

RTK Express Kit

GPS-18380

Product Overview

09-30-2022

For the most up-to-date information, visit www.mouser.com or the supplier's website.

Description

SparkFun RTK Express Kit includes everything needed to get centimeter-level global positioning measurements using GNSS RTK. The RTK Express is a Bluetooth® enabled multi-band GNSS receiver based on the ESP32 from Espressif and the ZED-F9P from u-blox. The RTK Express offers 300mm approximate accuracy out of the box and 14mm accuracy with RTCM corrections. The kit comes with a handy carrying case for protection. This carrying case allows the quick attachment of the L1/L2 antenna and RTK Express housing to a pole or tripod. The kit consists of antenna bits, cables, and chargers the user needs to get started in this field.



Kit Contents



- SparkFun RTK Express GNSS receiver
- RTK Kit carrying case
- TOP106 GNSS L1/L2 multi-band antenna
- SMA to TNC (300mm) antenna interface cable
- 1/4" to 5/8" antenna thread adapter
- 5V, 2A USB wall charger
- 0.8m USB A to C cable
- Data cable
- Radio cable

Features

- ZED-F9P GNSS receiver
 - Concurrent reception of GPS, GLONASS, Galileo, and BeiDou
 - Receives both L1C/A and L2C bands
 - 68mA to 130mA current (varies with constellations and tracking state)
 - 25s (cold), 2s (hot) time to first fix
 - Maximum navigation rate:
 - PVT (basic location over UBX binary protocol) - 25Hz
 - RTK - 20Hz
 - Raw - 25Hz
 - Horizontal position accuracy:
 - 2.5m without RTK
 - 0.010m with RTK
 - 50km (31 miles) maximum altitude
 - 500m/s (1118mph) maximum velocity
- ESP32 WROOM Bluetooth® transceiver
 - Xtensa® dual-core 32-bit LX6 microprocessor
 - Up to 240MHz clock frequency
 - 4MB of flash storage
 - 520kB internal SRAM
 - Integrated 802.11 BGN Wi-Fi transceiver
 - Integrated dual-mode Bluetooth® (classic and BLE)
 - Hardware-accelerated encryption (AES, SHA2, ECC, and RSA-4096)
 - 2.5µA deep sleep current
- Overall device
 - LiPo 1300mAh with 500mA charging internal battery
 - 3.3V TTL serial (57600bps RTCM TX/RX) radio port
 - 3.3V TTL serial (115200bps NMEA) data port
 - Embedded OLED display for available satellites and data logging
 - Push-button controls
 - 162g (an entire device including battery) weight
 - 132mm x 101mm x 32mm (5.2" x 3.9" x 1.2") dimensions
 - 1x Qwiic connector
- GNSS multi-band L1/L2 surveying antenna
 - ≥5dBi gain
 - 40dB LNA gain
 - Reception frequencies
 - L1: 1555 to 1615MHz
 - L2: 1198 to 1278MHz
 - 50ohm antenna impedance
 - 335g overall antenna weight
 - 160g bare antenna element weight (including MMCX connector, with RF shield)
 - 148mm x 55mm dimensions
 - Waterproof IP67
 - Female TNC connector

Mouser Part Number

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To learn more, visit <https://www.mouser.com/new/sparkfun/sparkfun-rtk-express-kit/>