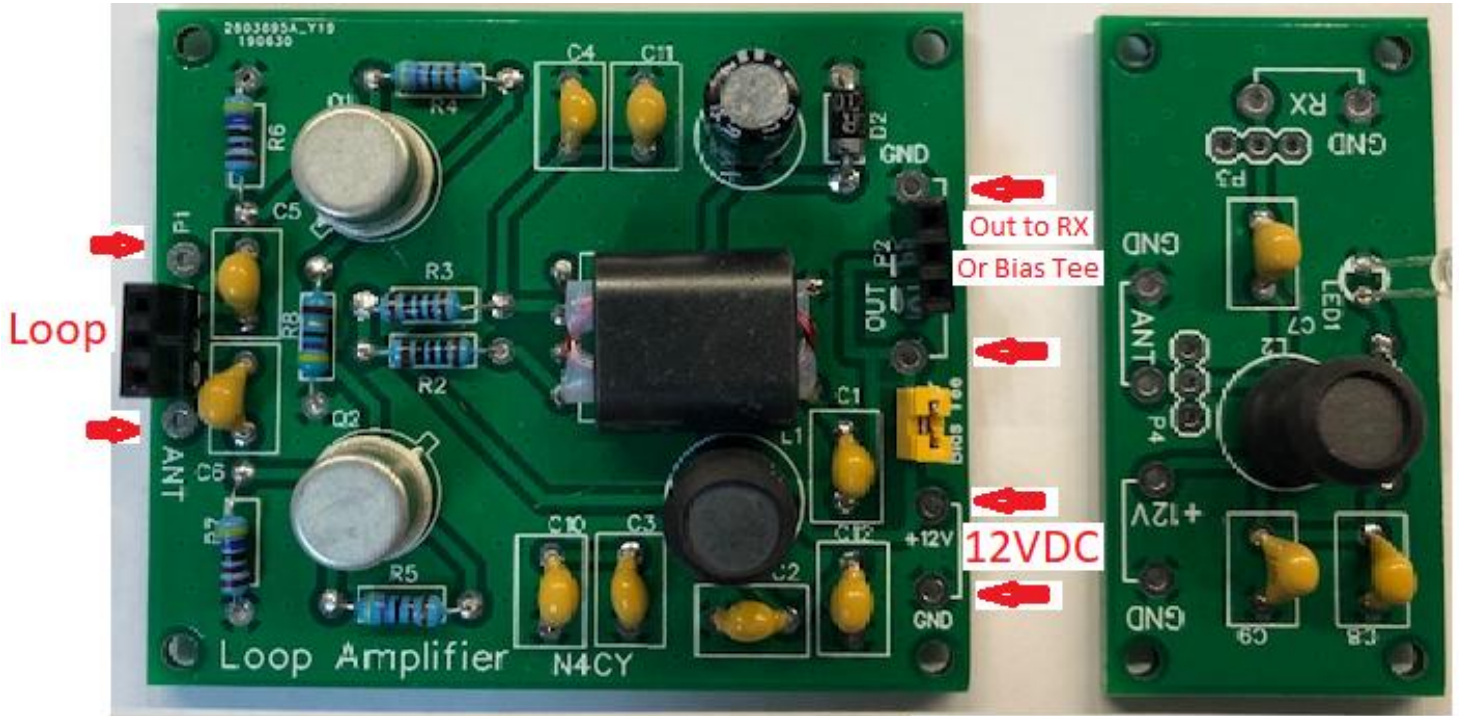
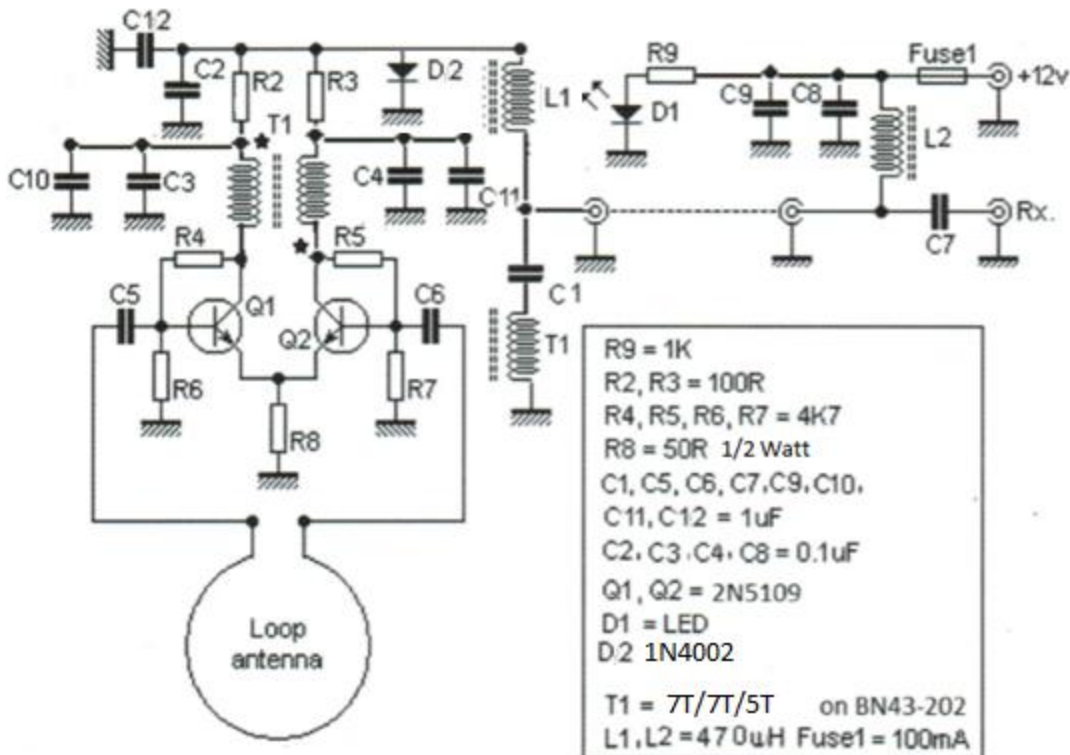


