Trimble Ranger 7 User Guide V1 (08/02/2022)

**DO NOT CONNECT THE RANGER 7 TO YOUR LAPTOP FOR ANY REASON**
This creates a Peer-to-peer connection which is not allowed by the Forest Service.

The Trimble is a device that operates with the Windows 10 platform. Many of the functions you use on your regular laptop are the same as on the Ranger 7. Think of it as your portable laptop in terms of the operating system. But keep in mind, it’s not equivalent as far as being able to use Teams and your Forest Service email. The Ranger 7 does not have the standard FS Image installed so they must not be used with the secure FS networks or websites.

*These units should never be connected to a FS Network or FS Wireless Network.*

To turn the device on, simply press the power button (green button above letter keys). No need to hold down, just press it and the screen will turn on.

To turn the device off (Shut down), click start (lower left on the task bar), click power , then click the Shut down option. Do not hold down the power button (green button above letter keys) to turn off the unit.

Logging on with password:

When you boot it up, you will see this screen. Simply swipe up or press the enter button to enter your login credentials. When you initially receive the units, your password will match the User Name at the bottom left of the screen (NRSFIAx). You may have to click on the NRSFIAx option if NRSADMIN is currently selected.

Once logged in, the default password should be changed. To do so, click and hold ‘Ctrl+Alt+Del’. Click on ‘Change a Password’. Be sure to recall what you change it to, because it may require that the unit be sent back to St. Paul to recover the password.

You are highly encouraged to customize the settings for when the display turns off and when it enters sleep mode for what suits your needs best. Tap the search icon (magnifying glass) in the lower left
corner of the display and type “power”. Open “Power & sleep settings” and adjust time to your preferences.

**Power and Screen Settings:**

While in the **Power & sleep settings**, scroll down to “Additional power settings” and tap it. In the left pane, tap “Choose what the power buttons do”. While it is recommend to leave the power button to turn off the display, you may want to change what happens when you press the sleep button. (The sleep button is the FN button followed by the number 3 – there is a moon above the 3 to indicate this.) Choose either hibernate or sleep. Sleep mode stores the documents and files you are using into the memory, using a small amount of power while sleeping. Hibernate mode essentially does the same thing, but saves the information to your hard disk, then shuts the Ranger down completely and uses no energy. Sleep will continue to use a little battery, but wakes up quickly. Hibernate will use no battery, but takes slightly longer to boot back up. Both options return to exactly the same place you left off. Make sure to hit **Save changes** once you have customized it.

To power the unit completely off, click on the ‘Window’ at the bottom left of the screen. Click on the power button. Click **‘Shut down’**. Similar to your laptop, these units will need to be rebooted on occasion so it is good to power it down completed every once in a while. The device can also be Shut down from the login screen. Click the power button in the lower left corner of the screen, then click Shut down.

**Updates:**

Similar to your laptop, these units will prompt on occasion that a system update is required. It might be a system update or an update to Defender or Tanium. Some of the updates will automatically be performed when the unit is powered down and restarted. Other updates need to be activated when prompted.

In addition to no longer needing to connect the data recorder to your laptop, there is no need to activate **Update Mobile Device Components** in the Mobile Device Center. Go to the Midas website directly from the Trimble when connected to a network for updates: [FIA Mobile Integrated Data Acquisition System (usda.gov)](https://www.usda.gov). Performing an **Install/Update MIDAS Software** function from the website will download all of the MIDAS updates. Opening the **MIDAS Control Panel** or clicking on **Unzip Downloaded Files** will save the updated files to the respective locations.

**Touchscreen Functions:**

The Trimble Ranger 7 device can be used in touchscreen mode (TSM) using your finger, glove, or with a stylus. To choose which option you need at a given time, double click on the TouchControl Icon (see picture below) on your desktop. A window will pop up allowing you to choose the option that fits your current needs.
It may be beneficial to turn TSM off when you are traversing to and from plots and subplots. If it is left active, you risk the screen brushing against vegetation and such which could affect data you’ve collected thus far.

