Trimble Access 2018

Quick Start Guide
R8s GNSS

Trimble Access

Trimble Access 2018 software is the latest generation of the Trimble Access field application. The comprehensive, easy-to-use software supports your everyday survey fieldwork, including topographic surveys, staking, control points, site calibration, and 3D scanning. The intent of this manual is to give the user a better understanding of the software and to help navigate Trimble Access in an efficient manner.

Setting up the TSC7

Before we can create a job to work in or stake out a point, we must set up the **survey styles** and make sure all pertinent data is the right location.

All surveys in Trimble Access are controlled by a **survey style**. **Survey styles** define the parameters for configuring and communicating with your equipment, and for measuring and staking points. This whole set of information is stored as a template and used each time you start a survey.

The necessary **Survey Styles**, **Geoids, and Feature Codes (.fxl)** will be provided but must be placed in the correct location. The Trimble folder that houses all the data is hidden and difficult to find when first operating Windows 10. To change this setting. Open file explorer
- o Go to **View** in the top ribbon and select it
- o Select **Options** (Folder Options) to the far right in the next ribbon
- o Click on **View** in the middle toggle
- o Click on **Show hidden files, folders, and drives**

All data used by the Trimble Access software must be stored in the appropriate folder in the **C:\ProgramData\Trimble\Trimble Data\System Files** folder. Navigate to this location and create a shortcut to the desktop for easy access. The system files folder is where you will need to put the **Survey Styles**, **Geoids, and Feature Codes.**

Trimble R8s GNSS

This manual describes how to setup and use the Trimble R8s GNSS. This will be a quick guide on just the basics. For more information visit https://www.trimble.com/support/support_az.aspx to view all possible downloads.

Connecting to the R8s GNSS

The R8s GPS connects to the TSC7 through Bluetooth. You will need to turn on the R8s head and allow it to start producing a Bluetooth signal to begin. There are a few different ways to configure the Bluetooth, this is just one way.
1. Start Trimble Access and tap ≡
2. Tap **Settings.**

3. Tap **Connections**.
4. Tap **Bluetooth.**
5. In the Bluetooth screen, tap **Config** in the bottom right corner.
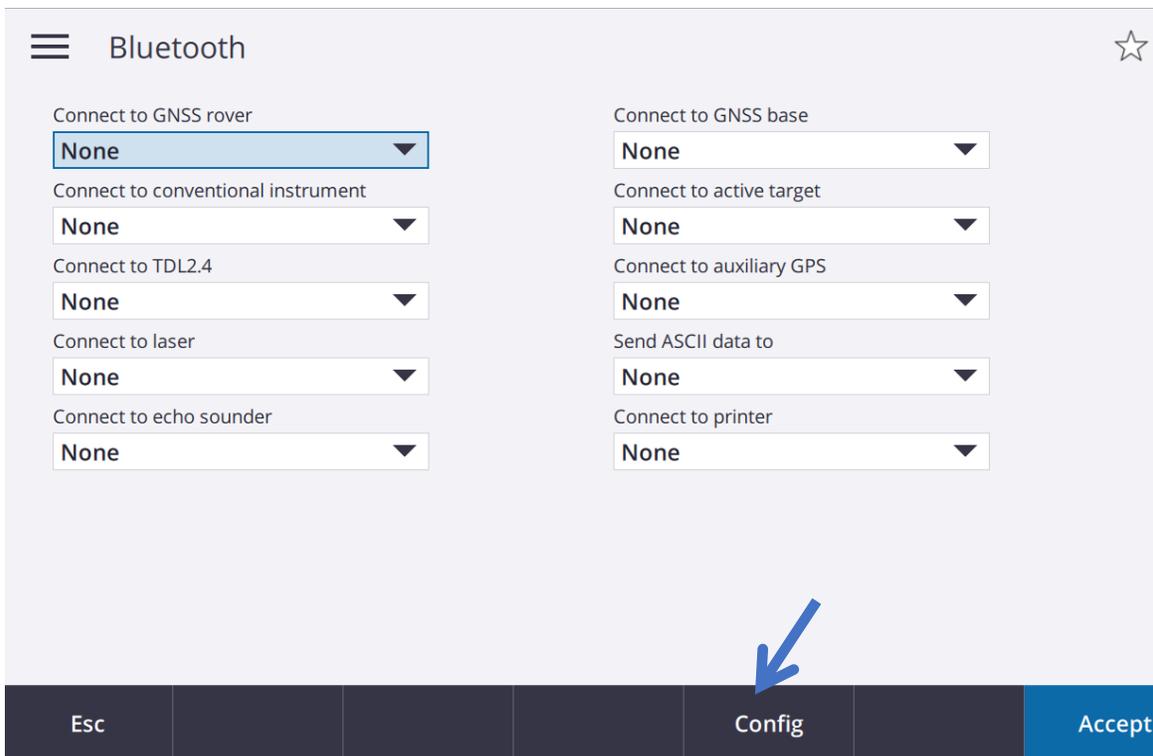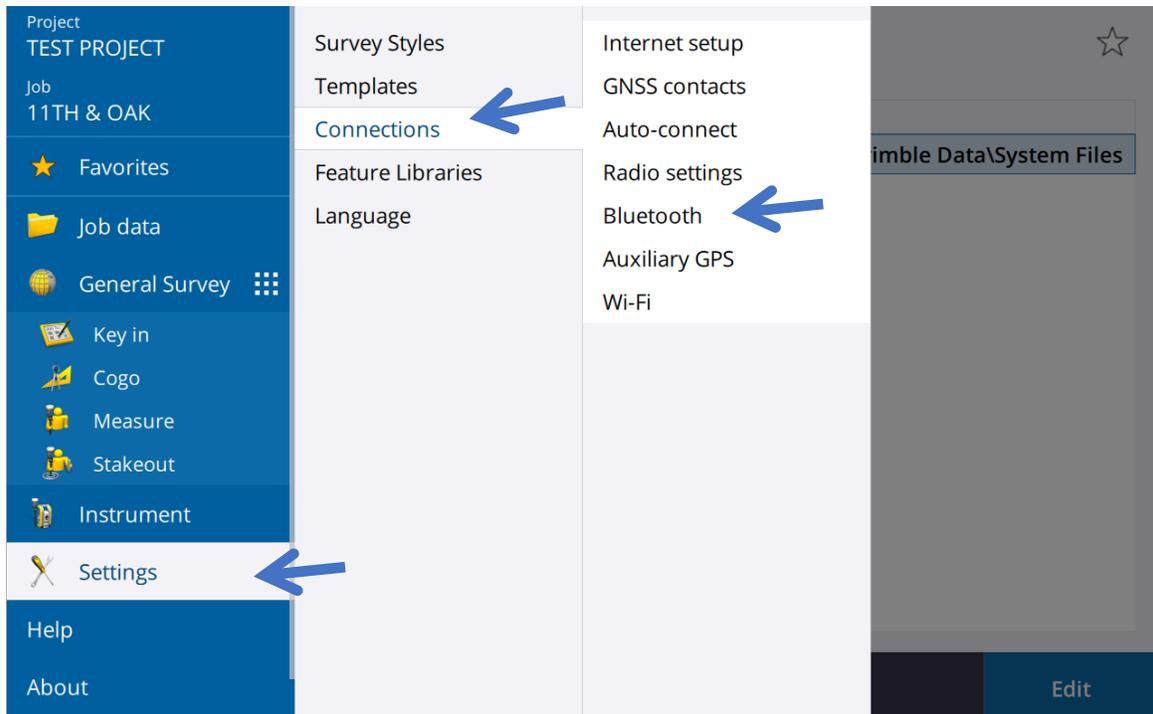
6. This will take you to the TSC7 Bluetooth screen in Windows 10. Select Bluetooth device. This will start the search for Bluetooth devices near you.
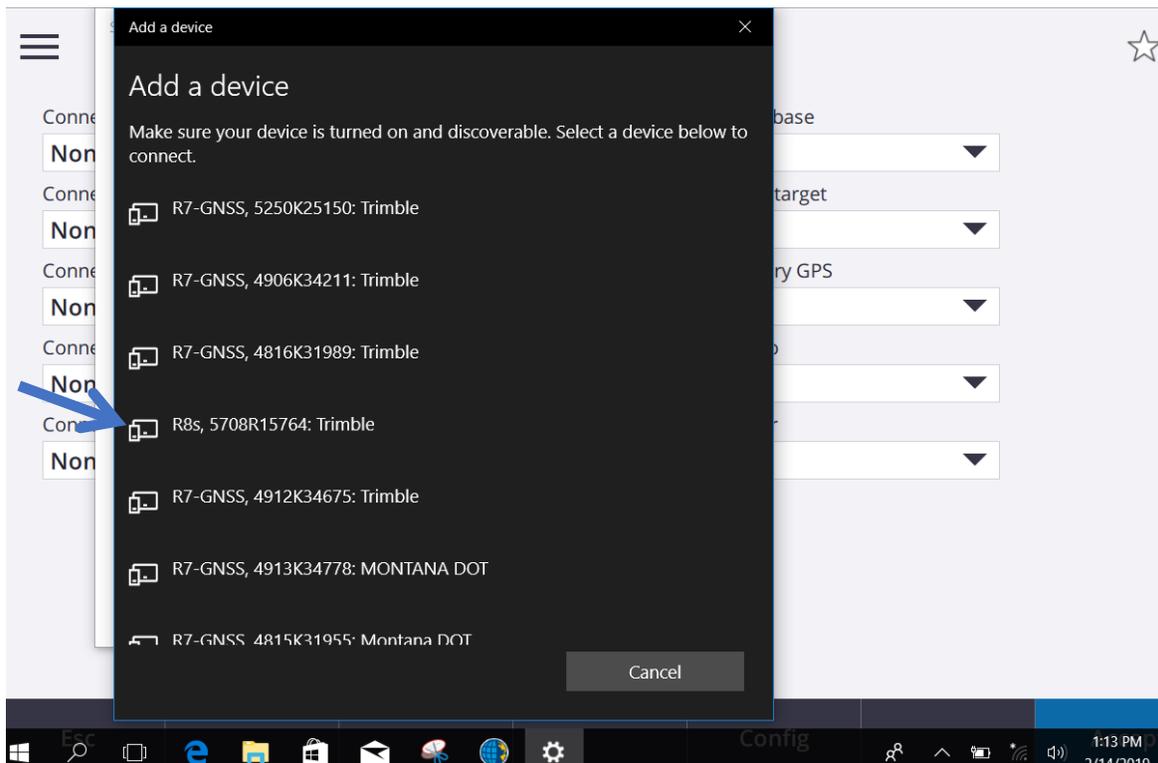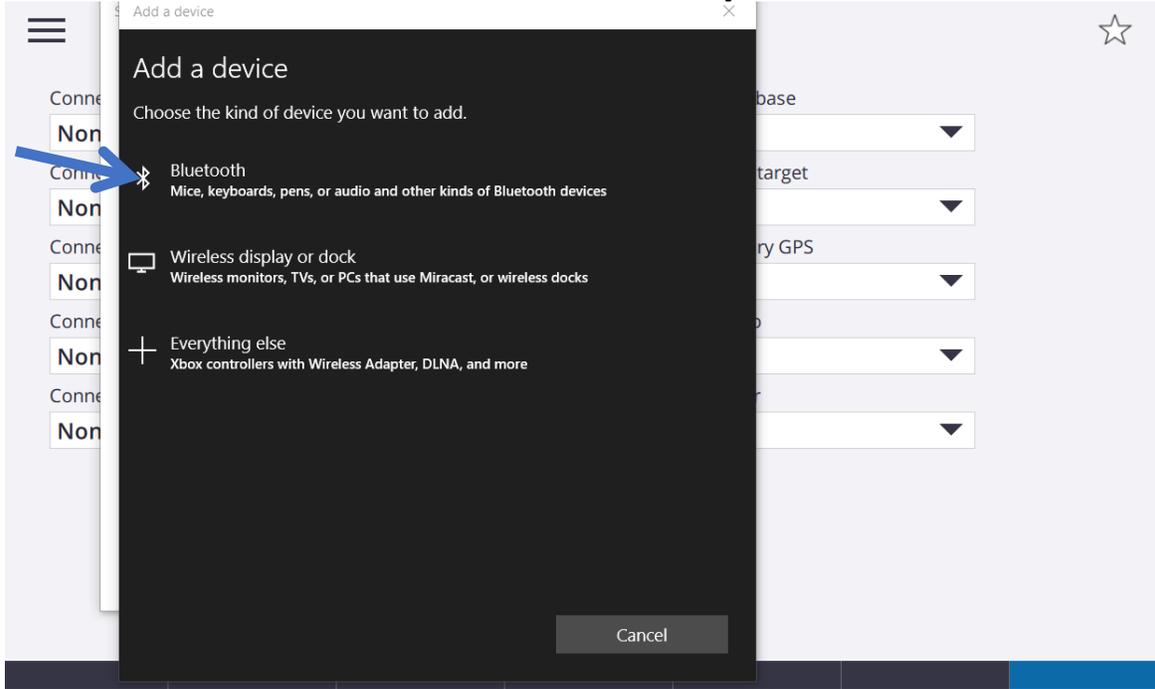
7. Find the GPS receiver that matches the serial number on the underside of your GPS head. Select the correct GPS. If it asks for a code to pair, enter **0000** and tap connect. MDT does not create security codes to connect to the GPS.
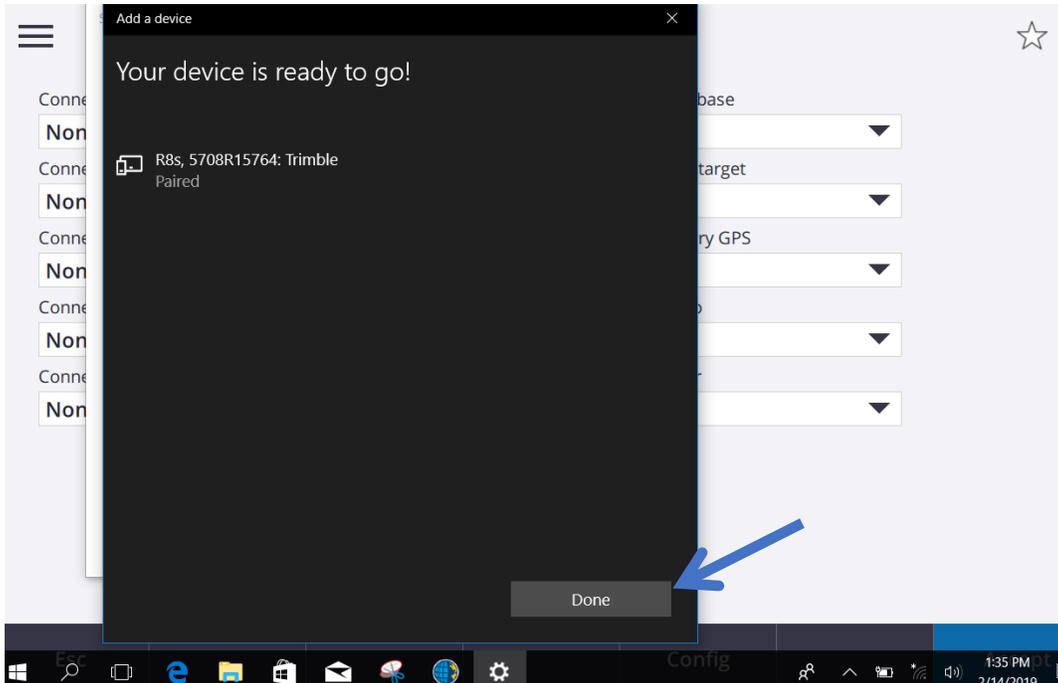
8. Once you are paired to the device, select **Done** and then in the Trimble Access Bluetooth module use the drop down to select the correct unit.
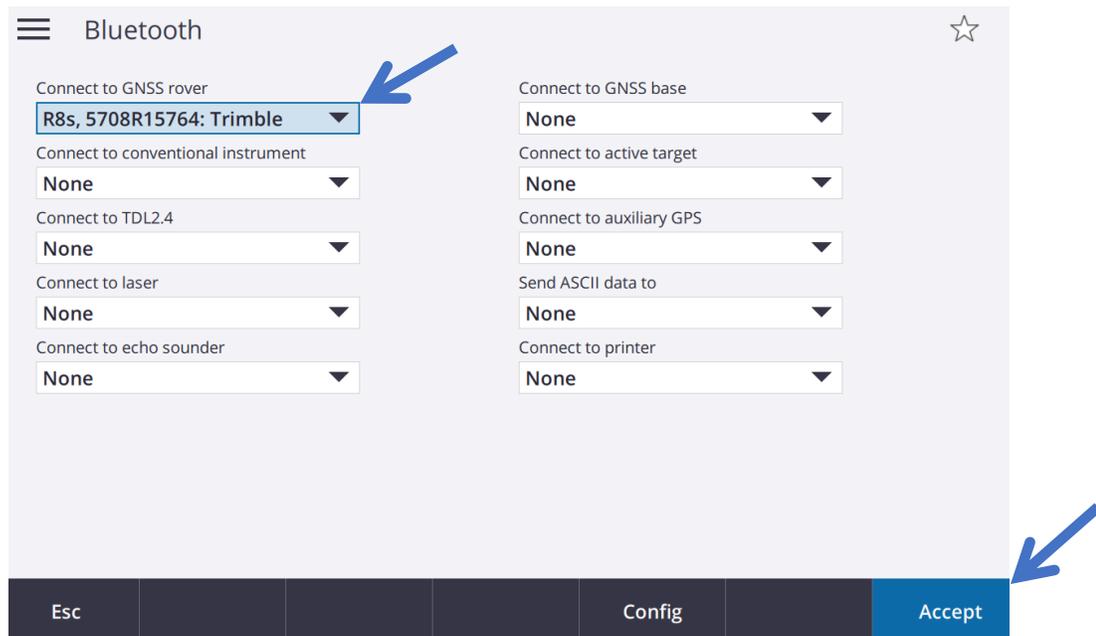
9. Tap **Accept.**

NOTE: Once you find the correct GPS head, it is easier to rename the unit from the serial number to a more recognizable name that corresponds to it being the base or rover. Here is the process to rename your Bluetooth device in Windows 10.

