Release Notes

TRIMBLE GEOSPATIAL
28 JULY 2022

TRIMBLE SURVEY GNSS FIRMWARE

Trimble Survey GNSS Firmware Version 5.55/6.15 (July 2022)

Requirements

This firmware version includes fixes and enhancements to the Survey Receiver Firmware.

Note: *For best results, users should upgrade to Trimble Access 2022.01 (2017.24 for legacy controllers) or later when using Survey GNSS Receiver Firmware version 5.55/6.15.*

Supported GNSS Receivers

The following tables identify the Survey GNSS receivers supported by this revision.

Integrated	
Receiver Model	**Support**
Trimble R12i (v6.15)	•
Trimble R12 (v6.15)	•
Trimble R10 Model 2 (v6.15)	•
Trimble R10/R10 LT	•
Trimble R8s/R8s LT	•
Trimble R8 Model 4	•
Trimble R8 Model 3	•
Trimble R8 Models 1, 2	-
Trimble R6 Model 4	•
Trimble R6 Model 3	•
Trimble R6 Models 1, 2	-
Trimble R4 Model 3	•
Trimble R4 Models 1, 2	-
Trimble R2	•

Modular	
Receiver Model	**Support**
Trimble R750 (v6.15)	•
Trimble R9s	•
Trimble NetR9 Geospatial	•
Trimble R7 Models 1, 2	-
Trimble R5	-
Trimble 5700 Models 1, 2	-

Geospatial Division, 10368 Westmoor Drive, Westminster, CO 80021, USA

geospatial.trimble.com

Firmware Warranty Dates

To upgrade your receiver's firmware, a current and valid receiver warranty is required. Your warranty must cover the time period beyond the first day of the month of the "Warranty Date".

Example: You purchase a Trimble R10 receiver on 1 June 2013 with the standard one-year firmware support warranty. Your warranty end date will be June 2014. Since the end date is beyond May 2014, you can upgrade your receiver to v5.00.

Version	Release Date	Warranty Date
5.55/6.15	July 2022	November 2020
5.54/6.14	March 2022	November 2020
5.53/6.13	November 2021	November 2020
5.52/6.12	July 2021	November 2020
5.51/6.11	June 2021	November 2018
5.50/6.10	March 2021	November 2020‡
5.48/6.08	September 2020	November 2018
5.46/6.06	May 2020	November 2018
5.45/6.05	March 2020	November 2018
5.44/6.04	November 2019	November 2018
5.43	October 2019	November 2018
5.42	July 2019	November 2018
5.41	April 2019	November 2018
5.40	December 2018	November 2018
5.37	September 2018	June 2017†
5.34	March 2018	June 2017
5.33	January 2018	June 2017
5.32	December 2017	June 2017
5.30	July 2017	June 2017
5.22	March 2017	May 2015
5.20	December 2016	May 2015*
5.15	September 2016	May 2015*
5.14	May 2016	May 2015
5.11	December 2015	May 2015
5.10	September 2015	May 2015
5.03	June 2015	May 2014
5.01	April 2015	May 2014
*Trimble R9s and R10 Warranty Date = May 2014		
†Trimble R8s, R8-4, R8-3, R6-4, R6-3, R4-3, R4-2 Warranty Date = March 2010		
‡Trimble R12i, R12, R10-2, R10-1, R8s, R2 Warranty Date = November 2018		

Version 5.55/6.15 Release Notes

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

Issue	Type	R12i	R12[1]	R10	R750	R9s	NetR9	R8s	R8[2]	R6[3]	R4[4]	R2
In rare instances, when a rover switches to a new virtual reference station during a survey the previous station coordinate is used, resulting in rover position errors	Bug Fix	•	•		•							
RTK performance issues with third-party RTK networks and base stations using RTCM 3.1	Bug Fix	•	•		•							
Receiver crashes when receiving RTK corrections via integrated UHF radio	Bug Fix			•				•				
LTE modem attempts to connect to network when disabled and APN is blank	Bug Fix				•							
E5 AltBOC SNR reported as 63.0 for all Galileo SV's	Bug Fix	•	•	•	•	•	•	•	•	•	•	•
Front panel "Use Current Location" command displays incorrect system units for height	Bug Fix				•							
Support for Gmail and other email clients which require SSL/TLS security added to email notifications feature	Enhancement	•	•	•	•	•	•					•
RTCM3 MSM support for NavIC (IRNSS) L5	Enhancement	•	•		•							
Add WAAS PRN 135 to default list; deprecate PRN 138	Enhancement	•	•	•	•	•	•	•	•	•	•	•
Add QZSS PRN 196 to default list; deprecate PRN 193	Enhancement	•	•	•	•	•	•	•	•	•	•	•
Enable NMEA GNS constellation outputs when not tracking GPS; each constellation reported independently	Enhancement	•	•		•							
Add uninterruptible power supply (UPS) control to receiver WebUI	Enhancement				•							

