Trimble 5700 Receiver

Advanced Dual Frequency GPS and WAAS/EGNOS receiver system with integrated UHF radio modem.

GENERAL

- Tough, lightweight magnesium alloy casing
- Fully integrated internal radio modem fully sealed
- Compact flash data storage expandable up to 96MB
- Integral USB (Universal Serial Bus) for ultra fast download
- Up to 10 hours continuous receiver operation on 2 internal miniature camcorder 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 compact flash cards, ephemeris and application file deletion and restoring default controls. Panel indicators for satellite tracking, radio link operation data logging and power monitoring
- Low power consumption

PERFORMANCE SPECIFICATIONS

Measurements

- Advanced Maxwell 4 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 precision in a 1Hz bandwidth
- L1 and L2 Signal-to-Noise ratios reported in dB-Hz
- Proven Trimble low elevation tracking technology
- 24 Channels L1 C/A Code, L1/L2 Full Cycle Carrier, WAAS/EGNOS.

Code Differential GPS Positioning[7]

Horizontal: 0.25m + 1ppm RMS
Vertical: 0.50m + 1ppm RMS
WAAS differential positioning accuracy typically <5m 3DRMS[1]

Static and Fast Static GPS Surveying[7]

Horizontal: ±5mm + 0.5ppm RMS
Vertical: ±5mm + 1ppm RMS

Kinematic Surveying[7]

Real Time and Post-Processed Kinematic Surveys.
Horizontal: 10mm + 1ppm RMS
Vertical: 20mm + 1ppm 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 30km
VRS initialization time <30 seconds typical any where within coverage area

Initialization Reliability: Typically >99.9%[2]

eRTK Wide Area Coverage

- Conventional RTK typical coverage 300sq km (115 sq mi) per base
- Single Base eRTK up to 1,250 sq km (500 sq mi)[3]
- Multiple Base eRTK up to 3,750 sq km (1500 sq mi)[3, 4]
- Virtual Reference Station eRTK 8500+ sq km (3300 sq mi)[3, 5]

HARDWARE

Physical

Casing: Tough, lightweight fully sealed magnesium alloy
Waterproof: IPX7 for submersion to depth of 1 meter
Shock: Will survive a 1 meter drop onto concrete; shock and vibration tested to 40G random, passes testing per MIL-STD-810F, FIG. 514.5C-17
Weight: With internal batteries, internal radio, internal battery charger, standard UHF antenna: 3 lb. (1.4kg) As entire RTK Rover with batteries for 7 hours, less than 4kg (8.8lb)

Electrical

Power: DC input 10.5 to 28V with over voltage protection
Power Consumption: 2.5 Watts receiver only, 3.75 Watts including internal radio
Battery: Approximately 10 hours postprocessed, 7 hours RTK (with two internal miniature batteries)
Battery weight: 0.1kg (1.6oz)
Battery charger: Internal with external AC power adapter; no requirement for external charger
Power output: 10.5V - 20V (Port 1), 10.5V - 27.5V (Port 3)
Certification: Class B Part 15 FCC certification and CE Mark approved Environmental
Operating Temp: -40° to +65° C[6] (-40° to +149° F)
Storage Temp: -40° to +80° C (-40° to +176° F)
Humidity: 100%, condensing

COMMUNICATIONS AND DATA STORAGE

- 2 external power ports, 2 internal battery ports, 3 serial ports, 1 USB
- Integrated USB for data download speeds in excess of 1 megabit per second (10 times faster than even the fastest serial port)
- Compact Flash - advanced lightweight and compact removable data storage. Options of 48Mb or 96Mb from Trimble
- More than 2,500 hours continuous L1+L2 logging at 15 seconds with 6 satellites typical. (96Mb)
- Fully integrated, fully sealed internal UHF radio modem option
- GSM, Cell Phone and CDPD modem support for eRTK and VRS operation
- Range pole antenna for eRTK Wide Area Real Time Kinematic. For long range UHF communications without interference to GPS antenna phase center
- Dual event marker inputs
- 1Hz, 2Hz, 5Hz and 10Hz Positioning and Data Logging
- 1 Pulse Per Second Output
- CMRII, CMR+, RTCM 2.1 Input and Output Standard
- 10 NMEA outputs

Trimble™

ZEPHYR™ ANTENNA

- Dimensions: 16.2cm (6,4") diameter x 5.7cm (2.25") maximum depth
- Weight: 0.45kgs,1lb
- Operating temperature range -40 to +70 C (-40°F to 158°F)
- 100% humidity proof, fully sealed
- The GPS antenna meets the following environmental standards:
  - MIL-810-F Figure 514 5c-17 vibration levels on each axis
  - Shock tested to MIL-810-F Table 516.5-I to survive a 2m (6.56ft) drop
- 4-point antenna feed for sub-mm phase center repeatability.
- Integral Low Noise Amplifier
- 50dB antenna gain
- Phase Center Repeatability <1mm horizontal.

ZEPHYR GEODETIC ANTENNA

- Dimensions: 34.3cm (13.5") diameter x 7.6cm (3") maximum depth
- Weight: 1.0kgs 2.2 lbs
- Operating temperature range -40 to +70 C(-40°F to 158°F)
- 100% humidity proof, fully sealed
- The GPS antenna meets the following environmental standards:
  - MIL-810-F Figure 514 5c-17 vibration levels on each axis
  - Shock tested to MIL-810-F Table 516.5-I to survive a 2m (6.56ft) drop
- Shock tested for a drop of 2 meters (6.56ft)onto concrete
- 4-point antenna feed for sub-mm phase center repeatability.
- Integral Low Noise Amplifier
- 50dB antenna gain
- Trimble Stealth™ Ground Plane for reduced multipath
- Phase Center Repeatability <1mm horizontal.

[1] Depends on WAAS system performance
[2] May be affected by atmospheric conditions, signal multipath and satellite geometry
[3] May require cellular telephone coverage
[4] Based on configuration of 3 stations at 40km spacing
[5] Based on configuraiton of 6 stations at 70km spacing
[6] Receiver operates normally to -40 but some office based functions such as USB download or internal battery charging are not recommended at temperatures below freezing.
[7] Accuracy may be subject to conditions such as multipath, obstructions, satellite geometry, atmospheric parameters. Always follow recommended survey practices. Specifications subject to change without notice.

Trimble Navigation Limited
Engineering and Construction
5475 Kellenburger Road
Dayton, Ohio 45424-1099
800-538-7800 Toll Free
937-233-8921 Main
937-233-9441 Fax
www.trimble.com

Trimble Europe
Trimble GmbH
Am Prime Parc 11
D-65479 Raunheim
Germany
+49-6142-2100-0 Main
+49-6142-2100-220 Fax

Trimble Navigation
Australia PTY Limited
Level 1/123 Gotha Street
Spring Hill, QLD 4004
Australia
+61-7-3216-0044 Main
+61-7-3216-0088 Fax