

# RECEIVING LOOP ANTENNA EXPERIMENTING

## Part Three

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This is phase one of testing my receiving loop antennae with the nanoVNA H4.

I connected the nano to two of the three loops at their feedpoints, without amplifiers attached to the active loops. The small Octoloop is connected to two HF receivers via knife switch and the closest I could get to the feedpoint without cutting wires was at the knife switch center. The balanced feedline run is very short, so the results I got should be pretty close to those from a more ideal location.

To do the phase one testing, I installed beta firmware written by HB9IIU specifically for loop antenna measurements. This firmware automatically tunes up the nanoVNA, then sweeps from 3 to 30 MHz looking for the frequency where the reactances balance out. Then, instead of reading out the reactances and other numbers or displaying the Smith chart, it simply places the resonant frequency on the screen.

Phase two will involve another nanoVNA with normal firmware and PC software.

It was not easy to get clear screen photos of the nanoVNA. I tried with a video camera, which got very nice shots of the antennae, but the nano screen was too blurry to read. The shots displayed here came from my iPhone 14, which required finding the best distance between the phone and the nano and carefully tapping the iPhone screen.

Interestingly, the nano with custom firmware was not able to determine a resonant frequency for the YouLoop or the Hula Loop. Based on preliminary results with an unmodified nano, I believe this is because these antennae are resonant outside the frequency range tested. Phase two should clear that up as well.

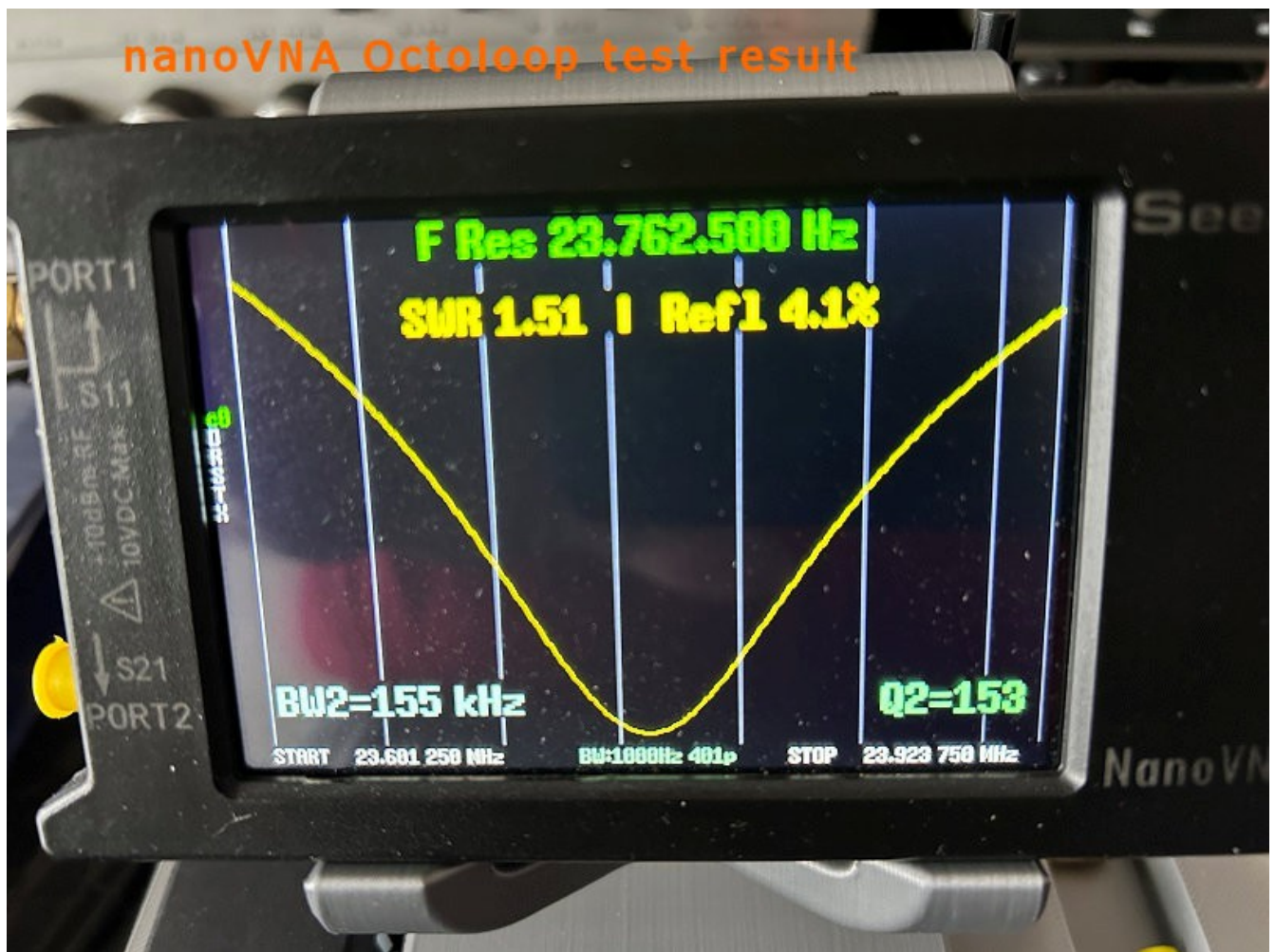
P.S. The large Octoloop needs to be rebuilt. I have not decided whether or not I will bother doing that.



