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## How to do a 1 Point Localization on Topcon Pocket 3D V15

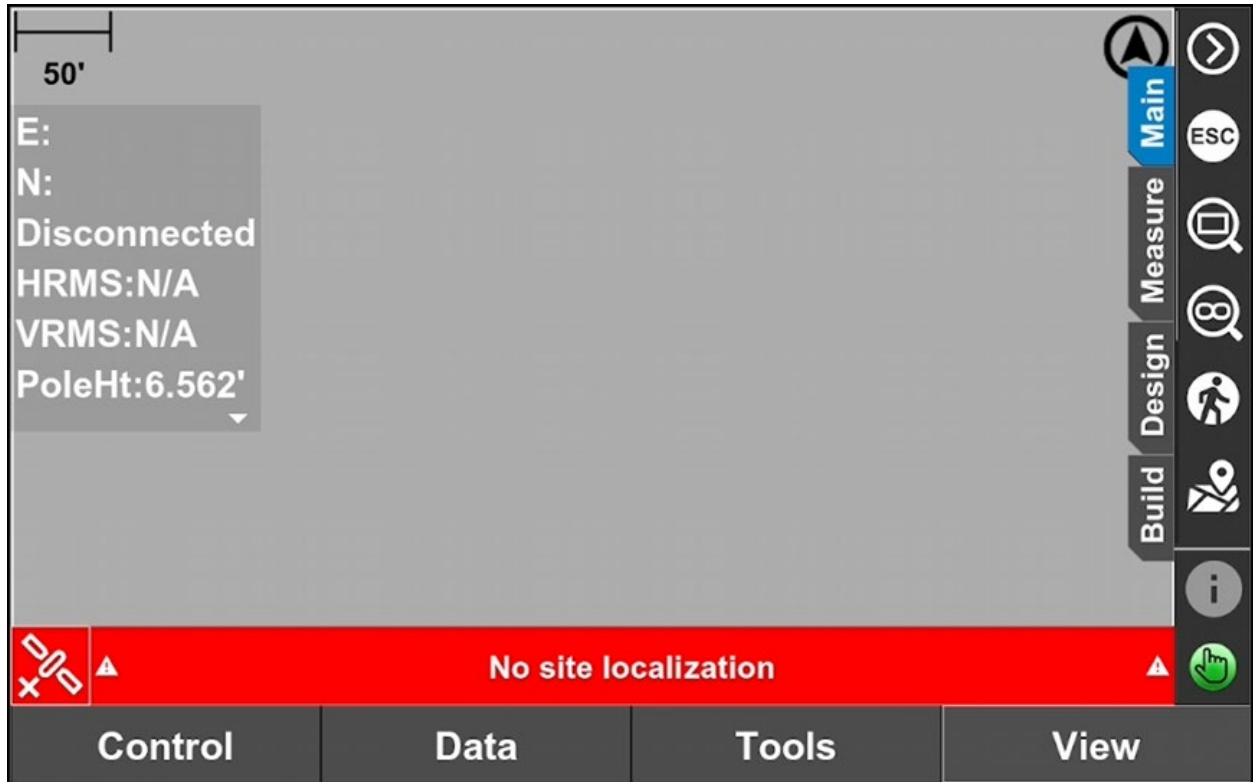
1. Set up your equipment.



2. Get a stake or rebar and pin it on the ground.

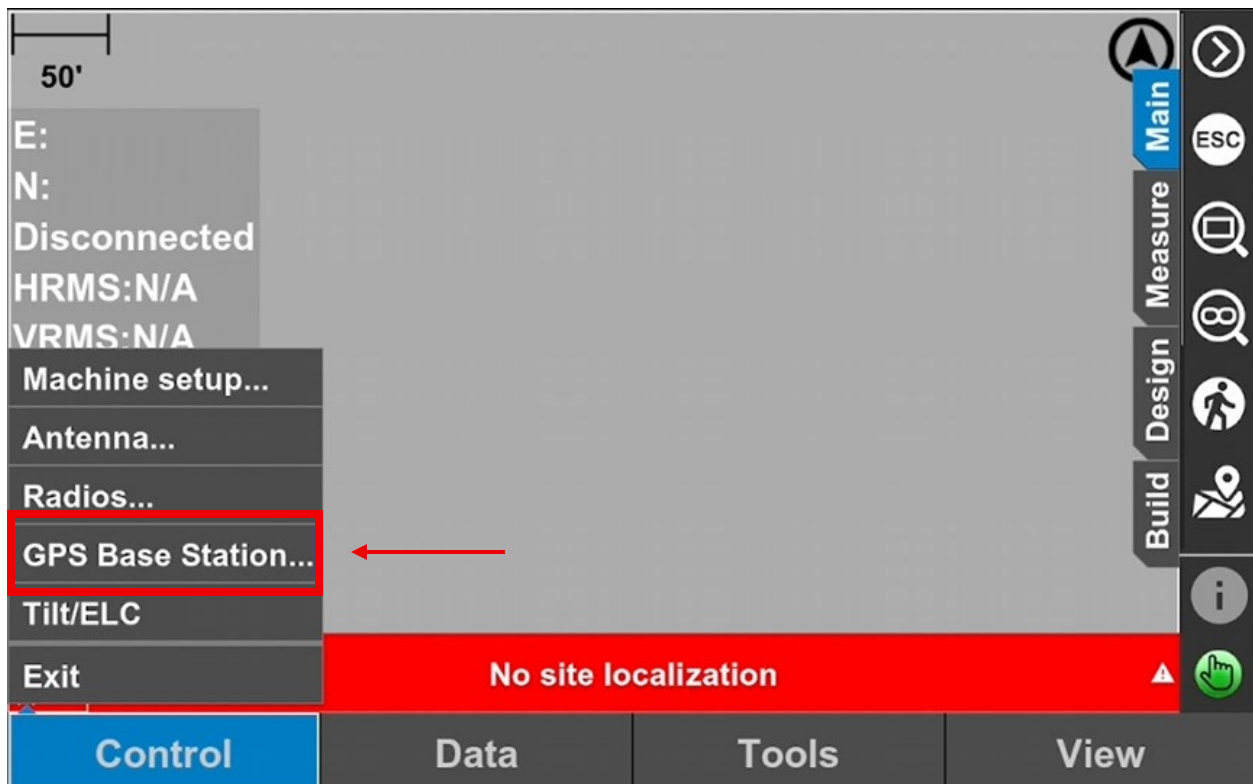


3. Make sure you are on an empty job.





4. Click **“Control”**, then click **“GPS Base Station...”**



5. Press **“Unknown point”** and **“Add point to project”** to add the base post to the project.

The screenshot shows a 'Base station' dialog box. It has a blue header bar with the title 'Base station'. Below the header, there are two radio button options: 'Known control point' and 'Unknown point'. The 'Unknown point' option is selected and highlighted with a red box and a red arrow. Below these options, there is a text input field for 'Name:' and a text input field for 'Description:'. The 'Add point to project' checkbox is checked and highlighted with a red box and a red arrow. At the bottom right, there are two buttons: 'Next >' and 'Cancel'.

6. Rename your point and click “**Next >**”

**Base station**

☐ Known control point

☒ Unknown point

☒ Add point to project

Name: **BASE POST**

Description:

**Next >** Cancel

7. Change the antenna type, depending on the equipment you are using.

**Antenna setup**

**Dimensions** Image

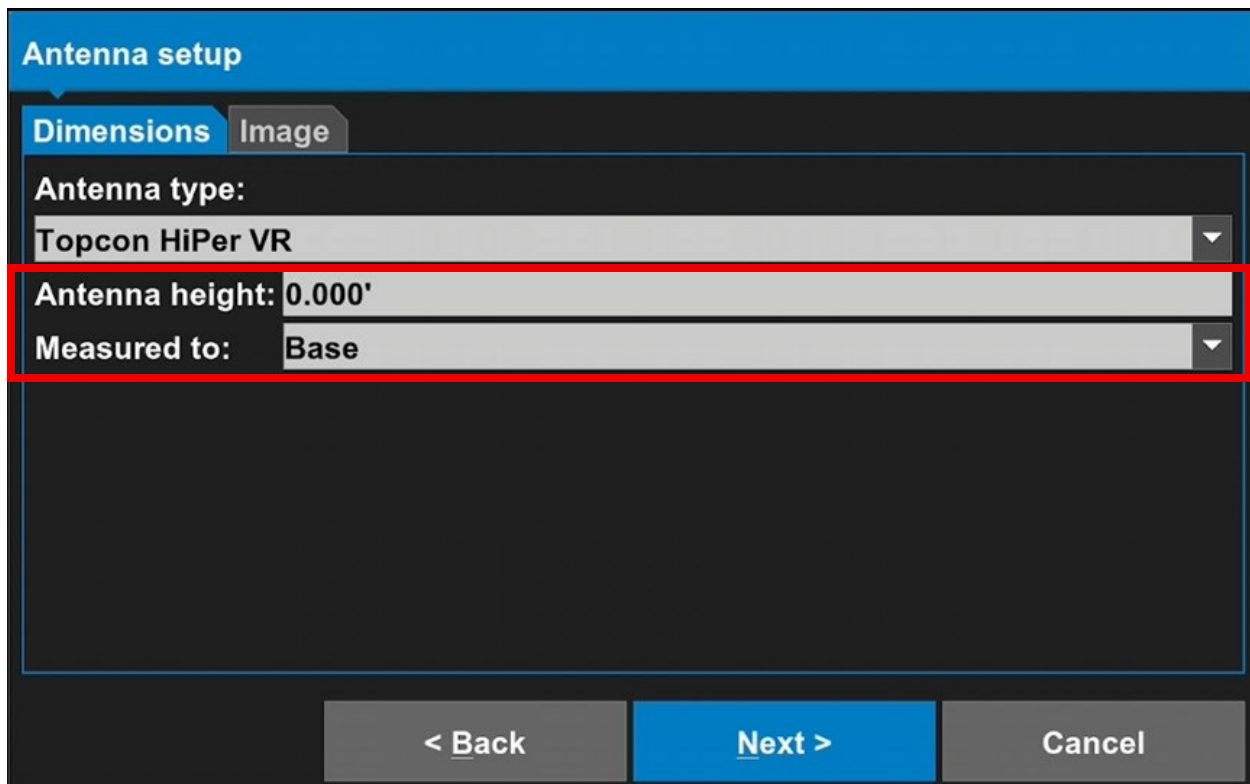
Antenna type: **Topcon HiPer VR**

Antenna height: 0.000'