To enable / disable touchscreen: Press FN button then the ‘1’ key (No need to hold button down).
  Note: there is a popup confirmation of disabling touchscreen, but no popup when enabling.

To enable / disable display: Once the Ranger has booted up, pressing the green power button will turn the screen off and on.

**Batteries:**

To check the battery charge level: Press and hold the charge indicator button on each of the batteries. At least one charge LED must be lit up to indicate that a battery has enough power for the device to start on battery power. If no LEDs light up on a battery, attach the device to an external power source, or swap the batteries for charged batteries, then try again. If your battery charge level gets too low, the device will automatically go into a hibernate mode to prevent loss of data.

If you regularly run out of battery power while in the field, consider carrying spare batteries with you. The device supports hot-swapping of the batteries. Swap one battery at a time; you must always have one battery with sufficient charge in the device while you remove a battery and replace it with another. If you remove both batteries, the device shuts down.

**Installing and removing the batteries**

The batteries in the Ranger 7 data collector can be charged inside the device or using the Battery charger accessory.

The batteries in the Ranger 7 data collector are also hot swappable; you can remove one battery while the Ranger 7 data collector is still running on the second battery and replace it with a freshly charged battery without shutting down or needing to restart the device.

**CAUTION** – If you remove both batteries, the device will shut down and work may be lost.

**Installing the batteries**

1. Turn the battery latch 90° clockwise or anticlockwise until the flat edge aligns with a battery opening.
   
   **NOTE** – You can use a coin or the top of the stylus to do this.
2. Insert a battery, then turn the battery latch 180° until the flat edge aligns with the second battery opening.
3. Insert a second battery.
4. Turn the battery latch 90° back to the center position to lock both batteries in place.

Removing / hot-swapping a battery

**CAUTION** - Trimble strongly recommends that before you hot swap a battery:
- In the Trimble Access software, you complete your task;
- In all other applications, you save your data.

**CAUTION** - If you remove both batteries at the same time the device will instantly turn off due to power loss. Make sure you keep one battery in the device.

If you have the device turned off, you can remove both batteries at the same time.
To hot-swap the batteries, replace one battery at a time:
1. Check the charge level of the batteries by pressing the button on each battery
2. Replace the battery with the lowest charge first; turn the battery latch 90° until the flat edge aligns with a battery opening, then remove the battery.
3. Replace this battery with a fully charged battery.
4. Turn the battery latch by 180° until the flat edge aligns with the second battery opening, then remove the second battery.
5. Replace the second battery, then turn the battery latch 90° back to the center position to lock both batteries in place.

Charging and power modes

It takes approximately 3 hours to charge the Ranger 7 data collector batteries from an empty state. It may take longer if you are using your device for power-intensive activities, for example using GNSS or processing a lot of data while you are charging it.

Charging the battery
1. Connect the appropriate international plug adapter for your region to the AC adapter.
2. Connect the power cord to the charging port on the device.
3. Plug the power supply into an electrical outlet.
Checking the battery level

You can check the battery level:

- On the Lock screen. When you wake the device, the battery status appears in the lower-right corner of the Lock screen.
- On the Desktop taskbar. The battery status appears on the right side of the taskbar. Tap the battery icon for information about the charging and battery status, including the charge percent remaining.
- On the battery. Press the button on the battery to check the battery charge level. You can check the charge level of the battery in this way when the battery is inserted in the device, or when it is not.
- The LEDs on the battery will show one of the following:

  ![LED Charging Status]

  LED charging status

  The charging status is shown with an LED on the front top left corner of the display.

  - Red: Charging error. It can take the device approximately 30 seconds to recognize a bad battery and indicate a charging error.
  - Orange: Ranger 7 data collector is charging.
  - Green: Ranger 7 data collector is fully charged.
  - Green – Flashing: Ranger 7 data collector is in sleep state.

