



Support Note

28 JUNE 2019

TRIMBLE RANGER 7 DATA COLLECTOR AND TRIMBLE TSC7 CONTROLLER: GUIDE FOR AVAILABLE OPERATING SYSTEM, DRIVER, AND APP UPDATES

This support note provides guidance and instructions on what, if any, updates need to be applied to a Trimble® Ranger® 7 data collector or Trimble TSC7 controller, and help determine if you need to:

- apply Microsoft® updates. See [Downloading and Installing Microsoft Updates](#)
- install the latest Trimble Drivers and Utility App package. See [Downloading and Installing the Trimble Driver and Utility App Package](#)
- install individual driver or utility app components. See [Downloading and Manually Installing Individual Trimble Drivers or Utility Applications](#)
- update the BIOS/EC. See [Downloading and Installing the Trimble BIOS / EC](#)
- update Trimble EMPOWER Module Support Components. See [Downloading and Installing EMPOWER Module Support Components](#)
- update or reinstall the entire Trimble operating system. See [Downloading and Installing \(re-load or update\) the custom Trimble OS Image](#)

Affected Units

This support note applies to all Trimble Ranger 7 and TSC7 devices.

© 2019, Trimble Inc. All rights reserved. Trimble, the Globe & Triangle logo, and Ranger are trademarks of Trimble Inc., registered in the United States and in other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Trimble Inc. is under license. All other trademarks are property of their respective owners.

Overview

Trimble has released several operating systems—the latest version is Trimble OS B25-T, based on Microsoft Windows 10 Pro RS5, version 10.0.17763 (1809 update). The Trimble operating system includes the standard Microsoft Windows® 10 Professional operating system which includes the latest Microsoft Security Updates (at the time of the Trimble operating system release), plus additional components which makes the Trimble operating system build unique to any other Windows 10 operating system image. The additional components include:

- Drivers required for proper operation of hardware components integrated with the Ranger 7 data collector / TSC7 controller, including the Intel Chipset, Camera, Audio, WLAN, Bluetooth®, WWAN, GNSS, RS232, Power Management, etc.

Note - Occasionally a Microsoft update may overwrite a driver that was installed in the Trimble operating system image. This should not cause any issues and Trimble makes every attempt to proactively test driver updates pushed out by the Microsoft Security updates.

- Apps provided by Trimble for using the built in keyboard, touch panel, and SDK.
- EMPOWER module components including the Module Support Packages and Demo software.

Overview of options and recommendations

	Provided by Microsoft	Provided by Trimble	Recommendation
Generic Windows 10 OS image	Windows 10 Image (ex. 1709, 1803, 1809)	No drivers or apps specific to Ranger 7 / TSC7 hardware	Trimble does not recommend installing a Generic Windows 10 image on Ranger 7 / TSC7 device as drivers required for proper operation of the hardware are not included.
Trimble Ranger 7 / TSC7 Out of the Box OS image	Windows 10 Image (ex. 1709, 1803, 1809)	Includes Drivers and Apps for proper operation of Trimble hardware.	Shipping operating system; install the latest Microsoft Windows 10 Updates.
Trimble Ranger 7 / TSC7 OS image installer	Windows 10 Image (ex. 1709, 1803, 1809)	Includes Drivers and Apps for proper operation of Trimble hardware.	Recommended for full reset of the Ranger 7 / TSC7 when other troubleshooting methods do not resolve the issue; or if you are several Trimble OS builds behind and are not up to date with Microsoft Updates.
Standard Microsoft Windows 10 Updates	Windows 10 Image (ex. 1709, 1803, 1809)	There are no specific Trimble components included with Microsoft Updates	Recommended to keep the Ranger 7 / TSC7 up to date and secure.
Trimble Ranger 7 / TSC7 Driver / App Package	N/A	Hardware drivers, EMPOWER module apps	Recommended for updating the latest Trimble specific components as an alternative to installing the whole OS, or for troubleshooting purposes.

