



Rugged, Palm-sized Sub-Decimeter OmniSTAR® L1/L2 RTK GPS Receiver

The SXBlue III-L GPS is a compact GPS receiver that delivers sub-decimeter accuracy anywhere in the world using OmniSTAR®'s HP service. Its integrated lightweight design makes it the ideal choice for a variety of applications including GIS, Mining, Construction, Utilities, Agriculture, Surveying and Environmental, at a price you can afford. In addition to OmniSTAR, the SXBlue III-L is also capable of traditional RTK and post-processing for centimeter-level accuracy.

Worldwide Real-Time, All the Time!

The SXBlue III-L GPS uses innovative technology that puts dual frequency GPS, OmniSTAR, SBAS and RTK Network signals in one of the smallest packages ever. You get 51 channels of proven high accuracy real-time performance from a lightweight unit that fits in the palm of your hand. The SXBlue III-L GPS supports RTK base and rover configuration for places where real-time centimeter accuracy is required and no RTK Networks are available. In addition to OmniSTAR and RTK, you also have the option of using L1 SBAS (WAAS, EGNOS, MSAS, GAGAN) for sub-meter mapping that the SXBlue has built its reputation on. Having the choice of OmniSTAR VBS/XP/HP, L1/L2 RTK or L1 SBAS for real-time mapping provides you with the flexibility that no other unit of this size and price can offer you.

Sub-Decimeter Real-Time Accuracy with OmniSTAR HP

OmniSTAR offers worldwide over-the-air correction services via a subscription. The SXBlue III-L GPS is capable of achieving 10cm (4 in) accuracy using the OmniSTAR HP service, 20cm (8 in) with the OmniSTAR XP service and submeter with the OmniSTAR VBS service. The VBS service can be used in areas where no free SBAS (WAAS, EGNOS, MSAS, GAGAN) signal is available. It is ideal in all applications where submeter is sufficient. The SXBlue III-L GPS also provides with superior tracking performance and unique innovative real-time positioning that means no downtime even in the harshest conditions, making it ideal for a full-day DGPS work even under forest canopy.

Real-time Centimeter Accuracy with L1/L2 RTK

When higher accuracy than decimeter is required for your job, the SXBlue III-L GPS offers optional support for RTK (Real-Time Kinematic). If an RTK network is available in your area, you may activate the RTK Rover option on your SXBlue III-L GPS and connect to the network via a wireless link to achieve 1cm accuracy within seconds. The SXBlue III-L GPS also

features the option to be used as a local RTK base station to output standard and proprietary differential correction formats such as RTCM 3.x, ROX and CMR.

A Long Term Flexible Solution

Add a field computer that suits your application, and off-the-shelf software of your choice, and the SXBlue III-L GPS becomes the heart of a modular solution you can grow with. In today's rapidly evolving computer technologies, its unique multi-port interface (independent Bluetooth, USB and 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. The SXBlue III-L GPS maximizes your productivity by working directly within your framework (Esri, Autodesk, Carlson, CMT, Intergraph, MapInfo, Digiterra, etc) both in the field and in the office.

Key Features

- Worldwide 10cm accuracy
- Smallest OmniSTAR VBS/XP/HP receiver in the world
- Optional 1cm accuracy long range (50km) L1/L2 RTK
- 60cm (95% confidence) using L1 SBAS
- Patented technology allows the use of SBAS and OmniSTAR VBS under forest canopy
- Integrated field-replaceable battery for full-day operation
- Micro-sized GPS L1/L2/OmniSTAR antenna
- Standard NMEA-0183 Output
- Compact and Lightweight
- Ultra-rugged and Waterproof
- Bluetooth, USB and RS-232 Ports

Options

- RTK Rover
- RTK Base
- 10 Hz and 20Hz
- Future L2C upgrade
- Auto-Dif



Specifications

GPS Sensor

Receiver Type:	L1/L2 GPS with OmniSTAR (VBS/XP/HP)
Channels:	48 channels, parallel tracking 12 x L1 C/A, 12 x L1P, 12 x L2C, 12 x L2P
L-Band Support :	1 channel
SBAS Support:	3 channels SBAS (WAAS, EGNOS, MSAS, GAGAN and compatible) or L1 C/A (when not tracking SBAS). Features SBAS Ranging.
Update Rate:	1Hz default, optional 10Hz & 20Hz
Cold Start:	60s (no almanac or RTC)
Reacquisition:	< 1s
Maximum Speed:	1607 km/h (999mph)
Maximum Altitude:	18,288m (60,000 ft)

