

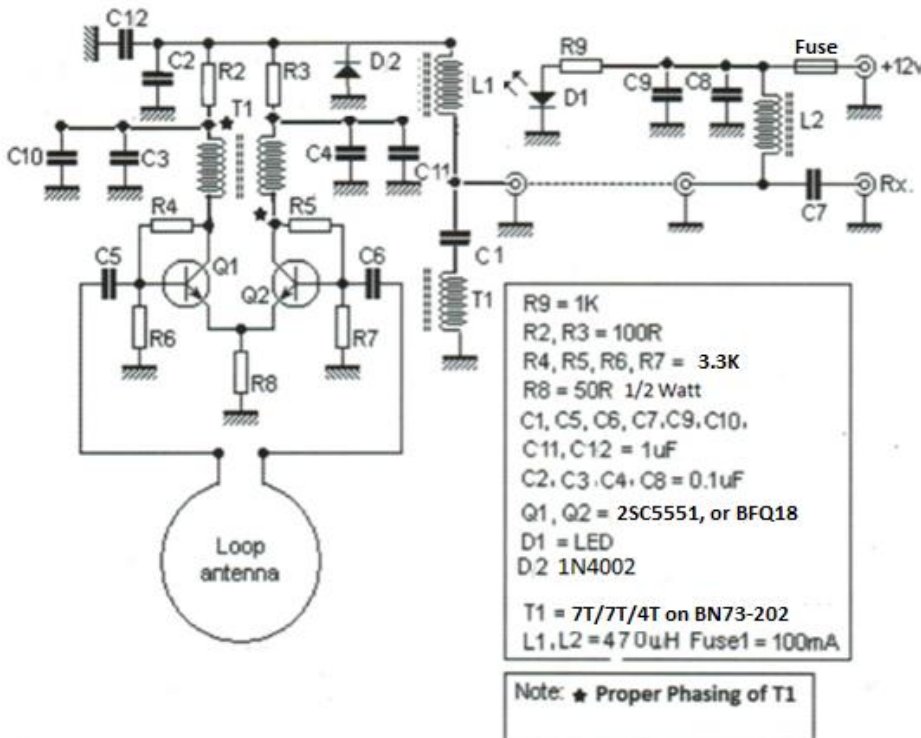
Modified M0AYF Loop Amplifier design by Steve Ratzlaff AA7U

