

MS750

Dual Frequency RTK Receiver for Precise Dynamic Positioning

Key features and benefits

- **20 Hz position update rate**
- **Less than 20 milliseconds position latency**
- **Centimeter-level position accuracy**
- **Front panel display & keypad for status monitoring and configuration**
- **User-defined local coordinates direct from receiver**
- **Industry standard CAN bus interface**

The MS750™ represents the highest level of accuracy and response available from a dual frequency GPS receiver. The receiver is specifically designed to allow the easy integration of reliable centimeter-level positions to any guidance or control application.

Accuracy and Response Times

Dynamic platforms, require virtually instantaneous position reports multiple times per second. The MS750 delivers positions to guidance or control loop software twenty times per second with a latency of less than 20 milliseconds. This responsiveness is matched with a horizontal accuracy of two centimeters and vertical accuracy of three centimeters. For the most precise applications, the MS750 provides one centimeter accuracy horizontally at a 5 Hz rate with a small increase in latency.

Interfacing and Configuration Ease

The MS750 is designed to plug right into your application with minimal development. An easy to-use application file interface enables the user to completely program receiver operation with a single command. Alternately, the receiver can be configured via the user-friendly built-in display and keyboard interface, or by the included Windows-based Configuration Toolbox software. Multiple configurations can be stored in the receiver as files and



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activated when desired. Local datum and transformation parameters may be loaded directly into the receiver. Therefore, output grid coordinates are compatible with GPS and traditional survey systems that may be in use on the same site. ASCII or Binary messages may be output through any of the three bi-directional serial ports. The receiver also includes support for the industry standard CAN (Controller Area Network) interface.

Advanced Technology

The accuracies, update rates and latencies available in the MS750 are made possible through a GPS architecture specifically designed for demanding dynamic positioning applications. Reliable operation in the most adverse environments, such as radio interference experienced at

construction or mining sites, is a strict requirement. Custom designed hardware with Supertrak™ multibit GPS signal technology and Everest™ advanced multipath suppression provide superior tracking especially for weaker, low elevation satellites.

Both the RTCM format for differential GPS corrections and Trimble's published Compact Measurement Record (CMR) differential data can be received simultaneously, allowing the receiver to choose the optimum source and provide seamless navigation. Available as an option is the ability to calculate the baseline vector between two moving receivers to centimeter accuracy. The MS750 addresses a vast range of applications in the field of machine positioning, guidance and control.

Trimble

MS750

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STANDARD FEATURES

- Centimeter accuracy, real-time positioning
- 20 Hz position updates
- < 20 ms position latency
- Front panel display & keypad
- User-defined local coordinates direct from receiver
- 3 serial I/O ports
- 2 CAN ports
- 1 PPS Output
- Trimble CMR Input/Output
- RTCM Input/Output
- One year hardware warranty
- Compact, easy mounting design
- Synchronized 5 Hz position updates

OPTIONS AND ACCESSORIES

- Moving Base RTK
- Rugged L1/L2 machine mount antenna
- Micro-Centered Antenna
- 5 m, 7.5 m, 10 m, 24 m & 30 m antenna cables
- Data extension cable
- Extended hardware warranty
- Firmware and Software update service

ORDERING INFORMATION

MS750

Part Number 36577-00

Includes MS750 receiver, Configuration Toolbox software, operating manual, power/data cable, data/1 PPS cable

PHYSICAL CHARACTERISTICS

Size	14.5cmW × 5.1cmH × 23.9cmD (5.7 ² W × 2.0 ² H × 9.4 ² D)
Weight	1.0 kg (2.25 lbs)
Power	12VDC/24VDC, 9 Watts

ENVIRONMENTAL CHARACTERISTICS

Operating temp	-20°C to +60°C
Storage temp	-30°C to +80°C
Humidity	MIL 810 E, Meth. 507.3 Proc III, Aggravated, 100% condensing
Vibration	MIL 810 D, Tailored Random 3gRMS Operating Random 6.2gRMS Survival
Mechanical Shock	MIL 810 D ± 40 g Operating ± 75 g Survival
EMC	
Radiated Emissions	CISPR 12
Conducted Emissions	SAE J1113/41
Radiated Immunity	ISO/DIS 13766, 30V/m
ESD	±15KV
Input Voltage Transients	ISO 7637-2

TECHNICAL SPECIFICATIONS

Tracking	9 channels L1 C/A code, L1/L2 full cycle carrier Fully operational during P-code encryption Supertrak Multibit Technology Everest Multipath Suppression		
Signal processing			
Positioning mode	Accuracy¹	Latency²	Max Rate
Synchronized RTK	1cm+ 2ppm Horizontal 2cm+ 2 ppm Vertical	300ms ³	5 Hz Std
Low Latency	2cm+ 2ppm Horizontal ⁴ 3cm+ 2 ppm Vertical	< 20ms	20Hz
DGPS	< 1m	< 20ms	20Hz

¹ 1 sigma level

² At maximum output rate

³ Dependent on data link throughput

⁴ Assumes 1 second data link delay

Initialization	Automatic OTF (on-the-fly) while moving
Time required	Typically < 1 minute
Range	Up to 20 km from base for RTK
Start-up	< 90 seconds from power on to positioning < 30 seconds with recent ephemeris
Communications	3 × RS-232 ports. Baud rates up to 115,200 2 × CAN/J1939
Configuration	Via front panel display & keypad, Configuration Toolbox Software or user definable application files NMEA-0183: GKG, GGA, ZDA, VTG, GST, PJT and PJK Trimble Binary Streamed Output
Output Formats	



NORTH AMERICA
Trimble Engineering and
Construction Division
5475 Kellenburger Road,
Dayton, Ohio 45424, U.S.A.
800-538-7800 (Toll Free)
+1-937-233-8921 Phone
+1-937-233-9004 Fax
www.trimble.com

EUROPE
Trimble GmbH
Am Prime Parc 11,
65479 Raunheim,
GERMANY
+49-6142-21000 Phone
+49-6142-2100-550 Fax

ASIA-PACIFIC
Trimble Navigation Australia
Pty Limited
Level 1/123 Gotha Street,
Fortitude Valley, QLD 4006,
AUSTRALIA
+61-7-3216-0044 Phone
+61-7-3216-0088 Fax



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