

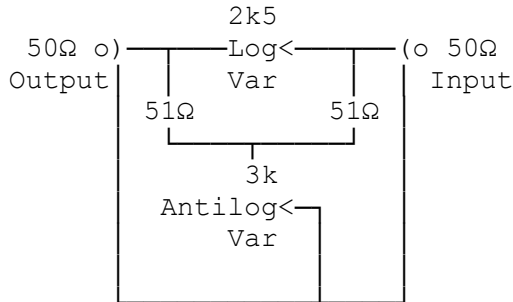
Variable RF Attenuator

By G8MNY

(Updated Mar 10)

(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

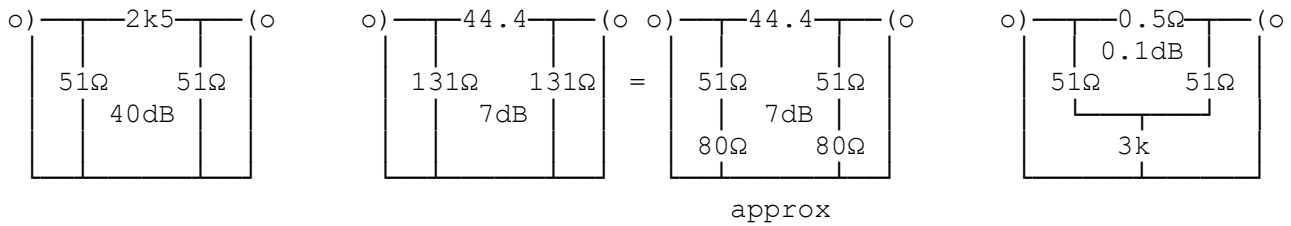
While working on an old pulse generator that goes up to 50MHz, I was interested to know how the variable attenuator works. It used a ganged log-antilog pot to make quite usable approximation to this table.



Attenuation	Log Var	Anti Var
40dB	2500.0Ω	0.0Ω
35dB	1406.0Ω	0.4Ω
30dB	790.0Ω	1.05Ω
25dB	443.0Ω	2.5Ω
20dB	248.0Ω	5.0Ω
15dB	136.0Ω	10.65Ω
10dB	70.7Ω	22.5Ω
7dB	44.8Ω	40.0Ω
5dB	30.4Ω	64.0Ω
3dB	17.6Ω	120.5Ω
0.1dB	0.5Ω	3000.0Ω

HOW IT WORKS

At maximum loss the 2k5 in series with the signal & the 3k shorted out, the input & output Z is mainly due to the two 51Ω.



At minimum loss the 2k2 is a short & the antilog to earth is nearly open circuit @ 3k. The clever bit is mechanically arranging that log & antilog tracks produce the correct resistance to maintain the 50Ω match at all other settings. Note 7dB is half way around the pot with about equal tracks!

To work well to 50MHz all the leads are short & te Rs are not wire wound types!

Why Don't U send an interesting bul?

73 de John G8MNY @ GB7CIP