PCB designed by Everett Sharp N4CY

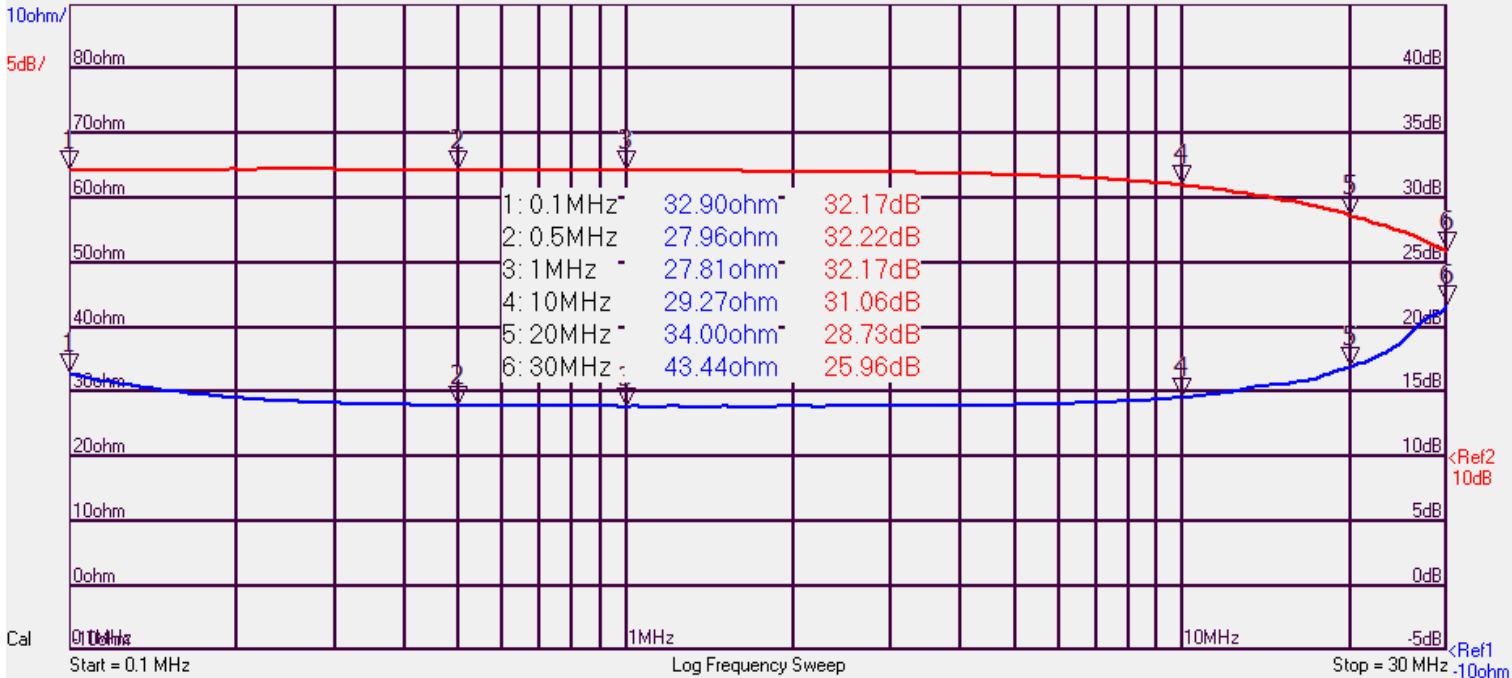


Remove the yellow jumper if you wish to feed the the power at the 12VDC pads.
However, if you wish to the feed the power through the coax then place the
yellow jumper at the Bias Tee on loop amplifier board.

The loop amplifier draws about 65mA at 12VDC and 75mA at 13.8VDC. The circuit board is 2" X 2 3/8", with a copper ground plane on each side of the circuit board. The transistors are a matched pair of SMD 2SC551s. The PCB is setup so that it can be feed power either through the coax, or 12 volts directly to the circuit board. There is a jumper that will allow it to be connected either way.



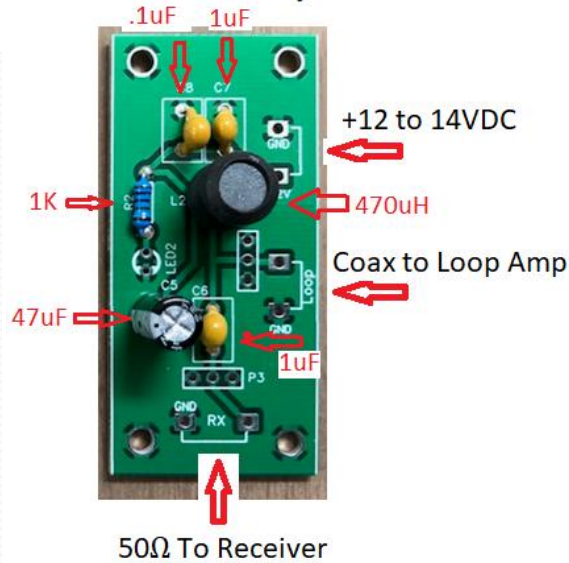
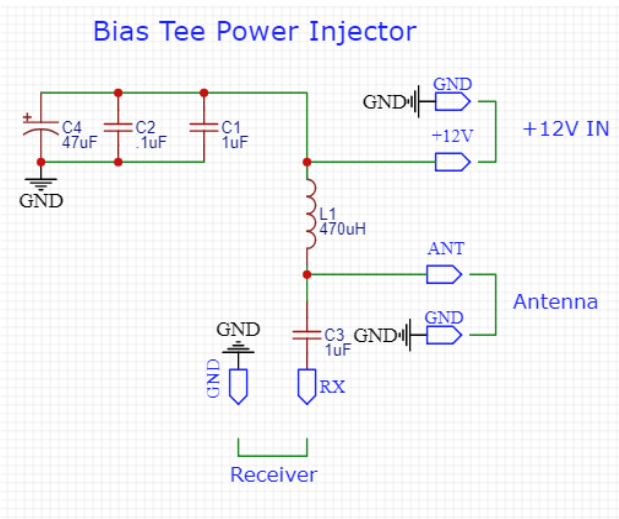
T=30.9°C



=>
TX Level = -17 dBm
S11 |Z|
S21 dB

I found that the 73 mix cores worked better than the 43 with the 2SC5551 transistors, Also I found the 7/7/4 on T1 worked the best with the 2SC5551s, or BFQ18s. I ended up using 3.3K resistors for R4, R5, R6 and R7. What I am seeing with the 2SC5551 transistors is the M0AYF amp has a the gainspread from 100kHz to 30MHz of 6 to 7 dB. Whereas with the 2N5109 and PN2222 the spread is 10 to 11dB. IMD is **OIP2** 1MHz +75dB, 7MHz +70dB; **OIP3** 2MHz +33, 5MHz +33.2dB

