

Specifications

Trimble SPS882 Smart GPS Antenna



Receiver Name	SPS882 GPS Smart Antenna
Configuration Option	
Base and Rover interchangeability	Yes, upgradeable to Rover, Base or Rover / Base
Rover position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz
Rover maximum range from base radio	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
General	
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)
Antenna Options	
GA510	NA, inbuilt
GA530	N/A
GA810	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
Temperature	
Operating ¹	–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
Shock and Vibration	
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

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)

Galileo GIOVE-A and GIOVE-B⁸

SBAS (WAAS/EGNOS/MSAS) Positioning³

Accuracy

Better than 5 m 3DRMS (16 ft)

Code Differential GPS Positioning²

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)

OmniSTAR Positioning

VBS service accuracy

Not available

XP service accuracy

Not available

HP service accuracy

Not available

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)

Real-Time Kinematic (RTK up to 30 km)

Positioning²

Horizontal accuracy

8 mm + 1 ppm RMS (0.026 ft + 1 ppm RMS)

Vertical accuracy

15 mm + 1 ppm RMS (0.05 ft + 1 ppm RMS)

Trimble VRS⁹

Horizontal accuracy

8 mm + 0.5 ppm RMS (0.026 ft + 0.5 ppm)

Vertical accuracy

15 mm + 0.5 ppm RMS (0.05 ft + 0.5 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

Initialization reliability⁴

>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

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Power

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

DC external power input with over-voltage protection on Port 1 (Lemo)
Receiver automatically turns on when connected to external power

Power over Ethernet (PoE)

N/A

Power consumption

3.2 W, in RTK mode with internal radio

Operation Time on Internal Battery

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

Regulatory Approvals

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

Communications

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 module⁶

Integrated radios (optional) Fully-integrated, fully-sealed internal 410-470 MHz Tx/Rx; Internal 900 MHz Tx/Rx

Channel spacing (450 MHz) 12.5 kHz or 25 kHz spacing available

Sensitivity (450 MHz)

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

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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™, RTCM 2.x, RTCM 3 (require Rover upgrade)

Correction data output CMR, CMR+, CMRx, RTCM 2.x, RTCM 3 (require Base upgrade)

Data outputs NMEA, GSOF

Receiver Upgrades

Location RTK (10/10), Location RTK (10/2)

Precision RTK Rover, Base or Rover/Base

L5, GLONASS

28 MB Internal Data Logging

Notes

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

2 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, 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.

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

8 Galileo Commercial Authorization

Receiver technology having Galileo capability to operate in the Galileo frequency bands and using information from the Galileo system for future operational satellites is restricted in the publicly available Galileo open Service Signal-In-Space Interface Control document (GAL OS SIS ICD) and is not currently authorized for commercial use.

Receiver technology that tracks the GIOVE-A and GIOVE-B test satellites uses information that is unrestricted in the public domain in the GIOVE A + B Navigation Signals-In-Space Interface Control document. Receiver technology having developmental GIOVE-A and B capability is intended for signal evaluation and test purposes.

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

Specifications subject to change without notice.

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