dummy page; the text is now represented on the dummy page by a small box. The actual text remains in the article box so you can use it more than once.

Articles dropped onto the page align themselves depending on the page format selected. For instance, if you take a section from a one-third-page article and drop it onto a page formatted for three columns, it will align with the column closest to where you drop the article.

After you cut text in an article, Macpublisher automatically creates a new article with the remainder of the text in the article box. You can continue to cut and drag pieces of the article to a page or pages until you have used all of the text. Each article on the dummy page has small note areas telling you how much text, in characters, you have cut and where it is on the dummy page.

To help you get better print quality, Macpublisher allows you to print pages up to 200 percent larger than the normal 8½ by 11 inches. After printing an enlargement, you can go to a good photo processing shop and have your documents reduced to make them more attractive. Another option is to purchase the Laserwriter version of Macpublisher and print your work on the Laserwriter to take advantage of its higher quality output.

Macpublisher's current versions have some problems that need to be worked out before the program's full potential will be realized. We tested two different versions of the program, using both on a 512K Macintosh. Although they were different, both programs carried a creation date of February 21, 1985 (in the get info dialog box) and were labeled version 1.25. The first one we received failed four times as we worked with it. Each time the program failed, we tried to reconstruct the events leading to the failure but were unable to do so.

The second version didn't fail while we were using it, but it did contain a rather entertaining bug. While creating a picture, we placed it on the page and then dragged it off the page and onto the desktop. When we tried to make the picture active again, the program steadfastly refused. Instead, every time we moved between the dummy page and the picture, a little more of the image in the original picture box disappeared. Eventually, we could see nothing in the box at all. But Macpublisher thought everything was OK, and when we tried to reopen the picture, it informed us it was already there. We finally opened a copy of the picture and had no further problems.

It is a curious problem, given the care the publisher has taken to protect you against errors on your part. In light of the failures and the difficulty in distinguishing one version from another, we think further testing by the publisher is in order. For now, buyers of this generally good product will have to be careful to find the newer version and be ready to put up with its little idiosyncrasies.

Installing Macpublisher is not difficult and can be accomplished in a matter of minutes. Getting used to the way it works might take some time, however. For instance, the program requires that files and articles be named before you can use them (because of the autosave feature), so every time you open a new article, you have to go through the naming process. This can be partially eliminated by turning off autosave, but when combined with other features it will take some getting used to.

Macpublisher is copy-protected with one of those annoying key disk schemes. There are several versions of the program available — for a hard disk, Laserwriter, and Imagewriter — so you need to make sure your copy is compatible with the devices you intend to use.

Macpublisher's documentation can make learning somewhat difficult. It is written in what we can best describe as a stream-of-consciousness writing style that can be quite confusing. Despite the unusual style — and the misspellings and cramped format — there really is information buried in the manual.

The greatest problem of the manual is that it was apparently created using Macpublisher with the intention of illustrating the power of the program. It does, but it also illustrates some of the program's flaws. For example, at places where italics or boldface should have been used for emphasis, they weren't because Macpublisher doesn't permit mixed character modes within individual articles.

Boston Software Publishers' technical support was very helpful when we called, even though the failures we called to discuss were random and could not be duplicated, making it difficult for the technician to pinpoint the cause.

We like what Macpublisher has to offer but aren't satisfied with its implementation. This is a product that people will want to own, though, once Boston Software Publishers takes the bugs out of it.

Ready Set Go also needs to have some changes made to it before it will be taken seriously by many graphic designers and compositors. Both publishers are already working on updated versions of their products, including additions aimed at graphic artists. In their present state, both products should appeal to consumers and small businesses whose needs aren't so critical; both products could be used to lay out a small newsletter or simple brochure, but it would be overly time consuming and tedious (and probably not very profitable) to do a quality multipage document. □

DESKTOP COMPUTERS

Kaypro Comes Close With 286i

THIS CLONE IS AS NEAR TO THE PC AT AS CAN BE, BUT TERRIBLE MANUALS, SUPPORT SHOULD MAKE YOU WARY

BY JOHN V. LOMBARDI
Review Board

As predicted by almost everybody, the IBM PC AT has spawned a school of clones here and in Japan. In this country, the first to reach consumers is an interesting offering from Kaypro, the 286i. Unlike some work-alike IBM imitations, this machine is as close a copy of the AT as is legally possible — but with some serious problems for current buyers.