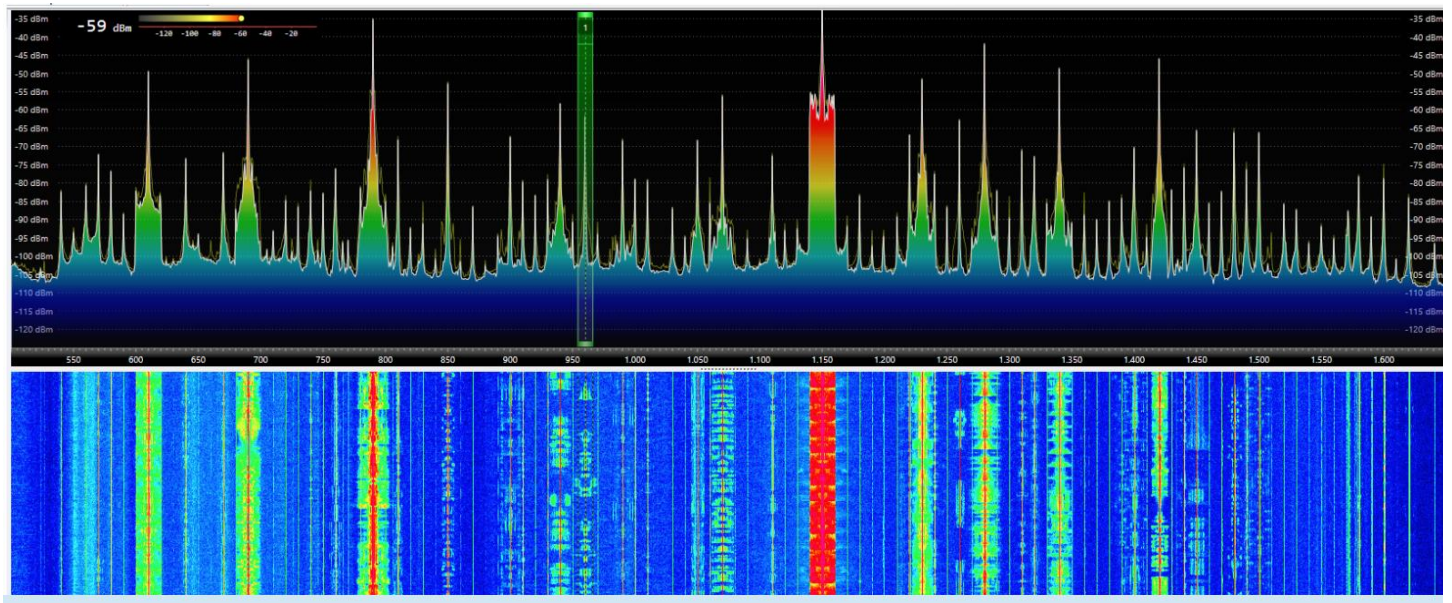
Bias Tee Power Injector



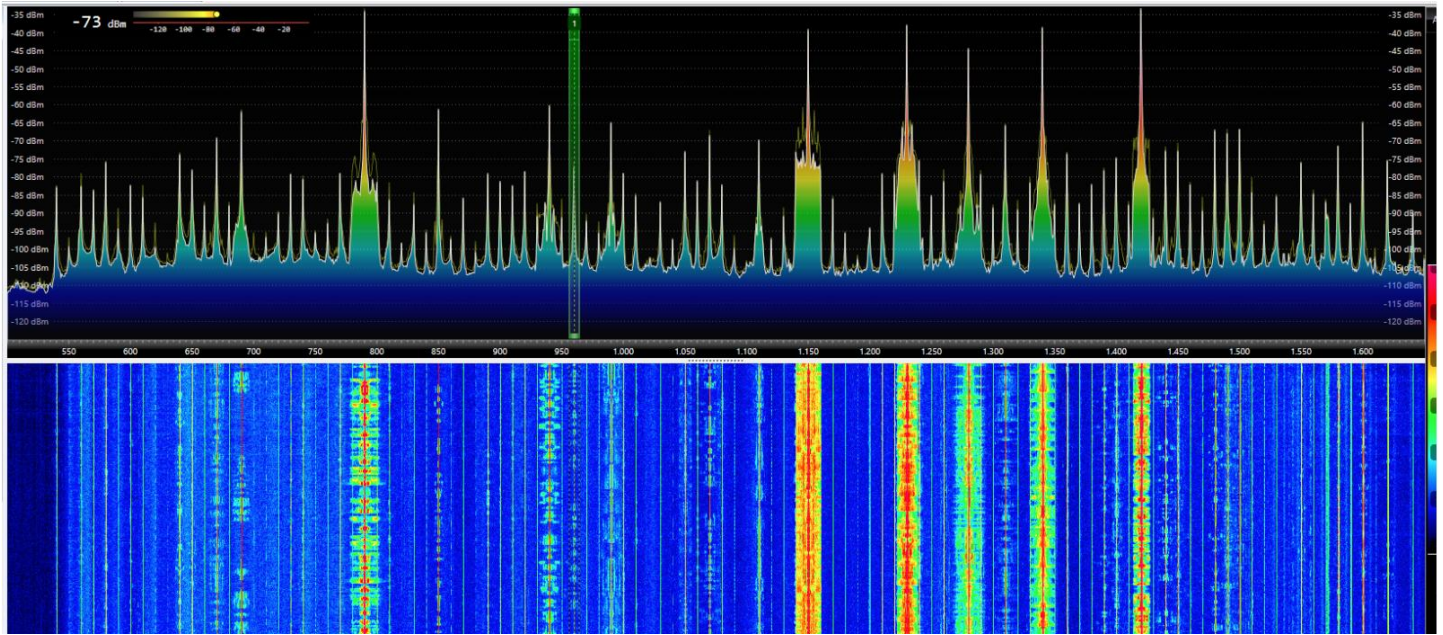
Below are screen shots of the Modified M0AYF loop amplifier on my 1 Meter loop. All of the test were run during midday. The receiver is a NetSDR with SDR Console. There were no issues of over-load from local MW BC, or FM BC stations.



