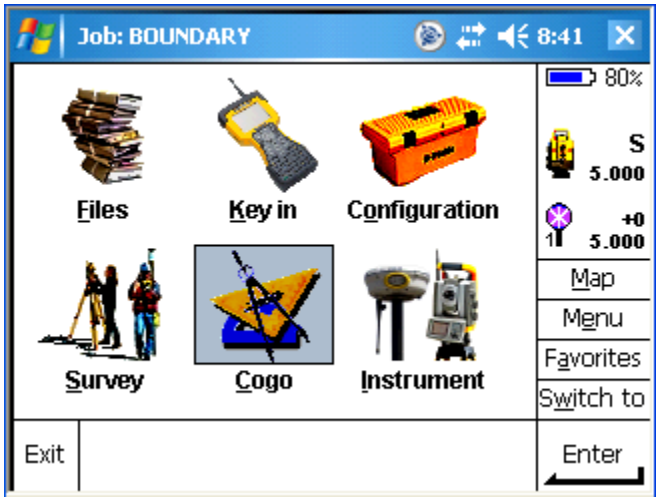
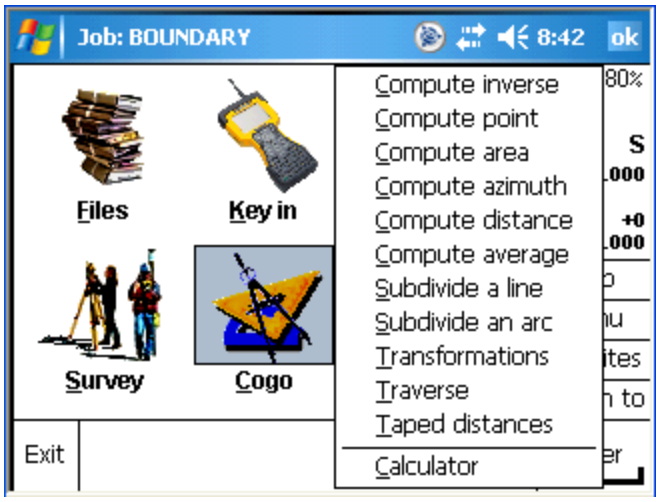
Rotate and Translate in Trimble Survey Controller

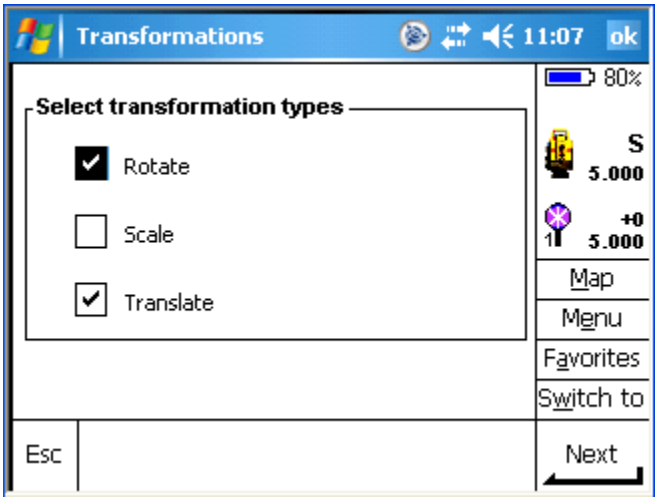
Scenario: You have a plat for a boundary survey you are performing that is tied to grid and lists the bearings and distances for each property line. You are unable to occupy and backsight any of the corners, so you wish to set your own assumed control to start your survey and tie two property corners in order to rotate and translate your control to match the plat. For this example points 1,2, and 3 are traverse points and points 100 and 101 are iron pins side shot from the traverse. Points 1000 and 1001 are the values keyed in from the plat that corresponds to points 100 and 101.



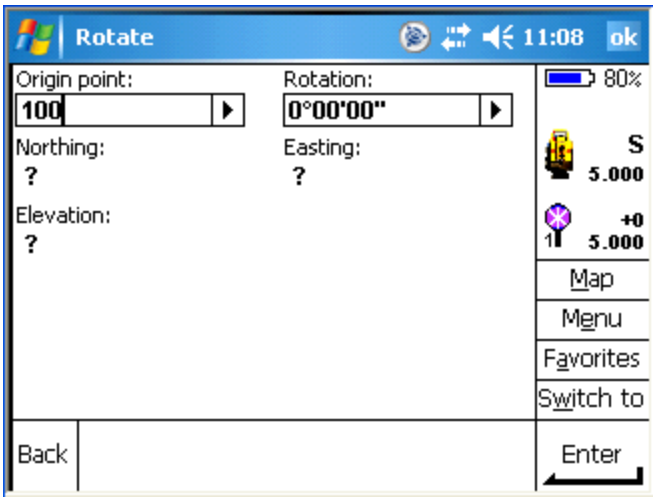
From the Survey Controller main menu tap on Cogo.



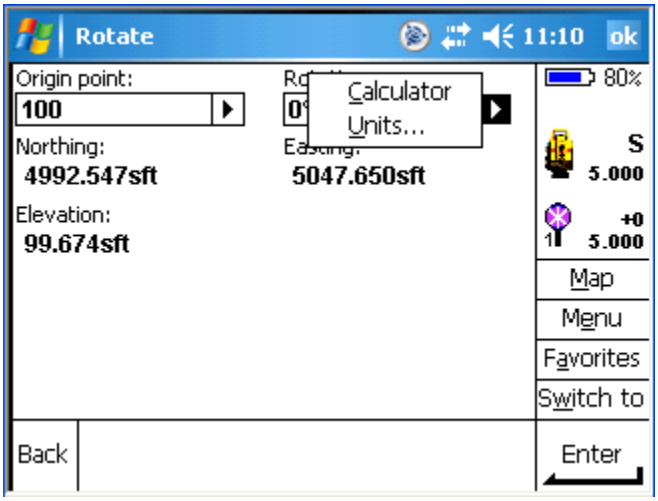
Tap on Transformations.



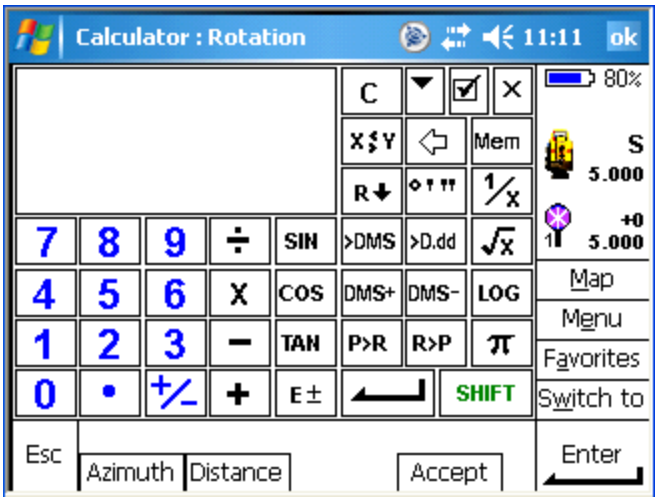
Tap on Rotate and Translate. Tap on Next.



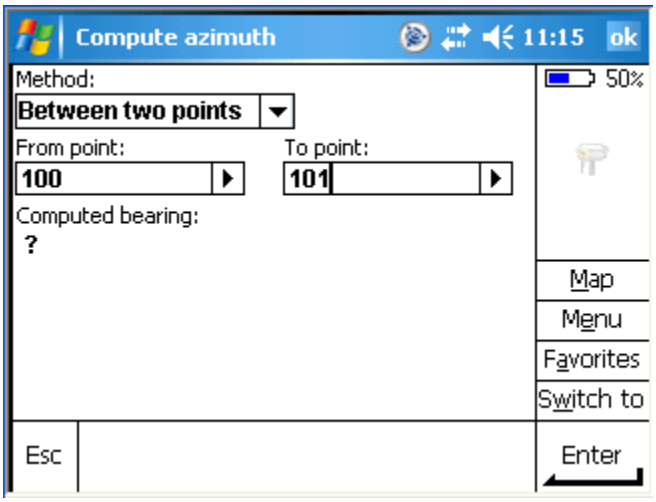
Enter the origin point for the rotation. Tap on ▶ next to the Rotation box.