Measured to: Base

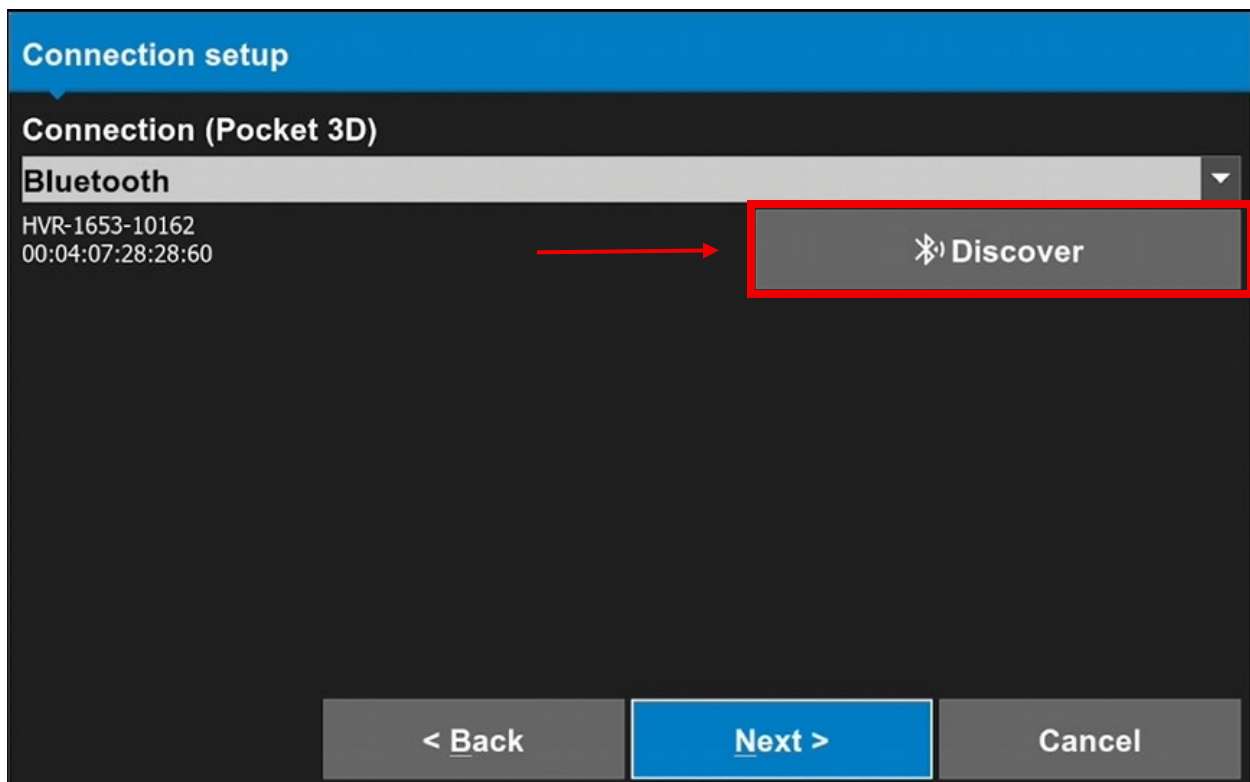
< Back **Next >** Cancel

8. Set the “Antenna Height” and “Measured to:” depending on the project. Then click “Next >”.



The screenshot shows the "Antenna setup" screen with a blue header. Below the header are two tabs: "Dimensions" (active) and "Image". Under the "Dimensions" tab, there are three input fields. The first is "Antenna type:" with a dropdown menu showing "Topcon HiPer VR". The second is "Antenna height:" with a text input field containing "0.000'". The third is "Measured to:" with a dropdown menu showing "Base". A red rectangular box highlights the "Antenna height:" and "Measured to:" fields. At the bottom of the screen are three buttons: "< Back", "Next >" (highlighted in blue), and "Cancel".



9. Click “Discover” to connect the device to Bluetooth.



The screenshot shows the "Connection setup" screen with a blue header. Below the header is a section titled "Connection (Pocket 3D)". Under this section is a dropdown menu showing "Bluetooth". Below the dropdown menu, there is a list of devices with the text "HVR-1653-10162" and "00:04:07:28:28:60" next to it. A red arrow points from this text to a "Discover" button, which is highlighted with a red rectangular box. At the bottom of the screen are three buttons: "< Back", "Next >" (highlighted in blue), and "Cancel".

10. Click **“Refresh”** if you do not see your Base’s Bluetooth.

**Bluetooth Devices**

Name	ID
 10145 Rover	00:04:07:28:BE:0F
 HVR-1653-10162	00:04:07:28:28:60
Ugreen-70601	41:42:43:D9:9F:19
Unknown device	00:03:19:7A:B8:DB

☒ Show all devices



Refresh

Select

Cancel

11. Highlight your base then click **“Select”**.

**Bluetooth Devices**

Name	ID
 10145 Rover	00:04:07:28:BE:0F
 HVR-1653-10162	00:04:07:28:28:60
Ugreen-70601	41:42:43:D9:9F:19
Unknown device	00:03:19:7A:B8:DB

☒ Show all devices

Refresh

Select

Cancel

12. Click “Next”.

Connection setup

Connection (Pocket 3D)

Bluetooth

HVR-1653-10162  
00:04:07:28:28:60

Discover

< Back   **Next >**   Cancel

13. Set the Radio type to “Satel TR4+” and format to “RTCM 3.x”. Then click “Configure”.

Radio setup

Radio Type:

Satel TR4+

Connected to: Modem Port A

Baud rate: 115200

Format: RTCM 3.x

Configure...

Output rate (secs): 1

☐ Set Station Id

Id: 0

< Back   **Next >**   Cancel

14. We recommend these radio settings but you can change them depending on the project.

**Satel TR4+**

**Channel:**  
CH 4 - TX 461.100000 MHz - 12.5 kHz - 0 mW

**Spacing:** 12.5 kHz

**Power:** 1 W

**Protocol:** PDL 4FSK

**Scrambling:** On

**FEC:** On

**Repeater:** Off

Set

Cancel

15. Once done, click “Set”

**Satel TR4+**

**Channel:**  
CH 4 - TX 461.100000 MHz - 12.5 kHz - 0 mW

**Spacing:** 12.5 kHz

**Power:** 1 W

**Protocol:** PDL 4FSK

**Scrambling:** On

**FEC:** On

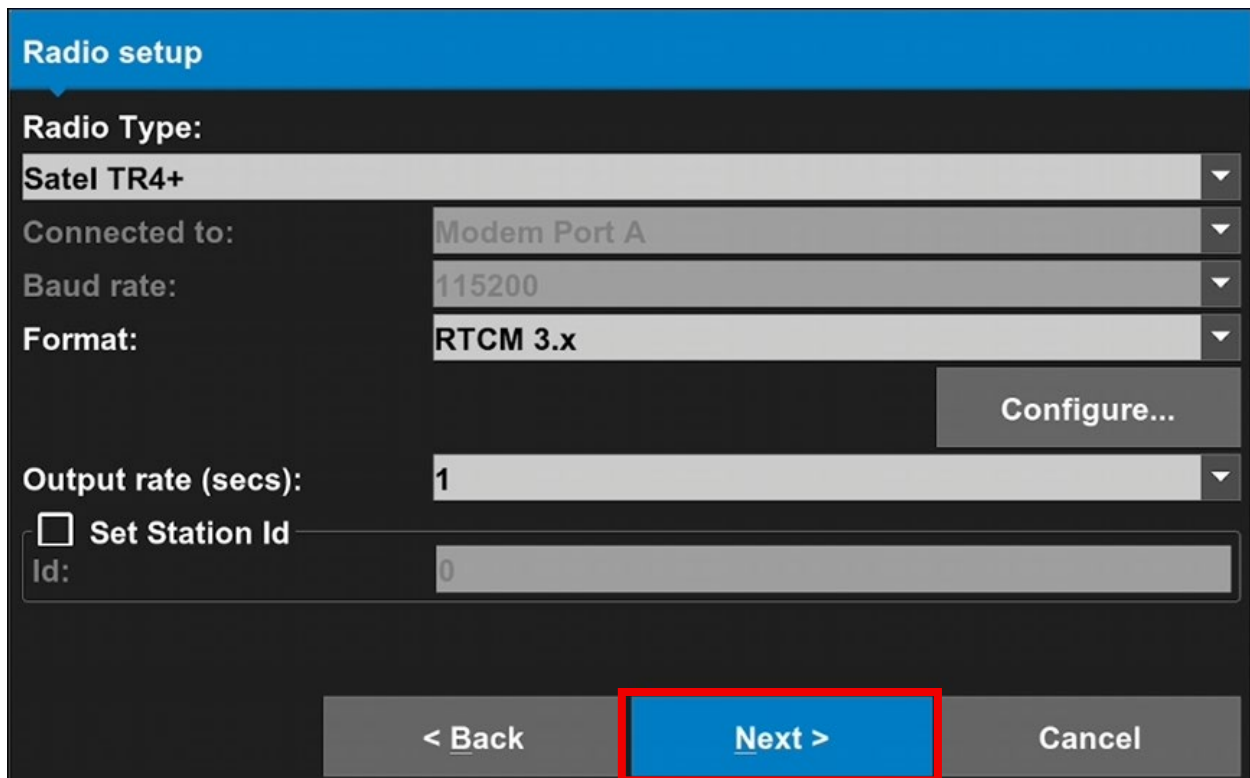
**Repeater:** Off

Set

Cancel



16. Click "Next >"



The "Radio setup" screen features a blue header bar. Below it, the "Radio Type:" dropdown is set to "Satel TR4+". The "Connected to:" dropdown is set to "Modem Port A", "Baud rate:" is set to "115200", and "Format:" is set to "RTCM 3.x". A "Configure..." button is located to the right of the "Format:" dropdown. The "Output rate (secs):" dropdown is set to "1". There is an unchecked checkbox for "Set Station Id" and an "Id:" text field containing the value "0". At the bottom, there are three buttons: "< Back", "Next >" (highlighted with a red box), and "Cancel".

**Radio setup**

Radio Type: Satel TR4+

Connected to: Modem Port A

Baud rate: 115200

Format: RTCM 3.x

Configure...

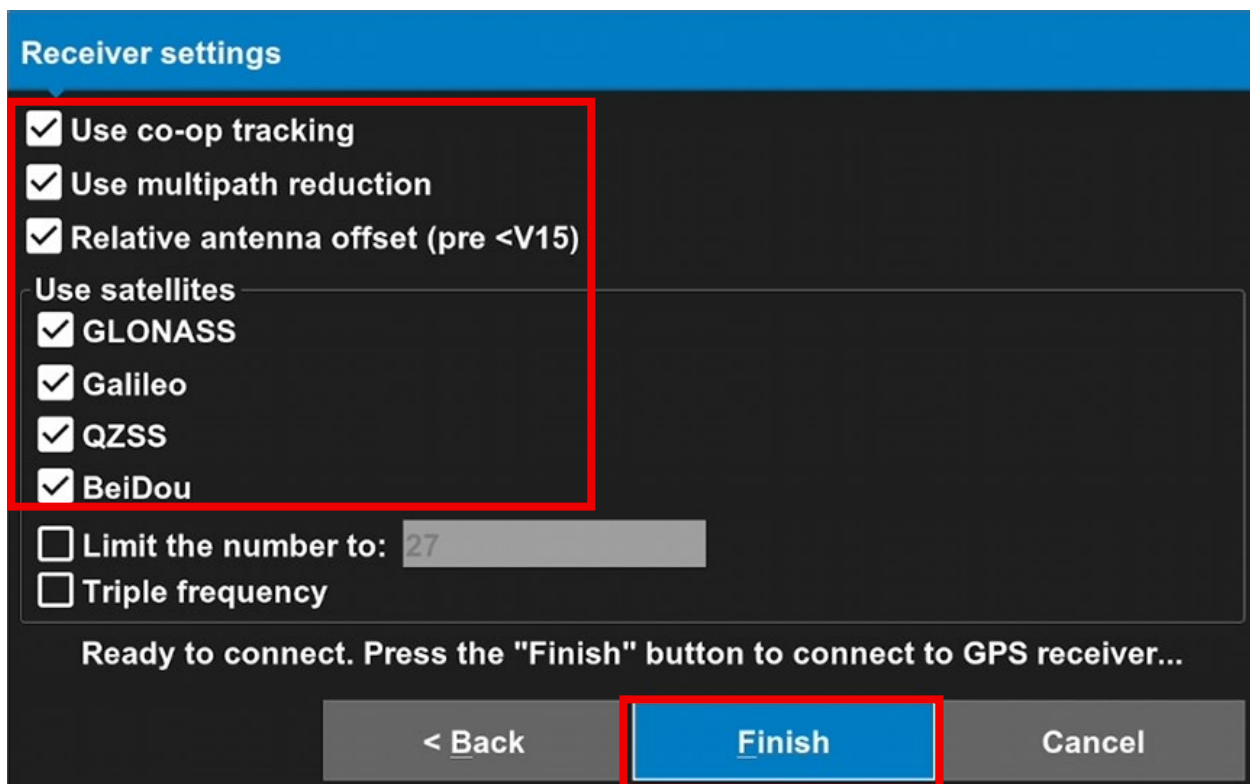
Output rate (secs): 1

☐ Set Station Id

Id: 0

< Back Next > Cancel

17. Make sure these boxes are checked, then click "Finish".



The "Receiver settings" screen features a blue header bar. A red box highlights a group of settings: "Use co-op tracking", "Use multipath reduction", "Relative antenna offset (pre <V15)", and a section titled "Use satellites" which includes checkboxes for "GLONASS", "Galileo", "QZSS", and "BeiDou". Below this group, there is an unchecked checkbox for "Limit the number to:" followed by a text field with the value "27", and another unchecked checkbox for "Triple frequency". At the bottom, there is a message: "Ready to connect. Press the 'Finish' button to connect to GPS receiver...". Below the message are three buttons: "< Back", "Finish" (highlighted with a red box), and "Cancel".

