Smartends Track & Trace

Device Datasheet

SmartEnds Tracker is a long-range, low power outdoor tracker based upon NBIOT and LoRaWAN protocol with integrated BLE 5.0, it integrates a GNSS receiver with GPS, GLONASS, and QZSS for positioning. It supports various working modes and is suitable for many tracking applications ranging from livestock to industrial level and much more.

Introduction

SmartEnds Tracker is a smart wireless & low-power consumption with GPS Tracker. This is based on standard NBIOT & LORAWAN protocol suitable for long-distance transmission, and built-in GPS,3-Axis accelerometer sensor for positioning & motion tracking applications. It can be used with many applications like heavy equipment tracking, asset tracking at the industrial level, vehicle positioning/monitoring and livestock monitoring, etc.

The SmartEnds Tracker is fully compatible with widely used LPWAN technologies like LORAWAN & NBIOT. The built-in tracking feature with multiple available satellites Allows for reducing the fixing time and improving positioning accuracy. The integrated GNSS module provides improved sensitivity and accuracy with enhanced performance under a challenging environment. The hardware design complies with extremely low power & EMI proof technology standards. With optimized firmware and low consumption, the span is more than 3 years (depending on the transmission frequency) on (Lithium Thionyl Chloride) battery pack with an option of replacement. Hardware stability makes SmartEnds Tracker a non-maintenance device

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The device runs on very flexible and robust firmware. Finely designed and scheduled firmware runs concurrent processes at power-optimized CPU speed, providing high speed and high performance at a very low battery consumption.SmartEnds Tracker can integrate with third-party platforms seamlessly using SmartEndsData API. Data API relays data from the sensors in ready-to-consume data format, to get up and running in no time.

Specifications

Versions	SmartEnds Tracker LORAWAN SmartEnds Tracker NBIOT
Connectivity	LORAWAN & NBIOT
NBIoT Supported Regions	**Europe:** B3 (1800), B8 (900) and B20 (800); **North America:** B4 (1700), B12 (700), B66 (1700), B71 (600), B26 (850) **Asia Pacific:** B1(2100), B3(1800), B5(850), B8(900), B18(850), B20(800), B26(850) and B28(700) **Latin America:** B2(1900), B3(1800), B5(850) and B28(700) **Commonwealth of Independent States:** B3 (1800), B8 (900) and B20 (800) **Sub-Saharan Africa:** B3(1800) and B8(900) **Middle East and North Africa:** B8(900) and B20(800)
LoRaWAN Supported Regions	EU 863 to 870 MHz USA 902 to 928 MHz AUS 915 to 928 MHz IND 865 to 867 MHz
Sensors	3 axis accelerometer for motion
Antennas	LPWAN, GPS & BLE (Internal)
Firmware Update	Device firmware upgrade via BLE (5 m range)
Location Tracking GNSS	GPS, GLONASS (or BeiDou) and QZSS. Industrial leading sensitivity of -165 dBm during tracking and -148 dBm during acquisition GPS Horizontal Position Accuracy: ±25m meters
Battery	6600 mAh (Lithium Thionyl Chloride)

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Device Life	>3 years (4 transmissions per day)
Sleep current	< 25 µA
Operating Temperature	-20 °C to 70°C
Weight	160 grams
Dimensions	111 x 62 x 33 mm (L X W X H)
Casing Material	ABS
Supply Voltage	3.6V via (Primary) Lithium Thionyl Chloride battery
IP Rating	IP68

Features

Installation
Easy installation using screws
Velcro Tape

Mounting Type
Side mount (preferable)
Top mount

GNSS based Positioning
GPS, GLONASS and QZSS with
±25m positioning Accuracy

Monitoring
Monitors battery percentage and location tracking.

Configurations:

Radio Power

- LoRaWAN
  EU 14 dBm
  AU 18.5 dBm
  USA 18.5 dBm
- NB IOT
  23 dBm

Configurable Modes

- Configurable modes as per application
  Motion
  Periodic Mode
  Geo-Fencing

Transmission
Configurable and optimized transmissions based upon the configured mode.

Buzzer
Beeps on turning on the device.
Beeps after completing a self-test.

Data Acquisition
Configurable data acquisition based on configured mode

Periodic Mode
Motion Mode
Geo Fence

Periodic Mode
First time the device is turned ON it transmits every half hour, after 24 hours it will shift to a 3 hours uplink interval.
This is default mode.

Motion Mode
Configurable via downlink between 1 to 10 minutes.

Geo Fence
Configurable via downlink between 3 to 30 minutes.

Sleep Time
Configurable via downlink (depends on mode)

Platform Access
Data access from anywhere via the internet

Uplink Packet Types

Type 1 (default, contains lat/long info.)
Type 2 (device info. uplink)
Type 3 (contains motion/fence status)
Type 4 (contains fence info)
Configurable via downlink

Factory Defaults:

Mode
The device is set to periodic mode by default.

Transmission Interval
Transmission interval of 30 minutes per message for the first 24 hours after turning on the device for the first time
After 24 hours, if no downlink is scheduled, the device will automatically shift to 3 hours transmission interval.

Uplink Packet Type
Type1 (contains the lat/long info.)