



Rugged, Bluetooth sub-meter GPS/GNSS and SBAS receiver

GPS, GNSS and SBAS

The SXBlue is a compact GPS/GNSS and SBAS module that offers sub-meter performance suitable for a variety of applications including Forestry, Mining, Machine Navigation, Precision Agriculture, GIS and Mapping, at a price that you can afford.

Bluetooth Enabled

The SXBlue provides a wireless link with any Bluetooth enabled PDA, computer or device, thus eliminating the need for cumbersome cabling.

High Performance GPS

The SXBlue delivers sub-meter positioning accuracy, low power consumption and optional 2, 10 or 20Hz position update rates.

It uses a new GPS/GNSS engine architecture that provides faster startup and acquisition times. With a current almanac and ephemeris, the SXBlue GNSS will provide a position within 35 seconds. If it's been powered within the last couple hours, the SXBlue GNSS will provide a position within approximately 20 seconds.

SBAS Support

The US Federal Aviation Administration's Wide Area Augmentation System (WAAS) is now undergoing rigorous final testing for its Initial Operation Capability. Other WAAS-compatible Space Based Augmentation Systems (SBAS) are also under development elsewhere such as the European Geostationary Navigation Overlay System (EGNOS) and the Japanese MTSAT Satellite-based Augmentation System (MSAS), among others. The SXBlue provides compatibility for each of these free services.

Interface

The SXBlue features a Bluetooth and an RS-232 serial ports, both of which may be independently configured for versatility. For example, both ports might be set to output either NMEA 183 or RTCM-104. The RS-232 can be configured to consume RTCM 104 data.

A series of LED on the front panel provides useful monitoring information such as Power, GPS/GNSS, DGPS, SBAS Lock and Bluetooth connection.

COAST™ Technology

Coast Technology allows the SXBlue to use aged correction data for up to 45 minutes or more without seriously affecting the quality of your positioning. Using Coast, the SXBlue is less likely to be affected by differential outages due to differential signal blockages, weak signal, or interference. No other product offers this flexibility.



Specifications

GPS Sensor

Receiver type:	L1/G1, GPS + GLONASS
Channels:	36-channel, parallel tracking
SBAS Support:	3-channel, parallel tracking WAAS, EGNOS, MSAS, GAGAN, SBAS ranging.
Update Rate:	1 Hz standard (optional 10 or 20)
SBAS Accuracy:	<30cm HRMS
DGNSS Horizontal Accuracy:	< 60cm 2dRMS, 95% confidence ¹ (< 30cm HRMS, < 25cm CEP)
Horizontal Accuracy:	< 2.5m 2dRMS, 95% confidence (autonomous, no SA) ²
Optional Proprietary RTCM:	< 20cm 2dRMS, 95% confidence ³
Optional RTK:	1 cm to 3 cm + 1 ppm ¹ (Horizontal) 2 cm to 6 cm + 1 ppm ¹ (Vertical)
Post-processing:	
<i>Horizontal Accuracy</i> ¹ :	5 mm + 0.5 ppm (Static) or better 10 mm + 1 ppm (Kinematic) or better
<i>Vertical Accuracy</i> ¹ :	5 mm + 1.0 ppm (Static) or better 20 mm + 1 ppm (Kinematic) or better

Accuracy standard when baseline or kinematic are using the same antenna at the base and the remote receiver.

Cold Start:	< 60 sec typical (no almanac or time)
Reacquisition:	< 1sec
Maximum Speed:	1.850 kph / 1.150 mph / 999 knots
Maximum Altitude:	18.288 meters (60.000 ft)

Communication

Serial Ports:	1 Bluetooth serial port (9600 baud) 1 full duplex RS-232C
Baud Rates:	4800 to 57600
Data I/O Protocol:	NMEA 183
Raw Measurement Data:	Proprietary binary (RINEX utility available) RTCM SC-104
Status LEDs:	Power, GPS lock, DGPS position, SBAS lock, Bluetooth connection

Bluetooth

Bluetooth Transmission:	Class 1
Frequency:	2.400 – 2.485 GHz
Max Transmit Power:	+6 dBm
Min Transmit Power:	+0 dBm
Range:	250 m
Fully Bluetooth pre-qualified:	Bluetooth 2.0

Power

Input Voltages:	5 VDC (4.5 to 9 VDC), or 12 VDC (9 to 18 VDC), or 24 VDC (18 to 36 VDC)
Average Power Consumption:	3.6 W @ 7.2 V
Average Current Consumption:	865 mA @ 5 V 270 mA @ 12 V 125 mA @ 24 V
Antenna Voltage Output:	5 VDC
Antenna Input Impedance:	50 Ω



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Environmental

Operating Temperature:	-40°C to +70°C
Storage Temperature:	-40°C to +85°C
Humidity:	95% non-condensing

Mechanical

Enclosure material:	Environmentally sealed powder-coated Aluminum
Enclosure rating:	IP65, NEMA4X, DIN VDE 0470
Enclosure Dimensions:	11.26 x 8.54 x 3.53 cm (4.43 x 3.36 x 1.39 in.)
Overall Dimensions:	14.20 x 8.54 x 3.53 cm (5.59 x 3.36 x 1.39 in.)
Weight (with bracket):	290g (0.64 lbs)
Mounting:	Mounting bracket optional
Power Connector:	2-pin weathertight
Data Connector:	3-pin weathertight
Antenna Connector:	BNC female, straight

Antenna

Frequency Range:	L1, G1 L-Band (1.525 - 1,607 MHz)
Gain (without cable):	26 dB (+/- 2 dB), 35mA
Voltage:	+ 4.5 to 15 VDC
Impedance:	50 Ohms
Dimensions:	6.6 diam. x 2.7 cm (2.61 x 1.05 in)
Weight (without cable):	114 g (0.25 lbs) (with removable magnet mount)
Antenna Cable:	SMA Female
Finish:	Fluid Resistant
Temperature :	-55°C to +70°C (-67°F to + 158°F)
Humidity:	Immersion up to 1 meter

Field Activated Options

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

Notes:

1. SVs > 5, HDOP < 2, short baseline from reference station, and low multipath environment.
2. Dependant upon ionospheric activity and multipath
3. Real-time clock

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