SonarMite with Trimble Access

Overview: Trimble Access software, when connected to a SonarMite will store water depths associated with field measurements.

Equipment: SonarMite echo sounder, Trimble Access data collector and a positioning device like a GNSS rover or a total station system, echo sounder specific XSL style sheets.

Results: Points collected can be exported by using one of two specially formatted XSL style sheets. One will include the Point name, X and Y positions from the survey equipment and the elevation will include the depth reading from the echo sounder. The other style sheet export will show the Point Name, XYZ of the position measured and the depth from the transducer at that location. If you want actual water depth, you should make note of the depth the transducer is below the actual water level as a note in the job file.

Procedure: Download, copy and paste the two Trimble Access echo sounder XSL style sheets to the data collector so you can export the measured data after the survey.

1. Download the style sheets from the Trimble website. Typically the Style sheet link ZIP file includes a JPG picture of what the results looks like and the actual XSL style sheet.

2. Extract the files to your computer.

    - **Comma delimited with depth applied** http://trl.trimble.com/dscgi/ds.py/Get/File-430466/Comma%20delimited%20with%20depth%20applied.zip

    - **Comma delimited with elevation and depths** http://trl.trimble.com/dscgi/ds.py/Get/File-430467/Comma%20delimited%20with%20elevation%20and%20depths.zip

3. Copy then paste the XSL file/s into the **TRIMBLE DATA/SYSTEM FILES** folder on the data collector.

NOTE: *The small black antenna near the power light is NOT a switch. We have had users try the flip it and they have broken the device and disconnected the Bluetooth antenna. It is a fixed antenna, not a Switch!*

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Copy your normal Survey Style then edit for the Sonarmite echo sounder

By copying your normal survey style, all the settings you normally use will carry over and then you can edit the copied survey style to add the echo sounder settings.

1. To do this, from the main **Trimble Access** screen, select **Settings** → **Survey Style**, use the up and down navigation spider key to highlight the style you want to duplicate then tap **Copy** (Ctrl +2) , fill in a name like *RTK SonarMite* then tap **Enter** then **Accept**
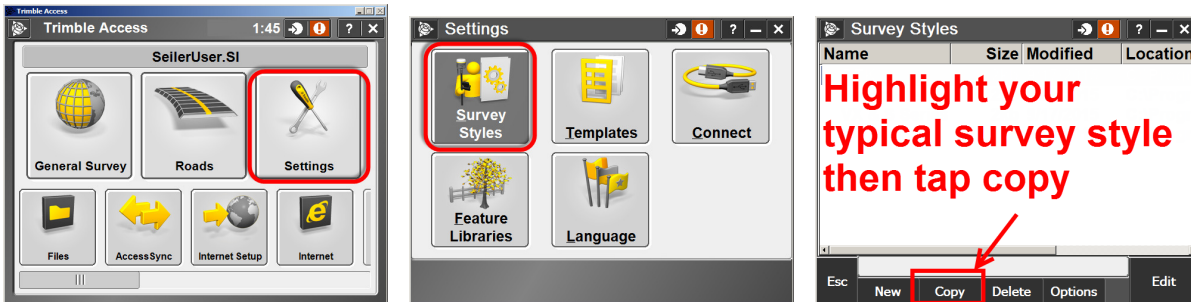
2. **Highlight** the newly created SonarMite survey style and tap **Edit** or just tap on it to **edit**.

3. **Arrow down** to *Echo sounder* and tap **Edit**

4. To edit the **Echo sounder** settings and set the proper device to connect via Bluetooth

    a. Set *Type:* **SonarMite**

    b. Set *Controller port:* **Bluetooth**

    c. Latency and draft are normally left at **0.** *(See note below about Latency and Draft)*
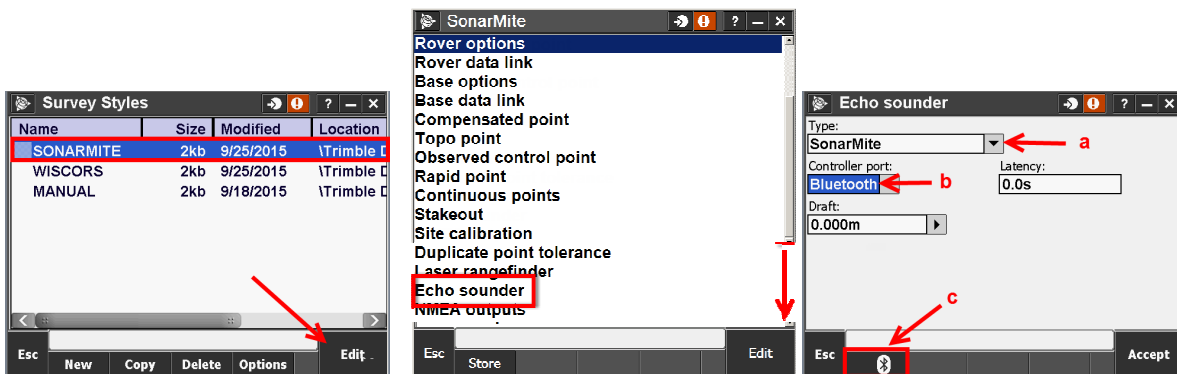

Note: The latency caters for echo sounders where the depth is received by the controller after the position. Trimble Access-→ General survey software uses the latency to match and store the depth when it is received with continuous topo points that were saved previously.

    d. If you have <u>not</u> previously paired with this SonarMite, tap the **Bluetooth icon** (Ctrl +1) to open the Bluetooth pairing screen.

1. Tap **Config** (Ctrl +4)

2. Connect cable from the SonarMite to the transducer via the TXR port.
   A green light will appear. Note, there is no on / off switch.

3. Tap **Add new device…**
   .
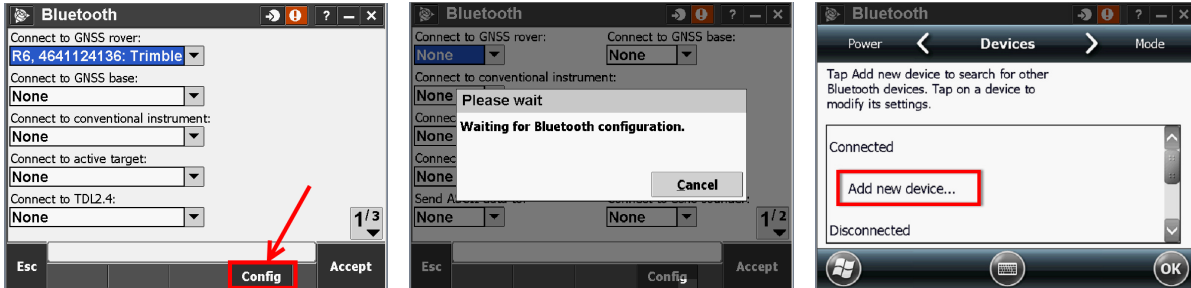
4. After all discoverable Bluetooth devices are found, select the **SonarMite** (usually named **SM#####**
   where # is the serial number then tap **Next**

