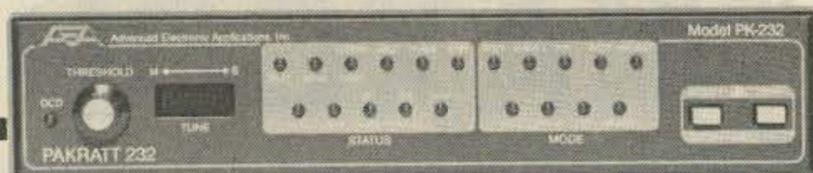


AEA PK-232 PAKRATT

by Perry Donham KW1O

Advanced Electronic Applications, Inc.
PO Box C-2160
Lynnwood WA 98036
Price class: \$320



Number 10 on your Feedback card

Two years ago, when AEA came out with the PK-64 PAKRATT™ for the Commodore computer, many of us began to wonder when we'd see a PAKRATT for a generic machine. I think there was quite a bit of envy, too, as the non-C-64 owners saw how much fun it was to have a complete station controller run from the keyboard. Finally, there's some relief. AEA's PK-232 is designed to interface with any computer having an RS-232 port. And, maybe to make up for the long wait, the PK-232 is a classier unit.

The PAKRATT concept is this: AEA decided to put all of ham radio's digital operating modes into one station controller. The PK-232 will run Morse, Baudot RTTY, ASCII, AMTOR, and packet; all modes are selectable from the keyboard. All you have to do is plug a computer into the 232, run a cable over to your rig, and you're on the air!

Front Panel

The first thing that you'll notice about the PK-232 is the front panel and its twenty LEDs. The display is grouped into two sections: STATUS and MODE. Everything that you need to know about your operation is right here. MODE LEDs show not only the five basic modes, but also the "sub-mode" (FEC, ARQ, or Listen) on AMTOR. STATUS LEDs keep you in touch with what your transmitter is doing, what state the PK-232 is in, whether or not you're connected to another station, and so on. In a glance you can see exactly what's going on in the shack.

Two rigs can be attached to the PK-232; the RADIO 1/RADIO 2 switch selects which of them is active. Wiring in both a VHF and an HF transceiver gives you great flexibility of choice; the VHF and WIDESHIFT commands let you pick the appropriate tone pairs for operation on HF or VHF.

A ten-segment LED tuning display makes it very easy to net stations in on RTTY. The display is like a tiny spectrum analyzer which lets you look at the mark and space frequencies of the RTTY signal—with a little practice you can jump right on top of a station and even tell what shift is being used. For the purist, an oscilloscope output is provided on the rear panel.

Modes

The PK-232 handles just about every digital mode available to amateur radio operators. Modes are selected from the keyboard; it takes only a few keystrokes to jump from one to another. Each mode defines special keys to perform certain functions—you can turn your transmitter on and off with Control-X and Control-D, for example. The software folks at AEA spent a little time thinking about the codes to use, and as a result you'll find yourself quickly remembering which letters do what.

• **RTTY**—Typing "BA" from command mode will give you a full RTTY system. The unit will handle Baudot code at five standard speeds: 45, 50, 57, 75, and 100 baud (60, 66, 75, 100, and 132 wpm), selected by the RBAUD command. One blessing is the unshift-on-space feature which forces a switch to letters when a space is received. This comes in especially handy if you're copying things like news reports that have times and dates in them on a less-than-perfect channel. Sometimes the machine will read the shift to numbers but miss the shift back to letters. Without UOS you can end up with a few yards of nothing but numbers on your printout.

Another neat feature is the CCIT command which automatically translates characters into the International Telegraph Alphabet Number 2 used by many DX stations. You can type

away and not have to worry about whether what you send as English comes out looking like Serbo-Croatian on the other end.

The PK-232 treats ASCII as a separate mode. Speeds supported are 45, 50, 57, 75, 100, 110, 150, 200, and 300 baud.

