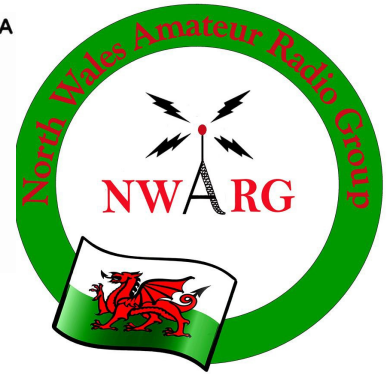
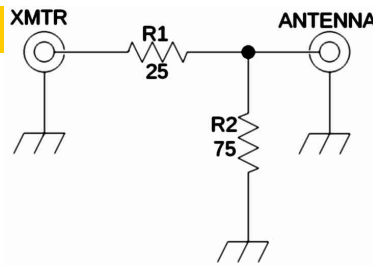


DIY

Worthwhile projects with MWOJWP



Impedance Mollifier: (Pictures below)

Seriously, haven't there been a few times when you would like to use just any wire as an antenna? Without an antenna tuner? Perhaps just a clip lead? Maybe something like an old abandoned telephone wire that the Forest Service left strung through the trees a century ago? Here's a way to do that without worries.

This is not a reactance conjugator, not even an impedance transmogripher. No, this circuit just mollifies the impedance mismatch, soothes and calms it to where it is palatable to the transmitter.

The OzarkCon "Dummy Load Special" antenna (WA0ITP, in the Summer 2008 QRP Quarterly [1] Idea Exchange section) came close to this concept by incorporating a resistive dummy load in series with a 40' piece of wire. The military has sometimes used similar configurations for compromise but rapid deployment antennas. The Impedance Mollifier provides further protection and more efficient energy transfer. This is not a new concept but I've never seen anything quite this blatant.

Just two parts!

Two resistors; A 25 ohm resistor in series with the transmitter output and the antenna connection, followed by a 75 ohm resistor in parallel with the antenna connection. This will limit the overall impedance mismatch to less than 2:1 VSWR. No matter what is (or isn't) attached to the antenna connection.

If the antenna connection is a dead short then the transmitter will "see" a 25 ohm resistive load. If nothing is attached to that connection then the transmitter will be presented with a 100 ohm load. Anything attached to the antenna port will improve that match.

To accommodate these two extremes, R1 (the 25 ohm resistor) needs to be able to dissipate the full output power of the transmitter. R2 (the 75 ohm resistor) needs to be able to dissipate up to 75% of that power.

Naturally, this convenience does come at a cost. Namely, a loss of at least 4.8 dB. That means that if you attach a good antenna and apply 5 watts then 1.6 watts will be radiated. That might be noticed at the far end. Might not! The more egregious the mismatch, the worse the efficiency, but do you really care? This gadget is just to protect the transmitter while allowing anything as an antenna.

No adjustments. No controls. No options. Ultra reliable. Cheap. Compact. So simple that anyone could use it without instruction.

Impedance Mollifier:

