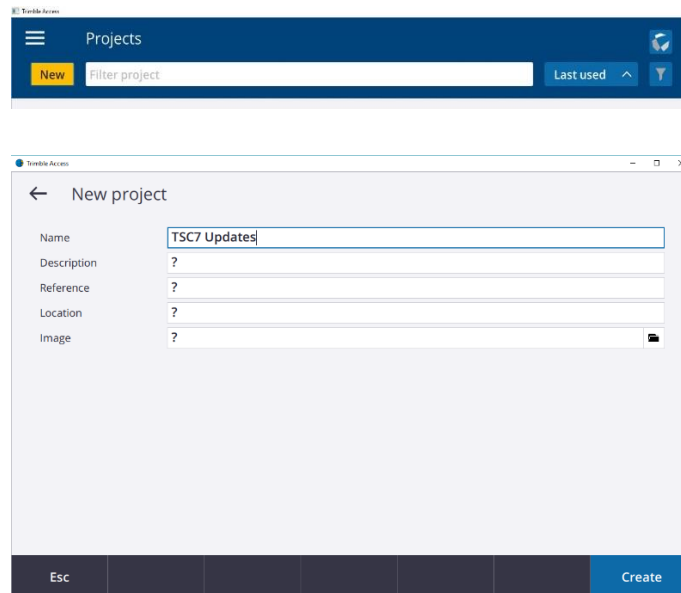


Operating a Total Station with Trimble Access

Starting a Survey & Measuring Points

- Turn on the Total Station and the TSC7 Controller then start Trimble Access. Access will start up with the Projects screen. Tap the yellow “New” button on the top left to create a new project or you can open an existing project. If creating a new project, name it appropriately. All other options can be left blank. Tap the blue button “Create” in the lower right-hand side of the screen.

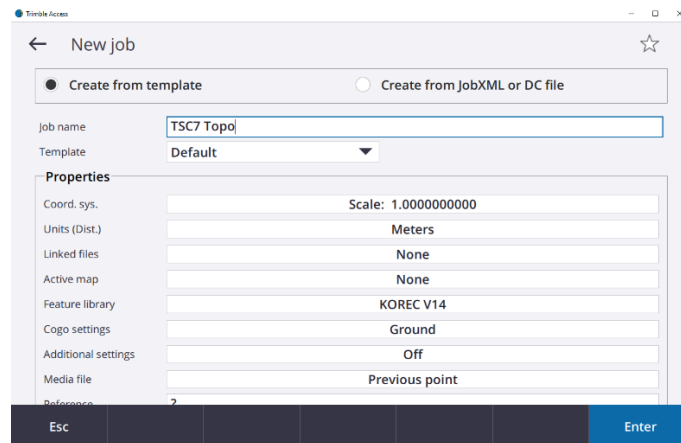


A project is a folder for grouping Trimble Access jobs and the files used by those jobs, including control points, road or alignment RXL files, background images or surfaces, and reference files for the project such as site or health and safety information.

- Next you can open an existing job or create a new job. If you need to create a new job the next screen requests the name of the job. Change the template to Default, and then tap “Enter” in the lower right-hand corner of the screen. If you have a feature code library or any other reference text or CAD data to attach to the job, then it this can added to the job using the appropriate buttons.

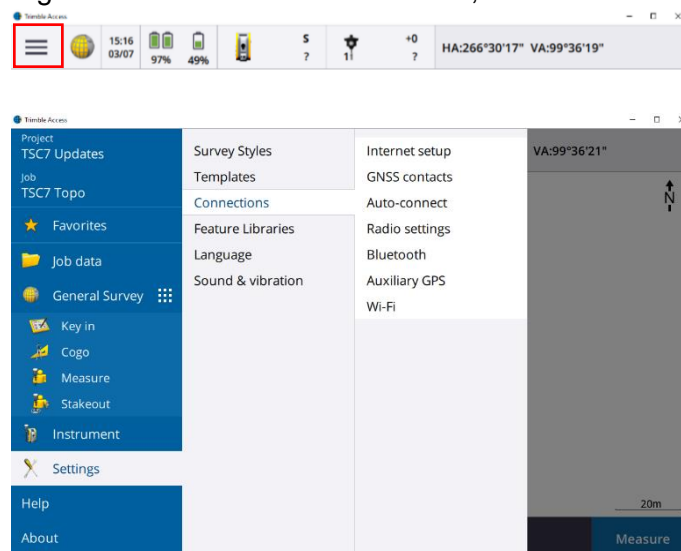
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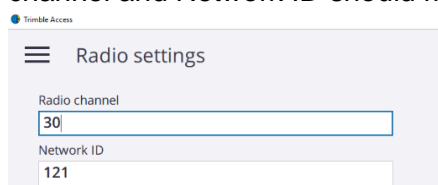


