

Wireless GPS Tracker with Temperature/Humidity Sensor and 3-Axis Accelerometer

Wireless GPS Tracker Based on LoRa Technology



R720G

Data Sheet

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Introduction

R720G is a compact GPS tracking device with built-in three-axis acceleration sensor. And transmits the detected data to other devices through the wireless network for display, which adopts the SX1276 wireless communication module. Users can monitor all changes in the network through the cloud access gateway and easily realize the real Internet of things remote control.

Operating Principle

The three-axis acceleration sensor is used to detect whether the device is moved. When the device is stationary, the device enters the sleep state and enters the low power consumption state. When the device vibrates, the device will wake up and report the current track position.

Main Characteristics

- Based on SX1276 wireless communication module
- Built-in GNSS module including GPS, BeiDou, Galileo, GLONASS, QZSS
- 2 x ER14505 AA size 3.6V lithium battery in parallel
- Built-in 3-axis accelerometer
- Built-in magnets for easy installation on a ferrous object
- IP Rating: IP65
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum
- Parameters can be configured via a third-party software platform. Data can be read and alerts can be set via SMS text and email (optional)
- Applicable to third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life

Note:

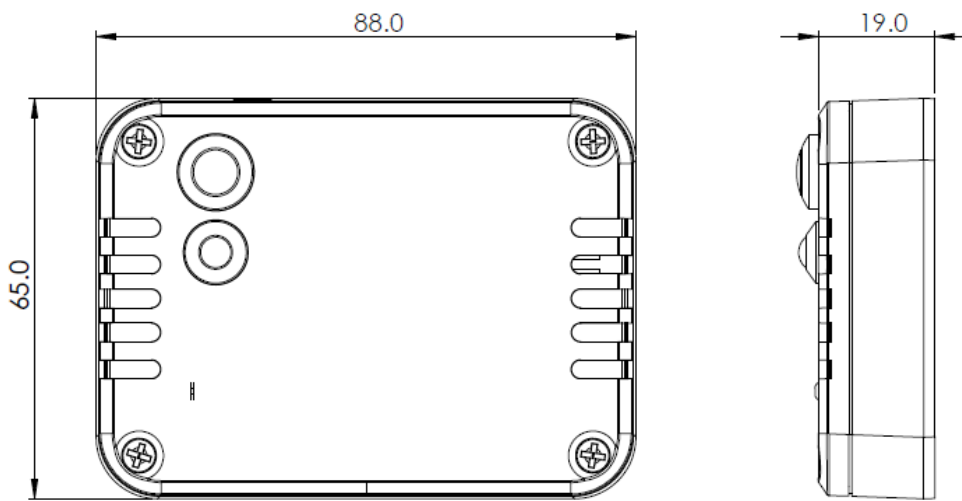
The battery life of a device is determined by the number of uplinks and other variables. Please refer to http://www.netvox.com.tw/electric/electric_calc.html for the battery life of various models in different configuration.

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Application

- Used for locating containers, trailer tracking, bulk material containers and other assets
- Small device for tracking resources, such as bags, bags, bicycles and other assets
- Used to track cars, pumps, generators, and any assets with power supply

Dimension



Electrical

Power Supply	2 x ER14505 AA size lithium battery (3.6V/section)
Battery Life	3.3 years (Conditions: ambient temperature 25 °C, 120 min report once, txpower = 20dBm, LoRa spreading factor SF = 10)
Standby Current	About 60uA
Wakeup Current	7.11mA (typical value) (when there is no Lora transmitting and receiving data) Range value 0.8mA-20mA
Low Voltage Threshold	3.2V
RF Receiving Current	LoRa: 120mA @ 3.3V (Max)
RF Transmitting Current	11mA @ 3.3V; GPS: 30mA@3.3V

*The actual electrical characteristics will vary with the input voltage.

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GPS Module

GNSS Module	MAX-M10S (UBLOX)
Constellation	concurrent reception of GPS and Galileo with QZSS, SBAS
Sensitivity	-148 dBm cold start / -160 dBm hot start
Low Noise Amplifier	MAX-M10S integrates an LNA and a SAW filter
GPS Antenna Type	Built-in GPS antenna

3-Axis Accelerometer

Model	LIS2DW12
Range	±4g
Resolving Power	14 bit

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Rx Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate = 293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna	Built-in GPS antenna; External LoRa antenna
Communication Distance	10 km (visible linear obstacle-free transmission distance, actual transmission distance depending on the environment)
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
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 (Note: optional, to be done in the factory configuration)

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Physical

Dimension	Main Part: 88mm(L)*65mm(W)*19mm(H)
Weight	129g
Operating Temperature	-20°C ~ 55°C
Operating Humidity	< 90%RH (Non-condensing)
Storage Temperature	-40°C ~ 85°C