



SPS985

GNSS SMART ANTENNA

RUGGED, RELIABLE POSITIONING

The ultra-rugged Trimble® SPS985 GNSS Smart Antenna offers unmatched reliability for construction site positioning. Ideal for use on small and large job sites, the SPS985 can serve as a GNSS rover system or as a Wi-Fi® enabled base station for other GNSS operations including machine control.



Key Features

Easy-to-Use Rover

The SPS985 is engineered to stand up to the most dynamic and rugged jobsite measurement applications. The integrated smart antenna design and quick release connector make it easy to transport and set up on a range pole, ATV or supervisor truck.

The SPS985 can move from one site measurement application to another with one quick release, saving set up time and maximizing use time. For example, a grade checker can mount the SPS985 to an all terrain vehicle and conduct site topos, check as-builts, and road center lines in even the roughest site conditions. The SPS985 can withstand the high vibration scenarios often seen on ATV-mounted site work without interruption or fear of damage.

With Trimble SCS900 Site Controller Software, you can:

- ▶ Determine cut/fill on a range pole, utility vehicle, or truck
- ▶ Stake out site or road features, utilities, daylight lines and side slopes
- ▶ Measure progress and calculate material stockpile volumes
- ▶ Carry out as-built measurements, grade checks and laid material thickness checks

Ultra-rugged housing built to withstand harsh construction site conditions

GNSS receiver, antenna, and battery in one unit

Connected site enabled with integrated Wi-Fi, Bluetooth, and optional wideband radio

Quick release connector makes it easy to move the unit between case, range pole, ATV, and truck

The SPS985 integrates numerous timesaving features in a compact and rugged system. It has never been so quick and easy to get measuring. Initial site work and topo can even be done base station free using satellite delivered GNSS corrections to the rover.

The Trimble Web UI™ eliminates the need to travel to the job site for routine monitoring of the established base station. Now you can assess the health and status of the base station and perform remote configurations from the office. Setting a new standard for rugged reliability, the SPS985 GNSS Smart Antenna keeps your crews working, not wasting time with GNSS maintenance.

Reliable Base Station

The SPS985 can also serve as a powerful site base station, using integrated Wi-Fi or optional radio to send and receive corrections for rover or machine control work. It is the easiest base station on the market – just put it on the tripod, switch it on, and you're ready to go. The SPS985 will automatically establish a Wi-Fi connection with the machine radio or GNSS rover and begin transmitting corrections.

With integrated Trimble 360™ receiver technology, the SPS985 GNSS Smart Antenna can “see” more GNSS constellations and signals than traditional GPS, so you can expect greater accuracy in more challenging conditions such as under tree canopy and in urban areas. That also means more uptime using the system and more productivity for your job crews.

SPS985 GNSS Smart Antenna

GENERAL

Keyboard and display LED indicators for satellite tracking
 radio link reception and power monitoring
 On/Off key for one-button startup

Dimensions (L x W x D) 12 cm (4.7 in) x 13 cm (5.1 in)

Weight 1.55 kg (3.42 lb) including radio and battery

Complete system (rover, controller, pole) 3.9 kg (8.6 lb)

ENVIRONMENT

Operating¹ -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

Pole drop Designed to survive a 2 m (6.6 ft) pole drop onto concrete

MEASUREMENTS²

- 440-channel L1C/A, L1/L2/L2C GPS and QZSS. Upgradable to L5 and
- GLONASS L1/L2C/A, L1/L2P Full Cycle Carrier
- Optional Galileo and BeiDou
- Trimble xFill for short gaps in correction service
- CenterPoint™ RTX™ Correction Service
- OmniSTAR™
- Trimble EVEREST™ multipath signal rejection
- 4-channel SBAS (WAAS/EGNOS/MSAS/QZSS)

CODE DIFFERENTIAL GPS POSITIONING³

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)

REAL-TIME KINEMATIC (RTK UP TO 30 KM) POSITIONING³

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 XFILL

Horizontal accuracy RTK⁴ + 10 mm/minute RMS

Vertical accuracy RTK + 20 mm/minute RMS

TRIMBLE CENTERPOINT RTX

Horizontal accuracy 4 cm (0.13 ft) RMS

Vertical accuracy 9 cm (0.30 ft) RMS

INITIALIZATION TIME

Initialization reliability⁵ > 99.9%

POWER

Internal Rechargeable, removable 7.4 V, 2.6 Ah
 Lithium-ion battery in internal battery compartment

External External power input with over-voltage protection
 11 V DC to 28 V DC external power input

Power consumption 3.7 W, in RTK mode with internal radio

OPERATION TIME ON INTERNAL BATTERY

Rover 4.6 hours; varies with temperature

Base station with internal radio 3.5 hours; varies with temperature⁶

REGULATORY APPROVALS

- 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
- ACMA: AS/NZS 4295 approval
- CE mark compliant
- C-tick mark compliant
- RoHS compliant
- WEEE compliant
- Japan MIC
- China CRRC - 220 MHz

COMMUNICATIONS

Lemo (Serial) 7-pin Lemo 2-key, Power Input, USB

Bluetooth wireless technology Fully-integrated, fully-sealed 2.4 GHz Bluetooth module⁷

Integrated radios (optional) Fully-integrated, fully-sealed
 Internal 450 MHz (UHF) Tx/Rx;
 Internal 900 MHz Tx/Rx

Internal radio output
 450 MHz output power 0.5 W, upgradeable to 2 W
 900 MHz output power 1.0 W
 220 MHz output power (China only) 0.5 W, 1.0 W

External GSM/GPRS, cell phone support Supported via SCS900 and SPS controller

Receiver position update rate 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning

Correction data input/output CMR™, CMR+™, CMRx, RTCM3, RTCM 2.x (with Rover/Base upgrade)

Data outputs NMEA, GSOF

- 1 Receiver will operate normally to -40 °C. Internal batteries are rated to -20 °C.
- 2 The Trimble SPS985 GNSS Smart Antenna is capable of supporting existing and planned GNSS satellite signals, including GPS, GLONASS, Galileo, Quasi Zenith Satellite System and BeiDou, and existing and planned augmentations to these GNSS systems. Support for the Galileo system is developed under a license of the European Union and the European Space Agency.
- 3 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended practices.
- 4 RTK refers to the last reported precision before the correction source was lost and xFill started.
- 5 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
- 6 For receivers with the 2.0W upgrade, reduced battery performance should be expected compared to the 0.5W solution.
- 7 Bluetooth type approvals are country specific. For more information, contact your local Trimble office or representative.

Specifications subject to change without notice.



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