

Trimble R580

GNSS SYSTEM

The Trimble® R580 GNSS system is a dependable survey-grade integrated receiver that delivers productivity and reliable accuracy. With advanced Trimble ProPoint® technology, the R580 boosts productivity and provides access to precise positioning in challenging GNSS environments. The Trimble R580 is a go-to solution for dependable survey-level accuracy in the field.



Performance specifications

GNSS TECHNOLOGY

- Constellation agnostic, flexible signal tracking and improved positioning¹ in challenging environments with Trimble ProPoint GNSS technology
- Trimble CenterPoint® RTX or Trimble FieldPoint RTX correction services are activated and ready to use for the initial 12 months. The subscription will either be CenterPoint RTX or FieldPoint RTX, based on the receiver configuration. Learn more at rtx.trimble.com
- Advanced Trimble Maxwell™ 7 technology
- Trimble EVEREST™ Plus multipath signal rejection
- Spectrum Analyzer to troubleshoot GNSS jamming
- Anti-spoofing capabilities
- Trimble IonoGuard™ technology for mitigation of ionospheric GNSS signal disruptions
- Supports Trimble Internet Base Station Service (IBSS) for streaming RTK corrections using Trimble Access™ 2023.10 or later
- Japanese LTE Filtering below 1510 MHz allows antennas to be used 100 m away from Japanese LTE cell tower
- Iridium Filtering above 1616 MHz allows the antenna to be used 20 m away from Iridium transfer

SATELLITE TRACKING

- GPS: L1C, L1 C/A, L2E (L2P), L2C, L5
- GLONASS: L1C/A, L1P, L2C/A, L2P, L3
- Galileo: E1, E5A, E5B, E5AltBOC
- BeiDou: B1, B2, B1C, B2A, B2B
- QZSS: L1 C/A, L1C, L2C, L5
- IRNSS: L5
- SBAS: L1 C/A (EGNOS/MSAS GAGAN/SDCM), L1 C/A and L5 (WAAS)
- L-band: Trimble RTX® Corrections



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STATIC GNSS SURVEYING

Centimeter level accuracy	Suitable for traditional surveying workflows and high-precision GIS mapping & asset data capture
Decimeter / Sub-meter level accuracy	Suitable for everyday GIS mapping & asset data capture

Positioning performance

STATIC GNSS SURVEYING

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)

RTK Positioning²	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 RTK²	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)

CODE DIFFERENTIAL GNSS POSITIONING

Horizontal	0.25 m + 1 ppm RMS
Vertical	0.50 m + 1 ppm RMS
SBAS ³	typically < 5 m 3DRMS

POST-PROCESSED KINEMATIC²

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

TRIMBLE RTX CORRECTION SERVICES

CenterPoint RTX⁴	Horizontal	2 cm RMS
	Vertical	3 cm RMS
	SBAS ³	< 1 min
FieldPoint RTX	Horizontal	10 cm RMS

TRIMBLE XFILL^{®5}

Horizontal	RTK ⁶ + 10 mm/minute RMS
Vertical	RTK ⁶ + 20 mm/minute RMS

Hardware

BATTERY AND POWER

Internal	Rechargeable, removable Lithium-ion battery in internal battery compartment	
External	Power input on the Mini-B USB connector, not for charging the internal GNSS receiver battery	
Power consumption	2.75 W	
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



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ENVIRONMENTAL

Temperature	Operating ⁷	-20 °C to +55 °C (-4 °F to +131 °F)
	Storage	-40 °C to +75 °C (-40 °F to +167 °F)
Humidity	100% condensing	
Ingress protection	IP65	
Pole drop	Designed to survive a 2 m (6.6 ft) drop onto all faces and corners onto concrete (25 °C (77 °F))	
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/L5 GPS/GLONASS/QZSS, BeiDou, Galileo, NavIC L5, SBAS, and Triple Frequency (Full GNSS)
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Communications and data storage

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 ⁸
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+™, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 input and output
Data outputs NMEA, GSOF	24 NMEA, GSOF, RT17, and RT27
Data storage	256 MB internal memory ⁹
External communications	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, 25 kHz channel spacing
Positioning Rates	1 Hz, 2 Hz, 5 Hz, 10 Hz

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Certifications

FCC Part 15 Subpart B (Class B Device), Part 15.247, Part 90
Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada
Canadian RSS-247
Cet appareil est conforme à la norme CNR-247
IEC 62368-1, 3rd Edition, IEC 62311, EN 38.3, UL 2054
RCM mark
CE mark per RED 2014/53/EU, EN 303-413, EN 300-328, EN 300-113, EN 301-489
Japan MIC
UKCA mark per S.I. 2016 No. 1101, S.I. 2016 No. 1091, S.I. 2017 No. 1206
RoHS compliance
WEEE compliance

Trimble Protected protection plans

Add a Trimble Protected protection plan for worry-free ownership over and above the standard Trimble product warranty. Added enhancements include coverage for wear & tear, environmental damage, and more. Accidental damage is covered with Premium plans, available only at point-of-sale in selected regions. For details, visit trimbleprotected.com or contact a local Trimble distributor.

- 1 Challenging GNSS environments are locations where the receiver has sufficient satellite availability to achieve minimum accuracy requirements, but where the signal may be partly obstructed by and/or reflected off of trees, buildings, and other objects. Actual results may vary based on user's geographic location and atmospheric activity, scintillation levels, GNSS constellation health and availability, and level of multipath and signal occlusion.
- 2 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, interference and atmospheric conditions. Always follow recommended practices. Specified R580 carrier (post-processed) accuracy can normally be achieved for baseline lengths of 100 km or less. Carrier postprocessing accuracy requires at least 2 minutes of carrier data.
- 3 Depends on SBAS system performance.
- 4 RMS performance based on repeatable in field measurements. Achievable accuracy and initialization time may vary based on type and capability of receiver and antenna, user's geographic location and atmospheric activity, scintillation levels, GNSS constellation health and availability and level of multipath including obstructions such as large trees and buildings.
- 5 Accuracies are dependent on GNSS satellite availability. Trimble xFill positioning without an xFill Premium subscription ends after 5 minutes of radio downtime. xFill Premium will continue beyond 5 minutes providing the solution has converged, with typical precisions not exceeding 3 cm horizontal, 7 cm vertical. xFill is not available in all regions, check with your local sales representative for more information.
- 6 RTK refers to the last reported precision before the correction source was lost and xFill started.
- 7 Receiver will operate normally to -20 °C, internal batteries are rated from -20 °C to +60 °C (ambient +50 °C).
- 8 Bluetooth type approvals are country specific.
- 9 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.

Made for

- iPhone 13
- iPhone 13 Pro
- iPhone 13 Pro Max
- iPad (9th generation)
- iPad Pro 12.9-in. (5th generation)
- iPad Pro 11-in. (3rd generation)



Use of the Made for Apple badge means that an accessory has been designed to connect specifically to the Apple product(s) identified in the badge 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.

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