Trimble R8s GNSS SYSTEM

One Receiver Configured for Today Scalable for Tomorrow

Rather than a pre-configured system, the Trimble® R8s GNSS system gives you just the features and benefits you need, in one flexible, scalable system. It’s never been easier to build a system tailored to your job.

The Trimble R8s easily integrates with Trimble S-Series total stations and the innovative Trimble V10 imaging rover. Create a complete solution by combining the Trimble R8s receiver with a Trimble controller running Trimble Access™ field software, and Trimble Business Center office software.

Configure and Scale With Ease

With the Trimble R8s, it’s easy and simple to build a receiver that is right for the job. Choose the configuration level that suits your needs best, whether it’s post-processing, base, rover, or a combination of base and rover functionality. After you’ve selected a configuration level, additional individual options can be added to further extend the receiver functionality.

The Trimble R8s offers the ultimate in scalability. As your requirements change, the Trimble R8s can adapt. Simply add functionality whenever you need it.

Trimble 360 Technology

Each Trimble R8s comes integrated with powerful Trimble 360 tracking technology that supports signals from all existing and planned constellations, and augmentation systems. Trimble 360 technology can expand the reach of your GNSS rover to sites that were previously inaccessible due to moderate vegetation or other obstructions by taking advantage of the availability of additional satellite signals.

The Trimble R8s includes two integrated Maxwell™ 6 chips with 440 GNSS channels. Capable of tracking a full range of satellite systems, including GPS, GLONASS, Galileo, BeiDou and QZSS.

Communication Options and Remote Access Via Web UI

The Trimble R8s GNSS receiver provides data communication options including an integrated wide-band UHF radio or 3G cellular modem.

Trimble’s exclusive Web UI eliminates the need to travel for routine monitoring of base station receivers.

The Complete Solution

Create an industry-leading field solution by pairing the Trimble R8s GNSS receiver with a powerful Trimble controller loaded with our easy-to-use Trimble Access field software.

Trimble Access field software offers the features and capabilities to simplify everyday work. Our streamlined workflow modules such as Roads, Monitoring, Mines, and Tunnels guide crews through common project types, enabling them to get the job done faster. Survey companies can also implement their unique workflows by taking advantage of the customization capabilities available in the Trimble Access Software Development Kit (SDK).

Once you’re back in the office, Trimble Business Center enables you to check, process and adjust your data with confidence. No matter what Trimble solution you use in the field, you can trust that Trimble Business Center office software will help you generate industry leading deliverables.

Trimble Mobile App—A New Way to Quickly Collect GNSS Raw Data

The Trimble DL Android app provides a simple and easy to use mobile interface for collecting static GNSS raw data for post-processing purposes without the need of using a Trimble controller or Trimble Access field software. This free of charge app is available through the Google Play Store and operates on Android smart phones and tablets.
PERFORMANCE SPECIFICATIONS

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

Required for
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Signal-to-noise ratios reported in dB-Hz
- Satellite signals tracked simultaneously:
  - GPS: L1CA/L1C, L2C, L2E, L5
  - GLONASS: L1CA/L1C, L1P/L2C, L2P/L2P, L3
  - SBAS: L1/L5 (for SBAS satellites that support L5)
  - Galileo: E1, E5A, E5B
  - Beidou (COMPASS): B1, B3
- SBAS, QZSS, WAAS, EGNOS, GAGAN
- Positioning rates: 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz

SBAS differential positioning accuracy3 typically <5 m 3DRMS
Vertical..................................................... 0.50 m + 1 ppm RMS
Horizontal.................................................. 0.50 m + 1 ppm RMS

Code differential GNSS positioning
- Satellite signals tracked simultaneously:
- GPS: L1CA/L1C, L2C, L2E, L5
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POSITIONING PERFORMANCE2

Static GNSS surveying
- High-Precision Static
  - Horizontal: 3 mm + 0.1 ppm RMS
  - Vertical: 3.5 mm + 0.4 ppm RMS
- Static and Fast Static
  - Horizontal: 3 mm + 0.5 ppm RMS
  - Vertical: 5 mm + 0.5 ppm RMS

Postprocessed Kinematic (PPK) GNSS surveying
- Horizontal: 8 mm + 1 ppm RMS
- Vertical: 15 mm + 1 ppm RMS

Real Time Kinematic surveying
- Single Baseline <30 km
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
- Network RTK
  - Horizontal: 8 mm + 0.5 ppm RMS
  - Vertical: 15 mm + 0.5 ppm RMS
- Initialization time5 typically <5 seconds
- Initialization reliability6 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
- Dimensions: 3.81 kg (8.40 lb) items above plus range pole, controller & internal radio

Operating Temperature6
- –40 °C to +65 °C (~–40 °F to +149 °F)

Storage Temperature
- –40 °C to +75 °C (~–40 °F to +167 °F)

Humidity
- 7% to 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 misc. sawtooth
  - Vibration: MIL-STD-BSTF, Fig.534.5C-1

Electrical

- Power 10.5 V DC to 28 V DC external power input with over-voltage protection on Port 1 (7-pin Lemo)
- Rechargeable, removeable 74 V, 2.8 Ah Lithium-ion smart battery
- Power consumption is <32 W in RTK rover mode with internal radio and Bluetooth® in use7

- Operating times on internal battery:
  - 450 MHz receive only option.............................................. 5.0 hours
  - 450 MHz receive/transmit option (0.5 W)............................. 2.5 hours
  - Cellular receive option.................................................. 4.0 hours

Communications and Data Storage
- Serial: 3 wire serial (7-pin Lemo) on Port 1, full RS-232 serial (Dsub 9 pin) on Port 2
- Radio Modem: fully Integrated, sealed 450 MHz wide band receiver/transmitter with frequency range of 403 MHz to 473 MHz, support of Trimble, Pacific Crest, and SATEL radio protocols;
  - Transmit power: 0.5 W
  - Range: 3–5 km typical / 10 km optimal8
- Cellular: fully integrated, sealed internal GSM/GPRS/EDGE/UMTS/HSPA+ modem option, CSD (Circuit-Switched Data) and PDP (Packet-Switched Data)
  - Global Operation:
    - Penta-Band UMTS/HSPA+ (850, 900, 1900, and 2000 MHz)
    - Quad-Band GSM/CSD & GPRS/EDGE (850, 900, 1800, and 1900 MHz)
  - Bluetooth: fully integrated, sealed 2.4 GHz communications port (Bluetooth®)
  - External communication devices for corrections supported on Serial and Bluetooth ports

Supported Trimble Controllers1
- Trimble TSC3, Trimble Slate, Trimble CU, Trimble Tablet Rugged PC

Certifications

- IEC 60950-1 (Electrical Safety); FCC OET Bulletin 65 (RF Exposure Safety); FCC Part 15, 15.247, Part 90; PTCRB (AT&T); Bluetooth SIG; IC ES-003 (Class B), Part 15.247 , Part 90; PTCRB (AT&T); Bluetooth SIG; IC ES-003 (Class B)
- Equipment Directive 2014/53/EU, RoHS, WEEE; Australia & New Zealand CMC, Japan Radio and Telecom MIC

Data Formats
- CMR, CMR+, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 inputs and outputs
- 23 NMEA outputs, GSOF, RT17 and RT27 outputs, supports BINEX and smooth carrier

WebUI
- Offers simple configuration, operation, status, and data transfer
- Accessible via Serial and Bluetooth

Contact your local Trimble Authorized Distribution Partner for more information.

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