Trimble BD990

TRIPLE FREQUENCY ON ALL GNSS CONSTELLATIONS WITH INTEGRATED MSS BAND DEMODULATOR

TRIMBLE MAXWELL 7 TECHNOLOGY

The Trimble® BD990 supports triple frequency for the GPS, GLONASS, BeiDou and Galileo constellations. As the number of satellites in the constellations grows the BD990 is ready to take advantage of the additional signals. This delivers the quickest and most reliable RTK initializations for centimeter positioning. With the latest Trimble Maxwell™ 7 Technology, the BD990 provides:

- 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 BD990 delivers varying levels of performance down to centimeter level without the use of a base station.

DESIGNED FOR GROWTH

The Trimble BD990 is part of a family of receivers that support advanced functionality. In the same mechanical footprint and pin-out the Trimble BD992 supports dual antenna GNSS heading while the Trimble BD992-INS supports position and orientation at high update rates. Industry professionals trust Trimble embedded positioning technologies as the core of their precision applications. Moving the industry forward, the Trimble BD990 redefines high-performance positioning.

FLEXIBLE INTERFACING

The Trimble BD990 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.

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
- 336 Channels for multi-constellation GNSS support
- OmniSTAR/RTX Support
- Compact design for mobile applications
- Flexible RS232, USB and Ethernet interfacing
- Centimeter level position accuracy
- Advanced RF Spectrum Monitoring
**Trimble BD990 Module**

**Performance Specifications**

<table>
<thead>
<tr>
<th>Time to First Fix (TTFF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Start</td>
</tr>
<tr>
<td>Warm Start</td>
</tr>
<tr>
<td>Signal Re-acquisition</td>
</tr>
<tr>
<td>Velocity Accuracy</td>
</tr>
<tr>
<td>Vertical</td>
</tr>
<tr>
<td>Maximum Operating Limits</td>
</tr>
<tr>
<td>Altitude</td>
</tr>
<tr>
<td>RTK initialization time</td>
</tr>
<tr>
<td>RTK initialization latency</td>
</tr>
<tr>
<td>Position latency</td>
</tr>
<tr>
<td>Maximum Position/Altitude Update Rate</td>
</tr>
</tbody>
</table>

**Physical and Electrical Characteristics**

- **Size:** 100 mm x 60 mm x 11.6 mm
- **Power:** 3.3 V DC +5%/–3%
- **Input voltage:** 3.3V DC to 5V DC
- **Typical 1.5 W (L1/L2 GPS + L1/L2 GLONASS)**
- **Power consumption:** 1.5 W
- **Connectors:** 44-pin header
- **Antenna LNA Power Input:** 3.3V DC to 5V DC
- **Maximum current:** 400 mA
- **Minimum required LNA Gain:** 31.0 dB (> 35 dB Recommended)
- **Environmental Characteristics**
  - **Temperature:**
    - Operating: -40°C to +75°C
    - Storage: -55°C to +85°C
- **Vibration:**
  - Random: 6.2 gRMS operating
  - Random: 8 gRMS survival
- **Shock:**
  - ±40 g operating
  - ±75 g survival
- **Altitude:**
  - Maximum: 18,000 m
  - Mechanical shock: ±1 g RMS operating

**Ordering Information**

Module Part Number: 100992-XX

**Positioning Specifications**

<table>
<thead>
<tr>
<th>No GNSS Outages</th>
<th>Autonomous</th>
<th>SBAS</th>
<th>DGNSS</th>
<th>RTK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position (m)</td>
<td>1.00 (H) 150 (V)</td>
<td>0.50 (H) 0.85 (V)</td>
<td>0.25 (H) 0.50 (V)</td>
<td>0.008 (H) 0.015 (V)</td>
</tr>
<tr>
<td>Roll/Pitch (deg)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Heading (deg)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 10 second GNSS Outages

| Position (m) | N/A   | N/A | N/A | N/A |
| Roll/Pitch (deg) | N/A   | N/A | N/A | N/A |
| Heading (deg) | N/A | N/A | N/A | N/A |

Contact your local Trimble Authorized Distribution Partner for more information.

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**Trimble BD990 Performance**

- Positioning accuracy of 0.1 m (95% of the time with initializations of less than 30 minutes).
- RTK initialization time typically <1 minute.
- Positioning accuracy of 0.01 m (95% of the time with initializations of less than 30 minutes).
- RTK initialization latency <99.9%.
- Position latency <20ms.

**Environment**

- Operating temperature: -40°C to +75°C.
- Storage temperature: -55°C to +85°C.

**Power**

- Max power consumption: 1.5 W (L1/L2 GPS + L1/L2 GLONASS).

**Connectors**

- 44-pin header.

**Antenna**

- LNA Power Input: 3.3V DC to 5V DC.

**Mechanical Shock**

- ±1 g RMS operating.

**Specifications subject to change without notice."