**Receiver settings**

☒ Use co-op tracking

☒ Use multipath reduction

☒ Relative antenna offset (pre <V15)

Use satellites

☒ GLONASS

☒ Galileo

☒ QZSS

☒ BeiDou

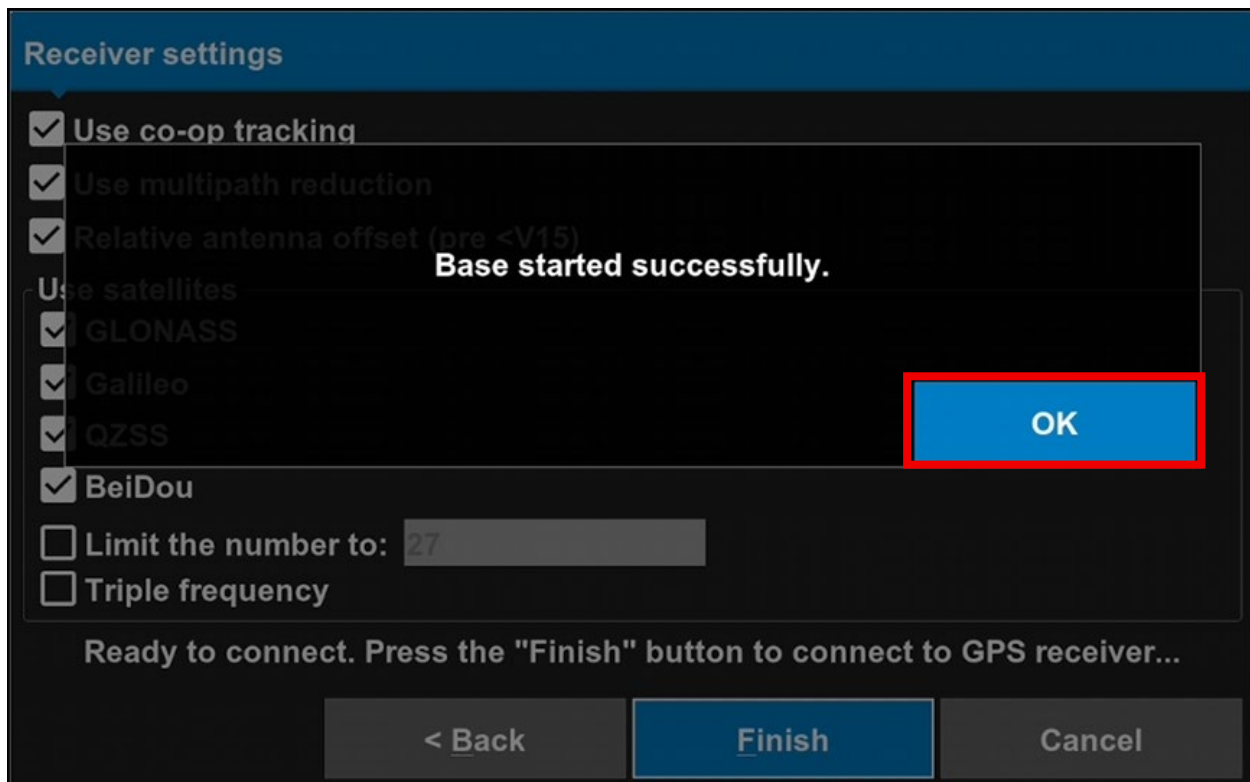
☐ Limit the number to: 27

☐ Triple frequency

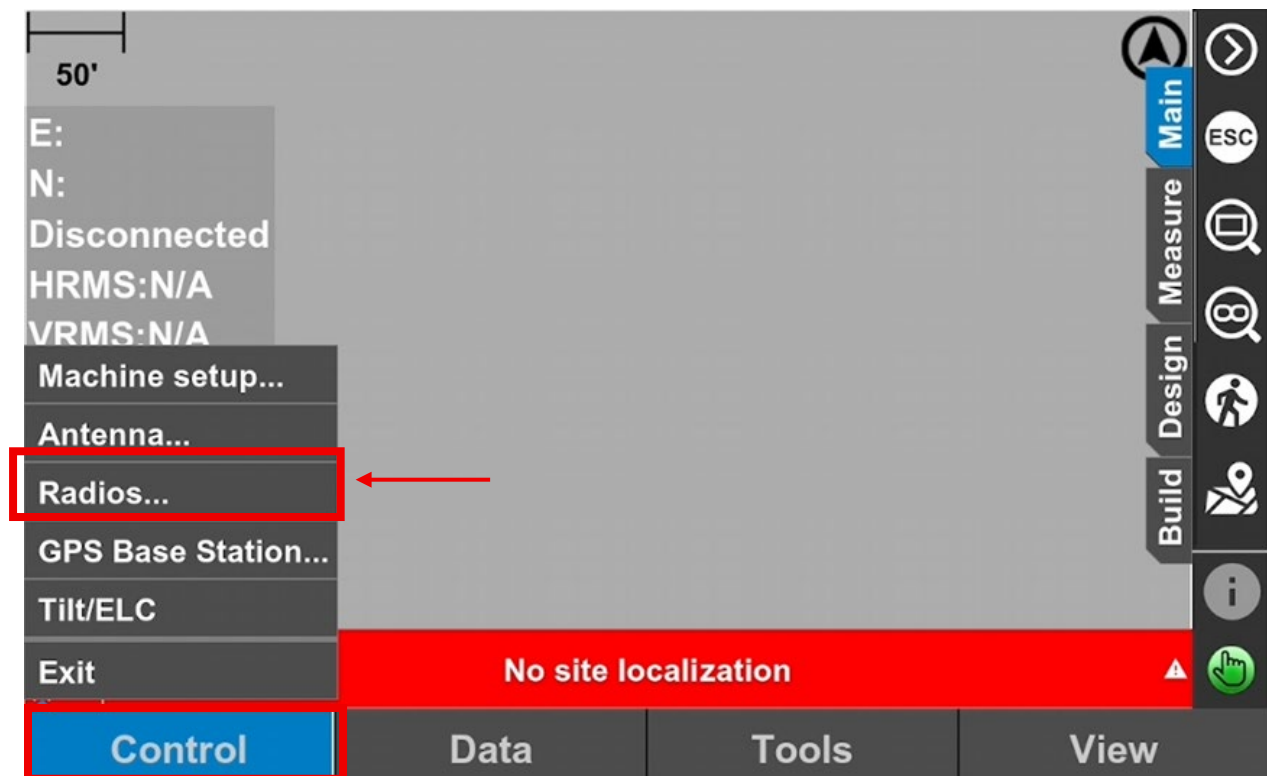
Ready to connect. Press the "Finish" button to connect to GPS receiver...

< Back Finish Cancel

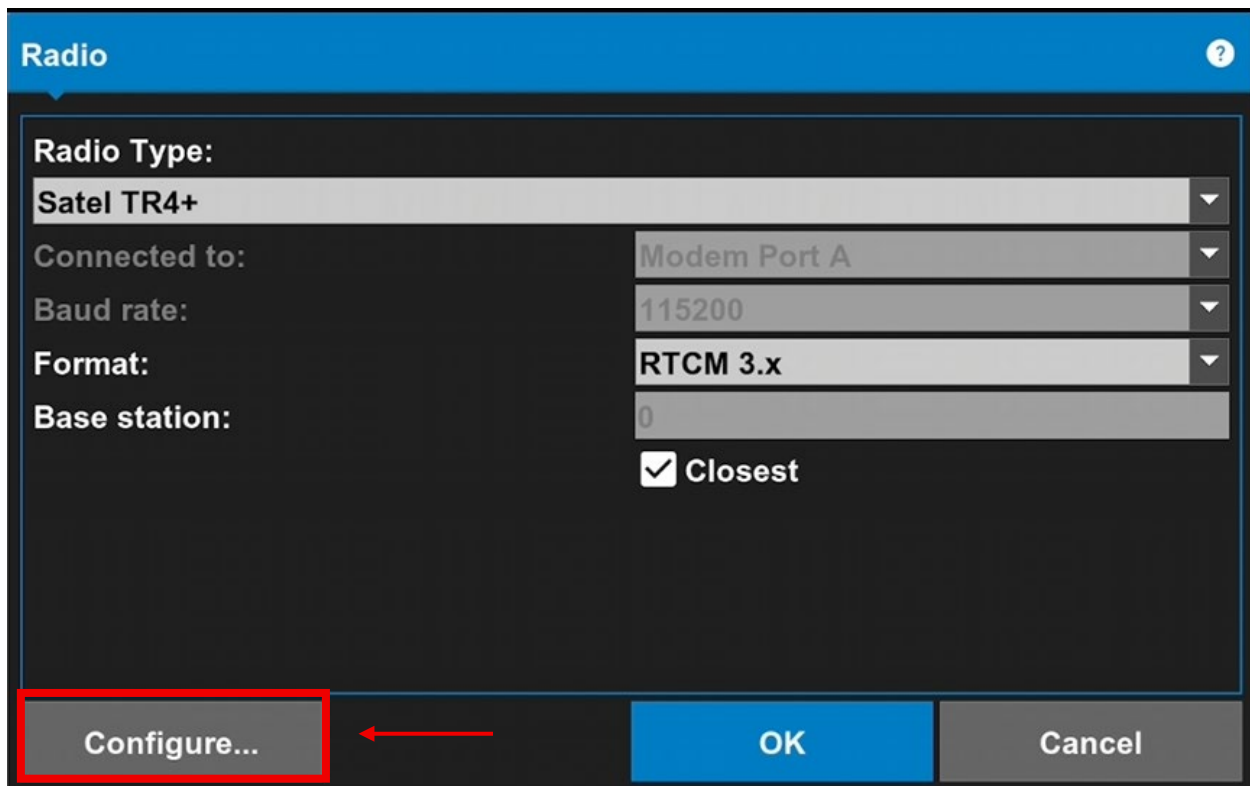
18. Wait for it to load and click “OK”.



