

Trimble® Infrastructure GNSS Series Receivers

These release notes describe the latest improvements made to the Trimble® NetR9™ GNSS Infrastructure series receivers.

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Introduction

These release notes describe the improvements made to the Trimble NetR9 Infrastructure series receivers.

With this release, these products can now use version 4.93 firmware.

Note – *Not all receivers support all features contained within this firmware release. The supported features will depend on the receiver model and options installed.*

To load and use firmware version 4.93, you must have a valid firmware warranty, dated 1 May 2014 or later. If necessary, contact your Trimble dealer to purchase a warranty.

Before you perform a firmware upgrade, download and back up any files or configuration settings.

New Features and Changes

General

- Minor translation updates.
- Updated antenna database.
- Updated OmniSTAR® libraries.
- Resolves issue whereby the receiver may not be able to check if a firmware update is available.
- Resolves rare occurrence where the receiver would report incorrect temperature values.

Data formats

- RT17/27 now supports the logging and streaming of SBAS ephemeris data.
- Added additional verification of data output to ensure unhealthy satellite data is not inadvertently broadcast/logged in T02, RT27, and BINEX formats.
- RTCM:
 - Support for RTCM version 2.4.
 - RTCM version 2 has been updated to prevent message type 34 outputs until valid ionosphere and UTC information has been received and a position has been computed.
 - Updates to RTCM version 3 message type 1033 to ensure that the correct IGS receiver name is transmitted.
 - Updates to RTCM version 3 message type 1033 to ensure that the full receiver serial number is transmitted.
 - Corrected problem with RTCM version 3 ephemeris output at GPS week rollover.
 - RTCM MSM messages are now supported for GPS, Glonass, QZSS, and Beidou.
- BINEX:
 - Identifier comment updated to **BNX2**.
 - 0x7f-04 updated to correctly handle null observation records. Previously the record would be truncated when null observations were included.
- NMEA:
 - GST updated to reflect the standard deviation of unit weight when the receiver is operating in an OmniSTAR solution type.
 - GGA string updated to send null positions when no position is available. Previously this would send zeroes.
 - GBS message updated to ensure satellites have a valid SV# before populating the message fields.

- The NetR9 platform now supports RTP Storage Integrity data transmission protocol. This protocol allows BINEX data to be sent to network operation centers in real-time via UDP/IP. RTP-SI will automatically retransmit unacknowledged packets to create full data archives at the network operation center. The size of the near real-time queue (for unacknowledged packets) runs from approximately 12 seconds for 10 Hz data to approximately 50 seconds for 1 Hz of data. If after that time no acknowledgement is received, the data is stored to local disk and retransmitted once the link is re-established. This format allows for epoch-by-epoch storage integrity.

Data logging

- FTP Push:
 - Now supports an *Enhanced Day* directory path style (RefData.YY/Month.MMM/Day.DD).
 - Now includes option to include the year within the naming of zip files. When the option is enabled, pushed files will appear as **filename.yyO.zip**, where yy is the year.
 - Changes to protect against the rare occurrence whereby the receiver will attempt to continuously resend a single file.
 - Resolves issue where the FTP Path style /type/yyyy/ddd/site would not correctly set the "type" (format) of the file being pushed.
- RINEX:
 - Updates to RINEX Galileo ephemeris files to correctly populate BGD and BDG fields.
 - On-board RINEX converter updated to correctly handle Beidou observables. Previously this data was omitted from the header and observable sections.
 - RINEX header now correctly list Beidou B1 observation codes.

Tracking

- This firmware update changes the tracking option bits to facilitate various GNSS tracking updates.

Note – *When upgrading to version 4.93, the Beidou B3 tracking option will be set to disabled (if previously enabled). If this tracking option is in use, contact Trimble Support to request the Beidou B3 tracking option bit prior to upgrading to version 4.93.*

- Corrected problem that could result in a receiver crash when GLONASS corrections are transmitted from an SBAS system.
- RTX™ satellite ellipse data updated.
- Improved handling of GNSS satellite search, acquisition, and tracking routines.
- Updates to Beidou B1 phase ambiguity.
- Improved handling of Galileo almanac data transmissions.
- Improved GPS L2C and GLONASS L1-C/A reacquisition
- Improved L5 multipath reporting. Previously this could show invalid multipath data for high elevation L5 SVs.

Networking and security

- Primary and Secondary DNS values are now configurable via the front panel display within the *Ethernet Configuration* menu.
- UDP Broadcast Transmit mode now allows for editing of the port number.
- Reduction in memory usage by HTTP tasks.
- Wget FTP command now handles wildcards (*.T02)
- Improved handling of NTRIP Caster source tables.
- Improved network stability.
- Improved handling of web redirects.
- Resolved issue that occurred where changing a Bluetooth® PIN code to a shorter PIN could create pairing issues.

Application files

- Improved handling of GZIP clone files. Previously some browsers did not provide the required information in their header information for the receiver to recognize the file type.

Web Interface and Front Panel

- When setting the *Reference Position* coordinate using the *Here* or *Average* routine, the resulting height now accounts for the antenna phase center offset **and** the height of the antenna. This is also true when using the *Here* position within the *Position Monitoring* routine. Previously the resulting height from these routines would be set to the height of the antenna phase center.
- *Position Monitor* now allows you to suspend correction outputs while the position to monitor against is outside the user-defined threshold.
- In the *General* page (below *Receiver Configuration*), a control is now available to force 1PPS output even if satellites are not tracked.
- The Web UI has been updated to support full 12-character passwords.
- On the *Web UI / Receiver Configuration / Antenna* page, you can now apply antenna corrections to the RTCM V3 stream. When enabled (default), the RTCM stream sends out ADVNULLANTENNA and normalizes the corrections. When this is turned off, the RTCM stream will include the IGS antenna name in the stream.
- The *Receiver Options* webpage has been changed to reflect an *Options overview*, with detailed option bits available if you click **Option Detail**.
- *Position Monitoring* now shows details on events displaying the solution type, time, duration, and offsets during the event. The event details appear on the *Position Monitoring* web page.
- The Web UI has been updated to correctly handle the keychain authentication routine on the Safari internet browser.

Known Issues

- This release contains updates for various signal processing changes. As a result of these changes, it is recommended that you test compatibility with external software packages **before** updating all equipment. Due to changes in the Beidou signal decoding, it is known that the Trimble Pivot™ platform version 3.5.4 (or lower) will not decode Beidou observables.

If required, please contact your local Trimble Sales Representative or Trimble Support for information on how to upgrade.

Upgrade Procedure

Make sure that the receiver firmware warranty date is 1 May 2014 or later.

Use one of the following methods:

- WinFlash utility: Use the latest version that is available with the version 4.93 Web package.
- Receiver Web User Interface: Make sure that the receiver is already running firmware version 4.xx or later. Download and install the version 4.93 *.TIMG file.

Legal Notices

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Release notice

This is the December 2014 release (Revision A) of the *Infrastructure GNSS Receivers Release Notes*. It applies to version 4.93 of the receiver firmware.

Product warranty information

For applicable product warranty information, please refer to the Warranty Card included with this Trimble product, or consult your Trimble reseller.

Notice to our European Union customers

For product recycling instructions and more information, please go to www.trimble.com/ev.shtml.

Recycling in Europe: To recycle Trimble WEEE (Waste Electrical and Electronic Equipment, products that run on Electric power), call +31 497 53 24 30 and ask for the “WEEE Associate”.

Or, mail a request for recycling instructions to:

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