1 Applies to R10 Model 2
2 R8 Model 4, R8 Model 3
3 R6 Model 4, R6 Model 3
4 R4 Model 3, R4 Model 2

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

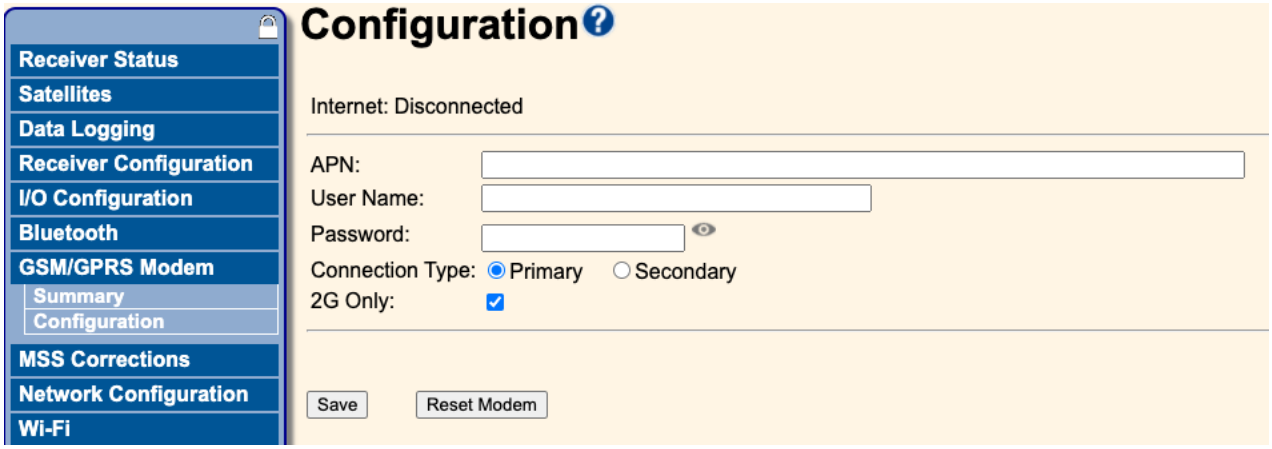
Special Note on Trimble RTX Server Maintenance Affecting QZSS Users

In June 2021, Trimble deployed a maintenance update to the Trimble RTX servers to reconcile with a change to QZSS tracking in receiver firmware version 5.50/6.10. Consequently, users must upgrade their receiver firmware to version 5.50/6.10 or later in order to use QZSS with Trimble RTX. Users who do not upgrade their receiver firmware will continue to receive corrections for GPS, GLONASS, Galileo, and BeiDou satellites. The Trimble R4s GNSS receiver will no longer support QZSS with Trimble RTX as a result of this update. Please contact your local reseller or Trimble Positioning Services Customer Care for updated information.

Receiver Internal Cellular Modem 2G Only Mode

For receiver firmware version 5.53/6.13 and above, Trimble GNSS receivers equipped with the Cinterion PHS8-P (FCC ID: QIPPHS8-P) cellular module include the option to force the modem to connect to 2G cellular bands. This capability allows users in regions where 3G cellular networks are unreliable or unavailable to eliminate the time it would otherwise take for the modem to search through the 3G bands before falling back to 2G. Because this selection persists through power cycles, users should only have to perform this action once for as long as they wish to continue to default to 2G cellular bands. Conversely, users will have to manually disable this option if they wish to use 3G cellular bands.