5. Enter the correct **Passcode** then tap **Next** (A SonarMite typically uses 1111, 0000, or 1234)
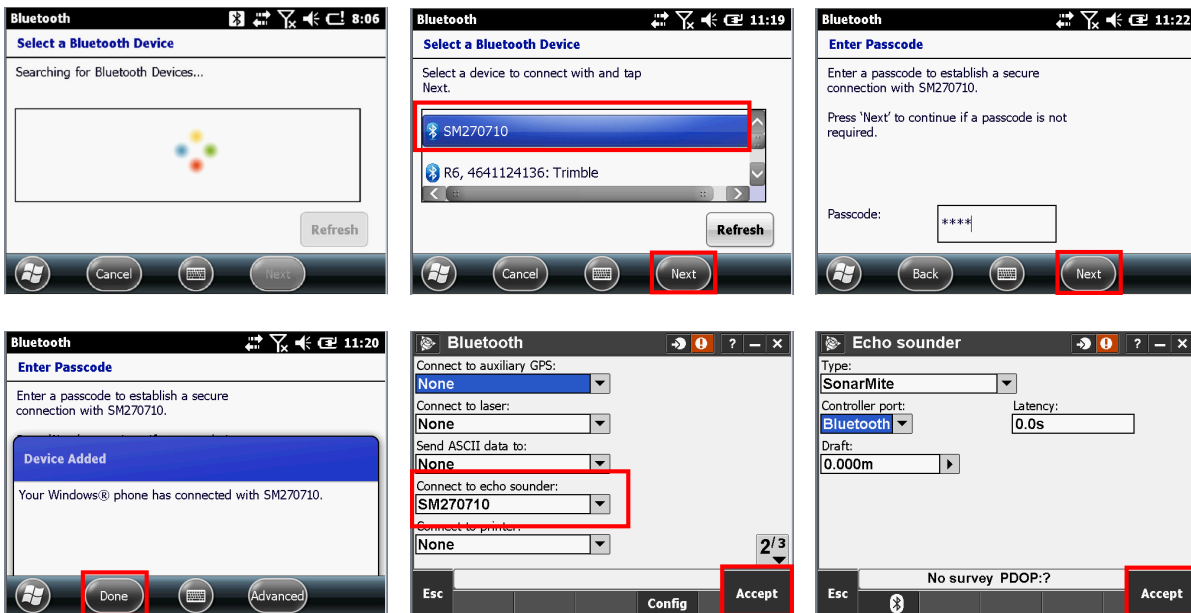
6. Tap **Done** to finish the pairing then tap **OK** to close Windows Bluetooth and return to Trimble Access

7. On the second page of Bluetooth settings, set the newly paired Bluetooth SonarMite as the **Connect to echo sounder**: device then tap **Accept** to close the Bluetooth screen

8. Confirm Echo sounder settings are correct then tap **Accept** and then tap **Store** to save changes to the new Survey Style

9. Tap **Esc** to return to the Settings screen and **Esc** again to return to the *Trimble Access main menu*

1. Begin the Survey as you typically would any other survey, check local control or calibrate as needed before starting the hydrographic survey then disconnect from the rover.

2. Connect the boat bracket securely to the side or front of the boat. Note, if it is attached too close to the motor, there may be some interference.
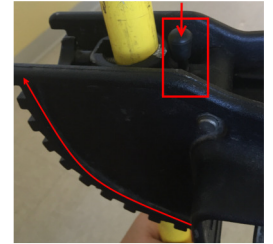
3. There is a button on the boat bracket that, when pressed, allows the user to rotate the rod to a vertical position after it has been connected to the side of the boat.

4. Slide the pole mounted transducer into the boat bracket from the bottom or pass a section of range pole thru the boat bracket and attach to pole mounted transducer section so the transducer is in the water. Make sure all pole threaded connections are tight. The transducer is on a cable but make sure these rod connections as well as the two bracket mounting screws are solid. Point the transducer away from the boat and to the rear. Do not mount transducer too deep in the water that it will catch on foliage or debris as you navigate.
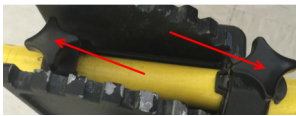
5. Adjust the boat bracket so the rod is as vertical as possible.

6. If the rod needs a third section to get the GNSS/GPS antenna higher for better satellite visibility, attach the receiver head to the pole first then attach it to the transducer pole. Again insure the connection to the pole is secure or you will be hiring a rescue diver…

7. Connect the transducer cable to the SonarMite. Gently push the cable into TXR port, insuring the keyed notches line up. Twist the locking ring on the cable's end. Attach the SonarMite to the pole or something else in the boat. The transducer communication cable will stop the transducer from dropping if a section of pole unthreads itself but the cable should not be used as rope or other pulling device.

8. Measure the antenna height. Hook a tape measure to the lip on the bottom of the transducer and measure to the bottom of antenna mount

9. Start the SonarMite survey again.

Note: Check the connections on the rod sections and boat bracket regularly throughout the day to insure they remain secure.

General Comment: if there is vegetation or a lot of debris in the water, the measurements may not reflect the actual river or lake bed.