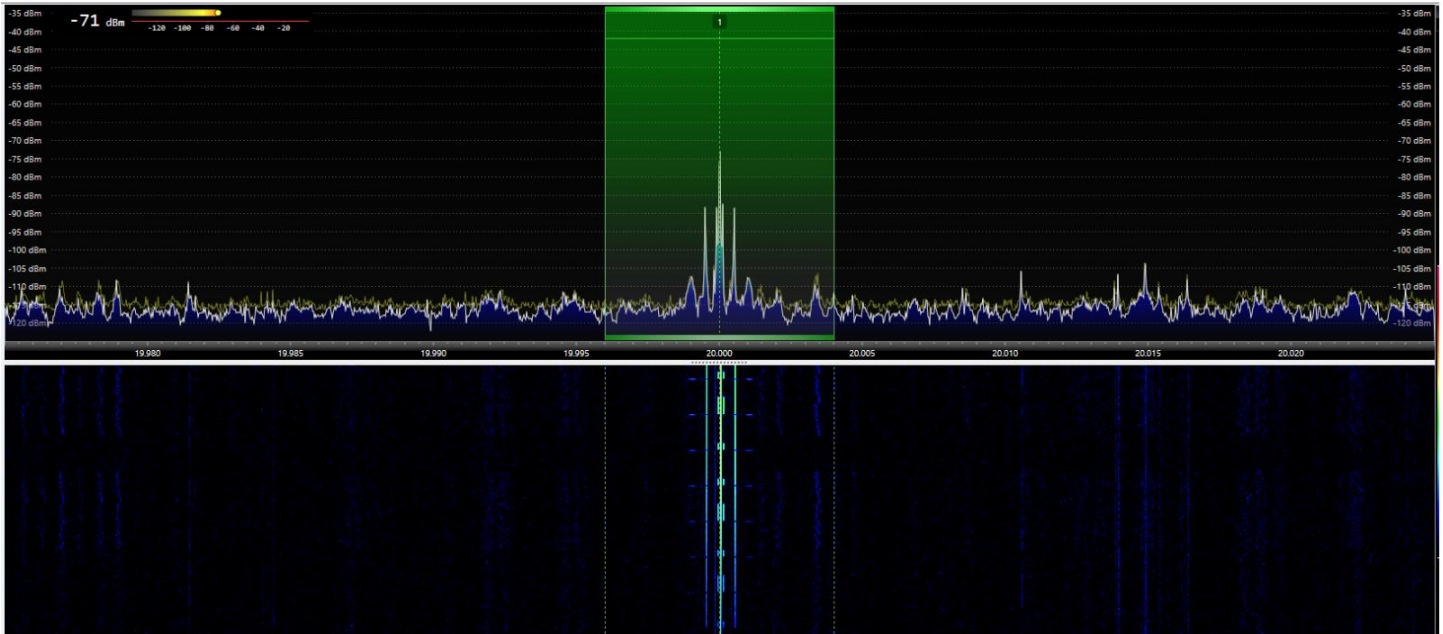
M0AYF Pointed East/West



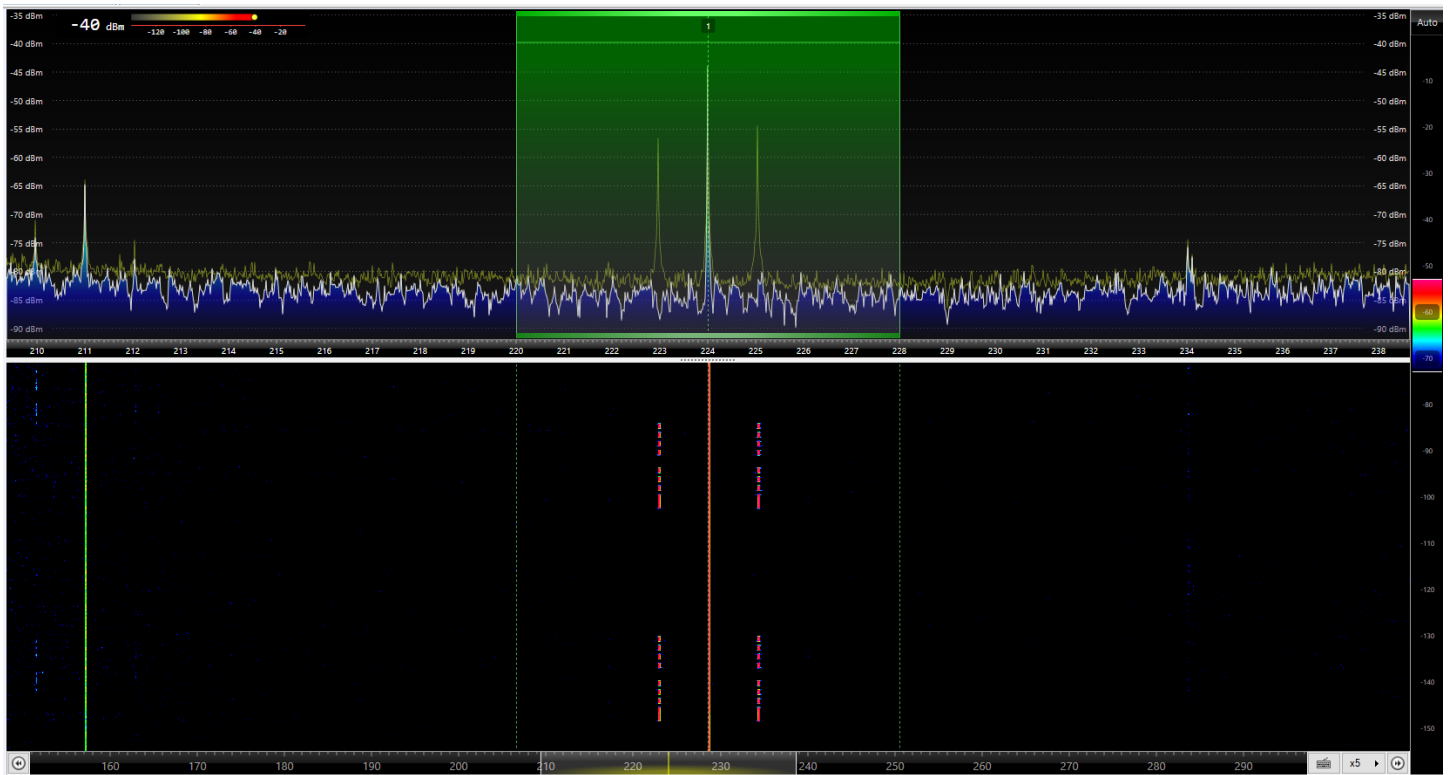
M0AYF Pointed North/South



WWV 20MHz M0AYF



NDB 224kHz (BH) which is 400Watts and is about 80 miles from my QTH.



An example of an easy to make loop using 1" X 1/4" X 10'

