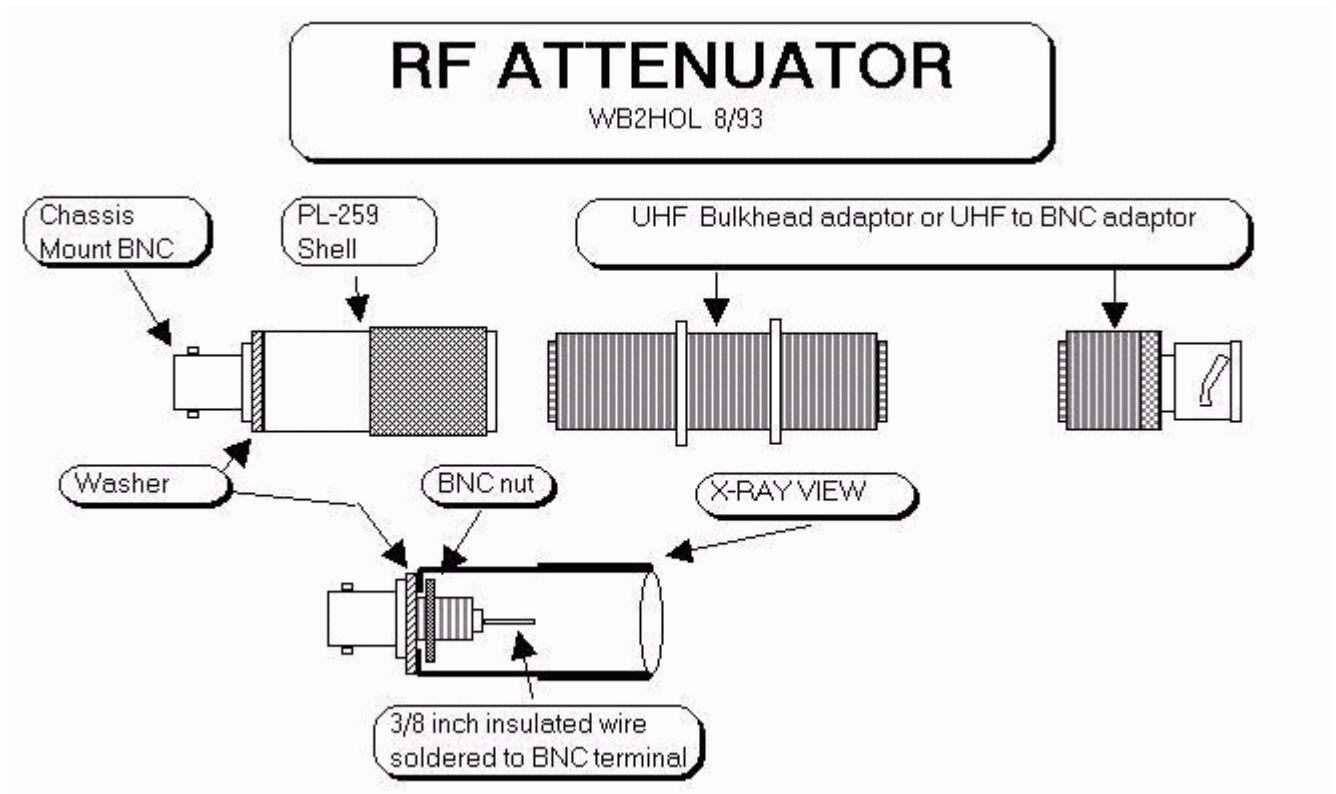


SIMPLE ADJUSTABLE PASSIVE ATTENUATOR

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This adjustable passive attenuator works as a "waveguide beyond cutoff." It can be constructed in about ten minutes from parts available locally.



This attenuator was the result of a search for an inexpensive attenuator which could be used on an HT to help beginners equip themselves for a hidden transmitter hunt. The 3/8 inch piece of wire will extend into the center conductor of the bulkhead adaptor forming a small capacitor. The coupling between the two conductors will vary as the PL-259 shell is turned further onto the bulkhead adaptor.

If you are able to find a BNC to UHF adaptor with a long threaded portion, you may use it instead of the bulkhead adaptor.

The maximum attenuation available depends upon the length of the wire soldered to the chassis mount BNC connector. A service monitor measured a loss of up to 36 dB. With the cost so low and construction so simple, many hams have made several with different length wires.

Although 36 dB may sound like a lot of attenuation it will not be sufficient when on most transmitter hunts. This passive attenuator project is aimed at the beginner who is armed with only an HT and is attempting to use the "body-fade" method of Radio Direction Finding. The passive attenuator can be put in-line with the existing rubber-duck antenna and adjusted so the signal no longer is full scale on the S-meter.

Tuning off frequency by 5 or 10 kc, listening for the third harmonic, using a foil wrapped tube as an RF shield around the HT, or even wrapping aluminum foil directly around the HT are all methods which will help to some degree. One or more of these techniques will reduce the signal to where a "S" meter reading peak (or null) gives you a clue to the direction where the transmitter might be found. (If you do wrap aluminum foil around your HT, put some tape over any exposed battery charging contacts. Otherwise, the foil may get a bit warm as it rapidly discharges the battery)

When closer to the fox, more signal will enter the HT through the case than through the antenna. At this point, other methods must be used to locate the fox transmitter. The most effective attenuator in most cases is an "active attenuator." They can offer over 100 dB of attenuation. Plans for one are available [here](#).

Construction Details

This BNC to UHF adaptor has a raised knurled portion of the barrel which prevents the PL-259 shell from being tightened completely. (The BNC and insulated wire do not "bottom out" when tightened all the way) You can file that section of the adaptor down and enjoy more range in available attenuation.



Looking in at insulated wire I soldered the wire to the BNC before mounting it in the PL-259 shell. I used a length of wire clipped from a 2 watt resistor. (Use any stiff wire) I then forced a small length of insulation stripped from another piece of wire onto it. By using this method, the insulation does not melt during assembly.



I used a "star" washer. It was just the right size. The washer prevents the BNC connector from falling through the PL-259 shell. The hardest part of the construction is tightening the nut on the BNC connector. I usually wedge a screwdriver in the shell to hold the nut and tighten the BNC from the outside.

