

Convert the MFJ-802X Field Strength Meter ¼” interfaces to RJ11 Phil Salas – AD5X

Introduction

The MFJ-802B Field Strength Meter is great for comparing antennas, and even evaluating antenna performance (such as looking at F/B and F/S). However, being close enough to the MFJ-802B to read it can introduce errors due to your proximity. MFJ gets around this by offering the MFJ-802R Remote Sensor. This sensor can be placed almost anywhere, and interfaced back to the MFJ-802B where you can more accurately read relative field strength without affecting the readings. You can purchase a combination of the MFJ-802B and the MFJ-802R – this is called the MFJ-802X.

A shielded cable terminated in ¼” mono phone plugs is the normal interface for the MFJ-802B/MFJ-802R – something the end-user must make or acquire. As there is no real problem due to distance between the two units, you might want to consider building up a 100-foot cable and use it for all applications. However, I came up with what I think is a better idea.

RJ11 Interface Modification

I have tons of RJ11 cables. Every time I buy a telephone, I get RJ11 cables with it, and I keep the cables when the phone is replaced. So it occurred to me that RJ11 cables might be a better solution since they’re essentially free, and most people have them in multiple lengths. And, of course, you can purchase inexpensive RJ11 dual-female couplers to make up any length of interface cable needed. To make the RJ11 conversion, the following parts are needed:

<u>QTY</u>	<u>Description</u>	<u>Mouser PN</u>	<u>Price ea.</u>
2	RJ11 Jack w/4” wire leads	154-UL623K4	\$1.48
2	0.01uf capacitors	80-C410C103K5R	\$0.13
2	0.10uf capacitors	80-C412C104K5R	\$0.17

The conversion is simple. After removing the original ¼” phone jacks in the MFJ-802B and MFJ-802R, simply nibble out the holes into ½”-wide by ¾” long slots so the new RJ11 jacks will slide in (you can find detailed RJ11 connector dimensions on the Mouser web site). Once you slide the RJ11 jacks into the boxes, use hot glue or epoxy to affix them in place. Photos A & B show the RJ11 jack mounted on the MFJ-802B, and Photos C & D show the RJ11 jack mounted in the MFJ-802R. I added a piece of black electrical tape to the inside of both jacks (you can see it in Photo C) just to keep dust and dirt out of the units. I used the red and green wires on the jacks, but any two of the four wires can be used as long as the same wires are used in both units.

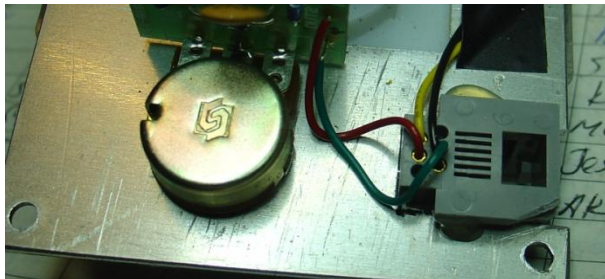


Photo A: MFJ-802B w/RJ11 jack mounted



Photo B: MFJ-802B outside w/RJ11 jack

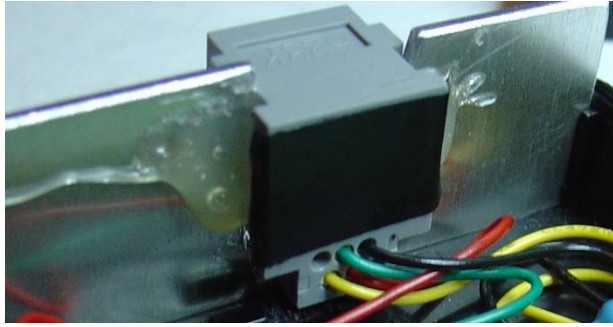


Photo C: RJ11 jack mounted in MFJ-802R



Photo D: MFJ-802R outside w/RJ11 jack

Since the RJ11 interface cables will no longer be shielded, it is important to properly bypass the cables in both units. I simply added a paralleled pair of 0.10uf and 0.01uf across the red and green wires in both units. You can see these in Photo E (MFJ-802B) and Photo E (MFJ-802R).

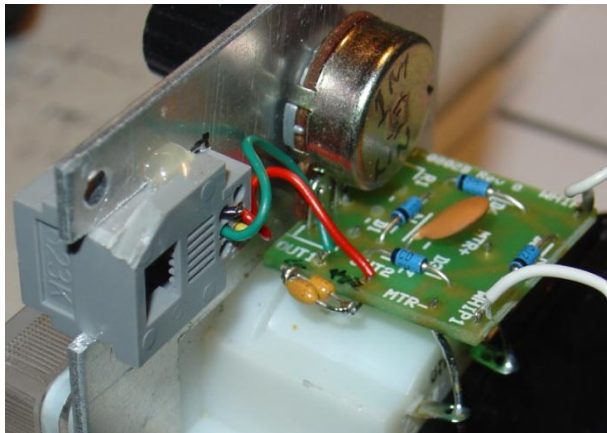


Photo E: 0.1/0.01uf capacitors in MFJ-802B

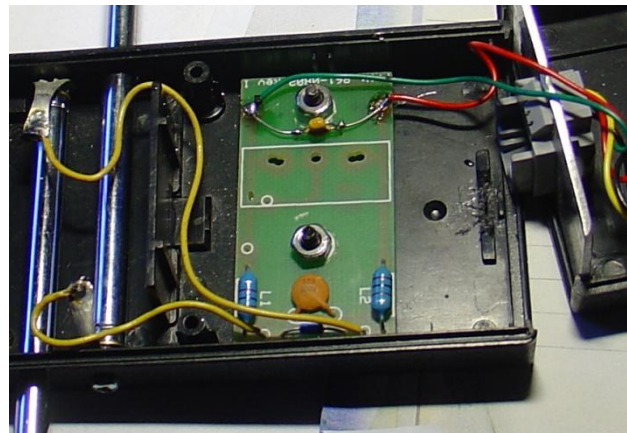


Photo F: 0.1/0.01uf capacitors in MFJ-802R

Conclusion

This conversion works great, and finally provides a use for all those RJ11 cables you've been accumulating over the years.