Specifications

Trimble SPS356 Modular GNSS Receiver

Receiver Name	**SPS356 DGNSS/Beacon Receiver**
Configuration Option	
Type	Modular
Base and rover interchangeability	Not supported
Base operation	Not supported
Rover operation	Yes
Heading and Moving Base operation	N/A
Rover position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz
Rover maximum range from base	Unlimited
Rover operation within a VRS™ network	RTCM DGPS only
Factory options	See Receiver Upgrades below
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 × W × D)	17.5 cm (6.9 in) × 12.8 cm (5.0 in) × 5.9 cm (2.3 in) including connectors
Weight	1.15 kg (2.54 lb) receiver only
Antenna Options	
Internal Antenna (Smart Antenna)	N/A
GA510 (Discontinued)	L1 GPS, L1 SBAS
GA530 (Discontinued)	L1 GNSS (GPS, Glonass, Galileo, BeiDou, QZSS), MSK Beacon, L1 SBAS
Rugged GA530	
GA810	L1 GNSS (GPS, Glonass, Galileo, BeiDou, QZSS), L1 SBAS
GA830	L1 GNSS (GPS, Glonass, Galileo, BeiDou, QZSS), MSK Beacon, L1 SBAS
L1/Beacon, DSM 232 (Discontinued)	Not supported
Zephyr™ Model 2	L1 GNSS (GPS, Glonass, Galileo, BeiDou, QZSS), L1 SBAS
Zephyr Geodetic™ Model 2	L1 GNSS (GPS, Glonass, Galileo, BeiDou, QZSS), L1 SBAS
Zephyr Model 2 Rugged	L1 GNSS (GPS, Glonass, Galileo, BeiDou, QZSS), L1 SBAS
Temperature	
Operating	–40 °C to +65 °C (–40 °F to +149 °F)
Storage	–40 °C to +80 °C (–40 °F to +176 °F)
Humidity	MIL-STD 810F, Method 507.4 IMO A.694/5 [EN 60945 4.4 b)]
Waterproof	IP67 for submersion to depth of 1 m (3.3 ft), dustproof
Shock and Vibration	
Pole Drop	Designed to survive a 1 m (3.3 ft) drop onto a hard surface
Shock – Non-operating	To 75 g, 6 ms, saw-tooth
Shock – Operating	To 40 g, 10 ms, saw-tooth
Vibration	Tested to Trimble Survey profile (2.6 g RMS): 5 Hz–500 Hz: 0.15 g/Hz^2 350 Hz to 500 Hz; –6 dB/octave

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Measurements	
	Advanced Trimble Maxwell™ 6 Custom GNSS chip L1 signal-to-noise ratios reported in dB-Hz
	Unfiltered, unsmoothed pseudo-range measurements data for low noise, low multipath error, low-time domain correlation, and high-dynamic response
	Trimble EVEREST™ multipath signal rejection
	220-channel L1 C/A code 2-channel MSK Beacon 3-channel SBAS (WAAS/EGNOS/MSAS/GAGAN)
SBAS (WAAS/EGNOS/MSAS) Positioning[3]	
Horizontal accuracy	± 0.50m (1.6ft)
Vertical accuracy	± 0.85m (2.8 ft)
Code Differential GPS Positioning[2]	
Correction type	DGPS RTCM v2.3, DGNSS RTCM v2.4
Correction source	Internal MSK Beacon, DGPS Base via ext. radio, NTRIP via IBSS or VRS
Horizontal accuracy	±(0.30m + 1 ppm) RMS ±(1.0 ft + 1 ppm)
Vertical accuracy	±(0.50m + 1 ppm) RMS ±(1.6 ft + 1 ppm)
OmniSTAR Positioning	
VBS service accuracy	N/A
XP service accuracy	N/A
HP service accuracy	N/A
CenterPoint RTX Positioning[12]	
Horizontal accuracy	
Vertical accuracy	
Convergence time for specified precisions	
xFill Positioning	
Horizontal accuracy	
Vertical accuracy	
RTK Positioning[2]	
Horizontal accuracy	N/A
Vertical accuracy	N/A
Precise Heading[2]	
Heading accuracy	N/A
2 m antenna separation	
10 m antenna separation	
Power	
Internal	Optional integrated internal battery 7.4 V, 3900 mA-hr, Lithium-ion Internal battery operates as a UPS in the event of external power source failure
	Internal battery will charge from external power source when input voltage is >12 V
	Integrated charging circuitry
External	Power input on 7-pin 0-shell Lemo connector is optimized for lead acid batteries with a cut-off threshold of 11 V DC Power input on the 26-pin D-sub connector is optimized for Trimble lithium-ion battery input (P/N 49400) with a cut-off threshold of 10.5 V 12 V DC to 28 V DC external power input with over-voltage protection
	Receiver will automatically turn on when connected to external power
Power over Ethernet (PoE)	N/A
Power consumption	4.95 W(VFD 100%), 3.7 W (VFD 12.5%) at 18 V, in rover mode

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Operation Time on Internal Battery	
Rover	7 hours; varies with temperature
Base station	N/A
450 MHz systems	N/A
900 MHz system	N/A
Regulatory Approvals	
	FCC Part 15 Subpart B (Class B Device) and Subpart C
	CAN ICES-3(B)/NMB-3(B), RSS-Gen, RSS-310 and RSS-210
	R&TTE Directive: EN 301 489-1/-3/-5/-17, EN 300 440, EN 300 328, EN 300 330, EN 60950, EN 50371
	ACMA Regulatory Compliance Mark (RCM)
	CE 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)
	WEEE and RoHS compliant
Communications	
Lemo (Serial)	7-pin 0S Lemo, Serial 1, 3-wire RS-232
Modem 1 (Serial)	26-pin D-sub, Serial 2, 5-wire RS232, using adaptor cable
Modem 2 (Serial)	26-pin D-sub, Serial 3, 3 wire RS-232, using adaptor cable
1PPS (1 pulse-per-second)	Yes
USB	1 USB 2.0 (Type B) Device via multi-port adaptor (57167)
Ethernet	Through a multi-port adaptor
WiFi	Simultaneous Client and Access point (AP) modes
Bluetooth wireless technology	Fully-integrated, fully-sealed 2.4 GHz Bluetooth module[4]
Network Protocols	
HTTP (web browser GUI)	Yes
NTP Server	Yes
TCP/IP or UDP	Yes
Ntrip	NTRIP v1 and v2, Client mode
mDNS/uPnP Service discovery	Yes
Dynamic DNS	Yes
eMail alerts	Yes
Network link to Google Earth	Yes
PPP and PPPoE	Yes
Supported data formats	
Correction Inputs	CMR™, CMR+™, CMRx, RTCM 2.x, RTCM 3
Correction Outputs	Repeat RTCM from internal Beacon source
Data Outputs	NMEA, GSOF, 1PPS Time Tags
External GSM/GPRS, cell phone support	Supported for Internet-based correction streams (VRS, IBSS) – directly using the external SNM940.
Integrated radios (optional)	N/A
Channel spacing (450 MHz)	
Sensitivity (450 MHz)	
Internal MSK Beacon receiver	
	Frequency range 283.5–325.0 kHz
	Channel spacing 500 Hz
	MSK bit rate 50, 100, and 200 bps
	Demodulation minimum shift key (MSK)

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Receiver Upgrades	
Constellation	Comes standard with Full GNSS constellation capability
Frequency	Comes standard with Single Frequency capability
Precision	N/A
Function	N/A
Data Logging	
Memory limit	N/A

Notes

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

3 Depends on SBAS system performance.

4 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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