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JUNE 14, 1985/$15.00

Computer Digest

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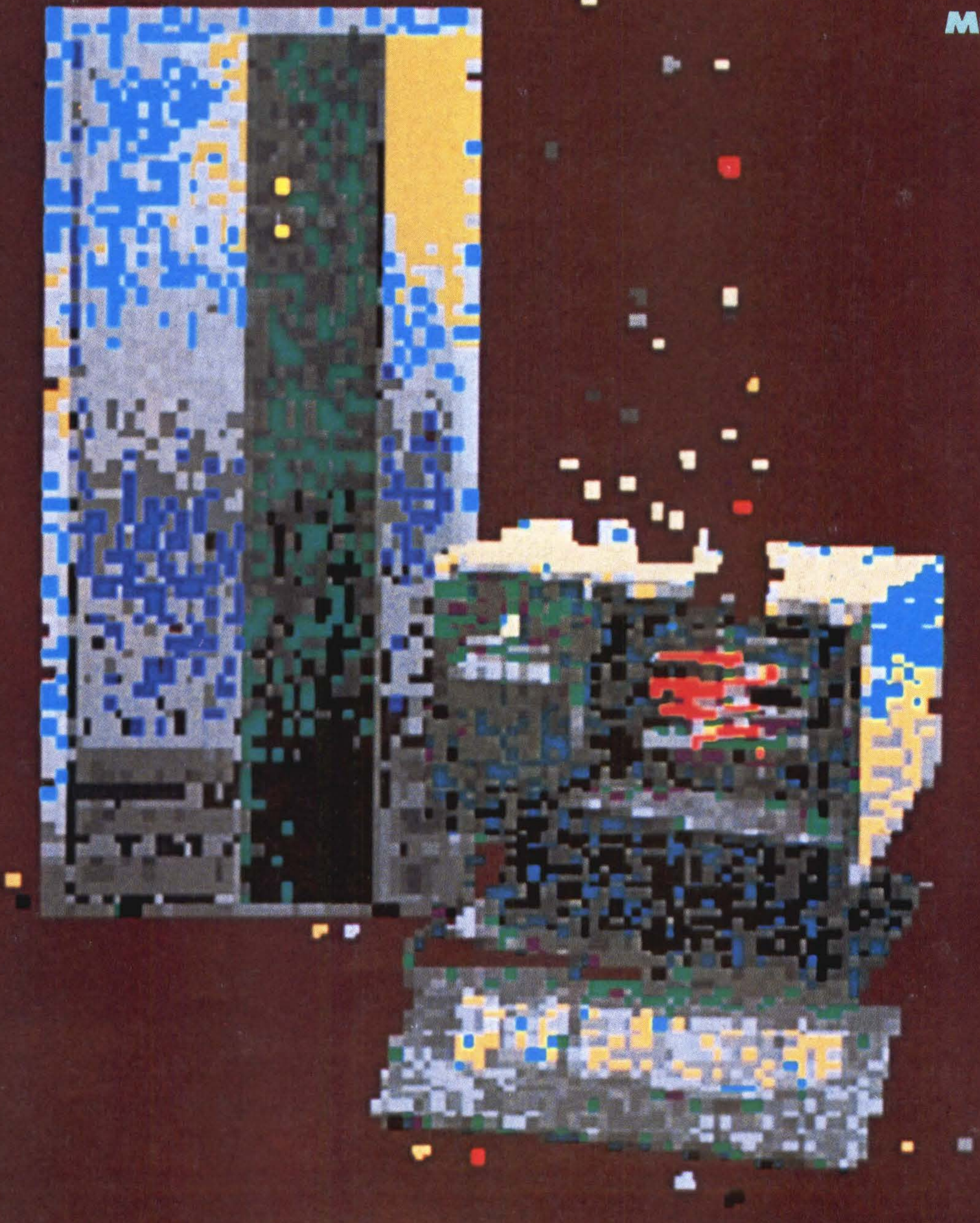
Single user

Multi user

Mini



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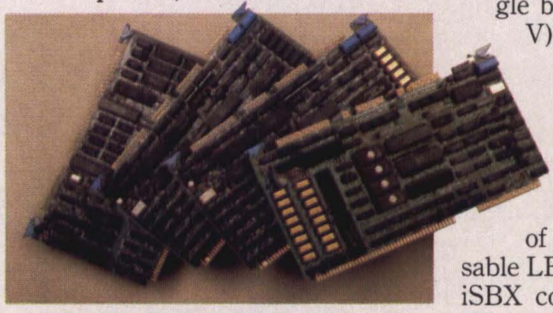

MLZ-91A single board CP/M™ system with on-card floppy disk drive controller, winchester interface, optional AM9511, streamer tape interface, two serial ports, one parallel port, 64K or 128K bytes RAM with parity, two EPROM sockets, and GPIB CONTROLLER.

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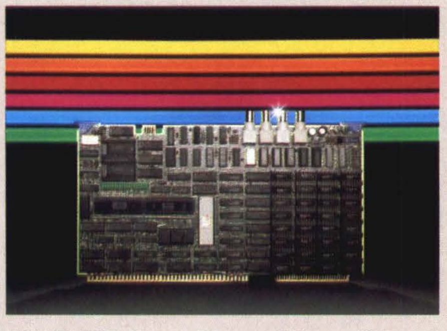

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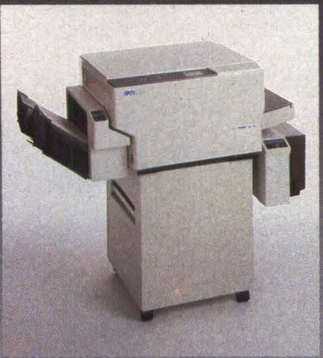

