Trimble R2

GNSS RECEIVER

VERSATILITY IN THE FIELD. FLEXIBILITY FOR YOUR WORKFLOW.

Work the way you want with the Trimble® R2 GNSS receiver. Using trusted Trimble technology the R2 receiver gives you the freedom to configure a solution by simply selecting the accuracy and GNSS performance to suit your application. Capable of achieving submeter to centimeter level positioning accuracy the Trimble R2 is the answer to keep you working productively in a wide range of geospatial applications, no matter what your workflow requirements are.

Whether you are performing pole-based stakeouts, surveying on roads, in mines or on construction sites, locating buried assets such as pipes and cables, capturing GIS field assets, or carrying out precision survey measurements, the versatile Trimble R2 is purpose-built for surveyors and mapping and GIS professionals alike.

Simple to setup and easy-to-use, the Trimble R2 pairs with any Trimble handheld, Trimble Access™ controller, or consumer-grade smart device across a variety of operating systems and platforms, to deliver reliable, high quality real-time data every time.

A Simple, Rugged System for Everyday Needs

Built to withstand the rigors in the field, the rugged IP65-rated Trimble R2 receiver will work as hard as you do in tough outdoor conditions. Its one-button start up and compact, streamlined form factor makes it fast to set up and can be operated either mounted on a pole, on a backpack or on a vehicle. The field-swappable battery means all day productivity with no interruptions, keeping you focused on the job at hand.

Technology to Keep you Productive

The Trimble R2 is capable of tracking the full range of GNSS satellite constellations and augmentation systems, and comes with an integrated Trimble Maxwell™ 6 chip and 220 channels to provide you with reliable accuracy and positioning performance. Achieve higher accuracy in real-time with the flexibility to choose correction sources from traditional RTK, VRS networks, to Trimble RTX™ correction services delivered by both satellite and Internet/cellular.

Trimble has evolved its Floodlight™ satellite shadow reduction technology to ensure the R2 receiver is able to provide reliable, accurate data even in difficult GNSS environments. Equipped with this advanced GNSS technology, you can achieve remarkable improvements to position availability and accuracy when heavy overhead cover, such as tree canopy and buildings, obstruct satellite signals, making even tough GIS workflows easier.

A Complete Solution

Connect the Trimble R2 receiver to your preferred controller or mobile device via a wireless Bluetooth® connection and add proven Trimble field and office software workflows to complete the solution. Data can be collected with the customizable workflows of Trimble field software such as Trimble Access or Trimble TerraFlex™ software that allow your teams to easily collect and communicate information between the field and office in real-time. Collected data can then be processed with Trimble office software, including Trimble Business Center or TerraFlex, providing you with data rich, high-quality deliverables for your organization.

For a simple, configurable, field-to-office solution, the innovative and flexible Trimble R2 GNSS receiver enables you to work accurately and productively your way.

Key Features

- A professional solution for geospatial applications ranging from sub-meter to centimeter accuracies to support any GIS or survey-grade workflow
- Easily collect data by pairing with devices such as smartphones, tablets or Trimble handhelds using Trimble Survey and GIS software
- Fast to setup, easy to use, keeping you productive and focused at your task at hand
- Supports multiple satellite constellations and correction sources for accurate data at any location
- Trimble Maxwell 6 chip with 220 channels and leading GNSS technology maximizes data quality

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CONFIGURATION OPTION

Type . . . . . Smart antenna
Base operation . . . . . Yes. Logging only.
Rover operation. . . . . Yes
Rover position update rate. . . . . 1 Hz, 2 Hz, 5 Hz
Rover operation within a VRS Now™ network . . . . . Yes

MEASUREMENTS

- Advanced Trimble Maxwell 6 custom GNSS chip
- High-precision multiple correlator for L1/L2 pseudo-range measurements
- Unfiltered, unsmoothed pseudo-range measurements data for low noise, low multipath error, low-time domain correlation, and high-dynamic response
- Very low noise carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Signal-to-noise ratios reported in dB-Hz
- Trimble EVEREST™ multipath signal rejection
- Proven Trimble low elevation tracking technology
- 220-channel GNSS
- 4-channel SBAS (WAAS/EGNOS/MSAS/GAGAN)

POSITIONING PERFORMANCE

SBAS (WAAS/EGNOS/MSAS/GAGAN) Positioning[1]

Horizontal accuracy. . . . . ±0.50 m (1.6 ft)
Vertical accuracy . . . . . ±0.85 m (2.8 ft)

Code Differential GPS Positioning[2]

Correction type. . . . . DGPS RTCM 2.x
Correction source. . . . . IBSS
Horizontal accuracy. . . . . ±(0.25 m + 1 ppm) RMS ±(0.8 ft + 1 ppm)
Vertical accuracy . . . . . ±(0.50 m + 1 ppm) RMS ±(1.6 ft + 1 ppm)

Static GNSS Positioning

Static and Fast Static
Horizontal . . . . . 3 mm + 0.5 ppm RMS
Vertical. . . . . 5 mm + 0.5 ppm RMS

Post-Processed Kinematic (PPK)[2]

Horizontal accuracy. . . . . 10 mm + 1 ppm RMS (0.033 ft + 1 ppm RMS)
Vertical accuracy . . . . . 20 mm + 1 ppm RMS (0.065 ft + 1 ppm RMS)