<u>**Renaming the Bluetooth device on Windows 10**</u>

1. From the Window's Home screen select **Settings.**
2. In the setting screen select **Devices** (Bluetooth, printers, mouse).
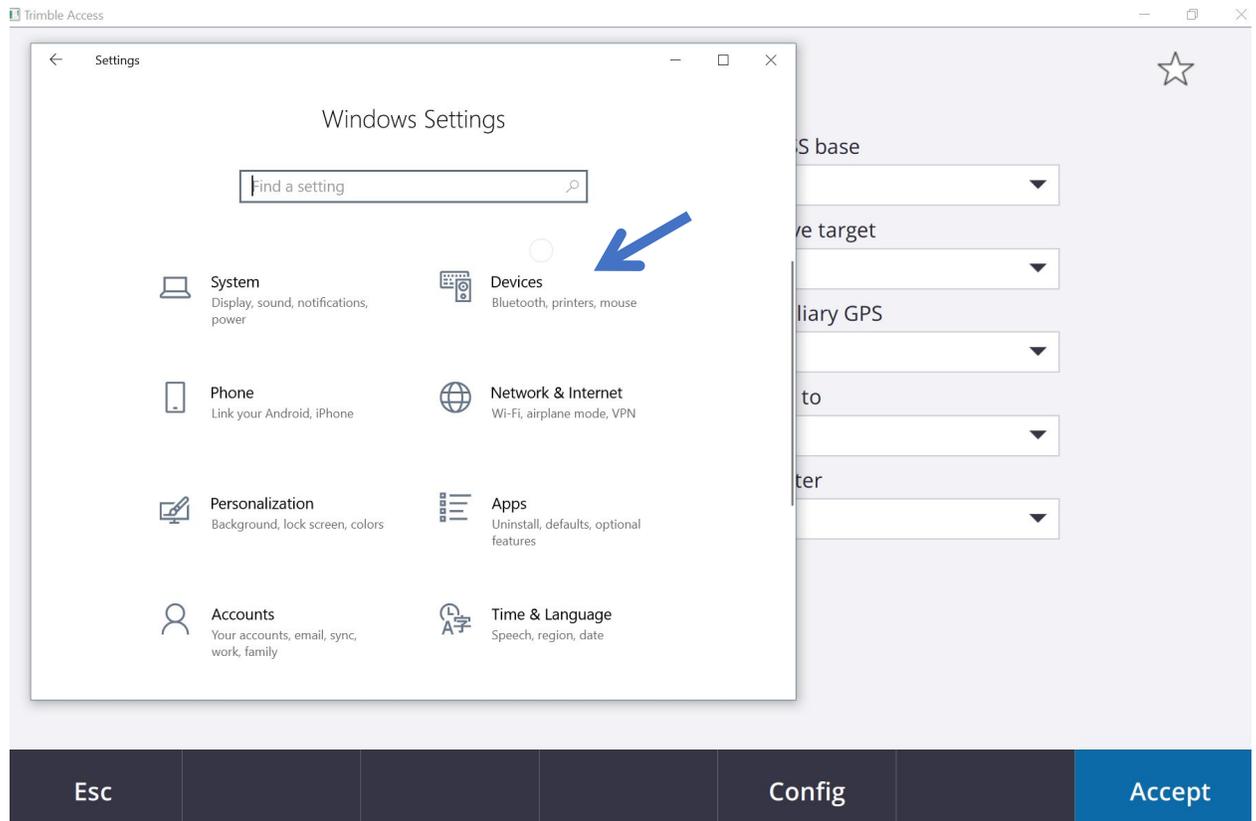
3. In **Bluetooth & other devices**. Scroll to the bottom and select **Devices and printers** under **Related settings**.
4. This will bring up all devices connected to the controller. Select the device you want to rename, and this will bring up another window.
5. From this window, select the Bluetooth tab and highlight the name of the device to rename.
6. Change the name to correspond with the proper device. Ex. R8s,HL 52 Base.
7. Click **Accept**.
8. Click **OK**.
9. Now in the Bluetooth window in Access. Use the drop down menu to select the proper device.

Bluetooth ☆

Settings

⌂ Home

Find a setting

Devices

🖥 Bluetooth & other devices

🖨 Printers & scanners

🖰 Mouse

⌨ Typing

✏ Pen & Windows Ink

▶ AutoPlay

📱 USB

Bluetooth & other devices

➕ Add Bluetooth or other device

Bluetooth

⬤ On

Now discoverable as "DESKTOP-NNOJ9J7"

Other devices

CP2105 Dual USB to UART Bridge Controller

CP2105 Dual USB to UART Bridge Controller

R8s, 5708R15764: Trimble
Paired

R8s, HL 51 Rover
Paired

USB 2.0 PC Camera

5 base

e target

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to

er

Esc				Config		Accept

Bluetooth ☆

Settings

⌂ Home

Find a setting

Devices

🖥 Bluetooth & other devices

🖨 Printers & scanners

🖰 Mouse

⌨ Typing

✏ Pen & Windows Ink

▶ AutoPlay

📱 USB

Bluetooth & other devices

Related settings

Devices and printers ⬅

Sound settings

Display settings

More Bluetooth options

Send or receive files via Bluetooth

Have a question?

Get help

Make Windows better

Give us feedback

5 base

e target

iary GPS

to

er

Esc				Config		Accept

Settings

Home

Find a setting

Devices

Bluetooth & other devices

Printers & scanners

Mouse

Typing

Pen & Windows Ink

AutoPlay

USB

Bluetooth & other devices

Devices and Printers

Control Panel > Hardware and Sound > Devices and Printers

Search Devices and Printers

Add a device   Add a printer   Remove device

DESKTOP-NNOJ9
J7

USB 2.0 PC
Camera

Printers (3)

Fax

Microsoft Print
to PDF

Microsoft XPS
Document Writer

Unspecified (4)

CP2105 Dual
USB to UART
Bridge Controller

CP2105 Dual
USB to UART
Bridge Controller

R8s,
5708R15764:
Trimble

R8s, HL 51 Rover

R8s, HL 51 Rov...   Model: Bluetooth Peripheral Device
Category: Unknown
Status: Paired

Esc   Config   Accept

Settings

Home

Find a setting

Devices

Bluetooth & other devices

Printers & scanners

Mouse

Typing

Pen & Windows Ink

AutoPlay

USB

Bluetooth & other devices

R8s, 5708R15764: Trimble Properties

General   Hardware   Services   Bluetooth

R8s, 5708R15764: Trimble

Device Information

Manufacturer: Unavailable
Model: Bluetooth Peripheral Device
Model number: Unavailable
Categories: Unknown
Description: Unavailable

Device Tasks

To view tasks for this device, right-click the icon for the device in
Devices and Printers.

OK   Cancel   Apply

R8s, 5708R15764: Trimble   Model: Bluetooth Peripheral Device
Category: Unknown
Status: Paired

Rover

Search Devices and Printers

Esc   Config   Accept

Trimble Access

Settings

Home

Find a setting

Devices

Bluetooth & other devices

Printers & scanners

Mouse

Typing

Pen & Windows Ink

AutoPlay

USB

R8s, 5708R15764: Trimble Properties

General Hardware Services Bluetooth

R8s, HL 52 Base

Device Information

Manufacturer: Unavailable
Model: Bluetooth Peripheral Device
Model number: Unavailable
Categories: Unknown
Transport: Bluetooth
Webpage: Unavailable

Troubleshooting Information

Connection: Standard
Last connected: Unavailable
Serial number: Unavailable
MAC address: Unavailable
Unique identifier: 00:03:19:9b:30:14
IP address: Unavailable

OK   Cancel   Apply

Search Devices and Printers

R8s HL 52 Ba...   Model: Bluetooth Peripheral Device
                   Category: Unknown
                   Status: Paired

USB to UART   USB to UART
Bridge Controller   Bridge Controller

Esc   Config   Accept

Bluetooth

Connect to GNSS rover
R8s, HL 51 Rover

Connect to conventional instrument
None

Connect to TDL2.4
None

Connect to laser
None

Connect to echo sounder
None

Connect to GNSS base
R8s, HL 52 Base

Connect to active target
None

Connect to auxiliary GPS
None

Send ASCII data to
None

Connect to printer
None

Esc   Config   Accept

Creating a Project and Job

A **Project** organizes and stores all the job files, including control points, road or alignment RXL files, background images or surfaces, and reference files for the project.

A **Job** organizes and stores the raw data collected during a survey, and the configuration settings for the job including coordinate system, calibration, and measurement unit settings. It may contain data from several different surveys. When creating a job, you can save the settings as a template and then create subsequent jobs using the template. You must create a job before you can measure any points or make any calculations.

To create a **Project**: first open Trimble Access on the corresponding device. This will lead you to the General Survey icon and then to the Projects Menu.
1. From the main Trimble Access Projects menu.
2. Tap **New.**
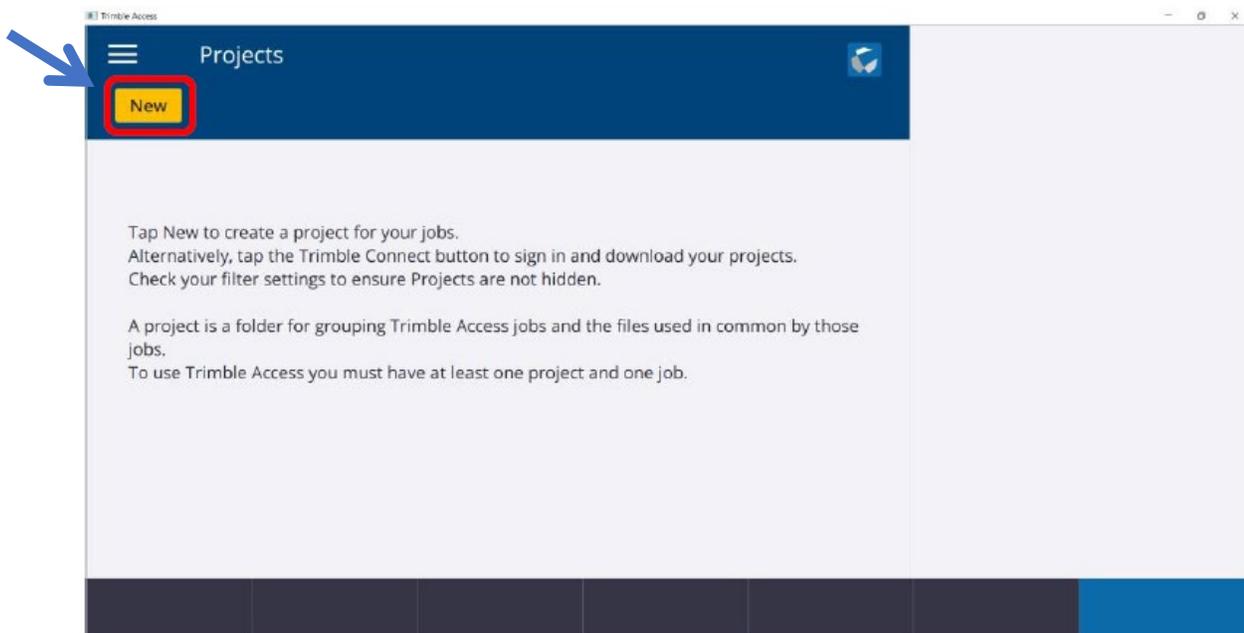
3. In the new project window you have the option to enter in additional Description, Reference, Location information, as well as a project Image to be used.
4. Click **Enter** then click **Create**
5. Now you have created the project that all associated data and JOB files will be located in.

