

ViaSat-1/SurfBeam 2 Point and Peak Job Aid

Summary

This Job Aid covers:

[VTT Point and Peak](#)

[Point Azimuth](#)

[Peak Azimuth](#)

[Peak Elevation](#)

[Push/Pull Test](#)

[RX SNR in the VTT App](#)

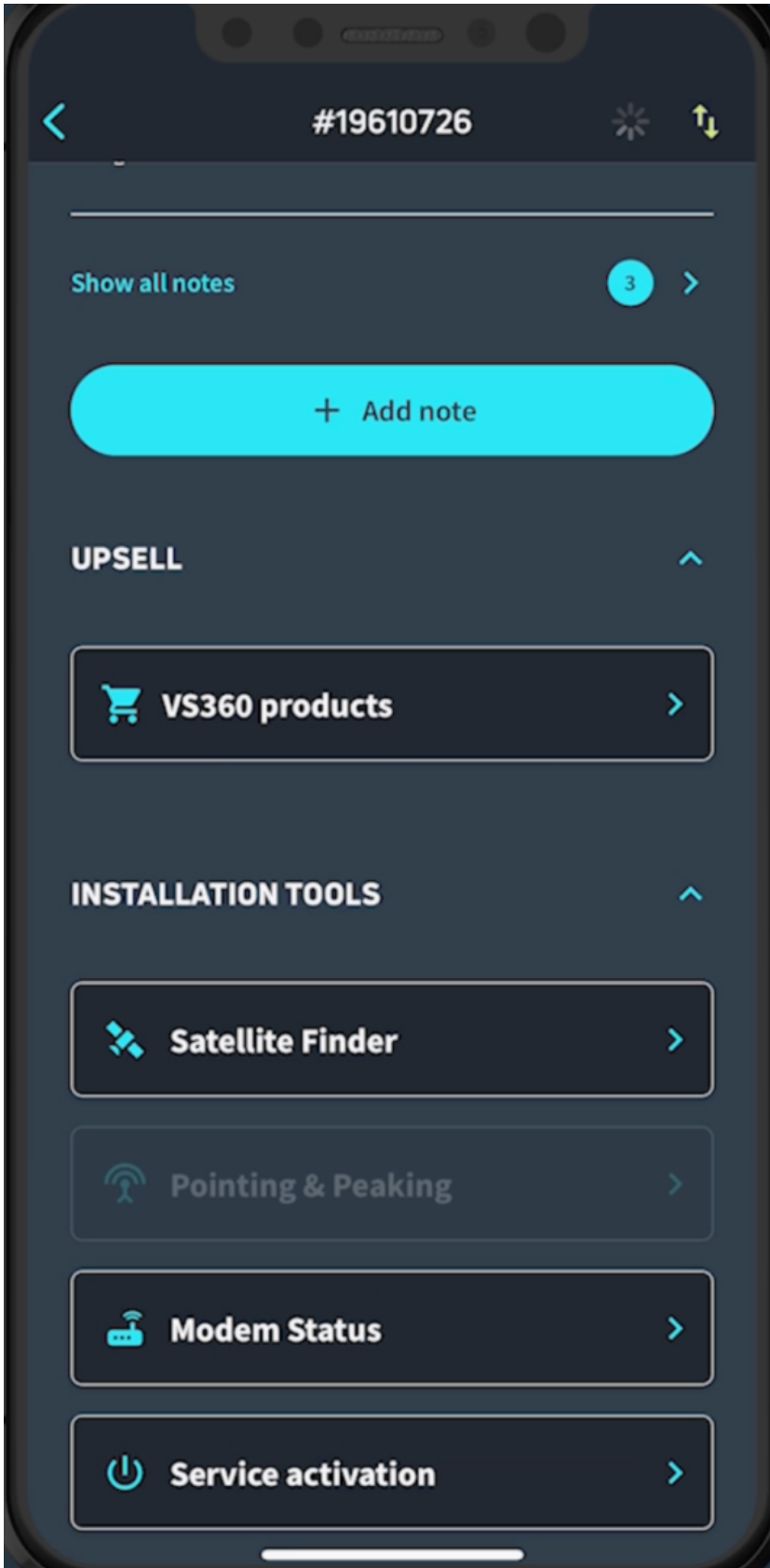
This Job Aid supports all technician audiences.