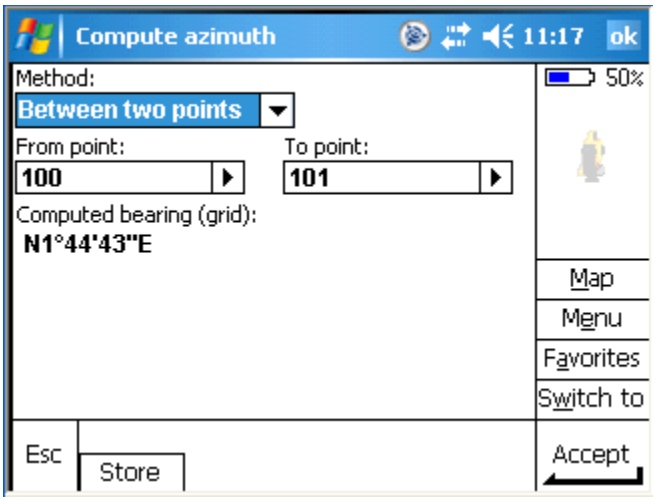
Tap on Calculator.



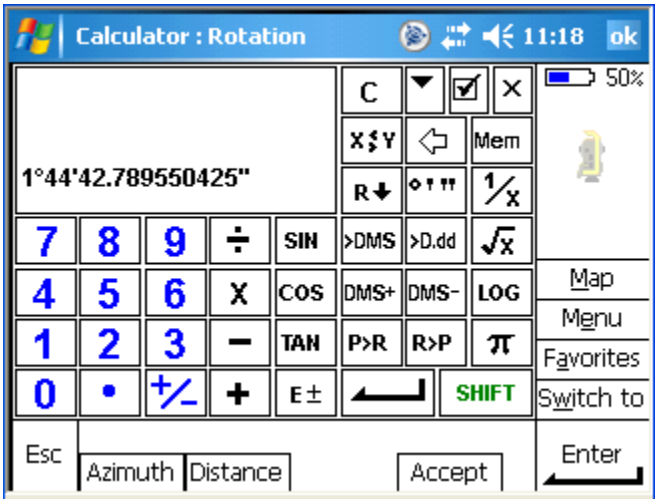
Tap on Azimuth.



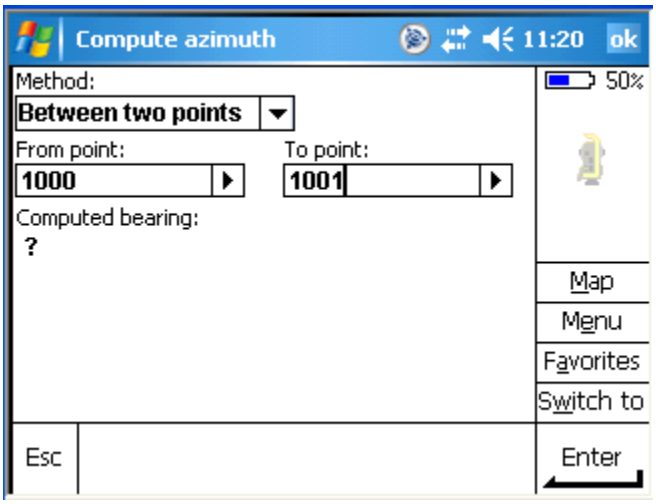
Enter the point numbers to calculate the first azimuth and tap Enter.



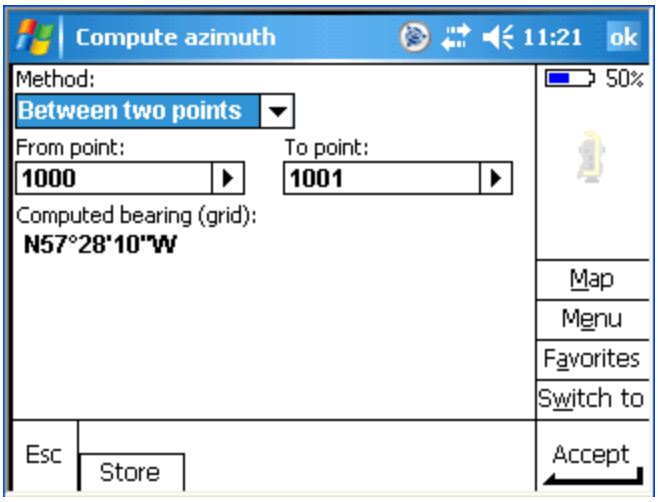
The computed bearing is displayed. Tap on Accept.



