

LoRaWAN Asset Tracker

TrackerD-LS



OVERVIEW:

TrackerD-LS is an **Open Source LoRaWAN Asset Tracker** based on **ESP32 MCU** and **Semtech LoRa Wireless Chip**. It can get the location data via GPS and set it to IoT server via LoRaWAN network.

TrackerD-LS supports Motion Detection, when there is motion, TrackerD-LS can send data more frequently and it will save power when no motion is detected.

The LoRa wireless technology used in TrackerD-LS allows the user to send data and reach extremely long ranges at low data-rates. It provides ultra-long range spread spectrum communication and high interference immunity whilst minimizing current consumption. It targets professional tracking services.

When there is no LoRaWAN network, TrackerD-LS can save the location data. It will send these data to IoT server when there is LoRaWAN network coverage.

TrackerD-LS is equipped with a **3000mAh Li-on rechargeable battery + Solar Panel** which let the device can be used for many years. Each TrackerD-LS has a worldwide unique OTAA keys to join the LoRaWAN network.

TrackerD-LS is program friendly. Developers can use Arduino IDE to customize the software of TrackerD-LS to fit their IoT solution.

Features:

- LoRaWAN 1.0.3 Class A
- ESP32 PICO D4
- SX1276/78 Wireless Chip
- Arduino IDE Compatible
- Open source hardware / software
- Regular/ Real-time GPS tracking
- Built-in 3 axis accelerometer
- Motion sensing capability
- Power Monitoring
- Charging circuit via USB port
- 3000mA Rechargeable Li-on Battery + Solar Panel
- Datalog

Applications:

- Logistics and Supply Chain Management

Order Info: TrackerD-LS-XXX

XXX: The default frequency band

- XXX: Frequency Bands, options:
EU433, EU868, IN865, KR920,
AS923, AU915, US915

Specification:

Micro Controller:

- Espressif ESP32 PICO D4
- Integrated SPI flash : 4 MB
- MCU: ESP32 PICO D4
- RAM: 448 KB
- EEPROM: 520 KB
- Clock Speed: 32Mhz

Common DC Characteristics:

- Supply Voltage: 2.5v ~ 3.6v
- Operating Temperature: -40 ~ 60°C

LoRa Spec:

- Frequency Range, 168 dB maximum link budget. Band 1 (HF): 862 ~ 1020 Mhz
- +20 dBm - 100 mW constant RF output vs
- +14 dBm high efficiency PA
- Programmable bit rate up to 300 kbps
- High sensitivity: down to -148 dBm
- Bullet-proof front end: IIP3 = -12.5 dBm
- Excellent blocking immunity
- Low RX current of 10.3 mA, 200 nA register retention
- Fully integrated synthesizer with a resolution of 61 Hz
- FSK, GFSK, MSK, GMSK, LoRaTM and OOK modulation
- Built-in bit synchronizer for clock recovery
- Preamble detection
- 127 dB Dynamic Range RSSI
- Automatic RF Sense and CAD with ultra-fast AFC
- Packet engine up to 256 bytes with CRC
- LoRaWAN 1.0.3 Specification

Battery:

- 3000mA Li-on Battery power
- Built-in Solar Panel

Power Consumption:

- Sleeping Mode: 60uA
- LoRa Transmit Mode: 125mA @ 20dBm
44mA @ 14dBm
- Tracking: max: 38mA