A job contains the raw survey data from one or more surveys, and the configuration settings for the job including coordinate system, calibration, and measurement unit settings. Scan data and media images captured during the survey are stored in separate files and linked to the job. A job may also contain control points if you have imported them into the job instead of using a linked file from the project folder.

- To check Radio Settings to connect to an instrument are correct, tap the Menu button, then tap the Settings button and select Connections, then Radio settings.



- The Radio channel and Network ID should match with the instrument settings.



Got a question?

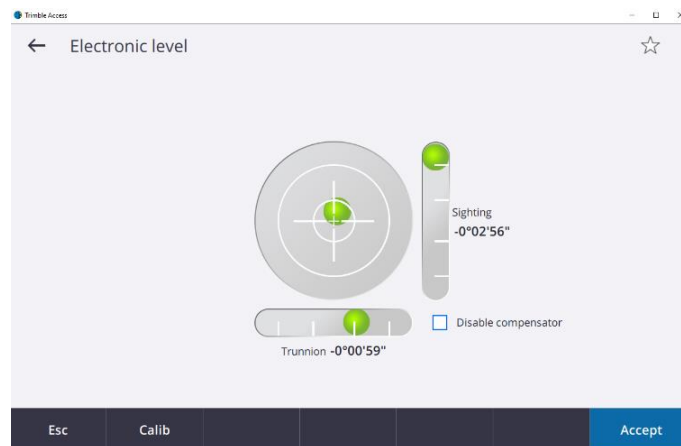
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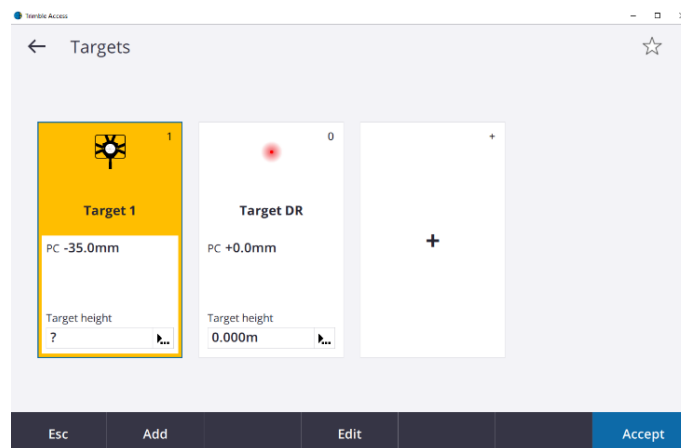
- Update if required, then press Accept to close the Radio Settings dialogue.
- Once connected to the Total Station, you will see a picture of the instrument and the horizontal angle and vertical angle readings. On this top bar the instrument and TSC7 battery levels are also shown.



- Once the TSC7 connects to the Total Station the Electronic level should appear, if it does not you can tap the instrument icon on the top bar and tap Level button. Level the Total Station using the tribrach foot screws.



- Check the correct prism type is selected. Tap the target icon in the middle of the top bar, to display the targets list. Here we can see a traverse target and a DR (Direct Reflex) target.

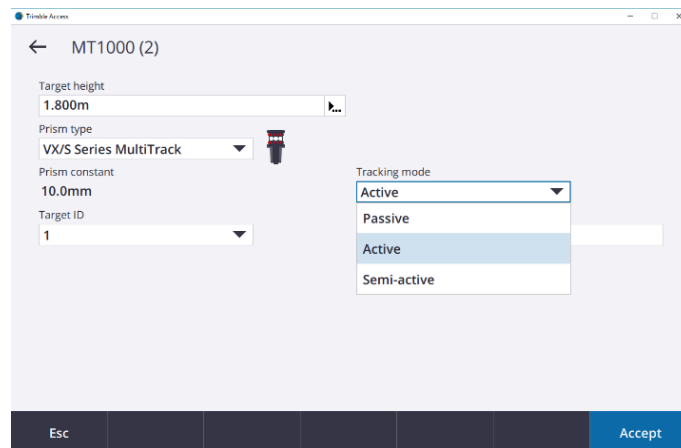


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- To add a new target, tap the Add button. In the example below a MultiTrack (MT1000) target is added. Make sure in Tracking mode to select Active for this target type.