Creating a New Job from scratch

There are two ways to create a job to work from. One way is to create a job from scratch as the example below shows. The other way is to create a job from TBC and simply open it in Access.

1. If you are creating the Job from scratch, then click on **Create from template**.

2. In the **Job name** field, enter the desired name of your Job file.
3. If creating a JOB from scratch, you will now need to define the **PROPERTIES** of the job.

Click on the **Coord Sys**: Then **select from library**. This will change from job to job and the proper **Datum** and **Geoid** must be selected based on any previous work. This information is in Read Me file. For this example I am using **Montana State Plane system (United States/ITRF to Nad 83 (2011)(7P)** and the **Geoid 12A**. **Grid** for coordinates and a **project height** relative to the area from an average height using the .IFT Coordinate file.
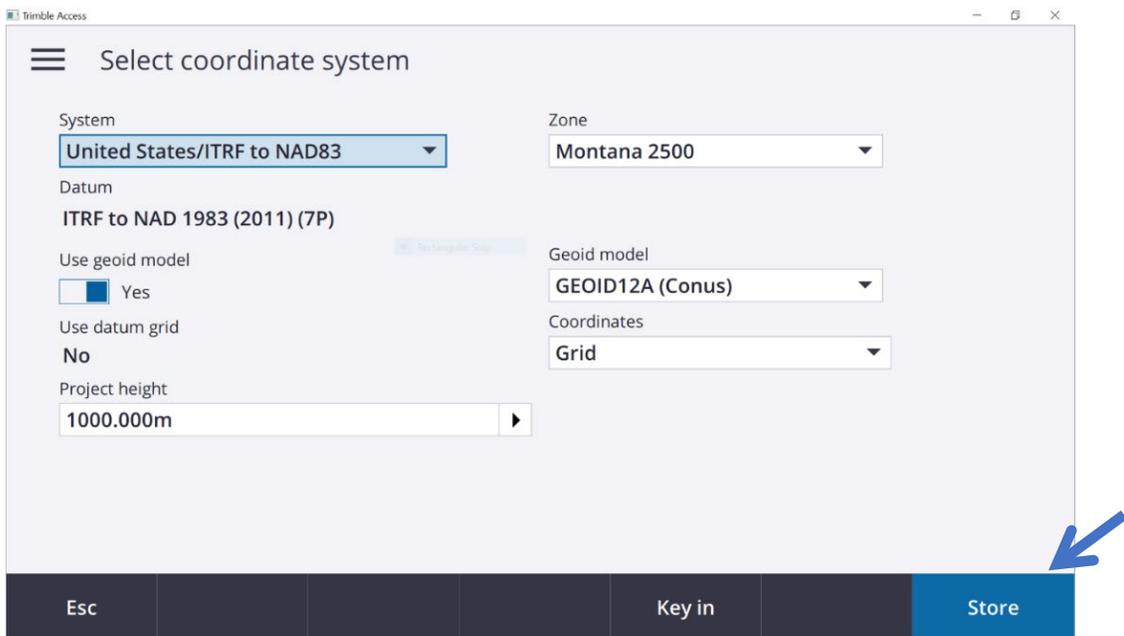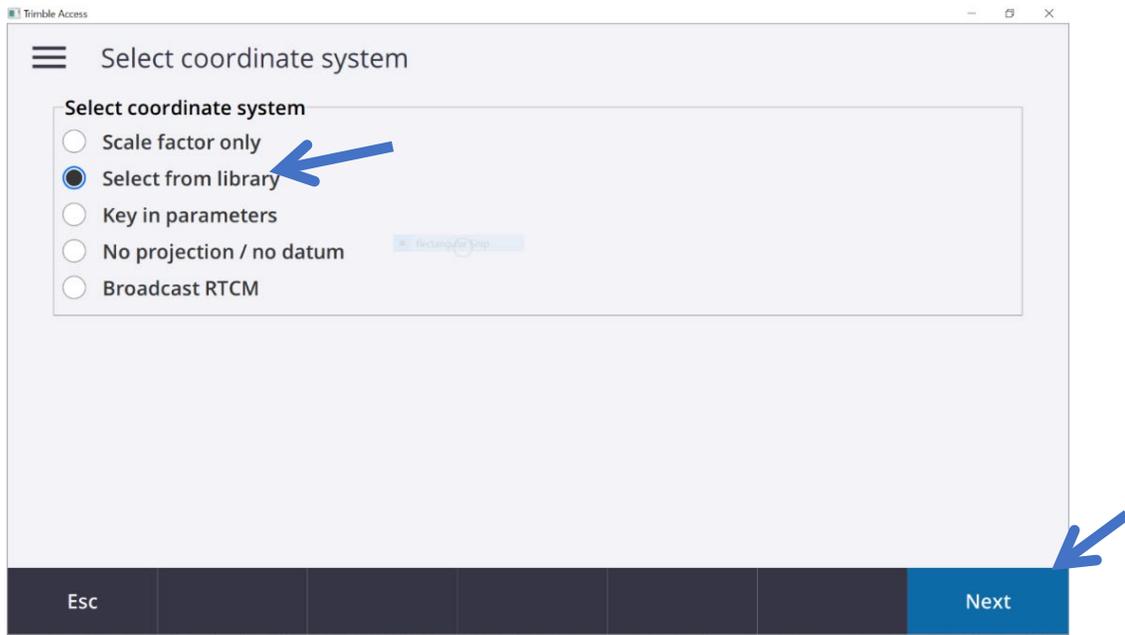
1. Click on **Units (Dist):** and set the units to the appropriate units for the job. Then click **Store** and **Accept**.
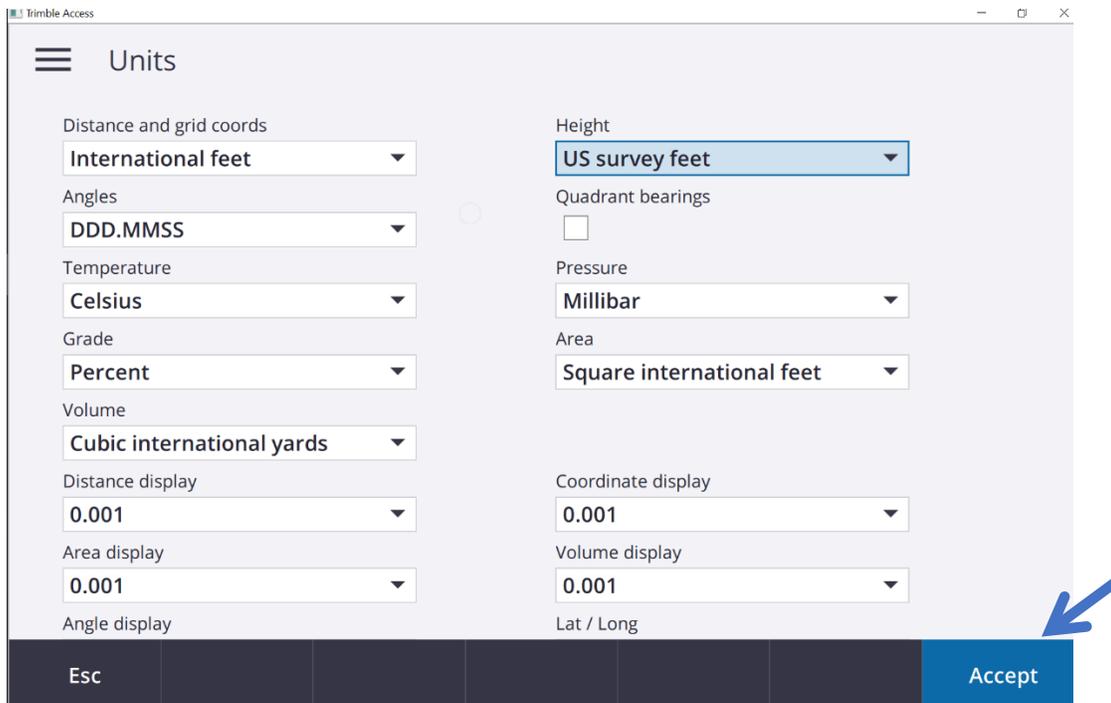
2. If you have files to link to the job, for example a CSV file containing control point coordinates or another Job file, select **Linked files**. Tap **Accept**. If the linked file is modified, then the file must be deleted and relinked to show the updated information. The software then returns to the **New Job** screen.
3. **Active Map** shows the current Job's points, lines, and arcs from the current database. You can add other files to the map as layers, including RXL files, DXF files, and background image files. Features in layers can be made visible and selectable but they cannot be edited or deleted. Make sure that all linked files are on the same datum that your job is currently working in.
4. You can also select a **Feature Library** to use on a job by navigating to the correct Feature Codes and selecting.
5. Now the Project and Job files are set up and you are ready to connect to the instrument and start collecting data.
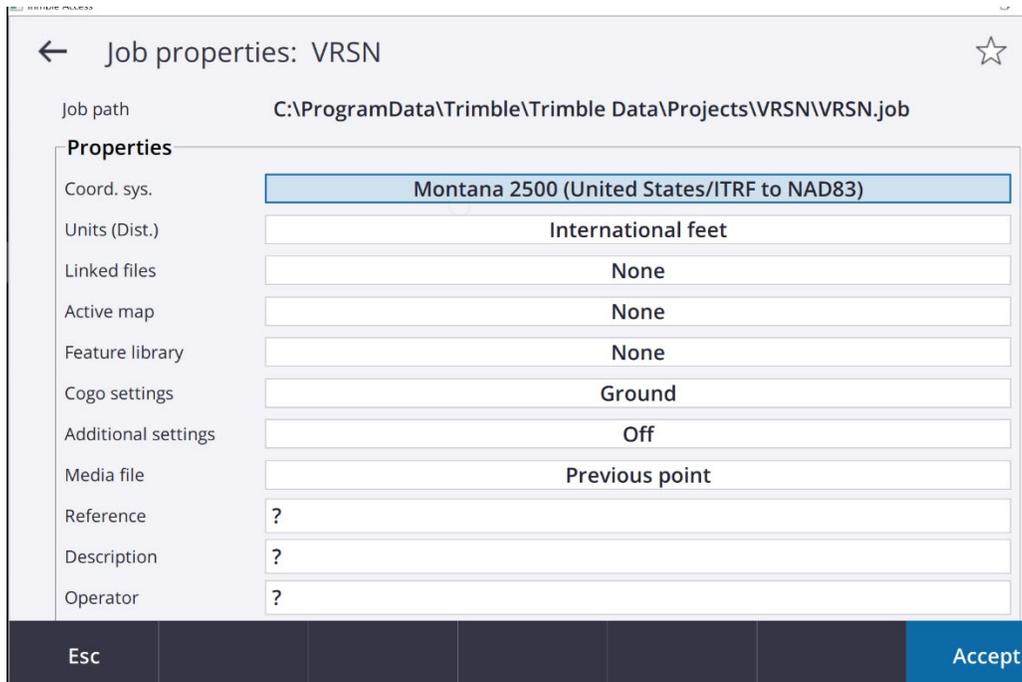
This screen shows the correct information has been entered for the project.