In order to enable this selection, users will need to open their receiver's WebUI, navigate to the *GSM/GPRS Modem Configuration* page, and check the "2G Only" box. The modem configuration will be saved automatically.

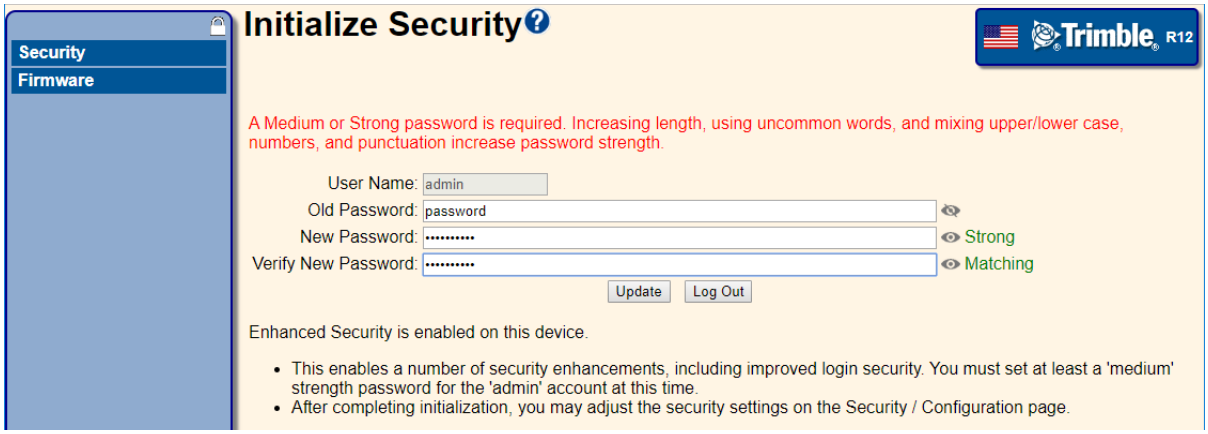


To disable this selection, users may return to the receiver WebUI to uncheck the "2G Only" box. Alternatively, performing a factory reset by pressing and holding the receiver power button for 30 seconds will clear this selection and return the modem to the default 3G with 2G fallback mode.

Enhanced Security

For receiver firmware version 5.44/6.04 and above, the first time you access the receiver WebUI you will need to perform additional steps to set up a new password for the 'admin' user. You will also be given the option to enable Wi-Fi access point security. Current owners of receivers which do not support option loading via Trimble Installation Manager (e.g. R10-1) can contact their Trimble Distribution Partner to have enhanced security enabled.

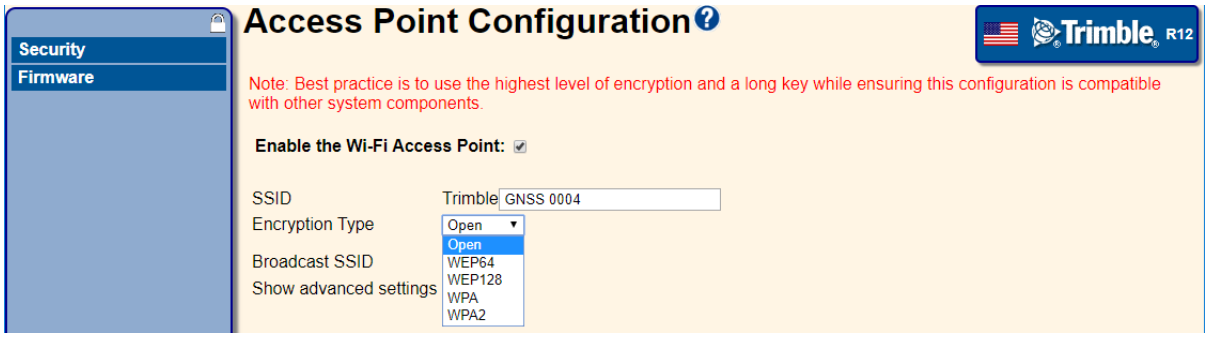
1. Connect to the receiver's Wi-Fi access point and launch the WebUI. You will initially see that the list of menu options is limited to *Security* and *Firmware*. When prompted, enter the default login username and password. By default, the username is **admin** and the password is **password**. However, if initializing the admin password outside of a WAN/LAN connection, i.e. over the internet, the default password is the receiver serial number.
2. Next, you will be prompted to enter a new password. Use a combination of upper and lowercase letters, numbers, and punctuation in order to obtain a 'medium' or 'strong' password; a 'weak' password will be rejected. After verifying your new password, click "Update".



