



### KEY FEATURES

Accurate, reliable and rugged system

Built on proven, dependable Trimble technology

Scalable from postprocessing to VRS to multi-constellation RTK configurations

Cable-free for convenience

The ideal solution for surveyors that need proven, straightforward GPS technology that performs under the most rigorous conditions, the Trimble R4 with Trimble Digital Fieldbook software delivers when every point counts.

Surveyors around the world depend on Trimble to deliver every time. With over 25 years of GNSS leadership, Trimble GNSS solutions are established in the industry to provide the characteristics that surveyors appreciate every day on the job – accuracy, stability, and rugged dependability.

#### A COMPLETE GPS SYSTEM

Lightweight, ergonomic and cable-free, the Trimble® R4 GPS system with Trimble Digital Fieldbook™ software provides the ease of use of an integrated receiver with the rugged reliability of the popular Trimble Recon® controller. Couple the easy-to-learn Trimble Digital Fieldbook with Trimble's powerful GNSS and optical data processing and analysis software, Trimble Business Center (optional) to complete the system. Founded on proven Trimble GPS technology, the Trimble R4 RTK system comes standard with GPS L1 and L2 with an upgrade available to GLONASS.

The dual-frequency antenna enhances tracking capacity and delivers sub-millimeter phase center stability, for precise results in demanding conditions. Internally powered with removable batteries, this system provides 11 hours of uninterrupted field operation.

#### VRS ROVER, RTK ROVER OR FIELD BASE STATION

Use as a lightweight rover for static surveying or RTK. The Trimble R4 with Trimble Digital Fieldbook is also completely compatible with Trimble VRS™ solutions, creating an attractive VRS rover for use inside real-time networks. With built-in 450 MHz receive radio or an external cellular modem, this system can be adapted to meet a variety of needs. As a base station, The Trimble R4 with the integrated UHF transmit option is rugged, weather-resistant and compatible with a range of radio solutions.

#### TRIMBLE SOLUTIONS FOR BROADER HORIZONS

Designed to bring the Trimble experience to more surveyors, the Trimble R4 with Trimble Digital Fieldbook system helps shorten training time and simplify data collection. As your business needs grow and change, leverage the workflows and software knowledge your crew has developed with Trimble Digital Fieldbook software as you move up to the advanced capabilities of Trimble Survey Controller™ software.

With Trimble's extensive global network of highly qualified training, support and service teams, you can be certain that Trimble and our partners will be there for you. Trimble solutions make surveying easy today and position your team for a future of growth.



# TRIMBLE R4 GPS SYSTEM

## PERFORMANCE SPECIFICATIONS

### measurements

- Trimble R-Track™ technology
- Advanced Trimble Maxwell™ 5 Custom Survey GNSS chip with 72 channels
- 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
- Satellite signals tracked simultaneously:
  - GPS: L1C/A, L2E (Trimble method for tracking L2P)
  - GLONASS<sup>1</sup>: L1C/A, L1P, L2C/A (GLONASS M only), L2P
  - SBAS: L1C/A

### Code differential GNSS 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 GNSS 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 <25 seconds  
Initialization reliability<sup>5</sup> . . . . . typically >99 %

## HARDWARE

### Physical

Dimensions (W×H) . . . . . 19 cm × 10.9 cm (7.5 in x 4.3 in), including connectors  
Weight . . . . . 1.34 kg (2.95 lb) with internal battery, internal radio, standard UHF antenna  
3.70 kg (8.16 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)

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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

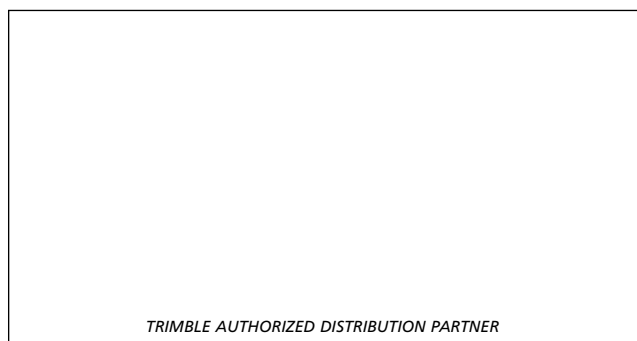
- Power 11 V DC to 28 V DC external power input with over-voltage protection on Port 1 (7-pin Lemo)
- Rechargeable, removable 7.4 V, 2.4 Ah Lithium-Ion battery in internal battery compartment. Power consumption is 3.2 W, in RTK rover mode with internal radio. Operating times on internal battery:
  - 450 MHz receive only option . . . . . 5.8 hours<sup>8</sup>
  - 450 MHz receive/transmit option . . . . . 3.7 hours<sup>9</sup>
- 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 450 MHz receiver/transmitter option:
  - Transmit power: 0.5 W
  - Range<sup>7</sup>: 3–5 km typical / 10 km optimal
- Fully integrated, fully sealed 2.4 GHz communications port (Bluetooth®)<sup>10</sup>
- External cellphone support for GSM/GPRS/3G modems for RTK and VRS operations
- Data storage on 11 MB internal memory: 302 hours of raw observables, based on recording every 15 seconds from an average of 6 satellites
- 1 Hz, 2 Hz, 5 Hz, and 10 Hz positioning
- CMR+, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1 Input and Output
- 16 NMEA outputs, GSOE, RT17 and RT27 outputs. Supports BINEX and smoothed carrier

1 Optional upgrade.  
2 Accuracy and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended survey practices.  
3 Depends on WAAS/EGNOS system performance.  
4 May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry.  
5 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.  
6 Receiver will operate normally to –40 °C, internal batteries are rated to –20 °C.  
7 Varies with terrain and operating conditions.  
8 Varies with temperature.  
9 Varies with temperature and wireless data rate.  
10 Bluetooth type approvals are country specific.  
Contact your local Trimble Authorized Distribution Partner for more information.

Specifications subject to change without notice.



TRIMBLE AUTHORIZED DISTRIBUTION PARTNER

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