

Wander v1.1 Prototype Sheet

Requirements

- Commercial/Regions/Regulatory
 - COGS \$200; sold in US and Canada. FCC (active emitter), IC, PTCRB, CE, RoHS LeadFree
- Hardware/Sensors
 - Block diagram, major BOM components; sensor requirements (accelerometer)
- Electronics/Power/Battery
 - PCB must be no larger than 100mm x 36mm, 2K EEPROM; no more than 1.8A transients at 5VDC, 130uA in deep sleep; max battery runtime 11 days in deep sleep, LiPo, no larger than 51mm x 34mm x 9mm
- Firmware/API/Libraries
 - Operating System (Device OS), OTA updates (Particle Cloud); CoAP over DTLS over UDP; RSA used for authentication
- Software/Web/Cloud
 - Device Cloud, Google Firebase
- Mechanical/Plastics/Logos/Packaging
 - PA-12 enclosure; Wander logo embossed onto enclosure surface
- Environmental/ Dimensions/Service
 - Operating ambient temperature -20C-60C, 0% - 95% RH; 80mm x 45mm x 15mm; no field service, issues will be resolved in-house as refurbish

Specifications

- Installed System Life

- N/A

- Operating Temperature Range

- -40 to 85C E-Series; -40 to 85C PA6H; -20 to 60C LiPo Battery

- Dimensions

- Main Housing
 - 80mm x 45mm x 20mm
- PCB
 - 58mm x 42mm x 11mm
- Battery
 - 41mm x 41mm x 6mm

- Weight

- TBD

- On-Board GPS

- 66-channel, MTK3339-based module
- GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B1I, Galileo E1B/C, SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN
- Update rates: Single GNSS: up to 10 Hz, 2 Concurrent GNSS: up to 10 Hz
- -165dBm sensitivity; 20mA current draw; 1.8m position accuracy
- Acquisition times: Cold starts: 34s, Aided starts: 2s, Reacquisition: 1s

- Battery

- Runtime: 28h
- Cell Chemistry: Rechargeable Lithium Ion Polymer (Lithium Systems)
- Polymer Cell Electrolyte: Gel Polymer
- Dimensions: 41mm x 41mm x 6mm
- Capacity: 1080mAh; JP604141

- Power

- USB: Max 500mA supply
- VIN: 3.9VDC to 12VDC, rated 10W
- LiPo: 180mA, upto 550mA transients. Deep sleep mode at 110uA

- Field Strategy

- Not field serviceable
- RMA strategy not necessary, test units will be swapped out for working units
- No reset button

- Wireless Firmware Update

- Done OTA on the Particle Device Cloud