19. Now, click “Control” then “Radios”



20. Click **"Configure..."**. This will automatically connect the device to the Rover.

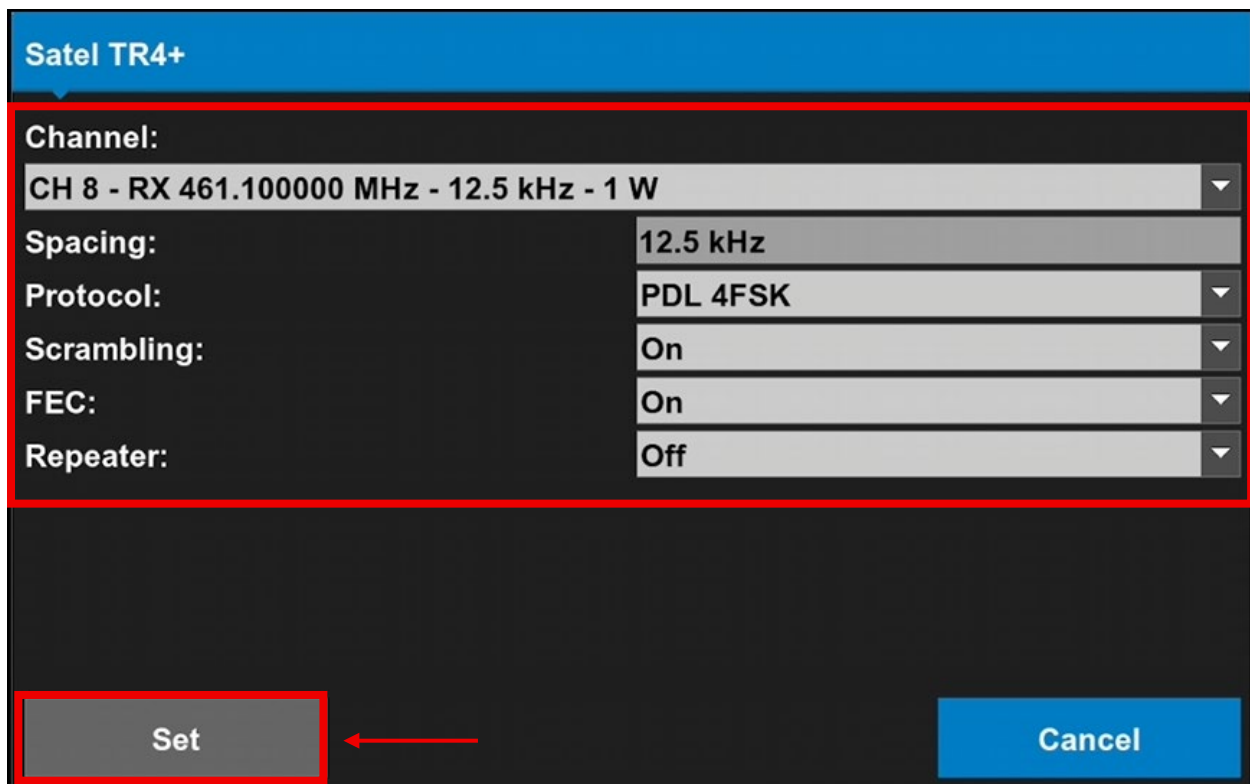


The "Radio" dialog box has a blue header with a question mark icon. It contains several settings: "Radio Type:" set to "Satel TR4+", "Connected to:" set to "Modem Port A", "Baud rate:" set to "115200", "Format:" set to "RTCM 3.x", and "Base station:" set to "0". There is a checked checkbox labeled "Closest". At the bottom, there are three buttons: "Configure..." (highlighted with a red box and a red arrow), "OK", and "Cancel".

Radio Type:	Satel TR4+
Connected to:	Modem Port A
Baud rate:	115200
Format:	RTCM 3.x
Base station:	0
<input checked="" type="checkbox"/> Closest	

Buttons: **Configure...** (highlighted), OK, Cancel

21. Make sure all settings match the Base settings, then hit **"Set"**

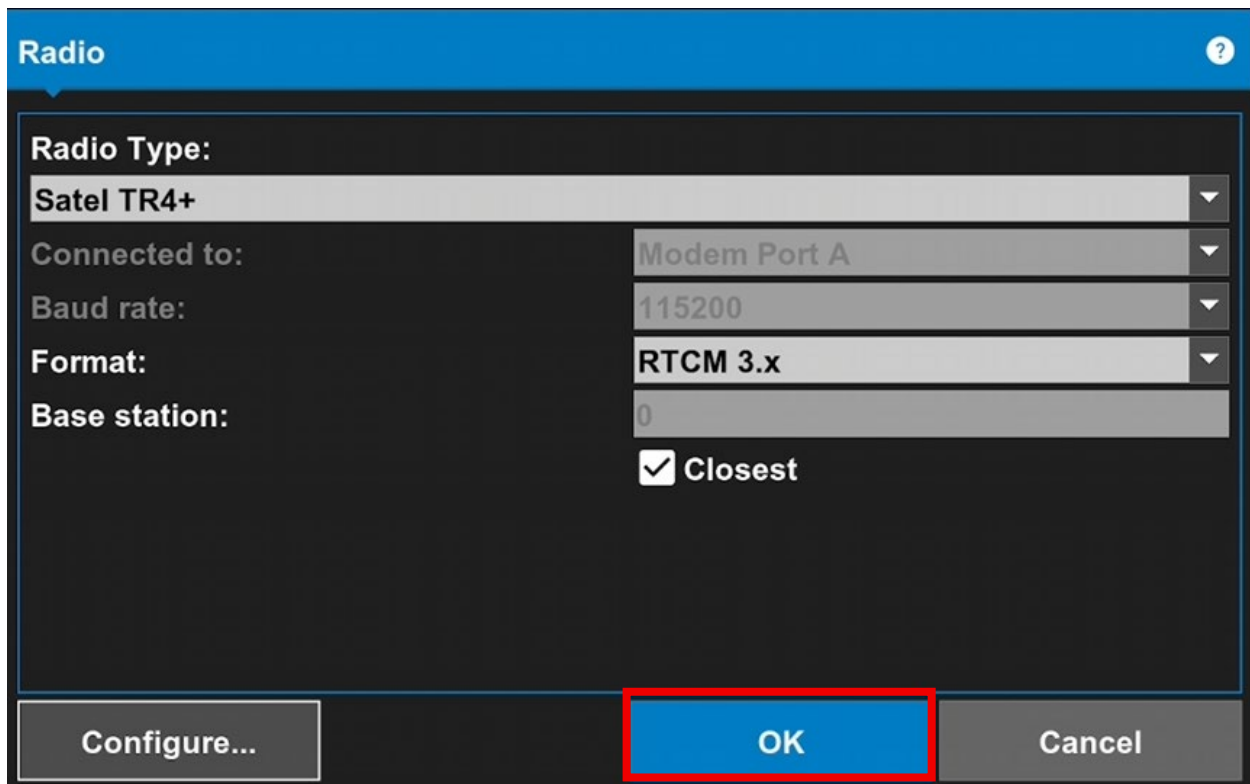


The "Satel TR4+" dialog box has a blue header. It contains several settings: "Channel:" set to "CH 8 - RX 461.100000 MHz - 12.5 kHz - 1 W", "Spacing:" set to "12.5 kHz", "Protocol:" set to "PDL 4FSK", "Scrambling:" set to "On", "FEC:" set to "On", and "Repeater:" set to "Off". At the bottom, there are two buttons: "Set" (highlighted with a red box and a red arrow) and "Cancel".

Channel:	CH 8 - RX 461.100000 MHz - 12.5 kHz - 1 W
Spacing:	12.5 kHz
Protocol:	PDL 4FSK
Scrambling:	On
FEC:	On
Repeater:	Off

Buttons: **Set** (highlighted), Cancel

22. Click "OK"



The image shows a 'Radio' configuration dialog box with a blue header and a dark grey body. It contains several settings: 'Radio Type' is set to 'Satel TR4+', 'Connected to' is 'Modem Port A', 'Baud rate' is '115200', 'Format' is 'RTCM 3.x', and 'Base station' is '0'. There is a checked checkbox labeled 'Closest'. At the bottom, there are three buttons: 'Configure...', 'OK' (highlighted with a red border), and 'Cancel'.