Modified M0AYF Loop Amplifier design by Steve Ratzlaff AA7U

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.



Note: ★ Proper Phasing of T1

The loop amplifier draws about 60mA at 12VDC and 70mA 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 2N5109s, or BFQ18. 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.

I just ran a gain sweep on two boards, just finished, with my VNA. The amplifier was feed with a BN73-302 with 6 turns/6turns 1:1 matching transformer and was powered with 13.8VDC. Both gain sweeps were almost identical.

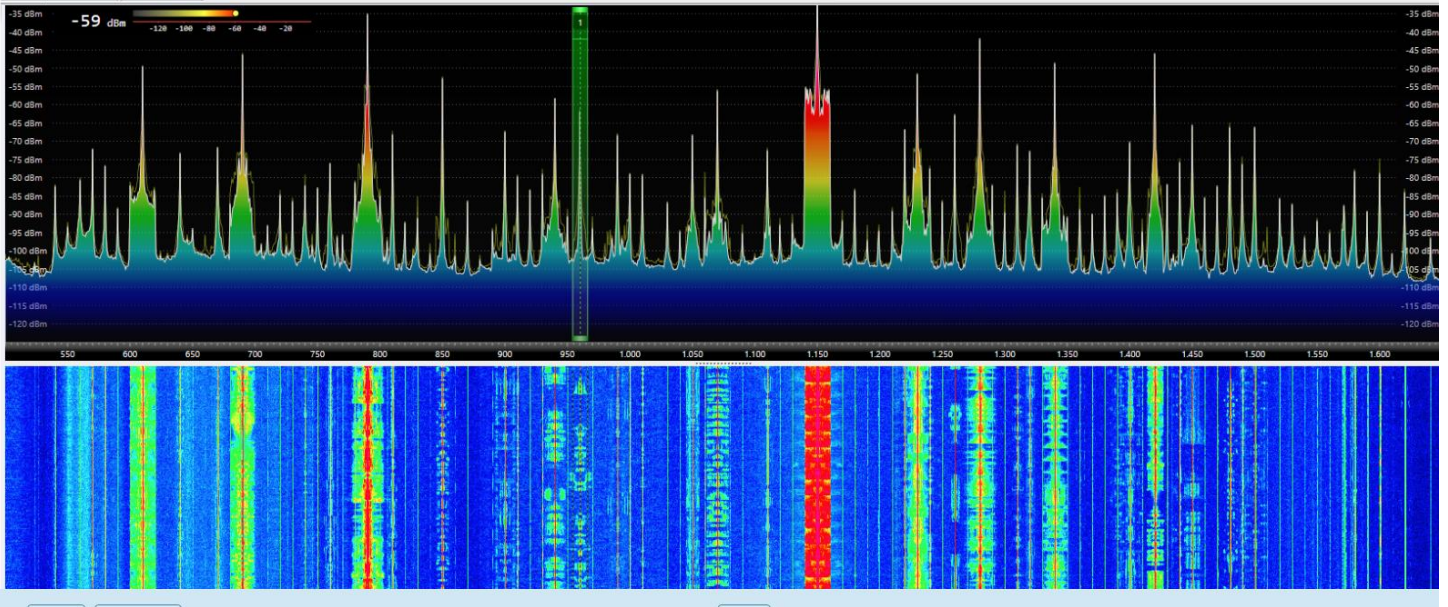
