



### KEY FEATURES

Proven GNSS technology from Trimble

Internal GSM/GPRS modem for fast Internet connection and data transfer

Lightweight, ergonomic, and cable free

Designed to optimally support the Trimble GNSS infrastructure solution



The Trimble® R8 GNSS VRS™ Rover is a multi-channel, multi-frequency GNSS (Global Navigation Satellite System) receiver, antenna, and data-link radio combined in one compact unit. The VRS rover combines advanced receiver technology with a proven system design to provide maximum accuracy and productivity.

#### TRIMBLE R-TRACK TECHNOLOGY FOR COMPREHENSIVE GNSS SUPPORT

Powered by an enhanced RTK engine, Trimble R-Track™ technology in the Trimble R8 GNSS VRS Rover supports the modernized GPS L2C and L5 signals as well as GLONASS L1/L2 signals. This extensive GNSS support is capable of providing surveying professionals with real field benefits.

With the world's GNSS' in constant development, surveying businesses small and large can be confident that investment in a Trimble GNSS system is protected. Trimble, already proven in GPS technology, will continue to lead the industry in GNSS support.

#### PROVEN SYSTEM DESIGN

From its powerful Trimble field software and controller to the receiver itself, the Trimble R8 GNSS VRS Rover's overall design has been tried, tested, and proven. It's rugged, lightweight and cable free for unsurpassed ergonomics and productivity in the field. Additionally, the Trimble R8 GNSS VRS rover consumes very little power and includes internal memory. These features also assist you in the field, enabling you to work longer without changing batteries or transferring data.

The Trimble R8 GNSS VRS Rover works optimally with Trimble controllers such as the Trimble CU or Trimble® TSC2® controller. Both controllers run industry-standard Microsoft® Windows™ operating systems, which are familiar and easy to use. They are also flexible for running both Trimble field software and other specialized applications.

The VRS rover includes an internal GSM/GPRS cell modem for wireless connection to the Internet via NTRIP (Networked Transport of RTCM via Internet Protocol). Quickly and easily access GNSS data from a Trimble GNSS infrastructure solution over the Internet. No additional cellphone or external modem is required.

#### AN IMPORTANT COMPONENT OF A TRIMBLE GNSS INFRASTRUCTURE SOLUTION

Trimble® GNSS Infrastructure is the most established and widely used GNSS infrastructure solution available. Additionally, all components of Trimble GNSS infrastructure—including the Trimble R8 GNSS VRS Rover—are designed to work together. This means the solution is scalable; that is, it will grow with you as your business needs change. And the solution is part of Trimble's Connected Site model, where products, techniques, services, and relationships combine to take your business to all-new levels of achievement.

With numerous fully modeled networks all over the world and dedicated GNSS infrastructure engineers on hand to support your unique needs, Trimble GNSS infrastructure solutions are always a wise investment. Surveying professionals like you can rely on Trimble's experience and expertise in this field, and be confident that choosing a Trimble GNSS infrastructure solution is the right decision.

# TRIMBLE R8 GNSS VRS ROVER

## PERFORMANCE SPECIFICATIONS

### Measurements

- Trimble R-Track technology
- Advanced Trimble Maxwell™ Custom Survey GNSS Chip
- 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
- 72 Channels:
  - GPS L1 C/A Code, L2C, L1/L2/L5<sup>1</sup> Full Cycle Carrier
  - GLONASS L1 C/A Code, L1 P Code, L2 P Code, L1/L2 Full Cycle Carrier
- 4 additional channels for SBAS WAAS/EGNOS support

### Code differential GPS positioning<sup>2</sup>

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

### Static and FastStatic GPS surveying<sup>2</sup>

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

### Kinematic surveying<sup>2</sup>

Horizontal..... ±10 mm + 1 ppm RMS  
Vertical..... ±20 mm + 1 ppm RMS  
Initialization time<sup>4</sup>..... typically <10 seconds  
Initialization reliability<sup>5</sup>..... typically >99.9%

## HARDWARE

### Physical

Dimensions (W×H)..... 19 cm × 11.2 cm (7.5 in x 4.4 in), including connectors  
Weight..... 1.35 kg (2.97 lb) with internal battery, internal radio, standard GSM/GPRS antenna.  
3.71 kg (8.18 lb) entire RTK rover including batteries, range pole, controller and bracket

### Temperature<sup>6</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)

### 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 <3.1 W, in RTK mode with internal radio. Operating times on internal battery:
  - 3.8 hours, varies with temperature
- 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 GSM/GPRS option<sup>7</sup>
- Fully integrated, fully sealed 2.4 GHz communications port (Bluetooth®)<sup>7</sup>
- Data storage on 11 MB internal memory: 302 hours of raw observables based on recording data from 6 satellites at 15 second intervals
- 1 Hz, 2 Hz, 5 Hz, and 10 Hz positioning
- CMR+, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1 Input and Output
- 16 NMEA outputs. GSOE and RT17 outputs. Supports BINEX and smoothed carrier

<sup>1</sup> The availability of the L5 signal is dependent on the US Government.

<sup>2</sup> Accuracy and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended survey practices.

<sup>3</sup> Depends on WAAS/EGNOS system performance.

<sup>4</sup> May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry.

<sup>5</sup> May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.

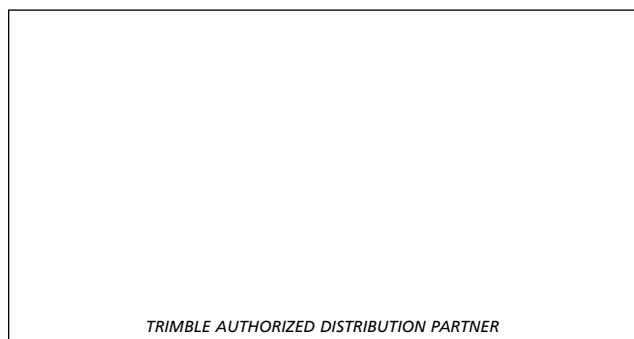
<sup>6</sup> Receiver will operate normally to –40 °C, internal batteries are rated to –20 °C.

<sup>7</sup> Bluetooth type approvals are country specific.

Contact your local Trimble Authorized Distribution Partner for more information.

Specifications subject to change without notice.

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