This Job Aid supports all SurfBeam 2 User Terminals: VS1100, VS1101, VS1200, and VS1300.

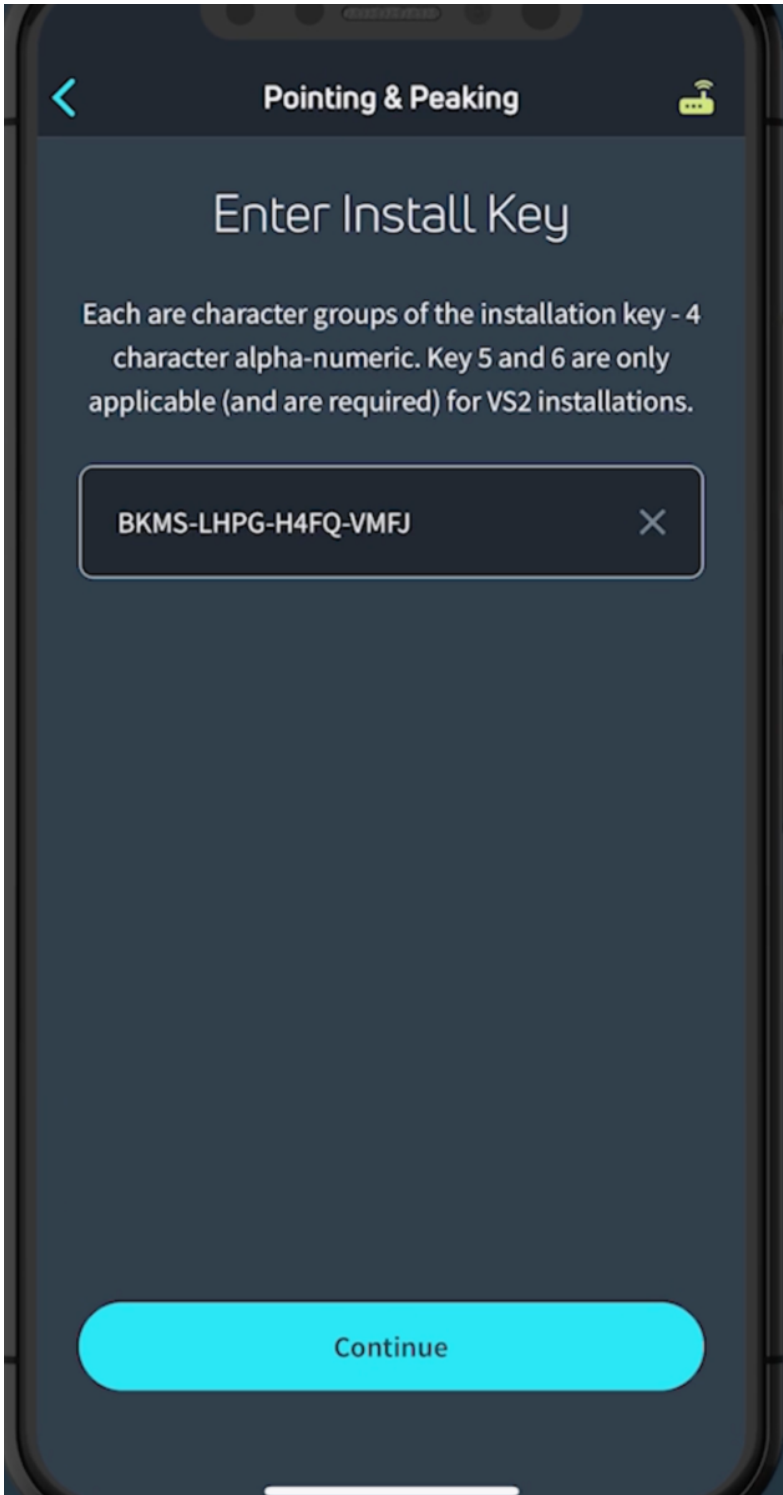
Note: Images for the VS1100 appear on the left; images for the VS1200/VS1300 appear on the right.