Below is the gain and impedance

	2N5109 Version		BFQ18 Version	
100 kHz	33.5dB	85Ω	28.5dB	86.2 Ω
200kHz	34.5dB	68Ω	28.8dB	76.1 Ω
500kHz	34.3dB	60Ω	29.3dB	64.7 Ω
1MHz	34.8dB	59Ω	29.2dB	64.4 Ω
10MHz	32.0dB	45Ω	27.3dB	64.6 Ω
15MHz	30.1dB	38Ω	27.0dB	65.3 Ω
20MHz	28.4dB	35.5Ω	26.2dB	67.2 Ω
30MHz	24.5dB	36Ω	24.0dB	75.8 Ω

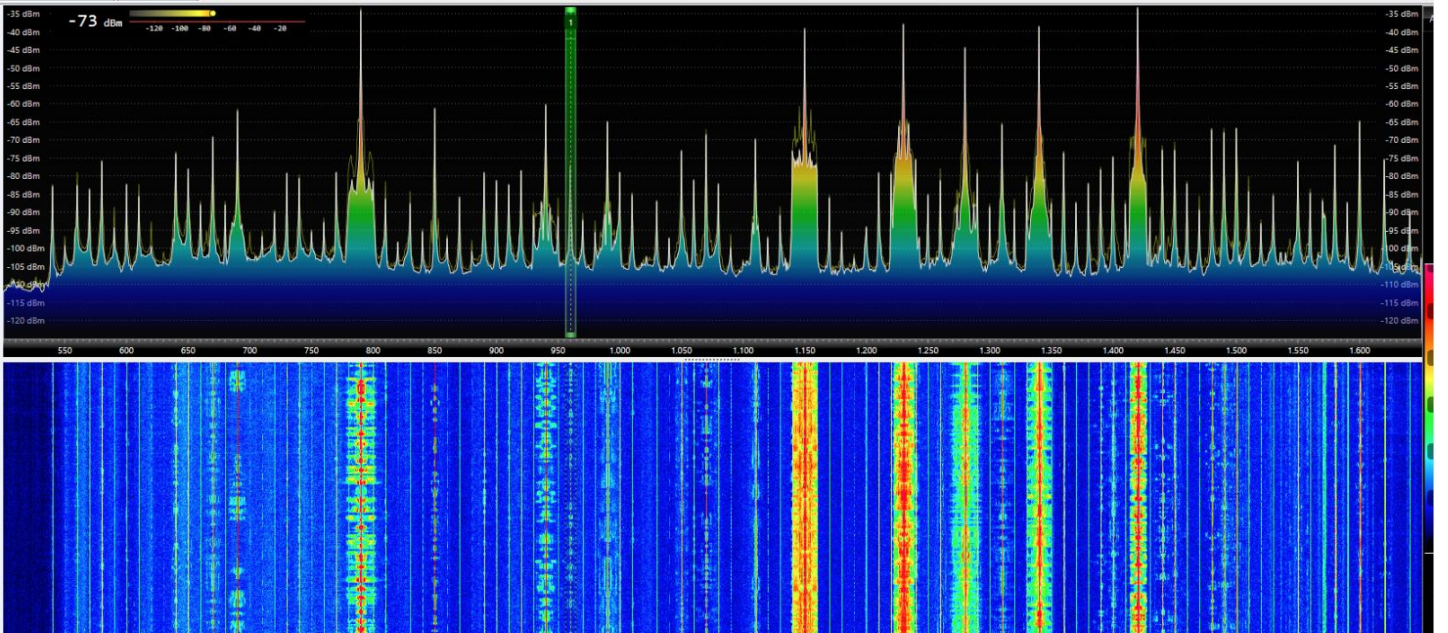
Below are screen shots of the Modified M0AYF loop amplifier on my 1 Meter loop. All of the test were run during midday. The receiver is a NetSDR with SDR Console. There were no issues of over-load from local MW BC, or FM BC stations.



