DATASHEET

KEY FEATURES

Highly versatile, rugged and field-proven

Extremely high data logging rate (50Hz) with data protection for data observed in combination with external devices supporting event marker output

Power over Ethernet (PoE) technology

Five independent logging sessions

Large internal memory

Convenient front panel configuration and web user interface

USES

Campaign – collect high quality data for postprocessing

Portable base station – produce RTK correctors for broadcast via radio and the Internet

CORS – sensor for centralized software

Scientific reference station – collect information for specialized studies and protect event related data

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The Trimble® NetR8™ GNSS reference receiver is a fully featured, top of the line GNSS reference receiver designed to support just about any positioning application in the surveying, construction, mapping or agricultural industries.

The highly versatile Trimble NetR8 GNSS reference receiver for infrastructure and networking applications can operate as a campaign receiver for post-processing, as a Continuously Operating Reference Station (CORS) or portable base station for Real-time Kinematic (RTK) applications, and as a scientific reference station collecting information for specialized studies.

Providing all of the functionality of a geodetic reference station at a highly competitive price, the Trimble NetR8 reference receiver can be used as a standalone receiver or as part of a network solution. Specific applications include high-accuracy positioning as part of a Trimble VRS™ network, support for differential global positioning system (DGPS) MSK beacons, and integrity monitoring of networks and physical infrastructure such as oil platforms, mines, dams and bridges. It is also an excellent solution for expanding an existing network and for adding GNSS support to networks that are currently GPS only. In addition, the Trimble NetR8 can support installation as a dedicated rover for VRS performance analysis.

The Trimble NetR8 has four gigabytes of onboard memory and the receiver's 50 Hz operation speed is the fastest in the industry. Large capacity onboard data storage allows post-processed results for base stations to be computed after the survey completion, improving the accuracy of the survey.

Using Trimble's exclusive R-Track™ technology, the NetR8 reference receiver has a total of 76 channels and supports GPS L1, L2, L2C and L5 signals as well as GLONASS L1/L2 signals. Supporting all of these signals provides users with every possible combination for signal processing from today's GNSS constellation. There are also four channels dedicated to tracking Space Based Augmentation System (SBAS), including WAAS in North America, EGNOS in Europe and MSAS in Japan, Omnistar™ services and others.

Optimized for field use, the lightweight yet rugged Trimble NetR8 reference receiver consumes little power and can be used for projects with remote connectivity and in extreme weather conditions. The onboard battery can act as an uninterrupted power supply by providing up to 12 hours operating time. And, the Trimble

NetR8 is IP67-rated and the physical memory is built into the circuit board, providing greater protection of data.

Multiple built-in serial ports supply communications and power to support field use, whether connecting to a radio for RTK surveys, direct communication with a satellite phone for remote operations or Bluetooth communication with a cell phone for real-time data streaming.

In addition, both power and Ethernet can be conveniently supplied over a single cable using Power over Ethernet (PoE) technology. The Trimble NetR8 reference receiver is able to support any method of supplying power for a customer application in the field, including direct power, internal battery power, solar power or another external source.

The receiver's flexibility makes CORS installations quick and easy. It's also especially convenient to gather campaign-style observations with the NetR8 reference receiver. Typically, this involves collecting high quality GNSS data for post-processing along with large onboard memory and flexible communications. The NetR8 allows configuration from the front panel, simplifying field operations and offering support for external sensors. Campaign style observations also require easy data download and low power consumption, which the NetR8 provides.

The NetR8 reference receiver's familiar Trimble Infrastructure web user interface provides full receiver status, configuration and data access and supports a variety of security levels and access control. The front panel offers partial receiver status and configuration for RTK applications and data logging activation in the field. The NetR8 reference receiver is easy to deploy in a local area network by entering IP address information via the front panel and simply plugging into the network for access to the full web user interface.

With its full functionality, versatility, ruggedness and attractive price point, the Trimble NetR8 GNSS reference receiver is simply one of the best options available on the market today for all of your positioning and monitoring needs.

®**Trimble**
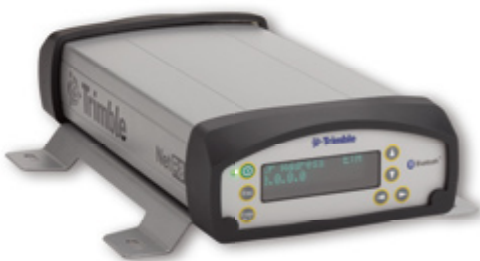
SATELLITE TRACKING

- 76 Channels
  - GPS L1 C/A Code, L2C, L1/L2/L5 – Full Cycle Carrier
  - GLONASS L1 C/A and P codes, L2 P code, L1/L2 – Full Cycle Carrier
  - Space-Based Augmentation Systems – WAAS, EGNOS, MSAS, L-Band (Omnistar)