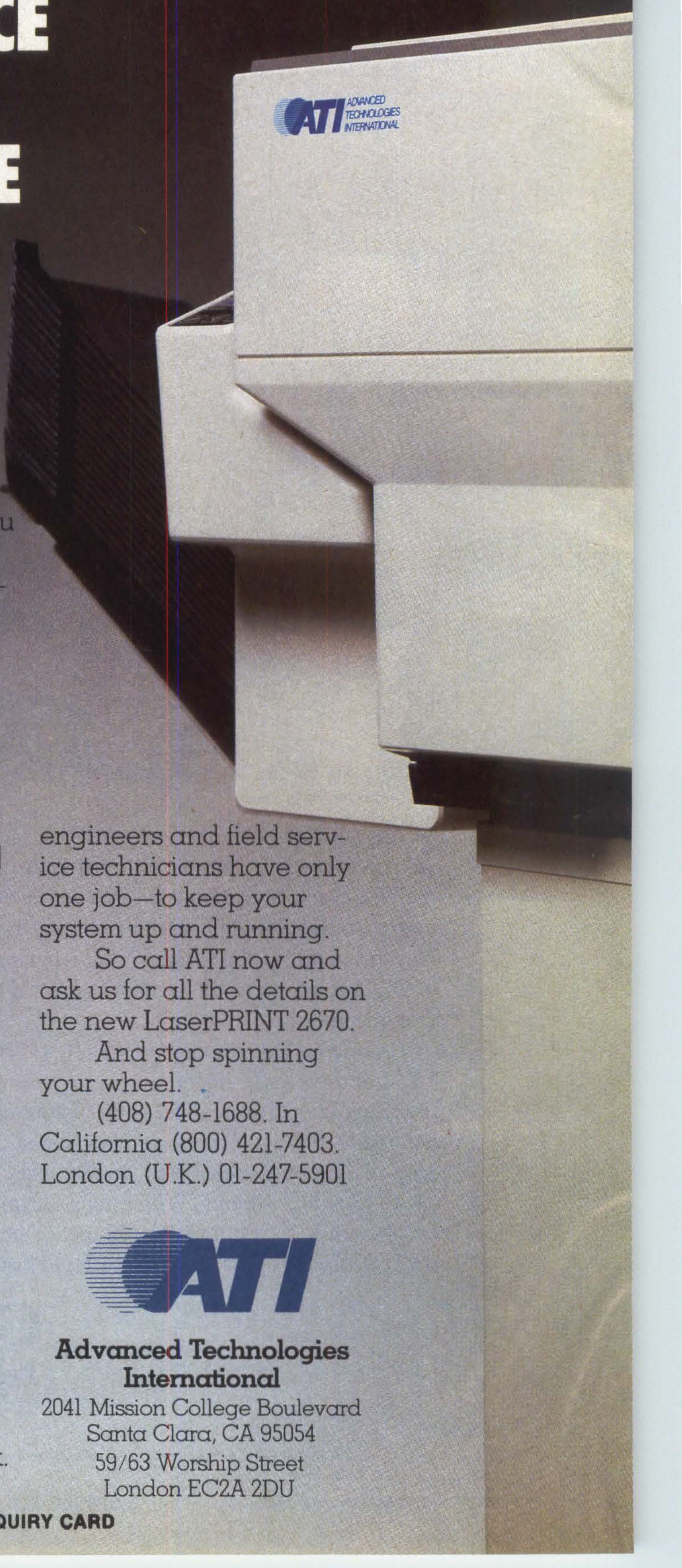
ATI ADVANCED TECHNOLOGIES INTERNATIONAL

Mini-Micro Systems
Computer Digest

A CAHNERS PUBLICATION VOL. XVIII NO. 8 JUNE 14, 1985

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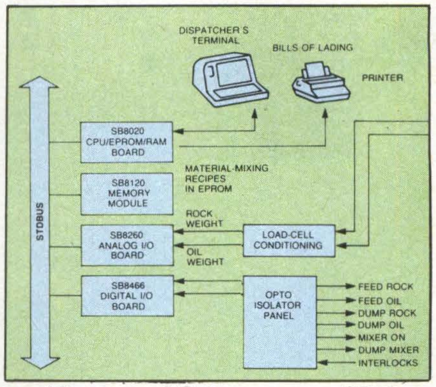

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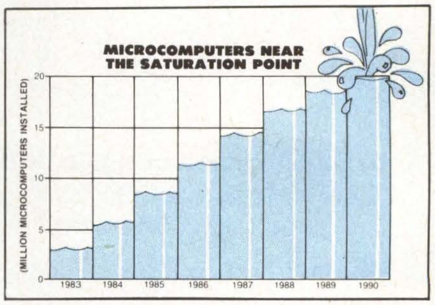

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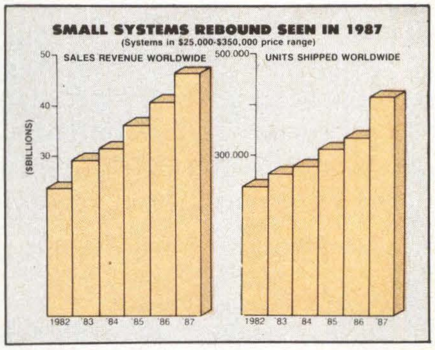

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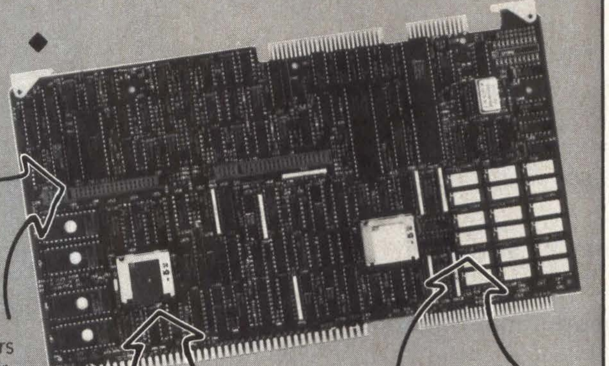