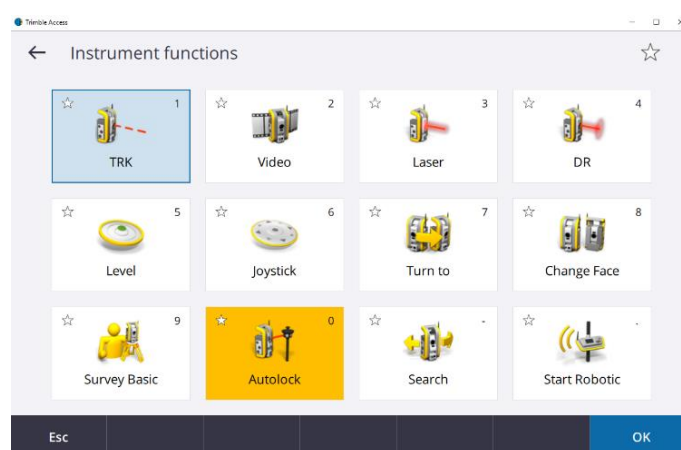


Got a question?

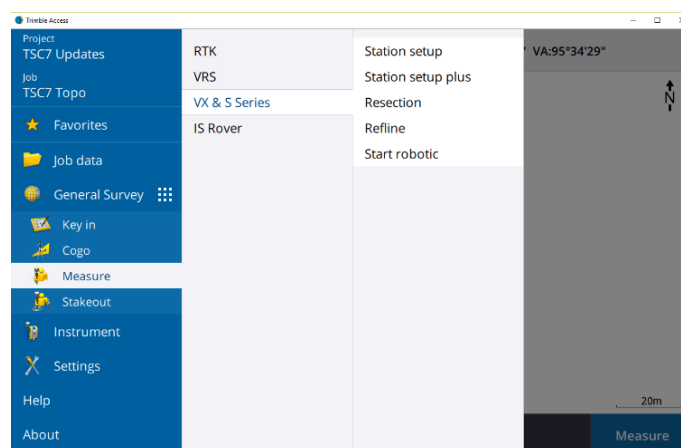
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- The different tracking modes are: -
 - **Active** when operating in a highly reflective environment or on a site with many prisms.
 - **Semi-active** when operating in a reflective environment and require more precise elevations.
 - **Passive** is when not operating in a reflective environment, be aware that there is a risk of nearby reflective surfaces interfering with the measurement.
- Also make sure Autolock is enabled, tap instrument icon and tap the button for the target lock method to enable it. Button is yellow when enabled.



- To perform a station setup, tap Menu button, select VX & S Series and select Station setup

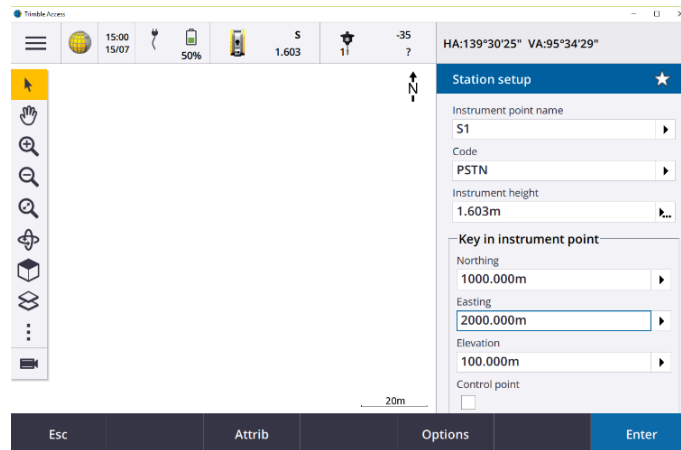


- Fill out Station setup details for the instrument point as below and key in arbitrary coordinates if not using known control coordinates. Press Enter and Accept.

