

### KEY FEATURES

- Flexible, integrated system design
- Scalable to add capability as your business needs change
- Industry-leading GPS positioning including L2C
- Trimble Integrated Surveying™ Ready



Be ready for anything with the Trimble R6 GPS receiver system. The Trimble R6 combines advanced GNSS technology with the scalability and flexibility to adapt and grow as your business needs change.

With integrated communication choices, flexible data collector solutions, a selection of field software, and GNSS upgrade options, you are ready for how you want to work today, and positioned for the changes tomorrow might bring.

#### FLEXIBLE, INTEGRATED SYSTEM DESIGN

The receiver itself combines a highly integrated and advanced GPS receiver, precision antenna, long-life battery and integrated communications in a rugged and reliable body. Choose the type of communications to best fit how your crews work.

Integrated cellular modem streamlines operation inside VRS networks. Integrated UHF RX or RX/TX streamlines RTK base/rover applications.

For additional constellation support, you can also choose to add GLONASS support to the GPS L1, L2 and L2C signals that are standard in the Trimble R6.

#### SCALABILITY TO MEET YOUR CHANGING NEEDS

With Trimble solutions like the Trimble R6, your business has the flexibility to choose the capabilities you need today and the scalability to add more functionality as your business needs change tomorrow.

- **Trimble TSC2 or Trimble CU Controller**  
Using either a handheld or detachable controller unit, rover systems based on the Trimble R6 are lightweight, flexible, and cable free. The Trimble TSC2® offers a full keyboard and expansion capabilities for versatility and integration with Trimble optical instruments.
- **Trimble Field Software**  
Trimble field software puts the power to manage seamless data flow, field efficiency, and true Integrated Surveying™ in your hands. Innovative, Trimble Access software delivers comprehensive control of any surveying situation. Optional Streamlined Workflows are also available to deliver fast results in specialized tasks.

- **Trimble Business Center Office Software**  
Easily transfer GNSS field data into the office for data processing. Harness the power of Trimble Business Center's network adjustment, combining your GPS and optical measurements together to get the best overall results.

#### GNSS TECHNOLOGY THAT MAKES A DIFFERENCE

The Trimble R6 receiver delivers the accuracy and reliability required for precision surveying with superior tracking and RTK performance. With GPS L2C included, and the GLONASS option, you can track more satellites and measure more successfully in challenging environments. L2C provides more than just additional signals. The advanced signal structure provides better strength for more reliable satellite tracking.

Reduce downtime caused by loss of lock and the time it takes to re-initialize with advanced tracking and positioning technology from Trimble.

#### INTEGRATED SURVEYING™ FOR A TOTAL SOLUTION

Bring the power of both GNSS and Optical technologies to every job site. With Trimble Integrated Surveying, your Trimble Controller acts as a common point of integration so all data is collected on a single job file.

With the Trimble I.S. Rover, you can take advantage of the high productivity of GPS data capture when you have good sky visibility and seamlessly switch over to using Trimble robotic total stations for precise measurements in hard to reach locations.

Simply add a prism to the rover pole and connect with a robotic optical system. This integrated solution maximizes the best of both surveying techniques for even greater field efficiency.

# TRIMBLE R6 GPS RECEIVER

## 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, L2C, L2E (Trimble method for tracking L2P)
  - GLONASS: L1C/A, L1P, L2C/A (GLONASS M only), L2P
  - SBAS: L1C/A

### Code differential GNSS positioning<sup>1</sup>

Horizontal . . . . . 0.25 m + 1 ppm RMS  
Vertical . . . . . 0.50 m + 1 ppm RMS  
WAAS differential positioning accuracy<sup>2</sup> . . . . . typically <5 m 3DRMS

### Static and FastStatic GNSS surveying<sup>1</sup>

Horizontal . . . . . 3 mm + 0.1 ppm RMS  
Vertical . . . . . 3.5 mm + 0.4 ppm RMS

### Kinematic surveying<sup>1</sup>

Horizontal . . . . . 10 mm + 1 ppm RMS  
Vertical . . . . . 20 mm + 1 ppm RMS  
Initialization time<sup>3</sup> . . . . . typically <25 seconds  
Initialization reliability<sup>4</sup> . . . . . typically >99.9%

## HARDWARE

### Physical

Dimensions (WxH) . . . . . 19 cm x 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>5</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)

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 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>7</sup>
  - 450 MHz receive/transmit option . . . . . 3.7 hours<sup>8</sup>
  - GSM/GPRS . . . . . 4.1 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>6</sup>: 3–5 km typical / 10 km optimal
- Fully integrated, fully sealed internal GSM/GPRS option<sup>7</sup>
- Fully integrated, fully sealed 2.4 GHz communications port (Bluetooth®)<sup>9</sup>
- External cellphone support for GSM/GPRS/CDPD 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, GSOF, RT17 and RT27 outputs. Supports BINEX and smoothed carrier

1 Accuracy and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended survey practices.

2 Depends on WAAS/EGNOS system performance.

3 May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry.

4 May be affected by atmospheric conditions, signal multipath, 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.

6 Varies with terrain and operating conditions.

7 Varies with temperature.

8 Varies with temperature and wireless data rate.

9 Bluetooth type approvals are country specific.

Contact your local Trimble Authorized Distribution Partner for more information.

Specifications subject to change without notice.

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