<table>
<thead>
<tr>
<th>Specifications</th>
<th>Trimble SPS855 GNSS Modular Receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver Name</td>
<td>SPS855 GNSS Modular Receiver</td>
</tr>
<tr>
<td>Configuration Option</td>
<td>Yes, upgradeable to Rover, Base or Rover / Base</td>
</tr>
<tr>
<td>Base and Rover interchangeability</td>
<td>1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz</td>
</tr>
<tr>
<td>Rover position update rate</td>
<td>Unrestricted, typical range 2–5 km (1.2–3 miles) without radio repeater</td>
</tr>
<tr>
<td>Rover maximum range from base radio</td>
<td>Yes</td>
</tr>
<tr>
<td>Rover operation within a VRSTM network</td>
<td>Yes - option</td>
</tr>
<tr>
<td>Heading and Moving Base operation</td>
<td>See Receiver Upgrades below</td>
</tr>
<tr>
<td>Factory options</td>
<td></td>
</tr>
</tbody>
</table>

**General**

| Dimension (L × W × D) | 24 cm × 12 cm × 5 cm (9.4 in x 4.7 in x 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**

| Antenna Options | L1/L2/L2C GPS, SBAS, and OmniSTAR |
| L1/Beacon, DSM 232 | L1/L2/L2C GPS, Glonass, Galileo, BeiDou, OmniSTAR, SBAS (optimized for OmniSTAR) |
| Zephyr™ Model 2 | Not Supported |
| Zephyr Geodetic™ Model 2 | L1/L2/L2C/L5 GPS, Glonass, Galileo, BeiDou, OmniSTAR, SBAS |
| Zephyr Model 2 Rugged | L1/L2/L2C/L5 GPS, Glonass, Galileo, BeiDou, OmniSTAR, SBAS |
| Zephyr, Zephyr Geodetic, Z-Plus, Micro-Centered™ | Refer to Antenna specification |

**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 |
| 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 |

**Keyboard and display**

| Vacuum Fluorescent display 16 characters by 2 rows. Invertable |
| 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)**

| 24 cm × 12 cm × 5 cm (9.4 in x 4.7 in x 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 |

**Humidity**

| -40 °C to +80 °C (-40 °F to +176 °F) |

**Waterproof**

| MIL-STD 810F, Method 507.4 |
| IP67 for submersion to depth of 1 m (3.3 ft), dustproof |

**Shock and Vibration**

| Designed to survive a 1 m (3.3 ft) pole drop onto a hard surface |
| To 75 g, 6 ms |
| To 40 g, 10 ms, saw-tooth |
| 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 |

Trimble
## Specifications
### Trimble SPS855
GNSS Modular Receiver

#### Measurements

**SBAS (WAAS/EGNOS/MSAS) Positioning**
- **Accuracy**
  - Better than 5 m 3DRMS (16 ft)

**Code Differential GPS Positioning**
- **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**
  - Horizontal <1 m (3.3 ft)
- **XP service accuracy**
  - Vertical 0.3 m (1.0 ft)
- **HP service accuracy**
  - Horizontal 0.1 m (0.33 ft), Vertical 0.15 m (0.5 ft)

**xFill Positioning**
- **xFill accuracy**
  - RTK<sup>11</sup> + 10mm(0.03 ft)/min Horiz. + 20mm(0.06 ft)/min Vert. RMS

**Location RTK Positioning**
- **Horizontal accuracy**
  - Location RTK (10/10) or (10/2) 10 cm + 1 ppm RMS (0.32 ft + 1 ppm)
  - 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)
- **Vertical accuracy**
  - 8 mm + 0.5 ppm RMS (0.026 ft +0.5 ppm)
  - 15 mm + 0.5 ppm RMS (0.05 ft +0.5 ppm)

**Real-Time Kinematic (RTK up to 30 km) Positioning**
- **Horizontal accuracy**
  - 8 mm + 1 ppm RMS (0.026 ft + 1 ppm RMS)
  - 15 mm + 1 ppm RMS (0.05 ft +1 ppm RMS)
- **Vertical accuracy**
  - 8 mm + 0.5 ppm RMS (0.026 ft +0.5 ppm)
  - 15 mm + 0.5 ppm RMS (0.05 ft +0.5 ppm)

**Trimble VRS**
- **Horizontal accuracy**
  - Combined with SPS55H<sup>7</sup>
  - 0.09° RMS
- **Vertical accuracy**
  - 0.05° RMS