For details on all of the components installed in each released Trimble operating system, including the Microsoft Security update build at time of release and versions of drivers and software, refer to [SprtNote_Ranger7-TSC7_OS_BIOS_EC_Driver_AppsHistory_Eng](#). It includes release dates, versions and how to find the version installed on the Ranger 7 / TSC7 device.

Guidance on what to update

- [Downloading and Installing Microsoft Updates](#)
- [Downloading and Installing the Trimble Driver and Utility App Package](#)
- [Downloading and Manually Installing Individual Trimble Drivers or Utility Applications](#)
- [Downloading and Installing the Trimble BIOS / EC](#)
- [Downloading and Installing EMPOWER Module Support Components](#)
- [Downloading and Installing \(re-load or update\) the custom Trimble OS Image](#)

Downloading and Installing Microsoft Updates

Microsoft routinely pushes out various updates and security patches and Trimble recommends keeping your Ranger 7 / TSC7 updated for optimal performance and security, as well as to reduce the amount of time it takes to perform updates. For example, it is faster to update from Microsoft v1803 to v 1809 than v1709 to v1809, as these releases can be very large.

Shortly after Microsoft releases a new major update such as 1803 or 1809, Trimble prepares a new Trimble Ranger OS image for shipping on all new Ranger 7 / TSC7 devices. Shortly after this, Trimble releases a field update tool to update the full operating system or just the latest drivers and apps so that the devices can be updated in the field.

There may be instances when a Ranger 7 / TSC7 does not ship with the latest Microsoft Updates, or a device already in the field requires installation of the latest updates. For new devices, it is important to check for updates after going through the Out of Box Experience (OOBE) and setting up the Ranger 7 / TSC7. Trimble recommends installing updates on the Ranger 7 / TSC7 in the evening while it is connected to a good Internet connection and to external power. Trimble does not recommend running updates while connected to the Internet over a cellular connection, or while using the device for field work, as the installation may consume a large percentage of the CPU resources, causing other programs to run slowly.

You can check installed updates under **Start / Settings** (Gear Icon) / **Home / Update & Security**. You can install the latest updates using the standard Microsoft update procedure. For more information on updating Windows 10, refer to the following site:

<https://support.microsoft.com/en-us/help/4027667/windows-10-update>

For detailed information on the types of updates and settings options, including setting Active Hours for updates and setting updates to install only while connected to Ethernet 'Metered Connection', see:

[SprtNote_Ranger7-TSC7_ManagingWindows10Updates_Eng](#)

While Trimble devices in the field are capable of downloading and updating the Microsoft updates and security releases, the Trimble components are not automatically updated. These components include the Trimble drivers, apps, and EMPOWER components. These can be manually downloaded, installed and updated using several methods:

- **Trimble Driver and Utility App Package.** This is an end-user updater that automatically installs all Trimble apps and drivers; this option does not erase any data. It installs the Trimble apps and drivers that were released with the currently shipping OS.
- **Manually install Trimble drivers, utility apps and EMPOWER components.** This option takes more time because you would need to individually install all drivers and apps. Trimble recommends that you only use this method if you are troubleshooting a specific hardware issues (such as Bluetooth) and need to reinstall a specific driver.
- **Full Trimble OS reload.** This option is recommended if you have a brand new device with an outdated Trimble OS such as OS B19.2-T or if you are having problems that cannot be resolved by using the Driver and Utility App Package or by manually updating individual components.
Caution - This method overwrites all data so you MUST back up all data. You may also need to install Microsoft Security updates after the OS install if any were released after the Trimble OS was created.

Downloading and Installing the Trimble Driver and Utility App Package

If your device is running an older Trimble OS, and you have kept up to date with the Microsoft Security Updates, using the Trimble Driver and Utility app package is the best method to bring the device up to date with the last released Trimble drivers, apps and other components required for proper device operation.

This option is a less obtrusive update method than reloading the OS as it will not overwrite data or updates, and you will not lose data, software or settings. It simply installs the latest version of drivers and EMPOWER module apps from Trimble.

This package does not include Microsoft updates; you will still need to keep up to date with these as Microsoft releases them.

