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A NEW(?) AID: THE RECEIVER MULTICOUPLER by Matt Stutterheim

There is one gadget I use around the shack, which I've never seen mentioned in the DX literature: The Multicoupler. What it is, what it does, and what it might be used for is discussed herein.

What is it? A receiver multicoupler is an electronic device which will take a signal from an antenna (long wire, loop, Beverage or whatever) and deliver it to as many as six or eight receivers without interaction. Generally, these multicouplers are wideband (that is, they cover a wide range of frequencies) so that the receivers attached to them can tune around freely in the HF bands. But they are not restricted to the HF or shortwave bands; they also exist in longwave and VHF/UHF versions. Generally they originate from the military, where one receiving antenna is used to drive eight or more receivers tuned to different frequencies. This type of broadband frequency coverage used to be called a "video amplifier" when I was growing up, because a TV signal is over 5 MHz wide, and where there was a need, invention followed.

A multicoupler will generally have no gain per se; put in a 30 microvolt signal, and you'll get six or eight 30 uVolt signals at the outputs. Put in the entire radio spectrum at the input and you'll get the entire spectrum out six times to feed six receivers, each of which can then tune around at will, without affecting the others. Not even a dead short at one output will result in any change at any of the other outputs.

The result is that you can now monitor with as many receivers as you want, as many frequencies as you want simultaneously. One obvious use: bring it along on a Beverage DXpedition! There'll be no need to switch the antenna between different receivers, since they'll all be hooked up, all the time. In dabbling with these things the last year or so, I've learned the following: they take all forms. I now have four different types: A Lear Lear-Siegler tube unit covering 2-30 MHz (big and heavy), a Wiltek-108 solid state unit (about 8x5x12 inches) covering 2-30 MHz, but which now covers down to 500 kHz with a minor wiring change, and two Rohde and Schwarz units covering from 10 kHz to 1600 kHz, and 1600 kHz to 30 MHz. These are tube units, but exquisitely made.

I found these at flea markets (the Ham radio types) and by ads in the "Yellow Sheets". They don't show up often, but since most hams are not interested in receive-only equipment, I've usually been the only one to call or write. At one time I picked up 10 of the Wiltek units for \$500. They were new, and I distributed them to a few DXers with multiple receivers.

If you see a multicoupler at a flea market, you may be hard put to identify it and recognize it for what it is. Generally any gadget with a lot of antenna sockets on the back is worthy of a second look. Unless there's a nameplate listing the frequency range, I wouldn't touch it. Most units seem to have been designed to cover the shortwave range, and list 2 MHz as the low end. But since they use input filters with 6 dB per octave slopes, there will usually be at least good coverage of the upper end of the ECB. A high-pass filter (it cuts everything below a certain frequency) can sometimes be bypassed; I've done this to my Wilteks, and I find no loss of sensitivity or gain in the ECB range. If the filter is not a separately identifiable circuit, then the going might be tougher, so opening the unit up might be worth it.

A multicoupler can reduce the number of antennas you have down to one. Presumably this would be a longwire, or an active antenna like a McKay Dynek DA-100, which is what I use. If you're listening to a station on one radio, you could fire up a second radio and listen to a second station without a problem.

This ability to simultaneously use several receivers offers up some interesting DXing possibilities. You could check for SW parallel stations on TA/TP/TA stations without losing the one you're listening to. You could also use the multicoupler to give you a fixed signal on one receiver, while you use a second receiver to fool around with filters, phasing units, and the like.

If you have a radio at bedside, away from you "shack", you could feed the bedroom radio with a signal from your best antenna. Or you can have a separate receiver for MW, then feed the audio to a stereo tape recorder on one channel and record the DX station on the other channel. Both signals could come from one antenna. And of course, this provides the ultimate way to compare DX rigs. Since each of the outputs is identical to the input, you can now compare receivers without worrying about one input "loading down" the other input, or having to switch antennas.

I collect receivers, and mine are all hooked up to multicouplers, just to settle "what's the best receiver?" questions. (I'm not telling!) What will they cost? I've paid from \$25.00 to \$112.50 for my multi-couplers. The highest price was paid for the unit which covered from 10 kHz to 1600 kHz--a rarity, and ideally suited for ECB and longwave DXing. The Wiltek's show up periodically, as they were CIA/NSA/Navy issue, and many were ordered but not too many put into service, so they'll probably be new. They are also the only solid-state ones I've seen. Fair Radio Sales in Lima, Ohio, had a tube unit in a recent catalog, but I didn't buy one so I can't comment on it. And then, there are those ham radio flea markets!

--although the following is not directly related to MW reception, it might be of interest to those owning the Sony ICF-6500W.

FM Display Problems in the ICF-6500W
by Kraig Krist
Perhaps others can benefit from my recent experience with a Duracell "C" battery and a SONY ICF-6500W. When I first purchased the ICF-6500W from EEB in 1984, I had to return it within several days due to an erratic FM frequency display. When I tuned in around 100 MHz the display went berserk. The frequency would change, some being actually beyond the standard FM band, and some were lower than 100MHz. However, the audio or actual station being received did not change. When I returned the radio to EEB I was given a replacement without any problems.

In 1985 I modified the ICF-6500W to include a narrow filter as per Gerry Thomas' mod kit. The selectivity was vastly improved. I was able to receive stations that I could not receive before doing the mod. Since the mod, the ICF-6500W has become a "man's best friend" to me. I've taken it on vacations and have taken it outside numerous times. I also listen to it (using the earphone to the approval of my wife) before falling asleep at night.

On June 19, 1986, I was attempting some FM DX when the frequency display became erratic. "Oh no", I thought, "this is the same problem that I had with the first ICF-6500W." But I could not return it this time as I had modified it. I tuned through the FM band several times and the display problem only got worse. Since I was using batteries I decided to use the wall transformer to determine if the power supply was causing the erratic display.

To my surprise once I plugged the wall transformer into the radio the frequency display problem stopped! I tuned through the FM band several times to see if I could duplicate the erratic display. Everything as it should. I concluded that a battery or batteries had gone bad.

I got out my VOM and measured the voltage of each battery that was in the radio (it takes 6). When I tested the 5th battery the VOM needle went the wrong way! I thought that I had put the test leads on the wrong poles, but negative was on negative and positive was on positive. The battery had become reverse charged somehow!

I replaced the batteries, putting in a fresh battery for the 5th one, and disconnected the wall transformer. I tuned through the FM band several times and everything worked as it should. I surmised that the battery had discharged enough that the stronger batteries in series caused it to become reverse charged. I concluded that perhaps my initial display problem with the first radio was also caused by a power supply problem. However, the erratic display might not have been so simple to fix.

If anyone else with a SONY ICF-6500W experiences an erratic frequency display on FM, check the power supply. It might be an easy problem to fix! An interesting side item: I left the reverse charged battery sitting on a table by itself for two days (so I would remember to write this article). But when I tested it again with the VOM for the heck it, it was back to normal and no longer reverse charged! "...there's a sign post up ahead. Next stop the Twilight Zone."