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### KEY FEATURES

- Advanced Trimble R-Track technology
- Unmatched GNSS tracking performance
- Includes Trimble Maxwell 6 chip with 220 channels
- Remote configuration and access
- Base and rover communications options to suit any application



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 all of 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<sup>1,2</sup>. 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<sup>3</sup> 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.

#### 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 publicly available Galileo Open Service Signal-In-Space Interface Control Document (GAL OS SIS ICD) and is not currently authorized for commercial use.

Receiver technology that tracks the GIOVE-A and GIOVE-B test satellites uses information that is unrestricted in the public domain in the GIOVE A + B Navigation Signals-In-Space Interface Control Document. Receiver technology having developmental GIOVE-A and B capability is intended for signal evaluation and test purposes.

2 For more information about Trimble and GNSS modernization, please visit [http://www.trimble.com/srv\\_new\\_era.shtml](http://www.trimble.com/srv_new_era.shtml).

3 Cellular modem required.

# TRIMBLE R8 GNSS RECEIVER

## PERFORMANCE SPECIFICATIONS

### Measurements

- Trimble 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: L1C/A, L2C, L2E (Trimble method for tracking L2P), L5
  - GLONASS: L1C/A, L1P, L2C/A (GLONASS M only), L2P
  - SBAS: L1C/A, L5
  - Galileo GIOVE-A and GIOVE-B

### Code differential GNSS positioning<sup>1</sup>

Horizontal . . . . . 0.25 m + 1 ppm RMS  
Vertical . . . . . 0.50 m + 1 ppm RMS  
WAAS differential positioning accuracy<sup>2</sup> . . . . . typically <5 m 3DRMS

### Static and FastStatic GNSS surveying<sup>1</sup>

Horizontal . . . . . 3 mm + 0.1 ppm RMS  
Vertical . . . . . 3.5 mm + 0.4 ppm RMS

### Kinematic surveying<sup>1</sup>

Horizontal . . . . . 10 mm + 1 ppm RMS  
Vertical . . . . . 20 mm + 1 ppm RMS  
Initialization time<sup>3</sup> . . . . . typically <10 seconds  
Initialization reliability<sup>4</sup> . . . . . typically >99.9%

## HARDWARE

### Physical

Dimensions (W×H) . . . . . 19 cm × 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<sup>5</sup>

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/dustproof . . . . . IP67 dustproof, protected from temporary immersion to depth of 1 m (3.28 ft)

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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<sup>7</sup>
  - 450 MHz receive/transmit option . . . . . 3.7 hours<sup>8</sup>
  - GSM/GPRS . . . . . 4.1 hours<sup>9</sup>
- 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<sup>6</sup>: 3–5 km typical / 10 km optimal
- Fully integrated, fully sealed internal GSM/GPRS option<sup>7</sup>
- Fully integrated, fully sealed 2.4 GHz communications port (Bluetooth®)<sup>9</sup>
- 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. 1.4 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
- CMR+, 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 smoothed carrier

<sup>1</sup> Accuracy and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended survey practices.

<sup>2</sup> Depends on WAAS/EGNOS system performance.

<sup>3</sup> May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry.

<sup>4</sup> May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.

<sup>5</sup> Receiver will operate normally to -40 °C, internal batteries are rated to -20 °C.

<sup>6</sup> Varies with terrain and operating conditions.

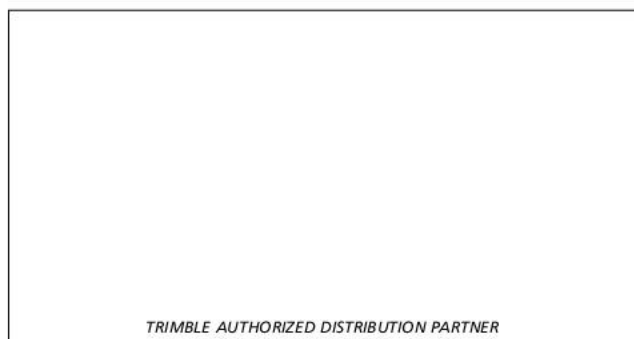
<sup>7</sup> Varies with temperature.

<sup>8</sup> Varies with temperature and wireless data rate.

<sup>9</sup> Bluetooth type approvals are country specific.

Contact your local Trimble Authorized Distribution Partner for more information.

Specifications subject to change without notice.



TRIMBLE AUTHORIZED DISTRIBUTION PARTNER

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