For detailed instructions on using the installer to update the driver and apps, see:

[SprtNote_Ranger7-TSC7_InstallationInstructions_OS-B25-T_Driver-AppPackage_Eng](#)

Downloading and Manually Installing Individual Drivers or Utility Applications

If you have been using the Ranger 7 / TSC7 for a while and are encountering any issues with specific hardware components, you may choose to install the Trimble Driver and Utility app package as

mentioned in the previous section, or just install or reinstall individual drivers or apps. The full driver set for the Trimble OS B25-T is available for download here:

http://dl.trimble.com/mcs/tsc7_ranger7_drivers_b25_full_20190607.zip

You may also use this package to include the Trimble recommended drivers and applications in their own Windows OS image. However, be aware that the only officially supported operating system builds are the versions released by Trimble. These are listed in:

[SprtNote_Ranger7-TSC7_OS_BIOS_EC_Driver_AppsHistory_Eng](#)

Any custom image is done at the customer's own risk; Trimble Technical Support will not be able to troubleshoot a custom OS image that was not released by Trimble.

Downloading and Installing EMPOWER Module Support Components

The Module Support Packages and other components required for proper operation of the Trimble EMPOWER Modules are not automatically updated with the Microsoft updates.

For Windows 10 platforms such as Ranger 7 / TSC7, the supporting EMPOWER components are updated to the latest versions when the Trimble OS image is created.

You can update all Trimble EMPOWER Components to the latest version included with OS B25-T using the Driver/App Update Package; for details, see:

[SprtNote_Ranger7-TSC7_InstallationInstructions_OS-B25-T_Driver_AppPackage_Eng](#)

There may be times when Trimble releases newer EMPOWER components between Trimble OS releases if there are significant updates, for example to support a new module.

If you are having any issues with EMPOWER modules or just want to make sure you have the latest components installed, Trimble recommends checking the [Support page](#) for available updates.

Downloading and Installing the Trimble BIOS / EC

If your Ranger 7 / TSC7 is performing as expected, there is no need to update the BIOS / EC.

If you are experiencing issues with the keyboard or power management, Trimble recommends that you update the BIOS/EC.

For a description of the BIOS/EC, instructions for determining what version of the BIOS / EC is installed, and instructions on how to update, see:

[SprtNote_Ranger7-TSC7_BIOS-EC-X66_UpdateProcedure_Eng](#)

Downloading and Installing the Custom Trimble OS Image

Since the Ranger 7 / TSC7 has a Windows 10 Professional operating system, Microsoft updates should automatically be downloaded and installed when connected to the Internet. A complete reinstall of the Trimble OS would not normally be needed unless you are experiencing difficulties with the device and reinstalling drivers or apps does not solve the problem.

If you are experiencing issues with the Windows 10 OS on the device, Trimble recommends that you first update the OS using the [Microsoft Updates option](#) to see if that fixes the problem, then [reinstall drivers/apps using the installer](#) or [update single components](#) depending on the issue.

As a last resort, you may completely reinstall the OS by Downloading and Installing the Custom Trimble OS Image. This method involves downloading the OS from a server (which can take several hours depending on your Internet connection) and loading it to a USB drive which you will use to install the OS to the device.

CAUTION - This method will overwrite all user settings and data.

Trimble Dealers may also use this method to manage inventory that may need to be updated.

Trimble strives to update the OS that ships with the Ranger 7 / TSC7 devices with the latest available Microsoft updates, and then make this OS available for updating devices already out in the field.

For devices in the field that require several major Microsoft updates to be installed, it may make more sense to download the Trimble OS image and load it to a USB drive; the USB drive can then be used to update all Ranger 7 / TSC7 devices that need updating. This will save a considerable amount of time rather than installing several major updates from Microsoft over a slow Internet connection.

This method installs the latest drivers and EMPOWER apps from Trimble, however you may need to install some smaller Microsoft updates after the OS update.

For instructions on updating the OS to B25-T using a USB drive, see:

[SprtNote_Ranger7-TSC7_OS-B25-T_Update&ReloadInstructions_Eng](#)

More Information

Contact your Trimble Regional Sales Manager or local Trimble Distribution Partner for more information.