Receivers OEM7600™

COMPACT, DUAL-FREQUENCY GNSS RECEIVER DELIVERS ROBUST POSITIONING

HIGH PRECISION GNSS, COMPACT SIZE

The dual-frequency OEM7600 offers future ready, precise positioning for space constrained applications with an extremely small form factor. Advanced interference mitigation features are available for 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 utilizing TerraStar L-Band satellite-delivered correction services, the OEM7600 ensures globally available, high performance positioning without the need for expensive network infrastructure. Anywhere. Anytime.

BUILT-IN FLEXIBILITY

NovAtel's OEM7™ firmware 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 upgradable to all OEM7 family software options. These options include ALIGN® for precise heading and relative positioning, GLIDE™ for decimetre level pass-to-pass accuracy and SPAN® GNSS+INS for continuous 3D position, velocity and attitude. NovAtel CORRECT™ with RTK delivers centimetre level real-time positioning, or go base-free for centimetre and decimetre PPP solutions using TerraStar corrections.

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

DESIGNED WITH THE FUTURE IN MIND

The OEM7600 features configurable channels to optimize satellite availability in any condition, no matter how challenging. It tracks current and upcoming GNSS constellations and satellite signals including GPS, GLONASS, Galileo, BeiDou and QZSS. The OEM7600 is software upgradable to track future signals as they become available.

FEATURES

+ 555 channel all-constellation, dual-frequency positioning solution

+ Multi-channel L-Band supports TerraStar correction services

+ Serial, USB, CAN and Ethernet connectivity with web interface

+ Advanced interference visualization and mitigation features

+ RTK, GLIDE and STEADYLINE® firmware options

+ Simple to integrate, compact form factor with 20 g vibration performance rating

+ SPAN GNSS+INS functionality

If you require more information about our receivers, visit novatel.com/oem7

OEM7600

PERFORMANCE[1]

Channel Count
555 Channels

Signal Tracking
GPS	L1 C/A, L1C, L2C, L2P
GLONASS	L1 C/A, L2C, L2P
BeiDou[2]	B1, B2
Galileo[3]	E1, E5b
SBAS	L1
QZSS	L1 C/A, L1C, L2C
L–Band	up to 5 channels

Horizontal Position Accuracy (RMS)
Single Point L1	1.5 m
Single Point L1/L2	1.2 m
NovAtel CORRECT	
» SBAS[4]	60 cm
» DGPS	40 cm
» PPP[5]	
TerraStar–L	40 cm
TerraStar–C	4 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[6, 12]	< 40 s (typical)
Hot start[7, 12]	< 19 s (typical)

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

Time Accuracy[8]
20 ns RMS

Velocity Accuracy
< 0.03 m/s RMS

Velocity Limit[9]
515 m/s

PHYSICAL AND ELECTRICAL

Dimensions
35 × 55 × 11 mm

Weight
20 g

Power
Input voltage   +3.3 VDC ±5%

Power Consumption[10]
GPS L1	0.9 W (typical)
GPS/GLONASS L1/L2	1.3 W (typical)
All frequencies/All constellations with L–Band	1.6 W (typical)

Antenna Port Power Output
Output voltage	3.3 VDC ±5%
Maximum current	200 mA

Connectors
Main
  60–pin dual row female socket
Antenna Input   MMCX female

COMMUNICATION PORTS

5 LVCMOS	up to 460,800 bps
2 CAN Bus	1 Mbps
1 USB 2.0 (device)	HS
1 USB 2.0 (host)[11]	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 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 (40 g)
Non–operating
  MIL-STD-810G, Method 516.7 (75 g) Survival

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

FEATURES

- Field upgradeable software
- Differential GPS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, 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
- Interference Toolkit
- Web GUI
- Outputs to drive external LEDs
- 4 Event inputs
- 4 Event outputs
- Pulse Per Second (PPS) output

FIRMWARE SOLUTIONS

- ALIGN
- SPAN
- RTK
- RTK ASSIST™
- TerraStar PPP
- API[12]

OPTIONAL ACCESSORIES

- VEXXIS™ GNSS–500 and GNSS–800 series antennas
- ANT series antennas
- OEM7 Development Kit

For the most recent details of this product: novatel.com/oem7

novatel.com

sales@novatel.com

1-800-NOVATEL (U.S. and Canada) or 403-295-4900

China 0086-21-68882300

Europe 44-1993-848-736

SE Asia and Australia 61-400-883-601

ALL SPECIFICATIONS PRELIMINARY SUBJECT TO CHANGE

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. **Designed for BeiDou Phase 2, B1 and B2 compatibility.**
3. **E1bc support only.**
4. **GPS only.**
5. **Requires subscription to TerraStar data service. Subscriptions available from NovAtel.**
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. **Time accuracy does not include biases due to RF or antenna delay.**
9. **Export licensing restricts operation to a maximum of 515 metres per second, message output impacted above 500 m/s.**
10. **Typical values using serial port communication without interference mitigation and Ethernet disabled. Consult the OEM7 User Documentation for power supply considerations.**
11. **Requires additional power and integration considerations. Consult the OEM7 Family Installation and Operation User Manual.**
12. **Available in Q4 2017.**