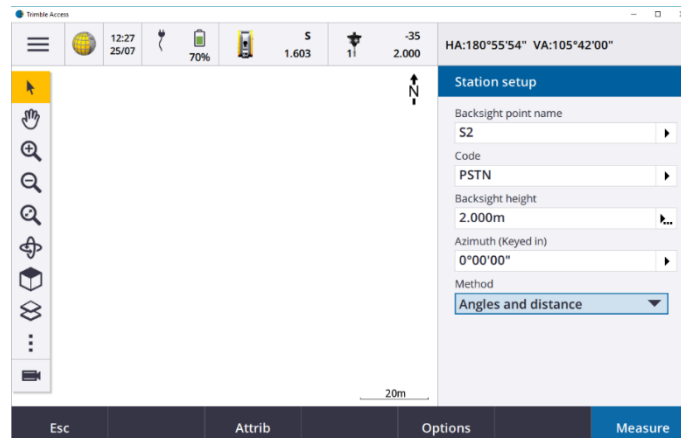
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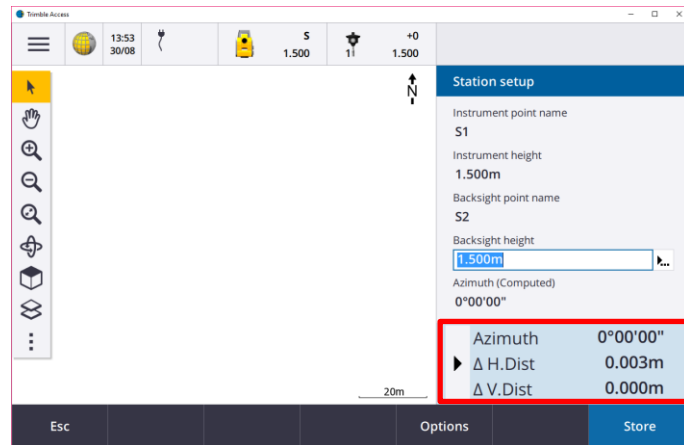
- Enter the name of the backsight point. If not using a known backsight coordinate, then you will be prompted to enter an azimuth angle. Sight backsight, and when locked to the prism target press Measure.



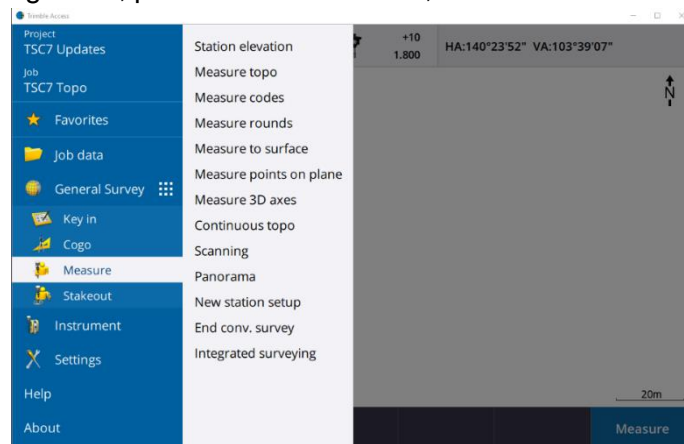
- If using known control coordinates check the measurement deltas reported are acceptable. Station set up should now be complete.

Got a question?

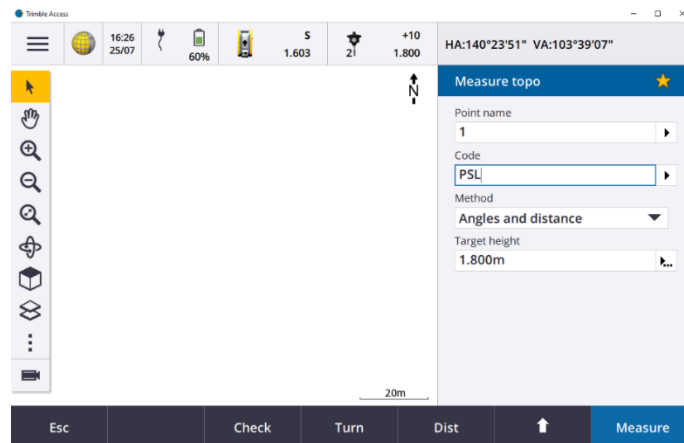
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- To start measuring detail, press the Menu button, select Measure and then Measure topo.



