



## Advanced Positioning Technology

- Fast, multi-constellation signal acquisition
- 32 channels for universal L1 GPS/GLONASS/SBAS tracking
- Up to 20 Hz measurement/position update rate
- Tri-color LED indicator
- L-band channel for OmniSTAR corrections with VBS
- Emulated radar out for ground speed simulation

The SGR-1 is a single board receiver which simultaneously processes both GLONASS and GPS signals with a position update rate up to 20Hz and features TruPass™ advanced positioning technology for higher, stable pass-to-pass accuracies in dynamic applications.

With 32 universal channels, the SGR-1 tracks different combinations of GPS L1 C/A, GLONASS L1, as well as SBAS including EGNOS and WAAS. The SGR-1 receives L-band OmniSTAR signals and delivers VBS mode measurements.

Ground speed is provided as simulated radar output for improved slow speed operations such as seeding and spraying. The compact rugged design provides water and dust protection to IP66 standards. The SGR-1 provides both Serial and CAN communication capability.

Physical	
Dimensions / Weight	130 x 60 mm / 640 g
Mounting	5/8-11 UNC female, or magnetic base for ferrous roof
Connector	12 pin extended DEUTSCH DTM
Temperature	Operating: -40 to 85°C Storage: -40 to 85°C
Power	
Voltage	9 to 28 VDC
Power	2.5 W at 12 VDC typical
Antenna	
Signals tracked	L1 GPS/GLONASS with L-band compatibility
RF Input Frequencies	1530 MHz – 1610 MHz
PPS Output	5 ns resolution, ≤30 ns pulse-to-pulse precision, LVTTTL, configurable polarity and period
Radar Output	Variable frequency, simulated ground speed output
Data Input/Output	RS-232, 2 ports up to 460.8 kbps w/o flow control CAN, 1 port, NMEA2000 compliant
SV Tracking Channels	32 GPS L1 C/A, GLONASS L1 C/A code and carrier, SBAS
Acquisition Time (TTFF)	
Hot / Warm / Cold Start	< 10 seconds / < 35 seconds / < 60 seconds
Reacquisition	< 1s
Data	
Supported formats	NMEA 0183 versions 2.1, 2.2, 2.3 and 3.0 output proprietary (TPS) data format, NMEA2000 compliant RTCM SC104 versions 2.1, 2.2, 2.3 and 3.0 input/output geoid and magnetic variation models, grid coordinates
Data Rates	Raw measurements and position, up to 20 Hz
Accuracy	
Position Standalone	Horizontal: 2 m, Vertical: 3 m
Position Code Differential	Horizontal: 0.4 m, Vertical: 0.6 m (DGPS with external correction)
Position OmniSTAR VBS	Horizontal: 0.9 m
Velocity	0.03 m/sec
Time	20 nsec RMS
Measurement Precision	L1 C/A code < 0.5 m L1 Carrier Phase < 2 mm



For more information:  
[topconpositioning.com/sgr-1](http://topconpositioning.com/sgr-1)

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