RTK Facet L-Band

GPS-20000

Product Overview

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

Description

SparkFun RTK Facet L-Band is designed for surveying and high-precision geolocation. This RTK Facet L-Band utilizes the corrections from the Geosynchronous Inmarsat satellite that supports u-blox's Point perfect service broadcast. RTK Facet L-Band requires WiFi SSID and password as the only setup. Once the setup is done, and appropriate terms are entered, the device will provision itself and update the decryption keys necessary to use the PointPerfect service periodically (once a month). The ESP32 WROOM is under the hood of RTK Facet L-Band, and it's connected to a NEO-D9S L-Band receiver, ZED-F9P GNSS receiver, and a variety of peripheral hardware (microSD, LiPo fuel gauge). The RTK Facet L-Band features satellite data receiver NEO-D9S, ZED-F9P, and Bluetooth® transceiver ESP32 WROOM.

The surveyor-grade L1/L2/L-Band antenna is present under the dome of the RTK Facet L-Band. This antenna features a unique combination of elements that are designed to receive the GNSS signals (L1/L2) alongside the 1.55GHz PointPerfect corrections. This RTK Facet L-Band works with common GIS software, including SurvPC, Field Genius, SW Maps, and any GIS software that supports NMEA over Bluetooth®.

Features

- Enclosed Facet Design IP53:
  - Protected from limited dust ingress and water spray
- Internal Antenna:
  - L1/L2/L-Band with ≥5dBi gain
- Internal Battery:
  - LiPo 6Ah with fast 1 amp charging
- Qwiic Port:
  - Supports I²C-based add-on devices

Features

- microSD:
  - Compatible with up to 32GB
- Embedded OLED Display for positional accuracy, available satellites, and data logging
- Single push button control
- 598g (1.3lbs) weight
- Works with common GIS software:
- SW Maps, SurvPC, and Field Genius
- GNSS Receiver: ZED-F9P
  - Concurrent reception of GPS, GLONASS, Galileo, and BeiDou
  - Receives both L1C/A and L2C bands
  - 184-channel u-Blox F9 engine
  - 25s (cold) and 2s (hot) time to first fix
- Satellite Data Receiver: NEO-D9S
  - Receives PMP messages from Inmarsat geosynchronous satellites
  - SESTB28A L-Band data receiver compliance
- Bluetooth® transceiver: ESP32 WROOM
  - Xtensa® dual-core 32-bit LX6 microprocessor
  - Integrated 802.11 BGN WiFi transceiver
  - Integrated dual-mode Bluetooth® (classic and BLE)
  - Hardware accelerated encryption (AES, SHA2, ECC, and RSA-4096)

Specifications

- Satellite Data Receiver: NEO-D9S
  - 133dBm sensitivity
  - <10s time to the first frame
  - 35mA to 130mA current (varies during acquisition and tracking state)
  - 1525MHz to 1559MHz frequency range
- Bluetooth® transceiver: ESP32 WROOM
  - Up to 240MHz clock frequency
  - 16MB of flash storage
  - 520kB internal SRAM
  - 2.5µA deep sleep current
  - 3.3V TTL Serial (57600bps RTCM TX/RX) radio port
  - 3.3V TTL Serial (115200bps NMEA) data port
  - 136mm x 146mm x 80mm (5.35inches x 5.74inches x 3.14inches) dimensions
- GNSS receiver: ZED-F9P
- 68mA to 130mA current (varies with constellations and tracking state)
- 50km (31 miles) max altitude
- 500m/s (1118mph) max velocity

Kit Contents

- 1x RTK Facet L-Band
- 1x RTK Facet carrying case
- 1x Antenna thread adapter - 1/4inches to 5/8inches
- 1x Breadboard to GHR-04V cable - 4-Pin x 1.25mm pitch
- 1x GHR-04V to GHR-06V cable - 1.25mm pitch
- 1x USB A to C cable - 0.8m
- 1x USB wall charger - 5V, 2A

Mouser Part Number

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To learn more, visit https://www.mouser.com/new/sparkfun/sparkfun-rtk-facet-l-band/