**Radio**

Radio Type: Satel TR4+

Connected to: Modem Port A

Baud rate: 115200

Format: RTCM 3.x

Base station: 0

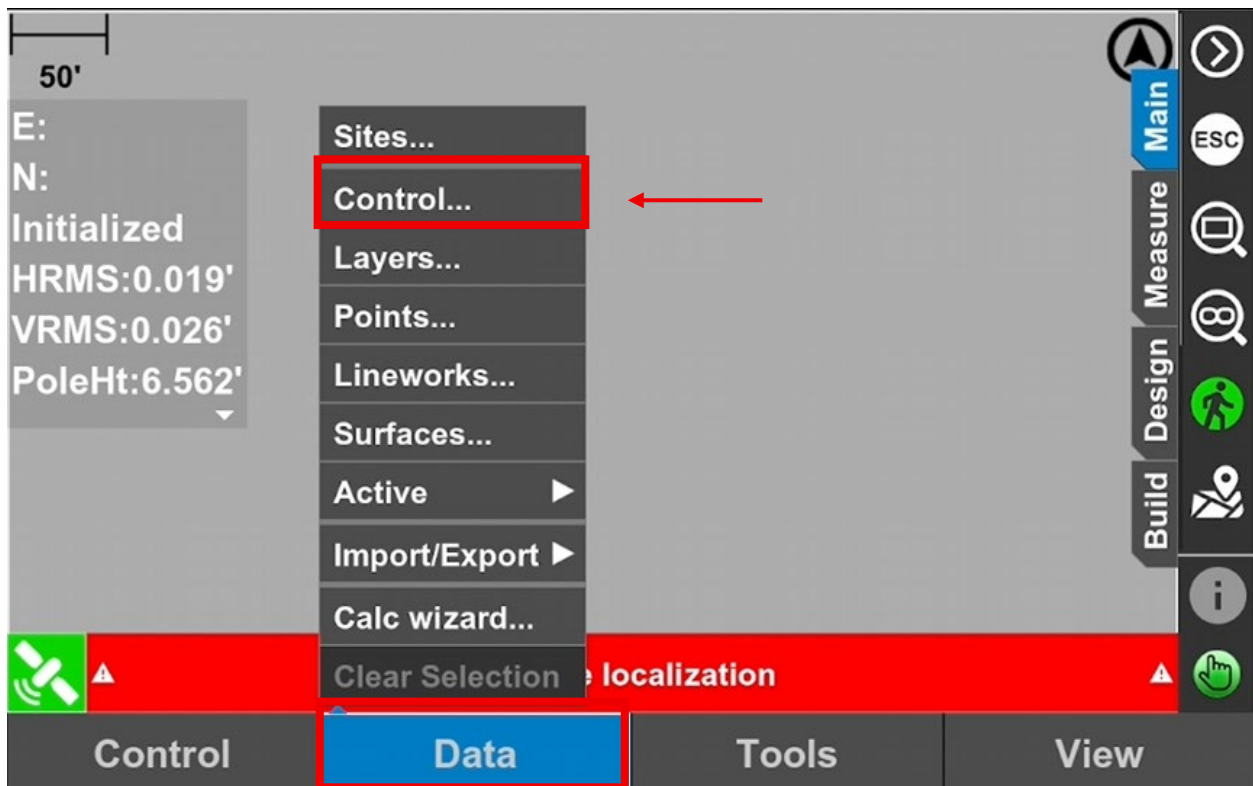
☒ Closest

Configure... OK Cancel

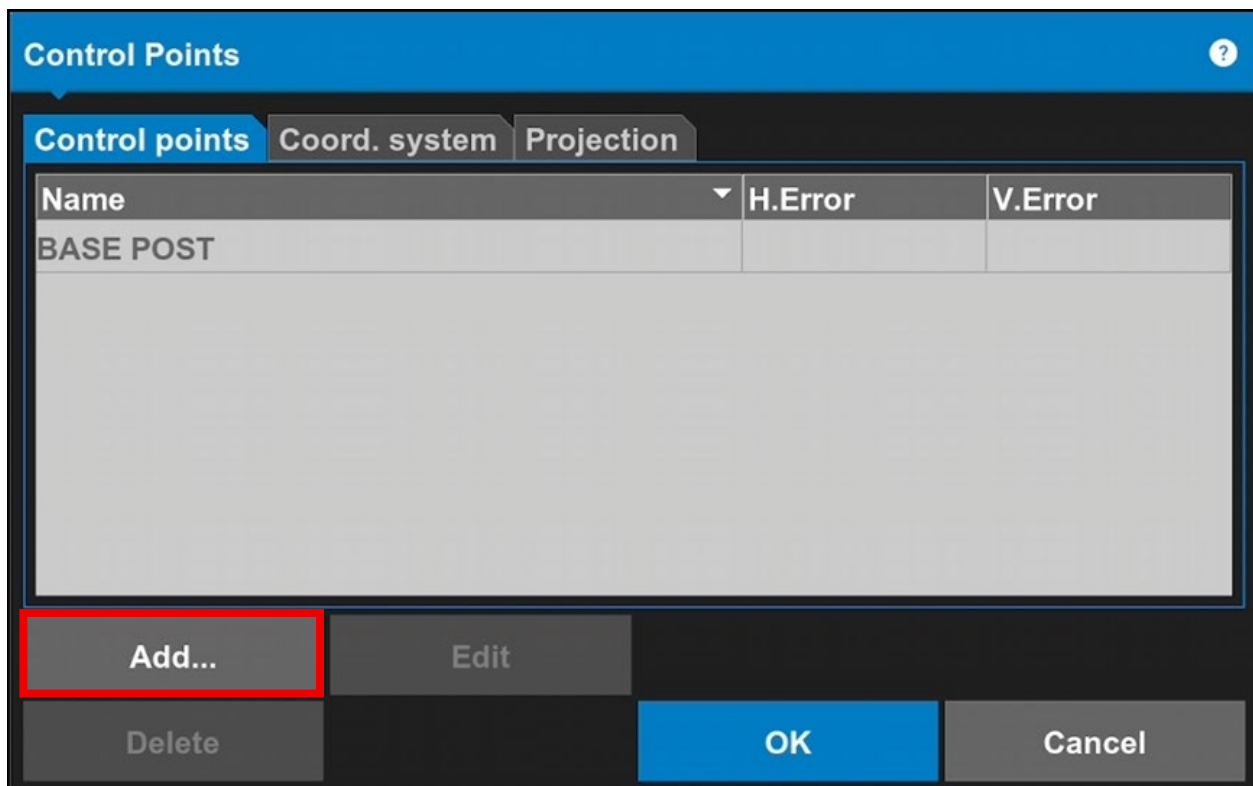
23. Once a green satellite appears on the lower left corner, then your device is initialized.



24. To create a point, Click **"Data"**, then **"Control..."**

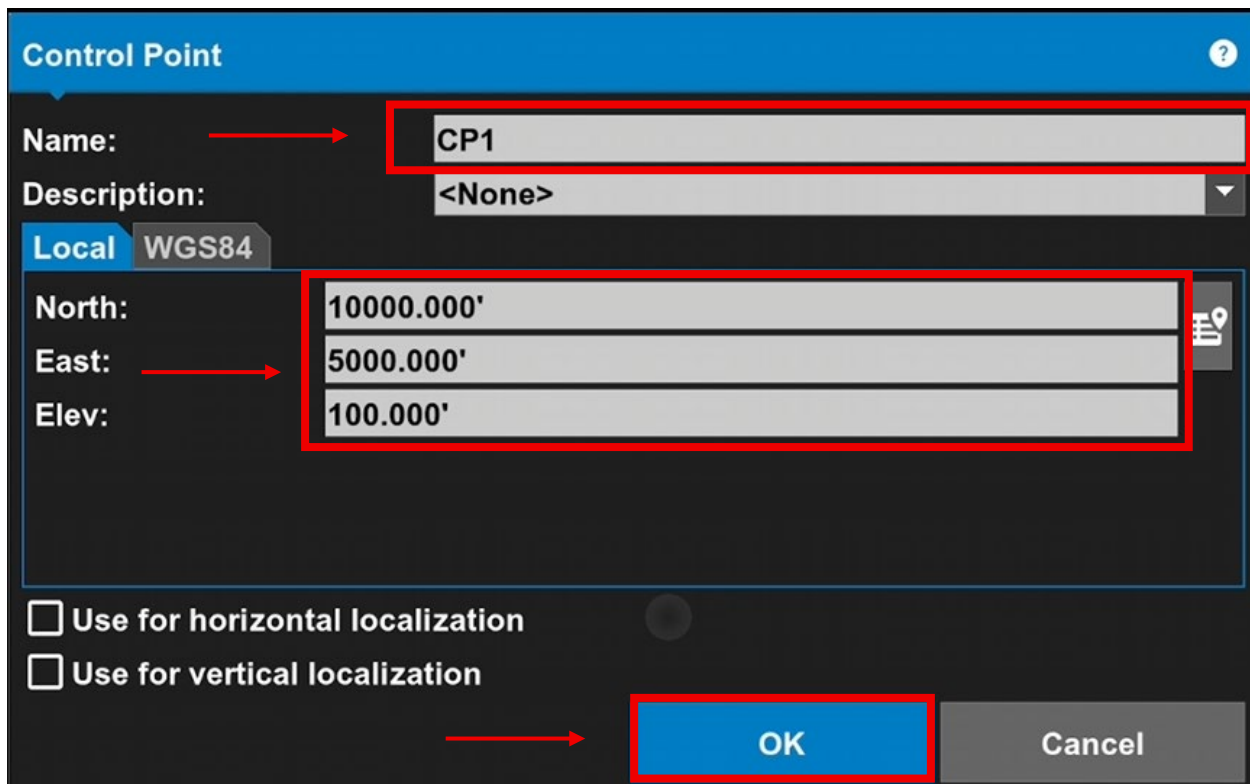


25. Click **"Add"**.





26. Name your point, then set the coordinates. Once done, hit **"OK"**



The "Control Point" dialog box is shown with a blue header and a dark grey body. It contains fields for "Name" (set to "CP1"), "Description" (set to "<None>"), and coordinate inputs for "North" (10000.000'), "East" (5000.000'), and "Elev" (100.000'). The "Local" tab is selected, and the "WGS84" coordinate system is chosen. At the bottom, there are checkboxes for "Use for horizontal localization" and "Use for vertical localization", both of which are unchecked. The "OK" button is highlighted with a red box.

**Control Point**

Name: CP1

Description: <None>

Local WGS84

North: 10000.000'

East: 5000.000'

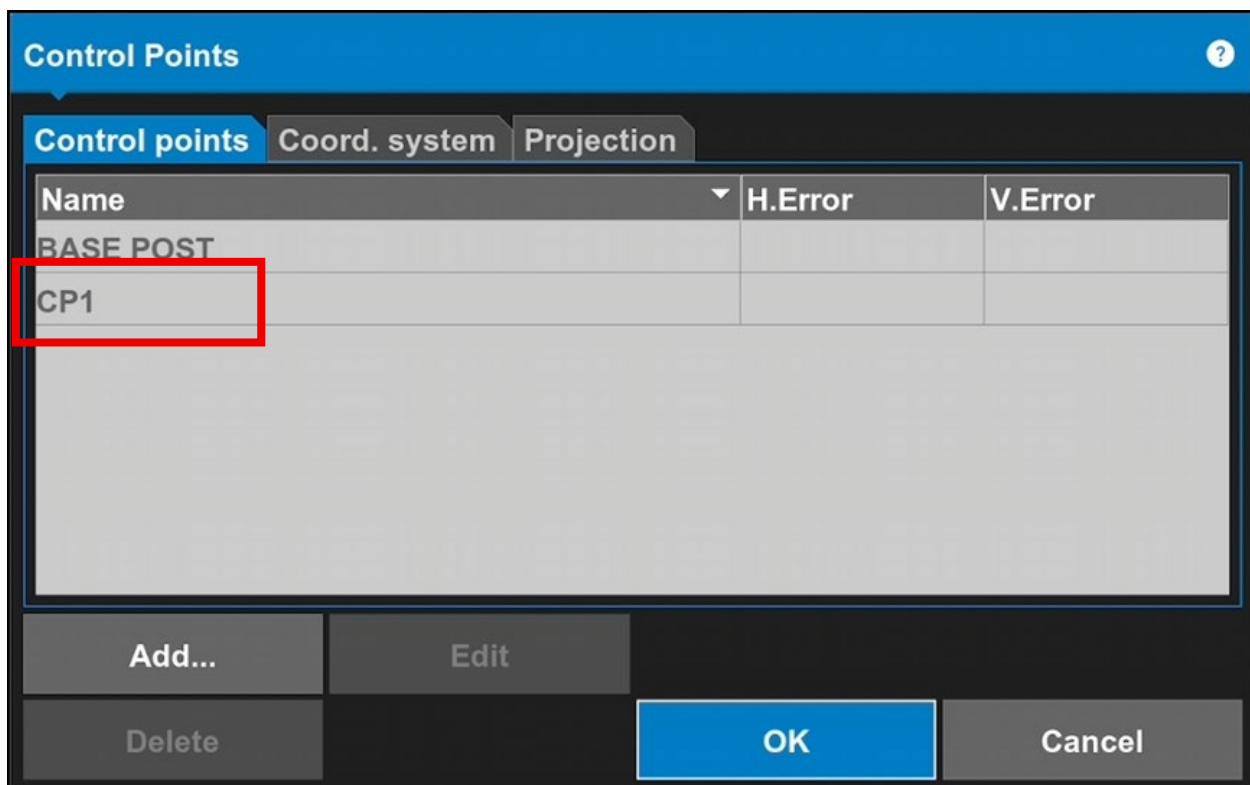
Elev: 100.000'

☐ Use for horizontal localization

☐ Use for vertical localization

OK Cancel

27. Your point has been added.



The "Control Points" dialog box is shown with a blue header and a dark grey body. It features three tabs: "Control points", "Coord. system", and "Projection". The "Control points" tab is active, displaying a table with columns for "Name", "H.Error", and "V.Error". The table lists two points: "BASE POST" and "CP1", with "CP1" highlighted by a red box. At the bottom, there are buttons for "Add...", "Edit", "Delete", "OK", and "Cancel".

