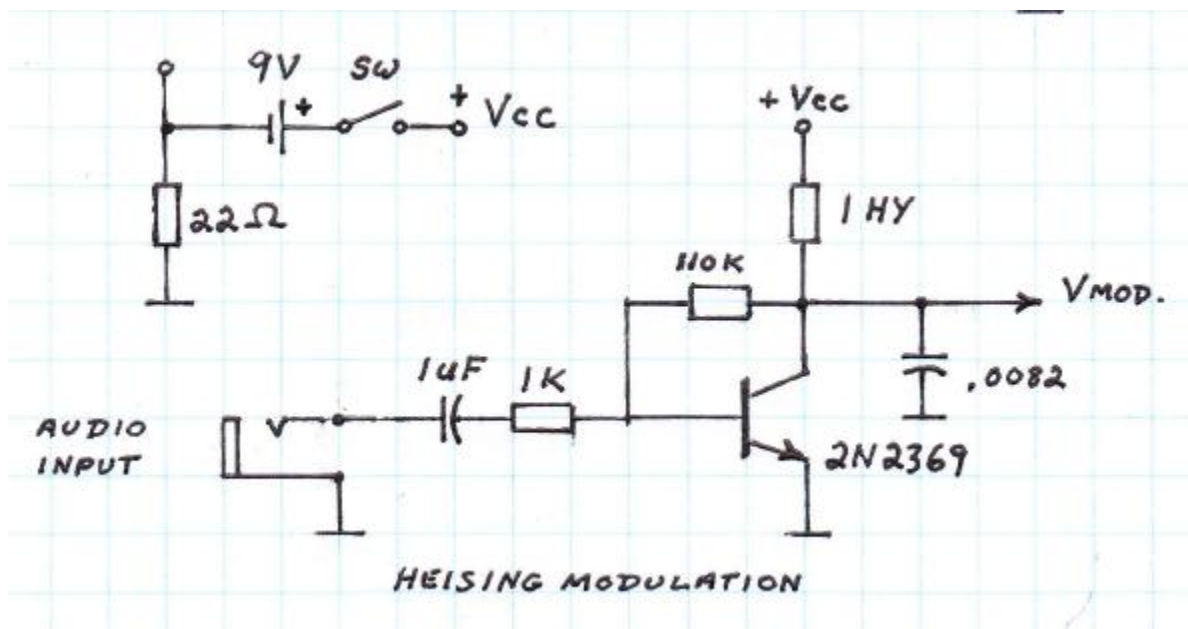
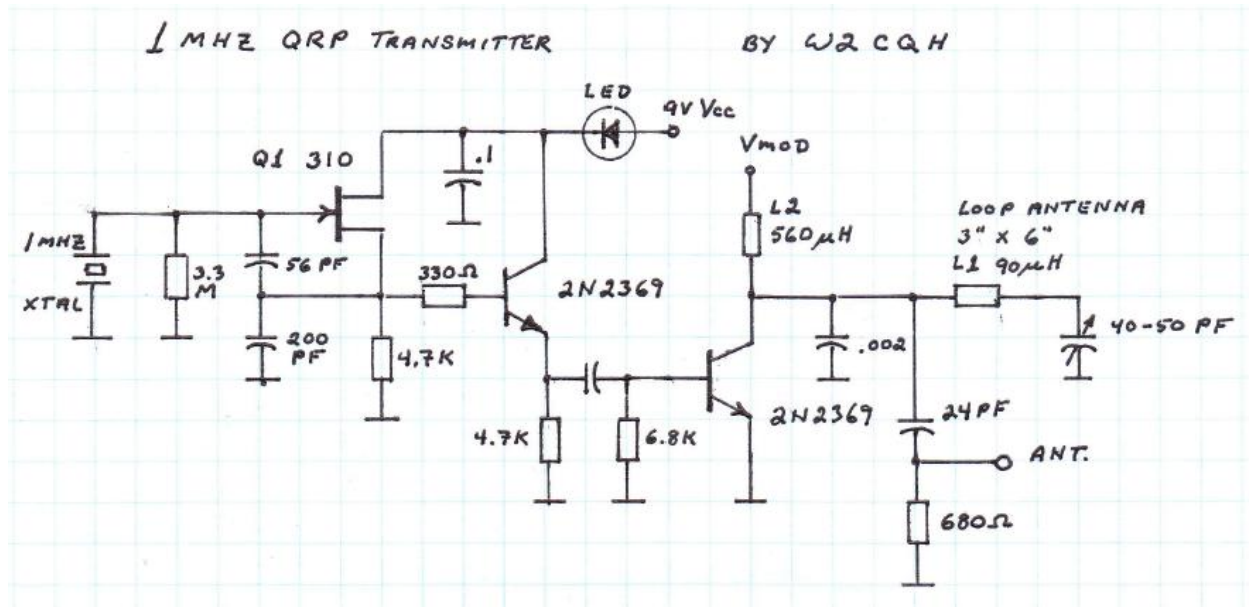


QRP Transmitter – 1 MHz – XTAL Controlled

by W2CQH



This QRP (low powered) broadcast transmitter was designed and built by Reed, W2CQH, to use at the SARS monthly meetings for those who brought in broadcast radios and wanted to show off how well they worked. The building where we meet is steel framed so reception is marginal at best, plus we can play our own selections of favorite music. I will say the fidelity is very good for such a simple device and the Heising modulation works quit well and seems to boost the effective power of the device.

