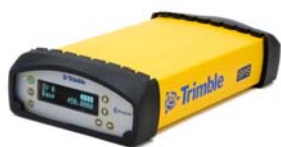


Specifications

Trimble SPS551 Modular GPS Receiver



Receiver Name

SPS551 Location GPS Receiver

Configuration Option

Type	Modular
Base and rover interchangeability	Yes
Base operation	DGPS RTCM only
Rover operation	SPS551
Heading operation	SPS551, SPS551H [®]
Rover position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz
Rover maximum range from base	Unlimited
Rover operation within a VRS [™] network	Location RTK and DGPS RTCM only
Factory options	L2C, GLONASS

General

Keyboard and display	VFD display 16 characters by 2 rows On/Off key for one-button startup Escape and Enter keys for menu navigation 4 arrow keys (up, down, left, right) for option scrolls and data entry
Dimensions (L x W x D)	24 cm (9.4 in) x 12 cm (4.7 in) x 5 cm (1.9 in) including connectors
Weight	1.65 kg (3.64 lb) receiver with internal battery and radio 1.55 kg (3.42 lb) receiver with internal battery and no radio

Antenna Options

GA510	L1/L2/L2C GPS, SBAS, and OmniSTAR (optimised for OmniSTAR)
GA530	L1/L2/L2C GPS, SBAS, and OmniSTAR
L1/Beacon, DSM 232	Not supported
Zephyr [™] Model 2	L1/L2/L2C GPS, GLONASS, SBAS, and OmniSTAR
Zephyr Geodetic [™] Model 2	L1/L2/L2C GPS and DGPS Base Station
Zephyr Model 2 Rugged	L1/L2/L2C GPS, SBAS, and OmniSTAR
Zephyr, Zephyr Geodetic, Z-Plus, Micro-Centered [™]	Refer to antenna specification

Temperature

Operating	-40 °C to +65 °C (-40 °F to +149 °F) ¹
Storage	-40 °C to +80 °C (-40 °F to +176 °F)
Humidity	MIL-STD 810F, Method 507.4
Waterproof	IP67 for submersion to depth of 1 m (3.3 ft), dustproof

Shock and Vibration

Drop	Designed to survive a 1 m (3.3 ft) pole drop onto a hard surface
Shock – Non-operating	To 75 g, 6 ms
Shock – Operating	To 40 g, 10 ms, saw-tooth
Vibration	Tested to Trimble ATV profile (4.5 g RMS): 10 Hz to 300 Hz: 0.04 g/Hz; ² 300 Hz to 1,000 Hz; -6 dB/octave

Specifications

Trimble SPS551 Modular GPS Receiver

Measurements

Advanced Trimble Maxwell™ 5 Custom GPS chip
High-precision multiple correlator for L1/L2 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 signal-to-noise ratios reported in dB-Hz
Proven Trimble low elevation tracking technology
72-channel L1 C/A code, L1/L2 Full Cycle Carrier. Upgradable to L2C and
GLONASS L1/L2 Full Cycle Carrier
Trimble EVEREST™ multipath signal rejection
4-channel SBAS (WAAS/EGNOS/MSAS)

Code Differential GPS Positioning²

Correction type	DGPS RTCM 2.x
Correction source	DGPS Base via external radio or Internet
Horizontal accuracy	$\pm(0.25\text{m} + 1 \text{ ppm})$ RMS $\pm(0.8 \text{ ft} + 1 \text{ ppm})$
Vertical accuracy	$\pm(0.50\text{m} + 1 \text{ ppm})$ RMS $\pm(1.6 \text{ ft} + 1 \text{ ppm})$

SBAS (WAAS/EGNOS/MSAS) Positioning³

Horizontal accuracy	Typically <1 m (3.3 ft)
Vertical accuracy	Typically <5 m (16.4 ft)

OmniSTAR Positioning

VBS service accuracy	Horizontal <1 m (3.3 ft)
XP service accuracy	Horizontal 0.2 m (0.66 ft), Vertical 0.3 m (1.0 ft)
HP service accuracy	Horizontal 0.1 m (0.33 ft), Vertical 0.15 m (0.5 ft)

Location RTK Positioning²

Horizontal accuracy	0.07 m + 1 ppm RMS (0.23 ft + 1 ppm RMS)
Vertical accuracy	0.07 m + 1 ppm RMS (0.23 ft + 1 ppm RMS)

Precise Heading

Heading accuracy	When combined with SPS551H ⁶
2 m antenna separation	0.06° RMS
10 m antenna separation	0.05° RMS

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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External	Power input on 7-pin 0-shell Lemo connector is optimized for lead acid batteries with a cut-off threshold of 10.5 V Power input on the 26-pin D-sub connector is optimized for Trimble lithium-ion battery input with a cut-off threshold of 9.5 V Power source supply (Internal/External) is hot-swap capable in the event of power source removal or cut off 9.5 V DC to 28 V DC external power input with over-voltage protection Receiver automatically turns on when connected to external power NA
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Power over Ethernet (PoE)	NA
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Power consumption	6.0 W in rover mode with internal receive radio 8.0 W in base mode with internal transmit radio
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Specifications

Trimble SPS551 Modular GPS Receiver

Operation Time on Internal Battery

Rover
Base station
450 MHz systems

13 hours; varies with temperature
SPS551 DGPS RTCM
Approximately 11 hours⁴; varies with temperature

Regulatory Approvals

FCC: Part 15 Subpart B (Class B Device) and Subpart C, 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.

R&TTE Directive: EN 301 489-1/-5/-17, EN 300 440, EN 300 328, EN 300 113, EN 60950, EN 50371

ACMA: AS/NZS 4295 approval
CE mark compliance

C-tick mark compliance

UN ST/SG/AC.10.11/Rev. 3, Amend. 1 (Lithium-ion Battery)

UN ST/SG/AC. 10/27/Add. 2 (Lithium-ion Battery)

RoHS compliant (excludes those with an internal 900 MHz radio)

WEEE compliant

Communications

Lemo (Serial)
Modem 1 (Serial)
Modem 2 (Serial)
1PPS (1 pulse-per-second)
Ethernet
Bluetooth wireless technology
Integrated radios (optional)

7-pin OS Lemo, Serial 1, 3-wire RS-232
26-pin D-sub, Serial 2, Full 9-wire RS232, using adaptor cable
26-pin D-sub, Serial 3, 3 wire RS-232, using adaptor cable

Available

Through a multi-port adaptor

Fully-integrated, fully-sealed 2.4 GHz Bluetooth module⁵

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

12.5 kHz or 25 kHz spacing available

0.5 W, 2.0 W (2.0 W available only in certain countries)

1.0 W

USA/Canada (-10)

New Zealand/Australia (-20)

Australia (-30)

External GSM/GPRS, cell phone support

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

Internal MSK Beacon receiver

NA

Correction data input
Correction data output
Data outputs

CMR™, CMR+™, RTCM 3, RTCM 2.x
CMR/CMR+, RTCM 2.x
NMEA, GSOF, 1PPS Time Tags

Receiver Upgrades

Notes

1 Receiver will operate normally to -40°C . Internal batteries are rated to -20°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 If your receiver has the 2.0 W upgrade, you will experience reduced battery performance compared to the 0.5 W solution.

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

6 When receiver is combined with an SPS551H or other suitable SPSx51 receiver.

Specifications subject to change without notice.

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