Rotiot
Tracker

**Flexible LoRaWAN® tracker
to manage valuables**

Flexible multi-standard LoRaWAN®
WiFi/GPS tracker for various
use-cases.

Description

Rotiot Tracker is a powerful and flexible GNSS
tracking device that integrates a multi-standard
GPS receiver and passive Wi-Fi MAC address
scanner with Bluetooth 5.2 connectivity and an
accelerometer for motion detection, into one
compact device. Location functionality is based on
Satellite communication and scanning nearby Wi-Fi
Access Points. It is tightly integrated with the
Swisscom location solver. It provides seamless
outdoor-indoor tracking. The highly configurable
device firmware allows for fine-grained adaptation
to a specific use case to optimize performance and
battery lifetime.

Features

- LoRaWAN® class A compliant device
- Dedicated high precision GPS receiver
- Passive Wi-Fi AP MAC address scanner module
- Bluetooth 5.2 receiver and transmitter
- Accelerometer to detect motion
- Rechargeable, USB-C / Wireless charging

Applications

- Tracking of assets and valuables
- Construction site management
- Fleet management
- Theft protection

Document Information

About

File Name	Document type	Date	Revision
DS_Rotiot_Tracker_V1_0	Datasheet	2023/02/23	1.0

Revision history

Date	Release	Changes
2023/02/23	1	Initial release

Table of content

Functional Description

Rotiot Tracker is a very small LoRaWAN® class A and Bluetooth 5.2 compliant GPS tracking device for valuable asset tracking, indoor and outdoor localization applications. The device is based on a multi-standard GPS receiver and passive Wi-Fi MAC address scanner.

The integrated Bluetooth 5.2 receiver / transmitter provides additional functionality such as secure firmware updates and advanced device configurations.

The built-in accelerometer allows to detect movement to trigger acquisition of GPS fixes and Wi-Fi scans only when needed, resulting in lower current consumption and extended battery lifetime. Additionally, the device can also obtain fixes on regular intervals.

Different device profiles for various applications can be configured even with the device deployed in the field using LoRaWAN® downlink messages.

Technical Specifications

Mechanical specifications	
Weight	35 g
Dimensions	56 x 50 x 17 mm
Enclosure	Plastic

Operating conditions	
Temperature	0 – 60 °C
Humidity	0 – 95 % RH, non-condensing

Radio / wireless	
Wireless technologies	LoRaWAN® 1.0.3, Bluetooth 5.2
LoRaWAN® Device type	Class A
Supported LoRaWAN® features	OTAA, ADR, Adaptive Channel Setup
LoRaWAN® receiver sensitivity[2]	-127 dBm (SF7, 125 kHz) to -141 dBm (SF12, 125 kHz)
LoRaWAN® transmission power[2]	14 dBm / 22 dBm (depending on region)
Bluetooth transmission power[2]	6 dBm
Bluetooth sensitivity	-106.7 dBm (125 kbps) to -96.2 dBm (2 Mbit/s)

[2]See transceiver datasheet for detailed specifications

Expected battery lifetime	
1 WiFi scan + HPGPS / hour[*]	20 days
1 WiFi scan + GPS / hour	2 months

[*]High Precision GPS

Power Management	
Rechargeable Battery	3.7V, 0.29 Ah
Battery type	Lithium Polymer
Charging	Wireless or USB-C

Sensor Specifications

GPS	
Receiver	uBlox GPS receiver with patch antenna
GNSS	BeiDou, Galileo, GLONASS, GPS / QZSS

Wifi	
Receiver	2.4 GHz passive MAC scanning 802.11 b/g/n

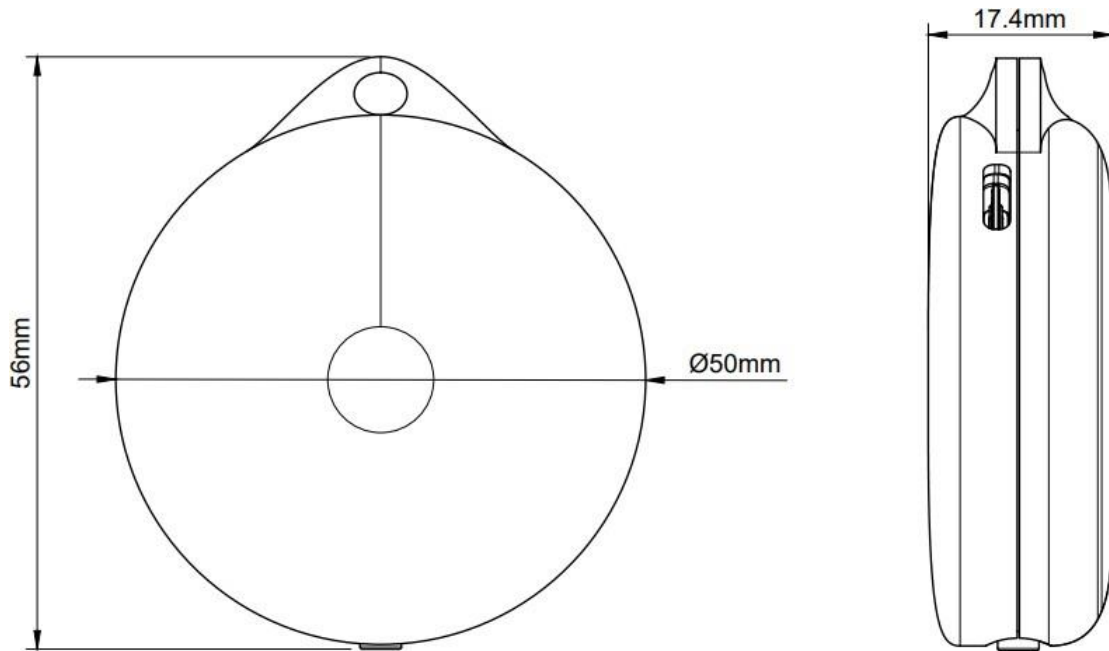| BLE	
Transceiver	Advertising, FOTA, device config via BLE connection, 2.4 GHz passive BLE beacon scanning capabilities

Accelerometer	
Range	±2, ±4, ±8, ±16
Resolution	16 bit
Accuracy (typ.)	±20 mg

Position accuracy	
High precision GPS[*]	5 - 10 meters
GPS[*]	20 - 30 meters
Wi-Fi	20 - 50 meters
BLE	Depends on the infrastructure

[*] assuming - 130 dBm

Mechanical Dimensions

Keep in touch

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