

Trimble® R8, R7, 5800, 5700 GPS Receivers

Trimble R8 GNSS Receiver

Release Notes

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Version 2.26 (Trimble R8, R7, 5800, 5700 GPS Receivers)
Version 3.10 (Trimble R8 GNSS Model 2 Receiver)
Revision A
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Release notice

This is the February 2006 release (Revision A) of the *Trimble R/5000 Series Receivers Release Notes*. It applies to versions 2.26 (Trimble R8, R7, 5800, 5700 GPS receivers) and 3.10 (Trimble R8 GNSS Model 2 receiver).

Limited warranty terms and conditions

Product limited warranty

Subject to the terms and conditions set forth herein, Trimble Navigation Limited ("Trimble") warrants that for a period of (1) year from date of purchase this Trimble product (the "Product") will substantially conform to Trimble's publicly available specifications for the Product and that the hardware and any storage media components of the Product will be substantially free from defects in materials and workmanship.

Product software

Product software, whether built into hardware circuitry as firmware, provided as a standalone computer software product, embedded in flash memory, or stored on magnetic or other media, is licensed and not sold. If accompanied by a separate end user license agreement, use of any such software will be subject to the terms of such end user license agreement (including any differing limited warranty terms, exclusions and limitations), which shall control over the terms and conditions set forth in this limited warranty).

Software updates

During the limited warranty period you will be entitled to receive such Fix Updates and Minor Updates to the Product software that Trimble releases and makes commercially available and for which it does not charge separately, subject to the procedures for delivery to purchasers of Trimble products generally. If you have purchased the Product from an authorized Trimble distributor rather than from Trimble directly, Trimble may, at its option, forward the software Fix Update or Minor Update to the Trimble distributor for final distribution to you. Major Upgrades, new products, or substantially new software releases, as identified by Trimble

are expressly excluded from this update process and limited warranty. Receipt of software updates shall not serve to extend the limited warranty period.

For purposes of this warranty the following definitions shall apply: (1) "Fix Update" means an error correction or other update created to fix a previous software version that does not substantially conform to its published specifications; (2) "Minor Update" occurs when enhancements are made to current features in a software program; and (3) "Major Upgrade" occurs when significant new features are added to software, or when a new product containing new features replaces the further development of a current product line. Trimble reserves the right to determine, in its sole discretion, what constitutes a significant new feature and Major Upgrade.

Warranty remedies

If the Trimble Product fails during the warranty period for reasons covered by this Limited Warranty and you notify Trimble of such failure during the warranty period, Trimble at its option will repair OR replace the nonconforming Product, OR refund the purchase price paid by you for the Product, upon your return of the Product to Trimble in accordance with Trimble's standard return material authorization procedures.

How to obtain warranty service

To obtain warranty service for the Product, please contact your Trimble dealer. Alternatively, you may contact Trimble to request warranty service at +1-408-481-6940 (24 hours a day) or e-mail your request to trimble_support@trimble.com. Please be prepared to provide:

- your name, address, and telephone numbers
- proof of purchase
- this Trimble warranty card
- a description of the nonconforming Product including the model number
- an explanation of the problem.

The customer service representative may need additional information from you depending on the nature of the problem.

Warranty exclusions and disclaimer

This Product limited warranty shall only apply in the event and to the extent that (i) the Product is properly and correctly installed, configured, interfaced, maintained, stored, and operated in accordance with Trimble's applicable operator's manual and specifications, and; (ii) the Product is not modified or misused. This Product limited warranty shall not apply to, and Trimble shall not be responsible for defects or performance problems resulting from (i) the combination or utilization of the Product with hardware or software products, information, data, systems, interfaces or devices not made, supplied or specified by Trimble; (ii) the operation of the Product under any specification other than, or in addition to, Trimble's standard specifications for its products; (iii) the unauthorized, installation, modification, or use of the Product; (iv) damage caused by: accident, lightning or other electrical discharge, fresh or salt water immersion or spray; or exposure to environmental conditions for which the Product is not intended; or (v) normal wear and tear on consumable parts (e.g., batteries). Trimble does not warrant or guarantee the results obtained through the use of the Product.

NOTICE REGARDING PRODUCTS EQUIPPED WITH TECHNOLOGY CAPABLE OF TRACKING SATELLITE SIGNALS from Satellite Based Augmentation Systems (SBAS) (WAAS, EGNOS, MSAS), OmniSTAR, GPS, Modernized GPS or GLONASS Satellites, or from IALA Beacon sources:

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Registration

To receive information regarding updates and new products, please contact your local dealer or visit the Trimble website at www.trimble.com/register. Upon registration you may select the newsletter, upgrade or new product information you desire.

Notices

Class B Statement – Notice to Users. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission rules.

