



Dual-Frequency GNSS  
 SMART® Antenna  
 Featuring Powerful OEM6® Technology

### Benefits

Dual-frequency tracking increases position reliability and mitigates ionospheric effects

Centimetre level accuracy using AdVance® RTK positioning

Increased position availability with GLONASS tracking

Smooth, consistent positions for pass-to-pass applications with GL1DE® technology

### Features

120 channels

Multi-constellation tracking

Rugged, integrated design

Proven NovAtel® Pinwheel™ antenna technology inside

### Scalable Performance

From single-frequency GL1DE autonomous tracking to dual-frequency Real Time Kinematic (RTK), the SMART6-L positions you for success. The SMART6-L integrates NovAtel's OEM6 receiver and Pinwheel antenna technologies in a single, rugged housing. Software upgradable, the SMART6-L eliminates the need for costly hardware replacement, as requirements change, while delivering scalable accuracy and performance.

### Multi-Constellation for Enhanced Positioning

Capable of tracking L1+ L2 GPS/GLONASS and L-Band, the SMART6-L improves position availability in obstructed sky conditions. Dual-frequency tracking minimizes the impact of ionospheric disturbances, further enhancing field productivity. Optional L-Band tracking improves positioning accuracy outside of L1 SBAS coverage areas.

### Smooth Pass-to-Pass Accuracy using GL1DE

SMART6-L features NovAtel's GL1DE technology to provide ultra-smooth positioning and exceptional pass-to-pass accuracy. GL1DE's steady, smooth output is especially suited for manual guidance and auto-steer applications and will bridge through short periods of poor satellite availability. Dual-frequency GL1DE further improves the absolute accuracy of the GL1DE position and creates a robust solution, resistant to the effects of high ionospheric activity.

### Multiple Interfaces for Maximum Flexibility

NMEA 0183 compatible RS-232 serial ports and a NMEA2000 compatible CAN port provide maximum flexibility. The SMART6-L also provides 1 PPS output, an event mark input and three daylight readable status LEDs. Built-in magnets simplify mounting although fixed mounting options are also available.

## Performance<sup>1</sup>

### Channel Configuration

120 channels<sup>2</sup>

### Signal Tracking

GPS	L1, L2, L2C
GLONASS	L1, L2
Galileo	E1
BeiDou	B1
SBAS <sup>3</sup>	
L-Band	

### Horizontal Position Accuracy (RMS)

Single Point L1	1.5 m
Single Point L1/L2	1.2 m
SBAS	0.6 m
DGPS	0.4 m
RT-2™	1 cm + 1 ppm
L-Band	
VBS	0.6 m RMS
XP	0.15 m RMS
HP	0.1 m RMS

### Measurement Precision (RMS)

Fully independent code and carrier measurements

	GPS	GL0
L1 C/A codes	4 cm	15 cm
L1 carrier phase	0.5 mm	1.5 mm
L2 P(Y) code <sup>4</sup>	8 cm	8 cm
L2 carrier phase <sup>4</sup>	1.0 mm	1.5 mm
L2C code <sup>5</sup>	8 cm	8 cm
L2C carrier phase <sup>5</sup>	1.0 mm	1.5 mm

### Maximum Data Rate<sup>6</sup>

Measurements	Up to 50 Hz
Position	Up to 50 Hz

### Time to First Fix

Cold Start <sup>7</sup>	<50 s (typical)
Hot Start <sup>8</sup>	<35 s (typical)

### Signal Reacquisition

L1	0.5 s (typical)
L2	<1.0 s (typical)

### Velocity Accuracy<sup>9</sup>

	0.03 m/s RMS
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### Time Accuracy<sup>10</sup>

	20 ns RMS
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## Physical and Electrical

**Dimensions** 155 mm diameter x 81 mm height**Weight** <550 g**Connector** 14-pin Tyco Ampseal

### Mounting

2 x magnetic mount  
 4 x M4 screw inserts  
 Optional mounting plate

### Power

Input Voltage Range +8 to +36 VDC  
 Power Consumption 2.9 W (typical)<sup>11</sup>

### Status LEDs

Power  
 Error  
 Position Valid

### Power Input and I/O Protection

ISO 7637-2:2004: Compliance ensures product's ability to withstand vehicular system electrical disturbances

ISO 15003: Compliance ensures product's ability to withstand vehicular electrical system abnormal conditions (I/O short circuits to battery or ground and abnormal voltage levels)

### Emissions and Immunity

ISO 14982: EMC for Agricultural machinery

## 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-I  
 Sinusoidal ASAE EP455, 5.15.2 Level 1

**Compliance** FCC, IC, CE**Ingress Protection Rating** IP67

## Communication Ports

RS-232 dedicated ports	3
CAN Bus	1
1 PPS	1
Event Mark Input	1

## Standard Features

- GPS L1 position, velocity and time with SBAS support
- 20 Hz data rates
- Field upgradable software using RS-232 serial ports
- 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
- Single-frequency GL1DE smoothing algorithm

## Firmware Options

- Dual-frequency GL1DE
- GLONASS tracking
- Galileo tracking
- BeiDou tracking
- L-Band tracking
- 50 Hz data rates
- ALIGN®
- RT-2™
- RAIM

## Optional Accessories

- Mounting plate
- Interface cable