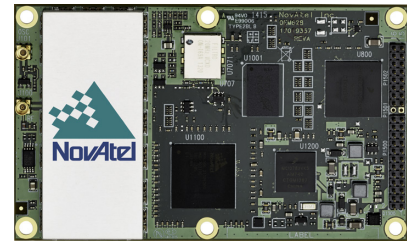


Receivers OEM628™



HIGH PERFORMANCE GNSS RECEIVER



BENEFITS

- + Innovative OEM6® technology
- + Supports current and future GNSS signals
- + Application based configurations
- + Designed for rapid integration

FEATURES

- + Low power consumption
- + Flexible communication interfaces
- + Software configurable performance
- + High position accuracy and availability
- + SPAN® INS functionality

If you require more information about our receivers, visit www.novatel.com/products/gnss-receivers/oem-receiver-boards

DESIGNED WITH THE FUTURE IN MIND

The OEM628 tracks all current Global Navigation Satellite System (GNSS) constellations including GPS, GLONASS, Galileo, BeiDou and QZSS. It features configurable channels to optimize satellite availability in any condition, no matter how challenging. The OEM628 is software upgradable to track future signals as they become available. Maximizing satellite availability and optimizing GNSS signal usage now, and in the future, ensures consistent, high performance GNSS positioning.

EASY SYSTEM INTEGRATION

The OEM628 is designed and built with a focus on product quality and ease of integration. It maintains our industry setting OEMV-2 form factor, ensuring easy drop-in replacement, and provides a backward compatible command and log interface for existing customers. An integrator's development kit and user friendly configuration software are available to assist new customers with integration, enabling faster time to market. NovAtel's well established, comprehensive set of software commands also facilitates system integration. Ethernet and NTRIP 2.0 Client and Server connectivity is offered in addition to our traditional communications interfaces.

FLEXIBLE CONFIGURATIONS FOR YOUR APPLICATION

Proven, innovative NovAtel technology combines to achieve the best in GNSS positioning. NovAtel's industry leading Pulse Aperture Correlator (PAC) multipath mitigation technology is standard and ensures the highest quality measurements and positioning. The OEM628 provides excellent resistance to interference for consistent, accurate and reliable positioning. Configurable options ensure your positioning and accuracy needs are always met. To learn more about how our firmware options can enhance your positioning, please visit www.novatel.com/products/firmware-options.

PERFORMANCE¹

Channel Configuration

120 Channels²

Signal Tracking

GPS	L1, L2, L2C, L5
GLONASS	L1, L2
BeiDou ³	B1, B2
Galileo	E1, E5a, E5b, AltBOC
SBAS	
QZSS	L1, L2C, L5
L-Band	

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 Rate⁸

Measurements	100 Hz
Position	100 Hz

Time to First Fix

Cold start ⁹	<50 s
Hot start ¹⁰	<35 s

Signal Reacquisition

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

Time Accuracy¹¹

20 ns RMS

Velocity Accuracy

0.03 m/s RMS

Velocity Limit¹²

515 m/s

PHYSICAL AND ELECTRICAL

Dimensions 60 x 100 x 9 mm

Weight 37 g

Power

Input voltage¹³ +3.3 VDC ±5%
Power consumption¹⁴ 1.3 W

Antenna LNA Power Output

Output voltage 5 VDC ±5%
Maximum current 100 mA

Connectors

Main	24-pin dual row male header
Aux	16-pin dual row male header
Antenna input	MMCX female
External oscillator input	MMCX female

COMMUNICATION PORTS

1 RS-232/RS-422	up to 921,600 bps
2 LVCMOS	up to 921,600 bps
2 CAN Bus ¹⁵	1 Mbps
1 USB port	12 Mbps
1 LAN Ethernet port supporting:	
» 10 BaseT/100BaseT networks	
» Direct TCP/IP & UDP connectivity	
» NTRIP (v2.0) client and server	

ENVIRONMENTAL

Temperature

Operating -40°C to +85°C
Storage -40°C to +85°C

Humidity 95% non-condensing

Vibration

Random	MIL-STD 810G (Cat 24, 7.7 g RMS)
Sinusoidal	IEC 60068-2-6

Acceleration (operating)

MIL-STD 810G, Method 513.6
Procedure II (16 g)

Bump ISO 9022-31-06 (25 g)

Shock MIL-STD-810G (40 g)
Survival (1000 g)

FEATURES

- Field upgradeable software
- 20 Hz measurement and position data rate
- PAC multi-path mitigating technology
- Differential GPS positioning
- 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
- Auxiliary strobe signals, including a configurable 1 PPS output for time synchronization and mark inputs
- Outputs to drive external LEDs
- External oscillator input

NOVATEL CONNECT™

NovAtel Connect is an intuitive configuration and visualization tool allowing comprehensive control

- Easy to use wizards
- Detailed information via GUI
- Plan, view and playback files
- Remotely control and monitor
- Windows 7 platforms

CORRECTION SERVICES

- TerraStar-L
- TerraStar-C
- RTK ASSIST™

FIRMWARE SOLUTIONS

- ALIGN®
- GLIDE™
- RAIM
- 100 Hz output rate⁹
- RTK
- SPAN

OPTIONAL ACCESSORIES

- GPS-700 series antennas
- ANT series antennas
- RF cables—5, 10 and 30 m lengths
- OEM6 Development Kit

HIGH VIBRATION HARDWARE

The OEM628 is available as a High Vibration TCXO hardware variant, the OEM628V. This is compliant with MIL-STD 810G (category 24, 20 g RMS).

For the most recent details of this product: www.novatel.com/products/gnss-receivers/oem-receiver-boards/oem6-receivers/oem628/

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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. Designed for BeiDou Phase 2 and 3, B1 and B2 compatibility.

4. Accuracy guaranteed only for GPS-only augmentations.

5. Requires subscription to TerraStar data service. Subscriptions available from NovAtel.

6. L2 P for GLONASS.

7. L2 C/A for GLONASS.

8. 100 Hz while tracking up to 20 satellites.

9. Typical value. No almanac or ephemerides and no approximate position or time.

10. Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

11. Time accuracy does not include biases due to RF or antenna delay.

12. Export licensing restricts operation to a maximum of 515 metres per second.

13. Consult the OEM6 Family Installation & Operation user manual for power supply considerations.

14. Power consumption values for GPS L1/L2 with Ethernet disabled.

15. User application software required.