- Enter the start point number, code and target height. Make sure the Method shows Angle and distance. Ensure that the correct prism target type is selected using the button on the top menu. Press Measure after locking to the prism target to take each measurement.



Got a question?

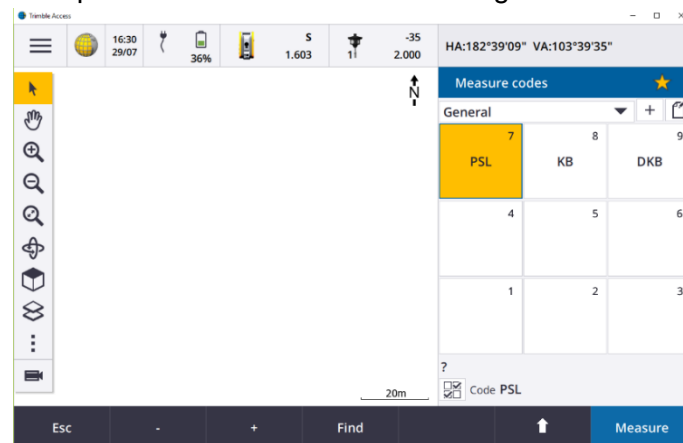
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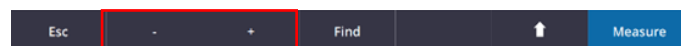
- Press Store to save each measurement if prompted. Saved points are shown on the map and listed in the Point Manager.

Measure Codes

- It is also possible to survey by picking from a defined selection of codes as shown below instead of picking codes from a list or manually entering them, as in the Measure Points screen. This method is particularly useful if you are only using a small number of codes on a regular basis, measuring string features, or need to constrain the number of codes used on a series of cross sections for example.
- To access this screen, tap the Menu button in the top left corner of the screen and tap the Measure button then select Measure codes. The first time this screen is used you will need to press the Add group button to create a screen of blank buttons.
- To assign a code to a button, tap and hold on a button and then release. Enter the code required. In the example below codes have been assigned to three buttons.



- To measure a code point, just tap the button required. It is also possible to highlight a button by using the spider key on the TSC7 keypad and pressing the Enter button to take the measurement.
- String numbers can be attached to codes by highlighting the button required and using the – and + keys at the base of the screen.



- The type of point measurement is the one that is defined in the Measure Topo screen (topo point, rapid point, etc.).

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Map Functions – Quick Guide

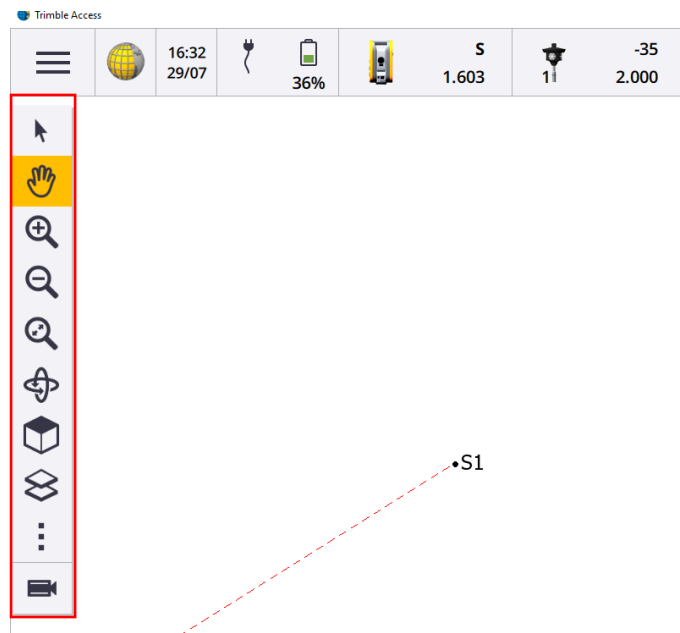
The map screen is displayed on the left-hand side of the screen.

