**TRIMBLE R10 GNSS SYSTEM**

### A NEW LEVEL OF PRODUCTIVITY
Collect more accurate data faster and easier – no matter what the job or the environment. The Trimble® R10 GNSS System. Built with powerful technologies like Trimble HD-GNSS, Trimble SurePoint™, Trimble CenterPoint™ RTX, and Trimble xFill™, integrated into a sleek design, this unique system provides Surveyors with a powerful way to increase productivity in every job, every day.

### TRIMBLE HD-GNSS PROCESSING ENGINE
The next generation of core positioning technology
The advanced Trimble HD-GNSS processing engine provides markedly reduced convergence times as well as high position and precision reliability while reducing measurement occupation time. Transcending traditional fixed/float techniques, it provides a more accurate assessment of error estimates than traditional GNSS technology.

### TRIMBLE SUREPOINT
Faster measurements, increased accuracy, and greater quality control with electronic bubble
With this system, surveyors don’t have to switch focus from the controller screen to the pole bubble to check that the pole is plumb. The Trimble controller displays an electronic bubble.

### Full Tilt Compensation
The system constantly monitors pole tilt and compensates while the point is automatically or manually measured. If a point is measured with pole tilt beyond a user-defined setting, Trimble Access™ software will give an alert and prompt the surveyor to accept or discard the point. Trimble SurePoint even uses the pole tilt as a controlling input. After a point is measured, tilting the pole causes the system to automatically prepare to measure the next point.

### Data Traceability
As insurance that all of your data is traceable, the Trimble R10 can record the pole tilt information for measured points. These records include tilt and compass data for 100% data traceability.

### TRIMBLE 360 RECEIVER
Future Proof Your Investment
Powerful Trimble 360 receiver technology in the Trimble R10 supports signals from all existing and planned GNSS constellations and augmentation systems. With two integrated Trimble MaxwellTM 6 chips, the Trimble R10 offers an unparalleled 440 GNSS channels. Trimble delivers business confidence with a sound GNSS investment for today and long into the future.

### TRIMBLE CENTERPOINT RTX
RTK Level Precision Anywhere
Trimble CenterPoint RTX delivers RTK level precision anywhere in the world without the use of a local base station or Trimble VRS™ Network. 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 base stations or maintain connection to a cellular network.

### TRIMBLE XFILL
More continuous surveying, less downtime
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. Extend xFill indefinitely with a subscription to CenterPoint RTX.

### ERGONOMICALLY DESIGNED
As the smallest and lightest integrated receiver in its class, the Trimble R10 is ergonomically designed to provide thesurveyor with effortless handling and operation. Designed for ease of use, the progressive design incorporates a more stable center of mass at the top of the range pole, while its sleeker, taller profile provides the durability and reliability for which Trimble is known.

The Trimble R10 receiver incorporates a quick release adaptor for simple and safe removal of the receiver from the range pole. Additionally the quick release adaptor ensures a solid, stable connection between the range pole and receiver.

### AN INTELLIGENT SOLUTION
A smart lithium-ion battery inside the Trimble R10 system delivers extended battery life and more reliable power. A built-in LED battery status indicator allows the user to quickly check remaining battery life.

### Advanced Communication Capabilities
The Trimble R10 system provides a number of communications options to support any workflow.
The latest mobile phone technology is built in to receive VRS corrections and connect to the Internet from the field. Access Trimble Connected Community to send or receive documents while away from the office. Using WiFi, easily connect to the Trimble R10 system using a laptop or smartphone to configure the receiver without a Trimble controller.

The Complete Solution: Trimble hardware and software
Bring the power and speed of the Trimble R10 system together with trusted Trimble software solutions, including Trimble Access and Trimble Business Center™.
Trimble Access field software provides specialized and customized workflows to make surveying tasks quicker and easier while enabling teams to communicate vital information between field and office in real time. Back in the office, users can seamlessly process data with Trimble Business Center software.