The unit is constructed in a 3" by 6" plastic project box, although you can certainly use another configuration. It is important to use a plastic box, though, because the loop coil will not work if wound on metal.

On the use of antennas, there are provisions for two means of coupling to your radios. You can connect a traditional wire antenna to the terminal marked "ANT" or you can make use of magnetic coupling by simply placing the transmitter within a few feet of your radio. The loop wound around the case will be sufficient to couple.

This loop consists of 18 turns of fine wire, wound on the 3" x 6" box which will come out to be about 90 uH (micro Henrys).

The modulation choke for the Heising, constant current modulation, is a Tamura TTC-105 one (1) Henry choke with a Q of 5 and DC resistance of 200 Ohms.

The 22 Ohm resistor in series with the 9 Volt battery is a convenient test point to measure current.

The crystal used is one Megahertz, although any other frequency inside the broadcast band should work well.

The audio source used was a common CD player normally connected to 32 Ohm ear buds.

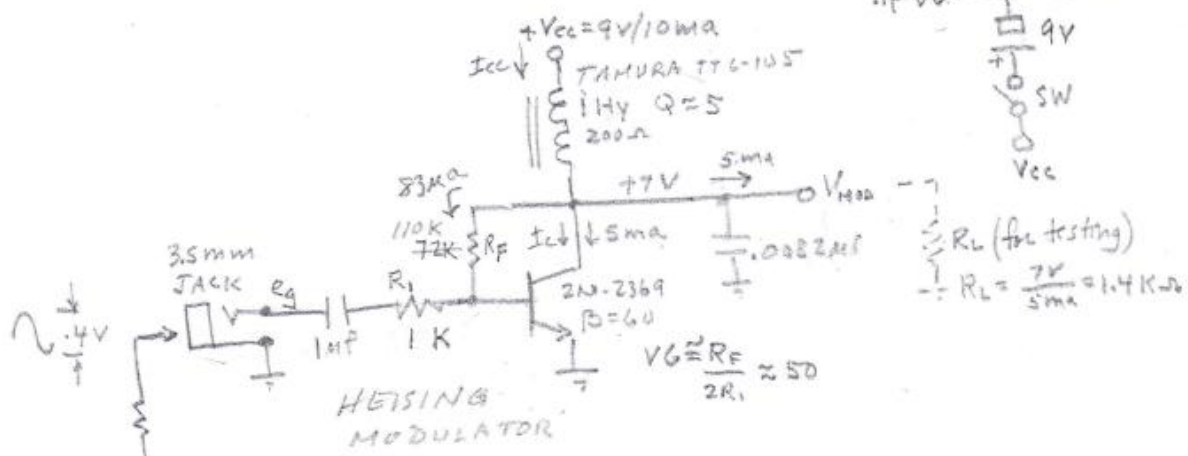
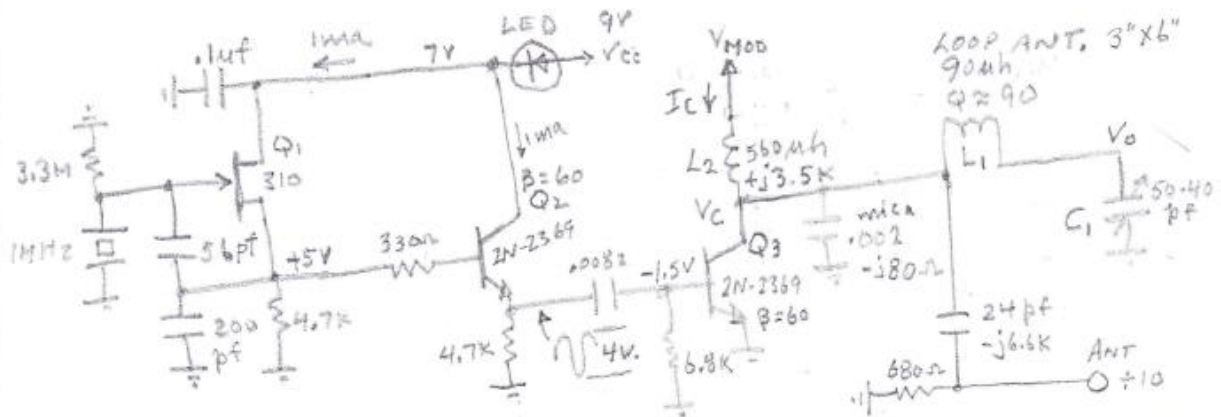
You can test the modulator as a 'stand alone' by connecting a 1.4 K resistor to the output at the collector of the 2N2369 and disconnect this from the rest of the circuit. At standby with no audio input, you should see 7 volts at 5 mA on the test load resistor.

Below are Reed's lab notes which should be of interest and help to a builder.

I hope you enjoy experimenting with this interesting project. Jim KD1I

1MHz QRP Transmitter

4/23/16
W2CQH



Source: 1
GNN CD PLAYER
#DNB15AV201
For 32Ω earbuds

RL (for testing)
 $R_L = \frac{7V}{5mA} = 1.4K\Omega$