Canada

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Australia and New Zealand

This product conforms with the regulatory requirements of the Australian Communications Authority (ACA) EMC framework, thus satisfying the requirements for C-Tick Marking and sale within Australia and New Zealand.



Taiwan – Battery recycling requirements

The product contains a removable Lithium-ion battery. Taiwanese regulations require that waste batteries are recycled.



廢電池請回收

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 electrical power:). Call +31 497 53 24 30, and ask for the "WEEE Associate". Or, mail a request for recycling instructions to:
Trimble Europe BV
c/o Menlo Worldwide Logistics
Meerheide 45
5521 DZ Eersel, NL



Introduction

These release notes describe features of the Trimble® R8, R7, 5800, 5700 GPS receivers and the Trimble R8 GNSS receiver that are not included in the receiver User Guides.

The CD that was supplied with your receiver contains utilities that you can use to program or configure your receiver.

Before you perform a firmware upgrade, Trimble recommends that you download and back up any files that are on the receiver.

If your Trimble receiver is supplied with additional Trimble firmware or software products, make sure that those products have been upgraded to the latest version. For more information about upgrading, refer to the release notes for that product.

New features

Trimble R8/R7/5800/5700 GPS receiver version 2.23

Improvements to:

- Power indication
- Alphanumeric serial numbering
- Receiver ID
- WAAS command when using GSOF

Trimble R8/R7/5800/5700 GPS receiver version 2.26

Improvements to:

- Dial-up networking Bluetooth® profile
- Australia channel range
- GSOF 26 (POS TIME UTC)

Trimble R8 Model 2 receiver version 3.0

New features include:

- Tracking of L5 signal
- Support of a lithium-ion 4.4 Ah 11.1 V battery with cradle
- An updated Real-time Kinematic (RTK) engine
- Updated hardware
- New antenna
- 48 channels
- 11 MB of memory



CAUTION – Cable (P/N 53107) has been released to support the connection between the Trimble R8 Model 2 receiver and the Multi Battery Adaptor. The cable carries power only and **must not** be used in any other manner. Damage to equipment can occur if this cable is not used in conjunction with the Trimble R8 Model 2 receiver and the Multi Battery Adaptor.

Trimble R8 GNSS Model 2 receiver version 3.10

New features include:

- Tracking of GLONASS signal (for use in real time surveys)
- 72 channels
- Full support for FKP format

Known issues

The following issues are known at the time of release of firmware versions 2.26 and 3.10.

- If L2C is enabled for SV17, you will experience initialization problems with firmware earlier than version 2.26. Trimble advises that the new L2C signal is under development and may be used for a variety of test applications until it achieves Initial Operational Capability.
- TRIMMARK™ 3 radio modems (version 1.11, revision A, or earlier) do not support RTCM 3.0 message broadcasts. If you use the TRIMMARK 3 radio modem to broadcast RTCM 3.0 messages, you must install radio firmware version 1.26 or later.
- If you use a TRIMMARK 3 radio modem to broadcast GLONASS messages, you must install radio firmware version 1.27, revision B, or later.

Trimble R7/5700 receiver

- If you use a Trimble R7 GPS receiver (with version 2.26 firmware) and a TSC2™ controller (running the Trimble Survey Controller™ software) to run GPRS surveys, make sure that you have software version 11.10 or later installed.
- If you use the Trimble Data Transfer utility, and you have trouble communicating with the receiver, or you cannot read files from the receiver once it is connected, close any other software applications that are running on the computer and try again.
- Trimble recommends that you use a SanDisk industrial grade CompactFlash card. Otherwise, you could encounter data logging and data transfer difficulties.
- Some USB devices may stop working when they are connected to a computer for extended periods. If this occurs when you try to connect to the USB port on the receiver, disconnect the USB cable and then reconnect it.



CAUTION – Do not interrupt the process when transferring data through a USB port or the serial port USB. If the process is interrupted, the office computer may stop responding.

- If you use the Microsoft® Windows® 2000 operating system, **before** you disconnect the USB cable, stop the receiver through the *Unplug and Eject Hardware* dialog. This dialog is available from the task bar whenever the receiver is connected.
- If you use a Trimble R7 GPS system or a Trimble 5700 GPS receiver with firmware version 2.23 or 2.24, the receiver **may appear to** turn on and off. If this occurs, use external power to operate the receiver. External power will operate the receiver but **not** correct the error condition. Connect the GPS receiver to external power and then connect a GPS antenna. Ensure that the antenna has a clear view of the sky so that it can track the GPS satellites and record a new almanac, which updates the receiver clock. This will take about 15 minutes. Turn the receiver off and then on. For more information, refer to the support note, *Trimble® R7 GPS System or Trimble 5700 GPS Receiver: Power On-Off Issue*, dated 28 October 2005.

