MS750

Dual-Frequency RTK Receiver for Marine Applications

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**

The MS750™ GPS receiver represents the highest level of accuracy and response available from a dual-frequency GPS receiver. The receiver is specifically designed to allow easy integration of reliable centimeter-level positions to any hydrographic survey, marine construction or precise navigation application.

Dual-frequency RTK receiver for marine applications.

Accuracy and response times

Dynamic platforms, such as dredgers or survey and construction vessels, require virtually instantaneous position reports multiple times per second. The MS750 receiver delivers positions to navigation software with a latency of less than 20 milliseconds at 20 times per second. This responsiveness is matched with a horizontal accuracy of 2 cm and vertical accuracy of 3 cm. For the most precise applications, the MS750 receiver provides accuracy of 1 cm horizontally at a 5-Hz rate with a small increase in latency.

Interfacing and configuration ease

The MS750 receiver is designed to plug right into your application with minimal development. An easy-to-use application file interface enables you 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 using the Windows-based Configuration Toolbox software. Multiple configurations can be stored in the receiver as files and activated when desired. Local datum and transformation parameters can 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.

Advanced technology

The accuracies, update rates and latencies available in the MS750 receiver 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 in ports, harbors and along the coastline, is a strict requirement. Custom designed hardware with Super-trak™ multibit GPS signal processing technology and EVEREST™ advanced multipath signal 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. The ability to calculate the baseline vector between two moving receivers to centimeter accuracy is available as an option, and is useful for determining accurate headings. The MS750 receiver addresses a vast range of applications in the field of hydrographic survey, marine construction, docking systems and other precise navigation applications.

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
- 1-PPS Output
- RTCM Input/Output
- One year hardware warranty
- Compact, easy mounting design
- Trimble CMR Input/Output
- Synchronized 5-Hz position updates

OPTIONS AND ACCESSORIES

- Moving Base RTK
- Rugged L1/L2 Antenna
- Micro-centered Antenna
- Antenna Cables (5 m, 7.5 m, 10 m, 24 m & 30 m)
- Data extension cable
- Extended hardware warranty
- Firmware and software update service

ORDERING INFORMATION

MS750 Receiver	**Part Number 36577-00**

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

Compact L1/L2 with Fixed Ground Plane	**Part Number 36128-00**
Compact L1/L2 Antenna Micro Centered	**Part Number 38614-00**
L1/L2 Permanent Antenna	**Part Number 31353-00**
Rugged L1/L2 Antenna	**Part Number 31354-00**
Rugged L1/L2 Antenna, 4-Hole Mount	**Part Number 31354-05**
Rugged Micro Centered/13" GP	**Part Number 38337-00**
TSC1 for MS750	**Part Number 30000-90**

PHYSICAL CHARACTERISTICS

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

ENVIRONMENTAL CHARACTERISTICS

Operating temperature	–20°C to +60°C
Storage temperature	–30°C to +80°C
Humidity	MIL 810E, Meth. 507.3 Proc III, Aggravated, 100% condensing
Vibration	MIL 810D, Tailored Random 3 gRMS Operating Random 6.2 gRMS Survival
Mechanical shock	MIL 810D ± 40 g Operating ± 75 g Survival
EMC	
Radiated emissions	CISPR 12
Conducted emissions	SAE J1113/41
Radiated immunity	ISO/DIS 13766, 30 V/m
ESD	±15 KV
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
Signal processing	Super-trak multibit signal processing technology EVEREST multipath signal suppression

Positioning mode	Accuracy[1]	Latency[2]	Max Rate
Synchronized RTK	1 cm + 2 ppm Horizontal 2 cm + 2 ppm Vertical	300 ms[3]	5 Hz Std
Low latency	2 cm + 2 ppm Horizontal[4] 3 cm + 2 ppm Vertical	< 20 ms	20 Hz
DGPS	< 1 m	< 20 ms	20 Hz

[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 10 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 and keypad, Configuration Toolbox Software or user-definable application files
Output formats	NMEA-0183: GGK, GGA, ZDA, VTG, GSV, VGK, VHD, GST, PJT and PJK Trimble Binary Streamed Output

Trimble®
ADDING VALUE TO GPS

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