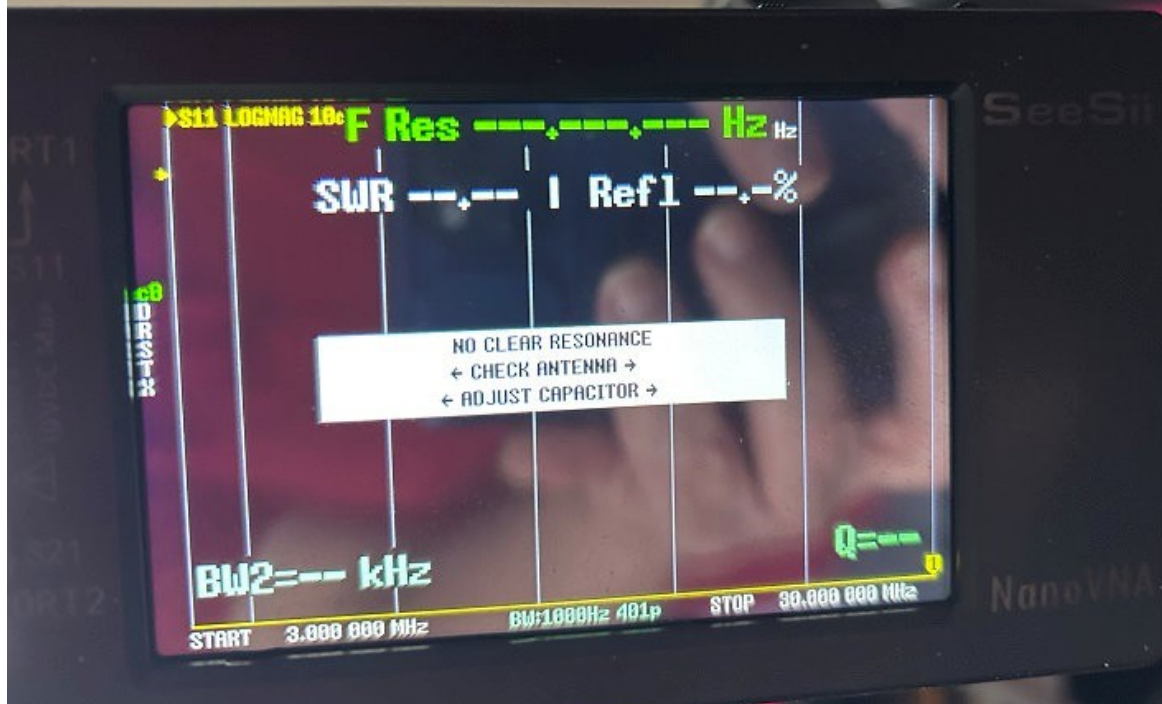


knife  
switch

nanoVNA Octoloop test result



nanoVNA YouLoop test result



nanoVNA YouLoop test result

