OEM7600

Compact, multi-frequency, GNSS receiver delivers robust positioning

Our most compact receiver for high-precision GNSS

The multi-frequency OEM7600 offers future-ready precise positioning for space-constrained applications with an extremely small form factor. Advanced interference mitigation features maintain high performance in challenging environments. With a variety of interface options to facilitate system integration, the OEM7600 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 OEM7600 ensures globally available, high-performance positioning without the need for expensive network infrastructure. Anywhere. Anytime.

Built-in flexibility

OEM7 firmware from Hexagon | NovAtel gives users the flexibility to configure the OEM7600 for their unique application needs. The OEM7600 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 OEM7600 features configurable channels to optimise satellite availability in any condition, no matter how challenging. It tracks current and upcoming GNSS constellations and satellite signals including GPS, GLONASS, Galileo, BeiDou, NavIC and QZSS. The OEM7600 is software upgradeable 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[1]

Signal tracking[2]

GPS	L1 C/A, L1C, L2C, L2P, L5
GLONASS[3]	L1 C/A, L2 C/A, L2P, L3, L5
Galileo[4]	E1, E5 AltBOC, E5a, E5b
BeiDou	B1I, B1C, B2I, B2a, B2b
QZSS	L1 C/A, L1C, L1S, L2C, L5
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[5]	60 cm
DGPS	40 cm
TerraStar-L[6]	40 cm
TerraStar-C PRO[6]	2.5 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[7]	< 39 s (typ)
Hot start[8]	< 20 s (typ)

Signal reacquisition

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

Time accuracy[9] 20 ns RMS

Velocity accuracy

< 0.03 m/s RMS

Velocity limit[10] 515 m/s

Physical and electrical

Dimensions 35 x 55 x 13 mm

Weight 31 g

Power

Input voltage 3.3 VDC ±5%

Power consumption[11]

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	3.3 VDC ±5%
Maximum current	100 mA

Connectors

Main	60-pin dual row female socket
Antenna input	right angle MMCX 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

Vibration

Random	MIL-STD-810G (CH1), Method 514.7 (Cat 24, 20 g RMS)
Sinusoidal	IEC 60068-2-6

Bump ISO 9022-31-06 (25 g)

Shock

Operating	MIL-STD-810G (CH1), Method 516.7 (40 g)
Non-operating	MIL-STD-810G (CH1), Method 516.7 (75 g)-Survival

Acceleration

Operating	MIL-STD-810G (CH1), Method 513.7 (16 g)

Compliance

FCC, ISED, CE and Global Type Approvals

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 Autonomous 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
- OEM7 Development Kit
- NovAtel Application Suite

1. Typical values. 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. 2. Model-configurable to track L5/E5a (all / Galileo) through L2 (GPS) or L3/E5b/B2 (GLONASS / Galileo / BeiDou) through L2 (GLONASS). See manual for details. 3. Hardware ready for L5. 4. E1bc and E6bc support only 5. GPS-only. 6. Requires a subscription to a TerraStar data service. Subscriptions available from NovAtel. 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. Time accuracy does not include biases due to RF or antenna delay. 10. Export licensing restricts operation to a maximum of 515 meters per second, message output impacted above 500 m/s. 11. Typical values using serial port communication without interference mitigation. Consult the OEM7 User Documentation for power supply considerations

Contact Hexagon | NovAtel

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

D21051 Version 8 | 12 April 2022 | Printed in Canada