SGR Receiver

The SGR family

Scalable Configuration Options

From standalone metre-level to AdVance® RTK centimetre-level positioning, the SGR6 is flexible to meet your positioning needs. With 240 channels and comprehensive support for all current and planned GNSS signals, the SGR is field-upgradeable to eliminate the need for future hardware changes.

Enhanced Connectivity

The SGR6 provides numerous interfaces including multiple RS-232/RS-422 serial ports, USB host. Most interfaces are provided via standard connectors, eliminating the need for hard-to-find and expensive custom cables. The SGR6 also boasts Ethernet support with an advanced WebUI for remote configuration and access of data logs.

SPAN Capable

SPAN (Synchronous Position, Attitude and Navigation) technology brings together two different, but complementary technologies: GNSS positioning and inertial navigation. The SGR6 supports IMUs from a variety of suppliers to provide a tightly coupled 3D navigation solution that is stable and continuously available, even through periods when satellite signals are blocked. Integrated ALIGN heading functionality further enhances the powerful SPAN capabilities of the SGR6.

Benefits / Features

- Future-proofed with current and upcoming GNSS signal support, like Galileo an BeiDou.
- Rugged IP67 housing for reliable use in harsh environments
- Multiple communication interfaces for ease of integration
- Advanced Web UI for remote configuration and access
- SPAN capable for enhanced continuous and stable navigation
- 240 Channels
- Scalable positioning options from metre to centimetre-level
- Standard connectors for simple interfacing
- Optional 4GB of on-board memory for data logging
- Dual-input option for heading

SGR6 RECEIVER system specifications

Specifications are subject to change without prior notification.

Performance[1]

Channel Configuration

240 Channels[2]

Signal Tracking

• GPS	L1, L2, L2C, L5
• GLONASS	L1, L2,L2C
• Galileo	E1, E5a, E5b, AltBOC
• BeiDou[3]	B1, B2
• SBAS	
• QZSS	L1, L2C, L5
• L-Band	

Horizontal Position Accuracy (RMS)

• Single Point L1	1.5 m
• Single Point L1/L2	1.2m
• SBAS[4]	0.6m
• DGPS	0.4m
NovAtel Correct™	
>> TERRASTAR-D[5]	6cm
>> Veripos Apex2[6]	6cm
>> RT-2®	1cm + 1ppm
• Init. Time	<10s
• Init. Reliability	>99.9%

Measurement Precision (RMS)

Fully independent code & carrier measurements

	GPS	GLO
• L1 C/A codes	4 cm	8 cm
• L1 carrier phase	0.5 mm	1.0 mm
• L2 P(Y) code[7]	8 cm	8 cm
• L2 carrier phase[7]	1.0 mm	1.0 mm
• L2C code[8]	8 cm	8 cm
• L2C carrier phase[8]	1.0 mm	1.0 mm
• L5 code	3 cm	–
• L5 carrier phase	0.5 mm	–

Maximum Data Rate

• Measurements	Up to 100 Hz
• Position	Up to 100 Hz

Time to First Fix

• Cold Start[9]	50s (typical)
• Hot start[10]	35s (typical)

Signal Reacquisition

• L1	<0.5s (typical)
• L2/L5	<1.0s (typical)

Velocity Accuracy[11]	<0.03m/s RMS
Time Accuracy[12]	20 ns RMS

ALIGN® Heading Accuracy[13]

• 0.5 m Baseline	0.40°
• 1.0 m Baseline	0.20°
• 2.0 m Baseline	0.10°

Physical & Electrical

• Dimensions	185 x 185 x 55 mm
• Weight	1,4kg
• Input Voltage	+9 to +36 VDC
• Consumption	3.5W

Antenna Port(s) Power Output

• Output Voltage	5 VDC
• Maximum Current	150 mA

Connectors

Front Panel

• Ethernet	RJ45

Rear Panel

• Power	4-pin LEMO
• COM1	DB9M
• COM2	DB9M
• COM3	DB9M
• I/O or Event	DB9F
• IMU	DB9F
• GPS1	TNC
• GPS2	TNC
• OSC	BNC

Front Panel Status LEDS

- Power
- COM1
- COM2
- COM3
- COM4
- IMU
- Heading

Environmental

Temperature

• Operating	-40 to +75C
• Operating (heading)	-40 to +65C
• Storage	-40 to +95C

Humidity	95% NC
Waterproof	IEC 60529 IPX7
Dust	IEC 60529 IP6X

Vibration (operating)

• Random	8.10G
• Sinusoidal	IEC 60068-2-60(5 g) 10-2000 Hz

Included Accessories

- 12VDC power cable
- Null modem cable
- Extension cable

Optional Accessories

- Mounting bracket
- Ethernet cable
- GPS-700 series antennas
- SBD-IMU-Sx
- Graf-Nav / GravNet®
- NovAtel Connect™
- High gaincell antennas

Features

- 4GB on-board memory (optional)
- WebUI interface accessible via Ethernet for remote configuration, data retrieval and firmware updates
- Field-upgradeable firmware and field-upgradeable software models
- Auxiliary strobe signals, including a configurable PPS output and two mark inputs (non-SPAN configurations)
- Multiple configurable event input and output triggers (SPAN configurations)
- Dual-input ALIGN Heading

Available Configurations

- SGR6-S: single OEM638 card
- SGR6-D: dual antenna input with OEM638 and OEM615 cards
- SGR6-S-Sx: single OEM638 card running SPAN firmware
- SGR6-D-Sx: dual antenna input running SPAN firmware

1. Typical value. Performance specifications subject to external factors including US DOD operational performance, atmospheric conditions, multipath, interference, etc.
2. Tracks up to 220 L1/L2 satellites.
3. Includes E5a, E5b and Alt-BOC.
4. Designed for Compass Phase 3 compatibility.
5. GPS only.
6. Expected accuracy after static convergence3.
7. L2P for GLONASS.
8. L2C/A for GLONASS.
9. 100 Hz while tracking up to 40 satellites.
10. Cold start with no almanac, ephemerides and no approximate time or position. Warm start with almanac & ephemerides saved, approximate time and position entered.
11. Export licensing restrictions limit maximum velocity to 514 m/s.
12. Time accuracy does not include biases due to antenna or RF delay.
13. Dual receiver option required to support ALIGN heading.

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Contact us

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Getting to the bottom of things