

# SGR-1

## Guidance and Mapping Receiver



Featuring Topcon's new TruPass™ advanced positioning technology for higher, more stable pass-to-pass accuracies in dynamic ag applications.

- **Fast, multi-constellation signal acquisition**
- **32 channel universal tracking**
- **up to 20 Hz position update rate**
- **L-band for OmniSTAR with VBS**
- **Simulated radar ground speed output**
- **Compact, rugged and low cost**

# SGR-1 GNSS Receiver

Topcon Precision Agriculture introduces the new SGR-1 satellite receiver with TruPass™ advanced positioning technology for higher, stable pass-to-pass accuracies in dynamic ag applications. The SGR-1 features faster satellite acquisition and simultaneous processing of both GLONASS and GPS signals.

The SGR-1 is a single board receiver with a position update rate of 10Hz, upgradeable to 20Hz. With 32 universal channels, the SGR-1 tracks different combinations of GPS L1 C/A, code and carrier, GLONASS L1 code and carrier, as well as SBAS including EGNOS and WAAS.

The SGR-1 receives L-band OmniSTAR signals and delivers VBS mode measurements.

In addition to standard GNSS features (PPS output), the SGR-1 provides ground speed 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 also provides both Serial and CAN communication capability.



## Key Features

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

## Specifications

Dimensions	5.12" x 2.36", 130 x 60 mm
Weight	1.41 lbs, 640g
Mounting	5/8-11 UNC female, or magnetic base for ferrous roof
Connector	12 pin extended Deutsch DTM
Operating Temperature	-40° C to +85° C
Storage Temperature	-40° C to +85° C
Voltage	+9 to +28 VDC
Power	2.5 W@12VDC typical
Antenna	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, LVTTL, 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 & carrier, SBAS
Acquisition Time (TTFF)	hot <10 sec, warm <35 sec, cold <60 sec reacquisition <1 sec
Data 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 & magnetic variation models, grid coordinates
Data Rates	raw measurements and position, up to 20 Hz
<b>ACCURACY</b>	
Position Standalone	hor. 2m, vert. 3m
Position Code differential (DGPS with external correction)	hor. 0.4m, vert. 0.6m
Position OmniSTAR VBS	hor. 0.9m, vert.
Velocity	0.03 m/sec
Time	20 nsec RMS
Measurement Precision	L1 C/A code < 0.5m L1 Carrier Phase < 2mm

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