

# Specifications

# Trimble SPS882 Smart GPS Antenna



<b>Receiver Name</b>	<b>SPS882 GPS Smart Antenna</b>
<b>Configuration Option</b>	
Base and Rover interchangeability	Yes, upgradeable to Rover / Base or Base
Rover position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz
Rover maximum range from base	Unrestricted, typical range 2–5 km (1.2–3 miles) without radio repeater
Rover operation within a VRS™ network	Yes
Heading and Moving Base operation	N/A
Factory options	See Receiver Upgrades below
<b>General</b>	
Keyboard and display	LED indicators for satellite tracking, radio link reception and power monitoring On/Off key for one-button startup N/A N/A
Dimensions (L × W × D)	SPS882 - 19 cm (7.5 in) × 11.2 cm (4.4 in) including connectors
Weight	1.35 kg (2.97 lb) receiver only including radio and battery Complete system (rover including controller and pole) 3.7 kg (8.2 lbs)
<b>Antenna Options</b>	
GA510	NA, inbuilt
GA530	N/A
L1/Beacon, DSM 232	N/A
Zephyr™ Model 2	N/A
Zephyr Geodetic™ Model 2	N/A
Zephyr Model 2 Rugged	N/A
Zephyr, Zephyr Geodetic, Z-Plus, Micro-Centered™	N/A
<b>Temperature</b>	
Operating <sup>1</sup>	–40 °C to +65 °C (–40 °F to +149 °F)
Storage	–40 °C to +75 °C (–40 °F to +167 °F)
Humidity	100%, condensing
Waterproof	IP67 for submersion to depth of 1 m (3.3 ft), dustproof
<b>Shock and Vibration</b>	
Pole drop	Designed to survive a 2 m (6.6 ft) pole drop onto concrete
Shock – Non-operating	To 75 g, 6 ms
Shock – Operating	To 40 g, 10 ms, saw-tooth
Vibration	MIL-STD-810F, FIG.514.5C-1

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## Measurements

Advanced Trimble Maxwell™ 6 Custom GPS Chip  
High-precision multiple correlator for L1/L2/L5 pseudo-range 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

L1/L2/L5 signal-to-noise ratios reported in dB-Hz

Proven Trimble low elevation tracking technology

220-channel L1C/A, L1/L2/L2C. Upgradable to L5 and GLONASS L1/L2C/A,  
L1/L2P Full Cycle Carrier

Trimble EVEREST™ multipath signal rejection

4-channel SBAS L1 C/A, L5 (WAAS/EGNOS/MSAS)

### Code Differential GPS Positioning<sup>2</sup>

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)

### SBAS (WAAS/EGNOS/MSAS) Positioning<sup>3</sup>

Horizontal accuracy

Typically <1 m (3.3 ft)

Vertical accuracy

Typically <5 m (16.4 ft)

### OmniSTAR Positioning

VBS service accuracy

Not available

XP service accuracy

Not available

HP service accuracy

Not available

### Real-Time Kinematic (RTK) Positioning<sup>4</sup>

Horizontal accuracy

10 mm + 1 ppm RMS (0.032 ft + 1 ppm RMS)

Vertical accuracy

20 mm + 1 ppm RMS (0.065 ft + 1 ppm RMS)

### Location RTK Positioning

Horizontal accuracy

Location RTK (10/10) or (10/2) 10 cm + 1 ppm RMS (0.32 ft + 1 ppm)

Vertical accuracy

Location RTK (10/10) 10 cm + 1 ppm RMS (0.32 ft + 1 ppm)

Location RTK (10/2) 2 cm + 1 ppm RMS (0.065 ft + 1 ppm)

### Precise Heading

Heading accuracy

N/A

2 m antenna separation

10 m antenna separation

### Initialization Time

Regular RTK operation with base station

Single/Multi-base

Minimum 10 seconds + 0.5 times baseline length in km, up to 30 km

RTK operation with Scalable GPS infrastructure

Typically <30 seconds anywhere within coverage area

Initialization reliability<sup>4</sup>

>99.9%

### Power

Internal

Rechargeable, removable 7.4 V, 2.4 Ah Lithium-ion battery in internal battery compartment

Internal battery operates as a UPS in the event of external power source failure

External

External power input with over-voltage protection on Port 1 ( 7-pin Lemo)

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

11 V DC to 28 V DC external power input with over-voltage protection on Port 1 ( 7-pin Lemo)

Receiver automatically turns on when connected to external power

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Power over Ethernet (PoE)	N/A
Power consumption	3.2 W, in RTK mode with internal radio
<b>Operation Time on Internal Battery</b>	
Rover	5 hours; varies with temperature
Base station	
450 MHz systems	Approximately 3.7 hours; varies with temperature
900 MHz systems	Approximately 3.7 hours; varies with temperature
<b>Regulatory Approvals</b>	
	FCC certification Class B Part 15, 22, 24 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.
	CE mark compliance C-tick mark compliance
	RoHS compliant WEEE compliant
<b>Communications</b>	
Lemo (Serial)	7-pin 0S Lemo, Serial 1, 3-wire RS-232
Modem 1 (Serial)	D-sub, Serial 2, Full 9-wire RS232
Modem 2 (Serial)	N/A
1PPS (1 Pulse-per-second)	N/A
Ethernet	N/A
Bluetooth wireless technology	Fully-integrated, fully-sealed 2.4 GHz Bluetooth module <sup>6</sup>
Integrated radios (optional)	Fully-integrated, fully-sealed internal 450 MHz (UHF) Tx/Rx; Internal 900 MHz Tx/Rx
Channel spacing (450 MHz)	12.5 kHz or 25 kHz spacing available
450 MHz output power	0.5 W
900 MHz output power	0.5 W (27 dBm)
Frequency approvals (900 MHz)	USA/Canada (-91) New Zealand/Australia (-92) Australia (-93)
External GSM/GPRS, cell phone support	Supported for direct-dial and Internet-based correction streams using the SCS900 software Cell phone or GSM/GPRS modem inside controller
Internal MSK Beacon receiver	N/A
Receiver position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning
Correction data input	CMR™, CMR+™, CMRx, RTCM3, RTCM 2.x (require Rover/Base upgrade)
Correction data output	CMR, CMR+, CMRx, RTCM3, RTCM 2.x (these require Base upgrade)
Data outputs	NMEA, GSOF

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## Receiver Upgrades

Location RTK (10/10), Location RTK (10/2)  
Precise RTK Rover/Base, Base  
L5, GLONASS Upgrades  
28 MB Internal Data Logging

## Notes

1 Receiver will operate normally to  $-40^{\circ}\text{C}$ . Internal batteries are rated to  $-20^{\circ}\text{C}$ .

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

6 Bluetooth type approvals are country specific. For more information, contact

Specifications subject to change without notice.

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