

Release Notes

GNSS OEM Receivers

This document contains late-breaking product information, updates, and troubleshooting tips not covered in the Trimble® GNSS OEM receivers' documentation.

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Introduction

These release notes describe improvements made since version 5.61/6.21.

With this release, Trimble is making available two versions of the firmware, 5.63 and 6.23. The 6.23 firmware includes the ProPoint® RTK/Trimble RTX® engine. Only receivers that have the ProPoint option installed can load 6.xx firmware. Listed below are the Trimble GNSS OEM receivers that these release notes apply to and the firmware that can be loaded.

Receiver	Firmware version	
	5.63	6.23 ProPoint (upgrade may be required ¹)
BD9250 / BD9250s	×	✓
BD940	✓	✓
BD940-INS	✓	✓
BX940	✓	✓
AX940 / AX940i ²	×	✓
BD970	✓	×
BD982	✓	×
BX982	✓	×
BD992	✓	✓
BD992-INS	✓	✓
BX992	✓	✓

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¹ Upgrade steps if the receiver was not purchased with the ProPoint option and does not have the ProPoint option installed: (a) Ensure that firmware version 5.46 or later is loaded in the receiver. (b) Install the purchased ProPoint option key password provided by the support team. (c) Install the ProPoint 6.XX firmware.

² All AX940 / AX940i and BD9250 / BD9250s receivers use the 6.XX firmware and do not require an upgrade to install 6.23.

To use the new firmware, you must have a valid firmware warranty. You can check the Firmware Warranty Date using the web interface. Make sure the date shown is 1 December 2022 or later. Alternatively, obtain the warranty date from the WinFlash software. Select **Verify receiver options** and ensure the **Firmware Option** is 1 December 2022.

Note: Additional support information can be found at <https://oemgnss.trimble.com/support/>.

Upgrade procedure

There are two ways to load the new firmware:

- Use the WinFlash utility (BD9xx WinFlash V563V623.exe) downloaded from the Trimble website.
- Use the web interface of the receiver to load the firmware image file downloaded from the Trimble website.

Note: Additional help on upgrading can be found at <https://tinyurl.com/mrxr5sz6>.

New features and changes between versions 5.61 and 5.63

The following improvements have been made to the GNSS OEM receivers since version 5.61:

General improvements

- Updates to NMEA2000 SNSR, DPOS, and DALT output messages.
- Updates to GSOFF Type 40 output message for L-Band status.
- Updates to CAN and NMEA2000 specific to the BD990 receiver.
- PDOP mask lower limit changed from 0 to 2.
- MSS Satellite parameter updates to account for RTX and OmniSTAR beam changes.
- Improvements to BeiDou tracking.
- RTCM 3 MSM output message 1008 is no longer transmitted as the same information is in message 1033.
- Support for RTCM 3 MSM messages at 1/2 Hz output rate.
- Ukraine language support added to the web interface.

New features and changes for ProPoint receivers between firmware versions 6.21 and 6.23

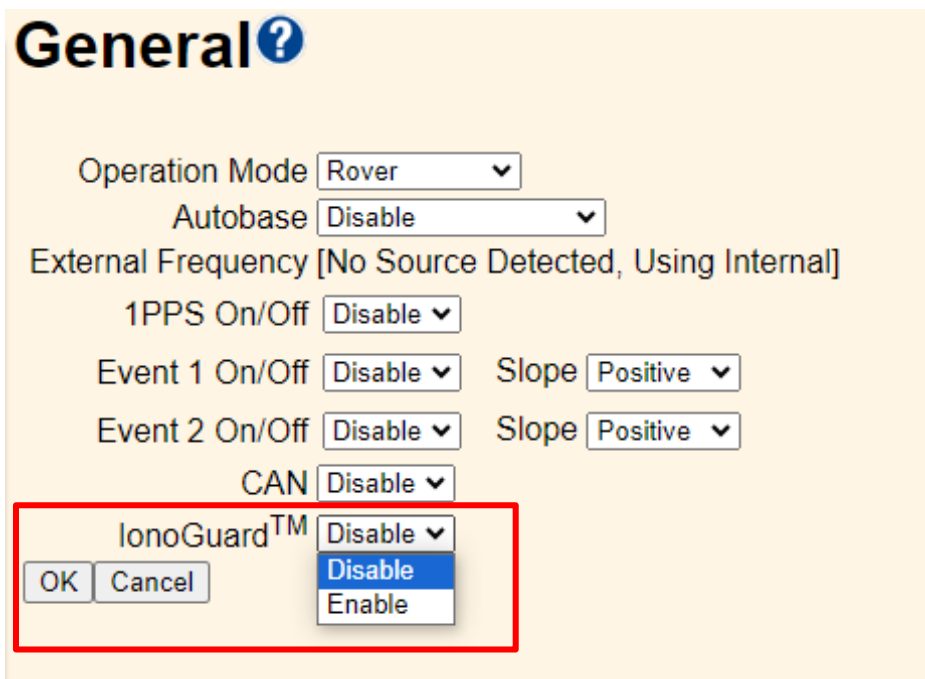
All features listed in the section [New features and changes between versions 5.61 and 5.63](#) on [page 2](#) also apply to version 6.23 of the ProPoint firmware unless noted otherwise. In addition, the following improvements have been made to the Trimble GNSS OEM ProPoint receivers since version 6.23:

Trimble IonoGuard (Ionospheric mitigation)

Firmware version 6.21 included limited functionality of our next generation ionospheric mitigation. With 6.23 this has been significantly expanded and introduced as IonoGuard™ technology. Optimum performance is achieved when IonoGuard is enabled at both the base and rover receivers. With IonoGuard enabled at the base station, ionospheric information for each satellite is transmitted via sCMRx or RTCM MSM protocols to rover receivers. IonoGuard rover receivers use this information together with their own ionospheric measurements to optimize the computed positions.

If IonoGuard is not enabled at the base receiver, then an IonoGuard rover will analyze the standard base messages and determine if ionospheric adjustments are necessary. These adjustments are then used to improve positioning performance. This method is not as rigorous as having the more detailed ionospheric information sent from the base station, but can assist when using a non Trimble ProPoint receiver or a third-party base receiver.

Note: For firmware 6.23, IonoGuard is disabled by default on all OEM GNSS (BD/BX/AX) receivers.



General improvements

- Fixed an issue where occasionally the dual-antenna vector would not reach high accuracy operation.
- Updates to GSOF type 62 output message when operating in GNSS/INS mode.
- New position type flag created to indicate xFill-RTX when in GNSS/INS mode.

Documentation updates

The latest documentation can be found online at <https://oemgnss.trimble.com/support/>.