The Trimble® R8 GNSS Receiver sets the new standard for full-featured GNSS (Global Navigation Satellite System) receiver technology. This integrated system delivers unmatched power, accuracy and performance in a rugged, compact unit.

**ADVANCED TRIMBLE R-TRACK TECHNOLOGY**

The Trimble R8 GNSS delivers the latest advancements in R-Track™ technology, designed to deliver reliable, precise positioning performance. In challenging areas for GNSS surveying, such as tree cover or limited sky view, Trimble R-Track provides unmatched tracking performance of GNSS satellite signals.

Trimble R-Track with Signal Prediction™ compensates for intermittent or marginal RTK correction signals, enabling extended precision operation after an RTK signal is interrupted. The new CMRx communications protocol provides unprecedented correction compression for optimized bandwidth and full utilization of all the satellites in view, giving you the most reliable positioning performance.

Featuring the Trimble Maxwell™ 6 chip, the Trimble R8 GNSS advances the industry with more memory and more GNSS channels. Trimble delivers business confidence with a sound GNSS investment for today and into the future.

**Broad GNSS Support**

The Trimble R8 GNSS supports a wide range of satellite signals, including GPS L2C and L5 and GLONASS L1/L2 signals. In addition, Trimble is committed to the next generation of modernized GNSS configurations by providing Galileo-compatible products available for customers well in advance of Galileo system availability. In support of this plan, the new Trimble R8 GNSS is capable of tracking the experimental GIOVE-A and GIOVE-B test satellites for signal evaluation and test purposes.

**FLEXIBLE SYSTEM DESIGN**

The Trimble R8 GNSS receiver combines the most comprehensive feature set into an integrated and flexible system for demanding surveying applications. The Trimble R8 GNSS includes a built-in transmit/receive UHF radio, enabling ultimate flexibility for rover or base operation. As a base station, the internal NTRIP caster provides you with customized access to base station corrections via the internet.

Trimble’s exclusive Web UI® eliminates travel requirements for routine monitoring of base station receivers. Now you can assess the health and status of base receivers and perform remote configurations from the office. Likewise, you can download post-processing data through Web UI and save additional trips out to the field.

**ENABLING THE CONNECTED SITE**

Pair the speed and accuracy of the Trimble R8 GNSS receiver with flexibility and collaboration tools of Trimble Access™ software. Trimble Access brings field and office teams closer by enabling data sharing and collaboration in a secure, web-based environment. With optional streamlined workflows, Trimble Access further empowers surveyors and survey teams for success. Now it is easier than ever to realize the potential of the Trimble Connected Site. Connecting the right tools, techniques, services and relationships enables surveying businesses to achieve more every day.

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1. Galileo Commercial Authorization: Receiver technology having Galileo capability to operate in the Galileo frequency bands and using information from the Galileo system for future operational satellites is restricted in the territory available for Galileo Open Service Signal-In-Space Interface Control Document (OS-SIS ICD) and is not currently authorized for commercial use.

2. GIOVE-A and GIOVE-B test satellites are information that is unclassified in the public domain in the GIOVE A - B Navigation Signal-In-Space Interface Control Document. Receiver technology having developmental GIOVE-A and B capability is intended for signal evaluation and test purposes.

3. Cellular modem required.
PERFORMANCE SPECIFICATIONS

Measurements
- Trimbles R-Track technology
- Advanced Trimble Maxwell 6 Custom Survey GNSS chip with 220 channels
- High precision multiple correlator for GNSS pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Signal-to-Noise ratios reported in dB-Hz
- Proven Trimble low elevation tracking technology
- Satellite signals tracked simultaneously:
  - GPS: L1/C/A, L2C, L2E (Trimble method for tracking L2P), L5
  - GLONASS: L1/C/A, L1P, L2C/A (GLONASS M only), L2P
  - SBAS: L1/C/A, L5
  - Galileo GIOVE-A and GIOVE-B

Code differential GNSS positioning\(^1\)
- Horizontal .................................................. 0.25 m + 1 ppm RMS
- Vertical ..................................................... 0.50 m + 1 ppm RMS
WAS differential positioning accuracy\(^2\) ................................ typically <5 m 3DRMS

Static and Fast Static GNSS surveying\(^1\)
- Horizontal .................................................. 3 mm + 0.1 ppm RMS
- Vertical ..................................................... 3.5 mm + 0.4 ppm RMS

Kinematic surveying\(^1\)
- Horizontal .................................................. 10 mm + 1 ppm RMS
- Vertical ..................................................... 20 mm + 2 ppm RMS
Initial time\(^3\) ................................................. typically <10 seconds
Initialization reliability\(^4\) .................................. typically >99.9%

HARDWARE

Physical
Dimensions (WxH) .................. 19 cm x 11.2 cm (7.5 in x 4.4 in), including connectors
Weight .................. 1.34 kg (2.95 lb) with internal battery, internal radio, standard UHF antenna.
3.70 kg (8.16 lb) entire RTK rover including batteries, range pole, controller and bracket

Temperature\(^5\)
- Operating .............................................. -40°C to +65°C (-40°F to +149°F)
- Storage .................................................. -40°C to +75°C (-40°F to +167°F)
Humidity .................................................. 100%, condensing
Water/dust proof ........................................... IP67 dust proof, protected from temporary immersion to depth of 1 m (3.28 ft)

Shock and vibration ........................................... Tested and meets the following environmental standards:
- Shock .................................................. Non-operating: Designed to survive a 2 m (6.6 ft) pole drop onto concrete. Operating: to 40 g, 10 msec, sawtooth
- Vibration .................................................. MIL-STD-810F, Fig.514.5C-1

Electrical
- Power 11 to 28 V DC external power input with over-voltage protection on Port 1 (7-pin Lemo)
- Rechargeable, removable 7.4 V, 2.4 Ah Lithium-ion battery in internal battery compartment. Power consumption is 3.2 W, in RTK rover mode with internal radio. Operating times on internal battery:
  - 450 MHz receive only option ............................................. 5.8 hours\(^6\)
  - 450 MHz receive/transmit option .................................... 3.7 hours\(^6\)
  - GSM/GPRS .................................................................. 4.1 hours\(^7\)
  - Certification Class B Part 15, 22, 24 FCC certification, 850/1900 MHz.
Class 10 GSM/GPRS module, CE Mark approval, and C-tick approval

Communications and Data Storage
- 3-wire serial (7-pin Lemo) on Port 1. Full RS-232 serial on Port 2 (Dsub 9 pin)
- Fully integrated, fully sealed internal 450 MHz receiver/transmitter option:
  - Transmit power: 0.5 W
  - Range\(^8\): 3-5 km typical / 10 km optimal
- Fully integrated, fully sealed 2.4 GHz communications port (Bluetooth)\(^9\)
- External cellphone support for GSM/GPRS/CDPD modems for RTK and VRS operations
- Data storage on 57 MB internal memory; 40.7 days of raw observables (approx. 1 MB /Day), based on recording every 15 seconds from an average of 14 satellites
- 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning
- CMRx, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1 Input and Output
- 16 NMEA outputs, GSOF, RT17 and RT27 outputs. Supports BINEX and smooth carrier

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1. Accuracy and reliability may be subject to anomalous due to multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended survey practices.
2. Depends on BUAV/GNSS system performance.
3. May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry.
4. May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
5. Recorder will operate normally to -40°C, internal batteries are rated to -30°C.
6. Varies with terrain and operating conditions.
7. Varies with temperature.
8. Varies with temperature and wireless data rate.
9. Bluetooth type approval varies country specific.

Specifications subject to change without notice.

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