

5700 GPS Receiver for Marine

10 December 2001

MARINE SURVEY

Fast, Precise Positioning with Trimble's 5700 GPS Receiver and the RTK Advantage

Trimble's new 5700 GPS receiver provides the greatest accuracy and response available from a GPS receiver. The 5700 provides marine surveyors and engineers with Trimble's *RTK advantage*: precision, a high position update rate, and low latency for hydrographic survey and marine construction.



The versatile 5700 GPS receiver is ideal for marine survey and construction applications:

- Use the 5700 for hydrographic survey operations—its accurate 3D positioning measures and compensates for *vertical motion* caused by disturbances such as tide and heave.
- Pole-mount the 5700 with a controller for construction tasks such as staking out, or for conducting topographic and control surveys.
- Achieve precise positioning for pile and structure placements with the 5700 mounted on a construction barge.

For an optimum solution with maximum performance and productivity, customers can combine the 5700 GPS receiver with Trimble's HYDRO*pro*™ software.

Features and Benefits

Trimble's 5700 GPS receiver provides the following key benefits:

- The RTK advantage – The 5700 is ideal for applications that require real-time vertical motion measurement, under-keel clearance, or automatic winch and crane control.
- WAAS/EGNOS – The 5700 provides WAAS or EGNOS tracking, and differential corrections in areas where this service is available.
- Easy configuration and integration – Easily reconfigure the 5700 for different applications using the receiver's stored configuration files. Alternatively, configure and monitor the receiver from a PC using the software provided.

The HYDRO*pro* software enhances this ease of use even further by automatically configuring the receiver using proprietary communications. Standard NMEA messages such as GGA, GGK, GSV, and ZDA are also available for other external applications.

- Interoperability – Interface the receiver to a software system using NMEA or GSOF messages. Alternatively, interface the receiver to a controller running the Trimble Survey Controller software.
- Versatile – Use the receiver as a reference or roving receiver, mounting it on a vessel, in a backpack, or on a pole.



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Trimble's 5700 GPS receiver outputs positions of up to 20 mm accuracy at an update rate of 10 Hz (10 per second) and with a latency of only 20 ms¹. See Figure 1.

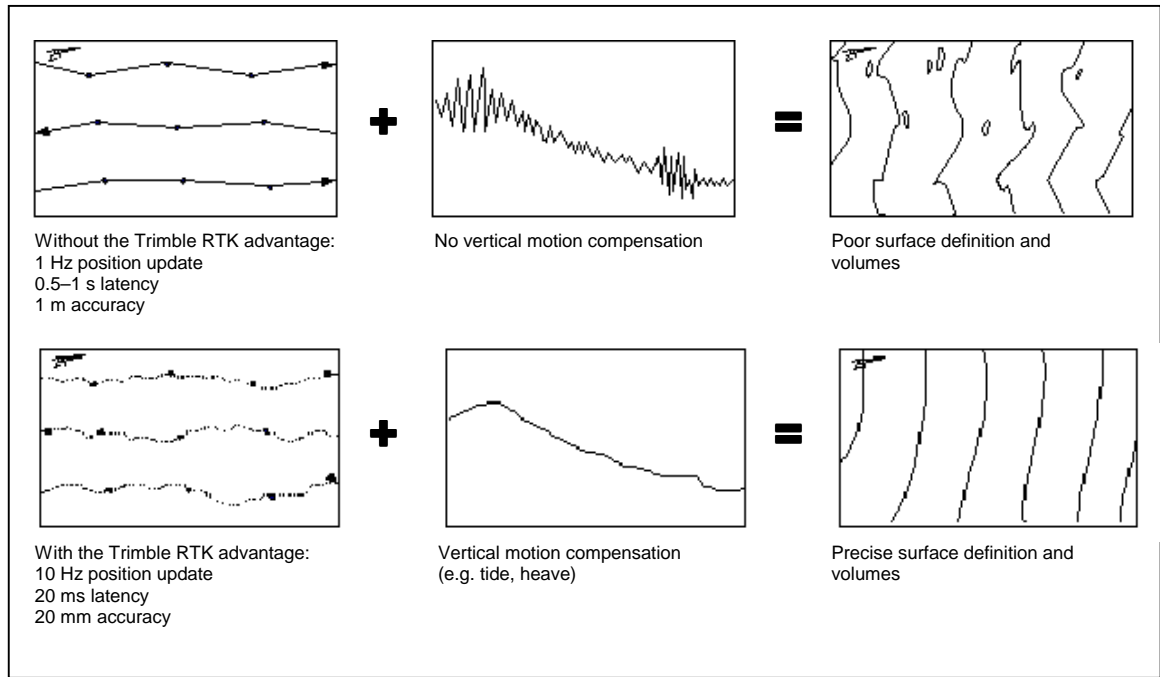


Figure 1. The RTK Advantage

The Importance of Low Latency in Marine Applications

A GPS receiver's *latency* is the time it takes to calculate and output positions.

The greater a receiver's latency, the greater the chance of errors. For example, suppose the vessel is traveling at 10 kn and your receiver has 1s latency. By the time the receiver calculates and outputs a position based on satellite information, the vessel has moved 5.4 m (almost 18 ft). If you use a 5700 GPS receiver, which has a constant 20-ms latency, the vessel moves only 0.1 m (4 in.) and because the latency is constant, error corrections can be applied without first measuring the latency of each update.

Ordering Information

The part numbers required are shown below. For more information on part numbers, access the 5700 Standard Bundles Guide from the Trimble website at www.trimble.com.

Product	Part Number
GPS Total Station® 5700 Rover (No radio, no controller)	57001-50
5700 Receiver RTK (No radio)	57005-00



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¹ The 5700 GPS receiver's 20-ms latency is independent of any caused by RTK-correction transmission.