

RELEASE NOTES

TRIMBLE SURVEY GNSS FIRMWARE

Trimble Survey GNSS Firmware Version 4.84 (December 2013)

Requirements

This firmware version includes improvements to the Survey Receiver firmware. It is considered a minor revision. This requires a valid firmware support agreement of:

- April 2013 or later for all support models

NOTE: For best results, users should upgrade to Trimble Access 2013.40 when using Receiver Firmware version 4.84.

Supported GNSS Receivers

The following table identifies the Survey GNSS receivers supported by this revision.

Integrated	Receiver	Support
	Trimble R10	●
	Trimble R8 Model 4	●
	Trimble R8 Model 3	●
	Trimble R8 Model 2	-
	Trimble R8 Model 1	-
	Trimble R6 Model 4	●
	Trimble R6 Model 3	●
	Trimble R6 Model 2	-
	Trimble R6 Model 1	-
	Trimble R4 Model 3	●
	Trimble R4 Model 2	●
	Trimble R4 Model 1	-
	Trimble 5800 Model 1	-

Modular	Receiver	Support
	Trimble R7 Model 2	●
	Trimble R7 Model 1	-
	Trimble R5	●
	Trimble 5700 Model 2	●
	Trimble 5700 Model 1	-

Handheld	Receiver	Support
	Trimble GeoXR	-
	Trimble R3	-

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Version 4.84 Release Notes

The release notes describe the added features and improvements made to Trimble Survey GNSS receiver firmware.

Issue	Type	R10 ⁶	R8 ¹	R7 ²	R6 ³	R5	R4 ⁴
<ul style="list-style-type: none"> ✓ Support for the Trimble R10 LT receiver <ul style="list-style-type: none"> ○ Scalable Trimble R10 ○ Premium solution at a lower price point ○ Trimble R10 receiver <i>without</i> the following features: <ul style="list-style-type: none"> ▪ SurePoint ▪ xFill ▪ CenterPoint RTX ▪ OmniStar ○ Fully upgradeable to all Trimble R10 features – service upgrade available 	Feature	●					
<ul style="list-style-type: none"> ✓ Added full tilt compensation capabilities to the Trimble SurePoint™ technology <ul style="list-style-type: none"> ○ Will correct tilt up to 15 degrees from plumb ○ Any error introduced from the tilt compensation is added to the RTK precisions ○ System will detect any magnetic disturbance and inform the user ○ Collect points using SurePoint by using the “Compensated point” measurement method <p>Warning – The performance of the magnetometer is affected by nearby metal objects (for example, vehicles or heavy machinery) or objects that generate magnetic fields (for example, high voltage overhead or underground power lines). To avoid errors due to magnetic interference, it is important to use compensated points only in areas free of magnetic disturbance.</p> <p>In areas of high magnetic interference, use of SurePoint full tilt compensation is not recommended. In this case you will receive a message, “Excess magnetic disturbance, unable to store point.”</p> <p>Note – Calibrating the magnetometer near sources of magnetic disturbance <i>does not</i> “correct” for the interference caused by these objects.</p>	Feature	●					
<ul style="list-style-type: none"> ✓ Added Trimble CenterPoint™ RTX™ positioning <ul style="list-style-type: none"> ○ Requires a CenterPoint RTX subscription ○ 30 minute convergence time ○ QuickStart using a known surveyed position is available to reduce convergence to ~5 minutes 	Feature	●					

Issue	Type	R10 ⁶	R8 ¹	R7 ²	R6 ³	R5	R4 ⁴
<ul style="list-style-type: none"> ○ 4 cm horizontal and 9 cm vertical accuracy ○ Added support for tectonic plates – see below. <p>To survey using RTX, create an RTK survey style with the <i>Broadcast format</i> set to <i>RTX (SV)</i>. To use RTX, the R10 receiver must have an RTX subscription.</p> <p>NOTE: You can use a site calibration to refine the transformation between the RTX reference frame and your local coordinate system.</p> <p>QuickStart points must be in the RTX reference frame. In practice this will almost always mean that the point has been previously measured using RTX, or that the site has been calibrated to RTX.</p> <p>All GNSS data within a single Trimble Access job is assumed to be within the same reference frame. You can perform an RTK survey in the RTX reference frame by setting up your RTK base on a point that has been measured using RTX. You cannot combine RTX data and VRS data unless the VRS is broadcasting corrections in terms of the ITRF-2008 epoch 2005.0 reference frame. You cannot use a site calibration to combine RTX and RTK or VRS data since a site calibration creates a transformation from the single GNSS reference system to the single local reference system, not from one GNSS reference system to another.</p> <p>For more information, go to www.trimble.com/positioning-services.</p> <p>For more information on using RTX with Trimble Access, refer to the General Survey Help.</p>							
✓ Updated Data Rate for OmniStar satellite covering Middle East (IOR)	Updated	●		●			
✓ Changed power down LED behavior of R8, R6, R4 receivers <ul style="list-style-type: none"> ○ When the power button is pressed, the power LED and satellite LED is turned solid ON and radio LED is off. After 2 seconds satellite LED turns off. Once the power button is released, the power button stays on till the receiver is completely shut down. ○ When the power button is held for over 15 seconds to erase the almanacs and ephemeris, the power and satellite LED will be on once the power button is pressed and radio LED goes off. After 2 seconds, satellite LED turns off and after 15 seconds the satellite LED comes back on. Releasing the power button at this point will erase the almanac and ephemeris, then reboot. 	Updated		●		●		●

