

SMART SMART6-L™



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



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 receiving TerraStar services using 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 TerraStar services improve 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 NMEA 2000 compatible CAN port provide maximum flexibility. The SMART6-L also provides 1 PPS output, an event mark input, simulated radar ground speed output and three daylight readable status LEDs. Built-in magnets simplify mounting although fixed mounting options are also available.

BENEFITS

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

FEATURES

- + 120 channels
- + Multi-constellation tracking
- + Simulated radar ground speed output
- + Rugged, integrated design
- + Proven NovAtel Pinwheel antenna technology inside

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

PERFORMANCE¹

Channel Configuration

120 channels²

Signal Tracking

GPS	L1, L2, L2C
GLONASS	L1, L2
Galileo	E1
BeiDou	B1
SBAS	
L-Band	

Horizontal Position Accuracy (RMS)

Single point L1	1.5 m
Single point L1/L2	1.2 m

NovAtel CORRECT™

» SBAS ³	60 cm
» DGPS	40 cm
» PPP ⁴	(95%) (RMS)
TerraStar-L	50 cm 40 cm
TerraStar-C	5 cm 4 cm
» RTK	1 cm + 1 ppm (RMS) 2.5 cm + 2 ppm (95%)

Maximum Data Rate⁵

Measurements	Up to 50 Hz
Position	Up to 50 Hz

Time to First Fix

Cold start ⁶	<50 s (typical)
Hot start ⁷	<35 s (typical)

Signal reacquisition

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

Velocity Accuracy⁸

0.03 m/s RMS

Time Accuracy⁹

20 ns RMS

PHYSICAL AND ELECTRICAL

Dimensions 155 mm diameter
x 81 mm height

Weight <570 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 consumption¹⁰
2.9 W (typical)

Status LEDs

Power
Error
Position valid

Power Input and I/O Protection

ISO 7637-2:2004

Emissions and Immunity

ISO 14982: EMC for agricultural machinery

COMMUNICATION PORTS

RS-232 dedicated ports	3
CAN Bus	1
1 PPS	1
Event mark input	1
Ground speed output ¹¹	1

ENVIRONMENTAL

Temperature

Operating	-40°C to +75°C
Storage	-55°C 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 514.6
Sinusoidal ASAE EP455,
5.15.2 Level 1 & 2

Ingress Protection Rating IP67

COMPLIANCE

FCC, IC, CE marking, E-mark

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
- 1 PPS output
- Event mark input
- Ground speed output¹¹

CORRECTION SERVICES

- TerraStar-L
- TerraStar-C
- RTK ASSIST™

FIRMWARE SOLUTIONS

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

OPTIONAL ACCESSORIES

- Mounting plate
- Interface cable
- Relay RTK radio module

For the most recent details of this product:

www.novatel.com/products/smart-antennas/smart6-l/

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¹ Typical values (open sky conditions). Performance specifications subject to GNSS system characteristics, Signal-in-Space (SIS) 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 Requires subscription to TerraStar data service. Subscriptions available from NovAtel.

⁵ 50 Hz while tracking up to 20 satellites. 20 Hz while tracking 20 satellites when used with the Relay RTK Radio.

⁶ Typical value. No almanac or ephemerides and no approximate position or time.

⁷ Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

⁸ Export licensing restricts operation to a maximum of 515 metres per second.

⁹ Time accuracy does not include biases due to RF or antenna delay.

¹⁰ Power consumption values for GPS L1/L2.

¹¹ Only supported on hardware revision 3.03 or greater.