**Trimble R9s**

**GNSS RECEIVER**

**Scalable GNSS Modularity**

The Trimble R9s receiver is a GNSS receiver designed to provide Survey professionals with maximum features and flexibility. The Trimble technologies provided in the Trimble R9s receiver are a unique and comprehensive combination.

Trimble CenterPoint RTX, Trimble xFill and Trimble 360 technologies are integrated into this receiver system to provide Surveyors with an outstanding option for their modular requirements.

**Options and Upgrades**

The Trimble R9s receiver platform allows you to purchase the options you want, when you want them. Whether you just need a simple receiver for post processing, a base receiver for transmitting RTK corrections, rover for mobile positioning, or a full base and rover capability; the Trimble R9s is scalable to meet your needs. You can also upgrade at anytime which means your technology investment can grow as your needs do.

**Trimble CenterPoint RTX**

Trimble CenterPoint RTX delivers RTK level precision anywhere in the world without the use of a local base station or Trimble VRS Now correction service. Survey using satellite delivered, CenterPoint RTX corrections in areas where terrestrial based corrections are not available. When surveying over a great distance in a remote area, such as a pipeline or utility right of way. CenterPoint RTX eliminates the need to continuously move a base station or maintain connection to cell coverage.

**Trimble xFill**

Leveraging a worldwide network of Trimble GNSS reference stations and satellite datalinks, Trimble xFill seamlessly fills in for gaps in your RTK or VRS connection stream. In combination with a CenterPoint RTX subscription, survey level precisions are maintained beyond five minutes.

**Trimble 360 Receiver**

Powerful Trimble 360 receiver technology in the Trimble R9s receiver supports signals from all existing and planned GNSS constellations and augmentation systems. With two integrated Trimble Maxwell 6 chips, the Trimble R9s offers an unparalleled 440 GNSS channels. Trimble delivers business confidence with a sound GNSS investment for today and long into the future.

**Smart for Many Applications**

The Trimble R9s receiver’s compact form factor, low power consumption and powerful feature set make for an ideal combination supporting a wide range of high-accuracy positioning applications, including:

► RTK and RTX rover
► Mobile field base station
► Post Processed data collection

The familiar Trimble web user interface provides full receiver status, configuration, data access, as well as a variety of security levels and access controls.

For simple hands-on configuration, the Trimble R9s receiver offers a seven-button, two line display and status information so that performing in-field configuration is practically effortless. Best of all, no handhelds are required to get datalogging started.

The Trimble R9s is available with an internal radio or with no radio. The radio model includes an internal UHF radio for transmitting and receiving RTK corrections. The no radio model can use a high power external radio for transmitting RTK corrections.

The Trimble R9s integrated lithium-ion battery can provide up to 15 hours of continuous power, easily spanning one days work. With stringent environmental specifications, the Trimble R9s is fully rugged to IP67 for dust and water and meets MIL-STD-810F standards for shock, vibration, humidity and temperature, to keep working even in harsh conditions.
DATASHEET

SATELLITE TRACKING
• Two advanced Trimble® Maxwell 6 GNSS chips for a total of 440 channels
• Measure points sooner and faster with Trimble® HD-GNSS technology
• Trimble® EVEREST™ multipath signal rejection
• Trimble 360 receiver technology
• 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
• Trimble® EVEREST™ multipath signal rejection
• Possess accuracy and reliability engineered for surveying
• Accuracies are dependent on GNSS satellite availability. xFill positioning without a Trimble CenterPoint RTX may vary based on type and capability of receiver and antenna, user’s geographic location and atmospheric conditions, scintillation levels, GNSS constellation health and availability and level of multipath including obstructions such as large trees and buildings.
• Specifications subject to change without notice.

Positioning Rates: 1 Hz, 2 Hz, 10 Hz, and 20 Hz
• GPS: L1 C/A, L2C, L5
• GLONASS: L1C/A, L1P, L2C/A, L2P, L3
• Galileo: E1, E5a, E5b, E5aIBOC
• Beidou: B1, B2, B3
• CenterPoint RTX
• QZSS, WAAS, EGNOS, GAGAN, MSAS
• Positioning Rates: 1 Hz. 2 Hz. 5 Hz. 10 Hz. and 20 Hz

ENVIRONMENTAL
Operating5 .................................................. −40 °C to +65 °C
Storage ..................................................... −40 °C to +85 °C
Humidity .................................................. MIL-STD 810F, Method 507.4
Waterproof ............................................. IP67 for submersion to depth of 1 m, dustproof
Power consumption .................................. 1.65 kg receiver with internal battery and radio

Electrical
Power input on the 26-pin D-sub connector is optimized for Trimble® Lithium-ion battery input with a cut-off threshold of 11.5 V

Power consumption ................................. 6.0 W in rover mode with internal receive radio

Operation Time on Internal Battery
Rover .......................................................... 13 hours; varies with temperature
Base station .................................................. Approximately 22 hours; varies with temperature

INPUT/OUTPUT FORMATS
• Correction Formats:
  – CMR, CMR+, CMRx, RTCM 2.1, RTCM 2.2, RTCM 3.3, RTCM 3.1, RTCM 3.2
• Observables:
  – RT17, RT27, RTCM 3.x, BIXEN
• Position/Status I/O: 
  – NMEA-0183 v2.30, GRSF
• 1 PPS output

COMMUNICATION AND DATA STORAGE
Lemo (Serial) ........................................... 7-pin 05 Lemo, Serial 1, 3-wire RS-232
Modem (Serial) ........................................... 26-pin D-sub Serial 2, Full 9-pin RS232, using adaptor cable
Integrated radios (optional) .................. Fully-integrated, fully-sealed
Integrated radios (optional) .................. Fully-integrated, 2.4 GHz Bluetooth technology
Internally controlled 450 MHz (UHF) Tx/Rx
External GSM/GPRS, cell phone support ........................................... For Internet-based correction streams
Receiver position update rate ........................................... 1 Hz. 2 Hz. 5 Hz. 10 Hz. and 20 Hz positioning
Capacity .................................................... 52 MB
USB flash drive or external hard drive

CERTIFICATIONS
IEC 60950-1 (Electrical Safety): 
FCC OET Bulletin 65 (RF Exposure Safety); FCC Part 15.247, Part 90; PTCRB (AT&T);
RoHS, WEEE, Australia & New Zealand

Europe
RCM; Japan Radio and Telecommunications
Bluetooth SIG; ICES-003 (Class B);
Part 15.247 , Part 90; PTCRB (AT&T);
Safe; EEC 1999/5/CE, Class B,
Telecommunications
Radio Equipment Directive 2014/53/EU,
Bluetooth SIG; IC-ES-003 (Class B);
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Contact your local Trimble Authorized Distribution Partner for more information.

Hardware
Physical
Keyboard and display ............... Vacuum fluorescent display 16 characters by 2 rows.

Dimensions (L x W x D) ............... 24 cm x 12 cm x 5 cm

Weight ........................................... 1.65 kg receiver with internal battery and radio

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