- Select – Tap the pointer button and use to select features in the map.
- Pan – Tap the hand button, then drag the map area to where you want to reposition the map.
- Zoom in/out - Tap the plus/minus buttons to zoom in or out one zoom level at a time.
- Zoom extents – Tap the button to zoom to the map extents.
- Orbit – Tap the button to orbit the data around an axis.
- Predefined view – Tap the button and then select Plan, Top, Front, Back, Left, Right or Iso.
- Layers – Tap button to add files from the project folder to the map as layers or to change which features are visible and selectable in the map.
- More – Tap button and then select the appropriate menu item to change the information that is shown in the map. Select from Settings, Scans, Filter, Pan to point and Pan to here.
- Camera – Tap button to change view between camera on instrument and map of points.

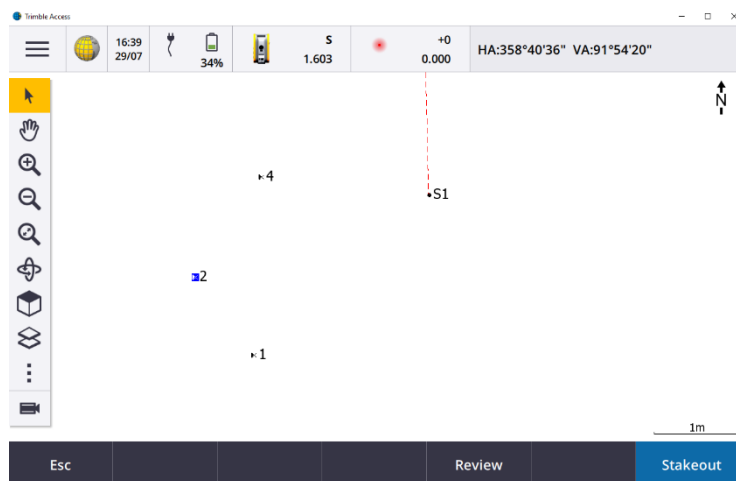
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- It is possible to select a point or multiple points on the map by tapping on them. To deselect points, then tap & hold in a clear part of the map screen and choose Clear selection from the menu that appears. Also double tap to deselect all.

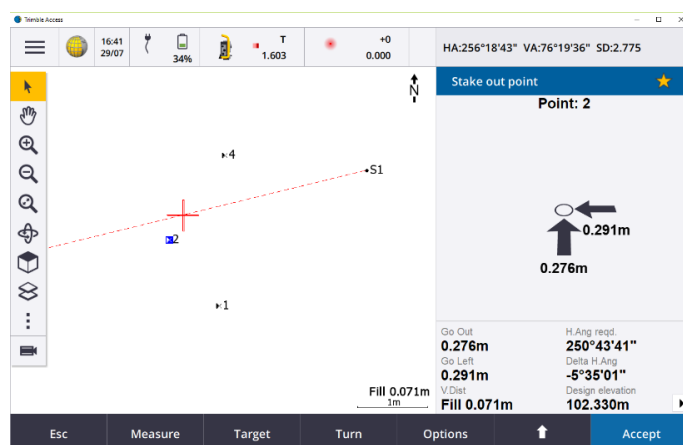
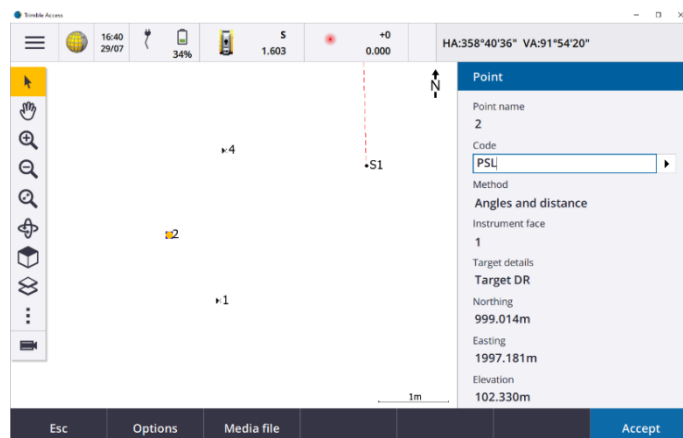


- When a point/s is selected you can review point information and quickly access stakeout.

