DATASHEET

TRIMBLE AG-542 GNSS RECEIVER

Flexible Receiver for Field Measurement

Whether you need a reliable GNSS base station or a rugged rover, the Trimble® AG-542 GNSS 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.

Secure and Easy to Use

The Trimble AG-542 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 tractor cab 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 AG-542 reciever. Integrated 450 or 900 MHz license-free radio make the AG-542 reciever 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 AG-542 GNSS 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

Trimble

TRIMBLE AG-542 GNSS RECEIVER

General

Keyboard and display . . . . . Vacuum fluorescent display 16 characters by 2 rows
Dimmable. On/Off key for one-button startup
Dimensions (L × W × D) . . . . . 24 cm × 12 cm × 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

AG-25 . . . . . L1/L2/L2C GPS, SBAS, and OmniSTAR
Zephyr™ 2 Models . . . . . L1/L2/L2C/L5 GPS, GLONASS, OmniSTAR, SBAS, Galileo, BeiDou

Environmental

Operating[1] . . . . . –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
Pole drop . . . . . Designed to survive a 1 m (3.3 ft) pole drop onto a hard surface

Measurements[2]

- 440-channel L1C/A, L1/L2/L2C GPS and QZSS. Upgradable to L5 and GLONASS L1/L2C/A, L1/L2P Full Cycle Carrier
- OmniSTAR
- Trimble EVEREST™ multipath signal rejection
- 4-channel SBAS (WAAS/EGNOS/MSAS/QZSS)

Code Differential GPS Positioning[3]

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) Positioning[3]

Horizontal accuracy . . . . . 8 mm + 1 ppm RMS (0.026 ft + 1 ppm RMS)
Vertical accuracy . . . . . 15 mm + 1 ppm RMS (0.05 ft +1 ppm RMS)

Initialization Time

Initialization reliability[5] . . . . . >99.9%

Power

Internal . . . . . Integrated internal battery 7.2 V, 7800 mA-hr, Lithium-ion
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 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[6]
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.
- 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 . . . . . Through a multi-port adaptor
Bluetooth wireless technology . . . . . Fully-integrated, fully-sealed 2.4 GHz Bluetooth module[7]
Integrated radios (optional) . . . . . Fully-integrated, fully-sealed internal 450 MHz (UHF) Tx/Rx; Internal 900 MHz Tx/Rx
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
Data outputs . . . . . NMEA, GSOF, 1PPS Time Tags (Marine version)

1. *Receiver will operate normally to –40 °C. Internal batteries are rated to –20 °C.*
2. *The Trimble AG-542 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.*
3. *Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended practices.*
4. *RTK refers to the last reported precision before the correction source was lost and xFill™ technology started.*
5. *May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.*
6. *For receivers with the 2.0W upgrade, reduced battery performance should be expected compared to the 0.5W solution.*
7. *Bluetooth type approvals are country specific. For more information, contact your local Trimble office or representative.*

8. *Specifications subject to change without notice.*

Trimble Agriculture Division
10368 Westmoor Drive
Westminster, CO 80021
USA
+1-720-887-6100 Phone
+1-720-887-6101 Fax

Trimble Navigation Limited
Corporate Headquarters
935 Stewart Drive
Sunnyvale, CA 94085
USA
+1-408-481-8000 Phone
+1-408-481-7740 Fax

www.trimble.com/agriculture