

Auto-tuner Tuning Range Extender (or Extending the MFJ-927 to 160-Meters)
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Approximately 40-50 uHy of inductance is needed to match a 43-foot vertical on 160 meters. Many auto-tuners don't have the maximum inductance necessary for this. For example, the MFJ-927 remote auto-tuner has 25uhy of maximum inductance. Therefore I decided to add 25-30uhy of external inductance to see if this would help the MFJ-927 tune my 43-foot vertical on 160 meters. I used a 2.5" length of MFJ 4004-0008 coil stock. This is an air-core coil of 16-gauge tinned copper wire, 2.5" in diameter, wound 10TPI. This is a 10" long coil, so there is plenty left for other projects.

The coil mounts in a 4"x4"x4" outdoor electrical box available from Lowes or Home Depot. Use #8 stainless steel hardware for the in/out RF connections. Two binding posts (MFJ 606-0014) permit shorting the coil for normal 80-10 meter auto-tuner operation. The schematic of the assembly is shown in Figure 1, and an internal view is shown in Photo A.

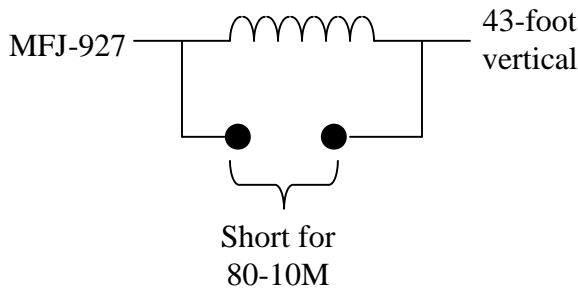


Figure 1: MFJ-927 range extender

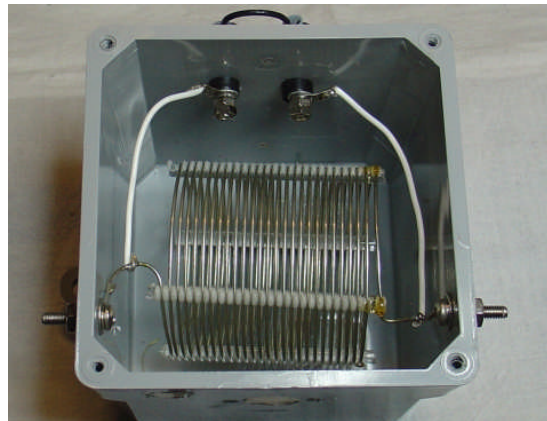


Photo A: Inductor assembly internal view

I made a simple shorting wire using a pair of spade lugs as you can see in Photo B. For mounting, I bolted the assembly to one of the MFJ-927 mounting holes and then connected everything to my 43-foot antenna as you can see in Photo C.



Photo B: 80-10M strapping



Photo C: Inductor add-on with MFJ-927

How does this work? Absolutely great! The MFJ-927 now easily tunes 160 meters. And just like on other bands, initial tuning occurs typically in less than two seconds, and tuning from memory occurs instantly. The only disadvantage (which I consider minor) is that you must manually select 160 meters or 80-10 meters with the external strap. And while this was built for use with my MFJ-927, this same assembly can be used with any auto-tuner that needs additional inductance for matching low frequency electrically short antennas. And the 16-gauge wire used in the coil is sufficient for much higher power levels, such as you might have with SGC SG-235 or CG Antennas CG-5000 high power auto-tuners.