Note: If the 'admin' user password is lost, the password can be changed by resetting the receiver to factory defaults. This is done by pressing and holding the physical power button on the receiver for 30 seconds. For receivers with a front panel display, e.g. Trimble R750, you will need to contact Trimble Support via your dealer to obtain a code to reset the password. This is done to prevent unauthorized access to computer networks from a networked receiver.

3. Next, you will be prompted to set up security for the receiver's Wi-Fi access point (optional). By default, the encryption type is "Open", i.e. no encryption. You can select an encryption option from the list and provide a security key, or else leave the encryption open. You also have the option to not broadcast the SSID (the Wi-Fi network name), which will prevent other devices from detecting your receiver's Wi-Fi access point.

Note: If the Wi-Fi access point security settings are changed, existing client connections will need to be updated.



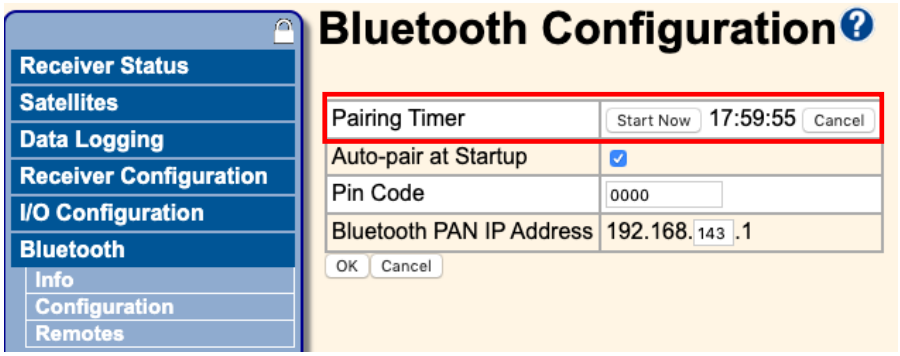
Note: You can view and configure additional access point settings by ticking the "Show advanced settings" checkbox.

Bluetooth Security

The Bluetooth module behavior has been modified as of firmware v5.45/6.05.

When the receiver is powered on, an 18-hour pairing timer starts, during which time the Bluetooth module is discoverable by external devices. After the countdown has elapsed, or after any device is paired with the receiver, the Bluetooth module is no longer discoverable by external devices.

The pairing timer can be initiated manually from within the *Bluetooth Configuration* menu in the receiver WebUI by clicking “Start Now”. The timer can be canceled by clicking “Cancel” button next to the countdown, which will make the Bluetooth module undiscoverable.



The timer can be also reinitiated without accessing the receiver WebUI by power cycling the receiver. While the timer is active, the *Bluetooth Info* menu will show that the module is discoverable.

Trimble Installation Manager

Trimble Installation Manager is a free download and can be found here:

http://www.trimble.com/installationmanager

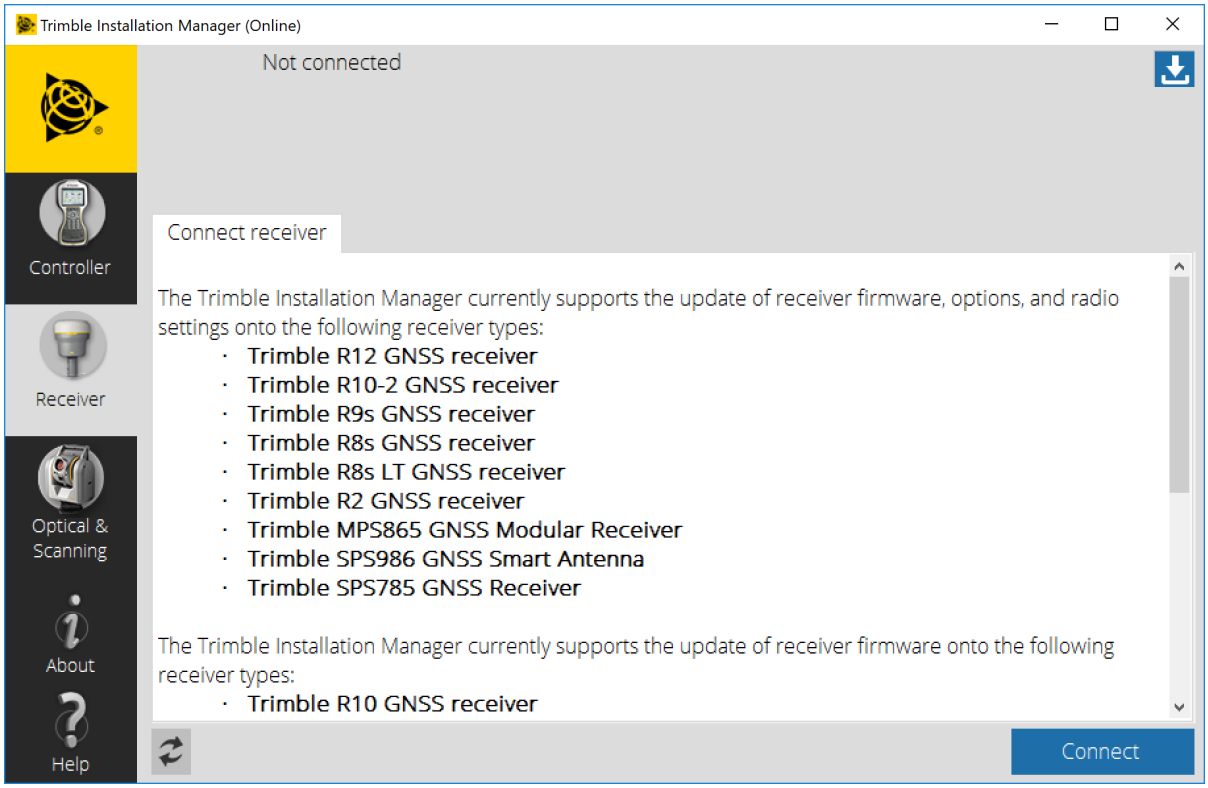
The primary Trimble Installation Manager features for GNSS receivers are:

- Warranty Activation
- Option Loading
- Radio Configuration
- Firmware Installation

The following GNSS receivers are currently supported:

- Trimble R2 (Warranty Activation, Option Loading, Radio Configuration, Firmware Installation)
- Trimble R8s (Warranty Activation, Option Loading, Radio Configuration, Firmware Installation)
- Trimble R9s (Warranty Activation, Option Loading, Radio Configuration, Firmware Installation)
- Trimble R750 (Warranty Activation, Option Loading, Radio Configuration, Firmware Installation)
- Trimble R10 (Firmware Installation)
- Trimble R10-2 (Warranty Activation, Option Loading, Radio Configuration, Firmware Installation)
- Trimble R12 (Warranty Activation, Option Loading, Radio Configuration, Firmware Installation)
- Trimble R12i (Warranty Activation, Option Loading, Radio Configuration, Firmware Installation)

After the installation process is complete, launch Trimble Installation Manager, connect the receiver with the appropriate data cable to your computer and click on **Connect**.