10. To start measuring points, in **General Survey** select **Measure** ➔ **SonarMite** (survey style) ➔ **Continuous topo**
    Since the Bluetooth device has been setup and echo sounder configured, the connection will be made automatically, the red light will start flashing on the SonarMite.
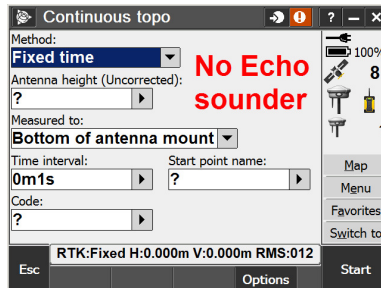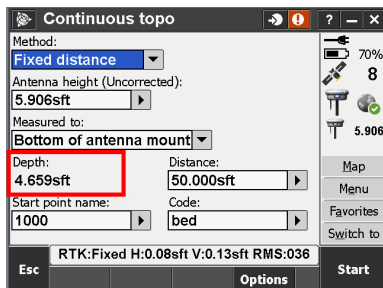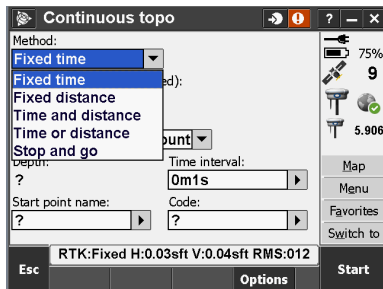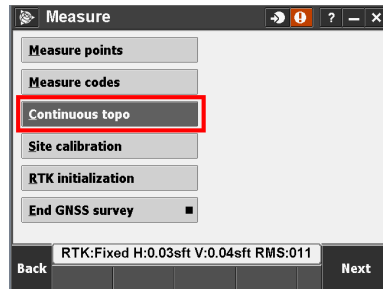
11. Set the **Method** to one of the options shown above: *Fixed time, Fixed distance Time and distance, Time or distance* or *Stop and go.*

12. Fill in the previously measured **antenna height** and set measure to **Bottom of antenna mount**

13. Current **Depth** will be shown on the screen. If no depth, there is no connection to the echo sounder.

14. Set the **Distance** or **Time interval** depending on the method selected

15. Fill in the hydro survey **Start point name** and **Code** and when ready tap **Start**

16. Tap the **Map** button in the status bar to see the measured points and help you travel in a consistent pattern to cover the area on the water.

17. Use the **Switch to** button to return to the **Continuous topo** screen if you want to stop measuring and readjust the boats trajectory before restarting the measure or just to change the Feature Code

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18. Build in quality control checks during the process of collecting data with the Echo sounder

    We recommended that checks be performed throughout your survey. This can be done by checking into a tidal gauge or by simply dropping a weighted tape and measuring to the bottom of the transducer
    - Before starting
    - During survey
    - After finished

19. End Survey as usual.

Export Hydro points out to CSV

1. Insure current job is the hydro survey job- look for job name at the top of your data collector screen.

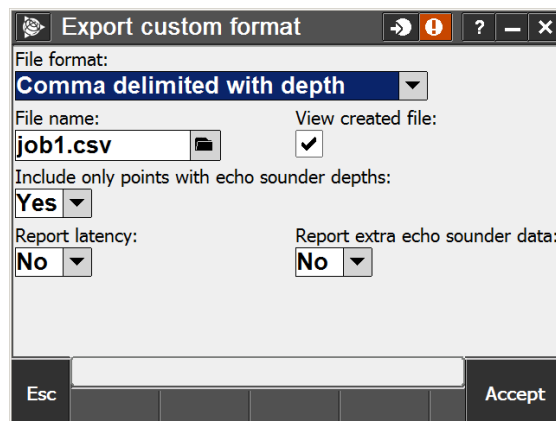2. From the main General Survey menu, tap **Jobs → Import / Export → Export custom format**

    Select one of the two Style sheets

    - Comma delimited with depth

Pt name	North	East	Depth applied elevation	Code
1000	569856.33	2369854.36	880.31	bed

    - Comma delimited with elevation and depths

Pt name	North	East	Elevation	Depth	Code
1000	569856.33	2369854.4	880.31	23.98	bed

3. Change the export file location folder if needed and review all other screen options and tap **Accept** then **OK**

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