Creating a New Job from a TBC file

The other option to create a job is with a .JOB file exported from TBC. This way imports all the settings that were created in TBC and all of the associated control points. To open a job this way, you must first create a folder to put the .JOB file in.

1. Navigate to the correct location and create a folder with the proper job name. The location is **C:\ProgramData\Trimble\Trimble Data\Project files.**
2. From a flash drive, copy the correct .JOB file and paste it in the folder you just created.
3. Now start Trimble Access from the desktop or start menu.
4. From the main Trimble Access Project menu, click on the correct project and click **Open**
5. Now click on the correct job and click **Open.** This will import the necessary information.

Screen 1: Projects

Trimble Access

Projects
New | Filter project | Name ⌄ | (filter icon)

📷	9313	3/27/2019
📷	9363	11/15/2018
📷	8193000	11/13/2018
📷	VRSN	3/27/2019

VRSN ⋮
Jobs (1)
VRSN

Properties | Open

Screen 2: VRSN

← VRSN | (icon)
New | Filter job | Last used ⌄ | (filter icon)

⊕	VRSN	3/27/2019

VRSN ⋮
Status
New ⌄

Back | Copy | Import | Export | Properties | Open
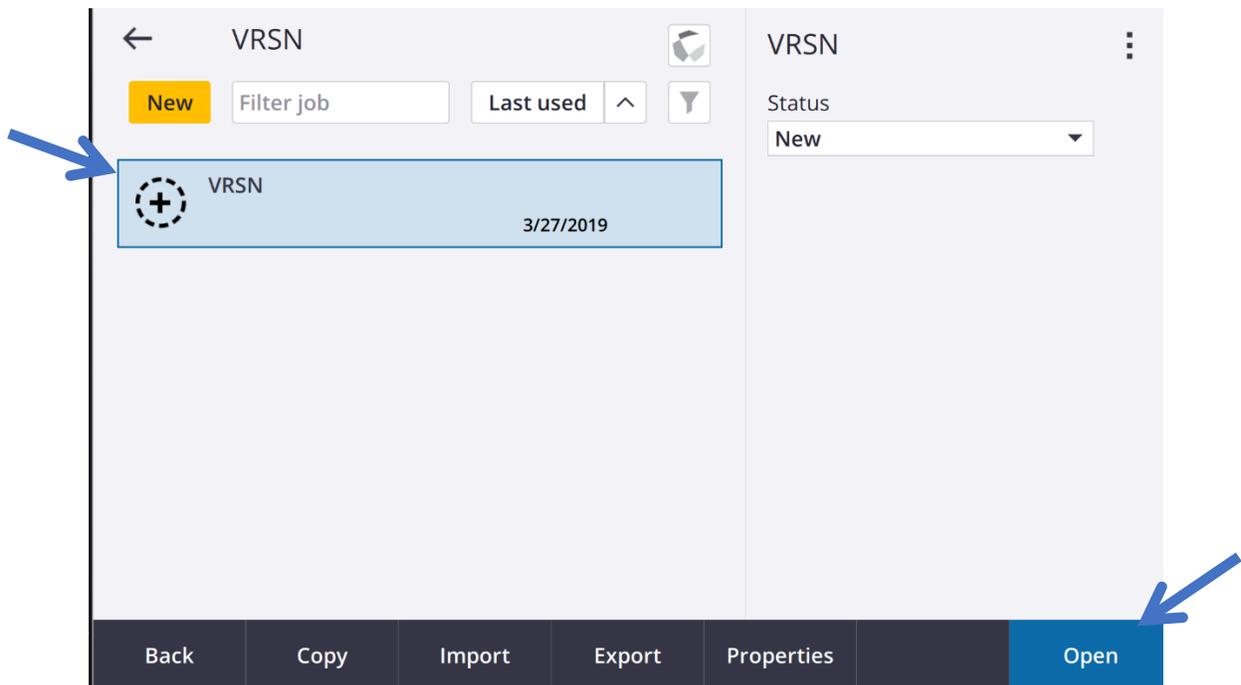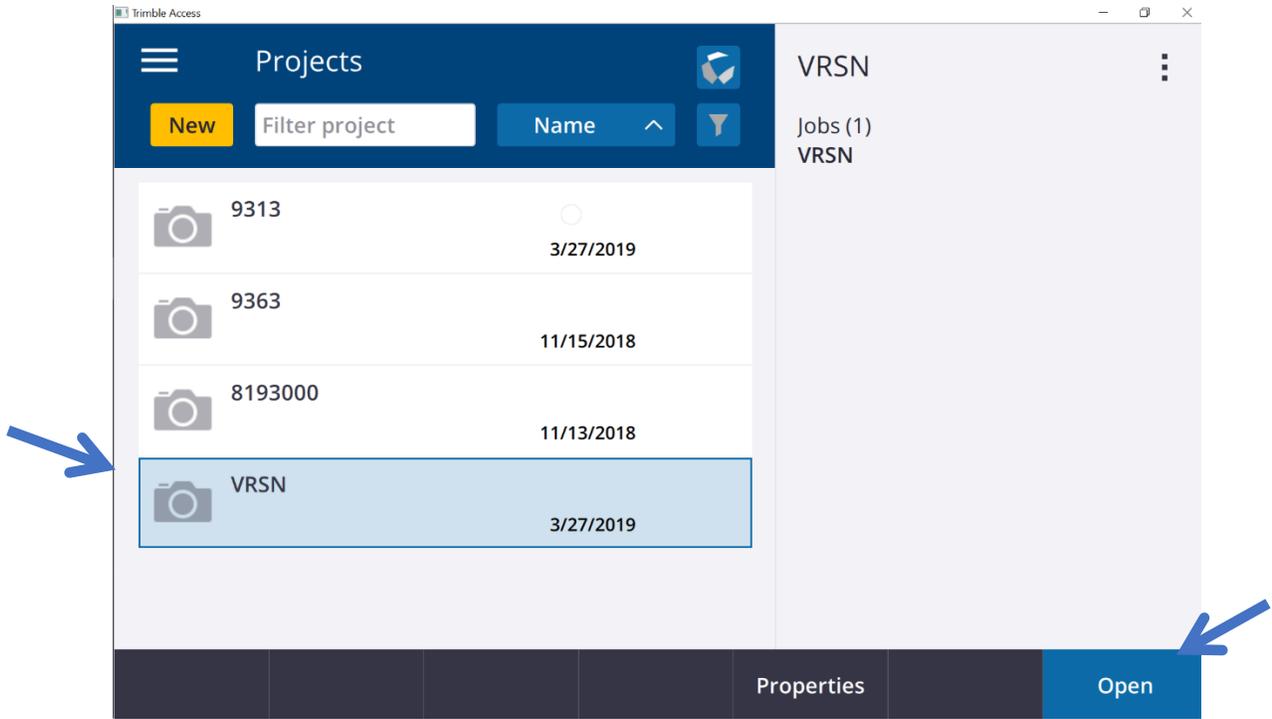
NOTE: This screen shows that the correct project information was imported with the job creation. You will still need to link any associated files like the feature library to the job.

