Drake WH7 QRO HF SWR Bridge

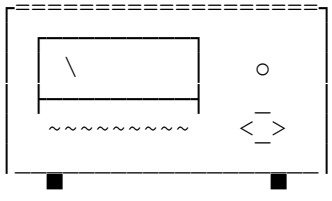
By G8MNY (New Nov 06)

(8 Bit ASCII Graphics use code page 437 or 850)

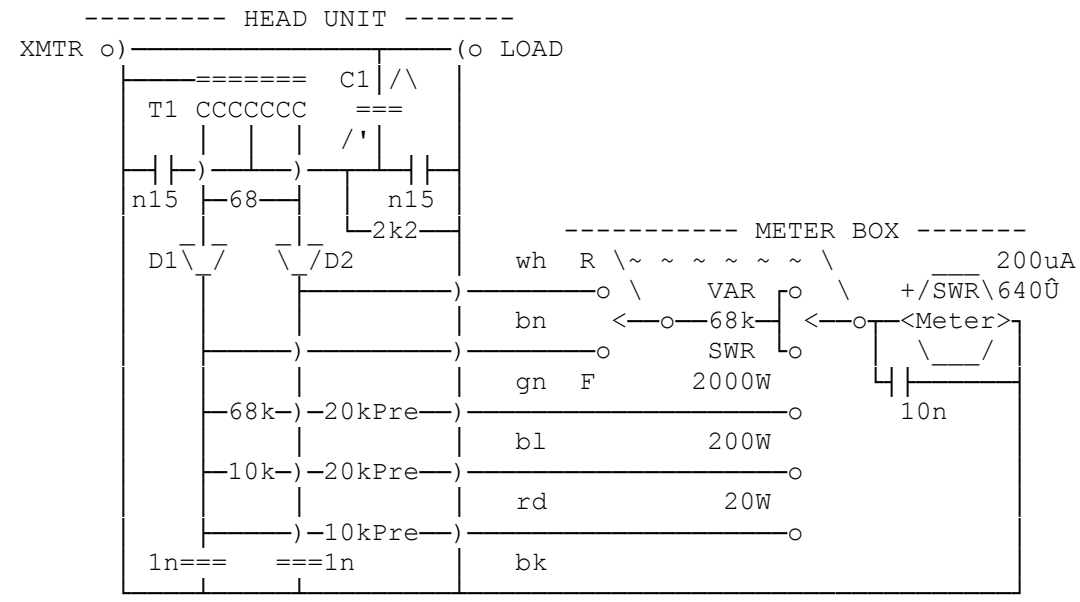
I have reverse engineered this QRO Bridge. It was quite straight forward.

SPECIFICATION

Frequency range	1.8-54MHz
Impedance	50Û
Peak Power	2kW
Connection	SO239
Accuracy	±(5% of reading +1% of full scale)
VSWR Insertion	1.05:1



THE CIRCUIT



WHO IT WORKS

A short length of thick wire goes through the screened ferrite transformer T1 making a 1 turn primary, and the lead joins the XTMR and LOAD sockets together. A
pickoff voltage attenuator is formed with trimmer C1 and the 2 150pF caps. This RF voltage is fed to T1 secondary centre tap. Load current is transformed by T1 into a voltage across the 5W non inductive 68Û.

When the load is exactly 50Û the diode D2 sees no RF as the voltage sample and the current sample are in opposition and cancel dependent on the calibration of the trimmer C1.

The 2k2 is needed to complete the DC meter circuit and will affect the calibration of the lowest frequency, as will the L value of T1.

Diode D1 however sees the voltage tap and the current sample added together and produces DC across the 1nF, and feeds this to the meter box on the brown wire for
SWR full scale, and via the calibration power presets on green, blue and red wires.

SWR voltage readings will be present on D2 when the load is not exactly 50Û are fed out on the white wire.

The meter box has a 1 wafer switch that forms a 2 switch bank connected as show, to give all the functions.

Why Don't U send an interesting bul?

73 de John, G8MNY @ GB7CIP