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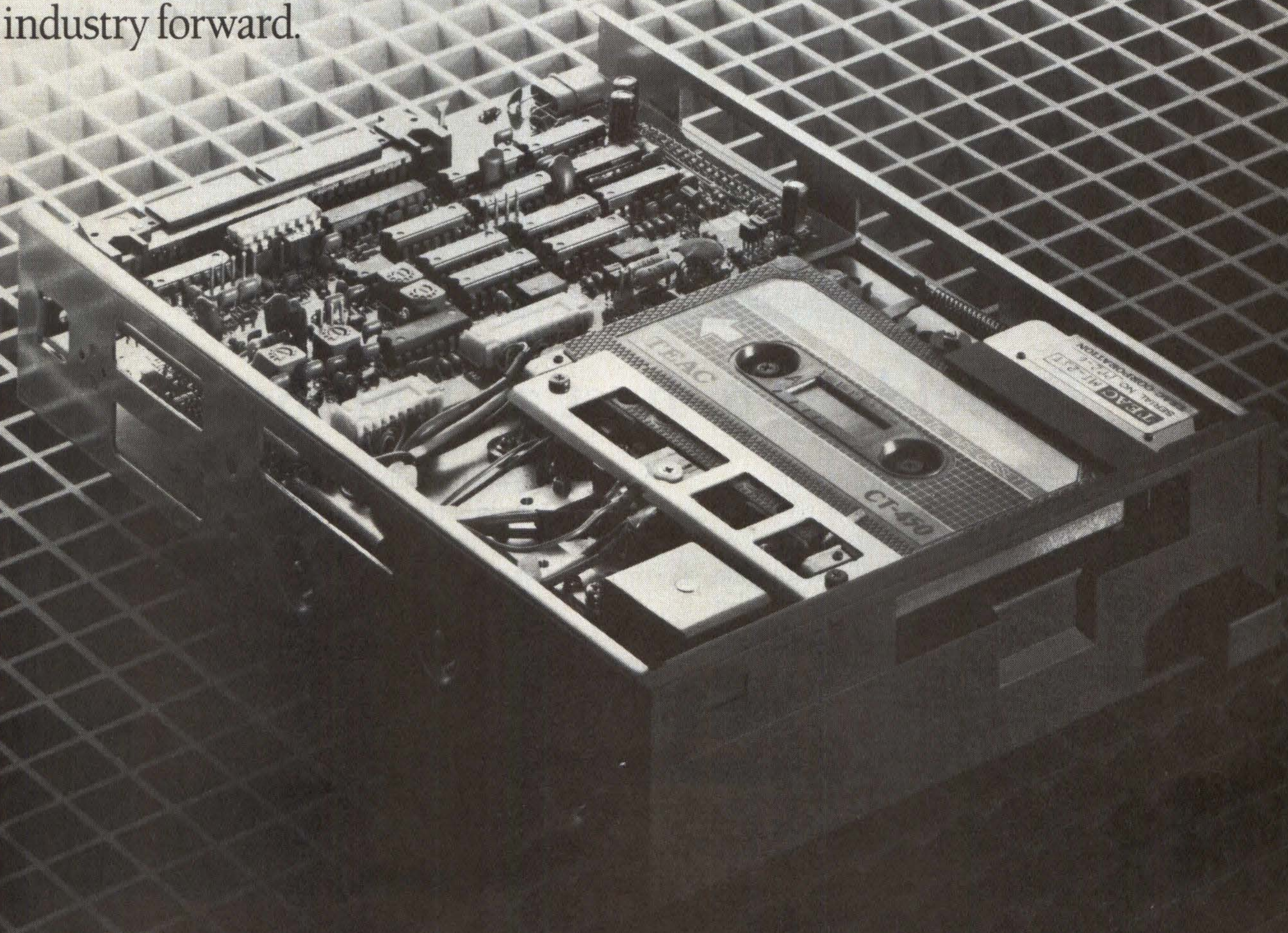

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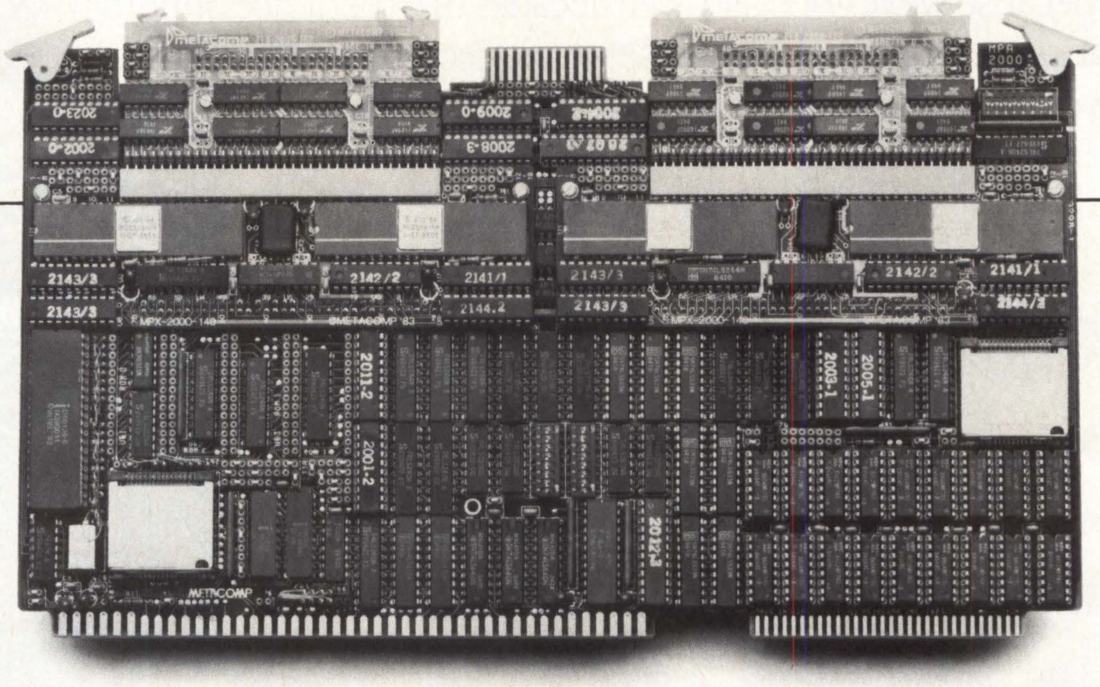

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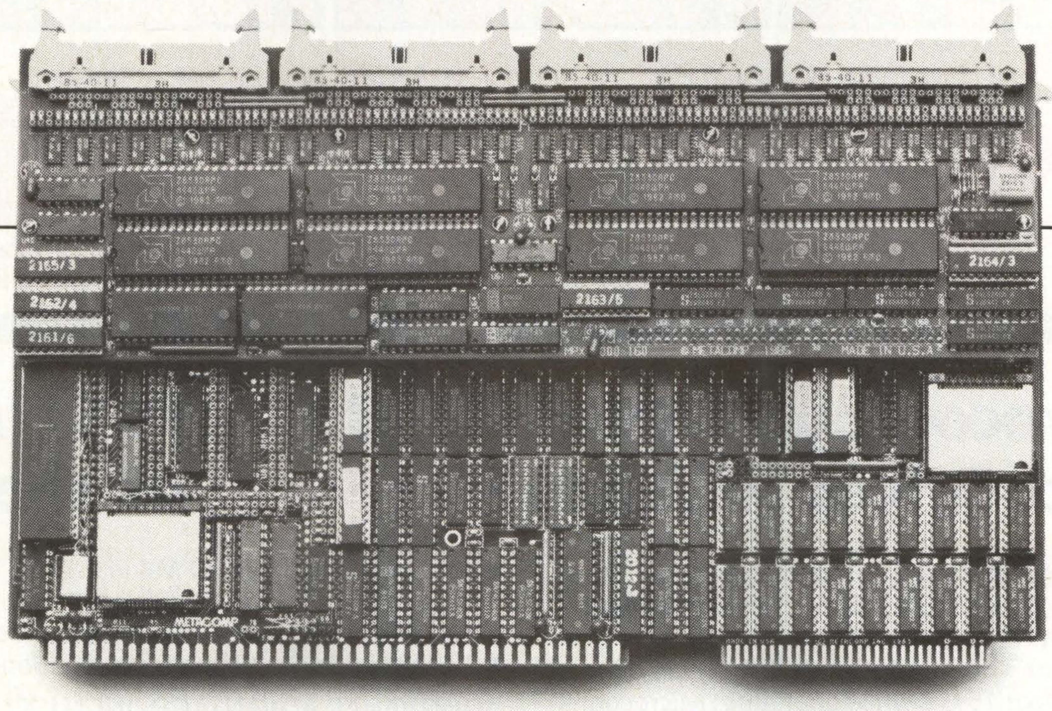