VTT Point and Peak

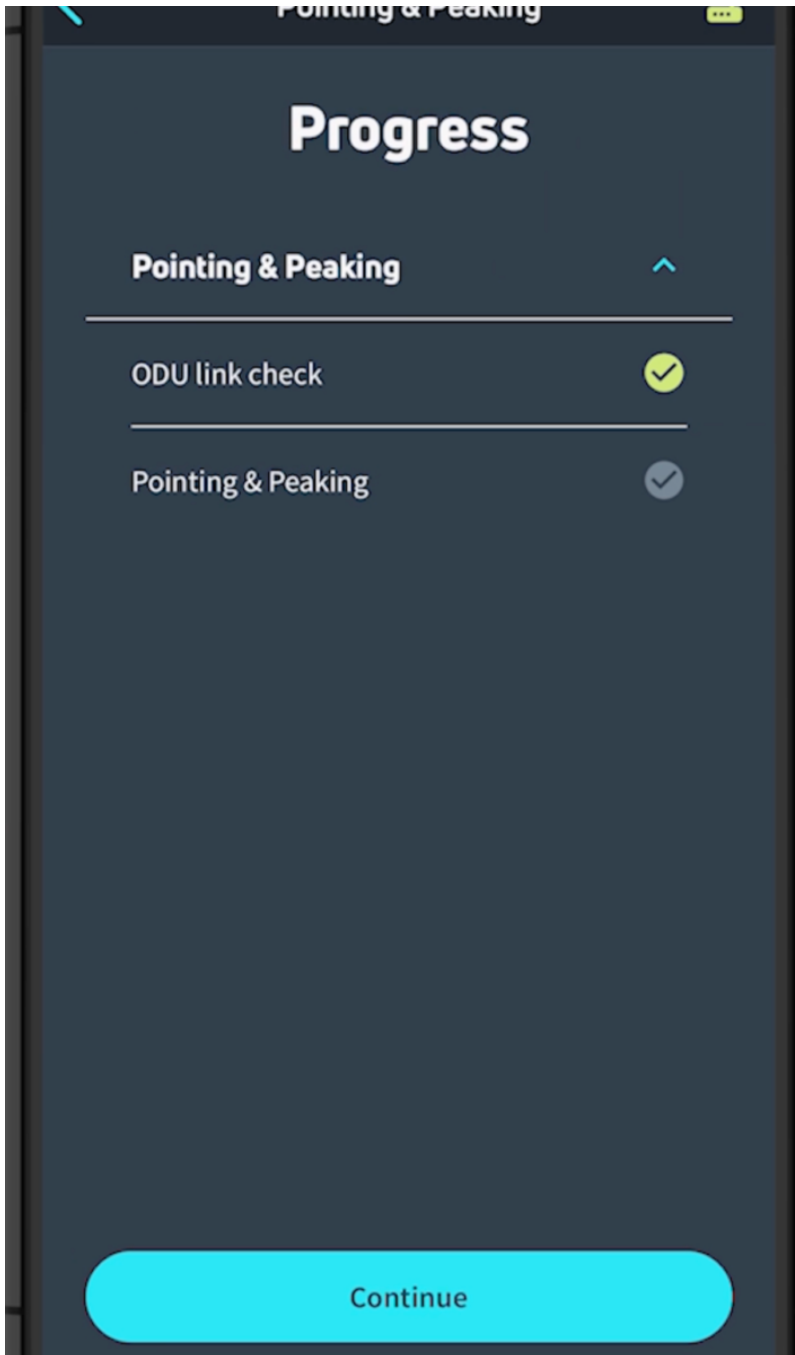
Utilize the Viasat TechTools App to begin the Point and Peak process through the work order by clicking “Pointing & Peaking”:



You'll see the Install Key autopopulates in the VTT App because you've accessed Pointing and Peaking through the work order.



Click continue in the VTT App to begin.



Confirm that these two events are happening:

- The SB2 modem's RX and LAN lights are flashing.
- The TRIA is emitting the 'heartbeat' tone

Click play to hear the "Heartbeat" tone.

The SB2 and TRIA are ready for the Point and Peak process.

Follow along in the VTT App during the Pointing & Peaking process.

Point Azimuth

Point the antenna to the course azimuth.

SB2 TRIA tone sequence

Recall that the SB2 modem must learn about its frequency set. This happens when you sweep the antenna from each side of the azimuth or the elevation.