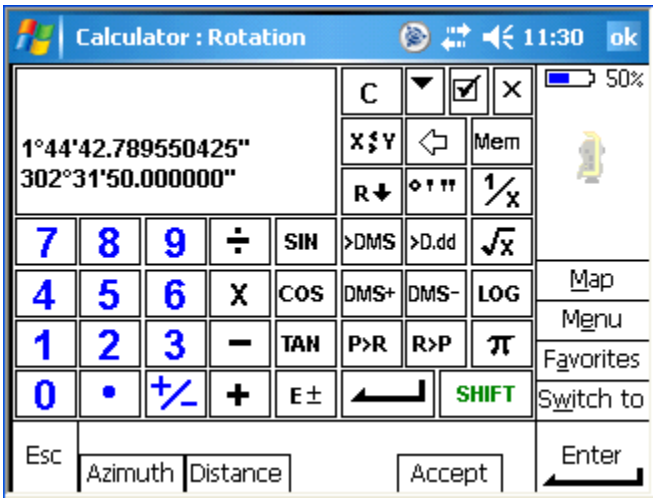
The computed bearing is automatically entered in the calculator. Tap Azimuth again.



Type in the points to compute the second bearing and tap Enter.

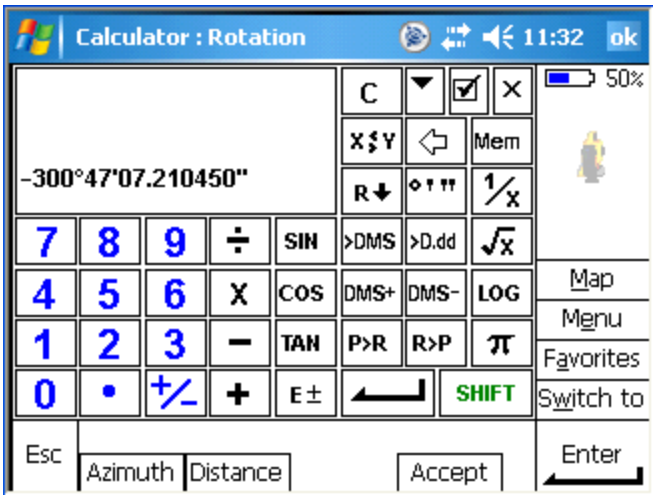


The computed bearing is now displayed. Tap on Accept.

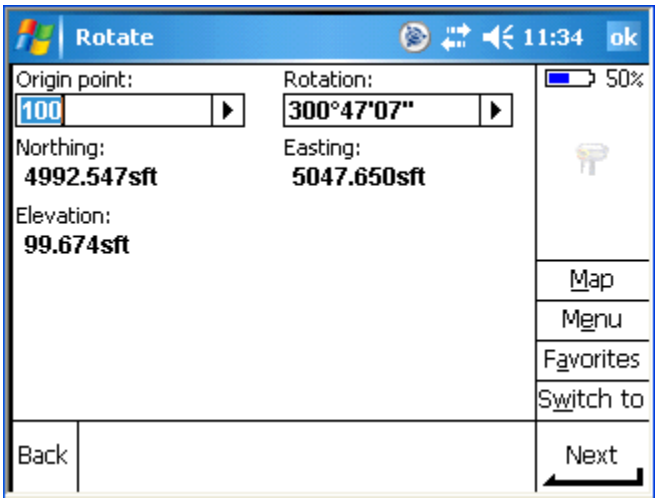


The bearing has automatically been changed to an azimuth and entered in the calculator.

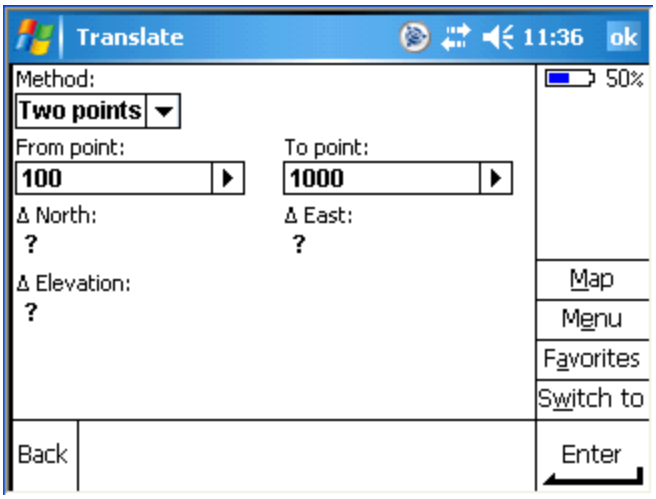
Tap on DMS-.



