

*SXBlue* II-B  
GPS



## Rugged, Bluetooth sub-meter Mapping receiver.

*The SXBlue II-B GPS is a compact GPS receiver that delivers sub-meter accuracy every second using SBAS or built-in DGPS Beacon receiver. Its integrated lightweight design makes it the ideal choice for a variety of industry applications including GIS, Forestry, Mining, Utilities, Agriculture, Survey and Environmental, at a price you can afford.*

### Go Real-time, All the Time!

The SXBlue II-B GPS uses innovative technology that delivers sub-meter accuracy in real-time, all the time. There is no need for post-processing. It utilizes SBAS corrections (WAAS/EGNOS/MSAS/GAGAN) or DGPS Beacon corrections world-wide. Having the choice of using either SBAS or DGPS Beacon for sub-meter accuracy provides the ultimate in flexibility to keep you working sub-meter in real-time, all the time. Even in forestry applications and other difficult mapping environments where GPS reception is limited, the SXBlue II-B is designed to keep working and deliver the DGPS accuracy you need all day long.

### Accuracy and Productivity in One

The SXBlue II-B GPS takes real-time accuracy a step further. Its accurate code phase measurements and leading edge multipath mitigation delivers sub-60 cm (2dRMS, 95% confidence) positioning. With its superior tracking performance and innovative real-time positioning, that means no downtime even in harshest conditions, the SXBlue II-B maximizes your productivity by working directly within your GIS framework (ESRI, Autodesk, CMT, Integraph, MapInfo, TDS, etc.) both in the field and the office.

### A Long Term Solution

Add a field computer that suits your application, an off-the-shelf software of your choice, and the SXBlue

II-B GPS becomes the heart of a modular solution you can grow with. In today's rapidly evolving technologies, its unique multi-port interface (fully independent Bluetooth, USB, RS-232 ports) helps to protect your long term investment by always allowing the use of up-to-date computer hardware, operating system and software.

### Built-in DGPS RadioBeacon Receiver

Take advantage of free sub-meter DGPS corrections broadcast in more than 38 countries:

- 2-channel technology - tracks a back-up DGPS station when available
- High sensitivity dual H-Field and GPS antenna
- Fully automatic DGPS Beacon station search
- Meets US Coast Guard (USCG), US Army Corps of Engineers (USCOE) and International Association of Lighthouse Authorities (IALA) requirements

### Key Features

- Sub-60cm, 2dRMS real-time performance
- Multi-port interface (Bluetooth, USB, RS-232)
- Rugged and Waterproof design
- Field-replaceable Li-Ion battery pack (11+ hrs)
- Battery fuel gauge
- Compact and lightweight
- RoHS compliant

# 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, GAGAN and compatible. Features SBAS Ranging.
DGPS Beacon:	2-channel parallel tracking, MSK Demodulation 283.5 to 325.0 KHz @ 500Hz channel spacing Automatic, Manual, Database Station Selection <2 second warm start, <1 minute cold start
MSK Bit Rates:	50, 100, 200 bps
Update Rate:	2Hz default, optional 10 and 20Hz
DGPS Horizontal Accuracy: (SBAS, Beacon)	< 60cm 2dRMS, 95% confidence <sup>1</sup> < 30cm HRMS, < 25cm CEP
Horizontal Accuracy: (Autonomous, no SA) <sup>2</sup>	< 2.5m 2dRMS, 95% confidence
Optional Proprietary RTCM:	< 30cm 2dRMS, 95% confidence <sup>3</sup>
Optional L1 RTK:	< 2cm 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:	Autonomous: WGS 84 (G1150) SBAS: ITRF-2000 DGPS Beacon (North America): NAD 83
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
Battery Capacity:	3,900mAh. 7.2V (Average autonomy: 11+ hours)
Power Consumption:	< 2.7W
Charging Time:	4-5 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 5.6 cm (5.57 x 3.15 x 2.22 in.)
Weight:	517g (1.14 lbs)
Data Connectors:	DB-9 Female USB Type B Female
Antenna Connector:	SMA Female

## Micro-B Antenna

GPS Freq Range:	1575 MHz ± 10 MHz
DGPS Beacon Freq Range:	283.5 - 325 KHz
Gain (no cable):	26 dB ±2 dB
Noise Figure:	2.5 dB Max.
Voltage/Current:	5V, 55mA
Connector:	SMA female
Dimensions:	7.62 mm D x 7.85 mm H 3.0 in. D x 3.1 in. H
Weight:	262g (0.58 lbs)
Temperature:	-40°C to +70°C
Humidity:	100% Condensing

## Standard Accessories

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

## Field Activated Options

10Hz, or 20Hz Output Rate
Base Station RTCM Output
Proprietary Real-time for <30cm
L1 RTK for <2cm

### 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.  
Stated accuracies for baseline lengths of up to 5 km
4. Transmission in free space
5. Lithium-Ion battery performance degrades below -20°C (-4°F)

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