

Hi.

Here are some basic notes on the multicoupler.

First. I'd like to thank Steve Ratzlaff of the NDB reflector who used "Paint" to redraw my hand drawn schematic and put it in PDF format.

1. Transistors are common CB driver transistors. I'm sure that others such as the SK or NTE general replacement types can be substituted with no degradation, though I haven't tried them.
2. Output transistors are heavily biased at about 120MA each to allow for maximum signal handling capability. As such, each transistor dissipates about 1 Watt and needs some heatsinking to prevent overheating. (I used small finned heatsinks salvaged from scrap gear).
3. The 51 Ohm resistors in the output emitters also dissipate about a Watt and should be 2 Watt units (not marked on schematics).
4. Though extended use of the multicoupler has not turned up any instances where a weak signal was degraded over a direct connection to an antenna you may wish to check this for yourself. No extensive testing has been done to determine total usable range, though I have managed to "push" FM broadcast signals through it with some loss.
5. If you don't have any strong AM broadcast band stations in your area you may be able to remove the input BCB reject filter so as to be able to use the unit in the BCB range. In this case, LEAVE the 51 Ohm input resistor installed to insure stability. This input filter was added after some MINOR IMD products from two local BCB stations showed up in the 100KHz region.
6. The 10 Ohm series resistors to the output connectors were added to eliminate some instability when used with receivers with highly reactive input circuits such as those with tunable input preselectors. Before their addition I had some VHF parasitics show up on the Yaesu VR-5000 connected to one "channel" when I "tuned" the preselector of the R-100A receiver connected to another channel.
7. The 2.2 uF Tantalum bypass capacitors also have a .01uF ceramic capacitor in parallel with them.
8. I built my unit with 4 outputs. BNC connector for the input, two BNC and 2 SO-239 chassis mount connectors for the outputs. You can add additional output circuits as needed. I DO NOT know the maximum number of usable outputs.

Most homebrewers will use what they have available. Good RF practice should be observed and you can use either a PC board (I use the R/S universal board) or build it "dead bug" style on copper clad board. In the latter case the Copper clad "may" be usable as the heatsinks if components are spaced out and grease and insulating washers used.

Parts suggestions: (what I used)

1. R/S Universal PC board 276-168
2. Metal Cabinet 270-253

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