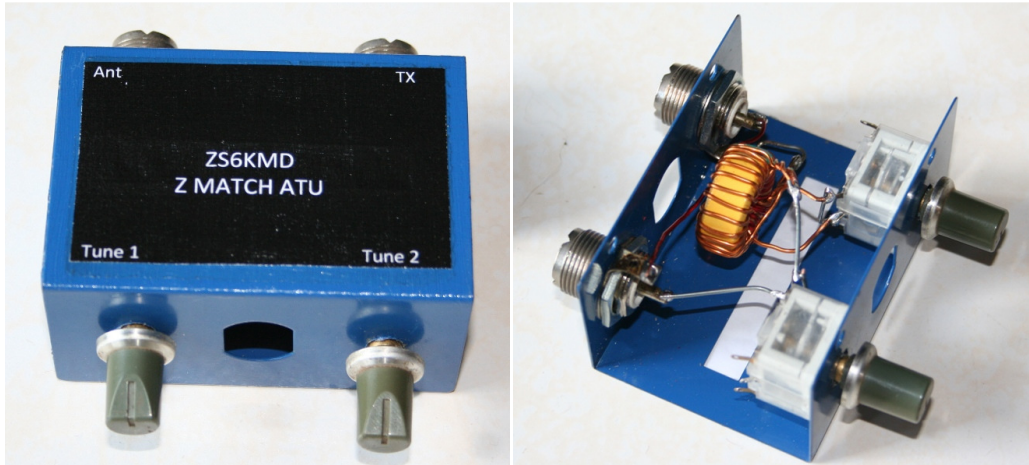


A ZS6KMD QRP Z-Match Antenna Tuner
Based on the design by Phil Salas AD5X



Like Phil, I've been reading about Z-Match antenna tuners for quite awhile now. I wanted to build just such a beast for QRP field work so I did not have to take my home station apart when I went out. Where his design and mine differ is in fact that I have built it specifically for QRP and have yet to include an SWR circuit in it. I have tested it with a few dipoles and a sloper and it has not failed yet. I have tested it to 10W with no arcing.

Tuner Construction

The final circuit shown in Figure 1 is based on Charles Lofgren W6JJZ's article. The only real change made was to go from two switch-selected output links (10-turns and 4-turns) to a single 8-turn output link. The variable capacitors must be insulated from ground. In order to do this, I mounted both capacitors on a piece of perf-board that was cut to be just wide enough to fit the capacitors. Then this capacitor/perf-board assembly was mounted in the case with Superglue. I made my own capacitor shaft couplings from hard plastic and drilled holes through for long screws to extend the capacitor shaft and allow for control knobs to fit.

Operation

Tuning the Z-Match tuner is very easy. First adjust C2 for maximum receiver noise. Then apply some RF power and adjust C1 and C2 for minimum SWR. If you need more capacitance for matching, you can switch in an extra section (or two) of C1 if available, or better yet switch in a fixed mica capacitor across C1. Balanced feedlines terminated in banana plugs can plug right into the SO-239 and adjacent banana jack. For a coax output, an SPST switch grounds one end of the output link as shown in the schematic (Figure 1).

