SMART AG-Star™

INTEGRATED L1 GPS+GLONASS RECEIVER AND ANTENNA IDEAL FOR HARSH AGRICULTURE ENVIRONMENTS

INTEGRATED GNSS DESIGN

NovAtel's AG-Star provides an integrated L1 GPS+GLONASS receiver and antenna in a single rugged housing. Designed to meet or exceed stringent MIL-STD-810G specifications, the AG-Star includes built-in magnets to simplify mounting. Fixed mounting is also supported.

PRECISION PERFORMANCE

The AG-Star features 14 channels for L1 GPS and L1 GLONASS code and phase tracking. Two channels can be configured for SBAS (WAAS, EGNOS and MSAS) signals. Measurement and position data are provided at up to 10 Hz.

SMOOTH, PASS-TO-PASS ACCURACY WITH GLIDE™

NovAtel's exclusive GLIDE technology is optionally available on AG-Star, providing ultra-smooth positioning and exceptional pass-to-pass accuracy. GLIDE's steady, smooth output is especially well suited for manual guidance and autosteer applications and will bridge through short periods of poor satellite availability.

INTEGRATED BLUETOOTH® CONNECTIVITY

AG-Star is available with optional Bluetooth technology to provide wireless connectivity.

MULTIPLE INTERFACES DELIVER MAXIMUM FLEXIBILITY

NMEA 0183 compatible RS-232 serial ports and optional Bluetooth wireless technology provide maximum flexibility. The AG-Star also provides simulated radar ground speed output, a one pulse per second output (1 PPS), an event mark input and three daylight readable status LEDs.

BENEFITS

+ SBAS and GLONASS tracking increase position availability
+ Smooth, consistent positions for pass-to-pass applications with optional GLIDE technology

FEATURES

+ 14 channels configurable for GPS, GLONASS and SBAS tracking
+ Rugged, integrated design
+ Optional Bluetooth communication
+ Simulated radar ground speed output
+ Compatible with 12 V or 24 V vehicle power

For more information about our SMART antenna products, visit www.novatel.com/smart-antennas

AG-Star™

PERFORMANCE[1]

Channel Configurations[2]

14 GPS L1
12 GPS L1 + 2 SBAS
10 GPS L1 + 4 GLONASS L1
8 GPS L1 + 6 GLONASS L1
8 GPS L1 + 4 GLONASS L1 + 2 SBAS
10 GPS L1 + 2 GLONASS L1 + 2 SBAS
7 GPS L1 + 7 GLONASS L1
14 GLONASS L1 (timing only)

Horizontal Position Accuracy (RMS)

Autonomous L1	1.5 m
NovAtel CORRECT™	
» SBAS[3]	0.7 m
» DGPS	0.5 m

Measurement Precision (RMS)

	GPS	GLO
L1 C/A Code	5 cm	35 cm
L1 Carrier Phase	0.6 mm	1.5 mm

Data Rate	
Measurements	up to 10 Hz
Position	up to 10 Hz
Time to First Fix	
Cold Start[4]	<85 s (typical)
Hot Start[5]	<55 s (typical)
Signal Reacquisition	
L1	<1.0 s (typical)
Velocity[6]	515 m/s
Velocity Accuracy	0.05 m/s RMS
Time Accuracy	
GPS[3, 7]	20 ns RMS
GLONASS[7, 8]	40 ns RMS

PHYSICAL AND ELECTRICAL

Dimensions
155 mm diameter × 68 mm height

Weight	<490 g
Connector	14-pin Tyco Ampseal

Mounting

2 × magnetic mounts
4 × M4 screw inserts
Optional mounting plate
Optional pole-mount adapter plate

Power

Input Voltage Range	+8 to +36 VDC
Power Consumption	2.5 W (typical)[9]

Status LEDs

Power
Position Valid
Enhanced Accuracy

I/O Protection	ISO 7637 ISO 15003

ENVIRONMENTAL

Temperature	
Operating	-40 to +75°C
Storage	-55 to +90°C
Humidity	MIL-STD-810G Method 507.5
Immersion	MIL-STD-810G Method 512.5
Shock	MIL-STD-810G Method 516.6
Solar Radiation	EN60950-22 8.2 MIL-STD-810G Method 505.5
Salt Fog	MIL-STD-810G Method 509.5
Sand and Dust	MIL-STD-810G Method 510.5

Vibration

Random	MIL-STD-810G, Method 514.6E-1
Sinusoidal	ASAE EP455, 5.15.2 Level 1 & 2

Compliance	FCC, IC, CE marking, E-Mark
Ingress Protection Rating	IP67

COMMUNICATION PORTS

2 RS-232 serial ports
1 CAN Bus NMEA2000
1 Bluetooth (optional)[10]
1 PPS
1 Ground Speed Output
1 Event Mark Input

STANDARD FEATURES

- GPS L1 position, velocity and time with SBAS support
- 1 Hz data rates
- Field upgradable software
- PAC multipath mitigating technology
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, CMR, CMR+ and RTCA
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- Emulated radar

HARDWARE OPTIONS

- Bluetooth wireless technology

FIRMWARE OPTIONS

- GLONASS tracking
- RAIM
- GLIDE

OPTIONAL ACCESSORIES

- Mounting plate
- Pole-mount adapter plate
- Interface cable

For the most recent details of this product:
www.novatel.com/products/smart-antennas/ag-star/

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SE Asia and Australia 61-400-883-601

Version 6 Specifications subject to change without notice.

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1. Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.
2. Channel configuration can be selected at run-time.
3. GPS only. Clock aligned to GPS System time.
4. Typical value. No almanac or ephemerides and no approximate position or time.
5. Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
6. Export licensing restricts operation to a maximum of 515 metres per second.
7. Time accuracy does not include biases due to RF or antenna delay.
8. GLONASS only, Clock aligned to GLONASS system time.
9. Power consumption values for GPS L1.
10. Optional Bluetooth connectivity reduces the number of RS-232 serial ports to one. Non-Bluetooth models have two RS-232 serial ports.