☰ Trimble R4s   GNSS System

Reliable, Accurate GNSS Deliverables at an Affordable Price

KEY FEATURES

- High accuracy

- 240-channel 6G ASIC

- Z-blade GNSS-centric technology

- SBAS ranging

- Inside-the-rod UHF antenna

- Trimble CenterPoint RTX correction service

- Trimble TSC3 controller

- Trimble Access field software

- Trimble Business Centre (TBC) office software

CE ℂ ❋ Bluetooth®

GNSS CHARACTERISTICS

- 240 GNSS channels
  - GPS L1C/A, L1P(Y), L2P(Y), L2C
  - GLONASS L1C/A, L2C/A, L3
  - BeiDou B1 (phase 2), B2
  - Galileo E1, E5b
  - QZSS L1C/A, L2C, L1 SAIF
  - SBAS L1C/A
  - L-band
- Supports Trimble RTX real-time correction services
- Patented Z-Blade technology for optimal GNSS performance
  - Full utilization of signals from all 6 GNSS systems (GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS)
  - Enhanced GNSS-centric algorithm for fully independent GNSS tracking and optimal data processing (Incl. GPS-only and GLONASS-only)
  - Fast search engine for quick acquisition and re-acquisition of GNSS signals
  - Patented SBAS ranging (code & carrier observations)
  - Patented Strobe Correlator for reduced GNSS multi-path
  - Up to 10 Hz real-time raw data output
  - Supported data formats: ATOM, CMR, CMR+, RTCM 2.1, 3.0, 3.1 and 3.2(Incl. MSM), CMRx and sCMRx
  - NMEA 0183 message output

REAL-TIME ACCURACY (RMS) [1,2]

SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Horizontal: < 50 cm
- Vertical: < 85 cm

Real-time DGPS position
- Horizontal: 25 cm + 1 ppm
- Vertical: 50 cm + 1 ppm

Real-time Kinematic position (RTK)
- Horizontal: 8 mm + 1 ppm
- Vertical: 15 mm + 1 ppm

Real-time performance
- Instant-RTK initialization
  - Typically 2 sec for baselines < 20 km
  - Up to 99,9% reliability
- RTK initialization range: over 40 km

POST-PROCESSING ACCURACY (RMS) [1,2]

Static & Fast static
- Horizontal: 3 mm + 0,5 ppm
- Vertical: 5 mm + 0,5 ppm

High-precision Static [3]
- Horizontal: 3 mm + 0,1 ppm
- Vertical: 3,5 mm + 0,4 ppm

Post-processed Kinematic (PPK)
- Horizontal: 8 mm + 1 ppm
- Vertical: 15 mm + 1 ppm

DATA LOGGING CHARACTERISTICS

Recording interval   0,1 - 999 seconds

PHYSICAL CHARACTERISTICS

Size   21 x 21 x 7 cm
Weight   930 g

User Interface
Five LED's - Power, Tracking, BlueTooth, Recording and Radio operation

I/O Interface
- RS-232 serial link
- USB 2.0/UART and USB OTG
- Bluetooth 2.1 + EDR / Long range: Class 1 (19dbm)

Memory
- 256 Mb internal memory NAND Flash
- 30+ Days of 15 sec raw GNSS Data (14 Satellites)

Operation
- RTK base & rover
- RTK VRS network rover
- NTRIP, Direct IP
- Post-processing
- Trimble RTX (satellite and cellular / IP)

Environmental characteristics
- Operating temperature: -40°C to +65 °C [4]
- Storage temperature: -40°C to +85 °C [5]
- Humidity: 100% condensing
- IP67 waterproof (sealed against sand & dust)
- Drop: 2m Pole-drop on concrete
- Shock: MIL STD 810 (fig. 516.5-10) (01/2000)
- Vibration: MIL STD 810 (fig. 516.5-10) (01/2000)

Power characteristics
- Li-on battery, 7,4V / 2600 mAh
- Battery life: 10 hrs (GNSS On ; UHF Rx Off)
                 8 hrs (GNSS On ; UHF Rx On)
- External DC power: 9 - 28V

Standard system components
- Trimble R4s GNSS receiver
- Li-on battery
- Dual battery charger, power supply & cord kit
- Tape measure (3,6m)
- 7cm Pole extension
- USB to mini-USB comm cable
- R4s internal UHF Kit (410-470 MHz, 2W, TRx)
- 2 Year receiver warranty
- Trimble TSC3 Data collector
- Trimble ACCESS field software

Optional system components
- R4s Field power kit
- R4s Office power kit

1 Accuracy and TTFF specifications may be affected by atmospheric conditions, signal multipath, satellite geometry and corrections availability and quality.
2 Performance values assume minimum of five satellites, following the procedures recommended in the product manual. High multipath areas, high PDOP values and periods of severe atmospheric conditions may degrade performance.
3 Long baselines, long occupations, precise ephemeris used
4 At very high temperatures UHF module should not be used in the transmitter mode. With UHF transmitter on radiating 2W of RF power, the operating temperature is limited to + 55°C
5 Without batteries. Batteries can be stored up to +70°C.
6 Receiver initialization time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.

TRIMBLE RTX INITIALIZATION [1,2,6]	Horizontal (RMS)	Initialization	GNSS
CenterPoint RTX	2 cm	< 1 min / <15 mins	L1 + L2