Trimble SPS986 GNSS Smart Antenna



SPS986 GNSS Smart Antenna

Yes, upgradeable to Rover, Base or Rover / Base 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz Unrestricted, typical range 2–5 km (1.2–3 miles) without radio repeater Yes Yes - option[7] See Receiver Upgrades below

LED indicators for satellite tracking, radio link status, WiFi and power On/Off key for one-button startup 13.9 cm (5.5 in) Diameter × 13 cm (5.1 in) including connectors 1.55 kg (3.42 lb) receiver only including radio and battery Complete system (rover including controller and pole) 3.9 kg (8.6 lbs)

-40 °C to +65 °C (-40 °F to +149 °F) -40 °C to +75 °C (-40 °F to +167 °F) 100%, condensing IP68 Certified per IEC-60529 - waterproof/dustproof (1m submersion for 1hr)

Designed to survive a 2 m (6.6 ft) pole drop onto concrete 75 Gs at 6msec 40 Gs at 10msec Mil-Std-810G, FIG 514.6E-1 Cat 24, Mil-Std-202G, FIG 214-1, Condition D

Advanced Trimble Technology Custom GNSS chips High-precision multiple correlator for GNSS pseudorange measurements Unfiltered, unsmoothed pseudo-range measurements data for low noise, low multipath error, low-time domain correlation, and high-dynamic response Very low noise carrier phase measurements with <1 mm precision in a 1 Hz bandwidth Trimble EVEREST+ multipath signal rejection

> MSS Band: CenterPoint RTX and OmniSTAR by subscription Trimble xFill for short gaps in correction messages

GPS L1 C/A, L2C, L2E (Trimble method for tracking unencrypted L2P) upgradable to L5. 672 channels

Upgradeable to GLONASS L1/L2C/A, L2P Full Cycle Carrier Upgrade to Galileo L1 CBOC, E5A, E5B & E5AltBOC8 and BeiDou B1,B1C, B2,B3 Able to track 3rd generation BeiDou signals Integrated MEM's sensor for eBubble 4-channel SBAS L1 C/A, L5 (WAAS/EGNOS/MSAS/GAGAN)

QZSS: L1 C/A, L1C, L1 SAIF, L2C, L5

Receiver Name

Configuration Option Base and Rover interchangeability Rover position update rate Rover maximum range from base radio Rover operation within a VRS™ network Heading and Moving Base operation Factory options

General Keyboard and display

Dimensions (L × W × D) Weight

Temperature

Operating[1] Storage Humidity Ingress protection

Shock and Vibration

Pole drop Shock – Non-operating Shock – Operating Vibration Measurements

SBAS (WAAS/EGNOS/MSAS) Positioning[3]

Trimble SPS986 **GNSS Smart Antenna**



Accuracy Horizontal ± 0.50m (1.6 ft), Vertical ± 0.85m (2.6 ft) Code Differential GPS Positioning[2] Horizontal accuracy 0.25 m + 1 ppm RMS (0.8 ft + 1 ppm RMS) Vertical accuracy 0.50 m + 1 ppm RMS (1.6 ft + 1 ppm RMS) Vertical accuracy 1050 m + 1 ppm RMS (1.6 ft + 1 ppm RMS) Vertical accuracy 1050 m + 1 ppm RMS (1.6 ft + 1 ppm RMS) Vertical accuracy 1050 m + 1 ppm RMS (0.8 ft + 1 ppm RMS) Vertical accuracy 1050 m + 1 ppm RMS (0.8 ft + 1 ppm RMS) ConterPoint® RTX Positioning Accuracy 1050 ft NP Service accuracy 1050 ft NP Service 1050 ft NP Serv		
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		support the power drain and is more than 11.8 VDC
Power		Integrated charging circuitry
	Power	

2

Trimble SPS986 GNSS Smart Antenna



External

External power input with over-voltage protection on Port 1 (7-pin Lemo 2key). Minimum 10.8 V, Maximum 28 VDC, shutdown optmized for 12V lead acid battery operation

Power source supply (Internal/External) is hot-swap capable in the event of power source removal or cut off

DC external power input with over-voltage protection on Port 1 (Lemo)

Receiver automatically turns on when connected to external power

N/A 3.2 W in rover mode with internal receive radio

5.2 W in base mode with internal 0.5 W transmit radio

5.5 hours; varies with temperature

Approximately 4 hours; varies with temperature[5] Approximately 4 hours; varies with temperature

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-310, RSS-210, and RSS-119. Cet appareil est conforme à la norme CNR-310, CNR-210, et CNR-119 du Canada.