• **AMTOR**—This little-understood mode should gain some popularity with the introduction of the PK-232, since the PAKRATT makes it so easy to use. It's a bit complicated at first (there are a lot of obscure names for the different phases of operation), but the AEA manual leads you through an AMTOR QSO step by step, down to telling you which keys to press and when to press them. I think that part of the challenge of AMTOR is just figuring out how to talk with someone!

• **Morse**—The PK-232 deals very well with Morse sent from 5 to 99 wpm. The manual warns you not to expect miracles when trying to copy a poor fist, but I found the decoding algorithm to be pretty forgiving. There's a feature that sends BTs as filler characters, which I found a little annoying. I've always considered Morse keyboards to be a little silly, and this one is no different, but I must say that I was impressed by the 232's ease of use. If you're into CW keyboards, you'll definitely like this one.

• **Packet**—I have to admit that I consider the PK-232 to be a TNC that happens to have RTTY, AMTOR, and CW stuck in on the side. The 232 is a complete AX.25 level 2 TNC, and you can pick either version 1.0 or version 2.0. Up to ten multiple connections are available for those who tend to be slightly schizophrenic.

One of the best features is a complete set of MONITOR commands which let you keep track of who's on the channel, what path they're using, and what time they're on (using the built-in clock). You can also filter out stations that you'd rather not see on the screen, such as crazies who beacon every 10 seconds or BBSs spewing out last week's propagation bulletin. Speaking of beacons, the PK-232 will let you know if it thinks you're beaconing too often! (I think that it should display the "beaconing too often" message any time a beacon is turned on.)

You can switch very quickly from VHF to HF packet just by hitting the RADIO 1/RADIO 2 button and selecting the appropriate tone pair; it takes about 10 seconds.

Overall

I was impressed with the PK-232. As I mentioned, I would buy it primarily as a TNC and justify the added expense by using the other modes now and then. You could, I suppose, buy it as a RTTY TU and use it on packet and CW now and then. The big selling point is that you get all five modes right at your fingertips out of one small box.

The unit is built with the usual AEA attention to quality and I expect it to run practically forever. I didn't have any trouble at all with interference to or from the computer.

If you have any interest at all in using digital modes on ham radio, I would strongly recommend buying the PK-232. Reader Service number 214. ■

Heathkit HS-148 Compact PC

by Perry Donham KW1O

Heath Company
Dept. 150-815
Benton Harbor MI 49022
Price class: \$900

Number 11 on your Feedback card

You can't go to a hamfest anymore without seeing at least two companies selling IBM PC-compatibles. This year's Dayton Hamvention had six! Hams are buying up these units faster than surplus HTs; I have the feeling that the days of the VIC-20 and C-64 are numbered.

The reason that these units are selling in such volume is the price/performance ratio.

As the price of clones falls, it gets to a point where it's just silly not to buy one. Why spend several hundred dollars on a C-64 with a monitor and drives when for a few hundred more you can pick up a computer that's IBM-compatible and comes with 360K drives and 256K of RAM?

The real question, then, is where to buy your

computer. I spent several months wandering the hamfests, observing seedy-looking salesman handing out mimeographed information sheets. The prices were fine, but somehow I didn't believe that I would get much support if I ever needed help. Then one day I wandered into the Heath booth.

Heath's HS-148

Heathkit sells several PC-compatibles. I chose one on the low end of the scale since I really didn't need coprocessors, multitasking, and networking. The HS-148 kit seemed to perfectly fill my requirements for a low-cost, multipurpose machine that would let me do word processing, programming (in languages other than Basic), and would have the ability to control the shack.

The basic HS-148 comes standard with 256K of RAM (expandable to 640K), one 360K half-height disk drive, a monochrome monitor, and the MS-DOS operating system. The keyboard is full-size (including 10 function keys) and has an excellent feel. Both composite monochrome and RGB video are supported, and one parallel and one serial port are brought to the back panel.