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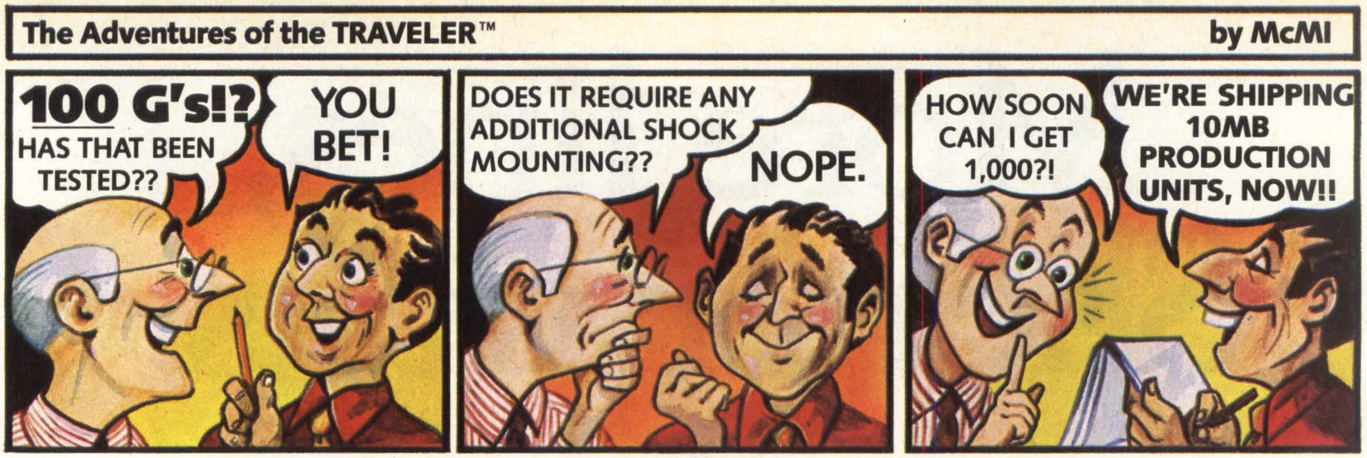
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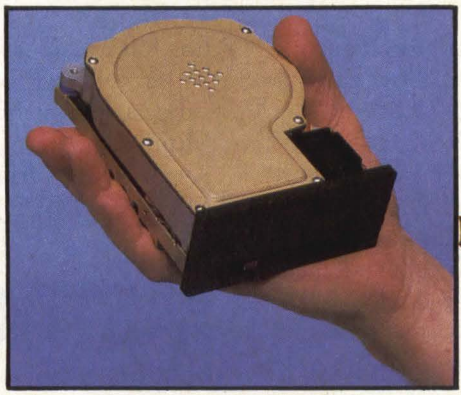

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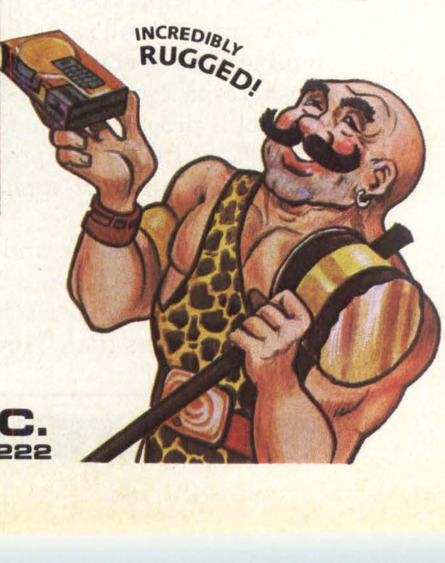

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CIRCLE NO. 8 ON INQUIRY CARD

EDITORIAL

From revolution to evolution

Revolution: "An activity or movement designed to effect fundamental changes in the socioeconomic situation." —*Webster*

We have been delighted by the general public's fascination with the computer. It was only a couple of years ago that you couldn't walk through a public place without overhearing someone remark about how marvelous it was that (you name it) had been computerized.

Although computers have been installed for over 30 years, they have only comparatively recently become highly visable to the general public. Bear in mind that the number of personal computers, automatic bank tellers and point-of-sale terminals installed in just the last two years exceeds the total number of all types of computers installed prior to 1983.

Has there been a computer revolution? Yes. Will it continue? We don't think so.

During a revolution one observes radical (marked by a considerable departure from the usual or traditional) behavior. Using a computer is no longer radical behavior in any sense. Computers are now so pervasive that we encounter them every day. No; today's "radical" is the bank customer who refuses to use an automatic teller.

History teaches us that, following a revolution, there is a period of accommodation and consolidation. We are in that period now.

Computer end users have met their original objectives—such as word-processed documents and automated test systems—and are now addressing more ambitious objectives, such as office-automation and quality-control systems incorporating artificial intelligence. These are objectives that require careful planning and force the participants to compromise.

We have been through the computer revolution and have returned to computer evolution—a process of continous change from a lower and simpler state to one that is higher and more complex.

As computer systems continue to become more complex and end-user objectives more ambitious, the role of system integration becomes more important. By necessity, computer end users will focus most of their energy on defining and redefining system objectives, leaving the task of system configuration and installation to a trusted team member—the system integrator.