Sweep the antenna from side to side, checking the tightness of the three flange nuts on the mount canister. The antenna should move, but not too easily. Tighten or loosen the flange nuts as needed.

Note: After placing the antenna on the mount tube, align it to the Azimuth setting indicated on the work order.

Sweep the antenna to the right, about 10 degrees away from the line-of-sight selected during the Site Survey.

Sweep the antenna toward the left, listening for the TRIA to emit the '**ring ring**' tone.

Click play to hear the "Ring-Ring" tone.

Continue sweeping the antenna toward the left until the TRIA emits the '**heartbeat**' tone. Stop, as this is the end of the first learning pass.

Click play to hear the "Heartbeat" tone.

Note: Disregard any '**beep bop**' tones. The TRIA does not recognize these satellites.

Reverse the direction of the sweep, and listen for the TRIA to progress through the tone sequence. Stop the sweep when the TRIA emits the **heartbeat** tone. This is the end of the second learning pass.

Note: Use a slow, consistent tension on the antenna during this sweep. Not all of the tones may be heard.

Reverse the direction of the sweep again, now sweeping to the center, and listen for the TRIA to emit the **high steady** tone. The antenna is now in the center of the beam.

Click play to hear the "High Steady" tone.

Finish this step by tightening the Flange bolts, starting with the top to maintain an even pressure on the Tube canister.

Note: The high steady tone may dip while tightening the Flange bolts. If the tone does not return to the high steady, then repeat the step. Remember to reset the modem's learning by sweeping the antenna away from the satellite, and holding the Inclinator bracket over the feed horn.

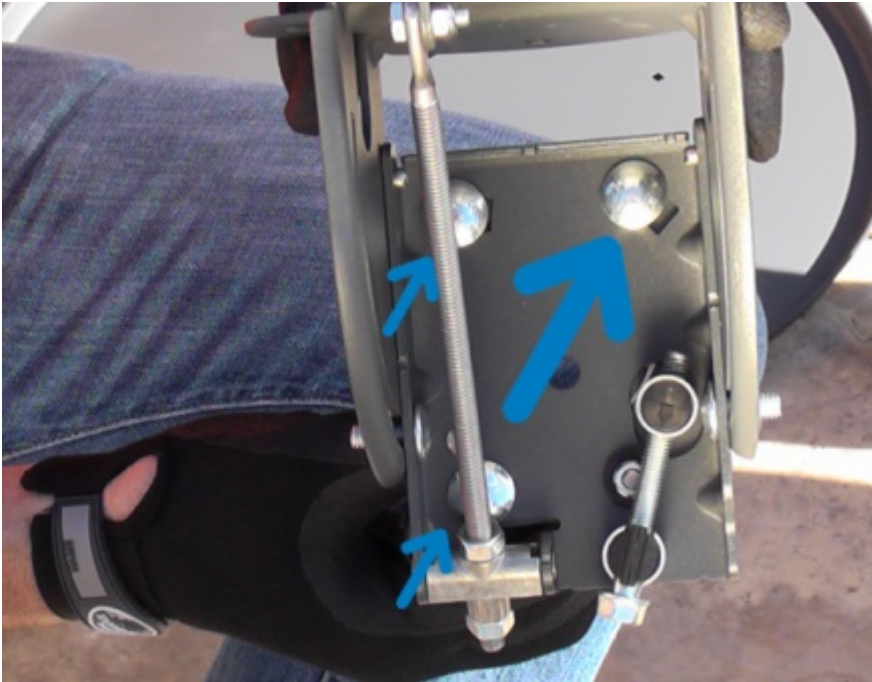
Peak Azimuth

The following information reviews the steps to complete the peak (fine) antenna Azimuth adjustment.

1: Loosen the Azimuth base plate bolts using a 13mm ratchet.



VS 1200 Azimuth base plate bolts



VS 1100 Azimuth base plate bolts

2. Using an open wrench, rotate the hex head of the Azimuth fine-adjust bolt.

Important: Do not pass the **low slow tone** when peaking the antenna.

