

# Kaypro Column

By David Thompson

A lot of people have called asking if the 8" interface for the Kaypro really exists. Yes, it does (in the flesh or a facsimile), and it's available.

You get the Pro-8 version 2 features (if you have an 83 Kaypro), or the Pro-8 MAX features (if you have an 84 Kaypro). With either you can run up to four drives on your system. A: and B: can be any type of 5" drive; C: and D: can be any type of 5" or 8" drive. Double-sided 8" drives will read and write single-sided, single density 241K disks (like the SIG/M disks) as well as single- and double-sided double density disks (600K and 1.2 meg). That's 16 sectors of 512 bytes per sector, 77 tracks.

If there's room in your system, the monitor will also read and write 1024 bytes per sector in double density. This gives you 670K per single-sided disk and 1.34 meg per double-sided disk. You can make room by moving CP/M down 1K.

The price for the 8" board is \$190. You need to specify whether your system is '83 or '84. If you have a Kaypro II-83 (the monitor ROM's paper reads 81-149), then you'll need to do the II to 4 upgrade. See issue #15 or #24 for upgrade information.

It's easy to install the board. Just unplug the 1793 floppy disk controller chip, plug in our board, and then plug in the 5" and 8" drive cables.

You supply the 8" drive(s), cabinet, power supply, and cables. There are many sources for drives, and many different types of 8" drives. Siemens drives are the standard on the surplus market. They aren't the best because the stepper motors die if you use them a lot, but they're cheap (\$100 - \$130 single-sided and about twice that for double-sided).

Cascade Electronics usually has a variety of slightly used Shugarts. Check with them; their drives and service are consistently good, and they also may have power supplies and cabinets. Their number is 507-645-7997.

If you want to go fancy, you might consider the Mitsubishi 8" half-height double-sided units. They look good, and they don't require 110V AC, so

you can run them in portables.

Some say it's a contradiction to talk about portable systems with 8" drives, but you can ignore those people.

## 286i

Most of the systems in our office haven't seen their boxes or their tops since the day they arrived (unless they're systems we built, which means they never had tops). However, our second 286i sits forlornly on the floor in its unopened box.

It's not that we don't have great plans for the system. We do. In fact, we've spent a good deal of time trying to add a hard drive to the 286i. We haven't even gotten it to select the Winnie. The system supposedly supports a number of different hard disks (they are numbered between 1 and 14), but we don't have a comprehensive list yet. The 20 meg Tulin TL200 Series, the 10 meg Shugarts, and the 20 meg Seagates work (at least in Portland and Solana Beach). Rodime, High-Technology, and the Seagate ST-506 have had problems. Xenix requires type 2 drives to work, and PC-DOS is limited to 30 meg per drive. (Whew.)

The Rodime drive we tried was never selected. We checked the drive select lines, and none corresponded with the hard disk select light on the 286i's front panel. After we returned our first system to Kaypro, they called and said that it interfaced properly with a #2 drive (type #2 in the AT Diagnostics). If you're adding a Winchester, you have to purchase the AT's advanced diagnostics from IBM (\$270) in order to format the Winnie.

Kaypro doesn't supply MS-DOS 3 with the system; you have to purchase that from an IBM dealer (it'll cost you \$60).

When Kaypro chose to ship their \$4500 system without a Winchester, they said it was to "allow" users to install drives of their choice. You'd think they could at least write a disk formatter and supply a \$60 copy of the operating system.

Kaypro says it's negotiating with

Microsoft for a multi-user version of MS-DOS to include with the 286i. We have heard rumors, however, that one of the bugs still residing in the 80286 makes it impossible to support multiprocessing or multi-user. As for the formatter, I think they need to write one.

I tried formatting some ordinary floppies as 1.2 meg in the 286i. Our Mag Media disks that format perfectly as quad density (784K) work very poorly at the higher density.

1.2 meg format is 96 tpi (80 tracks per side) like the quad density, but the disks spin at 360 rpm instead of 300 rpm — and the data is written at 500K bits/second (like 8" double density) instead of 250K bits/second. So the number of tracks is the same as quad density, but there's almost twice as much data crammed into each track.

The double density Mag Media disks format to about 800K usable space after formatting. At least MS-DOS automatically traps the bad sectors, but with a disk that marginal, I wonder how long it will take before errors show up.

So I have to figure on spending \$4 each for the high density disks. Fortunately, the system can read 360K disks, and if you need to write data onto these standard format disks, you can exchange a double-sided 48 tpi drive for one of the 1.2 meg drives.

## Three 286is

The 286i is now available in three versions — a stripped down model with one 1.2 med drive, a rigid/floppy controller board, 512K RAM, and GWBasic for \$2995; a spiffier model with two 1.2 meg floppies, controller, 512K RAM, graphics/parallel card, parallel/series card. GWBasic and MicroPro software for \$4550; and a 20 meg hard disk model with Winchester, one 1.2 floppy, controller board, 640K RAM, parallel/serial card, and GWBasic for \$4795.

