

Specifications

Trimble SPS361 Modular GPS Heading Receiver



Receiver Name	SPS361 GPS Heading Receiver
Configuration Option	DGPS
Type	Modular
Base and rover interchangeability	No, rover only
Base operation	N/A
Rover operation	All models
Heading and Moving Base operation	All models ⁵
Rover position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz, 20Hz
Rover maximum range from base	Unlimited
Rover operation within a VRS™ network	DGPS only
Factory options	N/A
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	1.22 kg (2.70 lb) receiver only 1.34 kg (2.95 lb) receiver with internal beacon radio
Antenna Options	
GA510	L1/L2 GPS, SBAS, and OmniSTAR (optimized for OmniSTAR)
GA530	L1/L2 GPS, MSK Beacon, SBAS, and OmniSTAR
GA810	L1/L2/L2C GPS, Glonass, SBAS and OmniSTAR (optimised for OmniSTAR)
L1/Beacon, DSM 232	not supported
Zephyr™ Model 2	L1/L2 GPS, SBAS, and OmniSTAR
Zephyr Geodetic™ Model 2	L1/L2 GPS, SBAS, and OmniSTAR
Zephyr Model 2 Rugged	L1/L2 GPS, SBAS, and OmniSTAR
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	
Pole 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

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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

Trimble EVEREST™ multipath signal rejection
2-channel MSK Beacon (Optional)
4-channel SBAS (WAAS/EGNOS/MSAS)

Code Differential GPS Positioning²

Correction type DGPS RTCM 2.x
Correction source DGPS Base via 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 N/A
HP service accuracy N/A

Location RTK Positioning²

Horizontal accuracy N/A
Vertical accuracy N/A

Precise Heading²

Heading accuracy
2 m antenna separation 0.09° RMS
10 m antenna separation 0.05° RMS

Power

Internal N/A

External

Power input on the 26-pin D-sub connector is optimized for lead acid batteries
with a cut-off threshold of 11 V DC
11 V DC to 28 V DC external power input with over-voltage protection

Receiver automatically turns on when connected to external power

Power over Ethernet (PoE)

44 V DC to 57 V DC, IEEE802.3af compliant device

Power consumption

6.0 W in rover mode with internal MSK Beacon receiver

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Operation Time on Internal Battery

Rover	N/A
Base station	N/A
450 MHz systems	
900 MHz system	

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
RoHS compliant
WEEE compliant

Communications

Lemo (Serial)	N/A
Modem 1 (Serial)	26-pin D-sub, Serial 2, Full 9-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)	Available
Ethernet	Through a multi-port adaptor
Bluetooth wireless technology	Fully-integrated, fully-sealed 2.4 GHz Bluetooth module ⁴
Integrated radios (optional)	Fully-integrated, fully-sealed internal MSK Beacon radio
Channel spacing (450 MHz)	N/A
450 MHz output power	N/A
900 MHz output power	N/A
Frequency approvals (900 MHz)	N/A

External GSM/GPRS, cell phone support Supported for Trimble IBSS and VRS services – directly using the clip on SNM910 or using the SCS900 software on device with an internet connection

Internal MSK Beacon receiver If internal MSK Beacon Radio is installed⁶
Frequency range 283.5–325.0 kHz
Channel spacing 500 Hz
MSK bit rate 50, 100, and 200 bps
Demodulation minimum shift key (MSK)

Supported data formats
Correction Inputs CMR™, CMR+™, CMRx, RTCM 2.x⁷
Correction Outputs Repeat RTCM from MSK Beacon or OmniSTAR VBS source

Data Outputs NMEA, GSOF, 1PPS Time Tags

Receiver Upgrades

Not Upgradable

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Notes

1 Receiver will operate normally to -40°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 Bluetooth type approvals are country specific. For more information, contact your local Trimble office or representative.

5 Two of the supported antennas (See Antenna Options) must be connected for heading.

6 One of the antennas must be a GA530 for MSK Beacon signal reception.

7 CMR input for DGPS positioning only available on receivers shipped with v4.10 f/w or later.

Specifications subject to change without notice.

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