Data entry with MIDAS:

Use **MIDAS Utilities > MIDAS Tablet** to enter data. We are no longer using MIDAS Mobile (if you choose this option, the screen will be too small to efficiently enter data). To open MIDAS Tablet, select the icon on the desktop, then select your Region, Crew Name and enter your password.

Midas Tablet needs to be closed after each use. To properly close Midas Tablet, click the Exit Program button located on the Midas Tablet home screen.

Data Transfer with MIDAS:

It’s not recommended to use a USB drive to transfer plot files onto your PC. Plot files should be loaded directly from the Ranger the same way they’re loaded with the PC, if a Wi-fi connection is available. If a Wi-fi connection isn’t available and you need to use a USB drive to transfer files, then the proper procedure for removing a USB flash drive from a PC after your file copy is complete is to right click on
the drive in File Explorer and left click the Eject menu item (see picture below) and then pull the flash drive. Pulling the USB drive from the PC before the file copy is complete could result in corrupt/empty plot files.

Airplane mode:

Switch the Trimble to *Airplane* mode when using in the field to collect data (Airplane mode is a mobile setting that switches off your Ranger’s connection to the Wi-Fi networks). This should improve the performance of the device and also extend battery life.

To enable Airplane mode:

- **Alt + Function 0** or open the Network connection window (click the WiFi or Ethernet (monitor with cable) icon on the taskbar. It’s located on the right side of the taskbar in the notification area.)
- Click the "**Airplane mode**" tile. It has an airplane icon at the top of it
- Re-click the tile to disable

**!Windows Updates for the Ranger 7!**

1. Make sure the device is connected to the internet.
2. Click **Start**, Click **Settings**, Click **Update and Security** or type Update and Security into search box.
3. Click **Check for updates**
4. Download and install any Windows updates. Don't download and install Optional updates. Do download and install Feature updates.
5. You may need to restart your Ranger 7

**!Occasionally it is necessary to run a Full virus scan. The USDA Cyber Security Team recommends this be done at least once a week or if the device isn’t functioning correctly.**

To Run a Full Virus Scan:

1. Make sure the device is connected to the internet
2. Click the Start icon  
   (lower left on the task bar)
3. Click Settings
4. Click Update & Security
5. Click Windows Security
6. Click Virus and Threat protection
7. Click Scan options (under quick scan)

   ![Scan options]

   **Scan options**
   - Allowed threats
   - Protection history

1. Select Full scan

   - Full scan
     Checks all files and running programs on your hard disk. This scan could take longer than one hour.

2. Click the Scan now button

   - Microsoft Defender
     Some malicious software can be particularly difficult to remove from your device. Microsoft Defender offline can help find and remove them using up-to-date threat definitions. This will restart your device and take about 15 minutes.

   ![Scan now]

   - Scan now

   !Some malicious software can be particularly difficult to remove from your device. Microsoft Defender offline can help find and remove them using up-to-date threat definitions. This will restart your device and take about 15 minutes.

1. Follow “To Run a Full Virus Scan” steps 1 through 7
2. Select Microsoft Defender Offline scan
How to disable or enable the on-screen keyboard

- Left click Start > Settings
- Choose Ease of Access
- Select Keyboard
- Set On-screen Keyboard to On or Off

Screen Rotation: If the setting for screen rotation becomes unlocked. Go to Settings > System > Display (you might need to expand the window to full size to see it). Scroll down until you see the option for Rotation lock (located under display orientation) and switch it to the ON position.

How do I fix Caps Lock & Num Lock keys that are stuck?
1. Press the Windows key to launch the Start menu.
2. Open the Settings menu.
3. Select Time & Language.
4. Go to the Language tab.
5. Select the Keyboard menu.
6. Click Input language hot keys.
7. On the Advanced Key Settings tab, select Press the Shift key.
8. Click OK.

Using the desktop hub: An optional accessory, the Ranger 7 data collector desktop hub connects to the device with a USB cable. The desktop hub allows a keyboard, mouse, and larger monitor to be connected to the Ranger 7 at the same time while in the office. This will make office tasks easier to manage on the Ranger 7.

