

GPS Receiver Comparisons

	Trimble 6000 GeoXH/ Geo7X Centimeter	Trimble 6000 GeoXH	Trimble ProXRT	Trimble Pro6H	Trimble 6000 GeoXT	Trimble Pro6T	Trimble Geo7X	Trimble Geo 5	Trimble Juno 5
Post- Processed Accuracy	1-4 cm ¹¹ /1 cm + 1 ppm	10-50 cm ⁵ + 1 ppm ³	10-50 cm ⁵ + 1 ppm ³	10-50 cm ⁵ +1 ppm ³	50 cm + 1 ppm ³	50 cm + 1 ppm ³	50 cm + 1 ppm ³	Submeter	2-4 m ²
Real-Time DGPS Capable	SBAS ⁴ or External Source ⁶	SBAS ⁴ or External Source ⁶	SBAS ⁴ , External Source ⁶ , Omnistar [®]	SBAS ⁴ or External Source ⁶	SBAS ⁴ or External Source ⁶	SBAS ⁴ or External Source ⁶	SBAS ⁴ or External Source ⁶	SBAS ⁴ or External Source ⁶	SBAS ⁴
Real-time Accuracy	1-4 cm ¹¹ /1 cm + 1 ppm	10 cm -1 m	10 cm-1 m	10 cm-1 m	75 cm-1 m	75 cm to 1 m	75 cm-1 m	Submeter	2-4 m (1-2 m Enhanced version) ¹⁹
EVEREST™ multipath rejection technology	YES	YES	YES	YES	YES	YES	NO	NO	NO
GLONASS tracking	YES	YES	Optional	YES	Optional	Optional	YES	Optional	NO
Floodlight⁸ Technology	YES	YES	NO	YES	Optional	Optional	YES	NO	NO
H-Star™ Technology	YES	YES	YES	YES	NO	NO	Optional	NO	NO
SBAS+¹⁶	NO/ YES	NO	NO	NO	NO	NO	NO	YES ¹⁷	NO
Galileo & BeiDou tracking¹⁸	NO/ YES	NO	NO	NO	NO	NO	NO	NO	NO
Channels	220, GPS: L1C/A, L2C, L2E GLONASS: L1C/A, L1P, L2C/A, L2P	220, GPS: L1C/A, L2C, L2E GLONASS: L1C/A, L1P, L2C/A, L2P	220, GPS: L1 code and carrier, SBAS, Omnistar [®]	220, GPS: L1C/A, L2C, L2E GLONASS: L1C/A, L1P, L2C/A, L2P	220, GPS: L1 code and carrier, SBAS GLONASS: L1C/A, L1P	220, GPS: L1C/A GLONASS: L1C/A, L1P	220, GPS: L1 code and carrier, SBAS GLONASS: L1C/A, L1P	45, GPS: L1C/A GLONASS: .L1C/A, L1P	50, GPS: L1 code and carrier only
External Antenna	YES, Zephyr Model 2 recommended for highest accuracy	Optional	Standard	Optional	Optional	Optional	Optional	Optional	Optional
Internal Antenna	Standard	Standard	NO	Standard	Standard	Standard	Standard	Standard	Standard
Supported Data Collection Software	Terrasync Centimeter Edition v5.30 or later 13/ Terrasync Centimeter Edition v5.60 or later ¹³	TerraSync, ArcPad ¹⁴ , ArcPad+ GPScorrect or Positions, ArcGIS Mobile ¹⁴ , ArcGIS Mobile+Positions, Field Inspector, Solo Forest	TerraSync, ArcPad ¹⁴ , ArcPad+ GPScorrect or Positions, ArcGIS Mobile ¹⁴ , ArcGIS Mobile+Positions, Solo Forest	TerraSync, ArcPad ¹⁴ , ArcPad+ GPScorrect or Positions, ArcGIS Mobile ¹⁴ , ArcGIS Mobile+Positions, Solo Forest	TerraSync, ArcPad ¹⁴ , ArcPad+ GPScorrect or Positions, ArcGIS Mobile ¹⁴ , ArcGIS Mobile+Positions, Solo Forest	TerraSync, ArcPad ¹⁴ , ArcPad+ GPScorrect or Positions, ArcGIS Mobile ¹⁴ , ArcGIS Mobile+Positions, Solo Forest	TerraSync, ArcPad, ArcPad+ Positions, ArcGIS Mobile, ArcGIS Mobile+Positions, Solo Forest	TerraSync, ArcPad, ArcPad+ Positions, ArcGIS Mobile, ArcGIS Mobile+Positions, Solo Forest	Terrasync, ArcPad, ArcPad+Positions, ArcGIS Mobile (Android Only), ArcGIS Mobile+Positions
NMEA Output	YES (10cm accuracy)	Optional upgrade	Optional upgrade	Optional upgrade	Optional upgrade	Optional upgrade	YES	YES	YES
Price⁹	\$17,495-\$17,995 (Bundle Price) ¹²	\$7,695-\$8,500	\$5,995-\$7,900 ¹⁰	\$5,400-\$5,895 ¹⁰	\$4,995-\$6,500	\$2,700-\$4,495 ¹⁰	\$7,195-\$13,045	\$3,295-\$3,990	\$1,499-\$2,899
Receiver Type	Trimble Maxwell™ 6 Custom GPS Chip	Trimble Maxwell™ 6 Custom GPS Chip	Trimble Maxwell™ 6 Custom GPS Chip	Trimble Maxwell™ 6 Custom GPS Chip	Trimble Maxwell™ 6 Custom GPS Chip	Trimble Maxwell™ 6 Custom GPS Chip	Trimble Maxwell™ 6 Custom GPS Chip	Trimble Receiver Chipset	U-Blox NEO 6T (Regular) U-Blox NEO-7P (Enhanced GPS)