Trimble RTX Positioning[3, 4]

CenterPoint® RTX
Horizontal accuracy . . . . . 2 cm RMS
Vertical accuracy. . . . . 5 cm RMS
FieldPoint RTX™. . . . . 10 cm Horizontal RMS
RangePoint® RTX . . . . . 30 cm Horizontal RMS
ViewPoint RTX™. . . . . 50 cm Horizontal RMS

RTK Positioning[2]

Horizontal accuracy. . . . . 10 mm + 1 ppm RMS (0.033 ft + 1 ppm RMS)
Vertical accuracy . . . . . 20 mm + 1 ppm RMS (0.065 ft + 1 ppm RMS)

Network RTK[2]

Horizontal accuracy. . . . . 10 mm + 0.5 ppm RMS (0.033 ft + 0.5 ppm RMS)
Vertical accuracy . . . . . 20 mm + 0.5 ppm RMS (0.065 ft + 0.5 ppm RMS)

BATTERY AND POWER

Internal . . . . . Replaceable internal battery 7.4 V, 2800 mA-hr, Lithium-ion
External. . . . . Power input on the Mini-B USB connector, non-charging as per the USB standard 10 W USB adapter
Power consumption. . . . . 4.95 W (VFD 100%), 3.7 W (VFD 12.5%) at 18 V, in rover mode

Operation time on internal battery
Rover . . . . . 5 hours; varies with temperature

MECHANICAL

User interface . . . . . LED indicators for receiver status
On/Off key for one-button startup
Dimensions . . . . . 14.0 cm (5.5 in) diameter x 11.4 cm (4.5 in) height
Weight . . . . . 1.08 kg (2.38 lb) receiver only

ENVIRONMENTAL

Temperature
Operating . . . . . –20 °C to +55 °C (–4 °F to +131 °F)
Storage . . . . . –40 °C to +75 °C (–40 °F to +167 °F)
Humidity . . . . . 100% condensing
Waterproof IP65
Pole drop. . . . . Designed to survive a 2 m (6.6 ft) drop onto all faces and corners onto concrete (25C)

Shock
Non-operating . . . . . To 75 g, 6 ms, saw-tooth
Operating . . . . . To 40 g, 10 ms, saw-tooth 100 shock events at 2 Hz rate
Vibration . . . . . MIL-STD-810G (Operating), Method 514.6, Procedure I, Category 4, Figure 514.6C-1 (Common Carrier, US Highway Truck Vibration Exposure) Total Grms levels applied are 1.95 g

INTERNAL ANTENNA

Frequency Range . . . . . L1/L2 (GPS, GLONASS, Galileo, BeiDou, QZSS), MSS (RTX), L1 SBAS

COMMUNICATIONS

USB . . . . . 1 USB 2.0 (Type B) device
Wi-Fi. . . . . Simultaneous client and access point (AP) modes
Bluetooth wireless technology . . . . . Fully-integrated, fully-sealed 2.4 GHz Bluetooth module[5]
Network protocols . . . . . HTTP (web browser GUI); NTP Server, TCP/IP or UDP; NTRIP v1 and v2, Client mode; mDNS/uPnP service discovery; dynamic DNS; eMail alerts; network link to Google Earth; PPP and PPPoE
Supported data formats
Correction inputs . . . . CMR, CMR+™, CMRx, RTCM 2.x, RTCM 3.0, RTCM 3.1, RTCM 3.2
Correction outputs. . . . . None
Data outputs . . . . . NMEA, GSOF
External GSM/GPRS modem, cell phone support
Integrated receiving radio (optional). . . . . Integrated 450 MHz UHF Radio
Channel spacing (450 MHz) . . . . . 12.5 and 25 kHz
Sensitivity (450 MHz) . . . . . -103 dBm, GMSK 9600 baud 25kHz channel spacing
Data storage . . . . . 48 MB internal memory[6]

CERTIFICATIONS

IEC 60950-1 (Electrical Safety); FCC OET Bulletin 65 (RF Exposure Safety); FCC Part 15.105 (Class B), Part 15.247, Part 90; Bluetooth SIG; IC ES-003 (Class B); Radio Equipment Directive 2014/53/EU, RoHS, WEEE; Australia & New Zealand RCM; Japan Radio and Telecom MIC

"Made for iPhone" and "Made for iPad" mean that an electronic accessory has been designed to connect specifically to iPhone or iPad respectively, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPhone or iPad may affect wireless performance.

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1 Depends on SBAS system performance.
2 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, interference and atmospheric conditions. Always follow recommended practices.
3 CenterPoint RTX accuracy is typically achieved within 5 minutes in select regions, and within 30 minutes worldwide. FieldPoint RTX accuracy is typically achieved within 5 minutes in select regions, and within 15 minutes worldwide. RangePoint RTX and ViewPoint RTX accuracy is typically achieved within 5 minutes worldwide.
4 Receiver accuracy and convergence time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.
5 Bluetooth type approvals are country-specific. For more information, contact your local Trimble office or representative.
6 The actual available capacity of the internal memory is less than the specified capacity because the firmware occupies part of the memory. The available capacity may change when you upgrade receiver firmware.

Specifications subject to change without notice.

Contact your local Trimble Authorized Distribution Partner for more information

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