Tip: Disable the electronic keyboard if the Midas program entry fields shrink when the on-screen keyboard pops up.
Troubleshooting
This section contains answers to some common troubleshooting questions. If you encounter problems when using your Ranger 7 data collector, try the following troubleshooting tips to detect and solve the problem. If problems persist, contact USFS Trimble Frontline Support at (866) 560-6200 (When calling, identify yourself as either a Forest Service employee or Forest Service Contractor).

Performance issues

**Device is running slowly**

- Operating system updates may be installing.
  - Windows 10 Pro may have automatically downloaded software or operating system updates and is installing these in the background. While these updates are being installed, system performance may be reduced, or wireless connectivity speed may appear to be slower than normal.
- You may have too many background applications are running.
  - Some programs start automatically and run in the background. You can disable these programs at startup to improve Windows startup time and overall system performance.
- You may have malware or a virus.
  - A virus or other malicious software could cause your device to run slowly. Check whether your device has a virus by using Windows Defender, which is included with Windows 10.
- Check your wireless network speed.
  - If the apps you are using are connecting to the Internet, a poor network connection may be causing them to run slowly. For detailed information on checking your network, see Wi-Fi speed is slow.
- Check for low disk space.
  - You may be able to improve performance if you free up some disk space on your device. Disk Cleanup can delete temporary and system files, empty the Recycle bin, and remove apps and data that you no longer need.
- Your device may have overheated.
  - If you are using your device in a hot environment and/or are using a processor or memory-intensive, your device may have become too hot. Move your device to a cooler spot, wait five minutes, and see if it runs faster.

Wireless connectivity issues

**Wi-Fi speed is slow**

- Your network is running slow for all devices.
  - You should first check to see whether your network is slow on another device. Can you connect to your wireless network and browse the web at normal speeds from another device? Try running a Network Speed Test to ensure your Internet connection is functioning normally.
• Your Wi-Fi signal is weak.
  o Look at the Wireless network icon in the taskbar.
    This icon shows your current signal strength. If the icon is partially dimmed, move your device closer to your wireless router to see if the signal improves. If your router is broadcasting on both a 2.4GHz and 5GHz frequency, try connecting to a different frequency. In general, a network operating on the 5GHz frequency will be faster and less susceptible to interference but will have a shorter range than a 2.4GHz network.

**Power and battery issues**

**Battery will not charge**

• The battery is overheated, or too cold.
  o The battery will charge between 0 °C and +40 °C (+32 °F and +104 °F). If you have been using or storing the battery and/or device in a particularly hot or cold environment, the battery may be outside the safe charging temperature range. Sensors in the battery will prevent the battery from charging until its temperature returns to a normal level.
• The battery is not installed correctly.
  o If the battery is not installed correctly in the device or the battery charger, it may not have a proper connection and will not charge.
• The battery terminals are dirty or corroded.
  o If the terminals of the battery are dirty or corroded, it may not have a proper connection and will not charge.

**Device will not start up**

• The batteries do not have enough charge to power the device:
  o Press and hold the charge indicator button on each of the batteries. At least one charge LED must be lit up to indicate that a battery has enough power for the device to start on battery power. If no LEDs light up on a battery, attach the device to an external power source, or swap the batteries for charged batteries, then try again.
• The batteries are not correctly installed.
  o The device may not be receiving power from the batteries if they are not installed properly. Remove both the batteries, then replace them correctly.

**Device suddenly turned off during use**

• The device may have run out of power and gone into critical suspend mode.
  o If your battery charge level gets too low, the device will automatically go into a hibernate mode to prevent loss of data. Check the battery level by pressing and holding the battery level button on each of the batteries. If the battery charge is too low, connect the device to external power, or swap the batteries for a charged batteries. If you regularly run out of battery power while in the field, consider carrying spare batteries with you. The device supports hot-swapping of the batteries. Swap one battery at a time; you must always have one battery with sufficient charge in the device while you remove a battery and replace it with another. If you remove both batteries, the device shuts down.