The internal design of all models is very AT-like, except Kaypro is using 256K DRAMs instead of 64K chips piggybacked (a la AT).

### Kaypro 10 Hard Disk Failure

Jeff Brown, Kaypro's district manager in Oregon, says he's been seeing a lot of hard disk failures on the Kaypro 10's that are directly related to heat (usually a clogged fan) or inadequate power protection. The first is easily remedied.

For the second, he suggests you use a dedicated power line (don't run your coffee pot or air conditioner on the same connection), and make sure that you have good solid +12V (+ or -.35V) to the disk and the controller. It's best to use an uninterruptable 110V source (UPS) for triple A insurance (some service companies won't sell extended warranty contracts on hard disk systems that don't have UPS because of hard disk failures from power-related accidents).



### SMART-PIK NFL & USFL Football Handicapping Program

**PURPOSE:** Do-it-yourself Program. For Kaypro users interested in predicting the outcome of professional football games.

**HOW IT WORKS:** Each week, enter the stats required by the SMART-PIK formula. SMART-PIK projects the number of points that each team is likely to score (and allow) against its next opponent.

**RESULTS:** A winning record, against the pointspread, in each of the last 4 Pro Football seasons. (1983 and 1984, NFL and USFL. More than 500 selections.)

**QUICK & EASY:** Required stats are obtainable from any newspaper. I/O takes about 2 hours per week. (Also, data maintenance via mail or modem is an available option.)

**VARIABILITY FEATURES:** You can easily vary the SMART-PIK selection determinants. Further experimentation may produce still better results.

Developed by Marty Mendelsohn and Jim Thompson of Las Vegas Kaypro Users Group.

\$49.00 includes postage and handling. Specify what kind of Kaypro you have. MS DOS okay, too.

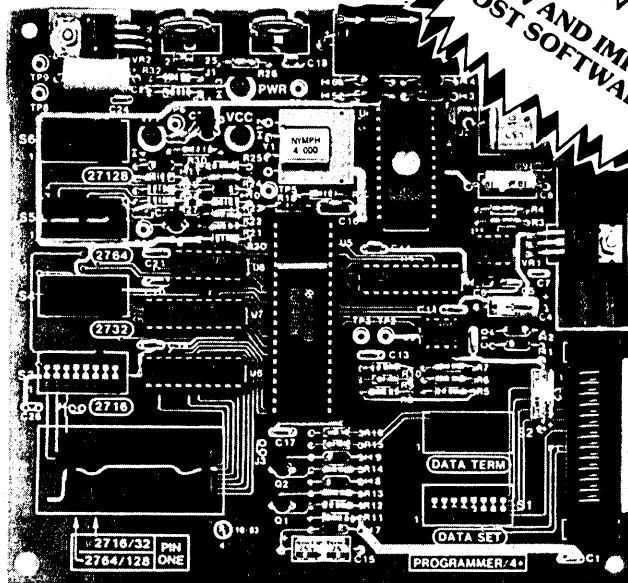
Phone or Write for Free Brochure



**Marty Mendelsohn Associates**  
3807 Central Park Dr. #4 • Las Vegas, NV 89109  
Tel. (702) 737-6256

## PROGRAMMER/4+

NEW AND IMPROVED  
HOST SOFTWARE DISK



### A LOW COST ALTERNATIVE TO EPROM PROGRAMMING

Reads and programs 2716, 2732, 2764, and 27128 EPROMS.

Reads 2-16K ROMS.

Direct connect to any RS232C terminal or computer.

Plug selectable as either a data set or data terminal.

All voltages made on board, (no power supplies needed).

(User supplies power Xformer, 25.2 to 30 VAC C.T. 1 Amp.)

Power electronically switched, (can't damage EPROMS).

Zero insertion force socket for EPROM.

Programs, verifies, and dumps in both ASCII and hex.

Edit buffer (like DDT).

Saves hex and/or image files to and from disk.

Saves or loads all or partial buffer.

Completely menu driven for ease of operation.

Commands of Test, Read, Display, Save, Load, Program and more.

Check sum calculation.

All software on disk including well commented source code.

Detailed owners manual including schematic

All chips socketed.

Not a kit! Completely built and tested.

48 hour dynamic burn-in and test before shipment.

90 day limited warranty on parts and workmanship.

24 hour return policy on repairs.

Delivery from stock.

**NOTICE TO PREVIOUS CUSTOMERS:** Send us your old disk and a suitable S.A.S.E. for your free copy of our new software, ver. 1.6.

**PROGRAMMER 4+ WITH OWNERS MANUAL AND DISK. \$199.95**

Order from



1659 Scott Blvd., Suite 1  
Santa Clara, CA 95050  
(408) 244-5214

VISA and MASTERCARD telephone orders welcome.

Please specify Disk format

CP/M 8" IBM format, KAYPRO II, XEROX 820, OSBORNE I, others.

Please specify method of shipment, UPS or Postal Service.  
California residents add 6% Sales Tax. Dealer Inquiries invited.