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

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SPEC SHEET

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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 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)
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 CONFIGURATIONS[2]		
	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[4]		
	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 xFILL[5]		
	Horizontal	RTK[6] + 10 mm/minute RMS
	Vertical	RTK[6] + 20 mm/minute RMS

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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, 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

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** 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)

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