

# Trimble R8s for General Contractors

THE CONCEPT IS SIMPLE: TAKE THE FIELD-PROVEN TRIMBLE R8S RECEIVER, PAIR IT WITH TRIMBLE FIELD LINK CONTROLLER SOFTWARE AND WATCH PRODUCTIVITY SOAR ON THE WORK SITE. DESIGNED SPECIFICALLY TO MEET THE NEEDS OF BUILDING CONSTRUCTION, THE TRIMBLE R8S SYSTEM FOR GENERAL CONTRACTORS STREAMLINES WORKFLOWS TO HELP CONTACTORS PERFORM COMMON FIELD POSITIONING TASKS FAST.

Whether your team is performing initial layout, Quality Assurance (QA) on completed work, or a range of other field positioning tasks, GNSS technology is a viable option in many situations. All it takes is a clear view of the sky, and you're in business. The system is lightweight and let's your team move fast. Because GNSS signals come from the sky, there's no need to maintain line-of-sight between the work and a tripod.

For more than 30 years, Trimble® has set the standard in a broad range of precise positioning systems. Known as the foremost pioneer in commercial GPS, Trimble is still extending the value of GPS and other Global Navigation Satellite System (GNSS) technologies to transform field work for new users and new applications.



## SIMPLE AND STREAMLINED

GPS and other Global Navigation Satellite System (GNSS) technologies have played a role in construction for years. Originally developed for land surveyors, workflows were often complex and overwhelming for non-specialists in the building industry. So when Trimble set out to design a GNSS system specifically for general contractors, it had to be simple. The system is controlled by the same software that controls our total stations, Trimble Field Link. So even novice users can be up and running in minutes with guided workflows that make short-work of layout and data collection tasks.

## COMMON APPLICATIONS

- Footings
- Retaining walls
- Formwork
- QA/QC
- Rough grading
- Deck layout

## ADVANCED GNSS TECHNOLOGY

Trimble 360, our powerful GNSS tracking technology supports signals from all existing and planned satellite constellations. It expands the utility of your GNSS rover in sites that were previously inaccessible due to moderate obstructions by taking advantage of the availability of additional satellite signals.

## Key Features:

- Trimble 360 tracking technology for access to all existing and planned satellite constellations
- Sub-centimeter horizontal accuracy
- Lightweight and convenient
- Same Trimble Field Link software and controller used with Trimble RTS total stations
- No need for line of sight with a tripod

# GENERAL SPECIFICATIONS

## PERFORMANCE SPECIFICATIONS<sup>1</sup>

### Measurements

- Advanced Trimble Maxwell™ 6 Custom Survey GNSS chips with 440 channels
- Future-proof your investment with Trimble 360 tracking
- High precision multiple correlator for GNSS pseudorange measurements
- Unfiltered, un-smoothed 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, L1C, L2C, L2E
  - GLONASS: L1C/A, L1P, L2C/A, L2P, L3
  - Galileo: E1, E5A, E5B
  - BeiDou (COMPASS): B1, B2
- Positioning rates: up to 20 Hz

## POSITIONING PERFORMANCE<sup>2</sup>

### Real Time Kinematic surveying

Single Baseline <30 km	
Horizontal	8 mm + 1 ppm RMS
Vertical	15 mm + 1 ppm RMS
Network RTK <sup>3</sup>	
Horizontal	8 mm + 0.5 ppm RMS
Vertical	15 mm + 0.5 ppm RMS
Initialization time <sup>4</sup>	typically <8 seconds
Initialization reliability <sup>4</sup>	typically >99.9%

## HARDWARE

### Physical

Dimensions	19 cm x 10.4 cm (7.5 in x 4.1 in), including connectors
Weight	1.52 kg (3.35 lb) with internal battery, internal radio and antenna 3.81 kg (8.40 lb) items above plus range pole, controller & internal radio
Operating Temperature <sup>5</sup>	-40° C to +65° C (-40° F to +149° F)
Storage Temperature	-40° C to +75° C (-40° F to +167° F)
Humidity	100%, condensing
Ingress Protection	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 V DC to 24 V DC external power input with over-voltage protection on Port 1 (7-pin Lemo)
- Rechargeable, removable 7.4 V, 2.8 Ah Lithium-ion smart battery
- Power consumption is <3.2 W in RTK rover mode with internal radio and Bluetooth® in use<sup>6</sup>
- Operating times on internal battery<sup>7</sup>:
  - 450 MHz receive only option . . . . .5.0 hours
  - 450 MHz receive/transmit option (0.5 W) . . . . .2.5 hours

## COMMUNICATIONS

- Serial: 3-wire serial (7-pin Lemo) on Port 1; full RS-232 serial (Dsub 9 pin) on Port 2
- Radio Modem<sup>1</sup>: fully Integrated, sealed 450 MHz wide band receiver/transmitter with frequency range of 403 MHz to 473 MHz:
  - Transmit power: 0.5 W
  - Range: 3–5 km typical / 10 km optimal<sup>8</sup>
- Bluetooth: fully integrated, fully sealed 2.4 GHz communications port (Bluetooth)<sup>9</sup>

## Data Formats

- CMRx

## Supported Trimble Controllers<sup>1</sup>

- Trimble Field Tablet

## CERTIFICATIONS

FCC Part 15 (Class B device), Part 15.247 and Part 90; ICES-003, RSS-210 and RSS-119; CE Mark; C-Tick; Bluetooth EPL

- 1 Based on Trimble R8s GNSS receiver configuration
- 2 Precision and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. The specifications stated recommend the use of stable mounts in an open sky view, EMI and multipath clean environment, optimal GNSS constellation configurations, along with the use of survey practices that are generally accepted for performing the highest-order surveys for the applicable application including occupation time appropriate for baseline length. Baselines longer than 30 km require precise ephemeris and occupations up to 24 hours may be required to achieve the high precision static specification.
- 3 Network RTK PPM values are referenced to the closest physical reference station.
- 4 May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
- 5 Receiver will operate normally to -40° C, internal batteries are rated to -20° C, optional internal cellular modem operates to -40° C.
- 6 Tracking GPS and GLONASS
- 7 Varies with temperature and wireless data rate. When using a receiver and internal radio in the transmit mode, it is recommended that an external 6 Ah or higher battery is used.
- 8 Varies with terrain and operating conditions.
- 9 Bluetooth type approvals are country specific.

## CORRECTIONS DATA

A source of GNSS data corrections is required for professional-grade accuracy. Corrections can be achieved with a base station set-up and broadcast through an integrated wide band UHF radio in the base receiver. For more convenience, corrections can also be received via mobile internet connection and a Trimble VRS Now™ subscription or alternate corrections service available from a variety of public and commercial vendors.



*Caption: The system is available in a complete kit with Rover & Base Station Receivers, Trimble Field Tablet, Trimble Field Link software, Tripod and all accessories needed to get started and stay productive.*

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Specifications subject to change without notice.



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