Starting a Survey

Now that we have the correct data in the systems file, started a job, and connected to the instrument, we are ready to start surveying. To do any mapping or staking, we need to use a survey style. The steps for completing measurements using a GNSS receiver are:

1. If you are setting up your own base station, set up your survey equipment at the base and start the base survey.
2. Set up the rover receiver equipment.
3. Start the rover survey.
4. Measure or stakeout points.
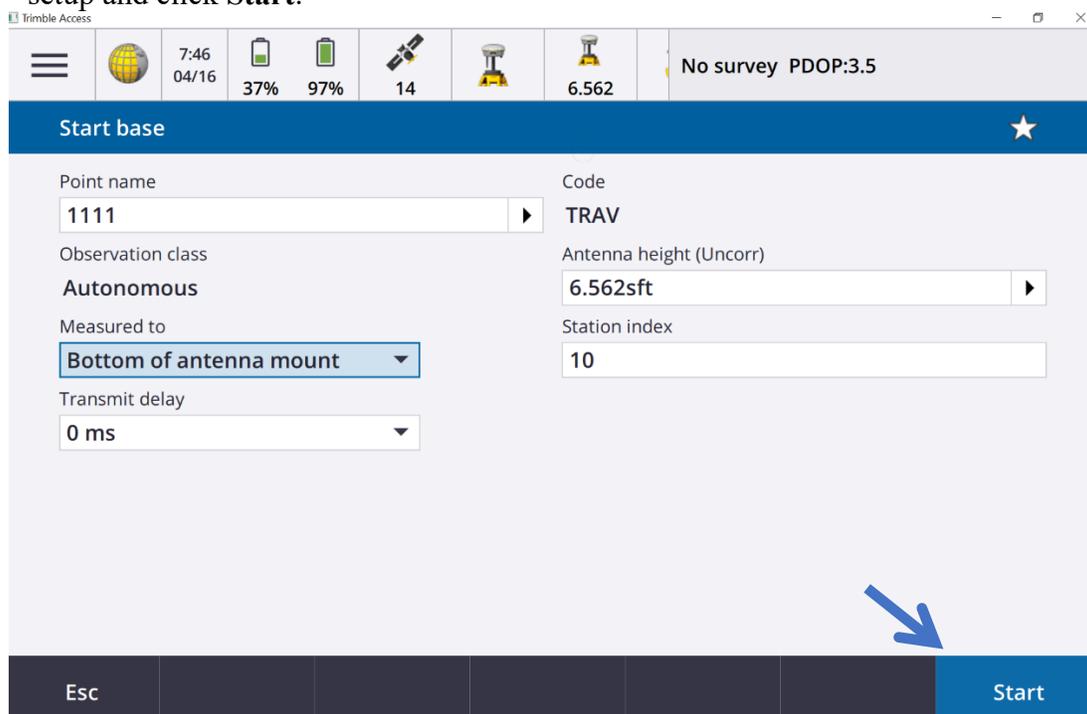5. End the survey.

To start a GPS RTK survey

There is more than one way to start an RTK survey in the TSC7. Here are two examples of the process required to begin surveying. The first is a more common way to begin an RTK survey using the **Measure** mode. The second method shown below goes through the **Instrument** mode. Either is an acceptable way to begin your work flow.

Measure Method

1. Tap ≡ and select **Measure** and then the **MDT RTK** survey style.
2. Select **Start base receiver** to Bluetooth the controller to the GPS head.
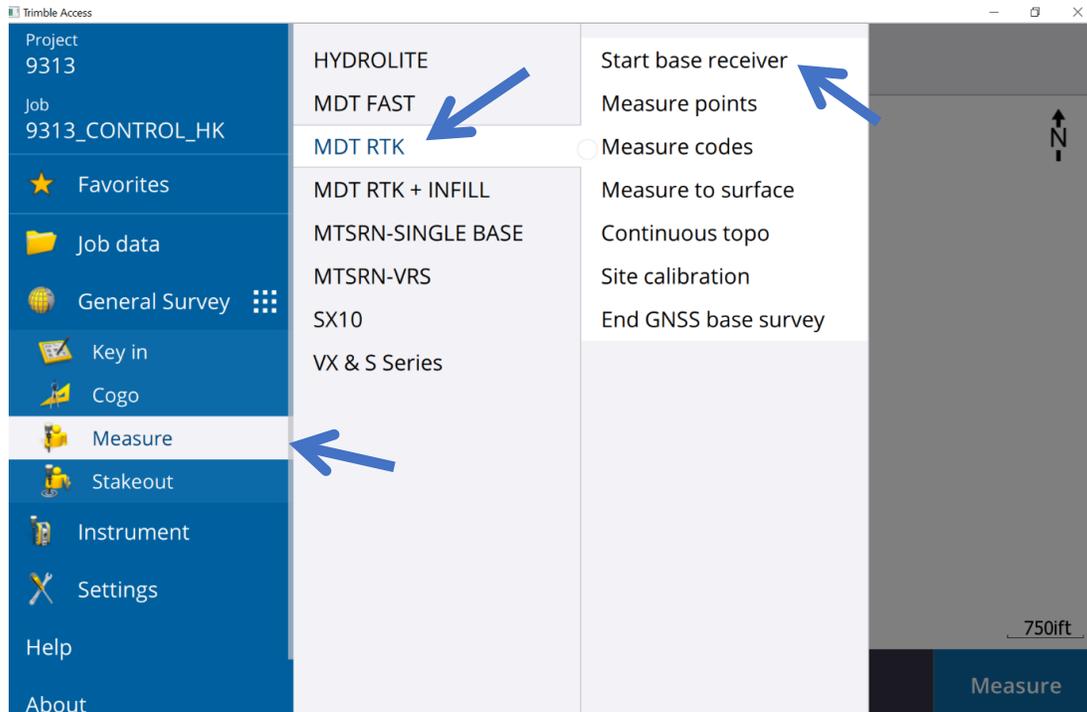
3. This will take you to the **Start Base** screen. Enter the correct information for your base setup and click **Start**.

4. Once the base is started, Access will return you to the **Measure** screen. Click the **Measure** button in the lower right corner and this will begin the Bluetooth connection to the Rover.

5. You will need to now select the same survey style as the base (**MDT RTK**). This will start the survey with the rover and begin the communication between the base and the rover. Once the radio reaches 100% reliability, click **Accept**.
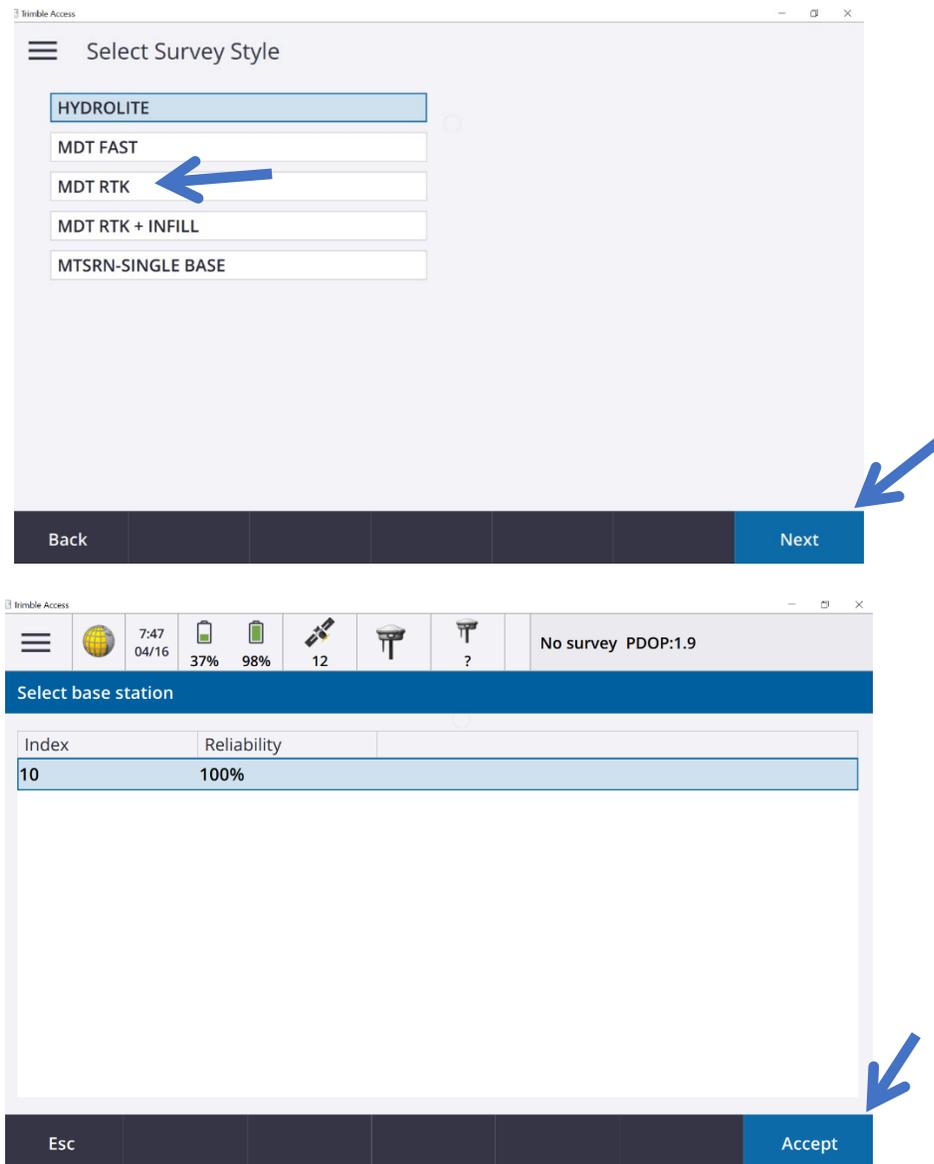
6. Access will return you back to the **Measure** screen. You can now begin mapping or go back to the main menu and select **Stakeout** to begin staking.
7. When you have completed your work, navigate back to **Measure**, and select **End GNSS Base Survey** and power down your equipment.
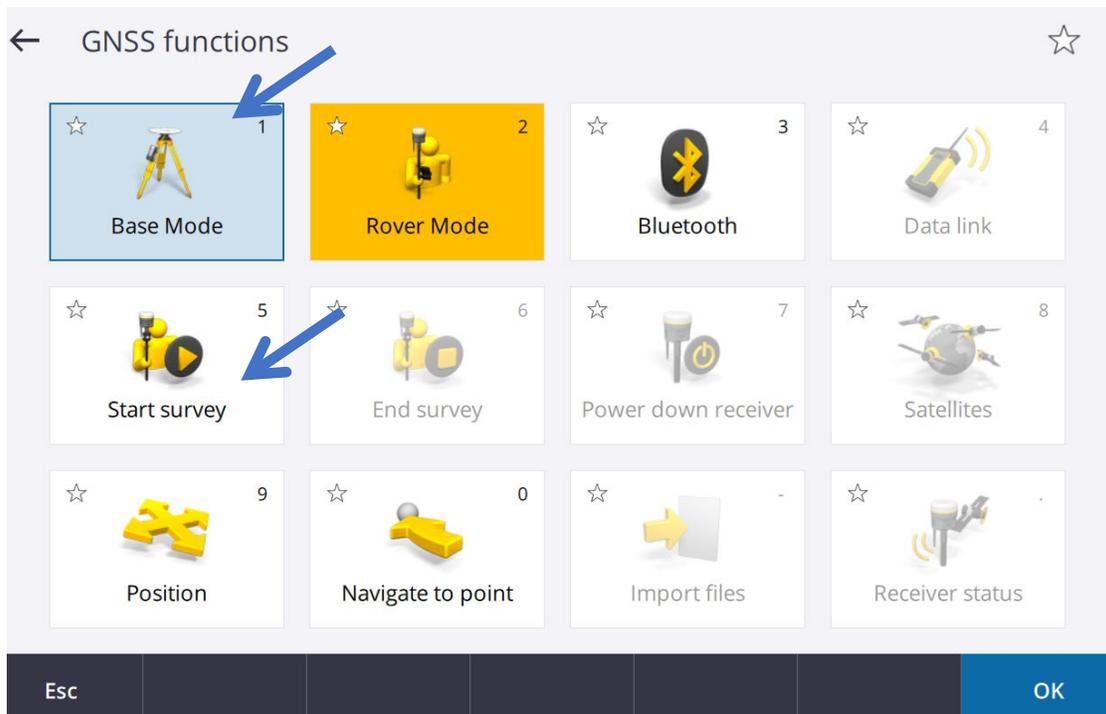
Instrument Method