POSITIONING PERFORMANCE

Code Differential GPS Positioning[1]
Horizontal. . . . .±0.25 m RMS
Vertical . . . .±0.50 m RMS

RTK Positioning[2] – 100 m Baseline Limit
Horizontal. . . . .±10 mm RMS
Vertical . . . .±20 mm RMS
Initialization time. . . . . typically <10 seconds
Initialization reliability . . . . .typically >99.9%

ELECTRICAL

- Power Over Ethernet (PoE). Requires a Class 3 PoE supply
- 9.5 to 28 V DC Input on two ports:
  - User-configurable Power On voltage
  - User-configurable Power Down voltage
- Onboard battery – up to 12 hours operation
- Typical power consumption with antenna – 4.3 W[3]

PHYSICAL SPECIFICATIONS

Dimensions (L x W x H) . . . . 26.5 cm x 19.0 cm x 6.7 cm (10.43 in x 7.48 in x 2.64 in) including connectors
Weight . . . . 2.08 kg (4.59 lb)

ENVIRONMENT

Operating temperature[4] . . . . . . –40 °C to +65 °C (–40 °F to +149 °F)
Storage temperature . . . . –40 °C to +80 °C (–40 °F to +176 °F)
Humidity . . . . .100% condensing
Shock. . . . . Survival: Non-operating 75g, 6 mS; Operating: to 25 g 10 ms, sawtooth; designed to survive a 1 m drop onto hard surface
Vibration. . . . . .Operating: 7.5 Hz to 350 Hz 0.015 g^2/Hz, 350 Hz to 500 Hz 0.006 g^2/Hz -6dB/Octave; Non-Operating: 10 Hz to 300 Hz 0.04 g^2/Hz 300 Hz to 1000 Hz –6 dB/Octave
Ingress protection . . . . . IP67-Waterproof for temporary immersion to a depth of 1 m (3.28 ft); Dustproof
Mounting . . . . May be installed in any orientation using the standard mounting base. Included tripod clip may be substituted for mounting base for campaign operations.
Keypad and Display . . . . Vacuum fluorescent display 16 characters by 2 rows. Escape and Enter key for menu navigation. 4 arrow keys (up, down, left, and right) for optional scrolling and data entry. Power indication LED.

COMMUNICATION

- Serial Ports
  - Port 1: D9 Male, EIA-574 RS-232/V.24 Full 9 wire serial
  - Port 2: Lemo 7pin 0shell, 3 wire serial with power input, 1 PPS output and event input
  - Port 3: Lemo 7pin 0shell, 5 wire serial with power input
- Bluetooth® – Integrated 2.4 GHz Bluetooth; supports 3 simultaneous connections
- Ethernet
  - RJ45 jack
  - Full-Duplex, auto-negotiate 100-BaseT
  - Supports Power Over Ethernet (POE) with a Class 3 Ethernet network
  - HTTP, FTP, NTRIP (source, server, caster with 3 streams)
  - Supports 10 simultaneous TCP/IP data streams
  - Proxy server support
  - Routing table support
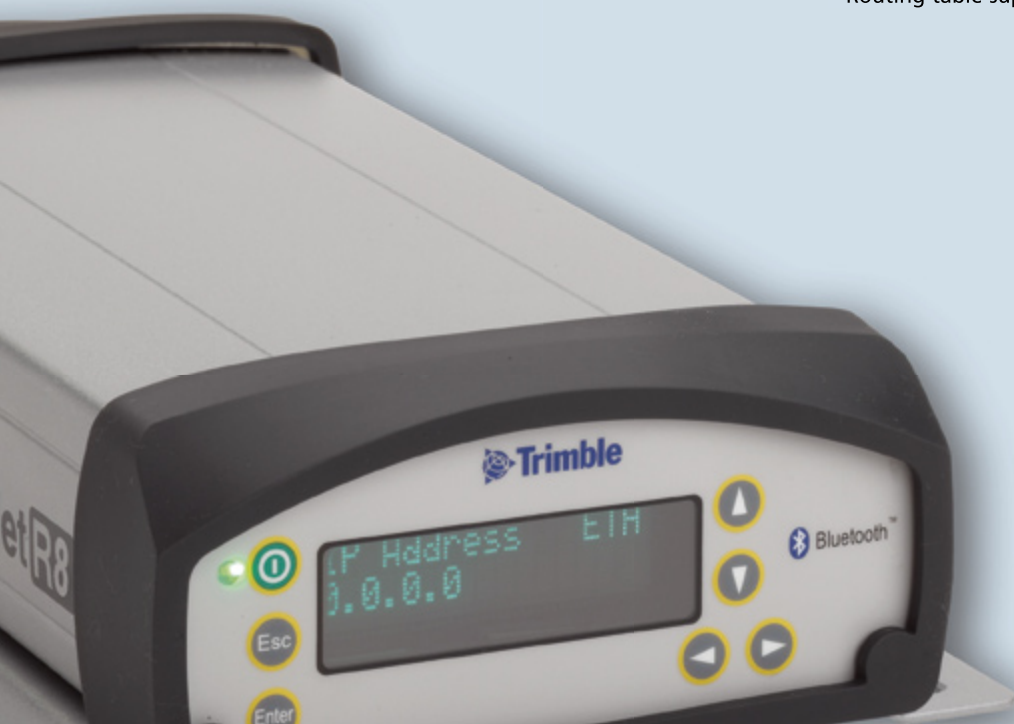
INPUT/OUTPUT FORMATS
• Correction/Corrector I/O
– CMR, CMR+, RTCM 2.3, RTCM 3.0, RTCM 3.1
• Observations
– RT17, RT27, Trimble BINEX, RTCM 3.1
• Position/Status I/O
– NMEA-0183 V2.30, GSOF

