OEM7700

Multi-frequency, GNSS receiver delivers robust positioning and simplifies integration

High-precision GNSS
The multi-frequency OEM7700 offers future-ready precise positioning for space-constrained applications. Advanced interference mitigation features maintain high performance in challenging environments. With a variety of interface options to facilitate system integration, the OEM7700 provides the most efficient way to bring powerful Global Navigation Satellite System (GNSS) capable products to market quickly. With centimetre-level positioning utilising TerraStar satellite-delivered correction services, the OEM7700 ensures globally available, high-performance positioning without the need for expensive network infrastructure. Anywhere. Anytime.

Built-in flexibility
The OEM7700 can be configured in multiple ways for maximum flexibility. OEM7 firmware from Hexagon | NovAtel provides users with the ability to configure the OEM7700 for their unique application needs. The OEM7700 is scalable to offer sub-metre to centimetre-level positioning and is field upgradeable to all OEM7 family software options. These options include ALIGN for precise heading and relative positioning, GLIDE for decimetre-level pass-to-pass accuracy, SPAN GNSS+INS technology for continuous 3D position, velocity and attitude, and GNSS Resilience and Integrity Technology (GRIT) for advanced positioning protection. RTK delivers centimetre-level real-time positioning, or it can go base-free for centimetre and decimetre PPP solutions using TerraStar corrections.

To learn more about how our firmware solutions can enhance your positioning, visit novatel.com/products/firmware-options-pc-software/gnss-receiver-firmware-options.

Designed with the future in mind
The OEM7700 can track all current and upcoming GNSS constellations including GPS, GLONASS, Galileo, BeiDou, QZSS and NavIC. It is software upgradable to track modernised signals as they become available.

Features
- High position availability with multi-constellation, multi-frequency tracking and high data rate
- TerraStar Correction Services supported over multi-channel L-Band and IP connections
- Serial, USB, CAN and Ethernet connectivity with web interface
- Spoofing detection, interference detection and mitigation provided by GRIT
- RTK, GLIDE and STEADYLINE firmware options
- Simple to integrate, small form factor with 20 g vibration performance rating
- SPAN GNSS+INS technology integration bridges 3D positioning through GNSS outages in difficult environments
**Performance**

**Signal tracking**
- BeiDou B1I, B1C, B2I, B2a, B2b, B3I
- QZSS L1 C/A, L1C, L1S, L2C, L5, L6
- NavIC (IRNSS) L5
- SBAS L1, L5
- L-Band: up to 5 channels

**Horizontal position accuracy (RMS)**
- Single point L1: 1.5 m
- Single point L1/L2: 1.2 m
- SBAS: 60 cm
- DGPS: 40 cm
- TerraStar-L: 40 cm
- TerraStar-C PRO: 2.5 cm
- TerraStar-X: 2 cm
- RTK: 1 cm + 1 ppm
- Initialization time: <10 s
- Initialization reliability > 99.9%

**Maximum data rate**
- Measurements: up to 100 Hz
- Position: up to 100 Hz

**Time to first fix**
- Cold start: <39 s (typ)
- Hot start: <20 s (typ)

**Signal reacquisition**
- L1: <0.5 s (typ)
- L2: <1.0 s (typ)

**Time accuracy**
- 20 ns RMS

**Velocity accuracy**
- <0.03 m/s RMS

**Velocity limit**
- 515 m/s

**Physical and electrical**

| Dimensions | 46 x 71 x 8 mm |
| Weight     | 31 g          |
| Power      | Input voltage: 3.3 VDC ±5% |
| Power consumption |
- GPS L1: 0.9 W (typ)
- GPS/GLONASS L1/L2: 1.3 W (typ)
- All frequencies/All constellations with L-Band: 1.8 W (typ)

**Antenna port power output**
- Output voltage: 5 VDC ±5%
- Maximum current: 200 mA

**Connectors**
- Main: 60-pin dual row female socket
- Antenna Input: MMBX female

**Communication ports**
- 5 LVCMOS serial
- up to 460,800 bps
- 2 CAN Bus
- 1 Mbps
- 1 USB 2.0 (device) HS
- 1 USB 2.0 (host) HS
- 1 Ethernet 10/100 Mbps

**Environmental**

**Temperature**
- Operating: -40°C to +85°C
- Storage: -55°C to +95°C

**Humidity**
- 95% non-condensing

**Features**
- Field upgradeable software
- Differential GNSS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, 3.2, 3.3, 3.4, CMR, CMR+, RTCA and NOVATELX
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- Receiver Autonomus Integrity Monitoring (RAIM)
- GLIDE and STEADYLINE smoothing algorithms
- Web GUI
- Outputs to drive external LEDs
- 4 Event inputs
- 4 Event outputs
- Pulse Per Second (PPS) output

**Firmware solutions**
- ALIGN
- GNSS Resilience and Integrity Technology (GRIT)
- SPAN GNSS+INS technology
- RTK
- RTK ASSIST
- TerraStar Correction Services
- API

**Optional accessories**
- VEXXIS GNSS-500 and GNSS-800 series antennas
- Compact GNSS antennas
- Mechanical mounting rails
- OEM7 Development Kit
- NovAtel Application Suite

**Contact Hexagon | NovAtel**

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For the most recent details of this product: novatel.com

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