To avoid this issue, upgrade the receiver firmware to version 2.26.

Trimble R8/5800 GPS receiver

- If you use a Trimble R8 GPS receiver, that is, not a GNSS model, (with firmware version 2.26) and a TSC2 controller (running the Trimble Survey Controller software) to run GPRS surveys, make sure that you have software version 11.10 or later installed.
- If you use an ACU controller or a TSCe™ controller with BlueCap® module, use the Bluetooth wireless connection between the receiver and the controller to control an RTK survey.

To log raw GPS data directly to the controller for in-fill or for a static/fast static survey, Trimble recommends that you use a cable to connect the receiver to the controller. Although the Bluetooth wireless connection supports logging data to a controller, the cable connection provides greater security and is less likely to result in loss of data.

- Trimble recommends that you change the receiver internal battery when the Low Battery message appears on the controller, or when a low battery is indicated by the receiver power LED. Do not wait until the battery is completely discharged and the receiver stops operating. Otherwise, you may not be able to reconnect the receiver over the Bluetooth wireless link. (If this situation does occur, reset the receiver in order to re-establish Bluetooth wireless communication.)
- Before you start a survey in which you will log data to a controller, Trimble recommends that you turn on the receiver and allow enough time for it to acquire a current time, ephemeris and almanac, and to start tracking satellites.
- The radio mode is retained when you reset the receiver. Once you reset the receiver, confirm that it is in the correct radio mode.

Registering the receiver

Trimble recommends that you register your Trimble receiver to protect your investment and to ensure that the system is always up to date. If you register the receiver, you will be notified by e-mail when there are updates to the receiver firmware, or when new functionality becomes available.

To register the receiver:

1. Run the receiver CD.
2. From the main menu, select *Register your receiver*.
3. Do one of the following:

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- To register online, select *Register using the Internet*. The online registration form opens in your default web browser. Fill in the required fields, and then click **Submit** to submit the completed form.
 - To register by mail, select *Register using mail*. The registration form opens in the Microsoft WordPad editor. Fill in the required fields, print the form, and then mail it to the address shown at the bottom of the form.

Software compatibility

The receivers are compatible with the following software:

- Trimble Geomatics Office™ version 1.6 or later
- Trimble Survey Controller version 7.71 or later

Note – *Trimble Survey Controller software version 7.72 or earlier is **not** compatible with the Trimble R7 or Trimble R8 receivers.*

- GPSBase (version 2.40 or later with the Trimble R8 Model 2 receiver)
- Trimble Total Control™ version 2.5 or later
- GPS Configurator (version 3.30 with the Trimble R8 Model 2 receiver)

Note – *For Trimble R/5000 series receivers with firmware later than 2.xx, Trimble recommends that a satellite tracking elevation mask of 10° is used for optimal performance.*

Updating the system files

Before you can use your receiver with Trimble office software, such as Trimble Geomatics Office, Trimble Total Control, or Terramodel® software, you must install or update the following files:

- The receiver Device Driver for Data Transfer

You must have this file to transfer files from the CompactFlash card or the receiver internal memory to the computer, using the USB and serial ports or a Bluetooth wireless connection.

- Configuration files

These files provide the latest list of antennas and receivers that are recognized by Trimble software. They also ensure that antenna and receiver information flows correctly from the receiver to the Trimble Survey Controller software and to the office software.

To install or update these files:

1. Run the receiver CD.
2. From the main menu, select *Install Components for TGO / TTC / Terramodel*.
3. Follow the instructions in the installation wizard.

Note – *You must also install the latest version of the software or firmware for any other Trimble product that you will use with your Trimble receiver (for example, the Trimble Survey Controller software.)*

Updating the utilities

The receiver CD contains the following utilities. Make sure that you install the latest versions of these utilities.

GPS Configurator software

Use the GPS Configurator software to configure the receiver when it is connected to the office computer. You can also use this software to view the current receiver settings, check GPS information, change receiver settings in real time, and to save and transfer configuration files. Use the GPS Configurator software with a Trimble R8, R7, 5800, 5700 GPS/Trimble R8 GNSS receiver, or MS750™ receiver. You may not be able to use the software to configure some older model receivers, such as a 4600 LS™ receiver, or a 4000 series receiver.



CAUTION – When you connect the office computer to the receiver using the GPS Configurator software, all outputs on the port you connect to are disabled.

Installing the GPS Configurator software

The GPS Configurator software is supplied on the receiver CD. You can install the software on any number of computers.

1. Run the receiver CD.
2. From the main menu, select *Install individual software packages*.
3. From the menu that appears, select *GPS Configurator*.
4. Follow the instructions in the installation wizard.



CAUTION – You can select the internal radio as an output port for CMR™ or RTCM corrections only when the operating mode for the internal radio is set for Base.