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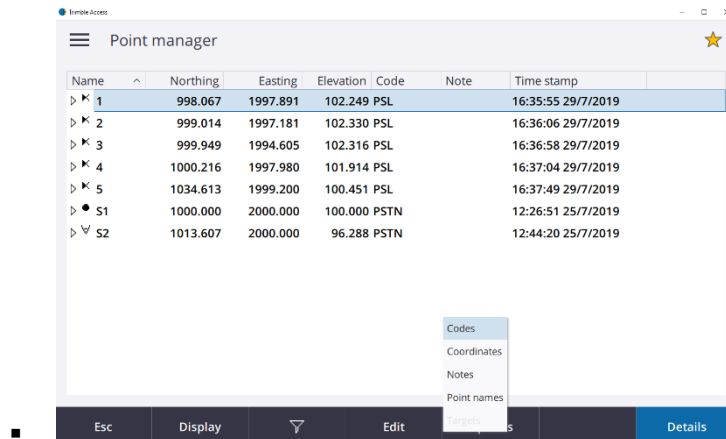
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Point Manager

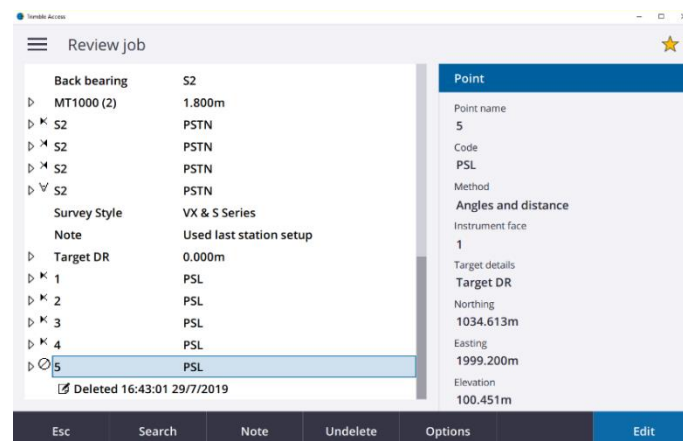
- The Point Manager is accessed by tapping the Menu button, Job data and then Point Manager. It provides a list of the points stored within, or linked to, the current job.



Name	Northing	Easting	Elevation	Code	Note	Time stamp
1	998.067	1997.891	102.249	PSL		16:35:55 29/7/2019
2	999.014	1997.181	102.330	PSL		16:36:06 29/7/2019
3	999.949	1994.605	102.316	PSL		16:36:58 29/7/2019
4	1000.216	1997.980	101.914	PSL		16:37:04 29/7/2019
5	1034.613	1999.200	100.451	PSL		16:37:49 29/7/2019
S1	1000.000	2000.000	100.000	PSTN		12:26:51 25/7/2019
S2	1013.607	2000.000	96.288	PSTN		12:44:20 25/7/2019

Review Job

- Review Job is accessed by tapping the Menu button, Job data and then Review job. Review job is used to review the job settings and the actions taken during the course of the survey.



Review job	
Back bearing	S2
MT1000 (2)	1.800m
S2	PSTN
S2	PSTN
S2	PSTN
Survey Style	VX & S Series
Note	Used last station setup
Target DR	0.000m
1	PSL
2	PSL
3	PSL
4	PSL
5	PSL
Deleted 16:43:01 29/7/2019	

Point
Point name
5
Code
PSL
Method
Angles and distance
Instrument face
1
Target details
Target DR
Northing
1034.613m
Easting
1999.200m
Elevation
100.451m

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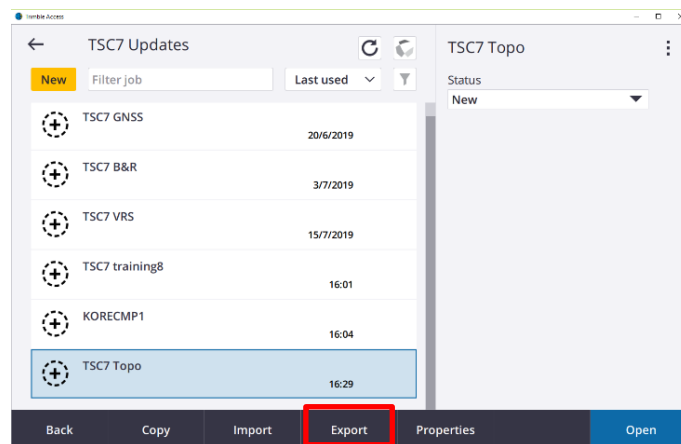
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Ending the Survey

