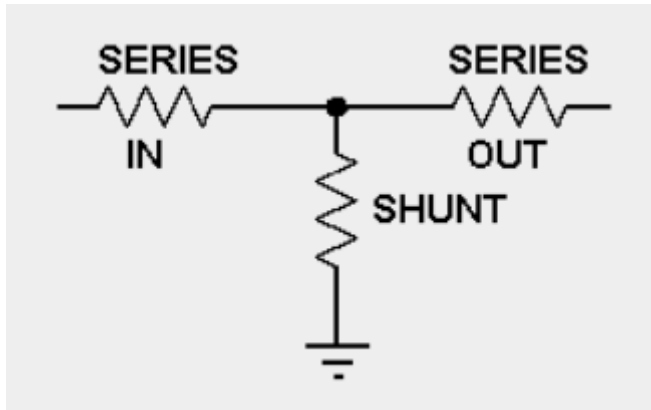


Home made 40dB attenuator.

A power attenuator is almost a «must have» when you are using a spectrum analyzer to measure high RF power levels. My good friend, LA6LCA, has made one for me. It's rather easy to build and I will give a description on «how-to-do» in this document.

The attenuator is of T-type like this drawing:



By using an online calculator, this will give the following values for 50ohms as in and out impedances and a attenuation of 40dB, series resistors 49.01 ohms and shunt resistor 1ohm. 49.01ohm is rather special value. If we use 50ohms, we don't get a perfect match – we get an SWR of 1.02:1. This is good enough for radio amateurs!

The shunt resistor is made from 15 resistors each of 15ohms in parallell. The series resistor on the output are two 100ohms resistors in parallell. The series resistor on the input side is two 100ohms power resistors in parallell.

The small resitors on output and as the shunt are of MRS 16000 S type. They are 0.4W professional thin film resistors. To get the dummyload/attenuator to work at high frequencies, it's very important to have short leads and a good groundplane! Good grounding and short leads are essential to get it working in the VHF/UHF range!

All to be mounted on a heatsink with good shielding. The following pictures says more than 1000 words!

Good luck!

73s de LA3FY – Karl Jan