Rick Dalrymple

Rick Dalrymple
Senior Editor

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CIRCLE NO. 10 ON INQUIRY CARD

HOW TO USE THE COMPUTER DIGEST

The *Computer Digest* is divided into five sections—four for product categories and one for a manufacturers' directory of *Digest* products. Each of the four product categories begins with a staff-written article, followed by one or more product tables.

Each of the product tables contains pricing and specification information, arranged alphabetically by company name. These tables are based on mail- and telephone-survey information.

The manufacturers' directory of *Digest* products, the last section of the *Digest*, is a consolidated alphabetical listing of all the vendors. Each entry provides a vendor's mailing address and telephone number, as well as a circle number for the reader-service card. The main directory is followed by a supplementary directory. This directory, also in alphabetical order, lists known vendors of computer products that did not respond to our survey.

To use the *Computer Digest* effectively, use the tabs to find the desired product category. Refer to the manufacturers' directory for company addresses and telephone numbers.

To check product prices or specifications:

- Turn to the appropriate product category
- Find the product table
- Find the alphabetically listed vendor.

To select a product:

- Turn to the appropriate product category
- Refer to the product table
- Refer to the manufacturers' directory of *Digest* products for the supplier's address.

To comment on the *Computer Digest* or to suggest future product coverage or entries, contact the Editor-In-Chief, *Mini-Micro Systems, Computer Digest,* Cahners Publishing, 275 Washington St., Newton, Mass. 02158.

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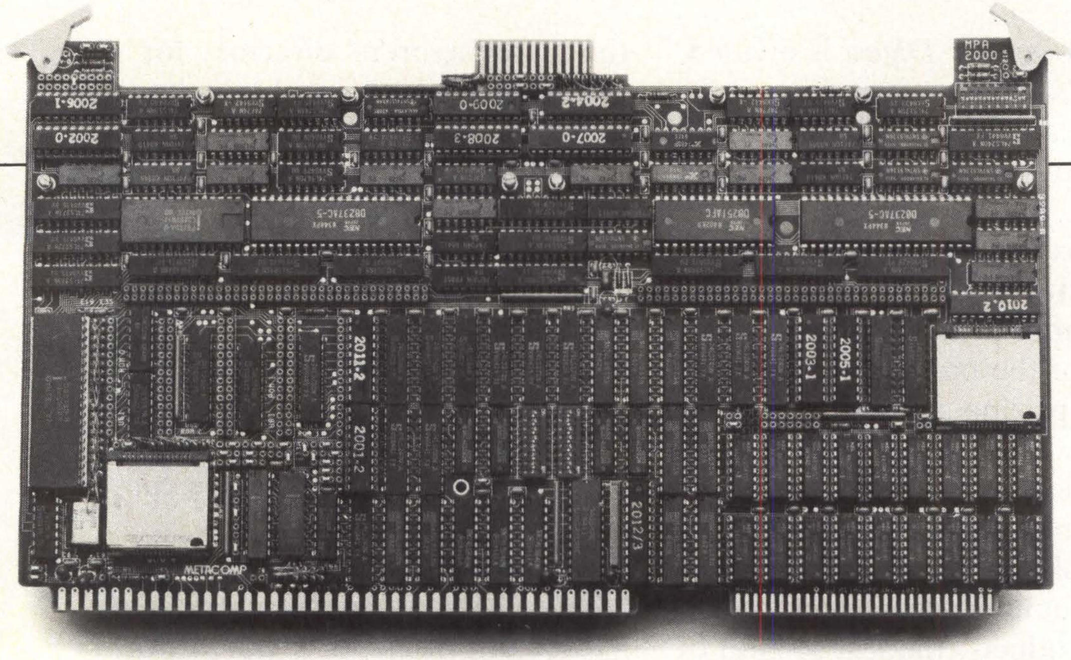
Slot Machine.



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THE MULTIBUS BREAKTHROUGH PEOPLE

CIRCLE NO. 11 ON INQUIRY CARD

PC BUS BOARDS TARGET STDBUS MARKETS

Armed with the IBM PC's huge array of software and peripheral boards, PC bus single-board computers are aggressively penetrating office automation and low-end industrial applications

Jesse Victor, Associate Editor

The vast popularity of the IBM Corp. PC has spilled over into the board-level market, spurring the development of an upstart offspring that is challenging older, established board standards. PC bus single-board computers that are hardware and software compatible with the PC are riding the computer's wave of software, peripheral and interface boards to pick up market share in many business, industrial and scientific application areas. Aiming at office-automation, factory-floor and specialized scientific market segments, PC bus products are colliding directly with STDbus single-board computers in low-end, industrial applications.

PC bus vs. STDbus

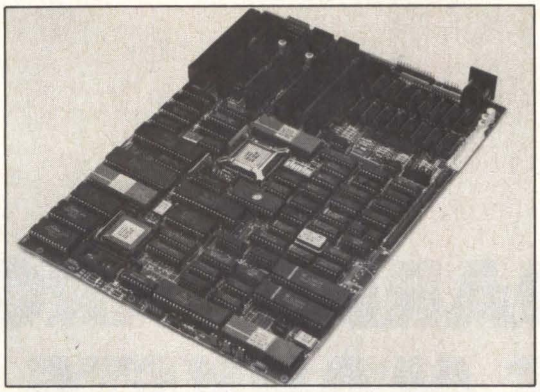
"The battles will be between PC bus and STDbus on the low end and Multibus and VMEbus at the high end [of the board market]," contends Jan Lewis, senior analyst at InfoCorp, Cupertino, Calif. "PC bus products are doing well now. It will take some time for momentum to build up. But once they build momentum they will become a signifcant bus standard. Some of the market share of STDbus products will go into PC bus cards."

Some analysts also expect PC bus single-board computers to make a significant impact in mid-range, mid-performance market areas, now the province of Multibus, Q-bus and VMEbus boards. Dave Wilson, analyst at Future Computing Inc., Dallas, asserts, "For price reasons, Multibus and VMEbus will be forced to higher performance applications and away from medium-performance, mid-range applications."

A link between industrial *and office-automation applications is provided by the dual-ported Baby Blue II from Microlog. The Z80B-based board with the Background Header operating system can run CP/M-80 programs in the background while a PC-DOS system is occupied with other tasks.*

PC bus single-board computers have achieved success in the market by capitalizing on the advantages to be gained by designing with any standardized bus structure—minimum capital investment, minimal design time and time to market, wide peripheral board selection and better price/performance ratios.