**Control Points**

Control points Coord. system Projection

Name	H.Error	V.Error
BASE POST		
CP1		

Add... Edit

Delete OK Cancel



28. Place your Rover Rod on the stake you placed earlier.



29. Make sure your Rod is level.





30. Tap **“OK”** on your screen.

**Control Points** ?

**Control points** | Coord. system | Projection

Name	H.Error	V.Error
BASE POST		
CP1		

Buttons: Add... Edit Delete **OK** Cancel

31. Before starting, make sure your measurement count is accurate, Click **“Tools”**.

50'

E:  
N:  
Initialized  
HRMS:0.026'  
VRMS:0.038'  
PoleHt:6.562'

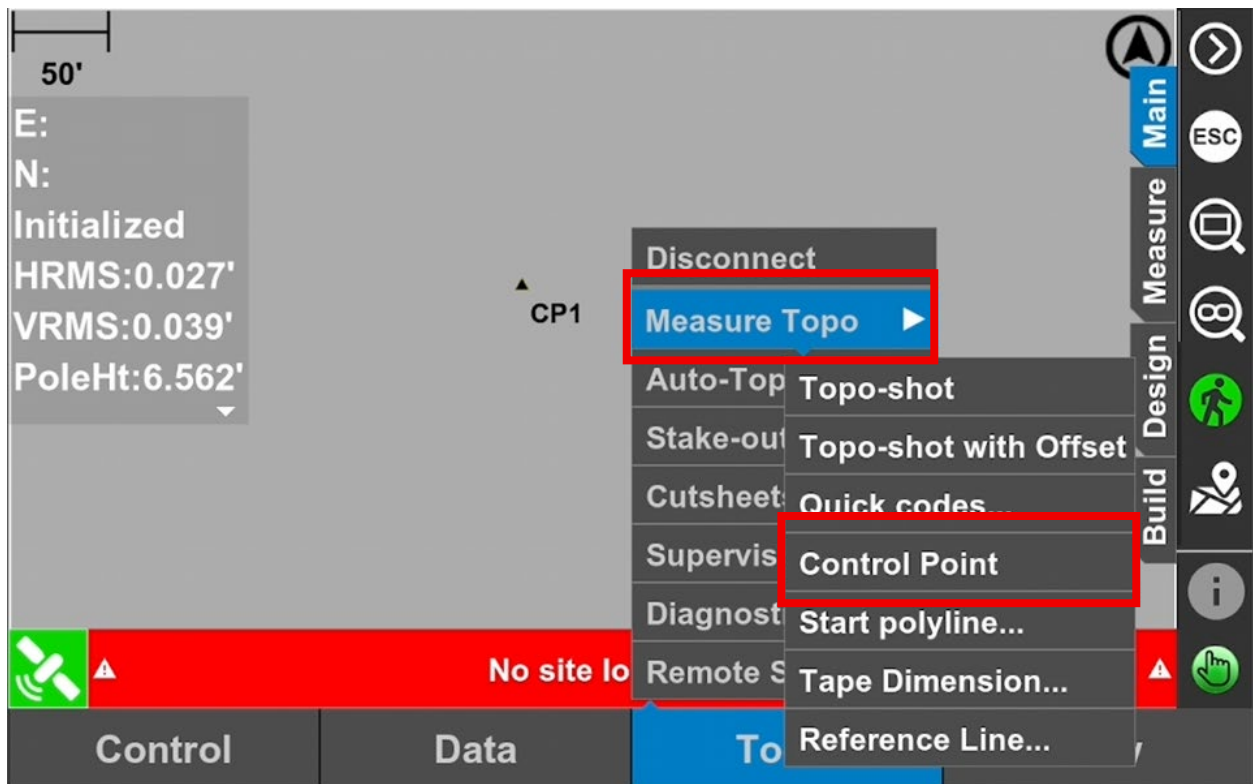
CP1

Tools Menu:  
Disconnect  
Measure Topo ▶  
Auto-Topo...  
Stake-out ▶  
Cutsheets...  
Supervisor...  
Diagnostics...  
Remote Support ▶

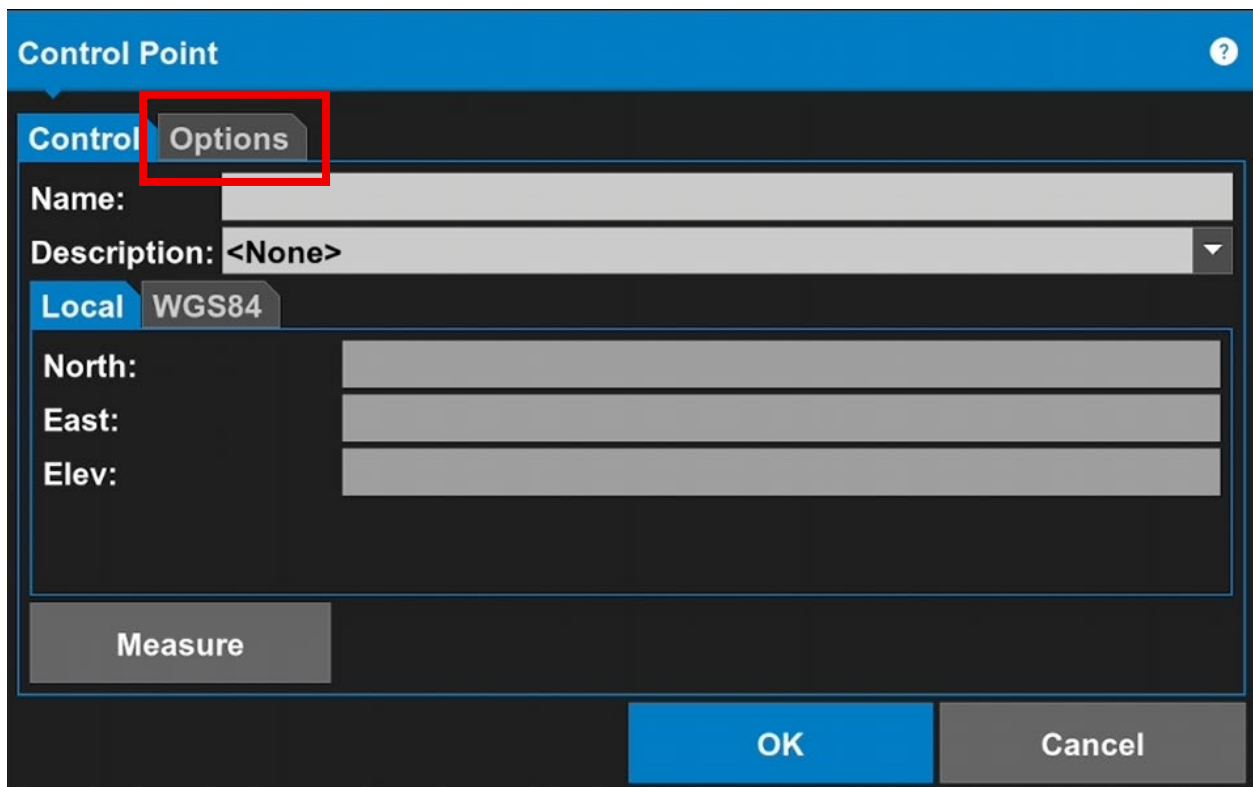
Bottom Bar: Control Data **Tools** View

Right Sidebar: Main Measure Design Build (with icons for navigation, search, and user profile)

32. Click **"Measure Topo"**, then click **"Control Point"**.



33. Click **"Options"**.



34. Set the Sample count to “60”, then click “Apply”

The screenshot shows the 'Control Point' dialog box with the 'Options' tab selected. Under 'Minimum requirements', there are three input fields: 'Sample Count' (set to 60), 'H. Precision' (set to 0.100'), and 'V. Precision' (set to 0.150'). The 'Sample Count' field is highlighted with a red box. At the bottom right, the 'Apply' button is also highlighted with a red box. Below the 'Apply' button are 'OK' and 'Cancel' buttons.

Sample Count:	H. Precision:	V. Precision:
60	0.100'	0.150'

Apply

OK Cancel

35. Click “OK”

The screenshot shows the same 'Control Point' dialog box, but now a message box is overlaid on top. The message box contains the text 'Options applied successfully.' and has an 'OK' button highlighted with a red box. The background dialog box is dimmed, but the 'Sample Count' field still shows 60. The 'Apply' button in the background is also visible.

Options applied successfully.