Continued

	Trimble Juno 3 and Nomad 900	Trimble Ranger 3	Trimble Yuma 2	Juniper Mesa	Juniper Archer 2	Juniper Allegro 2	MobileDemand xTablet T7200	MobileDemand xTablet T1200	GlobalSat
Post- Processed Accuracy	1-3 m ² + 1 ppm ³	N/A ¹	2-4 m	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ²	N/A ¹
Real-Time DGPS Capable	SBAS ⁴	SBAS ⁴	SBAS ⁴	SBAS ⁴	SBAS ⁴	SBAS ⁴	SBAS ⁴	SBAS ⁵	SBAS ⁴
Real-time Accuracy	2-5 m	2-4 m	2-4 m (1-2 m Enhanced version) ¹⁹	2-5 m	1-2.5 m	<2 m ¹⁵	<2 m ¹⁵	<2 m ¹⁵	2-5 m
EVEREST™ multipath rejection technology	NO	NO	NO	NO	NO	NO	NO	NO	NO
GLONASS tracking	NO	NO	NO	NO	YES	YES	NO	NO	NO
Floodlight ⁸ Technology	NO	NO	NO	NO	NO	NO	NO	NO	NO
H-Star™ Technology	NO	NO	NO	NO	NO	NO	NO	NO	NO
SBAS+ ¹⁶	NO	NO	NO	NO	NO	NO	NO	NO	NO
Galileo & BeiDou tracking ¹⁸	NO	NO	NO	NO	YES	YES	NO	NO	NO
Channels	12,GPS: L1 code	NO	50,GPS: L1 code and carrier, 6 only, SBAS	12, GPS: L1 code	32, GPS: L1 only GLONASS: L1 only, SBAS	32, GPS: L1 only GLONASS: L1 only, SBAS	50,GPS: L1 code and carrier, SBAS	50,GPS: L1 code and carrier, SBAS	12,GPS: L1 code
External Antenna	Optional on Juno only	NO	Optional	NO	NO	NO	NO	NO	YES
Internal Antenna	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Supported Data Collection Software	TerraSync, ArcPad, ArcPad+ GPScorrect or Positions, ArcGIS Mobile,ArcGIS Mobile+Positions, Field Inspector, Solo Forest	SOLO Forest, ArcPad, ArcGIS Mobile	TerraSync, ArcPad, ArcPad+ Positions, ArcGIS Mobile	ArcPad, ArcGIS Mobile, Solo Forest	ArcPad, ArcGIS Mobile, Solo Forest	ArcPad, ArcGIS Mobile, Solo Forest	ArcPad and ArcGIS Mobile	ArcPad and ArcGIS Mobile	ArcPad, ArcGIS Mobile, Solo Forest
NMEA Output	YES	NO	YES	YES	YES	YES	YES	YES	YES
Price ⁹	\$799-\$2,849	\$2,499-\$2,649	\$2,995-\$4,345	\$3,495-\$3,995	\$1,650-\$2,800	\$2,695-\$3,395	\$2,000-\$3,000	\$3,300-\$5,000	\$115 ¹⁰
Receiver Type	SiRF	SiRF	U-Blox NEO 6T (Regular) U-Blox NEO-7P (Enhanced GPS)	SiRF	NVS08C-MCM	NVS08C-MCM	U-Blox 6 (Optional)	U-Blox 6 (Optional)	SiRF

GPS Receiver Comparisons

1) These receivers output NMEA data only and cannot be post-processed with Trimble post-processing software.

2) Requires Trimble® DeltaPhase technology, as supported in the GPS Pathfinder® Office software version 4.20 or later, or the GPS Analyst® Extension for Esri® ArcGIS® Desktop software version 2.20 or later.

3) The distance between the base station and the rover affects accuracy. There is a degradation of 1 part per million (1ppm) as the distance between the base station and rover increases. Therefore, one millimeter of degradation occurs for every kilometer between the base and rover.