> IEC 60950-1 2nd Edition CISPR 32, EN 55032, EN55024 RCM mark,ANS/NZS 4768

Radio Equipment Directive (RED 2014/53/EU)

Japan MIC CE mark RoHS compliance

WEEE compliance

7-pin Lemo 2-key, Power Input, USB. Optional USB to RS232 serial cable. Receiver supports RNDIS communications over USB N/A
N/A
Client or Access Point. Receive or transmit corrections. WiFi b/g Fully-integrated, sealed 2.4 GHz Bluetooth module[6].
Fully-integrated, fully-sealed internal 403-473 MHz; Internal 900 MHz; Rx/Tx 12.5 kHz or 25 kHz spacing available -114 dBm (12 dB SINAD) 0.5 W, 2W
1.0 W
USA/Canada

Power over Ethernet (PoE) Power consumption

Operation Time on Internal Battery

Specifications

Rover Base station 450 MHz systems 900 MHz systems

Regulatory Approvals

Communications

Lemo (Serial 1)

1PPS (1 Pulse-per-second) Ethernet WiFi Bluetooth wireless technology Integrated radios (optional) Channel spacing (450 MHz) Sensitivity (450 MHz) 450 MHz output power 900 MHz output power Frequency approvals (902-928 MHz)

Trimble SPS986 GNSS Smart Antenna



External GSM/GPRS, cell phone support

Receiver position update rate

Correction data input Correction data output Data outputs

Receiver Upgrades

Precision upgrades

Signal / Constellation upgrades Feature upgrades

Notes

Supported for direct-dial and Internet-based correction streams using the SCS900 software Cell phone or GSM/GPRS modem inside external controller

1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning

CMR[™], CMR+[™], CMRx[™], RTCM 2.x, RTCM 3 (require Rover upgrade) CMR, CMR+, CMRx, RTCM 2.x, RTCM 3 (require Base upgrade) NMEA, GSOF

> Location RTK (10/2), (10/10), or (30/30) Precision RTK Rover, Base or Rover/Base. IMU (Tilt Correction) L5 (Triple Frequency), GLONASS, GALILEO, BeiDou GNSS[10] 4 GB Internal Data Logging. Moving Base and Heading

1 Receiver will operate normally to those temperature limits. Internal batteries will operate from $-20~^\circ\text{C}$ to +48 $^\circ\text{C}$

2 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, interference and atmospheric conditions. Always follow recommended survey practices.

3 Depends on SBAS system performance.

4 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.

5 If your receiver is transmitting 2.0 W (450 MHz), you will experience reduced battery performance compared to the 0.5 W solution.

6 Bluetooth type approvals are country specific. For more information, contact your local Trimble office or representative.

7 When receiver is combined with an SPS986 with Moving Base installed or other suitable SPS receivers.

8 Galileo Commercial Authorization

Developed under a Licence of the European Union and the European Space Agency.

9 Networked RTK PPM values are referenced to the closest physical base station

10 This Trimble SPS Receiver is capable of supporting existing and planned GNSS satellite signals, including GPS, GLONASS, GALILEO, BeiDou and QZSS, and existing and planned augmentations to these GNSS systems.

11 RTK refers to the last reported precision before the correction source was lost and xFill started

12 Receiver accuracy and convergence time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.

13 Proper survey techniques should be followed to reduce multipath error and maintain a good line of sight to the sky for satellite tracking. At greater than 30° of tilt, accuracy at the rod tip may decrease more than specified.

Trimble SPS986 GNSS Smart Antenna



Specifications subject to change without notice.

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