

A-86-1-1

it went national, for about a year. Rumors are persisting that a replacement show, of a different format but aimed at the same audience, will begin in mid-1988. It would be hosted by Noah Adams who is leaving rival National Public Radio's "All Things Considered" magazine show. (APR) CBS will again offer radio coverage of the NCAA post-season basketball tournament 3/19-30. There'll also be a pair of call-in shows about NCAA basketball on 3/8 and 3/27. (BC)

Other news: The M Street Journal has moved its editorial and subscription functions to PO Box 16353, Alexandria, VA 22302. Even though this publication is designed for broadcasters, a DXer subscription rate is available. Information listed includes format changes, technical parameter changes, new station construction progress updates and news of FCC rule changes. Both AM and FM are included. (Programming items are from The M Street Journal except BC - Broadcasting, Rp - Radiophiles or named reporters)

RECENTLY ANNOUNCED (and not yet approved) STATION SALES:  
WBGO 560 TN, WPCR 720 NC, WKZY 770 FL, WRMS 790 IL, KNUU 970 NV, KMAS 1030 WA, WFSC 1050 NC, KQZX 1170 IA, KGOL 1180 TX, KYPB 1240 AZ, WSDR 1240 IL, KFMC 1240 MO, KPRE 1250 TX, WJ02 1310 PA, WRAR 1330 NY, WTR0 1330 TN, WLBC 1340 IN, KGNO 1370 KS, WSYB 1380 VT, KRAR 1390 MN, WWIN 1400 MD, WQX0 1400 MI, WLSI 1420 CT, KRXX 1450 OR, WRKB 1460 NC, WTKO 1470 NY, WPMX 1490 IL, KXVQ 1500 OK, WDCR 1520 GA, WRTF 1530 NC, KKDI 1540 AR, WPTF 1540 NY, WGAB 1550 CT, KXAA 1560 SD.  
Discontinued Station Sales: WACN 890 KY, WLSI 900 KY, WSIX 980 TN, WADO 1280 NY, WOOD 1300 MI, WSTV 1340 OH.

\*\*\*\*\*

THE HEATHKIT MODEL HD - 1424  
ACTIVE ANTENNA

A review by Karl J. Zuk



This device was primarily designed to be an active antenna, a small whip antenna that is amplified greatly to provide the electrical equivalent of a much longer antenna. A perfect accessory for an apartment dweller or a condo owner, this could be an excellent alternative when a long or complex antenna is not possible. It covers the frequencies of 300 kHz to 30 MHz in five ranges, and retails for about fifty dollars.

The Heathkit HD-1424 also includes a simple, yet effective tuning system to match the whip antenna to your receiver to optimize signal pickup. For those who can erect an outside antenna, SO-239 connectors, which mate with the popular PL-259 connectors, like those used with most CB antenna connections, are provided. When these connectors are used in conjunction with a standard outdoor antenna, the HD-1424 then becomes a preselector and preamplifier and antenna matching unit. As you can see, it is a very adaptable and versatile device. The unit also works well with a box loop antenna for BCB.

The circuit is fairly simple. The antenna is fed into a tuning system of a variable capacitor and a switchable array of six inductors, which determines what frequency the unit will selectively amplify. After this preselecting tuner, the signal is then amplified by two PN458 FETs, and passes through a limiting gain control, and is then amplified further by a MRF502 transistor before being fed to the receiver's antenna terminals. The output of the unit is a balanced 50 ohms. The unit will accept an unbalanced input, such as a wire connected to the provided whip antenna, or the whip itself. It will also accept a balanced 50-ohm antenna via the SO-239 connector.

The kit went together with ease. Only one or two slight mistakes or confusing directions were encountered. It was built flawlessly in less than six hours including ample time for preliminary testing. It is a near little unit. It is quite small, about half the size of a

large textbook: 2 1/4 x 5 1/4 x 5 D.

Performance was generally quite good. It provides more gain than you can ever deal with. Preselection tuning on BCB is fairly tight. You need to retune every 20 kHz or so for optimum performance. The device falls to unity gain at about 100 kHz from the tuned frequency. The gain control never needed to be opened more than 1/4 of the range allowed. Full open gain overloads most front ends and leads to oscillations. The operating instructions provided with the kit warn of this. One nice feature is its on/off switch. When the switch is off, whatever antenna is connected to the unit is bypassed around the circuit with little or no loss. This makes comparisons before and after amplification quite easy. Also, the bands are laid out to coincide almost perfectly with the receiver I was using it with, a Realistic DX-160. Band A is 300-600 kHz, Band B is 700-1500 kHz, Band C is 1.6 to 4.0 MHz, Band D is 4-12 MHz and Band E is 12.5-30 MHz. There are sufficient overlaps in these factory described ranges to make the coverage continuous.

There were several annoying design flaws. The unit needs bigger knobs, especially the one for tuning. If you operate this unit for any length of time you develop a permanent callous on your thumb and forefinger. A vernier dial would make tuning more accurate and easier. The knob is currently mounted directly to the shaft of the tuning capacitor. Tuning gets very tricky in the Band E range. It would also be advantageous if the design could include one more inductor to bring the frequency coverage down to 150 kHz. Although it only tunes down to about 250 kHz, the preamplifier has enough gain to make it somewhat useful below 250 kHz. It would be nice if it would preselect throughout the standard longwave band.

The provided 25 inch whip antenna is inadequate. To presume that you can amplify signals received by that small an antenna is optimistic. I was disappointed, on first testing this unit, because I heard more amplification noise than signals with this very short antenna. I tried a three section 60 inch whip, made for automotive use, and the improvement was dramatic. A whip this length would not be terribly obnoxious in a household setting, and would make a big difference in signal pickup.

The power for the unit is provided by either a 9 volt battery placed in a holder inside the unit, or an external power supply that can be connected via a subminiature jack mounted on the back of the unit. The power requirements are described as 6 to 14 volts of DC. I found it worked fairly well down to 1 1/2 volts. Mounting the battery inside the unit, without an access door or compartment, is not practical. Granted, the drain is minimal. Most of the power is probably consumed by the "power on" LED indicator on the front panel. My solution was to solder a pair of battery clips to a subminiature plug and plug it into the back of the unit, battery attached. The battery hangs loose, but I'll never have to open the unit to change it.

The only objectionable part of the assembly process was the sandpapering. The two part chassis is spray painted in production. Several cutouts, where components are mounted, need to be bared of paint to make a good connection with the chassis. This a departure from Heathkit's finished chassis of the past.

I've used this unit as a preselecting preamplifier for BCB for several days and have found it quite useful. Last night it helped pull clear audio out of an unamplified unintelligible hot of the German powerhouse on 1593 kHz, using a 40 foot vertical antenna and ground system for signal pickup. A vernier dial would improve this unit greatly. To use the unit as an active antenna, with the provided 25 inch whip, would be just barely satisfactory. A tremendous amount of gain can not compensate for a very short antenna. In this mode, the noise level almost buried most signals. I was very satisfied with the unit using a sixty inch antenna.

I also tried using the unit with a small box loop antenna. The unit had no problem matching the loop to the preamplifier. A noticeable tuning offset occurred, obviously showing that the tuner calibration was altered when the unit "looked at" an electrical equivalent of a short instead of a free whip antenna. It amplified and tuned the loop quite well.

I think this is a worthwhile project, but a few simple design upgrades would make it an excellent unit.