IBM PC compatiblity "allows the system integrator to take advantage of what is already out there," explains Jim White, sales manager at Mostron Inc. of Milpitas, Calif. "The bottom line is cost—in time and money. It is easier to design with PC bus boards." Also, PC bus products have a "significant" price advantage over other bus standards, contends Brian MacLeod, director of product marketing at OEMtek Inc., San Jose, Calif., adding, "Compared to STDbus or Multibus, [the price advantage] is probably at least 30 percent. And the cost-per-module is lower. Multibus, for example, carries a high overhead because of the sophisticated na-



Integrating CMOS video *and floppy disk controllers, Mostron's PC bus-based SBM-88 PC Engine supports the 8087 math coprocessor, as much as 640K bytes of RAM and MS-DOS, CP/M-86, Concurrent CP/M and the PC/iRMX real-time operating systems.*

ture of the bus. You have to control a certain number of signal lines, requiring extra hardware and more chips."

PC bus' well-defined architecture and standardized software help system integrators use the products. MacLeod emphasizes, "In the PC environment there are more standards than in any other part of the computer industry. Compare PC-DOS and UNIX, for example. You know PC-DOS works. And you know it works exactly the same way each time. Look at UNIX. How many different versions are there? [Hardware and sofware] standardization is a big advantage [with PC-based systems]."

Designing with PC bus boards confers further advantages, analysts contend, in terms of software development and market support. "Investment in development tools and time to learn the system is really minimal compared to other bus standards," explains Jim Geisman, president of Marketshare Inc., Wayland, Mass. "The IBM PC, especially for single-board-computer applications, is a great test bed. Using a development machine that is also your target machine gives you interesting advantages. You can, for example, use the PC as a logic analyzer for a board going inside the PC. The product is thus easy and fast to prototype." Such fast and efficient development contrasts with some other bus standards, Geisman says. "How do you know that your Multibus-board-based system is going to work? You have to buy an Intel [Corp.] development system, logic analyzers and scope."

PC bus systems also generate a significant market edge by creating a high perceived value. "A lot of people will buy a PC-based system to have an IBM PC," Geisman notes. "Because of the PC, they feel that, even if they load it up with $50,000 or $60,000 worth of boards or peripherals, it's still an inexpensive system."

A system integrator using PC bus single-board computers is incurring little risk, according to OEMtek's MacLeod, because he is tracking IBM, "the dominent player in all parts of the industry." He is also safer, Geisman points out, because of the large number of second sources. "There are a host of vendors out there. If you get hung up by one, you can easily go to another."

Geisman sees PC bus-board-level products appealing to two types of end users: those who already have an IBM PC and want to expand into new application areas, and those who are somewhat familiar with the PC and want to build up from the board level and preserve PC compatibility.

"As they become more familiar with the operations of their machine, PC users want to integrate using the machine and software into their day-to-day operations," Geisman declares. "They begin to see new opportunities for using the machine."

Board market follows PCs

Most analysts see the board-level market for PC products as following the market for the PC and its associated hardware and software. "There is no hard-and-fast line between them," Future Computing's Wilson maintains. "People have PCs on their desks. There is going to be a large number of people who have grown up on these systems and have been programming in an MS-DOS environment. The [board-level] market will be just another market for a product that is widely used anyway."

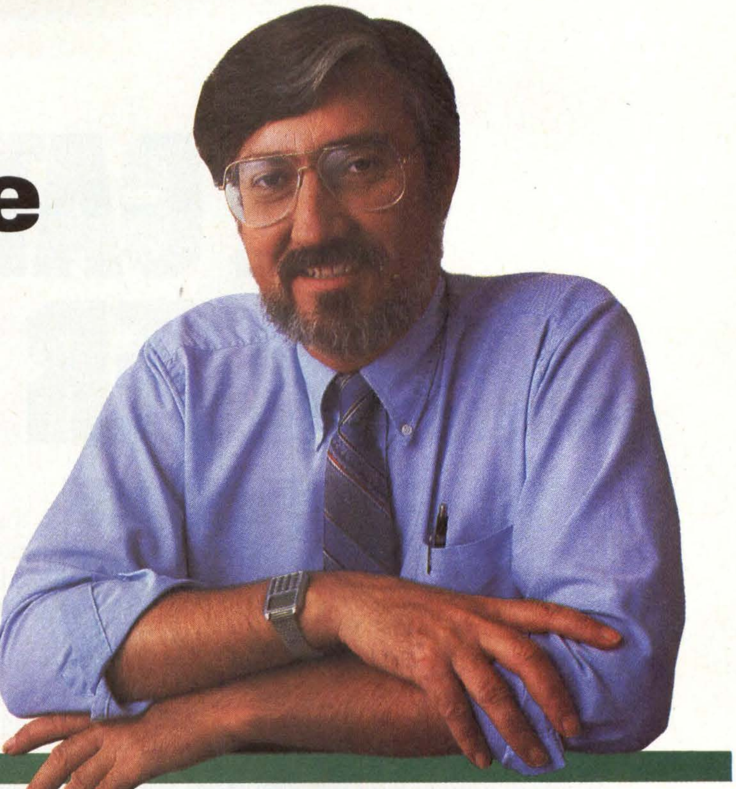
PC bus product vendors are emphasizing the speed, simplicity and cost-effectiveness of integrating systems with the bus. This approach appeals to many customers who, for whatever reasons, want a PC-based system but have been reluctant to venture down to the board level. Vendors offer two main product categories: highly functional, single-board computers, or "boards and boxes" combining CPU and other cards with card cages and sometimes enclosures, disk and tape drives.

OEMtek, for example, combines both approaches. It offers boards alone or low-profile (3½-inch-high) or standard (6-inch-high) computing modules, containing the 8088-based system board and expansion slots, plus data storage and expansion modules for add-in boards and storage devices. The company also provides an 8086- or 80286-based, file-server enclosure that can handle as many as 96 workstations, as an alternative to conventional LANs.

Another vendor of PC bus-board-based systems, ICS Inc., San Diego, Calif., touts the advantages of the bus in industrial applications. "We are supporting IBM because it is the big presence in the industrial-control market," declares ICS product manager Dave Lippincott. "They are on the way to taking over from programmable controllers."

Lippincott says the company's "Build-your-

"Interphase controllers will introduce your system to life in the fast lane."



