

# Specifications

## GPS Sensor

Receiver Type:	L1, C/A code, with carrier phase smoothing
Channels:	12-channel, parallel tracking (10-channel when tracking SBAS)
SBAS Support:	2-channel, parallel tracking WAAS, EGNOS, MSAS and compatible
Update Rate:	1Hz default, optional 2, 10 and 20Hz
DGPS Horizontal Accuracy:	< 60cm 2dRMS, 95% confidence <sup>1</sup> (< 30cm HRMS, < 25cm CEP)
Horizontal Accuracy:	< 2.5m 2dRMS, 95% confidence (autonomous, no SA) <sup>2</sup>
Optional Proprietary RTCM:	< 20cm 2dRMS, 95% confidence <sup>3</sup>
Optional L1 RTK:	< 5cm 2dRMS, 95% confidence <sup>3</sup>
Cold Start:	60s (no almanac or RTC)
Reacquisition:	< 1s
Maximum Speed:	1607 km/h (999mph)
Maximum Altitude:	18,288m (60,000 ft)

## Communication

Ports:	Bluetooth, RS-232C, USB 2.0
Bluetooth Transmission:	Class 1, 250m typical range <sup>4</sup>
Bluetooth Frequency:	2.400 – 2.485 GHz
Fully Bluetooth pre-qualified:	Bluetooth 2.0
Baud Rates:	4800 to 57600
Data I/O Protocol:	NMEA 183, Binary
Data Output Datum:	WGS 84 (G1150)
Timing Output:	1 PPS (HCMOS, active high, rising edge sync, 10 kOhms, 10 pF load)
Event Marker Input:	HCMOS, active low, falling edge sync, 10 kOhms, 10 pF load
Raw Measurement Data:	Proprietary binary (Free RINEX utility)
Correction I/O Protocol:	RTCM SC-104, Optional Proprietary format
GPS Status LED:	Power, GPS lock, DGPS position, DIFF lock, Bluetooth connection
Battery Status LED:	5 LED's bar graph

## Power

Battery type:	Field replaceable Lithium-Ion pack (Rechargeable in unit)
Battery Capacity:	3,900mAh. 7.2V (Average autonomy: 10+ hours)
Power Consumption:	< 2.5W
Charging Time:	5 hours (with supplied charger)
Antenna Voltage Output:	5 VDC
Antenna Input Impedance:	50 Ohms

## Environmental

Operating Temperature:	-40°C to +85°C (-40°F to +185 °F) <sup>5</sup>
Storage Temperature:	-40°C to +85°C (-40°F to +185 °F)
Humidity:	95% non-condensing
Compliance:	FCC, CE, RoHS and Lead-free

## Mechanical

Enclosure Material:	Re-enforced Nylon
Battery Case Material:	ABS
Enclosure Rating:	Waterproof, IP-67
Immersion:	30cm, 30 minutes
Enclosure Dimensions:	14.1 x 8.0 x 4.7 cm (5.57 x 3.15 x 1.85 in.)
Weight:	464g (1.02 lbs)
Data Connectors:	DB-9 Female USB Type B Female
Antenna Connector:	SMA Female

## Antenna

GPS Frequency Range:	L1 (1575 MHz +/- 10 MHz)
Gain (without cable):	26.5 dB (+/- 2 dB), 35mA
Voltage:	+5 VDC +/- 10%
Impedance:	50 Ohms
Dimensions:	5.5 diam. x 2.2 cm (2.16 x .87 in.)
Weight (without cable):	79g (.17 lbs) (with removable magnet mount)
Antenna Connector:	SMA Female
Finish:	Fluid Resistant
Temperature:	-55°C to +85°C (-67°F to +185 °F)
Humidity:	Immersion 1 meter

## Standard Accessories

SXBlue II GPS Receiver
Li-Ion Battery Pack (Field replaceable)
Li-Ion Charger
Belt/Shoulder Carrying Case
Precision Antenna with 1.5m cable
Soft Hat for antenna
RS-232 Cable (6 ft)
USB Type A/B Cable (6 ft)
CD-ROM (manuals and utilities)

## Field Activated Options

2Hz, 10Hz, or 20Hz Output Rate
Base Station RTCM Output
Proprietary Real-time for <20cm L1 RTK for <5cm

### NOTES :

1. Depends on multipath environment, number of satellites in view, satellite geometry, baseline length (for local services) and ionospheric activities
2. Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric activities
3. Option required on both base and rover. Also requires communication link between base and rover
4. Transmission in free space
5. Lithium-Ion battery performance degrades below -20°C (-4°F)