4) SBAS (Satellite Based Augmentation System). Includes WAAS available in North America, EGNOS available in Europe, and MSAS available in Japan.

5) The following factors increase the availability of 10 cm accuracy after H-Star™ post-processing: use of optional external antennas, longer elapsed time tracking uninterrupted L1/L2 carrier phase data, tracking of more GPS or GLONASS satellites with L2 measurements, shorter distance to the base station(s), and use of more than one base station for post-processing.

6) External real-time correction source includes VRS or real-time connection to a local base station. Requires H-Star data to be collected for up to 2 minutes. Requires a minimum of 3 good quality dual frequency reference stations within 200 km, or one good quality reference station within 80 km. With one reference station, accuracy degrades by 1ppm beyond 80km. Code processing reduces accuracy to 50 cm.

7) Requires optional Zephyr™ or Tornado™ antenna, VRS or base station less than 30 km away, and data collected with Trimble software. H-Star specified accuracy is typically achieved within 2 minutes.

8) Floodlight satellite shadow reduction technology allows receivers to compute positions even with very weak satellite signals. Floodlight technology increases the number of positions that are gathered in difficult locations and boosts accuracy in those places where normally only low accuracy data is available.

9) Price does not include cost of Pathfinder® Office or GPS Analyst™ software (\$1,995, bundled with TerraSync™ Pro \$2,695). TerraSync Professional is \$1,195, TerraSync Standard for \$295 can be used instead. Standard version does not include Data Update, External Sensor support, Laser Offsets, or Background Map.

10) Price of GlobalSat Card, XRT, XT or XH does not include cost of data collector. Trimble Nomad®, Trimble Recon® or Juniper Systems® Archer®, Allegro™ or other CE device will work with these receivers.

11) How accurate is the GeoXH Centimeter edition?

The accuracy users obtain depends on multiple factors including the environment, workflow, method of use, and GNSS conditions. As a general guide, the following accuracies are achievable over baselines of less than 30 km or when using VRS:

<u>Configuration</u>	<u>Real-time accuracy (RMS)</u>	<u>Post-processed accuracy (RMS)</u>
Internal antenna	Horizontal:2.5 cm + 1.2 ppm Vertical:4.0 cm + 2.0 ppm	Horizontal: 2.5 cm + 1.2 ppm Vertical: 4.0 cm + 1.5 ppm
Trimble Tornado™ antenna	Horizontal:2.0 cm + 1.0 ppm Vertical:3.0 cm + 2.0 ppm	Horizontal: 2.0 cm + 1.0 ppm Vertical: 3.0 cm + 1.0 ppm
Trimble Zephyr Model 2 antenna	Horizontal:1.0 cm + 1.0 ppm Vertical:1.5 cm + 2.0 ppm	Horizontal: 1.0 cm + 1.0 ppm Vertical: 1.5 cm + 1.0 ppm

12) GeoExplorer XH centimeter edition bundle includes:

- Centimeter output option
- Floodlight technology
- NMEA output option
- A license for TerraSync Centimeter edition GeoExplorer 6000 series Premium Accessory Kit, comprising:
 - GeoExplorer 6000 series Transport Case
 - Spare Rechargeable Battery
 - Spare International AC Charger
 - 1.5m antenna Cable
 - Zephyr Model 2 Antenna
 - Range Pole Bracket

Note: GPS Pathfinder Office and a Range Pole are not included in the bundle

13) Other software can be used if the Centimeter option is turned off. GPS Pathfinder Office v5.30 or later is required to post-process data collected using TerraSync v5.30. Use the Trimble Mapping and GIS Product compatibility chart to ensure compatibility: <http://trl.trimble.com/docushare/dsweb/Get/Document-160913/>

14) The GeoExplorer 6000 series and Pro 6 Series require the optional NMEA output for ArcPad and ArcGIS Mobile.

15) Trimble specifies accuracy to RMS (Root Mean Square), meaning a 68% confidence interval. This indicates that 68 out of every 100 positions should meet the accuracy specifications. The Allegro MX and MobileDemand accuracy specifications are using CEA (Circular Error Probability). CEP only specifies that 50% of collected positions will be within spec. Be aware of the difference when comparing accuracies.

16) SBAS+ mode is when non-GPS satellites (GLONASS satellites) remain in the position solution when using real-time SBAS corrections on GPS satellites.

17) The Geo 5T doesn't have the SBAS+, but it can still keep the non-GPS satellites in the position solution when using real-time SBAS corrections on GPS satellites.

18) Galileo is the GNSS system currently being developed and used in Europe. BeiDou is the GNSS system currently being developed and used in China.

19) Enhanced GPS in the Juno 5 and Yuma 2 requires SBAS corrections (WAAS or EGNOS) to achieve the 1-2 meter accuracy.