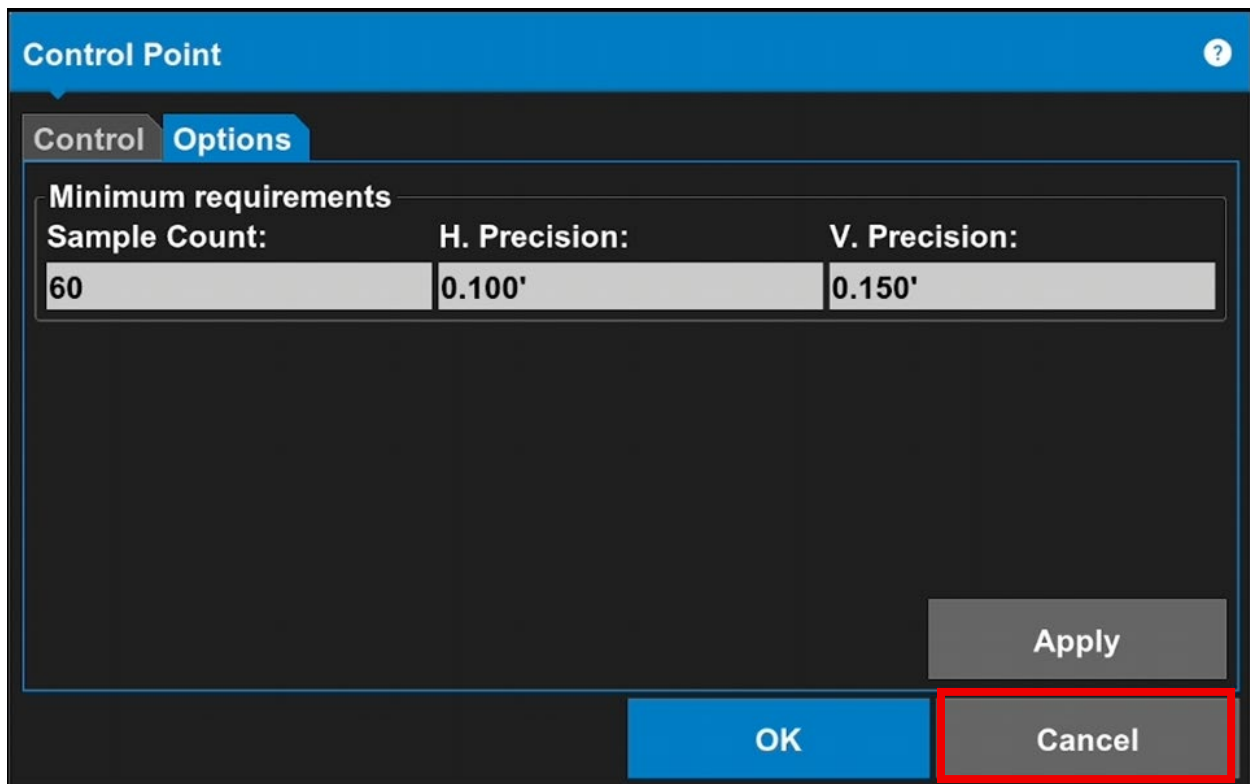
OK

Apply

OK Cancel



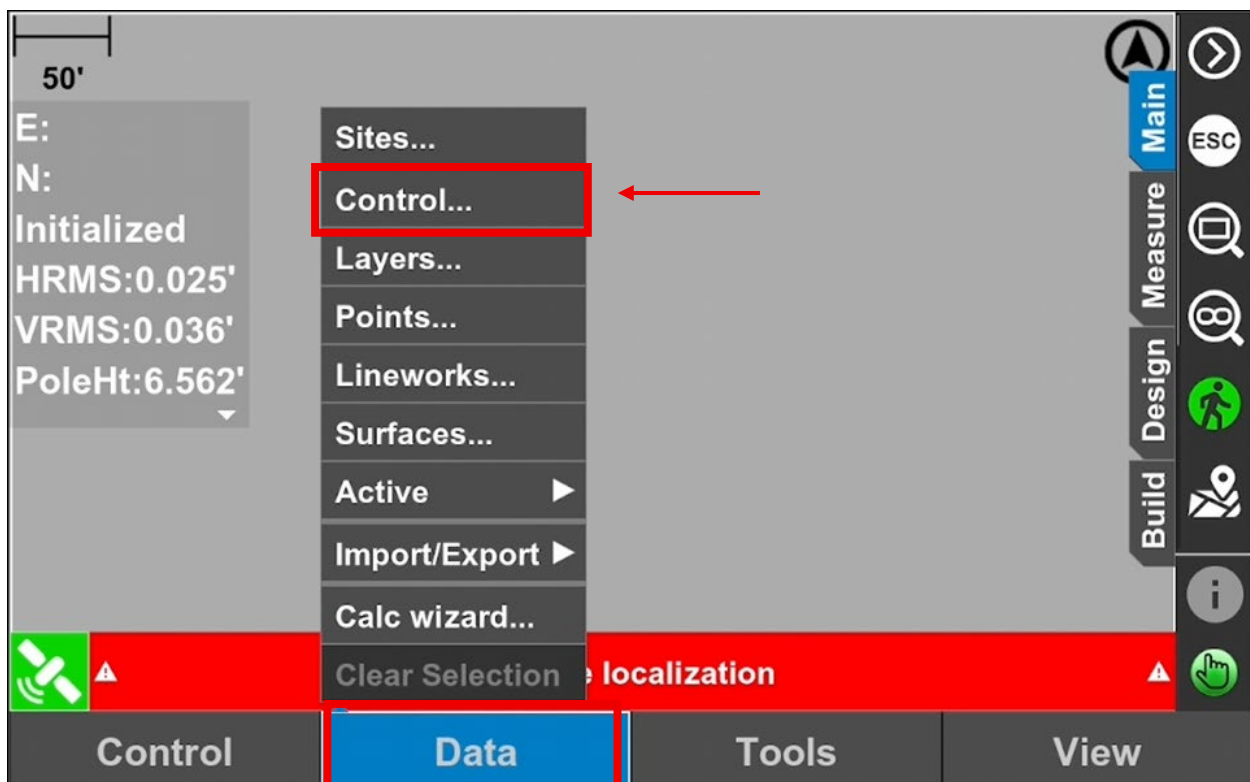
36. Click "Cancel"



The image shows a 'Control Point' dialog box with a blue header and a dark grey body. It has two tabs: 'Control' and 'Options', with 'Options' currently selected. Under the 'Options' tab, there is a section titled 'Minimum requirements' containing three input fields: 'Sample Count:' with the value '60', 'H. Precision:' with the value '0.100'', and 'V. Precision:' with the value '0.150''. At the bottom right of the dialog are three buttons: 'Apply', 'OK', and 'Cancel'. The 'Cancel' button is highlighted with a red rectangular border.

Sample Count:	H. Precision:	V. Precision:
60	0.100'	0.150'

37. Go to "Data", then click "Control".



38. Highlight your Control Point then click “Edit”

**Control Points**

Control points | Coord. system | Projection

Name	H.Error	V.Error
BASE POST		
CP1		

Add... Edit Delete OK Cancel

39. Press “WGS84”

**Control Point**

Name: CP1

Description: <None>

Local **WGS84**

Latitude:

Longitude:

Height:

☐ Use for horizontal localization

☐ Use for vertical localization

OK Cancel

40. Check both boxes then click the signal icon on the right side of the screen.

**Control Point** ?

Name: CP1

Description: <None>

Local WGS84

Latitude:

Longitude:

Height:

☒ Use for horizontal localization

☒ Use for vertical localization

OK Cancel

41. Once values are measured, click "OK"

**Control Point** ?

Name: CP1

Description: <None>

Local WGS84

Latitude: 45°39'56.737772"

Longitude: -122°31'00.349130"

Height: 126.703'

☒ Use for horizontal localization

☒ Use for vertical localization

OK Cancel

42. Control Point is now localized once it turns green. Tap **"OK"**

**Control Points** ?

**Control points** | Coord. system | Projection

Name	H.Error	V.Error
BASE POST		
CP1	0.000'	0.000'

Add... Edit Delete **OK** Cancel

43. Remember to measure multiple control points per Job site. (Ex. 1 Control point per corner)

20'

E:5005.757'  
N:9991.575'  
Initialized  
HRMS:0.019'  
VRMS:0.028'  
PoleHt:6.562'