Special I/O
• 10 MHz External Frequency Input:
– Normal Input Level 0 to +13 dBm
– Maximum Input Level + 17 dBm, ±35 Vdc
– Input Impedance 50 Ohms @ 10 MHz; DC blocked

1 PPS output. . . . . Using 36451-02 interface cable
Event input. . . . . Uses 36451-02 interface cable; user-defined positive or negative slope detection
Met/Tilt support . . . . Meteorological and tilt sensors may be connected to any of the 3 serial ports

DATA LOGGING
Onboard storage capacity. . . . . .4 GB
Maximum storage rate . . . . 50 Hz
File durations . . . . 5 minutes to continuous
Storage sessions . . . . 5 concurrent, independent with dedicated memory pooling for each
Storage Formats. T01
File naming options. . . . . .multiple
Logged Data Retrieval and Transfer. . . .HTTP download, FTP Server and FTP push
Programmable sleep and wakeup times . . . . Yes

USER INTERFACES
Front panel. . . . . . 2 Line x 16 character vacuum fluorescent display with advanced power saving modes; 7-button keypad
Web user interface. . . . . Offers complete configuration and control of receiver.

ANTENNA SUPPORT
Output voltage. . . . . 7.2 V DC nominal
Maximum output current . . . . 150 mA
Maximum cable loss. . . . . 12 dB
Recommended antennas. . . . . Trimble Zephyr Geodetic™ 2, Trimble GNSS Choke Ring

APPLICATION FILES – RECEIVER CONFIGURATION SHARING
• E-Mail Alerts Automatic notification of status
• NTRIP Support
– Source
– Server
– Caster; supports 3 mount points with 10 concurrent users on each

SECURITY
Optional HTTP logon, realtime stream authentication, programmatic interface authentication, HTTPS

REGULATORY COMPLIANCE
RoHS, China RoHS, FCC Part 15.247 FCC certifications, Class B Device FCC Part 15 and ICES-003 certifications, RSS-310 and RSS-210 Industry Canada certifications, CE mark compliance, C-tick mark compliance, UN ST/SG/AC.10.11/Rev. 3, Amend. 1 (Li-Ion battery), UN ST/SG/AC.10/27/Add. 2 (Li-Ion battery), WEEE.
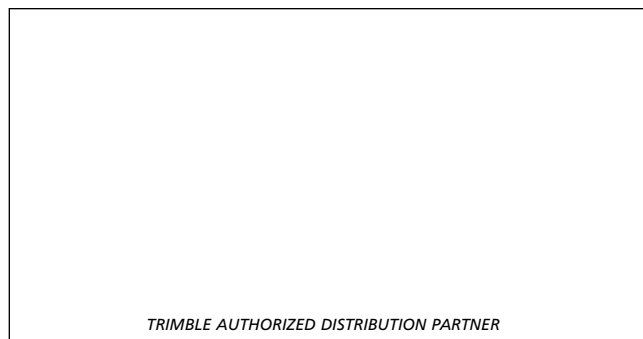
1 The NetR8 GNSS reference receiver is intended to offer positioning capability in conjunction with Trimble GNSS Infrastructure software. This receiver is not intended to serve as a positioning rover.
2 Accuracy and reliability may be subject to degradation by multipath interference, obstructions, satellite geometry and atmospheric conditions. Values reflect the use of a Trimble VRS corrector. Always follow recommended CORS installation practices.
3 Power consumption will be lower if any satellite tracking functions are disabled. Power consumption will increase by approximately 1 W when the front panel display is lit.
4 The sensor will operate normally to –40 C. The internal battery is rated to –20 C.

Specifications subject to change without notice

Bluetooth®

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