RECEIVING LOOP ANTENNA EXPERIMENTING
Part Four

Dave, NF2G

This was intended to describe phase two of testing my receiving loop antennae with the nanoVNA H4.

As described in Part Three, I did attempt to test my Hula Loop and YouLoop with two nanoVNA H4s, one with custom loop firmware and the other with normal firmware running VNA software on my PC. The attempts were not successful, at least in the way the previous tests were.

The Hula Loop is a single length of wire running inside a hula hoop. It is intended to be used as an active antenna. In my station, it has the MLA-30+ amplifier connected at the feedpoint. To do the testing, I removed the amplifier and connected the nano directly at the feedpoint.

The YouLoop is a two lengths of coaxial cable, connected at the top of the loop by a crossover and at the bottom by a coaxial tee. YouLoops are also better as active antennae, and mine has a small preamp powered by bias-tee voltage from an SDR. For this antenna test, I removed the amplifier and connected the nano to the feedpoint.

Neither antenna showed anything resembling the results from the multiturn octagonal loops on the nanoVNAs. Just partial curves on the Smith Chart and no resonant frequencies. There is a good reason for this, it turns out.

The reactances of these antennae are almost totally inductive. Without a tuning capacitor, they cannot be resonated because standing alone there is no capacitive reactance to cancel the inductive, and no point at which the curves would even touch the centerline on a Smith Chart. They cannot cross that line at all.

So, no photos or screenshots here. But even a negative result is a result and can teach us something. I hope you have found this series useful.