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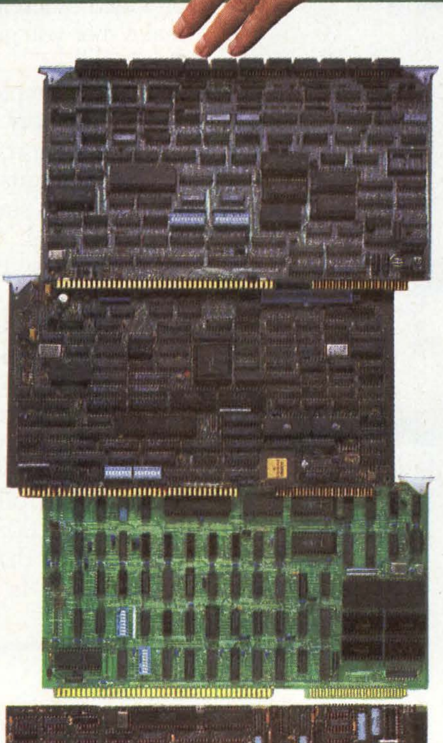

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CIRCLE NO. 12 ON INQUIRY CARD

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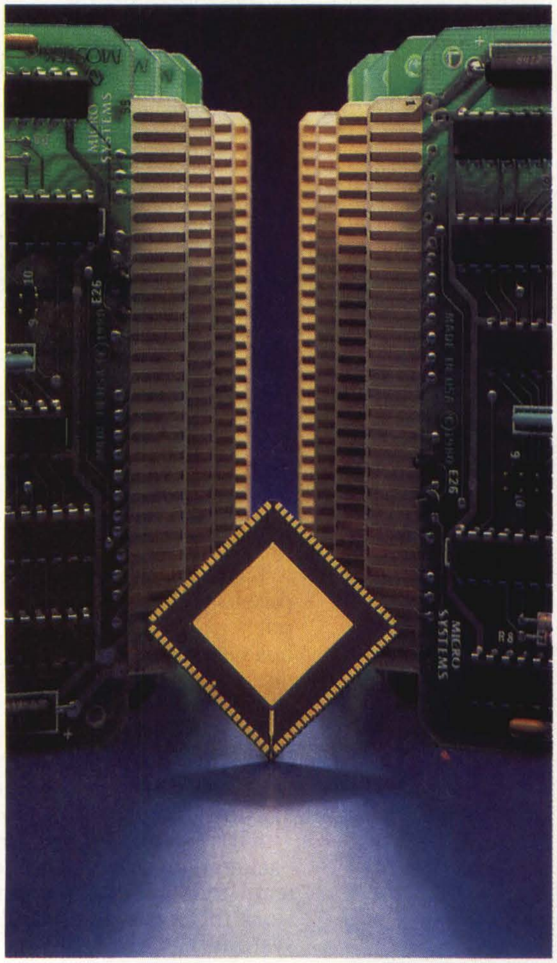

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CIRCLE NO. 13 ON INQUIRY CARD

own-PC" series of PC/CPU, RAM, video and disk cards, and an expansion chassis, is superior to IBM's industrial version of the PC—the Industrial IBM 5531—for factory-floor applications.

"The 5531 is not an industrial machine," Lippincott maintains. "IBM took a product built for the office environment, put a couple of fans on it, painted it gray and said, 'Now we are industrial.'"

Rotating media in an industrial environment is susceptible to contamination, Lippincott points out, contending "you can't rack-mount a PC." In contrast, Lippincott says, ICS's 0.5M-byte, Model BDISK1, industrial, bubble-memory board, is non-volatile, impervious to dust and vibration and responds to fixed disk commands under PC-DOS 2.0, CP/M-86 and other operating systems. The boards can be linked for as much as 2M bytes of storage, and their operating temperature range of 10 C to 55 C is a plus in industrial applications, he says.

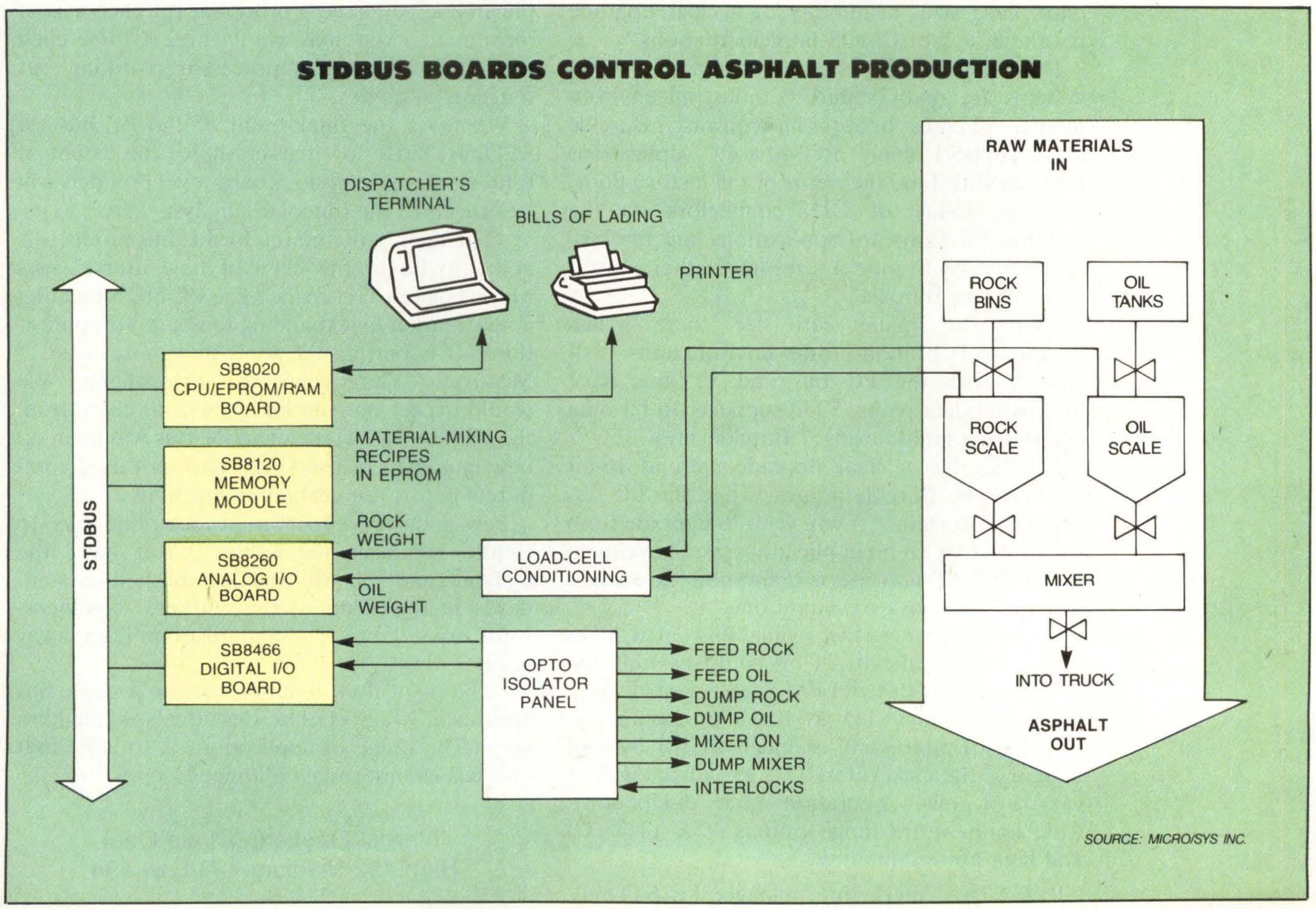
Mostron is another PC bus board vendor going after the industrial market, with its SBM-88 PC Engine. The board supports Intel's iRMX-86 real-time operating system and 8087 math coprocessor. This capability, and its on-board CMOS CRT and floppy disk controllers, two software-controlled timers, four direct-memory access (DMA) channels and 0-to-55 C operating temperature range, suit it for industrial-automation applications, stresses sales manager White.

