

DUAL-FREQUENCY SMART ANTENNA FEATURING POWERFUL OEM6® TECHNOLOGY



SCALABLE PERFORMANCE

From single-frequency GLIDE™ autonomous tracking to dual-frequency Real Time Kinematic (RTK), the SMART6 positions you for success. The SMART6 integrates NovAtel's OEM6 receiver and Pinwheel® antenna technologies in a single, rugged housing. Software upgradable, the SMART6 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, the SMART6 improves position availability in obstructed sky conditions. Dual-frequency tracking minimizes the impact of ionospheric disturbances, further enhancing field productivity.

SMOOTH PASS-TO-PASS ACCURACY USING GLIDE

SMART6 features NovAtel's GLIDE technology, 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. 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.

INTEGRATED GNSS DESIGN

A NovAtel OEM6 receiver and Pinwheel antenna are integrated into a single rugged housing to minimize integration effort and simplify system design requirements. Built-in magnets simplify mounting. Fixed mounting options are also available.

TILT COMPENSATION FOR INCREASED ACCURACY

With optional integrated tilt compensation, the SMART6 improves guidance and autosteer performance on uneven terrain.

INTEGRATED BLUETOOTH® CONNECTIVITY

SMART6 is available with optional Bluetooth technology to provide wireless connectivity.

MULTIPLE INTERFACES FOR MAXIMUM FLEXIBILITY

NMEA 0183 compatible RS-232 serial ports, a NMEA2000 compatible CAN port and Bluetooth wireless technology provide maximum flexibility. The SMART6 also provides simulated radar ground speed output, 1 PPS output, an event mark input and three daylight readable status LEDs.

BENEFITS

- + Dual-frequency capable for enhanced accuracy, reliable positioning and ionospheric disturbance mitigation
- + Flexible accuracy from entry level L1 to centimetre level RTK positioning with NovAtel CORRECT™
- + Increased position availability with GLONASS tracking
- + Smooth, consistent positions for pass-to-pass applications with GLIDE technology

FEATURES

- + 120 channels
- + GPS, GLONASS, BeiDou, Galileo and SBAS tracking
- + Optional Bluetooth
- + Optional tilt compensation
- + Simulated radar ground speed output
- + Proven NovAtel Pinwheel antenna technology inside

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

SMART6™

PERFORMANCE¹

Channel Configuration

120 channels²

Signal Tracking

| | |
|-------------------|-------------|
| GPS | L1, L2, L2C |
| GLONASS | L1, L2 |
| Galileo | E1 |
| BeiDou | B1 |
| SBAS ³ | |

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™ | |
| » 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 ⁴ | 8 cm | 8 cm |
| L2 carrier phase ⁴ | 1.0 mm | 1.5 mm |
| L2C code ⁵ | 8 cm | 8 cm |
| L2C carrier phase ⁵ | 1.0 mm | 1.5 mm |

Maximum Data Rate⁶

| | |
|--------------|-------------|
| Measurements | Up to 20 Hz |
| Position | Up to 20 Hz |

Time to First Fix

| | |
|-------------------------|-----------------|
| Cold Start ⁷ | <50 s (typical) |
| Hot Start ⁸ | <35 s (typical) |

Signal Reacquisition

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

Velocity Accuracy⁹ 0.03 m/s RMS

Time Accuracy¹⁰ 20 ns RMS

PHYSICAL AND ELECTRICAL

Dimensions

155 mm diameter × 81 mm height

Weight <520 g

Connector 14-pin Tyco Ampseal

Mounting

2 × magnetic mount

4 × M4 screw inserts

Optional mounting plate

Optional pole-mount adapter plate

Power

| | |
|---------------------|-------------------------------|
| Input Voltage Range | +8 to +36 VDC |
| Power Consumption | 3.5 W (typical) ¹¹ |

Status LEDs

| | |
|-------------------|--|
| Power | |
| Position Valid | |
| Enhanced Accuracy | |

| | |
|----------------|-----------|
| I/O Protection | ISO 7637 |
| | ISO 15003 |

Emissions and Immunity

ISO 14982: EMC for Agricultural machinery

ENVIRONMENTAL

Temperature

| | |
|-----------|--------------|
| Operating | -40 to +70°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

3 RS-232 serial ports

1 CAN Bus NMEA2000

1 Bluetooth (optional)¹²

1 PPS

1 Ground Speed Output

1 Event Mark Input

STANDARD FEATURES

- GPS L1 position, velocity and time with SBAS support
- 20 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

- GLIDE smoothing algorithm
- Emulated radar

HARDWARE OPTIONS

- Tilt hardware (optional)
- Bluetooth wireless technology (optional)

FIRMWARE OPTIONS

- Dual-frequency tracking
- GLONASS tracking
- Galileo tracking
- BeiDou tracking
- ALIGN®
- RAIM

OPTIONAL ACCESSORIES

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

For the most recent details of this product:
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Version 3 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. 20 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.

12. Optional Bluetooth connectivity reduces the number of RS-232 serial ports to two. Non-Bluetooth models have three RS-232 serial ports.