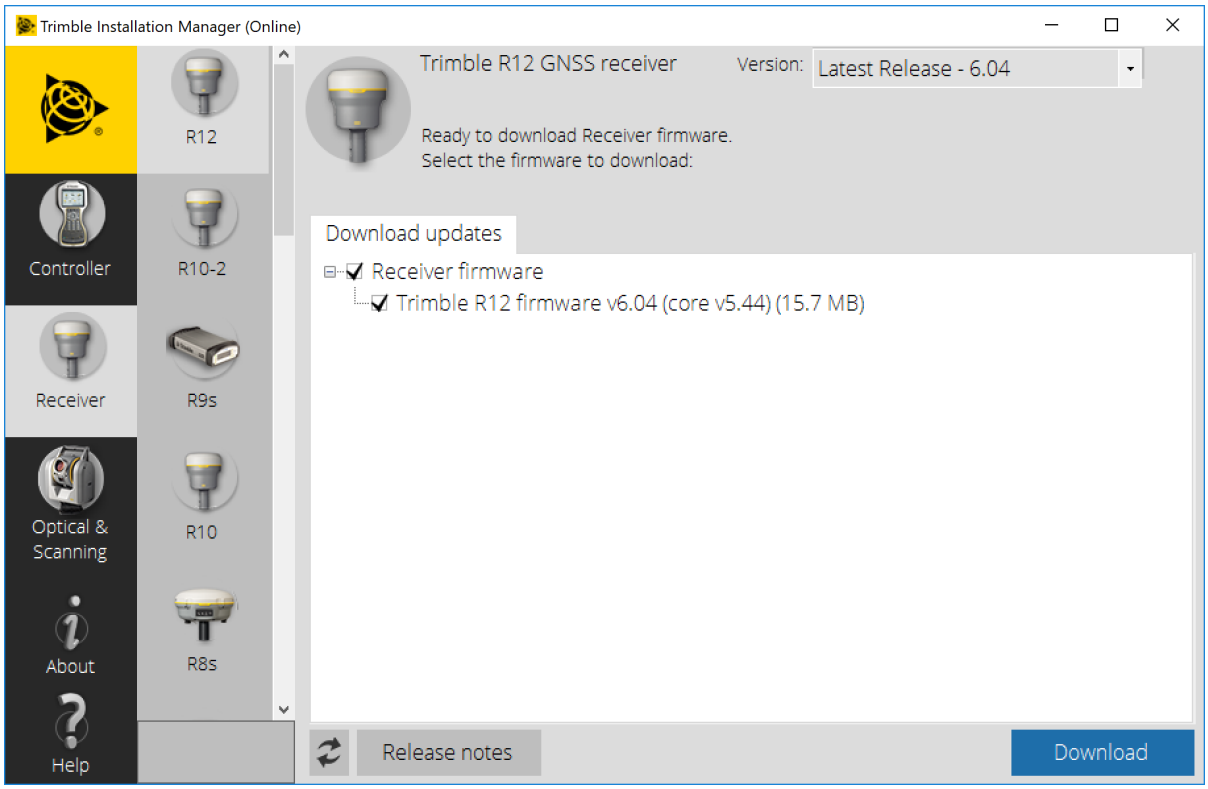


Trimble Installation Manager will display receiver-specific information. Select the firmware version you would like to install from the selection menu in the top right corner. Click on **Install** to start the installation process.

Download Trimble Survey GNSS Firmware to a Local Machine using Trimble Installation Manager

The latest version of Trimble Survey GNSS firmware for supported receivers can now be downloaded and saved to your local machine via Trimble Installation manager.

1. Launch Trimble Installation Manager – it is not necessary to have a receiver connected to your computer.
2. Click the Receiver tab.
3. Click the Download button in the upper right corner. 
4. Select the appropriate receiver model on the left.
5. Select the desired firmware version from the dropdown menu in the upper right – the latest release is selected by default.
6. Click Download.
7. Browse to the location where you would like to save the file and click OK – the firmware file will automatically be saved to a folder labeled with the receiver model and firmware version.



Download Information for Trimble Survey GNSS Firmware not using Trimble Installation Manager

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 at the top of the page.
3. Select *Support A-Z* from 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 full 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
   i. 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*.
   ii. 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:
   iii. Click on the *Browse…* button and navigate to the desired folder location you want to use.
   iv. Click *Ok* to accept the new location.
   v. Click on *Next* to continue.
   vi. 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 your 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 includes the USB driver necessary to connect the Trimble R10 with USB to your computer. Your PC will assign a COM port as your USB connection. This step is not necessary for Windows 10 users or for users who have previously installed the Trimble USB driver.

Once you have installed Winflash, the USB Driver installer is found in the Program Files\Common Files\Trimble\USB Driver[1] 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 Driver*[1] 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 R10, 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.

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

For More Information

For more information, please contact your local Trimble Distribution Partner.