SMART2™

MULTI-CONSTELLATION GNSS
SMART ANTENNA OFFERING
FLEXIBLE POSITIONING SOLUTIONS

SCALABLE PERFORMANCE
From single-frequency standalone positioning to dual-frequency Precise Point Positioning (PPP), the SMART2 positions you for success. The SMART2 integrates a NovAtel® OEM GNSS receiver and precision antenna in a single, rugged housing. Software upgradable, the SMART2 eliminates the need for costly hardware replacement as requirements change, while delivering scalable accuracy and performance.

MULTI-CONSTELLATION FOR ENHANCED POSITIONING
The SMART2 is able to receive dual-frequency GPS, GLONASS, BeiDou, Galileo and QZSS signals. Multiple GNSS signals and constellations deliver better satellite availability under variable terrain and environmental conditions. The SMART2 also receives L-Band signals providing easy access to the world-wide TerraStar-L and TerraStar-C correction services.

TERRAIN COMPENSATION FOR INCREASED ACCURACY
With optional integrated terrain compensation, the SMART2 improves guidance and autosteer performance on uneven terrain and slopes by providing positions corrected automatically for vehicle pitch and roll.

INTEGRATED BLUETOOTH® CONNECTIVITY
The SMART2 is available with optional Bluetooth technology to provide wireless connectivity that simplifies integration with tablets and other devices commonly used for guidance and mapping applications.

MULTIPLE INTERFACES FOR MAXIMUM FLEXIBILITY
Three NMEA 0183 compatible RS-232 serial ports, a NMEA2000 compatible CAN port and Bluetooth wireless technology provide maximum flexibility. The SMART2 also provides simulated radar ground speed output, 1 PPS output, an event mark input, as well as a daylight-readable status LED. Built-in magnets simplify mounting. Fixed mounting options are also available.

BENEFITS
+ Flexible positioning accuracy from entry level sub-meter to centimeter-level using TerraStar-C
+ 15 cm pass-to-pass accuracy using TerraStar-L
+ Smooth, consistent positions for pass-to-pass applications with optional GLIDE technology
+ Dual-frequency tracking increases position reliability and mitigates ionospheric effects
+ Wireless connectivity to Bluetooth tablets and devices
+ Terrain Compensation corrects for vehicle roll and pitch to improve performance on uneven terrain
+ Compact, waterproof, one-piece GNSS receiver solution

FEATURES
+ GPS, GLONASS, BeiDou, Galileo, QZSS plus TerraStar correction signal reception
+ Optional Bluetooth
+ Optional Terrain Compensation
+ Simulated radar ground speed output
+ Integrated magnetic mounting

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

Channel Configuration
- 167 channels

Signal Tracking
- GPS L1, L2, L2C
- GLONASS L1, L2
- Galileo E1, E5b
- Beidou B1I, B2I
- QZSS L1, L2
- SBAS L1
- L-Band

Horizontal Position Accuracy (RMS)
- Single point L1: 1.5 m
- Single point L1/L2: 1.2 m
- SBAS: 60 cm
- DGPS: 40 cm
- (95%) (RMS)
- TerraStar-L: 50 cm
- TerraStar-C: 40 cm

Pass-to-Pass Accuracy (95%)
- L1/L2: 50 cm
- TerraStar-L: 15 cm
- TerraStar-C: 3 cm

Maximum Data Rate
- Measurements: Up to 20 Hz
- Position: Up to 20 Hz

Time to First Fix
- Cold start: <50 s (typical)
- Hot start: <35 s (typical)

Signal Reacquisition
- L1: 0.5 s (typical)
- L2: <1.0 s (typical)

Velocity Accuracy
- 0.055 m/s RMS

Time Accuracy
- 20 ns RMS

Terrain Compensation Accuracy (deg)
- Roll/Pitch: <1.0 RMS

PHYSICAL AND ELECTRICAL

Dimensions
- 155 mm diameter by 81 mm height

Weight
- 470 g

Connector
- 14-pin Tyco Ampseal

Mounting
- 4 x M4 screw inserts
- Integrated magnetic mount

Power
- Input voltage range: +7 to +30 VDC
- Power consumption: 2.5 W (typical)
- Status LED
- Multi-colored, daylight viewable

COMMUNICATION PORTS
- RS-232 dedicated ports: 3
- CAN Bus: 1
- Event Mark Input: 1
- 1 PPS: 1
- Ground speed output: 1
- Bluetooth: Optional

ENVIRONMENTAL

Temperature
- Operating: -40°C to +70°C
- Storage: -45°C to +75°C

Humidity
- MIL-STD-810G(CH1), Method 507.6

Immersion
- MIL-STD-810G(CH1), Method 512.6

Shock
- MIL-STD-810G(CH1), Method 516.7

Solar Radiation
- MIL-STD-810G(CH1), Method 505.6

Salt Fog
- MIL-STD-810G(CH1), Method 509.6

Sand and Dust
- MIL-STD-810G(CH1), Method 510.6

Vibration
- Random
- MIL-STD-810G, Method 514.7

Ingress Protection Rating
- IP67 and IP69

COMPLIANCE
- FCC, ISED, CE

STANDARD FEATURES
- GPS L1 position, velocity and time with SBAS support
- 20 Hz data rates
- Field upgradeable software
- PAC multipath mitigating technology
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- 1 PPS output
- Ground speed output

CORRECTION SERVICES
- TerraStar-L
- TerraStar-C

AVAILABLE HARDWARE OPTIONS
- SMART2
- SMART2-B with Bluetooth
- SMART2-TB with Bluetooth and Terrain Compensation

FIRMWARE SOLUTIONS
- GLONASS tracking
- Galileo tracking
- Beidou tracking
- Dual frequency tracking
- L-Band tracking
- GLIDE smoothing algorithm

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

For the most recent details of this product contact NovAtel Customer Support: www.novatel.com/support

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