WinFlash utility

The WinFlash utility communicates with Trimble products, and enables them to perform functions that include:

- installing and updating receiver and radio firmware
- upgrading receiver options
- retrieving receiver configuration
- configuring the internal radio and adding receive frequencies
- configuring the Bluetooth ID string to help identify the receiver when it is connected using Bluetooth wireless technology

Installing the WinFlash utility

The WinFlash utility provided with this release supports only the Trimble R7, 5700, 5800 GPS/Trimble R8 GNSS receiver. To download WinFlash utility for other receivers, such as the GPS Total Station[®] 4700 or 4800, go to the Support section of the Trimble website (www.trimble.com/support.shtml).

If you have already run the *Install essential software* option from the receiver CD, the WinFlash utility is installed on the computer.

Note – *You can install the WinFlash utility on as many computers as required. The version of the WinFlash utility on the receiver CD is fully compatible with other copies of the software that you may have for other Trimble products. Installing the WinFlash utility from this CD will not disrupt operation with other Trimble devices.*

To install the WinFlash utility on another office computer, or to install reinstall it without installing other software:

1. Run the receiver CD.
2. From the main menu, select *Install individual software packages*. A menu appears.
3. Select *WinFlash vX.XX for Trimble R/5000 Series Receivers*.
4. Follow the instructions in the installation wizard.

The Trimble Data Transfer utility

Use the Trimble Data Transfer utility to transfer data between a variety of data collection devices and an office computer.

Installing the Data Transfer utility

If you have already run the *Install essential software* option from the receiver CD, the Data Transfer utility is installed on the computer.

Note – *You can install the Data Transfer utility on any number of computers.*

To install the Data Transfer utility on another office computer, or to reinstall it without installing other software:

1. Run the receiver CD.
2. From the main menu, select *Install individual software packages*.
3. From the menu that appears, select *Data Transfer vX.XX*.
4. Follow the instructions supplied by the installation wizard.

Using the Data Transfer utility to connect to the receiver

Connect the Data Transfer utility to a GPS Receiver (Trimble R/5000 Series) default device, or create a new GPS Receiver (Trimble R/5000 Series) device definition. You cannot use a device definition for another type of receiver. For more information about creating a new device, refer to the Data Transfer Help.

Using a USB with the receiver

This section describes how to use a USB with a Microsoft Windows operating system.

Windows 2000 operating system

When a Trimble R7 or 5700 GPS receiver is connected to a USB port on a computer, the receiver is treated as a peripheral device of the computer. Before you physically disconnect or turn off a peripheral USB device such as the receiver, you must complete the following steps:

1. Right-click the Unplug or Eject Hardware icon on the computer task bar.
2. From the menu that appears, select *Unplug or eject hardware*. A dialog appears.
3. From the *Hardware devices* list, select Trimble USB GPS and then click **Stop**. A dialog appears.
4. To confirm that you want to stop the receiver, click **Stop** again. A message confirms that it is safe to remove or disconnect the receiver.

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5. To close the message, click **OK** and then click **Close** to close the dialog.

You can now switch off the receiver and disconnect it from the computer.

Alternatively, to stop the receiver:

1. Click the Unplug or Eject Hardware icon. A menu appears.
2. Select *Stop Trimble USB GPS*.

The receiver stops immediately, and the confirmation message appears.

3. To close the message, click **OK** and then click **Close** to close the dialog.

Windows 98 or Me operating systems

Install the Data Transfer utility before you connect the computer to the receiver. For more information, see *The Trimble Data Transfer utility*, page 12. Until you do this, you cannot use the USB port to connect the receiver to the office computer.

The USB driver for the Trimble R7 or 5700 GPS receiver is installed on the office computer when you install the Data Transfer utility. If you connect the receiver to an office computer running the Windows 98 or Windows Me operating system before you install the Data Transfer utility, the system cannot find a driver for the receiver and you cannot connect to the receiver using its USB port.

If you cannot connect the office computer to the receiver using a USB, do the following:

1. If the *Add New Hardware* dialog appears, click **Cancel** to cancel the Add New Hardware wizard.
2. Install the Data Transfer utility.
3. From the *Start* menu, select *Settings / Control Panel*.
4. Double-click the System icon. A dialog appears.

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5. Select the *Device Manager* tab.
 6. Highlight *Other or Unknown Trimble* device and then do one of the following:
 - To delete this device, click **Remove**.
 - To update the driver for this device, click **Properties** and then click **Update Driver**. Follow the instructions. Use the file Trmbusb.inf in the folder Windows\Inf.
 7. Disconnect the USB cable and then reconnect it.
 8. If the device driver does not install automatically, restart the computer.

Using a CompactFlash card

Always format a CompactFlash card in the receiver. This prevents data on the card from being corrupted if you remove the card while the receiver is logging data to it.