This method will start the general survey and then you can navigate back to the main menu and select **Measure/Stakeout** to begin work flow.
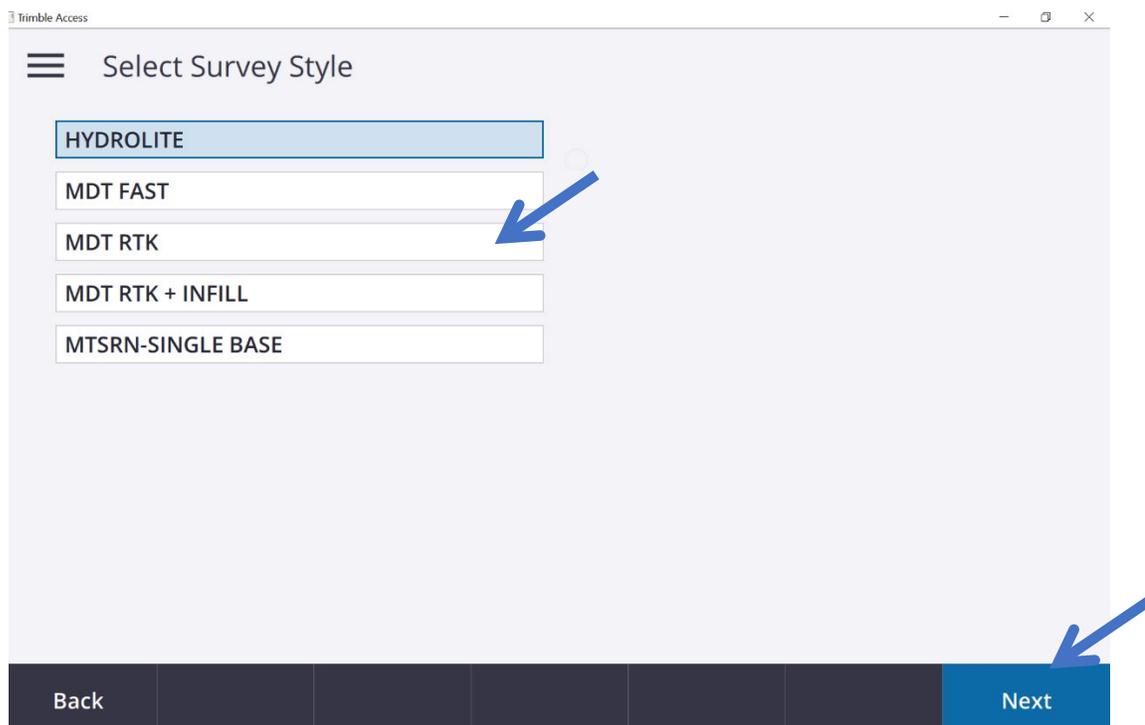
1. Tap ≡ and select **Instrument** and then the **GNSS Functions**
2. Select Base Mode to Bluetooth the controller to the GPS Head.
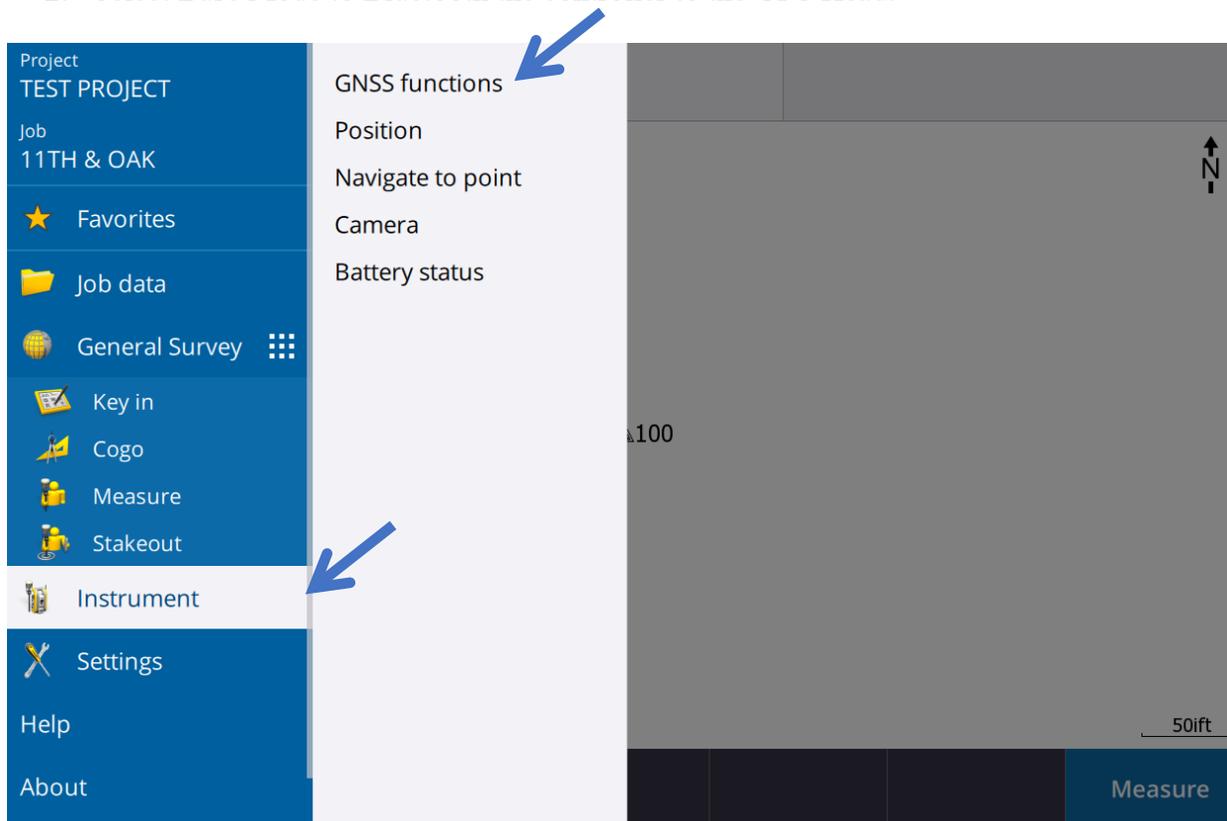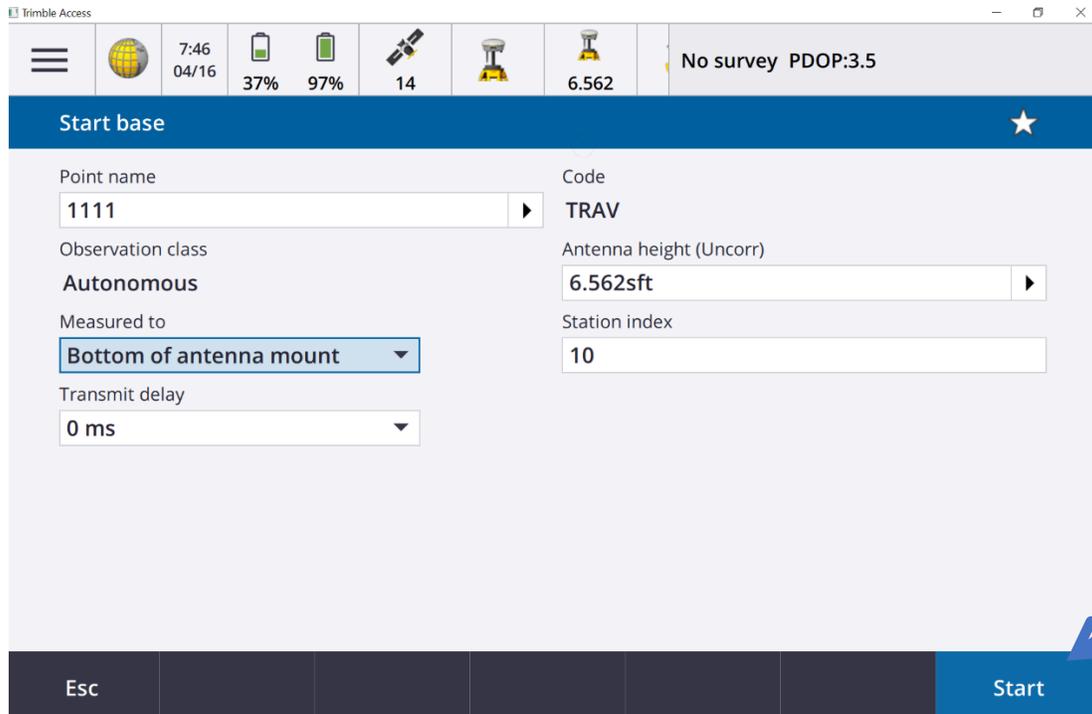