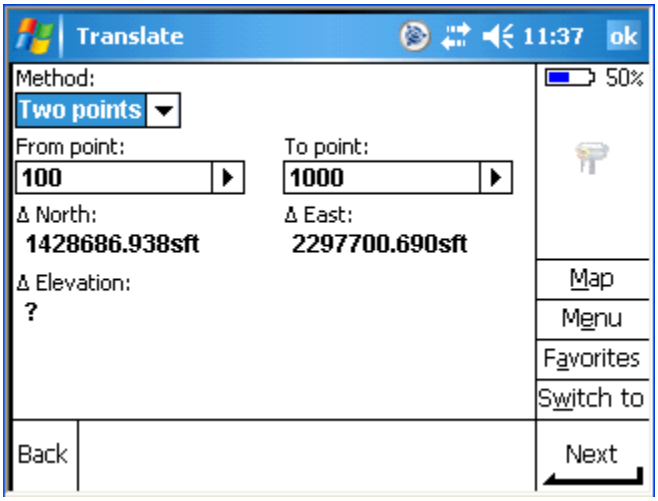
The rotation angle between the two bearings has been calculated. Tap on +/− to change the sign as needed. Tap on Accept.



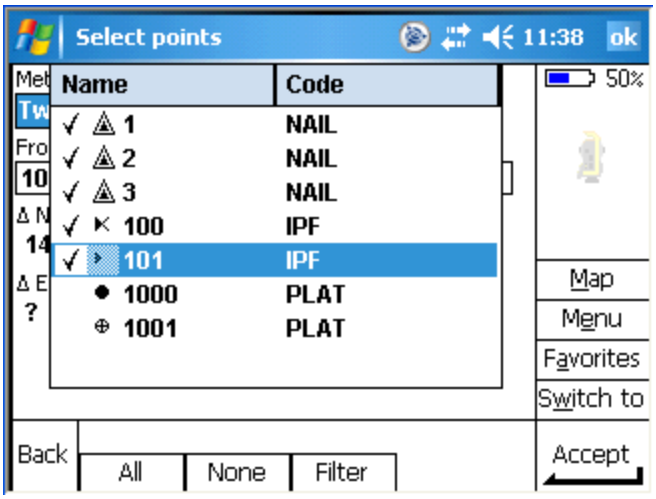
The rotation angle has automatically been entered. Tap on Next.



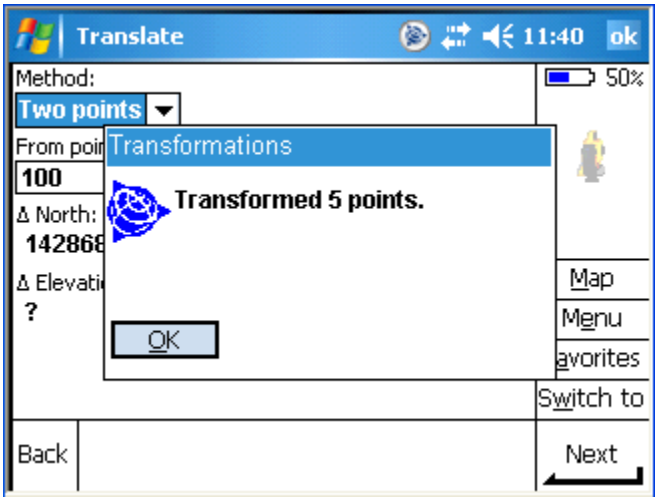
The Translate screen opens. Enter the beginning point and the ending point for the translation. Tap on Enter.



The translation deltas are computed. Tap on Next.



Select the points you wish to rotate. The filter button at the bottom allows you to select points by type. Tap Accept.



Our 3 traverse points and 2 iron rods have now been transformed. You can check your transformation by inversing between your sideshots on the iron rods and the plat coordinates of the iron rods.

You can change from bearings to azimuths in the units section of the properties of current job.