

A34-1-1

The MFJ-1020 Indoor Active Antenna

by Randy Tomer

Several months back, local IRCAn Edmund O'Leary gave me his MFJ-1020 "Indoor" Active Antenna to try out. I immediately liked the device, and used it quite a bit for awhile. This has its shortcomings (as does any active antenna or preselector used at medium-wave frequencies) but in certain applications it could be an extremely useful piece of equipment for a MW DXer.

The MFJ-1020 is housed in an attractive and compact cabinet. Front panel controls are included for RF gain, RF tune, bandswitching, and on/off. On the rear are RCA sockets for input and output, and a binding post for a ground wire. As Larry Magne stated in the 1981 WRTH, the MFJ's control knobs are too small, and also are stiff in operation, but this didn't bother me much. It is powered by either an internally contained 9 volt transistor battery or by an optional 9 volt power supply, an AC adapter which provides power to the MFJ through a sub-mini jack on the rear panel. I prefer using the battery just to have on less power cord cluttering up the DX shack.

The MFJ-1020 as an active antenna---a short telescoping whip antenna is flimsily mounted on top of the MFJ's cabinet, but it should hold up with reasonable care, or could be improved by the owner. The main difference between the MFJ and other active antennas is that the MFJ is tuneable, instead of being broadbanded as other active antennas are. This is a big plus for MW use, where overloading from strong signals is a constant problem. I was very pleasantly surprised with the MFJ's fine performance on medium wave--with just its two-foot high whip it gives signal strengths approximately equal to my Radio West loop, and practically every night I can use it to listen to 1YC-882, even when conditions aren't very good. Its main disadvantage is that unlike a loop, it cannot be used to null out interference, due to its omnidirectional pickup. Also, the MFJ's noise pickup is quite a bit worse than a loop's. At my location, power line hash is at a fairly high level, and the MFJ was useless unless hooked up to a ground wire. Grounded, it worked well. In a fairly quiet location, it works fine ungrounded. At this location, the MFJ-1020 gave me no overload problems when used as an active antenna, and I ran it at full gain. (Ed. note: Randy has no 50 kw locals; has anybody tried it in a high signal area?)

The MFJ-1020 as a longwire preselector---By retracting the MFJ's whip and attaching an outdoor antenna, this unit can be used as a preselector. However, in the presence of strong local signals, the MFJ is completely useless as a preselector, even when used with only a 30-foot outdoor wire. Even with the gain control set at minimum, my locals caused sideband splatter sounds to be heard all over the dial, as well as cross modulation and other spurious responses. Since my locals run only 5 kw max, you can imagine how bad its performance would be in a metropolitan area. At night, when my locals reduce power or sign off, the MFJ was useable as a preselector. It produced a useable boost with all my receivers, but was most useful when used with my FRG-7, which doesn't like a short random wire on MW. Adjacent channel splatter and atmospheric noise are also boosted, so the gain provided isn't 100% useful, but under very quiet conditions and without strong adjacent QRM, the MFJ-1020 might conceivably pull an ID out of the mud for you.

Portable and mobile use---I feel that this is where the MFJ-1020 really shines. I've tried several ways of matching an automobile's whip antenna to my FRG-7 and SPR-4 and always got very poor results. However, when using the MFJ between the whip and receiver, amazingly good results were had. The MFJ is also handy on camping trips, either used with a car whip or just attached to a short length of wire tied to a nearby bush or tree. For the travelling all-band DXer, the MFJ could also be very useful. Its MW pickup equals a loop, yet it's much more portable and less fragile. It does well on longwave down to 250 kHz and works well enough on shortwave. It would probably do extremely well if hooked up to a 9-foot whip in a car.

Additional comments---The tuning dial is inaccurately marked. Improved sensitivity can sometimes be obtained by trying different combinations of tuning and bandswitch positions. When the power is shut off, any external antenna connected to the MFJ will feed the receiver directly, handy for making quick comparisons and checking for possible overload. Its LED power indicator didn't seem to drain the 9 volt battery excessively. Price is \$80, far lower than some of its competition.