

DESKTOP COMPUTERS

Dimension 68000

JACK OF ALL TRADES, BUT MASTER OF NONE

BY STEPHEN T. SATCHELL
Review Board

You are now the owner of the most powerful, most compatible, most flexible microcomputer available in the world today," says Microcraft Corp.'s manual for the Dimension 68000. We ran this machine in its "native mode" and as an IBM PC compatible, and found it wanting as either. It is a jack of all trades, but master of none we tested.

The Dimension 68000 is built around the Motorola 68000 microprocessor chip, which is a 32-bit processor with a 16-bit data path between it and the outside world. This chip and its slightly bigger brother, the 68010, are finding work in multiuser and graphic workstations. In this case, the 68000 is in a computer that is still in development. As the product matures, we expect performance and compatibility with other machines to improve. We also expect Digital Research Inc. to improve the CP/M-68K operating system used as the product's main operating system in native mode.

The stripped-down Dimension 68000 comes with 256K of random-access memory (RAM); two double-sided, double-density, half-height disk drives; composite video output; keyboard, parallel printer interface; "three wire" serial port; game control port; light pen port; and six expansion slots. You must add your own monitor.

Besides the operating system, the publisher supplies a C compiler, assembler, and linker. Beyond that, you'll be hard-pressed to find applications that run on this machine under its native CP/M-68K operating system.

You can add memory chips to the main circuit board up to a maximum of 512K. The 68000, however, can deal with as much as 16 megabytes of RAM. All the necessary electronic signals appear on the expansion slot connectors, so memory expansion here is limited by the physical space and the system unit's power supply.

There is room and a power connector for a hard disk, which requires an adapter card.

Stephen T. Satchell has been involved in computing for 12 years as a professional systems designer and product programmer. He is currently a senior staff engineer for a major manufacturer.

Also, there is a connector (and software support) for 8-inch floppy disk drives.

If you plan to use a red-green-blue monitor, be sure to investigate the availability of a monitor adapter card for it. The computer itself has only an RS-170 connection for color monitors (the kind that connects with what looks like a high-fidelity patch cord); do not attempt to use a television set with a radio-frequency demodulator. As shipped, the system is tailored for 25 lines of 80 characters, which cannot be read well on either a color or black and white TV.

Our test system came with three intriguing add-on emulator cards: the Apple emulator (6502 co-processor card), the IBM PC emulator (8086 co-processor card), and the CP/M-80 emulator (Z80 co-processor card). Each emulator comes with a program that makes the system's peripherals available to the co-processor cards.

Setting up the system was reasonably easy. The hardest part turned out to be connecting the keyboard to the system unit. Many other personal computers have the keyboard jack either on the front or back of the system unit where you can see it and get your hands on the plug. Microcraft put the keyboard jack at the rear of the machine in a notch. To unplug it, you have to pull the cord — the sides of the notch come too close to the plug to get a fingerhold.

Starting the system for the first time was a real jolt. The computer occasionally had trouble finding the CP/M-68K operating system on the disk in drive A. The drive would spin, the screen would indicate the computer's effort to find the operating system, but nothing happened. What's worse is that, when it became clear our efforts were failing, the reset button was ineffective. We had to shut off the machine's power to restart it. This happened most frequently when we left the disk outside the drive until the machine was turned on and ready to go, a common practice that protects disks from accidental power damage. Sometimes we had no trouble, but having to start the machine sporadically is very unfriendly, especially to a new user.

We panicked more when what we saw on the screen was different from what the manuals described. We finally gave up on the documentation and settled on using the files called Read.Me on the distribution


diskettes. This discrepancy clearly shows that the product is evolving faster than its documentation can reflect.

Unlike help facilities in other CP/M systems we have seen, this one is next to useless. In standard CP/M systems, the help information consists of a series of screens you call through menus to let you zero in on the precise information you want. The help facility on the Dimension 68000 is half advertising and half "quick reference" that was incomplete. For example, we could not find out what all the options were for the peripheral interchange program (PIP) command on-line. What we did find referred us to the manual, the accuracy of which we have already mentioned. If Microcraft hasn't done so already, we highly recommend that it install the standard help facility on its machine and leave the plugs for

InfoWorld

REPORT CARD

DIMENSION 68000

	Poor	Fair	Good	Excellent
 Performance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ease of Use	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setup	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Serviceability	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SUMMARY

In trying to be many things to many people, the Dimension 68000 does not really master anything. Its native mode performance does not do justice to the 68000 processor, its IBM PC emulation mode is not completely IBM PC compatible, and there are some general quirks in machine operation. This potentially good product needs some work.

PRODUCT DETAILS

List price, \$3,995. Model tested includes 68000 microprocessor running at 7 MHz; 256K RAM expandable to 512K; two double-sided, double-density floppy disk drives; keyboard; composite video port; parallel and serial ports; six expansion slots; light pen port; game control port. Co-processor boards extra. Manufactured by Microcraft Corp., 4747 Irving Road, Dallas, TX 75247; (214) 630-2562.

traditional advertisements.

To get a feel for the system, we ran it both in its "native mode" and as an IBM PC compatible. Because only minimal software for CP/M-68K is available, we tested that function by using C programs developed on the IBM PC to run under MS-DOS and Unix and compiled them with the supplied version of the C language on this machine.