The Kaypro 286i comes in a black industrial-grade case, offering power with the minimum of cosmetic finesse in the trademark Kaypro style. The strength of this machine, of course, is the raw computing power provided by the 80286 microprocessor embedded in a virtual clone of the AT. Built around a main circuit board that looks almost exactly like the AT's and includes the eight expansion slots, the 286i comes with 512K of random-access memory composed of two soldered banks of 256K chips. In addition, the main board will accept another 128K in two rows of 64K socketed chips, making possible a total of 640K of main memory on the board.

The system unit incorporates two high-density, 1.2-megabyte floppy disk drives. The attractive 13-inch red-green-blue (RGB) color monitor has sharp characters and good color. Monitor controls under a front panel adjust contrast, brightness, and horizontal placement. The monitor attaches to an RGB 9-pin connector on the computer's back panel with a standard D-shell plug and gets its power from the wall plug, not the switched outlet on the system unit.

The system is also equipped with a disk

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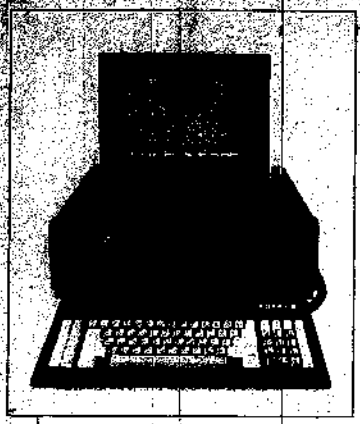

Fast and cheap: Kaypro has come out with the first U.S. clone of the IBM PC AT.

controller capable of handling both the high-density floppies as well as standard 360K floppy drives and the full range of AT-compatible hard disk drives. The computer has two other add-on boards as standard equipment: a Hercules color card with parallel port, which is a half-size clone of the IBM PC color card, and a serial/parallel printer adapter, also a half-size card. The parallel ports are standard, and the serial port uses the same 9-pin, non-standard plug used by the AT. There is no RCA socket for composite color to run either a cheap color monitor or a composite monochrome monitor. The main circuit board of the computer has a socket for an 80287 math coprocessor, just like the PC AT.

Although the 286i comes ready to accept a hard disk drive, our test unit only included two high-density floppy disk drives. We believed at first we had a hard disk drive; the hard disk activity light illuminated as if such a drive existed, and the system issued messages to us about hard disk failure. The documentation makes reference to a diagnostic disk, but none came with our unit. Perhaps this software would have identified the absent hard disk without our having to disassemble the computer.

Although the hard disk isn't crucial to the machine, an operating system is. But the Kaypro 286i comes without an operating system of any kind because MS-DOS 3.0 isn't ready. Instead, the hardware manual, a slim typed booklet, recommends you rush out and buy PC-DOS 3.0, a good idea since the 286i won't run without it. We utilized that operating system for this evaluation.

Because it is a clone, the 286i lacks the proprietary IBM read-only memory (ROM) chip used for part of the PC AT's Basic programming language. Instead, Kaypro provides GW Basic, a version of Microsoft Basic very close to PC Basic 2.0 with some of the enhancements available in PC Basic 3.0. The GW Basic manual is excellent and complete.

Kaypro provides a setup program that allows you to configure the system and set the on-board clock. Like the IBM PC AT, the 286i contains a battery that keeps the clock on time when the power is off and supports a small memory area containing information on the current system setup. This takes the place of the on-board switches used in the original PC and the XT to identify the number of drives and the display type attached to the computer.

The setup program lets you set or change these values, and although it works just fine, there is virtually no documentation on what it's all about. A first-time user would have a hard time figuring out the screen display that allows you to select the appropriate hard disk type from a long list.

The two half-height 1.2 megabyte floppy disk drives worked flawlessly, reading from and writing to 360K floppy disks as well as the 1.2 megabyte disks. The drives are reasonably quiet, and the luxury of 1.2 megabytes on a floppy is a joy to experience, although not quite the thrill of 10 megabytes of hard disk space.

