

BC ANTENNA COUPLER

Zoom in on those distant stations with an external antenna, and you don't even have to wire it up to your radio!

By Larry Lisle, K9KZT

YOU CAN TURN AN ORDINARY AM RADIO INTO A SUPER signal sniffer by adding a good antenna. With a good antenna you can hear those weak, but often times very interesting, stations, such as those operated by many state universities during the day. At night you can hear stations from thousands of miles away—even from overseas!

In the old days most console and table-model radios sported a connection for an external antenna. Today very few receivers have them, but you can still add an external antenna—with the *BC Antenna Coupler*.

How it Works

The BC antenna coupler (see Fig. 1) is simply a parallel-resonant circuit made up of coil L1 and capacitor C1. Signals captured by the antenna are fed to the coupler, where those at the resonant frequency are passed on to the receiver's loopstick antenna coil by inductive coupling with L1. Moving the coupler close to the radio increases the transfer of energy, while backing it off a little will help the selectivity and cut down on interference.

Construction

Building the BC Antenna Coupler is a snap, even if you've never built an electronic project before. The variable capacitor needed for the project can be salvaged from an old radio and is mounted on its side. A brass corner brace is used to secure the capacitor to a 3×16-inch piece of wood. A Fahnestock clip is placed under the screw that attaches the capacitor to the bracket.

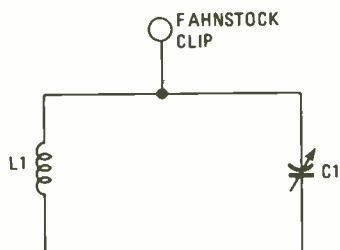


Fig. 1—Believe it or not, this schematic diagram contains all the components you'll need to build the BC Coupler. It can be built from parts you can salvage from any old radio.

PARTS LIST FOR BC ANTENNA COUPLER

C1—365-pF variable capacitor.
L1—Hand-wound coil (see text)

A baseboard 1×3×16 inches; 1-inch diameter dowel; knob to match the capacitor; Fahnestock clip; three brass corner braces; four ½×4-inch wood screws; 30-foot wire for antenna; alligator clip (see text).

The coil is wound on a 1-inch dowel, 11 inches long. Anchor holes are drilled through the rod 2 inches from each end, and the coil is wound between them with #22 enameled wire. Make sure the coil's lead lengths are amply long, and secure the coil to the board with a pair of corner brackets.

Trim the coil leads as appropriate, then scrape or sand the enamel off the ends of the wire from the coil and connect the end of the coil nearest the capacitor to the Fahnestock clip, and the wire from the far end to the stator (stationary) plate contact. You can solder the wire as shown or use an alligator clip. If the variable capacitor has more than one set of plates use the largest section only. Don't use the screws sometimes found on the sides of variable capacitors for attaching wires.

The Antenna

Although I've had very good results using just 30 feet of wire indoors, for best results an outdoor antenna that is long, high, and in the clear, is hard to beat. You can use regular insulators to keep it away from metal objects, but rubber bands will also work. The wire for the antenna can be any diameter. You can make an almost-invisible antenna by using very-fine gauge wire. The antenna should be attached to the coupler at the Fahnestock clip. Later you might want to experiment with directional antennas, such as the loop or beverage.

You can have a lot of fun just tuning around the dial. You'll be surprised how far you can hear even low-power stations during the day with a good antenna, and at night signals from all over the nation can be heard.

Listening to far-away stations on the AM-broadcast band was my first introduction to the wonder of radio and electronics and I still get a kick out of it. ■