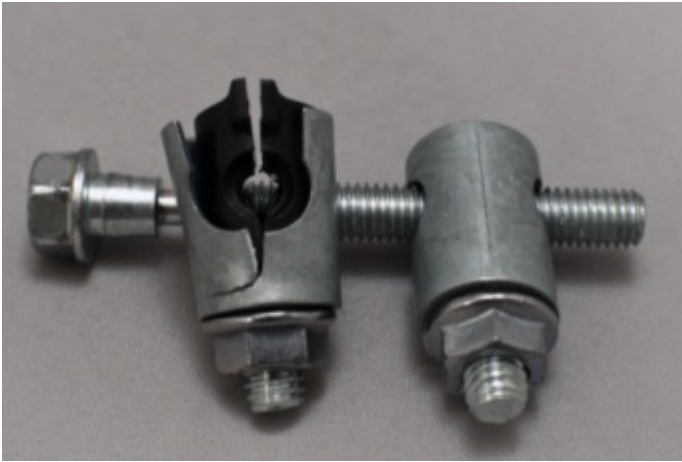
Click play to hear the "Low Slow" tone.



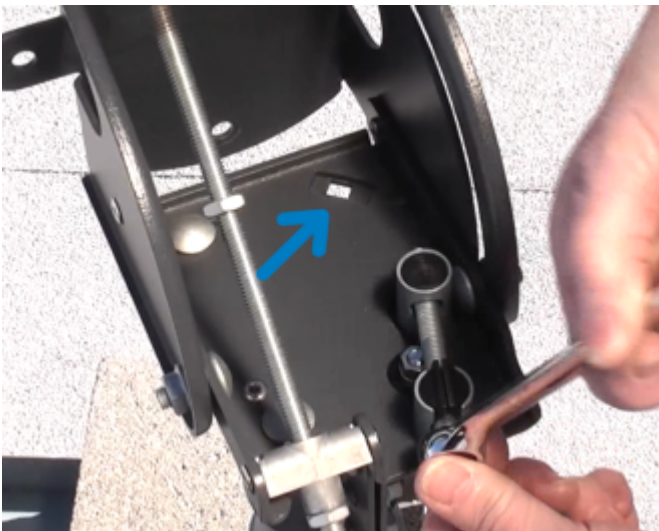
VS 1200



VS 1100



Rotating the hex head beyond the low/slow tone during the peaking procedure can compress the bolt's attachments, causing them to fail.



Avoid this problem by always centering the Azimuth fine-adjust bolt prior to pointing and peaking.

3. Sweep the antenna toward the left, listening for the TRIA to emit the **low slow** tone, which means that the antenna has found the far edge of its frequency set. Stop, as this is the end of the first fine-tune learning pass.

Click play to hear the "Low Slow" tone.

4. Reverse the direction of the sweep, now sweeping to the right, and listen for the TRIA to progress through the tone

sequence. Stop the sweep when the TRIA emits the **low slow** tone. This is the end of the second fine-tune learning pass.

Note: Because this is a fine-tune pass, all tones should be present. Periodically pause and wait for the modem to evaluate the information coming from the antenna.

5. Reverse the direction of the sweep again, now sweeping to the center, and listen for the TRIA to emit the **high steady** tone. The antenna is now in the center of the beam.

Click play to hear the “High Steady” tone.

