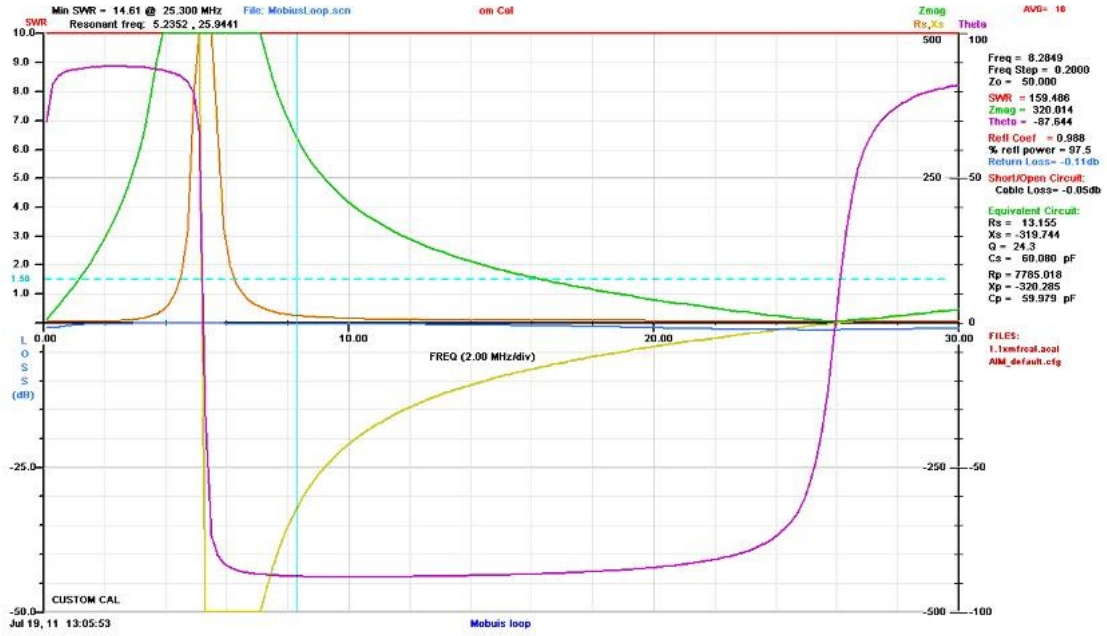
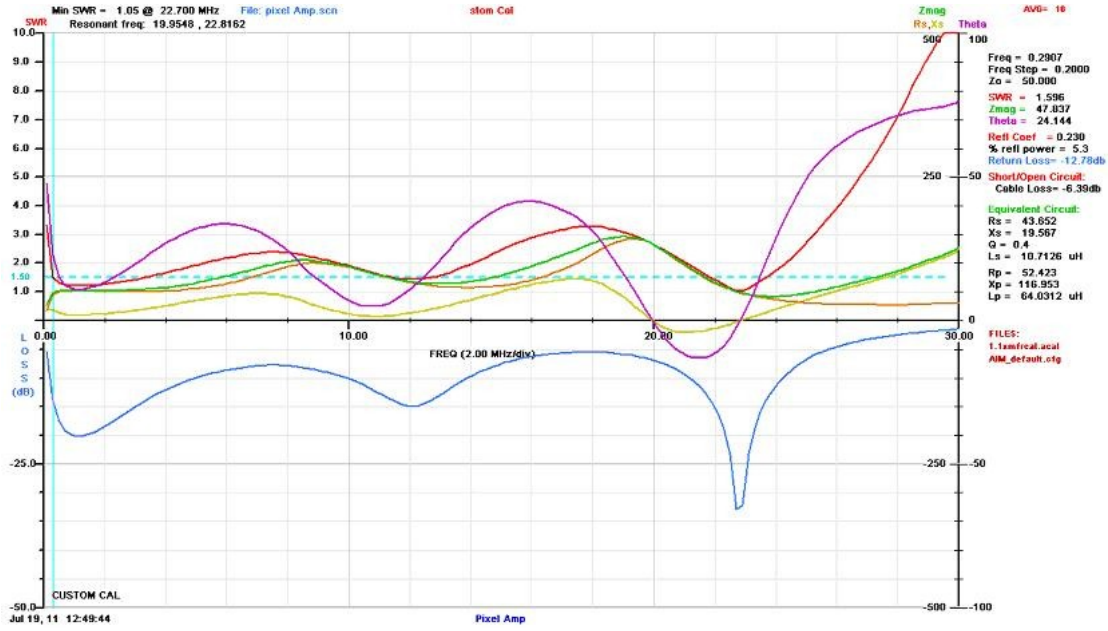
Comparison of the Mobius Loop verses a Wellbrook loop with an impedance-tracking amplifier using a Vector Impedance Analyser

