

Heathkit of the Month:
by Bob Eckweiler, AF6C



The Heath AC-1 Antenna Coupler

More Heath History:

Heathkit's ham radio beginnings started with a simple 35-watt CW transmitter, the AT-1. AT evidently stood for Amateur Transmitter. The three-tube transmitter first appeared in 1951 and remained in production into 1956. The transmitter covered 80, 40, 20, 15, 11 and 10 meters (Eleven meters was a ham band back then). When the AT-1 was introduced, the only shortwave receiver Heath offered was the AR-1 that had come out in 1949. The AR-1 only covered up to 20 MHz so it was a poor companion for the new Heath transmitter. In late 1951 Heath replaced the AR-1 receiver with the AR-2. It featured increased coverage to 35 MHz and better bandspread capabilities. In late 1955 the AR-2 was replaced with the AR-3 that incorporated further improvements, but the upper frequency range was lowered to 30 MHz. The AR-3 remained in production into 1961.



Heathkit AT-1

The AT-1 Transmitter used a link coupling scheme to feed the antenna that was designed for 52 ohm coax. It could not feed random wire antennas, which made operation on multiple bands difficult unless multiple antennas were erected. Heath solved this problem by introducing the Heathkit AC-1 Antenna Coupler.

The Heathkit AC-1:

The Heathkit AC-1 antenna coupler first appeared in 1953 as an accessory for the AT1, as well as other non-heath transmitters of the time. It was capable of handling up to 75 watts. The AC-1 is housed in a small cabinet 8" W x 4-3/8" H by 4-7/8" D excluding knobs and connectors. The antenna coupler features a copper plated chassis. The AC-1 sold for \$14.50 in the 1956 Heathkit catalog.



Heathkit AC-1 Antenna Coupler

The circuit of the AC-1 is shown in figure 1. Input from the transmitter is applied to the 52 ohm input connector. After passing through a three-section low pass filter with a cutoff frequency of about 36 MHz to reduce TVI causing harmonics, the RF is fed into a simple 'L' matching network consisting of a tapped inductor and a variable capacitor. A five-position switch selects the inductor tap. One side of an NE-51 neon lamp is connected to the output of the 'L' network. The other side relies on stray capacitance to complete the path to ground. The relative brightness of the neon lamp is used as a tuning indicator. The output of the 'L' network is also directly connected to a feed-thru output terminal on the front of the AC-1. The end of the single wire antenna connects directly to this terminal.

The single item on the rear of the AC-1 is the 52 ohm input, an SO-239 UHF connector. The front panel contains two controls, a neon lamp used for tuning, and a feed-thru output termi-

nal for connection of an end-fed wire antenna. The two controls are a switch marked **Coarse** that selects the tap on the matching coil, and a 250 μf variable capacitor marked **Fine**.

will be discussed in detail in an upcoming column.

73, from AF6C



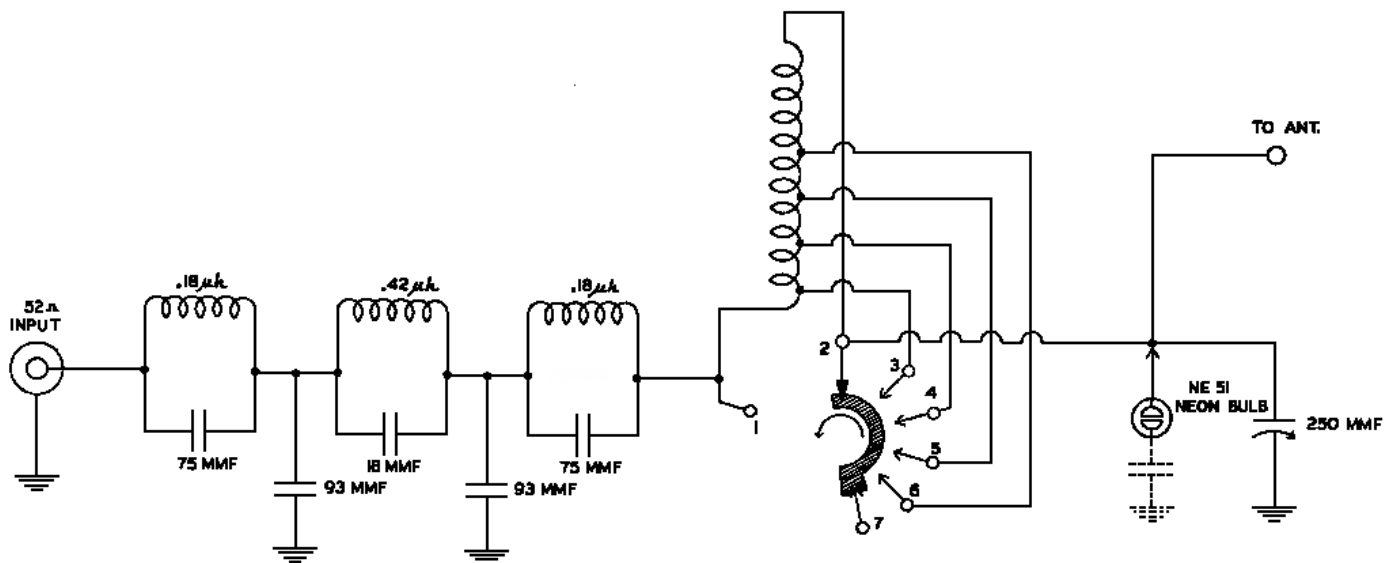
Heathkit continued production of the AC-1 until the end of 1956 when the AT-1 ended production. By then Heath had started on their DX line of transmitters that were the topic of the April and September Heathkit of the month articles.

Remember if you come across any old Heathkit Manuals or Catalogs that you do not need, please pass them along to me.

Thanks - AF6C

Heathkit went on to produce more antenna tuners, some basic and some sophisticated including the HFT-9 (and 9A), SA-2040, SA-2060 (and 2060A), automatic SA-2500 and remotely controlled SA-2550. Perhaps these

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AC-1 ANTENNA COUPLER