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# SMART SMART6-L™

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## DUAL-FREQUENCY GNSS SMART™ ANTENNA FEATURING NOVATEL'S POWERFUL OEM6® TECHNOLOGY

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### SCALABLE PERFORMANCE

From single-frequency GLIDE™ 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 GLIDE

SMART6-L features NovAtel's GLIDE technology to provide ultra-smooth positioning and exceptional pass-to-pass accuracy. GLIDE'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 GLIDE further improves the absolute accuracy of the GLIDE 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.

### BENEFITS

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- + Dual-frequency tracking increases position reliability and mitigates ionospheric effects
- + Centimetre-level accuracy using NovAtel CORRECT™ RTK positioning
- + Increased position availability with GLONASS tracking
- + Smooth, consistent positions for pass-to-pass applications with GLIDE technology

### FEATURES

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- + 120 channels
- + Multi-constellation tracking
- + Rugged, integrated design
- + Proven NovAtel Pinwheel antenna technology inside

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For more information about our SMART antenna products, visit [www.novatel.com/smart-antennas](http://www.novatel.com/smart-antennas)

# SMART6-L™

## 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

### NovAtel CORRECT™

» PACE™	0.15 m RMS
» TerraStar™	0.1 m RMS
» RT-2®	1 cm + 1 ppm

### Measurement Precision (RMS)

Fully independent code and carrier measurements

	GPS	GLO
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

### Time Accuracy<sup>10</sup>

20 ns RMS

## 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  
ISO 15003

### 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-1  
Sinusoidal ASAE EP455,  
5.15.2 Level 1 & 2

**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 GLIDE smoothing algorithm

## FIRMWARE OPTIONS

- Dual-frequency GLIDE
- GLONASS tracking
- Galileo tracking
- BeiDou tracking
- L-Band tracking
- ALIGN®
- RAIM
- 50 Hz data rates

## OPTIONAL ACCESSORIES

- Mounting plate
- Interface cable

For the most recent details of this product:

[www.novatel.com/products/smart-antennas/smart6-l/](http://www.novatel.com/products/smart-antennas/smart6-l/)

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**Version 2** 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. Tracks up to 60 L1/L2 satellites.

3. GPS only.

4. L2 P for GLONASS.

5. L2 C/A for GLONASS.

6. 50 Hz while tracking up to 20 satellites.

7. Typical value. No almanac or ephemerides and no approximate position or time.

8. Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

9. Export licensing restricts operation to a maximum of 515 metres per second.

10. Time accuracy does not include biases due to RF or antenna delay.

11. Power consumption values for GPS L1/L2.

