

INTERNAL 24 CMS SWR BRIDGE  
By G8MNY

External SWR bridges and power meters are ways; fiddly to connect up, lossy, & expensive pieces of test gear, that you always need connected when they're not. This bridge design has been used inside "Brick PAs" & "1 Watt excitors".

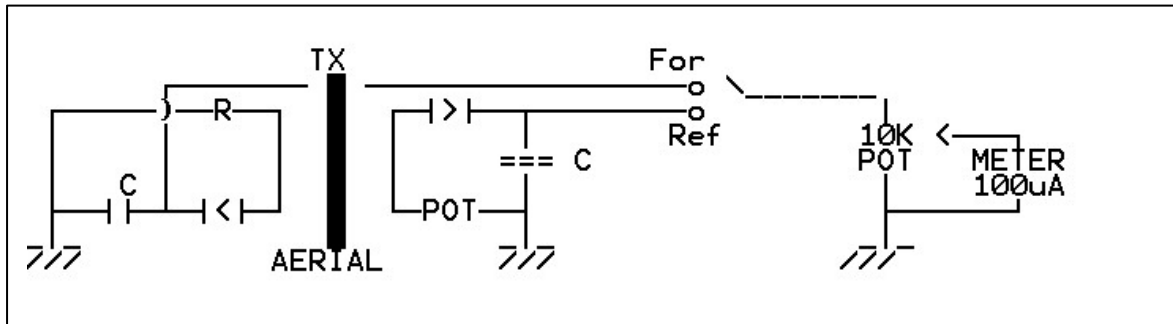
SMALL.

The only difference in a 23cm SWR bridge to a VHF one, is the reduced scale. So if the miniature bridge pickups are small enough, they can be placed over, only a few millimetres of 50 ohm track, which can be found on most PA layouts.

COMPONENTS.

All the components are mounted with minimum lead lengths. There are better diodes than 1N4148, but they do give surprisingly good performance at these frequencies.

The forward signal terminating resistor is not critical, but a very small one should be used in an attempt to get the "100 $\Omega$ " required at 1200MHz. The reflected terminating resistor is too critical to guess at, so a very small preset trim pot was used. This was a high value plastic 1K, but worked OK. The RF pickup wires should be about 6mm-10mm long.



CALIBRATION.

- 1/ Adjust the calibration pot to give no meter reading on a GOOD LOAD.
- 2/ With reduced output (PA run on 10V) and NO load connected, adjust pickup distances so that forward & reflected give the same reading.
- 3/ As 2 but with a FULL SHORT connected, adjust distances for best compromise in forward & reflected readings.
- 4/ Re-check 2.
- 5/ With full power set the sensitivity pot for FSD.

Meter scale

Deflection %	100	80	72	50	33	20	8	0
SWR 1:	Inf	9	6	3	2	1.5	1.2	1
Loss dB	Inf	4.4	3	1.3	0.5	0.2	.035	0