The processor is an 8088 16-bit CPU running at 4.7 or 8 MHz. A front-panel switch lets you select the clock speed; so far I've toggled to 4.7 MHz only once, to see how much slower things ran (noticeably slower). There's a spot for an 8087 numeric coprocessor, and Heath offers the chip as an option for \$285. I can't think of many applications that need the extra number-crunching capability, especially in a home environment.

All of the cabling for drive B is in the kit. Heath's second drive retails for \$200; I suggest buying one mail-order for half the price (Jameco has one for \$109). As long as the drive is PC-compatible you should have no trouble—just bolt it down and plug it in. Wherever you get it, it's well worth the extra price for the second drive.

There are no expansion slots on this machine. You've got the built-in parallel and serial ports to work with, but if you need more than that you'll have to buy the ZA-141 Daughter Board for \$99. This unit is installed above the I/O board and allows the use of one additional plug-in board (a standard PC has seven expansion slots). I have a couple of applications that require joysticks, so I'll probably end up using the ZA-141 in conjunction with the PCS-110 Game Port (\$69.95).

Construction

The computer came in two giant boxes. It took about ten minutes to pull everything out, and only another hour to completely assemble the system. There is no soldering going on here—you just bolt things down and plug them in. I knew it would go quickly, but I was still surprised when I looked at my watch! The construction manual is very thin; about half of it deals with installing disk drives.

The computer comes in two parts, a CPU section and an input/output section, which are connected to each other with a 60-conductor cable. Sockets for two additional banks of RAM are provided on the CPU board. Expand-

ing memory to 640K is extremely simple—you just plug the memory in and set a few DIP switches to tell the processor how much RAM to expect. It takes about three minutes. I would suggest not buying extra memory from Heath. I hate to keep knocking Heath add-ons, but they tend to be a bit pricey (their 256K RAM sets are \$80, while you can pick up the same parts at Jameco for about \$30). If you're not comfortable mucking around inside a computer, spend the extra bucks and get Heath's excellent instructions and support.

Operation

Once things were all together, I raced through the diagnostics and grabbed Micro-Soft's Flight Simulator off the shelf. I figured that if the HS-148 could run this, it could run anything! I managed to fly right into the Statue of Liberty with no problem. Some of the packages I've run are WordStar, SideKick, CrossTalk XVI, and the Perfect series of integrated software, all with no hitches.

I'm Happy

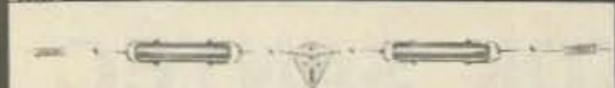
I've been extremely pleased with the HS-148 computer. Assembly was a snap (literally!), and the thing has run flawlessly from the first time I powered it up. It's faster than my IBM PC, and smaller and lighter, too. I like the keyboard a lot (better, I think, than the IBM's and infinitely better than Leading Edge's), and the display is sharp. It runs every scrap of software I've fed it without blinking.

The documentation is about as heavy as the computer and very complete. You also get a set of docs for MS-DOS. There's more stuff in these books than you'll ever want to know.

Is it worth the extra hundred or so dollars to buy a clone from Heath? I think it is. First, I trust Heath's quality control. I've built several Heath kits and have had no trouble whatsoever with them. Second, I know that if something goes wrong, I can call Heath on the phone and they'll help me. They have people whose job it is to do that. Finally, I can join Heath's User's Group and get access to cheap software!

Heath's Christmas catalog has the HS-148 and all of the accessories in it; you can get a copy by writing to Heath Company, Dept. 150-815, Benton Harbor MI 49022, or check Reader Service number 215. ■

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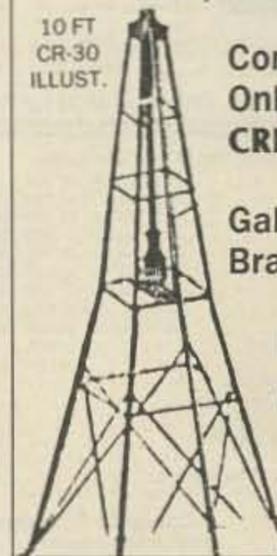
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