CP1

Main | Measure | Design | Build

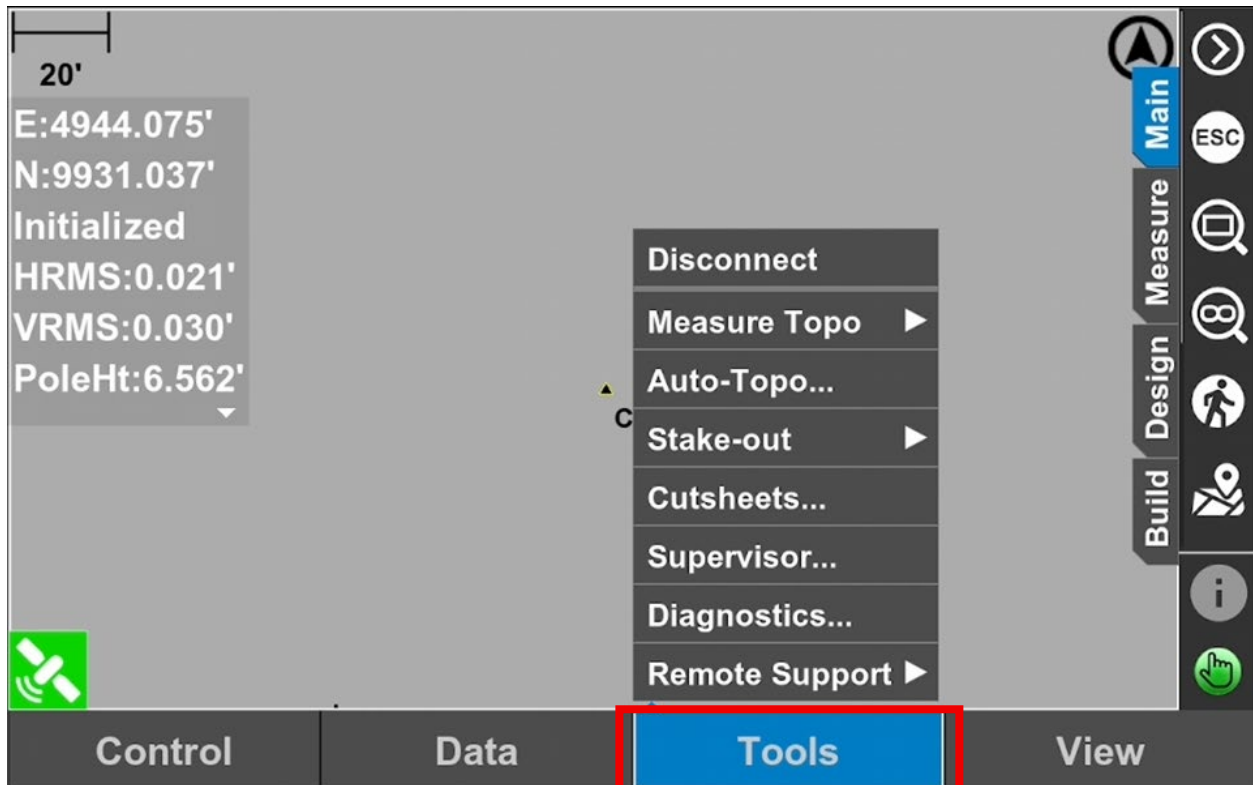
Control Data Tools View



44. Walk to the next control point and place your Rod on the next survey pin. Level the Rod.

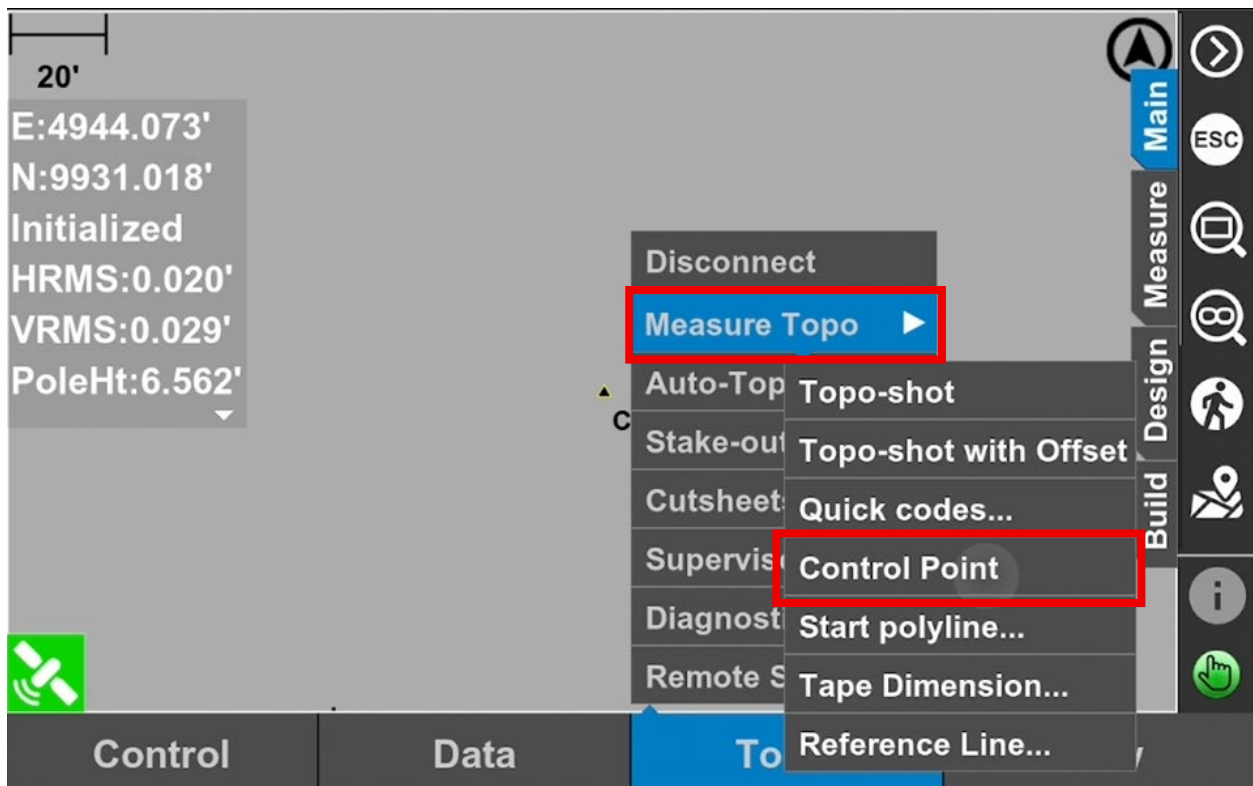


45. To Record your next control point, go to “Tools”





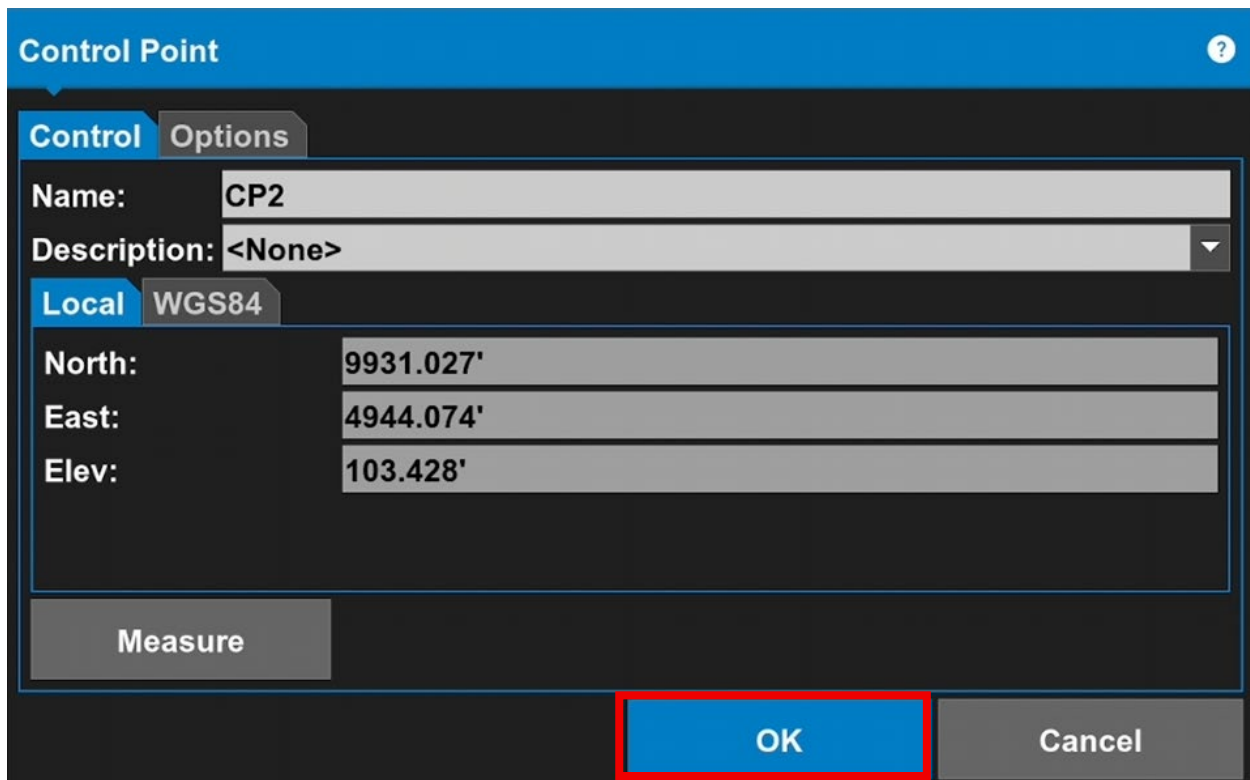
46. Click **"Measure Topo"**, then click **"Control Point"**



47. Name your Control Point then click **"Measure"**

The screenshot shows the 'Control Point' dialog box. The 'Control' tab is selected. The 'Name' field is set to 'CP2' and is highlighted with a red box. The 'Description' field is set to '<None>'. The 'Local' tab is selected, and the 'WGS84' coordinate system is chosen. The 'North:', 'East:', and 'Elev:' fields are empty. The 'Measure' button is highlighted with a red box and a red arrow pointing to it. The 'OK' and 'Cancel' buttons are at the bottom right.

48. Once measuring finishes, tap "OK"



The image shows a 'Control Point' dialog box with a blue header and a dark grey body. It has two tabs: 'Control' (selected) and 'Options'. Under the 'Control' tab, there are three input fields: 'Name:' with the value 'CP2', 'Description:' with the value '<None>', and a 'Local' tab with 'WGS84' selected. Below these are three more input fields: 'North:' with the value '9931.027'', 'East:' with the value '4944.074'', and 'Elev:' with the value '103.428''. At the bottom of the dialog is a 'Measure' button. Below the dialog, there are three buttons: 'OK' (highlighted with a red border), 'Cancel', and a third button that is partially visible.

Control Point

Control Options

Name: CP2

Description: <None>

Local WGS84

North: 9931.027'

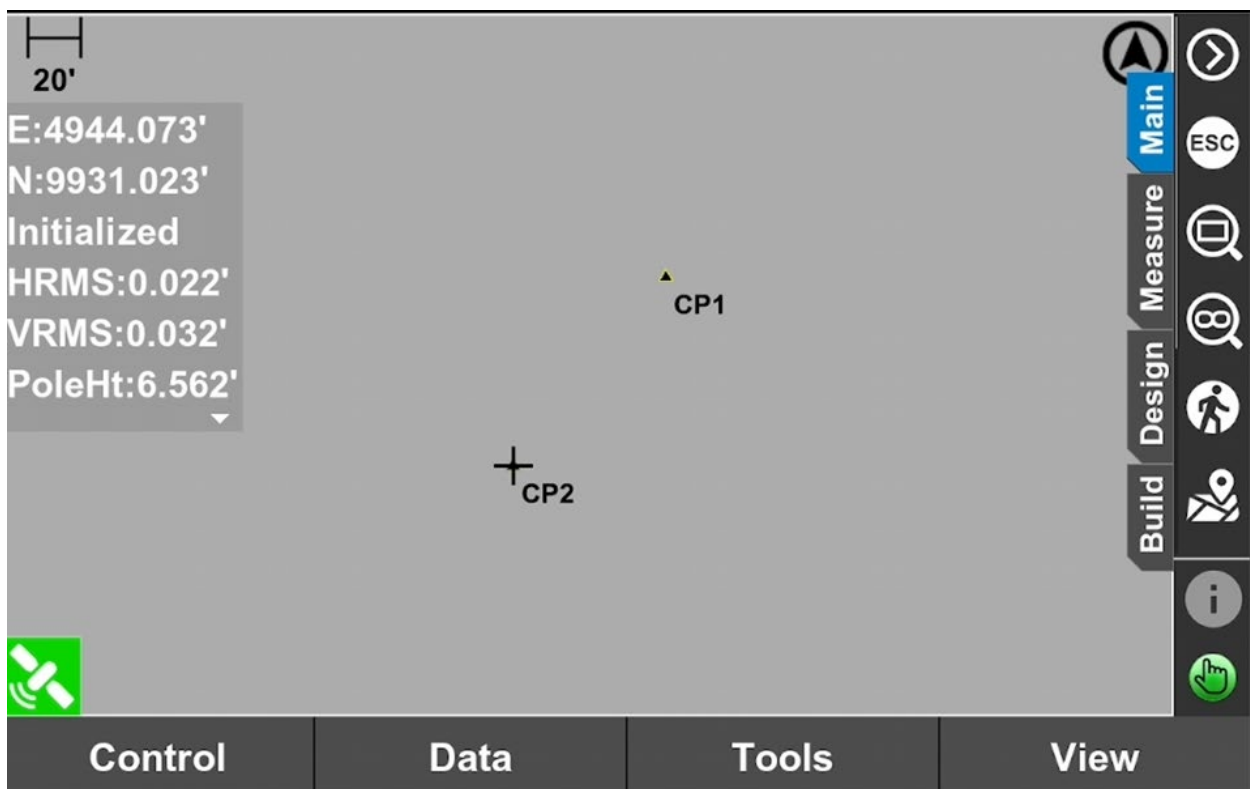
East: 4944.074'

Elev: 103.428'

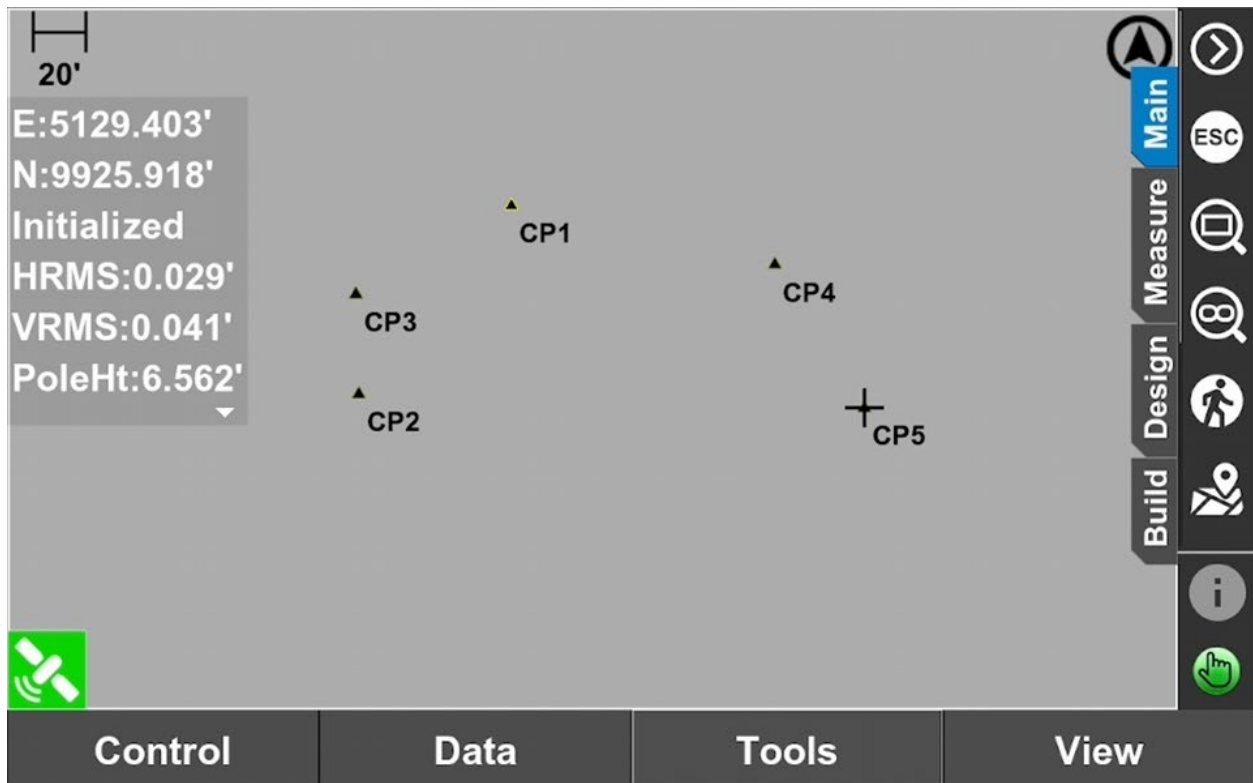
Measure

OK Cancel

49. Second Control Point is established.



50. Repeat steps **44 to 49** on your next control points. We recommend a minimum of 5 control points to make your measurements more accurate. Always make sure that your Rod is level each time you switch places.



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