LoRa/GPS Shield For Arduino

SKU 113990296

The LoRa/GPS Shield is an expension board for LoRa™/GPS for using with the Arduino.This product is intended for those interested in developing LoRa™/GPS solutions.The LoRa/GPS Shield is composed of LoRa/GPS Shield mother board and LoRa BEE.

In the LoRa part,the LoRa/GPS Shield is based on the SX1276/SX1278 transceiver.The transceivers of the LoRa/GPS Shield feature the LoRa™ long range modem that provides ultra-long range spread spectrum communication and high interference immunity whilst minimising current consumption. 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.

In the GPS part,the add on L80 GPS (base on MTK MT3339) is designed for applications that use a GPS connected via the serial ports to the arduino such as timing applications or general applications that require GPS information.This GPS module can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal flash memory, so the shield can fix position quickly even at indoor signal levels with low power consumption. With AlwaysLocate™ technology, the LoRa/GPS Shield 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.

- Frequency Band: 868 MHZ
- Low power consumption
- Compatible with Arduino Leonardo, Uno, Mega,etc.
- 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

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, 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.

GPS Spec

- Based on MT3339.
- 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.
- I/O Voltage:2.7V ~ 2.9V.
- 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.
- Environmental:Operating Temperature -40°C to 85°C,Storage Temperature -45°C to 125°C.
- Dynamic Performance Altitude Max.18000m， Maximum Velocity Max.515m/s， Maximum Acceleration 4G.
- L1 Band Receiver(1575.42MHz) Channel 22 (Tracking) /66 (Acquisition).

Technical details

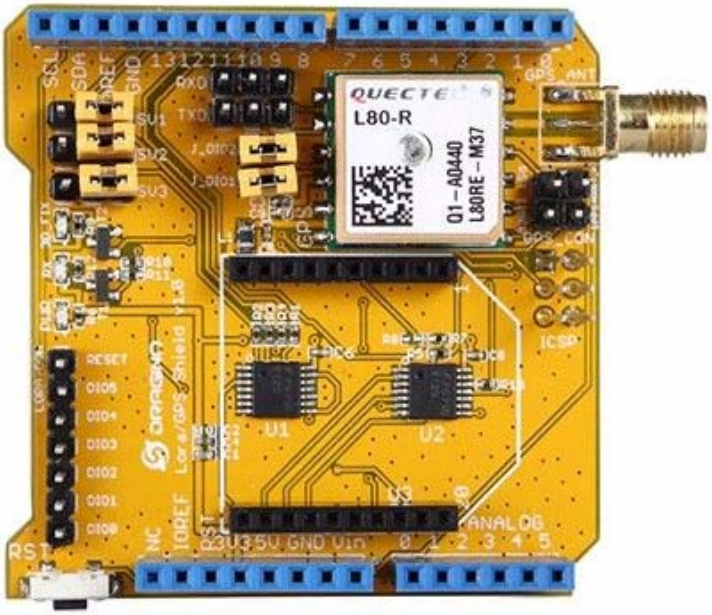
Dimensions	109mm x67mm x34mm
Weight	G.W 59g
Battery	Exclude

Part List

LoRa /GPS Shield mother board	1
LoRa BEE	1
Glue Stick Antenna(868 MHZ)	1

ECCN/HTS

ECCN	5A991.e
HSCODE	8517709000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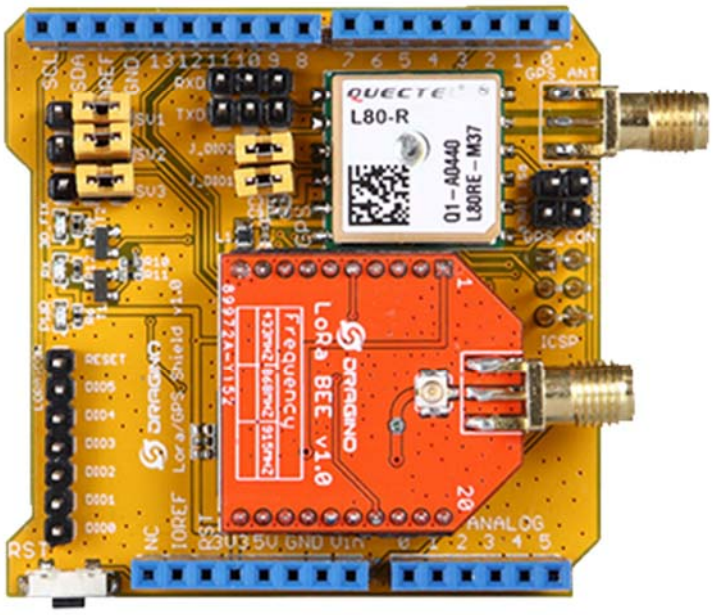
ICSP
ANALOG
Lora/GPS Shield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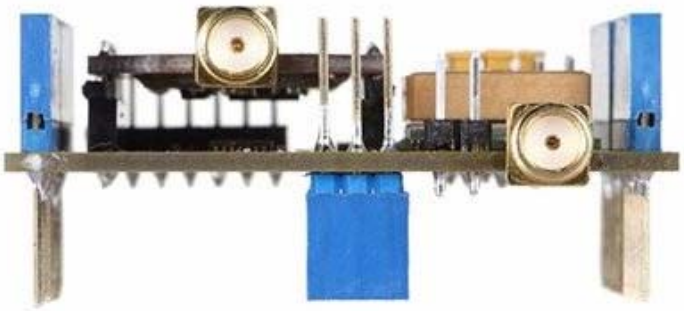
Lora/GPS Shield



https://www.seeedstudio.com/LoRa-GPS-Shield-For-Arduino-p-2802.html/1-7-19