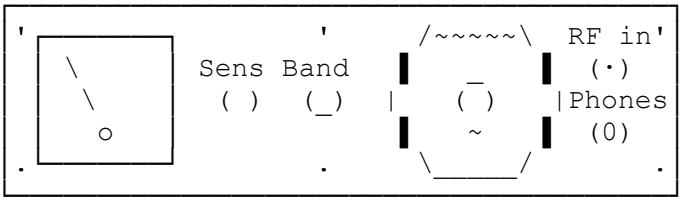
BURNS's MF-UHF Wavemeter TC-101

By G8MNY (Updaed Graphics Apr 10)
(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

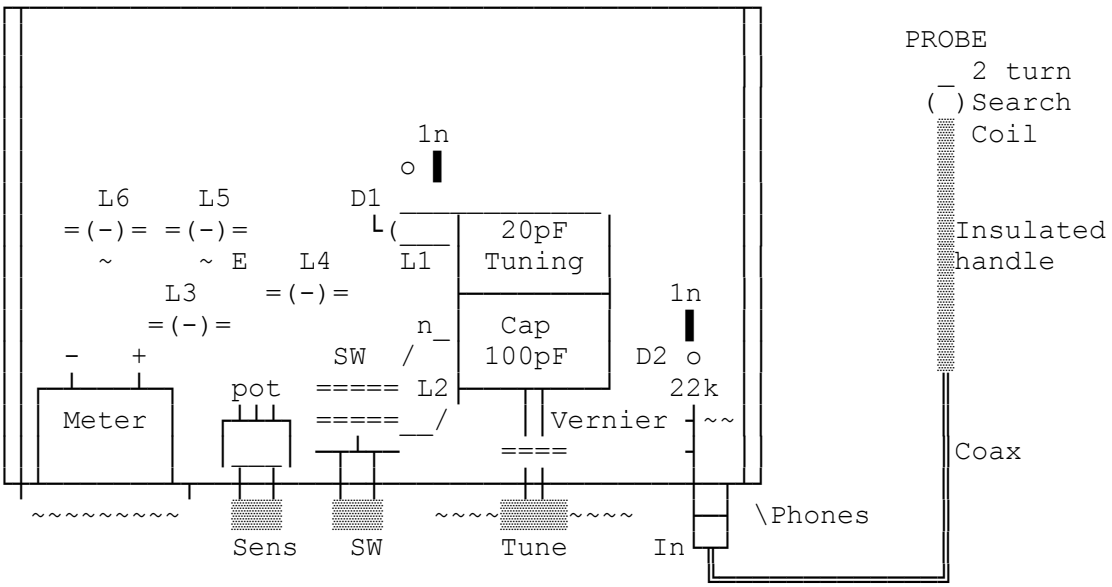
Here is a reverse engineered diagram & layout of one I picked up the other day.

FRONT PANEL

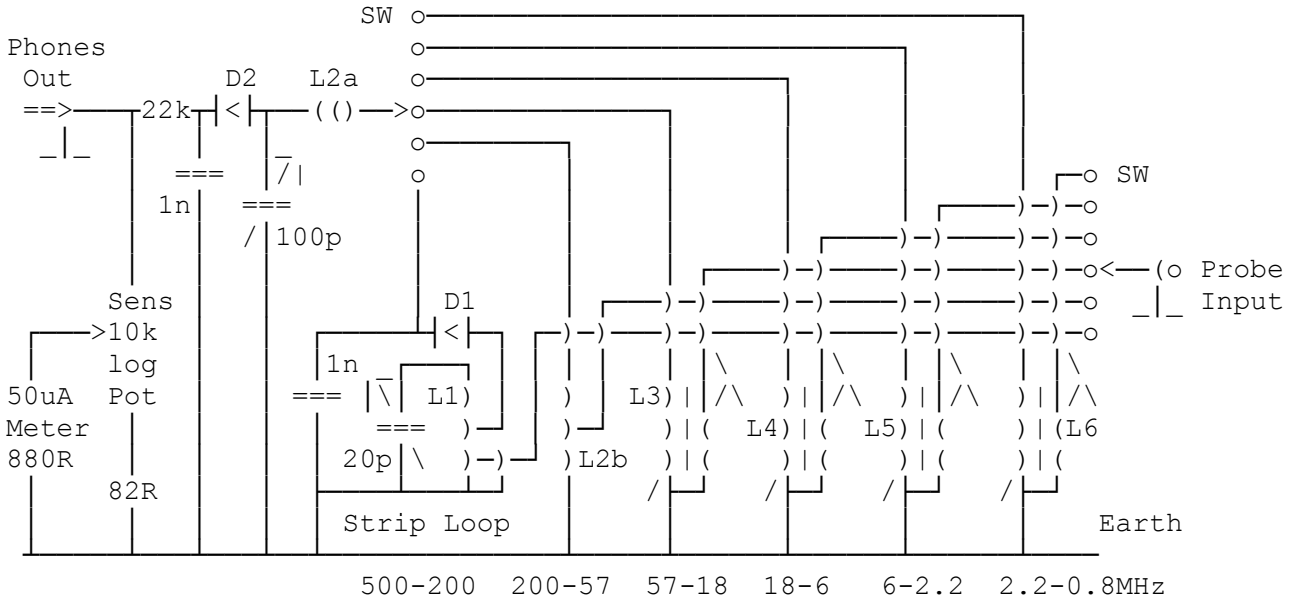


It covers 800kHz to 500MHz in 6 Bands, with a very accurate set of 3x 180° scales.

LAYOUT

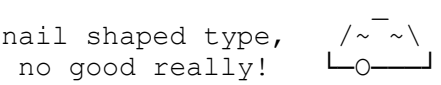


CIRCUIT



HOW IT WORKS
The input from a 2 turn loop probe feeds low impedance test signals to the "TV Belling Lee" input socket. The 6 pole 2 bank switch is actually a 4 bank band change type with 2 earthing contacts banks on the unselected bands. The lower 4 bands the ferrite cored preset coils L3-L6 are quiet conventional with a 1 turn drive primary, the layout not too important for the low frequencies.

The tuning capacitor is a constant frequency snail shaped type, with offset shaft. A constant C/angle would be no good really!



For the VHF range L2 is a thick wire loop split into two by the switch. Layout is everything to getting the right L & stay capacitance for the indicated frequency on this range.

On the same tuning cap there is a UHF 20pF section & a 2cm long copper strip folded across it that forms L1. The coax drive tap is placed 25% from ground, & the diode D1 detector on the 50% top of the U bend. Layout & small size at UHF is needed for stable calibrated scale.

Note that in this circuit the geranium/Schottky diodes D1 & D2 are in series on UHF range! But this does not affect the sensitivity much with the 50uA meter. Input power (e.g. direct connection or PA pickup) should be limited to below 100mW if the diodes are not to be damaged, as there is quite a bit of voltage step up!

Also look at my TECH buls on "Piston Absorption Wave meter", "AKD's VHF/UHF Wave meter WA1", & "RF Field Indicator FL-30AH".

Why Don't U send an interesting bul?

73 de John G8MNY @ GB7CIP