

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.

Trimble IonoGuard™ technology for mitigation of ionospheric GNSS signal disruptions.

Supports Trimble xFill® correction outage technology.

Trimble CenterPoint® RTX corrections via satellite or internet.

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.

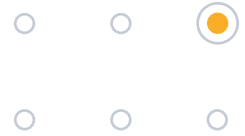
Military-grade rugged design, IP65 rating.



Find out more at:
geospatial.trimble.com/r580

Trimble R580

GNSS system



PERFORMANCE SPECIFICATIONS

GNSS TECHNOLOGY

Constellation agnostic, flexible signal tracking and improved positioning ¹ 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 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 [®]

CONFIGURATION OPTIONS

Centimeter level accuracy	Suitable for traditional surveying workflows and high-precision GIS mapping & asset data capture
Decimeter 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 KINEMATIC CENTIMETER / DECIMETER CONFIGURATIONS²

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
RTX convergence time for specified precisions in Trimble RTX Fast regions	< 1 min

FieldPoint RTX

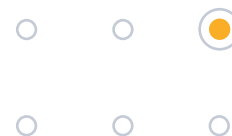
Horizontal	10 cm RMS
------------	-----------

TRIMBLE xFILL⁵

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

Trimble R580

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 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)	
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, GSOE	24 NMEA, GSOE, 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	
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	

Trimble R580

GNSS system



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 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.

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.

Specifications subject to change without notice.

FRONTIER PRECISION
GEOSPATIAL
 sales@frontierprecision.com
www.frontierprecision.com/solutions/geospatial

Contact your local Trimble Authorized Distribution Partner for more information.

NORTH AMERICA

Trimble Inc.
 10368 Westmoor Dr
 Westminster
 CO 80021
 USA

EUROPE

Trimble Services GmbH
 Am Prime Parc 11
 65479 Raunheim
 GERMANY

ASIA-PACIFIC

Trimble Navigation
 Singapore PTE Limited
 3 HarbourFront Place
 #13-02 HarbourFront Tower Two
 Singapore 099254
 SINGAPORE

