

# Trimble R580

GNSS SYSTEM

A dependable integrated receiver to meet your everyday high accuracy needs.



## Proven reliable positioning

### Productive

Trimble® ProPoint® GNSS positioning engine for improved accuracy and productivity in challenging GNSS conditions.

Supports Trimble xFill® correction outage technology.

Supports Trimble CenterPoint® RTX corrections via satellite/IP.

### Precise

A professional solution for geospatial applications requiring high accuracy survey or GIS workflows.

Optimized for Trimble Access™ or Trimble TerraFlex® field software.

### Dependable

Trimble Maxwell™ 7 technology anti-spoofing capabilities.

Trimble EVEREST™ Plus multipath mitigation.

Receive-only 450 MHz UHF radio.

Compact, cable-free design with integrated GNSS antenna.

Military-grade rugged design, IP65 rating.



Find out more at:

[geospatial.trimble.com/R580](https://geospatial.trimble.com/R580)



## PERFORMANCE SPECIFICATIONS

## GNSS TECHNOLOGY

Constellation agnostic, flexible signal tracking and improved positioning <sup>1</sup> in challenging environments with Trimble ProPoint GNSS technology.
Trimble RTX <sup>®</sup> corrections
Advanced Trimble Maxwell 7 technology
Trimble EVEREST Plus multipath signal rejection
Spectrum Analyzer to troubleshoot GNSS jamming
Anti-Spoofing capabilities
Japanese LTE Filtering below 1510 MHz allows antennas to be used 100m away from Japanese LTE cell tower
Iridium Filtering above 1616 MHz allows the antenna to be used 20m 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 and 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

## 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 &lt; 30 km

RTK Positioning<sup>2</sup>

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<sup>2</sup>

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 <sup>3</sup>	typically <5 m 3DRMS

POST-PROCESSED KINEMATIC SURVEYING<sup>2</sup>

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 RTX<sup>4</sup>

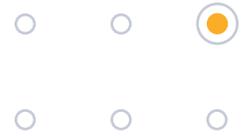
Horizontal	2 cm RMS
Vertical	5 cm RMS
RTX convergence time for specified precisions in Trimble RTX Fast regions	< 1 min

TRIMBLE XFILL<sup>5</sup>

Horizontal	RTK <sup>6</sup> + 10 mm/minute RMS
Vertical	RTK <sup>6</sup> + 20 mm/minute RMS

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## GNSS System



### 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

#### ENVIRONMENTAL

Temperature	Operating <sup>7</sup>	-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 (GPS, GLONASS, Galileo, BeiDou, QZSS), MSS (RTX), SBAS
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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 <sup>®</sup> wireless technology	Fully-integrated, fully-sealed 2.4 GHz Bluetooth module <sup>8</sup>
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
<b>Supported data formats</b>	
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, GSOFF	24 NMEA, GSOFF, RT17, and RT27
Data storage	48 MB internal memory <sup>9</sup>
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

### 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
EN 55032, EN 55035
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

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### 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](http://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 post-processing 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. 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.

Contact your local Trimble Authorized Distribution Partner for more information

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