**Trimble BX992**

**DUAL-ANTENNA RECEIVER WITH INTEGRATED INERTIAL NAVIGATION SYSTEM AND MSS BAND DEMODULATOR**

**GNSS AND INERTIAL TIGHT INTEGRATION**

Taking advantage of Trimble’s expertise in both GNSS and Inertial technology the Trimble® BX992 module has been designed for applications requiring continuous centimeter accuracy in a compact package. By integrating inertial sensors on the same module, robust high accuracy positions and orientations are produced in all environments.

**TRIMBLE MAXWELL 7 TECHNOLOGY**

The Trimble BX992 supports triple frequency for the GPS, GLONASS, BeiDou and Galileo constellations. As the number of satellites in the constellations grows the BX992 is ready to take advantage of the additional signals. This delivers the quickest and most reliable RTK initializations for centimeter positioning. For applications that do not require centimeter accuracy the BX992 integrated GNSS-Inertial engine also delivers high accuracy GNSS, DGNSS positions in the most challenging environments such as urban canyons. With the latest Trimble Maxwell™ 7 Technology, the BX992 provides:

- 2 x 336 Tracking Channels
- Trimble Everest Plus multipath mitigation
- Advanced RF Spectrum Monitoring and Analysis
- Proven low-elevation tracking technology

With the option of utilizing OmniSTAR or RTX services, the BX992 delivers varying levels of performance down to centimeter level without the use of a base station.

**FLEXIBLE INTERFACING**

The Trimble BX992 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. USB, CAN and RS-232 are also supported. Just like other Trimble embedded technologies, easy to use software commands simplify integration and reduce development times. An intuitive 3D interactive graphical web page allows easy input of lever arms. Dynamic and graphic models for various vehicle types can also be selected.

Different configurations of the module are available. These include everything from a DGPS L1 unit all the way to a four constellation triple frequency RTK unit. All features are password-upgradeable, allowing functionality to be upgraded as your requirements change.

**Key Features**

- Trimble Maxwell 7 Technology
- Onboard high accuracy inertial sensor package integrated with GNSS for precise position and orientation
- 336 Channels per antenna for multi-constellation GNSS support
- OmniSTAR/RTX Support
- Compact design for mobile applications
- Flexible RS232, USB and Ethernet interfacing
- Advanced RF Spectrum Monitoring
- Rugged IP67 Enclosure

**ROBUST CENTIMETER ACCURATE SOLUTIONS**

The Trimble BX992 integrates the latest in precision inertial sensors in a compact package. With the BX992 you are buying a robust navigation solution, not just a GNSS receiver.
**DATASHEET**

**TECHNICAL SPECIFICATIONS**

- Trimble Maxwell 7 Technology
- On-board Advanced MEMS inertial sensors
- Position Antenna based on 336 Channel Maxwell 7 chip:
  - GPS: L1 C/A, L2, L2C, L5
  - Beidou B1, B2, B3
  - GLONASS: L1 C/A, L2 C/A, L3 CDMA
  - Galileo: E1, E5A, E5B, E5AltBOC, E6
  - IRNSS L5
  - QZSS: L1 C/A, L1 SAIF, L1C, L2C, L5, LEX
  - SBAS: L1 C/A, L5
  - MSS L-Band: OmniSTAR, Trimble RTX
- Vector Antenna based on second 336 Channel Maxwell 7 chip:
  - On-board Advanced MEMS inertial sensors
  - Trimble Maxwell 7 Technology

**COMMUNICATION**

- 1 CAN Port
- Reference outputs/inputs
- Advanced RF Spectrum Monitoring and Analysis
- Trimble Everest Plus multipath mitigation
- High precision multiple correlator for GNSS pseudorange measurements

**ENVIRONMENTAL CHARACTERISTICS**

- Temperature: -40 °C to +75 °C
- Vibration: ±6 g operating, ±8 g survival
- Storage: -55 °C to +85 °C
- Mechanical shock: ±40 g operating, ±75 g survival
- Operating Humidity: 5% to 95% R.H. non-condensing, at +60 °C
- IP Rating: IP67

**PERFORMANCE SPECIFICATIONS**

- Time to First Fix (TTF)
  - Cold Start: <45 seconds
  - Warm Start: <30 seconds
  - Signal Re-acquisition: <2 seconds
  - Velocity Accuracy: 0.007 m/sec
  - Horizontal: 0.020 m/sec
  - Vertical: 0.015 m/sec
- Inertial Sensors
  - Maximum acceleration: ±4.5 g
  - Maximum angular rate: ±350 deg/sec
- Maximum Operating Limits
  - Velocity: 515 m/sec
  - Attitude: 18,000 m
  - RTK initialization time: typically <1 minute
  - RTK initialization reliability: >99.9%
  - Position latency: <20 ms
  - Maximum Position/Altitude Update Rate: 50 Hz

**PHYSICAL AND ELECTRICAL CHARACTERISTICS**

- Size: 149 mm x 93 mm x 43 mm
- Power: 9V DC to 30V DC
- Weight: Typical 1.5 W (L1/L2 GPS + L1/L2 GLONASS)

**CONNECTORS**

- I/O: D-sub DE9 and DA26
- GNSS Antenna: 2 x TNC (Female)
- Antenna LNA Power Input
  - Input voltage: 3.3V DC to 5V DC
  - Maximum current: 400 mA
  - Minimum required LNA Gain: 31.0 dB (> 35 dB Recommended)

**INTELLIGENT FIX SPECIFICATIONS**

- Minimum required LNA Gain: 31.0 dB (> 35 dB Recommended)
- Antenna LNA Power Input: 3.3V DC to 5V DC, 400 mA
- Minimum required LNA Gain: 31.0 dB (> 35 dB Recommended)

**ENVIRONMENTAL CHARACTERISTICS**

- Temperature: -40 °C to +75 °C
- Vibration: ±6 g operating, ±8 g survival
- Storage: -55 °C to +85 °C
- Mechanical shock: ±40 g operating, ±75 g survival
- Operating Humidity: 5% to 95% R.H. non-condensing, at +60 °C
- IP Rating: IP67

**ORDERING INFORMATION**

- Module Part Number: 100992-XX
- Module: Trimble BX992 GNSS available in a variety of software configurations from L1 SBAS upwards Evaluation Kit: Includes interface board, power supply

**POSITIONING SPECIFICATIONS**

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<th>No GNSS Outages</th>
<th>Autonomous</th>
<th>SBAS</th>
<th>DGNSS</th>
<th>RTK</th>
<th>INS-Autonomous</th>
<th>INS-SBAS</th>
<th>INS-DGNSS</th>
<th>INS-RTK</th>
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<td>0.85 (H) 0.85 (V)</td>
<td>0.50 (H) 0.50 (V)</td>
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<td>Roll/Pitch (deg)</td>
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<table>
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<th>Roll/Pitch (deg)</th>
<th>Heading (deg)</th>
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<tbody>
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<tr>
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Contact your local Trimble Authorized Distribution Partner for more information

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**TRANSFORMING THE WAY THE WORLD WORKS**

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