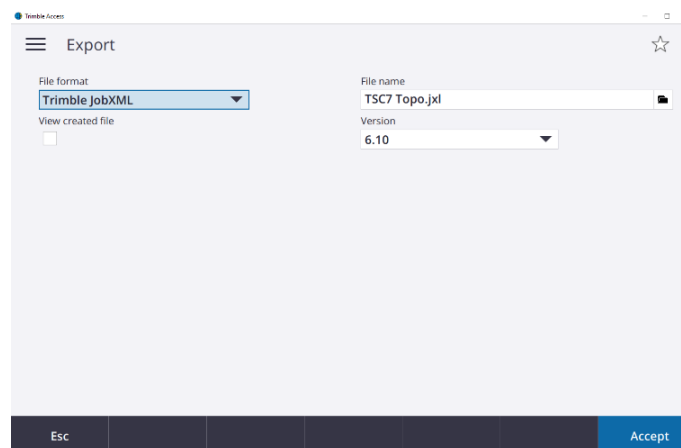
- When you have completed the survey, tap the Menu button and select Measure then End conv. survey.

Exporting Job Files

- To exporting data from a job, tap the Menu button and then tap on the job name. Press the Export button.



- Here you can export to many different file formats and reports.

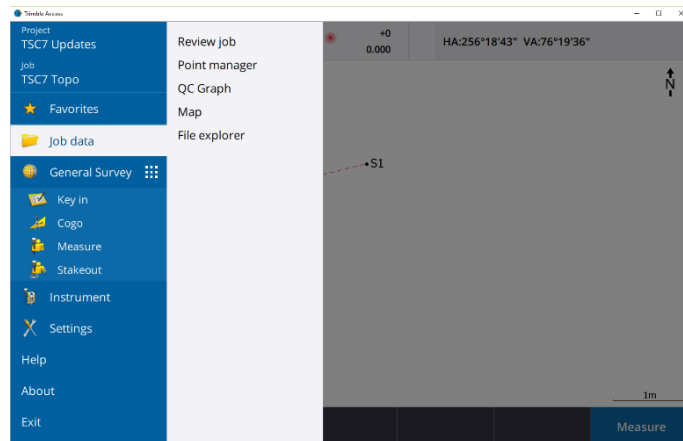


- To the locate the file exported, tap the menu button, select Job data and File explorer. Using File explorer, you can copy the file onto a USB stick.

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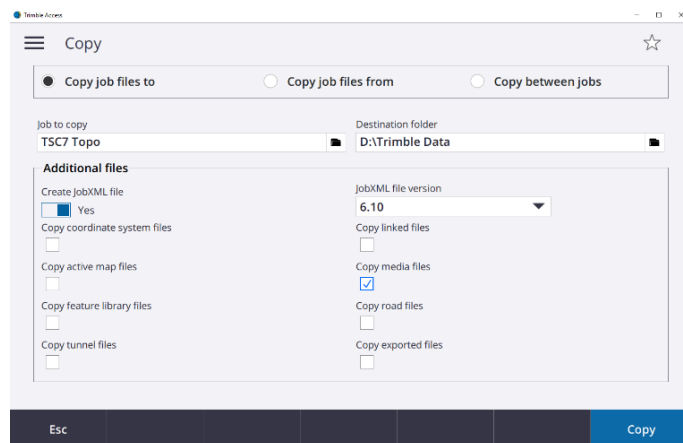
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Copying Job Files

- To copy a job and all its associated survey files to an external drive or USB stick, then tap the Menu button and then tap on the job name. Press the Copy button.
- The Copy jobs file to option is the one to select. Insert a USB stick and pick it to the Destination folder in the box to the right. Select the options required in the additional files section before press Copy.



- After you see File transfer completed message, the data will be on the USB stick, under Trimble Data > Projects.

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