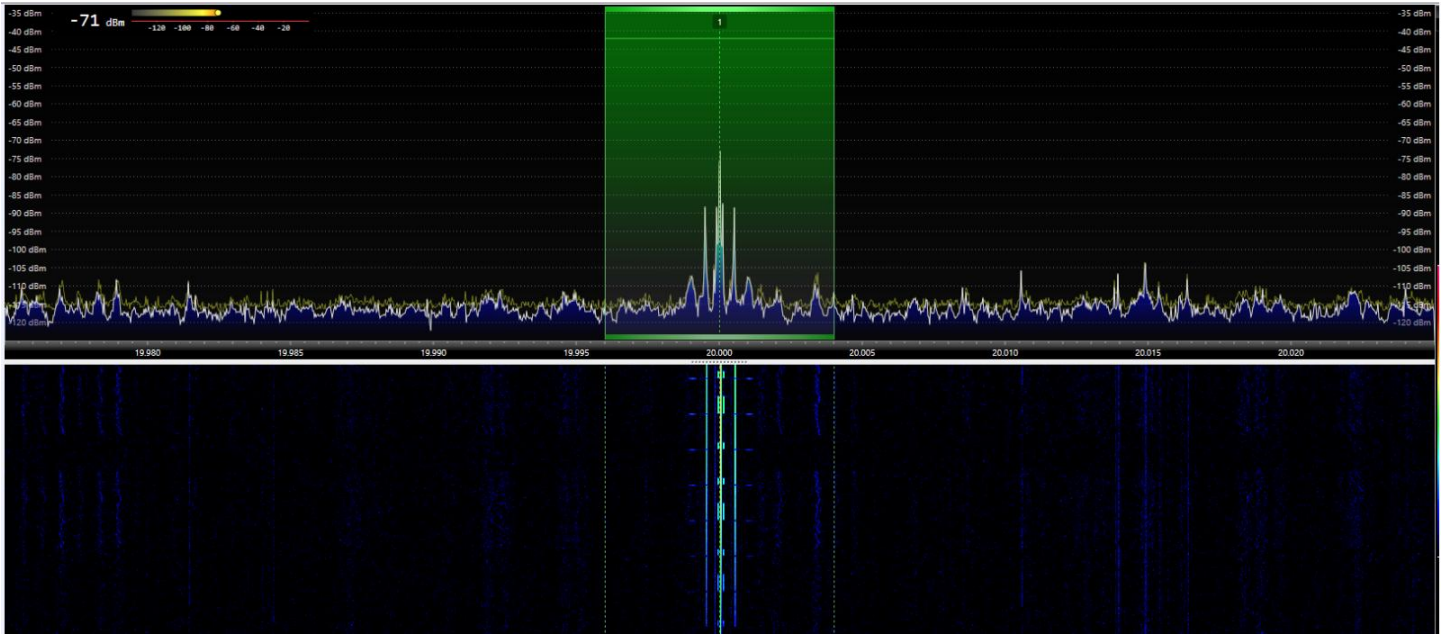
M0AYF Pointed East/West



M0AYF Pointed North/South



WWV 20MHz M0AYF



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