Accuracy	RMS (67%)	2dRMS (95%)
OmniSTAR HP ^{1,7,8} :	6cm	10cm
OmniSTAR XP ^{1,7,8} :	12cm	20cm
OmniSTAR VBS ^{1,7} :		Submeter
RTK Horizontal ^{1,6} :	10mm + 1ppm	20mm + 1ppm
Post-processing (Horizontal) ¹ :	10mm + 1ppm	
SBAS ¹ :	30cm	60cm
Autonomous ¹ :		2.5m

Communication

Ports:	Bluetooth, RS-232C, USB 2.0
Bluetooth Transmission:	Class 1, 250m typical range ²
Bluetooth Frequency:	2.400 – 2.485 GHz
Fully Bluetooth pre-qualified:	Bluetooth 2.0
Baud Rates:	4800 to 115200
Data I/O Protocol:	NMEA 183, Binary
Data Output Datum:	OmniSTAR VBS/XP/HP: ITRF-2005 (VBS in North America: NAD 83 Original) Autonomous: WGS 84 (G1150) SBAS: ITRF-2000 Local Correction: Follows datum of corrections
Timing Output:	1 PPS (HCMOS, active high, rising edge sync, 10 kOhms, 10 pF load) ³
Event Marker Input:	HCMOS, active low, falling edge sync, 10 kOhms, 10 pF load ³
Raw Measurement Data:	Proprietary binary (Free RINEX utility)
Correction I/O Protocol ⁴ :	RTCM 2.3, 3.x, CMR, CMR+, ROX
GPS Status LED:	Power, GPS Lock, DGPS/RTK Position, DGPS/RTK Lock, Bluetooth connection
Battery Status LED:	5 LED's bar graph

Power

Battery type:	Field replaceable Lithium-Ion pack (Rechargeable in or outside of unit)
Battery Capacity:	3,900mAh. 7.2V (Average autonomy: 7+ hours)
Power Consumption:	< 3.8W
Charging Time:	4-5 hours (with supplied charger)
Antenna Voltage Output:	5 VDC



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Environmental

Operating Temperature:	-40°C to +85°C (-40°F to +185 °F) ⁵
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 (with battery) :	517 g (1.14 lbs)
Data Connectors:	DB-9 Female - USB Type B Female
Antenna Connector:	SMA Female

Antenna

GPS Freq Range:	1575 MHz ± 13 MHz, 1227 MHz ± 13 MHz
L-Band Freq Range:	1525 – 1560 MHz
Impedance	50 OHMs
Gain (no cable):	33dB ±2dB
Noise Figure:	1.9dB Max
Voltage/Current:	2.5-24Vdc/<35mA
Connector:	SMA female
Dimensions:	21.5mm H x66.8mm D (0.85in H x 2.63in D)
Weight:	113g (0.25 lb)
Temperature:	-55°C to +85°C (-67°C to +185°C)
Humidity:	Hermetically sealed

Standard Accessories

SXBlue III-L GPS Receiver	Pole Bracket and Clamp
Li-Ion Battery Pack (Field replaceable)	RS-232 & USB Cables
Li-Ion Charger	Hard Shell Case
Carrying Case (Belt/Shoulder)	CD-ROM (manuals and utilities)
L1/L2/OmniSTAR Antenna with 1.5m cable	Soft Hat for antenna
Antenna Mounting Plate	Magnetic Mount

Field Activated Options

RTK Rover (includes RTK Base and 10Hz)
RTK Base
10Hz and 20Hz Output Rates
L2C (Future firmware upgrade)
Auto-Dif

NOTES :

1. Depends on multipath environment, number of satellites in view, satellite geometry, baseline length (for local services) and ionospheric activities. Stated accuracies for baseline lengths of up to 50 km
2. Transmission in free space
3. Free options available on serial port upon request
4. Depends on activated options. CMR+ format is receive-only.
5. Lithium-Ion battery performance degrades below -20oC (-4°F)
6. RTK Base and Rover are optional field activated features
7. Requires service subscription from OmniSTAR
8. OmniSTAR XP/HP requires 45-60 minutes of observation to achieve the specified accuracy. Convergence time is considerably reduced when initialization is done on a known point

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