DATASHEET

FLEXIBLE RECEIVER FOR JOBSITE MEASUREMENT

Whether you need a reliable GNSS base station or a rugged rover, the Trimble® SPS855 GNSS Modular Receiver gives you the flexibility to perform all of your construction site measurements. As a permanent or semi-permanent base station, it provides GNSS corrections for site measurements and machine control. As a rover, it can move easily from a site supervisor truck to a pole mount for grade checking, site measurement and stakeout.

The versatile SPS855 receiver is available in a range of options to suit your jobsite or marine construction performance requirements. Simply purchase the receiver that you need today, and upgrade as your needs change.

Secure and Easy to Use

The Trimble SPS855 is comprised of an integrated GNSS receiver and radio plus a choice of external antenna. The receiver can be placed in a secure environment such as the job trailer or boat cabin where it is protected from theft and weather. The less expensive antenna can be placed in a location with clear visibility to the sky and maximum radio coverage.

You don’t have to be a GNSS expert to use the SPS855. Integrated 450 or 900 MHz license-free radio and interface with Trimble SCS900 Site Controller Software make the SPS855 easy to use, fast to setup and more productive on the job. Trimble Autobase™ technology means anyone on the jobsite can perform daily base station set up with one button push.

For more advanced troubleshooting, the receiver’s web interface allows your GNSS manager to remotely monitor base station performance, availability, and configuration. No need for time-consuming and costly visits to the base station to set up each day or diagnose issues that may arise.

The fully upgradable SPS855 GNSS Modular Receiver can be configured in a variety of ways. For example:

• As a base station only
• As a rover only with SBAS, Location, or Precision Real-Time Kinematic (RTK) accuracy
• As a flexible base or rover with Precision RTK accuracy

The SPS855 can be combined with the Trimble SPS555H Heading Add-on Receiver, for applications on cranes, construction vessels, and dredges where real-time position and orientation are important.
TRIMBLE SPS855 GNSS MODULAR RECEIVER

GENERAL
Keyboard and display ............................................................. Vacuum fluorescent display 16 characters by 2 rows
Dimensions (L x W x D) .................................................. 24 cm x 12 cm x 5 cm (9.4 in x 4.7 in x 1.9 in)
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
GA530 .............................................................. L1/L2/LC GPS, SBAS, and OmniSTAR
GA810, ....................................................... GPS, Glonass, OmniSTAR, SBAS, Galileo (optimized for OmniSTAR)
Zephyr™ 2 Models .............................................................. L1/L2/LC/LS GPS, Glonass, OmniSTAR, SBAS, Galileo, BeiDou

ENVIRONMENTAL
Operating ............................................................. -40 °C to +65 °C (-40 °F to +149 °F)
Storage ......................................................... -40 °C to +125 °C (-40 °F to +257 °F)
Humidity .............................................................. 95% relative humidity, MIL-STD 810F Method 507.4
Waterproof .............................................................. IP67 for submersion to depth of 1 m (3.3 ft), dustproof
Pole drop ............................................................. Designed to survive a 1 m (3.3 ft) pole drop onto a hard surface

MEASUREMENTS1
• 440-channel L1/C/A, L1/L2/LC GPS and QZSS. Upgradable to L5 and GLONASS
• L1/L2/CA, L1/L2P Full Cycle Carrier
• Galileo
• BeiDou
• Omnisat
• Trimble EVEREST™ multipath signal rejection
• 4-channel SBAS (WAAS/EGNOS/MSAS/QZSS)

CODE DIFFERENTIAL GPS POSITIONING2
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) POSITIONING2
Horizontal accuracy .................................................. 8 mm + 1 ppm RMS (0.26 ft + 1 ppm RMS)
Vertical accuracy ................................................... 15 mm + 1 ppm RMS (0.50 ft + 1 ppm RMS)

TRIMBLE XFILL
Horizontal accuracy ................................................. RTK3 + 10 mm/mnute RMS
Vertical accuracy .................................................... RTK + 20 mm/minute RMS

INITIALIZATION TIME
Initialization reliability ................................................. >99.9%

POWER
Internal .............................................................. Integrated internal battery 7.2 V, 7800 mA-hr, Lithium-ion
External ............................................................. Power input on 7-pin O-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 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 temperature6
900 MHz systems ................................................... Approximately 9 hours; varies with temperature6

REGULATORY APPROVALS
• FCC: Part 15 Subpart B (Class B Device) and Subpart C, Part 90
• Canadian ICES-003. Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.
• Canadian RSS-310, RSS-210, and RSS-119.
• CET appareil est conforme a la norme CNR-310, CNR-210, et CNR-119 du Canada.
• 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 O5 Lemo, Serial 1, 3-wire RS-232
Modem 1 (Serial) .................................................. 26-pin D-sub, Serial 2, Full 9-wire RS232, using adapter cable
Modem 2 (Serial) .................................................. 26-pin D-sub, Serial 3, 3 wire RS-232, using adapter cable
PeM (1 Pulse-per-second) .............................................. Available on Marine versions
 • Through a multi-port adapter
 • Bluetooth wireless technology ........................................... Fully-integrated,
 • Fully-sealed 2.4 GHz Bluetooth module7
 • Integrated radios (optional) ........................................... Fully-integrated, fully-sealed
 • internal 450 MHz (UHF) T×R×; Internal 900 MHz T×R×
 • External GSM/GPRS, cell phone support ............................. For Internet-based
correction streams

Receiver position update rate ................................ 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning
Correction data input/output .................................... CMR™, CMR+™, CMRx™, RTCM v 2.x & 3.x
• NMEA, GSO, 1PPS Time Tags (Marine version)

• Receiver will operate normally to –40 °C. Internal batteries are rated to –20 °C.
• The Trimble SPS855 GNSS Modular Receiver 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.
• Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended practices.
• RTK refers to the last reported position before the correction source was lost and SFIX started.
• May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
• For receivers with the 2.0W upgrade, reduced battery performance should be expected compared to the 0.5W solution.
• Bluetooth type approvals are country specific. For more information, contact your local Trimble office or representative.

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