

# Trimble R7 GPS Receiver



Year of Purchase: 2005

Cost: 1.1 Lac

## General

- Tough, lightweight magnesium alloy casing
- Fully integrated internal radio modem fully sealed
- Incorporates the Trimble R-track technology, which allows tracking of the L2 Civil Signal (L2C)
- CompactFlash data storage expandable up to 128 MB
- Integral USB (Universal Serial Bus) for ultra fast download
- Greater than 10 hours data logging or 7 hours of RTK operation on 2 internal 1.8 ampere-hour lithium-ion batteries
- Tripod clip or integrated base case
- Mount rover on-the-pole, in a belt pouch or in a backpack
- Front panel for control of power, data logging, formatting of CompactFlash cards, ephemeris and application file deletion and restoring default controls. LED indicators for satellite tracking, radio link operation data logging and power monitoring
- Low power consumption

## Salient Features

- Advanced Maxwell™5 Custom Survey GPS Chip
- High precision multiple correlator L1 and L2 pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low noise L1 and L2 carrier phase measurements with < 1mm prevision in a 1 Hz bandwidth.

## Specifications

Feature	Specifications
<b>Code Differential GPS Positioning</b>	
Horizontal	0.25 m + 1 ppm RMS
Vertical	0.25 m + 1 ppm RMS
Static and Fast Static GPS Surveying	

Horizontal	±5 mm + 0.5 ppm RMS
Vertical	±5 mm + 1 ppm RMS
<b>Kinematic Surveying</b>	
Horizontal	10 mm + 1 ppm RMS
Vertical	20 mm + 1 ppm RMS 0.02 seconds (20 millisecond) latency
Initialization time	Single/Multi-Base eRTK min 10 secs +0.5 times baseline length in km, up to 30 km VRS™ (Virtual Reference Stations) initialization time <30 seconds typical anywhere within coverage area
Initialization reliability	Typically >99.9%
<b>Physical</b>	
Casing	Tough, lightweight fully sealed magnesium alloy
Waterproof	IPX7 for submersion to depth of 1 meter
Shock and Vibration	Tested and meets the following environmental Standards: Shock MIL-STD-810-F to survive a 1m (3.28ft) drop onto concrete. Vibration MIL-STD-810-F on each axis
Shock and Vibration	With internal batteries, internal radio, internal battery charger, standard UHF antenna: 1.4 kg (3 lb) As entire RTK Rover with batteries for 7 hours, less than 4 kg (8.8 lb)
Dimensions	13.5 cm W x 8.5 cm H x 24 cm L (5.3 in. W x 3.4 in. H x 9.5 in. L)
<b>Electrical</b>	
Power	DC input 10.5 to 28 V with over voltage protection
Power consumption	2.5 W receiver only, 3.75 W including internal radio
Battery	>10 hours postprocessed, 7 hours RTK (with two 1.8 ah batteries)
Battery weight	0.1 kg (1.6 oz)
Battery charger	Internal with external AC power adapter; no requirement for external charger
Power output	10.5 V to 20 V (Port 1), 10.5 V to 7.5 V (Port 3)
Certification	Class B Part 15 FCC certification and CE Mark approved Environmental
Operating temperature –	–40 °C to +65 °C (–40 °F to +149 °F) C-Tick approved
Storage temperature	–40 °C to +80 °C (–40 °F to +176 °F)
Humidity	100%, condensing