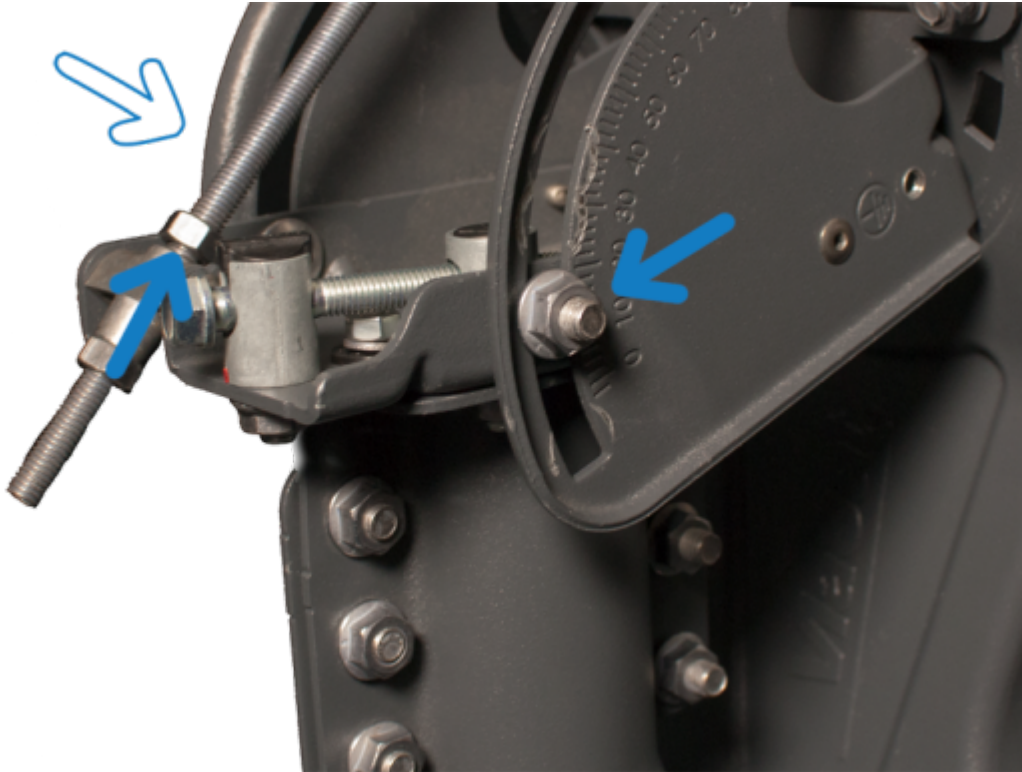
6. Finish this step by tightening the Azimuth base plate bolts.

Note: The high steady tone may dip while tightening the base plate bolts. If the tone does not return to the high steady, then restart the Point and Peak process. Remember to reset the modem’s learning by sweeping the antenna away from the satellite, holding the Inclinator bracket over the feed horn, and then re-centering the Azimuth fine-adjust bolt.

Peak Elevation

The following information reviews the steps to complete the peak (fine) antenna Azimuth adjustment.

1. Slightly loosen the Lockdown Nuts in the Arched Slots on sides of the Elevation Bracket. Next, turn the top $\frac{1}{2}$ -inch Nut on the Elevation Rod away from the top of the Pivot Casting.



2. Use the open wrench on the lower Elevation rod nut.

Caution: Do not pass the **low slow tone** when peaking the 75cm ODU.

Click play to hear the "Low Slow" tone.

3. Sweep the nut on the Elevation rod such that the TRIA drops, and listen for the TRIA to emit the low slow tone, which means that the antenna has found the far edge of its frequency set. Stop, as this is the end of the first fine-tune learning pass.

4. Reverse the direction of the sweep, now sweeping to raise the TRIA, and listen for the TRIA to progress through the tone sequence. Stop the sweep when the TRIA emits the low slow tone. This is the end of the second fine-tune learning pass.

Note: Because this is a fine-tune pass, all tones should be present. Periodically pause and wait for the modem to evaluate the information coming from the antenna.

5. Reverse the direction of the sweep again, now sweeping to the center, and listen for the TRIA to emit the high steady tone. The antenna is now in the center of the beam.

Click play to hear the "High Steady" tone.

6. Finish this step by tightening the same bolts and nuts. Start with the top nut on the Elevation rod, and then the Elevation Lock Down bolts.

Note: The high steady tone may dip while tightening the Elevation Lock Down bolts. If the tone does not return to the high steady, then restart the Point and Peak process.

Important: Always complete two tests before obtaining Modem Lock: a Push/Pull test and a review of the RX SNR in the Signal Strength section of the Modem Browser Interface.

Passing these tests prevents delays in Modem Lock

and Provisioning because they confirm that the antenna has aligned correctly during Point and Peak.

Push/Pull Test

From behind the antenna, gently push and pull each side of the antenna.