The R10 GNSS system, a new era of surveying productivity beyond GNSS for professional surveyors.
TRIMBLE R10 GNSS SYSTEM

PERFORMANCE SPECIFICATIONS

Measurements:
- Measuring points sooner and faster with Trimble HD-GNSS technology
- Increased measurement productivity and traceability with Trimble SurePoint electronic tilt compensation
- Worldwide centimeter level positioning using Trimble CenterPoint RTX satellite delivered corrections
- Reduced downtime due to loss of radio signal with Trimble xFill technology
- Advanced Trimble Maxwell 6 Custom Survey GNSS chips with 440 channels
- Future-proof your investment with Trimble 360 GNSS tracking

Satellite signals tracked simultaneously:
- GPS L1C/A, L1C, L2C, L2E, L5
- GLONASS L1/C/A, L1P, L2C/A, L2P, L3
- SBAS: L1/C/A, L5 (for SBAS satellites that support L5)
- Galileo: E1a, E5a, E5b
- BeiDou (COMPASS): B1, B2
- CenterPoint RTX, OmniSTAR HP, XP, G2, VBS positioning
- QZSS, VAAAS, EGNOS, GAGAN

RTK start-up time for specified precisions:
- 2 to 8 seconds

Trimble xFill5

Tracking GPS, GLONASS and SBAS satellites.

RTK refers to the last reported precision before the correction source was lost and xFill started.

May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry. Initialization typically <5 m 3DRMS

Network RTK PPM values are referenced to the closest physical base station.

Future-proof your investment with Trimble 360 GNSS tracking

High-Precision Static
- Horizontal: 3 mm ± 0.1 ppm RMS
- Vertical: 3.5 mm ± 0.4 ppm RMS

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

Real Time Kinematic surveying

Single Baseline <30 km
- Horizontal: 0.25 m ± 1 ppm RMS
- Vertical: 0.50 m ± 1 ppm RMS

SBAS differential positioning accuracy:
- Typically <3 m 3DRMS

Context

High-Precision Static
- Horizontal: 3 mm ± 0.1 ppm RMS
- Vertical: 3.5 mm ± 0.4 ppm RMS

Total station for RTK positioning accuracy:
- Typically <5 m 3DRMS

Network RTK
- Horizontal: 8 mm ± 0.5 ppm RMS
- Vertical: 15 mm ± 0.5 ppm RMS

RTK start-up time for specified precisions:
- 30 minutes or less

Trimble CenterPoint RTX
- Horizontal: 4 cm
- Vertical: 9 cm

RTK convergence time for specified precisions:
- 30 minutes or less

RTK QuickStart convergence time for specified precisions:
- 5 minutes or less

Trimble xFill:
- RTK+: 10 mm/minute RMS
- RTK+ 20 mm/minute RMS

Specifications subject to change without notice.

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Hardware

Physical
- Dimensions (WxH) ........................................ 11.9 cm x 13.6 cm (4.6 in x 5.4 in)
- Weight ......................................................... 1.12 kg (2.49 lb) with internal battery, internal radio with UHF antenna, 3.57 kg (7.86 lb) items above plus range pole, controller & bracket
- Temperature .............................................. -40°C to +65°C (40°F to +149°F)
- Humidity .................................................... 100%, condensing

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

Shock and vibration ...................................... Non-operating: Designed to survive a 2 m (6.6 ft) pole drop onto concrete. Operating: to 40 G, 10 msec, sawtooth

Power:
- 11 to 24 V DC external power input with over-voltage protection on Port 1 and Port 2 (7-pin Lemo)
- Rechargeable, removable 7.4 V, 3.7 Ah Lithium-ion smart battery with LED status indicators
- Power consumption is 5.1 W in RTK rover mode with internal radio
- Operating times on internal battery:
  - 450 MHz and 900 MHz receive only on transmit........................................ 5.5 hours
  - 450 MHz and 900 MHz receive/transmit on transmit (0.5 W) .......................... 4.5 hours
  - 450 MHz receive/transmit on transmit (2.0 W) ............................................ 3.7 hours
  - Cellular receive option ................................................................. 5.0 hours

COMUNICATIONS AND DATA STORAGE
- Serial: 3-wire serial (7-pin Lemo)
- USB v2.0: supports data download and high speed communications
- Radios: Modern: 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: 2 W
  - Range: 3–5 km typical / 10 km optimal
- Cellular: integrated, 3.5 G modern, HSDPA 7.2 Mbps (download), GPRS multi-slot class 12, EDGE multi-slot class 12, UMTS/HSDPA (WCDMA/FDD)
  - 850/1900/2100 MHz, Quad-band EGSM 850/900/1800/1900 MHz, GSM CSD, 3GPP LTE
- Bluetooth: fully integrated, fully sealed 2.4 GHz communications port

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

Supported Trimble Controllers:
- Trimble TSC3, Trimble Slate, Trimble CU, Trimble Tablet Rugged PC

CERTIFICATIONS
- FCC Part 15 (Class B device), 22, 24; R&TTE CE Mark; C-Tick, A-Tick; PTCRB; WFA
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