



Raspberry Pi LoRa/GPS HAT - support 868M frequency

SKU 113990254



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Description

The Dragino Lora/GPS HAT is an expansion module for LoRaWan and GPS uses with the Raspberry Pi. This product is intended for those interested in developing LoRaWAN solutions.

The Lora/GPS HAT is based on the SX1276/SX1278 transceiver. The add on L80 GPS (Base on MTK MT3339) is designed for applications that use a GPS connected via the serial ports to the Raspberry Pi such as timing applications or general applications that require GPS information. The transceivers of the Lora/GPS HAT feature the LoRa™ long range modem that provides ultra-long range spread spectrum communication and high interference immunity whilst minimising current consumption. The Lora/GPD HAT can achieve a sensitivity of over -148dBm using a low cost crystal and bill of materials. The high sensitivity combined with the integrated +20 dBm power amplifier yields industry leading link budget making it optimal for any application requiring range or robustness. LoRa™ also provides significant advantages in both blocking and selectivity over conventional modulation techniques, solving the traditional design compromise between range, interference immunity and energy consumption.

This board can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal flash memory, so the HAT can fix position quickly even at indoor signal levels with low power consumption. With AlwaysLocate™ technology, the Lora/GPS HAT can adaptively adjust the on/off time to achieve balance between positioning accuracy and power consumption according to the environmental and motion conditions. The GPS also supports automatic antenna switching function. It can achieve the switching between internal patch antenna and external active antenna. Moreover, it keeps positioning during the switching process.

Features

Frequency Band: 868 MHZ/433 MHZ/915 MHZ(Pre-configure in factory)

Compatible with Raspberry Pi 2 Model B/Raspberry Pi 3.

LoRa™ Modem

FSK, GFSK, MSK, GMSK, LoRa™and OOK modulation

Preamble detection

Baud rate configurable

Built-in temperature sensor and low battery indicator

Excellent blocking immunity

Automatic RF Sense and CAD with ultra-fast AFC

Support DGPS, SBAS(WAAS/EGNOS/MSAS/GAGAN)

GPS automatic switching between internal patch antenna and external active antenna

PPS VS. NMEA can be used in time service

Support SDK command

Built-in LNA for better sensitivity

EASY™, advanced AGPS technology without external memory

AlwaysLocate™, an intelligent controller of periodic mode

GPS FLP mode, about 50% power consumption of normal mode

GPS support short circuit protection and antenna detection

Specifications

Lora Spec:

- 168 dB maximum link budget.
- +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, LoRa™ 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.
- Built-in temperature sensor and low battery indicator.

GPS Spec:

- Power Acquisition: 25mA,Power Tracking:20mA.
- Compliant with GPS, SBAS.
- Programmable bit rate up to 300 kbps.
- Serial Interfaces UART: Adjustable 4800~115200 bps,Default: 9600bps.
- Update rate:1Hz (Default), up to10Hz.
- Protocols:NMEA 0183,PMTK.
- Horizontal Position Accuracy:Autonomous<2.5 m CEP.
- TTFF@-130dBm with EASY™:Cold Start<15s,Warm Start <5s,Hot start <1s;TTFF@-130dBm. without EASY™:Cold Start<35s,Warm Start <30s,Hot Start <1s.
- Timing Accuracy:1PPS out 10ns, Reacquisition Time<1s.
- Velocity Accuracy Without aid<0.1m/s,Acceleration Accuracy Without aid 0.1m/s².
- Sensitivity Acquisition -148dBm, Tracking -165dBm, Reacquisition -160dBm.
- Dynamic Performance Altitude Max.18000m, Maximum Velocity Max.515m/s, Maximum Acceleration 4G.
- L1 Band Receiver(1575.42MHz) Channel 22 (Tracking) /66 (Acquisition).

Documents

Please visit our [wiki](#) page for more info about this product. It will be appreciated if you can help us improve the documents, add more demo code or tutorials.

Best-sellers



Dragino LoRa Shield - supermini



Raspberry Pi 3 Model B



LinkIt Smart 7688 Duo



ESP-32S Wifi Bluetooth Co...

Technical Details

Weight	G.W 61g
Battery	Exclude

Part List

Lora/GPS HAT	1
Brass cylinders	4
Screws	4
Nuts	4
Glue Stick Antenna(868 MHZ)	1

Have a question about this? Ask people who own it.



View History



433Mhz RF link kit



125Khz RFID module - UART



2KM Long Range RF link ki...



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