3. Now select **Start survey** to begin the survey or pick the associated number (1 then 5).

4. Next, click on the correct survey style to prompt the correct settings. In this case, click on **MDT RTK** to start an RTK style survey. Click **Next**.

5. This will prompt you to put in the information for the Base setup. Enter the correct information and click **Start**.

6. Once the base is set up, now you can connect to the rover and select the same survey style as you used to start the base. Once connected, the rover will search for the correct radio frequency that the base is on. This will start a status bar and once you have reached 100% then click **Accept**. Now your base and rover are connected and ready to start surveying. From here, select **Measure/Stakeout** to begin field work.
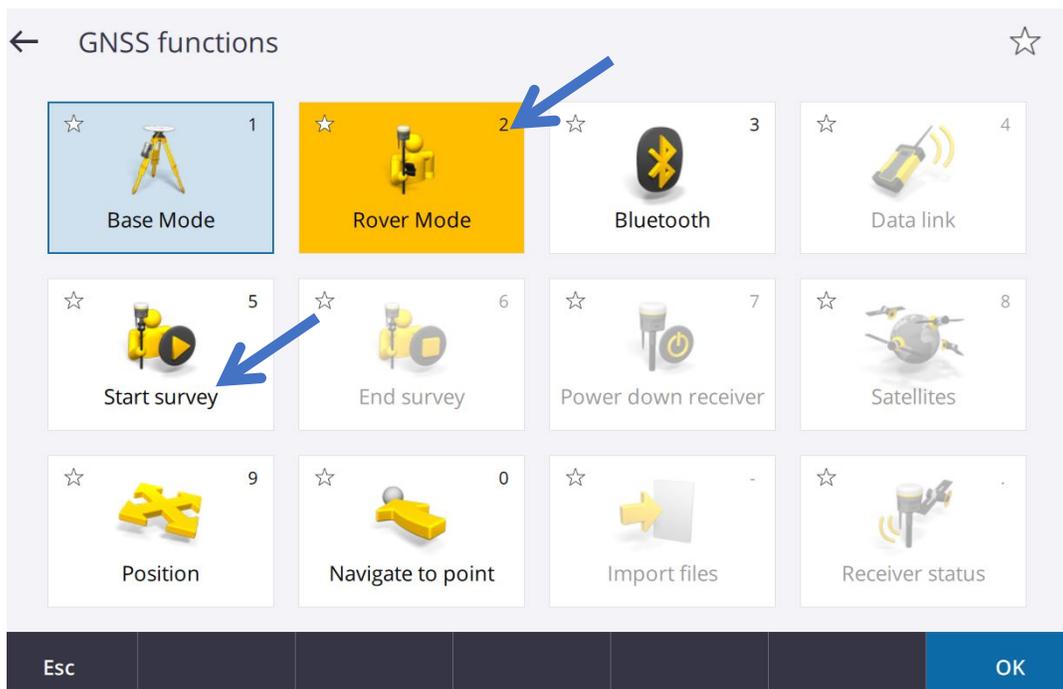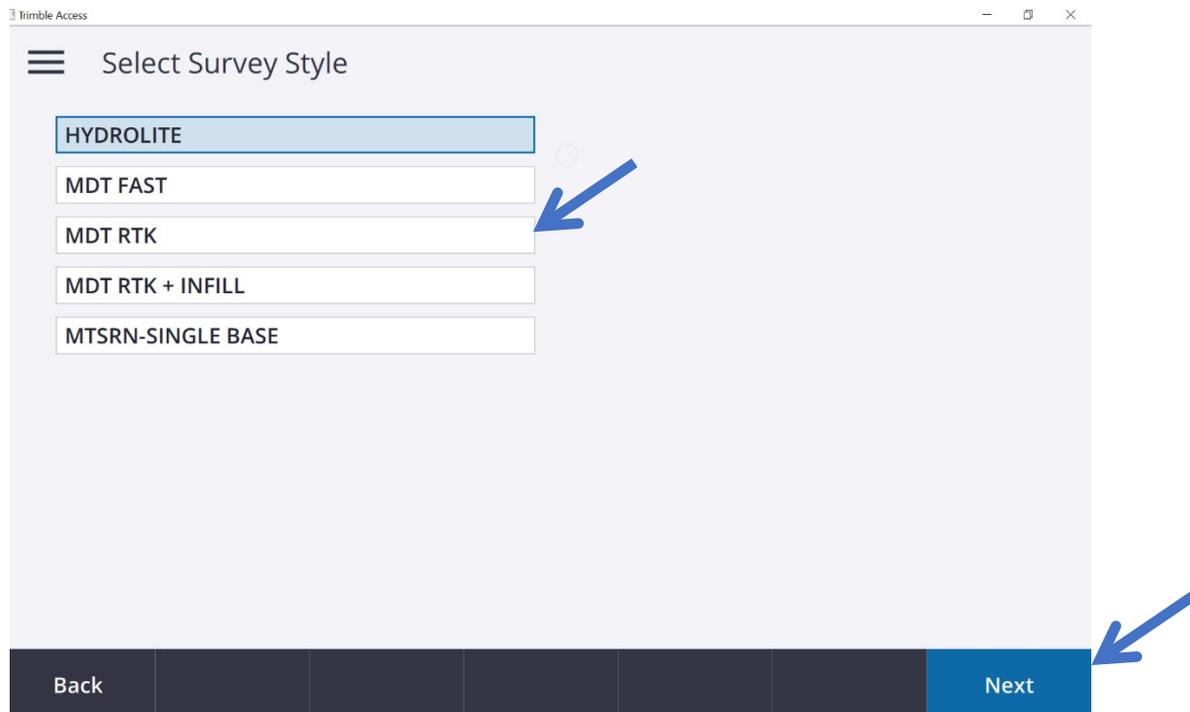
Once you have completed your field work, navigate back to GNSS functions and click **End survey** for the rover and power down the instrument. Then connect to the base and click **End survey** and power down the instrument.

Checking Radio Frequency

There are times that a communication problem occurs with the GPS receivers. This can happen due to both heads not being on the same frequency or the occasion that another user is stepping on your frequency. This is the procedure to check your GPS frequencies and change them if necessary.

1. Tap ≡ and select **Instrument** and then **GNSS functions.**
2. Select **Rover Mode** to Bluetooth the controller to the GPS head.
3. Once connected, click on **Data link.**
4. Click **Connect**. This will configure the radio so you can see what frequency you are using or change the frequency in the drop-down menu.
5. Write down your settings!
6. Click **Accept**.
7. Repeat the instructions in **Base Mode** and confirm they are on the same frequency.

Project
TEST PROJECT
Job
11TH & OAK

⭐ Favorites

📁 Job data

🌐 General Survey ⠿

📝 Key in

📐 Cogo

👷 Measure

👷 Stakeout

📟 Instrument

✂ Settings

Help

About

GNSS functions

Position

Navigate to point

Camera

Battery status

▲100

50ift

Measure

Trimble Access

← GNSS functions ☆

☆ 1 Base Mode	☆ 2 Rover Mode	☆ 3 Bluetooth	☆ 4 Data link
☆ 5 Start survey	☆ 6 End survey	☆ 7 Power down receiver	☆ 8 Satellites
☆ 9 Position	☆ 0 Navigate to point	☆ - Import files	☆ . Receiver status

Esc OK

Trimble Access

Rover data link

Type
Radio

Radio
Receiver internal ▾

Esc   Connect   Accept

Trimble Access

Radio configuration

Connected to
Receiver internal

Frequency
453.02500 MHz ▾

Radio operating mode
Rover ▾

Base radio mode
TRIMTALK v1 at 9600 bps ▾

Esc   Add Frq   Accept

No survey PDOP:?