

KEY FEATURES

Proven GNSS technology from Trimble

Centimeter level position accuracy

OmniSTAR XP/HP support

Convenience of Ethernet connectivity

Easy-to-integrate form factor and software commands



EMBEDDED GNSS RECEIVER SPEEDS DEVELOPMENT OF ADVANCED POSITIONING APPLICATIONS

THE GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM) INDUSTRY IS GROWING AND EVOLVING TO ADOPT NEW SIGNAL TECHNOLOGIES. BY ADOPTING MODERNIZED GPS AND GLONASS SIGNAL POSITIONING, APPLICATIONS REACH NEW LEVELS OF PERFORMANCE AND PRODUCTIVITY.

The Trimble® BD960 GNSS system is a multi-channel, multi-frequency, OEM GNSS receiver, in a compact Eurocard form factor. The latest, Trimble centimeter-level positioning technology is now available in an easy-to-integrate module. With the Trimble BD960, OEMs and integrators can easily harness both the modernized GPS L2C and L5 signals and GLONASS L1/L2 signals. This GNSS support is available now, with the confidence of working with proven technology.

DEMONSTRATED PERFORMANCE

Industry professionals trust Trimble embedded positioning technologies as the core of their precision applications. With the latest Trimble-precise Maxwell® technology, the BD960 provides assurance of long-term future-proofing and trouble-free operation.

Moving the industry forward, the Trimble BD960 redefines high-performance positioning:

- On-board multipath mitigation
- Proven low-elevation tracking technology
- Dramatically improved RTK initialization times

OMNISTAR SUPPORT

For land and air applications where decimeter-precision is required, onboard OmniSTAR satellite service is a convenient option. OmniSTAR satellite-based services are available in specific geographic regions worldwide and require a subscription from the service provider (check with OmniSTAR for availability and operating constraints in your area). The Trimble BD960 supports the three levels of Differential GPS Service provided by OmniSTAR: VBS, HP, and XP.

PROVEN DESIGN

The Trimble BD960 was designed for easy integration and rugged dependability. Customers benefit from the Ethernet connectivity available on the board, allowing high speed data transfer and configuration via standard web browsers. The compact, Eurocard form-factor is suitable for many of the most ambitious designs. Just like other Trimble embedded technologies, easy to use software commands simplify integration and reduce development times. All software features are password-upgradeable, allowing functionality to be upgraded as your requirements change. The BD960 is rigorously tested to perform in harsh environmental conditions with the reliability you expect from Trimble.

TRIMBLE BD960 GNSS RECEIVER MODULE

TECHNICAL SPECIFICATIONS

- Advanced Trimble Maxwell Custom Survey GNSS technology
- High precision multiple correlator for GNSS pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low receiver noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Signal-to-Noise ratios reported in dB-Hz
- 72 Channels:
 - GPS L1 C/A Code, L2C, L1/L2/L5¹ Full Cycle Carrier
 - GLONASS L1 C/A Code, L1 P Code, L2 C/A², L2 P Code, L1/L2 Full Cycle Carrier
- 4 additional channels for SBAS WAAS/EGNOS/MSAS support
- L-Band OmniSTAR VBS, HP & XP
- 1 LAN port:
 - supports links to 10BaseT/100BaseT networks
 - all functions are performed through a single IP address simultaneously—including web GUI access and data streaming
- 3 x RS232 ports:
 - Baud rates up to 115,200
- 1 Hz, 2 Hz, 5 Hz, 10 Hz and 20 Hz positioning and data streaming outputs
- Reference outputs CMR, CMR+, RTCM 2.1, 2.2, 2.3, 3.0
- Control Software:
 - HTML web browser. Internet Explorer 7.0 or later, Firefox 2.0 or later
 - PC Utilities including Configuration Toolbox
- 1 Pulse Per Second Output
- Event Marker Input Support

Initialization time³ typically <10 seconds
 Initialization reliability³ >99.9%
 Navigation outputs ASCII: NMEA-0183 GSV, AVR, RMC, HDT, VGK, VHD, ROT, G GK, GGA, GSA, ZDA, VTG, GST, PJT, PJK and Binary: Trimble GSOF
 LED drive support. 3
 (indicating Power, Satellite Tracking, and Differential Data)

Mode	Accuracy ⁴	Latency ⁵	Maximum Rate
Synchronized RTK	1 cm + 1 ppm Horizontal	300 ms ⁶	10 Hz
	2 cm + 1 ppm Vertical		
Low Latency RTK	2 cm + 2 ppm Horizontal ⁷	<20 ms	20 Hz
	3 cm + 2 ppm Vertical		
DGPS	<1 m 3D	<20 ms	20 Hz
SBAS ⁸	<5 m 3D	<20 ms	20 Hz

PHYSICAL CHARACTERISTICS

Size 100 mm x 106.7 mm x 12.7 mm
 Power 4.9 V DC to 28 V DC
 Typical 2.1 W at 5 V DC (L1/L2 GPS)
 Connectors
 I/O 34-pin header
 Antenna MMCX receptacle

ENVIRONMENTAL CHARACTERISTICS

Temperature
 Operating -40 °C to +75 °C
 Storage -55 °C to +85 °C
 Vibration MIL810F, tailored
 Random 6.2 gRMS operating
 Random 8 gRMS survival
 Mechanical shock MIL810D
 ±40 g operating
 ±75 g survival

ORDERING INFORMATION

Module Trimble BD960 GNSS available in a variety of configurations from L1 DGPS upwards
 Starter Kit Includes BD960 receiver, I/O board, Power Supply, Configuration Software and reference manual

1 The availability of the L5 signal is dependent on the US Government.
 2 L2 C/A on GLONASS-M satellites.
 3 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
 4 1 sigma level.
 5 At maximum output rate.
 6 Dependent on data link throughput.
 7 Assumes 1 second data link delay.
 8 Depends on SBAS system performance.

Specifications subject to change without notice.

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