Issue	Type	R10 ⁶	R8 ¹	R7 ²	R6 ³	R5	R4 ⁴
<ul style="list-style-type: none"> ○ If the power button is held after 15 seconds, satellite LED turns off after 30 seconds and file system will be reformatted and receiver will reboot. The power LED will be on while this happens. 							
✓ Fixed an issue with the R8-4, R6-4 and R4-3 shutting down prior to the battery being fully drained. ⁵	Fix		●		●		●
✓ Added support for tectonic plates (Receiver Configuration > Position) <ul style="list-style-type: none"> ○ Trimble CenterPoint RTX coordinates are computed and stored in the ITRF-2008 epoch 2005.0 reference frame. When you start an RTX survey, the receiver uses the tectonic plate that you select to compute the ITRF 2008 epoch 2005.0 coordinates from ITRF 2008 current epoch coordinates, using the ITRF model of continental drift. ○ The system will automatically select a tectonic plate based on your geographic position, and also provide a list of nearby plates, in the event that you are close to a tectonic plate border. (example: US West Coast) 	Update	●					
✓ Fixed issues with using Topcon VRS network	Fix	●	●	●	●	●	●
✓ Additional support for IGS names in RTCM version 3	Fix	●	●	●	●	●	●

1 R8 Model 4, R8 Model 3

2 R7 Model 2

3 R6 Model 4, R6 Model 3

4 R4 Model 3, R4 Model 2

5 **R8 Model 4, R6 Model 4 and R4 Model 3 only.**

6 R10 and R10 LT

Before you update the receiver, download and backup any data files that are on the receiver.

Download information

The latest version of Trimble Survey GNSS Firmware can be downloaded from the Trimble website within the support page of each supported receiver.

1. Go to www.trimble.com
2. Click on the *Support & Training* link in the blue banner at the top of the page.
3. Click on *Support A-Z List* on the drop-down menu.
4. Find your receiver on the list of supported products.

Hint: Click on the associated first character of your receiver type. All survey receivers fall under "T" for "Trimble XX Receiver".

5. Click on the link for your receiver type.
6. Click on the *Downloads* link.
7. The latest firmware version should be located at the top of the page.
8. Click on the link to the latest version.
9. Your browser will begin downloading the latest Winflash utility installer that contains your firmware.
10. At this point you can save the Winflash installer to a local folder or click on *Run (Open)* to begin installing the utility.

Note: You may need to accept some security warnings based on your computer configuration.

Installing Winflash utility

At this point you will continue from the last step above or if you have saved the downloaded Winflash utility, you must navigate to the folder that contains the file and click on *WFC-Rx-5x-vxxx.exe*. (xxx = latest firmware version)

1. The Winflash installer will start. Click on the *Next* button.
2. Read the License Agreement and click on *Yes* to accept the terms.
3. At this point the Winflash installer will try to detect any previous versions of Winflash on your system
 - a. If the Winflash installer detected a previous version of Winflash on your computer, it will display the current Winflash folder in use. Click on *Next*.
 - b. If the Winflash installer does not detect a previous version of Winflash on your computer, it will ask you to accept the default folder for Winflash. If you do not want to use the default location then:
 - i. Click on the *Browse...* button and navigate to the desired folder location you would like to use.
 - ii. Click *Ok* to accept the new location.
 - iii. Click on *Next* to continue.
 - iv. Select the Program Folder location for the program icon, and then click on *Next*.
4. Winflash installer will now install all required files to run the Winflash utility.
5. The Winflash installer will now ask if you want to register Winflash. You have three options:
 - a. **Register via the Internet (web access required)**
 - b. **Register by Fax or Mail.** Selecting this option will open a document. Complete the document and fax or mail to Trimble.
 - c. **Register Later.**
6. The Winflash installation is now complete.

Loading new Firmware

Use the Winflash utility to install the latest firmware on your Trimble GNSS receiver.

1. Click on the *Winflash* icon added to the Start menu on your computer.
2. Click on the *Device type* (receiver group) for your receiver type.
3. Click on the *PC serial port* drop down menu to select the serial port your receiver is connected to.
4. Click on the *Next* button.
5. From the *Operations* list box, click on the *Load GPS software* operation.
6. Click on the *Next* button.
7. Click on the *Available Software* for you receiver and the firmware you just downloaded. If you have installed firmware before, the firmware versions are still available in the listing.
8. Click on the *Next* button.
9. The next screen shows the current settings and actions to be taken by the Winflash utility.
10. Click on the *Finish* button.
11. Winflash will now load the latest firmware onto your receiver. This procedure can take several minutes. If the firmware loads correctly, then click on the *Exit* button.

Loading the USB Driver

This version of Winflash now includes the USB driver necessary to connect the Trimble R10 and Trimble R7/R5 Survey receiver with USB to your computer. Your PC will assign a COM port as your USB connection.

Once you have installed Winflash, the USB Driver installer is found in the *Program Files\Common Files\Trimble\USB Driver¹* folder. Follow the steps below to install the USB Driver.

1. Using Windows Explorer (or equivalent), navigate to the *Program Files\Common Files\Trimble\USB Driver¹* folder on your computer.
2. Double click on the *Win7_USB_Installer.exe* file in the folder. A *Device Driver Installation Wizard* dialog box will open. **Note:** If you are running Windows 7 64-bit, you will see a second dialog box, which automatically loads the 64-bit USB driver.
3. Click on the *Next* button if the installation wizard to continue.
4. The USB Driver will install and present you will and dialog showing the USB drivers that were installed. Click the *Finish* button.
5. The USB Driver is now installed. **Note:** The Windows 7 64-bit USB driver will complete its installation.
6. Plug the USB cable into the USB port of the R7 or R5, and then plug the other end into your computer. Your computer will find the device and assign a COM Port for the USB connection. A message is displayed in the Taskbar indicating which COM port the USB is assigned to.

¹For Windows 7 users, the *USB Driver* folder is located in *Program Files (x86)\Common Files\Trimble\USB Driver*