In casual tests using ordinary programs, the 286i runs about five or six times faster than the IBM PC in memory-intensive operations but with considerably less speed in floppy disk-intensive operations. The Norton Utilities benchmark formally shows the Kaypro running 5.7 times faster than a stock IBM PC.

Raw power, of course, isn't everything. The 286i's keyboard, also a serious black, mimics the AT's, although the touch is lighter. The keyboard has the improved layout that increases the size of the enter and shift keys and moves the tilde and backslash keys out of the way of errant fingers. This keyboard also has lights for num lock, scroll lock, and caps lock keys, but they didn't light up on our keyboard. The documentation offered no help as to the solution of this problem.

What about compatibility? This clone uses a Phoenix Software ROM basic input/output system (BIOS) to provide IBMlike performance without using proprietary code in IBM's ROM BIOS. Although Phoenix has had good success mimicking the performance of IBM ROM software, absolute compatibility can never be achieved. Functional compatibility will usually suffice, however, especially if software designers respect the standard design specifications of the BIOS provided by IBM. Certainly, we were able to use the IBM-specific version of DOS to operate the machine without trouble.

We also ran a variety of standard IBM PC packages to see if they would perform as expected on the 286i. Micropro's software ran fine, not only the packages bundled with the system but also its other software designed for the IBM PC. Lotus' 1-2-3 worked fine, as did Dbase II and Sidekick. Flight Simulator, however, would not run on the 286i, an anticipated result with an AT clone.

Hardware compatibility appears to be as good as software compatibility. For example, we got a Hayes 1,200-bit-per-second internal modem to work fine with this machine using PC-Talk III. Most AT-compatible add-on boards should work fine with this hardware, but one never knows without trying the board and the software. Boards incompatible with the AT are not likely to work with the Kaypro either.

Kaypro's machine comes complete with

InfoWorld

REPORT CARD

KAYPRO 286i

	Poor	Fair	Good	Excellent
Performance			■	
Documentation	■			
Ease of Use			■	
Setup			■	
Serviceability		■		

SUMMARY

As close an IBM PC AT clone as you can legally make, Kaypro's 286i could potentially be a money saver for buyers. It includes a color monitor and interface card as standard equipment, not to mention a set of solid application packages. At present, though, the system documentation is so poor that it makes use of the machine a challenge to those who don't know the AT or have access to IBM manuals. You must also purchase a version of IBM's PC-DOS 3.0 because the independent MS-DOS 3.0 is not yet ready. The only support available is by mail.

PRODUCT DETAILS

List price, $4,550. Model tested uses 80286 microprocessor running at 6.0 MHz under PC-DOS 3.0 (which is not included). Includes 512K RAM; two 1.2-megabyte floppy disk drives; keyboard; color graphics display capabilities. Bundled software includes Wordstar; Mailmerge; Infostar; Starburst; Calcstar; GW Basic; Mite. Manufactured by Kaypro Corp., P.O. Box N, Del Mar, CA 92014; (619) 755-1134.

a hefty package of Micropro software including Wordstar 3.31 for word processing, Mailmerge for list processing, Infostar for database management, Starburst, a database application generator, and the Calcstar spreadsheet. It also includes Microsoft's GW Basic and Mycroft Labs' Mite terminal emulation and communications program. Most of this software is from the standard IBM PC library and includes good documentation. Documentation for the Mite terminal program reflects the CP/M version of the product, though, and has not been revised to reflect operation in the PC-DOS environment.

The supplied software is powerful and effective, although it may not suit everyone. Infostar, for example, offers a flexible, sophisticated, powerful, and almost infinitely customizable database management system. When used with the application-builder Starburst, this often difficult-to-use package acquires a menu construction front end for the data management system that offers users relatively easy access to the power of Infostar.

Wordstar, of course, is a venerable, solid, and effective word processing program. Long the standard for microcomputer word processors, Wordstar has lost ground to somewhat more sophisticated programs with more features or those closely emulating dedicated word processing systems. Nevertheless, the combination of Wordstar and Mailmerge provides an excellent text management system for form letters or document preparation. Some of the weakness of Wordstar, stemming from its relatively slow speed on some operations, disappears when run on the Kaypro 286i's fast, powerful hardware.

You'll need to judge for yourself, though, if this software will meet your needs. The software's inclusion adds to the value of the product, but only Wordstar and Mailmerge are in widespread use. If you want 1-2-3 as your spreadsheet and Dbase as your database, the supplied software loses its value and the relative cost of the machine increases.