One word characterizes the system in its native mode: slow. Our benchmark studies showed such lackluster performance for a 68000-based machine that we have to conclude that either the C compiler is poorly written or the computer's design simply does not make the best use of the 68000 processor. The speed falls somewhere between the Compaq Deskpro (8086-based) and the IBM PC (8088 based).

The biggest problem is in CP/M-68K's treatment of the floppy disk drives. It should *not* take 25 seconds to do what just about every other machine does in five seconds: write 64K of text to the disk. Even the supplied PIP utility program could not copy the file faster.

Because the system is slow in its native mode, you might assume that the emulation modes would also be slow. Actually, the IBM PC emulation was a mixed bag. In speed, we found no obvious difference between the operation of the Dimension 68000's 8086 emulation card and the IBM PC.

The 8086 processor in the IBM PC emulation card performed the same benchmarks as the 68000 in native mode at about the same speed, except for the floppy disk test. That test ran in eight seconds, instead of the 25 seconds required by the 68000. Where the 8086 emulation faltered was in writing to the screen. That took roughly three times longer than any other IBM PC compatible we tested using the same benchmarks.

For running existing software, the Dimension 68000 is also a mixed bag. Lotus' 1-2-3 worked properly, but Microsoft's Flight Simulator kept splashing us into Lake Michigan. Microsoft's Adventure locked up the system so tightly we had to shut off the power before we could get the machine running again.

When we tried to use our PC-DOS 2.00 distribution diskette with the emulator and run Basic, the machine failed. We tried to run Basic with the same result. We got a version of Basic to run under the emulator only by using it with a Compaq operating system diskette. It seems Microcraft needs to take a page from Compaq's book.

Also, we had no luck running software that uses other IBM-PC-compatible operating systems. We tried several packages that use the UCSD p-System and some that require CP/M-86. None of these programs could be run normally, and CP/M-86 itself

did not function. In all fairness, Dimension makes no claim that the 68000 system can or cannot support operating systems besides MS-DOS.

Much of the documentation we received with the machine that is specific to the Dimension 68000 was apparently produced before the release of the machine. What we see is not so good, so we hope that the next version of the manuals will be improved.

Microcraft has a one-year limited warranty on this product. It will repair or swap hardware at its option. You pay the freight both ways. Software updates during the warranty period are free.

We are not very impressed with this system. We feel the emulator capability is

not a cost-effective way to run software intended for many machines. To some degree, it does what it claims to do, but why spend your money on something that almost works when you can get the real thing for just a little more?

We were also disheartened by the performance of the Dimension in its native mode. The product does not even begin to use the power available in the 68000 microprocessor, especially considering there are machines using this same 68000 that can support multiple users. If Microcraft would spend less time on the frill of emulation and more on the basic processing system, it would have a dynamite product. □

GRAPHICS

Fontrix

GRAPHICS PROCESSING MAKES PRINTED WORK SHINE

BY HENRY F. BEECHHOLD
Review Board

Programs such as Fontrix — and there are several on the market — need a generic name. Because they are to graphics what word processors are to words, why not call them "graphics processors"? For now, that's a good solution, but it still doesn't convey the whole story about this combination drawing, charting, and typesetting product.

Fontrix certainly can produce graphs, charts, and miscellaneous drawings. But it really shines as a typesetter. And though the 11 fonts that come with Fontrix will turn your dot-matrix printer into a dazzling design machine, you needn't feel the least bit constrained by this starter set, for the font editor and font designer allow you to modify existing fonts to create new ones.

If you'd rather not be bothered, you'll very likely find exactly what you wish somewhere in the nine accessory Fontpaks that are currently available from the publisher, each of which contains 10 distinctive fonts. More Fontpaks are promised, and publisher Data Transforms might even buy your own original font design for \$100 and include it in a future Fontpak. (The firm will even acknowledge your authorship in the documentation.)

Fontrix enables you to typeset an entire

Henry F. Beechhold, a professional writer and professor of English and linguistics, has written two microcomputer books. Beechhold, a personal computing enthusiast, owns eight microcomputer systems.

manuscript. This means text (in one or more standard typesetter fonts) as well as illustrations, decorative borders, separators, illuminated-style initials, logos, floor plans, scientific symbols, and anything else your project requires or your imagination dictates. Fontrix can easily set chic-looking menus, mailing pieces, greeting cards, invitations, and all those other odds and ends you would otherwise print "normally" or have printed professionally (and expensively).

With a fresh ribbon, a printer as modest as the Epson MX-80 (with Grafrax) — used for our evaluation of the software — will perform splendidly and produce handsome, easily reproduced copy. The major cost in an outside printing job is in the so-called setup — the initial typesetting. With camera-ready copy, you reduce the cost considerably. Xerography reduces it further.

Basically, you use Fontrix by designing your special graphics page on screen and then printing it.

After backing up the unprotected distribution disk, you can set up Fontrix for your printer simply by choosing the "new configuration" routine from the master menu. Fontrix supports 14 popular dot-matrix printers. Pick yours from the list — no special coding is required.

Because the configuration switches on your printer must be correctly set, the Fontrix manual has the necessary information for all the printers listed. Should you replace your printer, you need merely run this routine again and make the appropriate choice. Because virtually all the printers not officially supported use the same codes as