**Precise Heading**
- **Heading accuracy**
  - 2 m antenna separation
  - 10 m antenna separation
  - Single/Multi-base typically less than 8 seconds
  - >99.9%

**Initialization Time**
- **Regular RTK operation with base station**
- **Initialization reliability**

**Power**
- **Internal**
  - Integrated internal battery 7.2 V, 7800 mA-hr, Lithium-ion
  - Internal battery operates as a UPS during an ext power source failure
  - Internal battery will charge from external power source as long as source can support the power drain
  - Integrated charging circuitry

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Advanced Trimble Maxwell™ 6 Custom GPS Chips
High-precision multiple correlator for GNSS pseudorange 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
Trimble EVEREST™ multipath signal rejection
L-Band: OmniSTAR VBS, HP, XP, G2 by subscription
GPS L1 C/A, L2C, L2E (Trimble method for tracking unencrypted L2P)
upgradable to L5. 440 channels
Upgradeable to GLONASS L1/L2C, L1/L2P Full Cycle Carrier
Upgradeable to Galileo: L1 CBOC, E5A, E5B & E5AltBOC<sup>6</sup>
Upgradeable to BeiDou: B1, B2
4-channel SBAS L1 C/A, L5 (WAAS/EGNOS/MSAS)
QZSS: L1 C/A, L1C, L1 SAIF, L2C, L5

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Trimble SPS855
GNSS Modular Receiver

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## Specifications

### Trimble SPS855
GNSS Modular Receiver

#### Power

**External**

- Power input on 7-pin 0-shell Lemo connector is optimized for lead acid batteries with a cut-off threshold of 11.5 V
- Power input on the 26-pin D-sub connector is optimized for Trimble lithium-ion battery input with a cut-off threshold of 10.5 V
- 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
- Receiver automatically turns on when connected to external power
- Power over Ethernet (PoE): N/A
- Power consumption:
  - 6.0 W in rover mode with internal receive radio
  - 8.0 W in base mode with internal transmit radio

#### Operation Time on Internal Battery

**Rover**
- 13 hours; varies with temperature

**Base station**
- 450 MHz systems: Approximately 11 hours; varies with temperature
- 900 MHz systems: Approximately 9 hours; 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
- WEEE compliant

#### Communications

- **Lemo (Serial)**: 7-pin 0S Lemo, Serial 1, 3-wire RS-232
- **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 on Marine versions
- **Ethernet**
- **WiFi**
- **Bluetooth wireless technology**
- **Integrated radios (optional)**
- **Channel spacing (450 MHz)**
- **Sensitivity (450 MHz)**: Fully-integrated, fully-sealed 2.4 GHz Bluetooth module
- **450 MHz output power**
- **900 MHz output power**
- **Frequency approvals (902-928 MHz)**

- **External GSM/GPRS, cell phone support**: Supported for direct-dial and Internet-based correction streams – directly using the external SNM940 or using the SCS900 software
- **Cell phone or GSM/GPRS modem inside controller or external SNM940**

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<tr>
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<tbody>
<tr>
<td>Internal MSK Beacon receiver</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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

### Correction data input
- CMRTM, CMRTM+™, 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, 1PPS Time Tags (Marine version)

### Receiver Upgrades
- Location RTK (10/2), (10/10), or (30/30)
- Precision RTK Base, Rover or Base/Rover, xFill
- L5, GLONASS, GALILEO, BeiDou GNSS10
- 28 MB Internal Data Logging option. Moving Base and Heading

### Notes
1. Receiver will operate normally to those temperature limits. Internal batteries will operate from –20 °C to +48 °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.
5. If your receiver has the 2.0 W upgrade, you will experience reduced battery performance compared to the 0.5 W solution.
6. Bluetooth type approvals are country specific. For more information, contact your local Trimble office or representative.
7. When receiver is combined with an SPS555H or other suitable SPS receivers. SPS855 must have Moving base option installed
8. Galileo Commercial Authorization
10. Networked RTK PPM values are referenced to the closest physical base station
11. This Trimble SPS Receiver is capable of supporting existing and planned GNSS satellite signals, including GPS, GLONASS, GALILEO, BeiDou and QZSS, and existing and planned augmentations to these GNSS systems.
12. RTK refers to the last reported precision before the correction source was lost and xFill started

Specifications subject to change without notice.

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