In the event of difficulty in setting up, using, or adding to this machine, you are on your own. Kaypro's user support policy can be summed up in one sentence: "Write us about your problems." Nowhere in any of the material that came with this system is a telephone number. Communicating about an installation problem by mail does not constitute support at all.

Combine the lack of a phone number with a user booklet missing 98 percent of the information a user might need, and the Kaypro 286i earns the lowest possible grade for documentation and nearly so for support. Even the manuals for the application packages, although very good, include no information on differences to be encountered with the 286i and often refer to other Kaypro machines.

The Kaypro 286i is a powerful AT clone that operates well and comes with a good collection of bundled application software. When equipped with a 20-megabyte hard disk, a complete operating system, and a complete set of hardware and system software manuals, the 286i should provide a somewhat lower cost, functional equivalent to the original IBM PC AT.

In current form, however, the Kaypro 286i is best suited for hardy users capable of solving their own technical problems, or users with access to IBM manuals and the skill and experience to use them as a guide to this clone. Less experienced users will find this machine difficult to learn to use, especially without help from Kaypro.

Normally, we would give a product with a grade of Poor in any one area a one-disk rating overall, and we came close to doing so with the 286i. But the machine is such a good clone that we want to encourage the kinds of users we mentioned above to look at this machine. For everyone else, we encourage you to wait a bit. What Kaypro needs to do to make this a winner is fairly simple, and in the interest of buyers' pocketbooks, we hope the company does it soon. □

DESKTOP COMPUTERS

Tandy's Magnificent Concession

THE MODEL 1000 IS IBM PC COMPATIBLE AND A GOOD CHOICE FOR HOME USE WITH ITS DESKMATE SOFTWARE

BY P. GREGORY SPRINGER
Review Board

Tandy has been struggling openly with its image, its ego, and its output in the blood-soaked arena of personal computers. The desktop Tandy 1000 joins ranks with the company's portable models 100 and 200 to prove that success comes with Texas-size persistance.

By developing, manufacturing, and marketing this PC compatible, Tandy is making no small concession to Big Blue's dominating stranglehold. The good news is that the T1K — as the old techie Radio Shack crowd has dubbed it — has arrived with noticeable, if modest, innovations that make it worthy in its own right.

True compatibility in itself is no innovation. The first factor to cause much surprise about the 1000 was its price: fully one-third less than a comparably equipped IBM PC. The 1000 was never intended to wave swords at the PCjr, although in retrospect it might have been the PCjr's final straw.

The 1000 is now Tandy's most popular computer, and it deserves the attention. It comes equipped with a simple integrated software program, Deskmate, that makes the package a conceptually shrewd deal. Buyers of the 1000 possess both the practical elements for immediate entry into useful computing and the potential for expansion in business or home fields.

The main unit takes up little desk space and measures 6 by 13 by 16 inches. A front panel holds the keyboard connector, two joystick ports, one (with room for a second) double-sided half-height floppy disk drive, and a reset button. On the back, a Centronics printer interface is standard, as are a light pen port, video and audio ports, and three IBM PC card expansion slots, but no power outlet for the monitor — a minor trade-off. Inside lies the Intel 8088 processor, like the PC's. Enhanced monochrome and color graphics are standard, as are a three-voice sound circuit and a built-in speaker.

The lightweight, 90-key keyboard (with retractable cord) is a ringer for the one that got good reviews for the Tandy 2000. There are 12 function keys, compared to IBM's 10, arranged in a horizontal strip along the top of the keyboard. Tandy also includes dedicated cursor keys in a cluster at the lower right, rather than double up the function of the number pad. Numbers and caps lock keys both have light-emitting diode warning lights.

Inside the computer, Tandy has cleaned up its act. The top can be removed quickly and cleanly with no troublesome wires to trip over. Although Tandy still recommends the $15 installment treatment for most of its optional expansions, boards come with more than adequate instructions. Adding an RS-232C serial port board, for example, takes little time and gives no headaches.

The base price for the 1000 does not include a monitor or second disk drive, so it's not ready to run off the shelf. Any variety of monitors connect without a hitch, from the high-resolution Polo color monitor

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