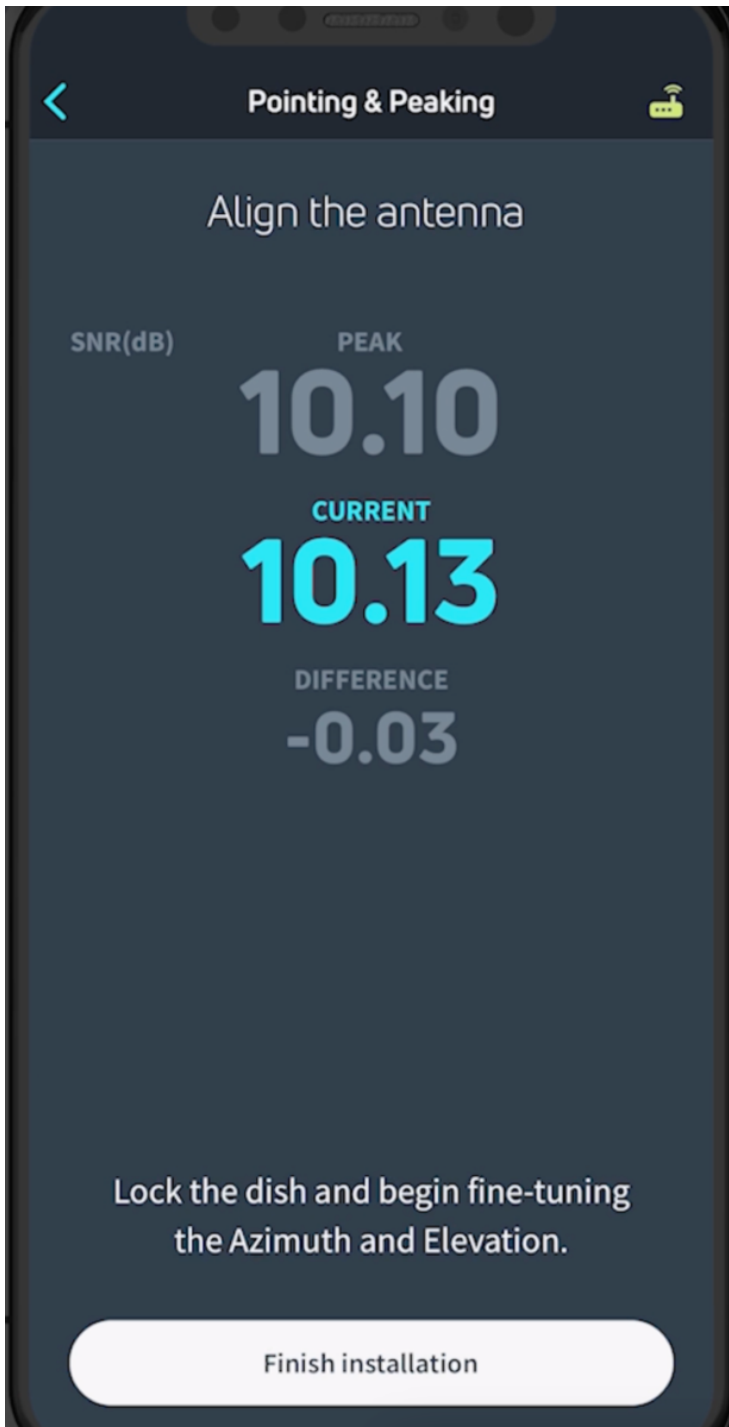
2. Gently push and pull the top of the antenna

3. The test passes when the TRIA's high steady tone dips **every time** pressure is added to the antenna. The tone returns to its high steady state when the pressure is removed.

If the tone rises, the alignment is not correct. Repeat the Point and Peak process. Remember to reset the modem's learning by sweeping the antenna away from the satellite, holding the Inclinator bracket over the feed horn, and then re-centering the Azimuth fine-adjust bolt.

RX SNR in the VTT App

During the Point and Peak process, the VTT App records the current and the peak RX SNR levels in the Signal Strength section. These two levels will nearly match when an antenna is aligned correctly.



Levels showing differences of +/- 0.3dB are acceptable. Differences greater than 0.3dB will fail Point and Peak in the VTT App. If levels are greater than +/- 0.3dB, the VTT App will repeat the Point and Peak process.

Remember to reset the modem's learning by sweeping the antenna away from the satellite, holding the Inclinator bracket over

the feed horn, and then re-centering the Azimuth fine-adjust bolt.

When Pointing & Peaking is complete, the customer will need to provide their signature, and then you can follow along as the VTT App updates the MAC address, performs QOI, and performs Service Activation.



Provisioning



Update MAC address

MAC address successfully updated!



QOI

All tests were successfully completed!



Service Activation

Service has been successfully activated!

Finish