# **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**<sup>™</sup>

#### PERFORMANCE<sup>1</sup>

# Channel Configurations<sup>2</sup>

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™	
» SBAS³	0.7 m
» DGPS	0.5 m

CDC

CLO

20 ns RMS

40 ns RMS

## Measurement Precision (RMS)

**Time Accuracy** 

GLONASS<sup>7, 8</sup>

GPS3,7

	GP3	GLO
L1 C/A Code	5 cm	35 cm
L1 Carrier Phase	0.6 mm	1.5 mm
Data Rate		
Measurements	uŗ	to 10 Hz
Position	uŗ	to 10 Hz
Time to First Fix		
Cold Start <sup>4</sup>	<85	s (typical)
Hot Start⁵	<55	s (typical)
<b>Signal Reacquisition</b>		
L1	<1.0	s (typical)
Velocity <sup>6</sup>		515 m/s
Velocity Accuracy	0.05 m/s RMS	

#### PHYSICAL AND ELECTRICAL

## **Dimensions**

155 mm diameter × 68 mm height

Weight <490 q Connector 14-pin Tyco Ampseal Mounting

2 × magnetic mounts 4 × M4 screw inserts Optional mounting plate

Optional pole-mount adapter plate

#### Power

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

# Status LEDs

Power Position Valid Enhanced Accuracy

I/O Protection ISO 7637 ISO 15003

## **ENVIRONMENTAL**

# **Temperature**

Operating -40 to +75°C -55 to +90°C Storage

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

MIL-STD-810G Method 509.5 Salt Fog 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

# **COMMUNICATION PORTS**

- 2 RS-232 serial ports
- 1 CAN Bus NMEA2000
- 1 Bluetooth (optional)<sup>10</sup>
- 1 PPS
- 1 Ground Speed Output
- 1 Event Mark Input
- 5. Typical value. Almanac and recent ephemerides saved and approximate
- second.

  - GLONASS only, Clock aligned to GLONASS system time.

    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

## 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/smartantennas/aq-star/

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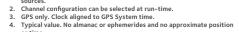
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Typical values. Performance specifications subject to GPS system

characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference

- position and time entered.

  Export licensing restricts operation to a maximum of 515 metres per
- Time accuracy does not include biases due to RE or antenna delay