Vector Impedance Analyser plot of 38 inch Mobius loop

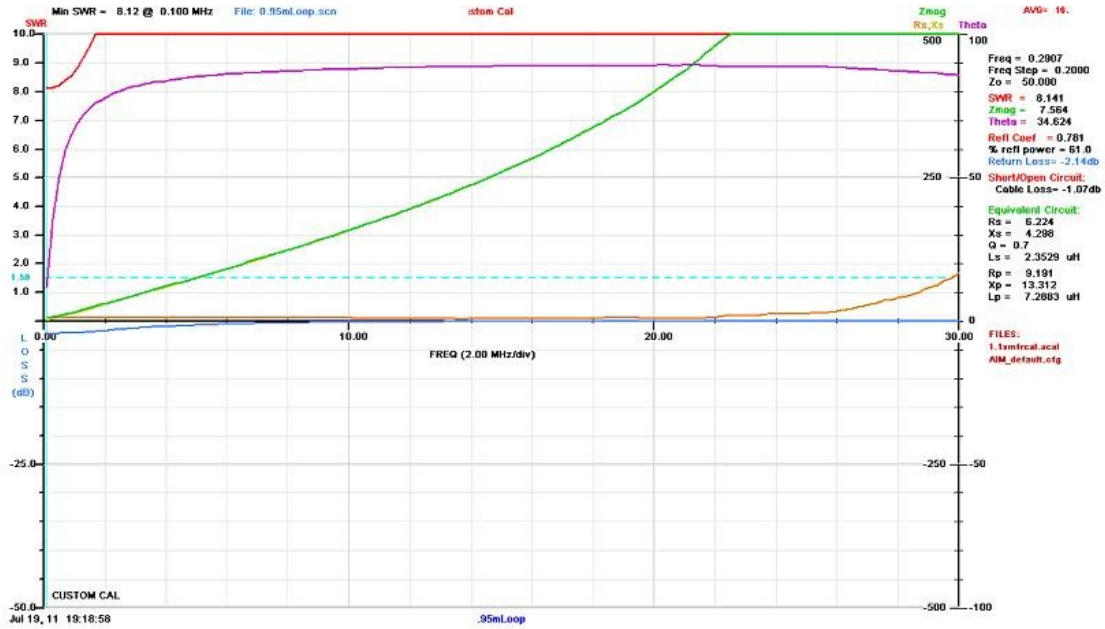


Vector Impedance Analyser plot of the Pixel model RF-30 loop amplifier including the Mobius loop Mini-Circuits matching transformer

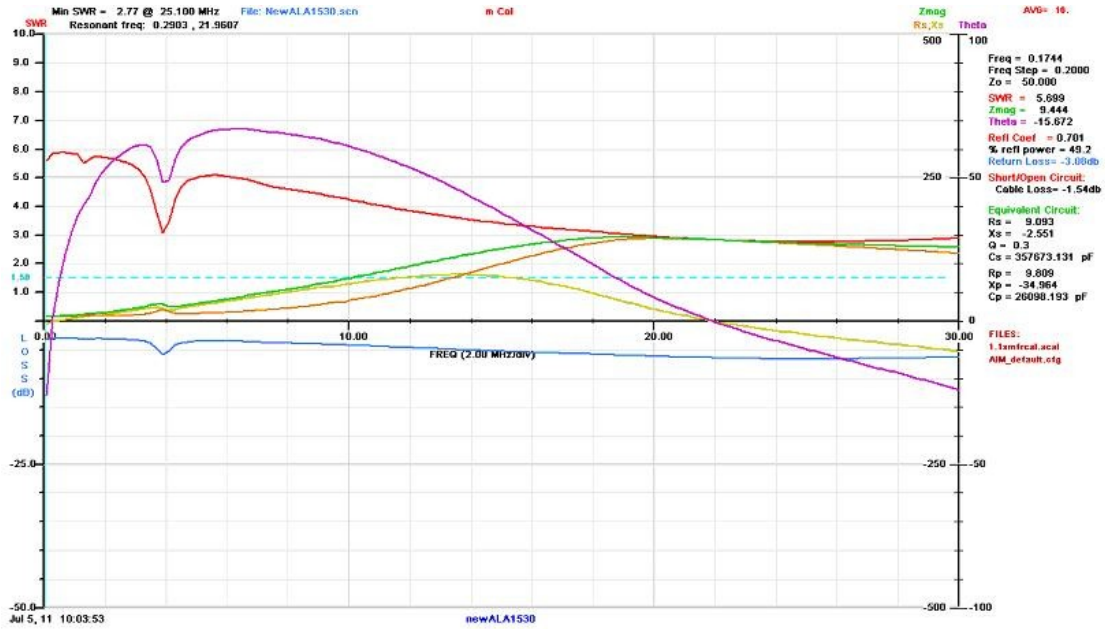


Looking at the two plots one can clearly see there is huge loop to Amplifier miss-match. The green line “Equivalent Circuit” shows this. Any miss-match could have a detrimental affect on the Loop/amplifier signal to noise ratio. It is hard to understand why any active loop antenna would have resonance peak at approx. 5.0MHz. One would normally have the antenna resonance above the upper design frequency.

Vector Impedance Analyser plot of 38 inch ¾ diam. Wellbrook loop



Vector Impedance Analyser plot ALA1530 Loop amplifier



The Wellbrook Loop plot clearly shows the predicted clean strait line (green) of the rising inductive reactance from a few Ohms at 100kHz to several hundred Ohms at 30MHz. Note: the steeper slope above 15MHz is due to the capacitance of Vector Impedance Analyser fixture (1:1 transformer). The magenta line is the loop reactance. Looking at the ALA1530 Loop amplifier plot, the green line shows a similar rise in the input impedance verses frequency to the loops plot; this reaches a maximum of approx. 150 Ohms at 20MHz. This is still within a 2:1 ratio loop to amplifier impedance ratio. Note also the amplifier input z is predominantly inductive. Hence there is a much smaller loop/amplifier miss-match.