"The IBM PC is having a wild and woolly impact on factory-floor industrial applications," notes Glen Allmendinger, president of the Harbor Research Corp., Boston. "The storm is overflowing into other application areas as well."

The growing linkage of industrial systems to corporate computers is driving people to PC bus products, Allmendinger says. "Cincinnati-Milacron, for example, is embedding an IBM PC in their machine-tool controls. They want to be able to talk to IBM computers such as the 4300 [mainframe] and System/38 [minicomputer]."

Analysts, however, don't gloss over the limitations of the PC bus in some industrial applications. Because of the 8088 processor's relatively low speed, 8-bit data path and other limitations, the boards are not ideal for real-time, throughput-sensitive control tasks requiring interrupts

Low-end industrial instrumentation *and control applications, such as this asphalt batching system, constitute the primary battleground in the PC bus and STDbus single-board computers' contest for market share.*



STDBUS BOARDS CONTROL ASPHALT PRODUCTION

SOURCE: MICRO/SYS INC.

'Investment in development tools and time to learn the system is minimal compared to other bus standards.'

with a flexible prioritization scheme. In this respect, William Zachman, corporate vice-president for research at International Data Corp., Framingham, Mass., cautions: "If you want fast access and efficient bus implementation for process-control and lab applications, there is not much advantage to being PC compatible."

STDbus fights back

STDbus board vendors, who sell to the low-end to mid-range industrial market, are not rolling over and playing dead under the onslaught of PC bus products. With more than 2,500 boards availible, the 7-year-old STDbus is very much alive in industrial applications, emphasizes Robert Burckle, vice-president of STDbus board vendor, WinSystems Inc., Arlington, Texas.

"It is undeniable that IBM PC-based products have made a tremendous dent in the marketplace," Burckle admits. "But I don't think the PC bus will run roughshod over the STDbus. The PC bus will create a new market in low-end industrial applications and not displace STD."

Burckle stresses the limitations of PC bus boards relative to STDbus products in their suitability for industrial environments, data path, card size, availibility of a clear upgrade path and lack of CMOS implementations.

Burckle questions whether disk-based, PC bus systems are really suited to industrial environments. STDbus boards, in contrast, Burckle says, support many ROM-based applications that can withstand the rigors of the factory floor. The availibility of DIN connectors on the STDbus for Eurocard applications and the bus' small (4½-by-6½-inch) size are further pluses, according to Burckle.

"With the smaller card size, there is less flexing in vibration-prone environments. Although both the PC bus and STDbus have 8-bit-wide data paths, STD supports 16-bit data transfer via multiplexing," Burckle says.

STDbus has a clear upgrade path to 16-bit applications, Burckle argues, while the PC bus route is uncertain. "If you want to upgrade from the PC to true 16-bit applications, you have to go to the PC-AT and use a brand-new card cage. You are then back to square one."

Burckle stresses the availability of CMOS cards, and specifically of his company's 80C88-microprocessor-based LPM-8088-5 board, as a major asset for STD in harsh environments. Capable of addressing as much as 1M byte of memory, the card offers CMOS advantages of very low-power operation (and dissipation), wide temperature range (minus 40 C to 85 C) and high noise immunity.

Paul Virgo, marketing manager for STDbus vendor Pro-Log Corp., Monterey, Calif., which offers several CMOS boards, including an 80C85 card, also sees the technology as a big plus for STD. "There is a developing trend to CMOS implementations," he notes. "It is only a matter of time before CMOS becomes a requirement at the board level."

Virgo expects a new Pro-Log 8088 CMOS board (due this summer) and its new Multimaster implementation to boost STDbus market growth. Analog Devices Inc., Norwood, Mass., is another company scheduling release of a CMOS board, an analog IO board, due out this month. The Multimaster approach goes beyond the intelligent I/O concept, already available on STD, in which single-board computers perform I/O acting as slaves to a master CPU card. With Pro-Log's Multimaster cards, any of the CPUs can control the bus and share the resources on it. Each master board has its own memory and can be fitted with its own I/O through iSBX connectors.

The Multimaster approach, Virgo says, will allow STDbus boards to take on higher end industrial applications, such as image processing and robotics control, which require multiple processors on the bus. "In complex robotic applications, you need a processor for each axis of movement. You may want three CPUs, each with its own math coprocessor, working out tangents or angles."

Whatever the final result of the PC bus vs. STDbus battle for market share, the extent of total market growth for board-level products will be crucial to the outcome, analysts agree.

"The main growth area for PC bus products is going to be in the class of new users," says Marketshare's Geisman. "The PC bus is creating a new market by expanding the base for applications. It is putting the tools into more hands." Mostron's White echos this assessment: "We would expect our market growth to come from the market as a whole. The PC bus will open up new markets...of users who have not used computers before for certain applications."

Few industry observers expect one bus to totally vanquish the other. "You have the STDbus and the Multibus established as standards in their end of the market," comments InfoCorp's Lewis. "Standards don't go away easily."

"The plant floor will not tolerate a single bus approach," says Harbor Research's Allmendinger. "The range of applications is so large that one bus cannot satisfy all needs." ☐

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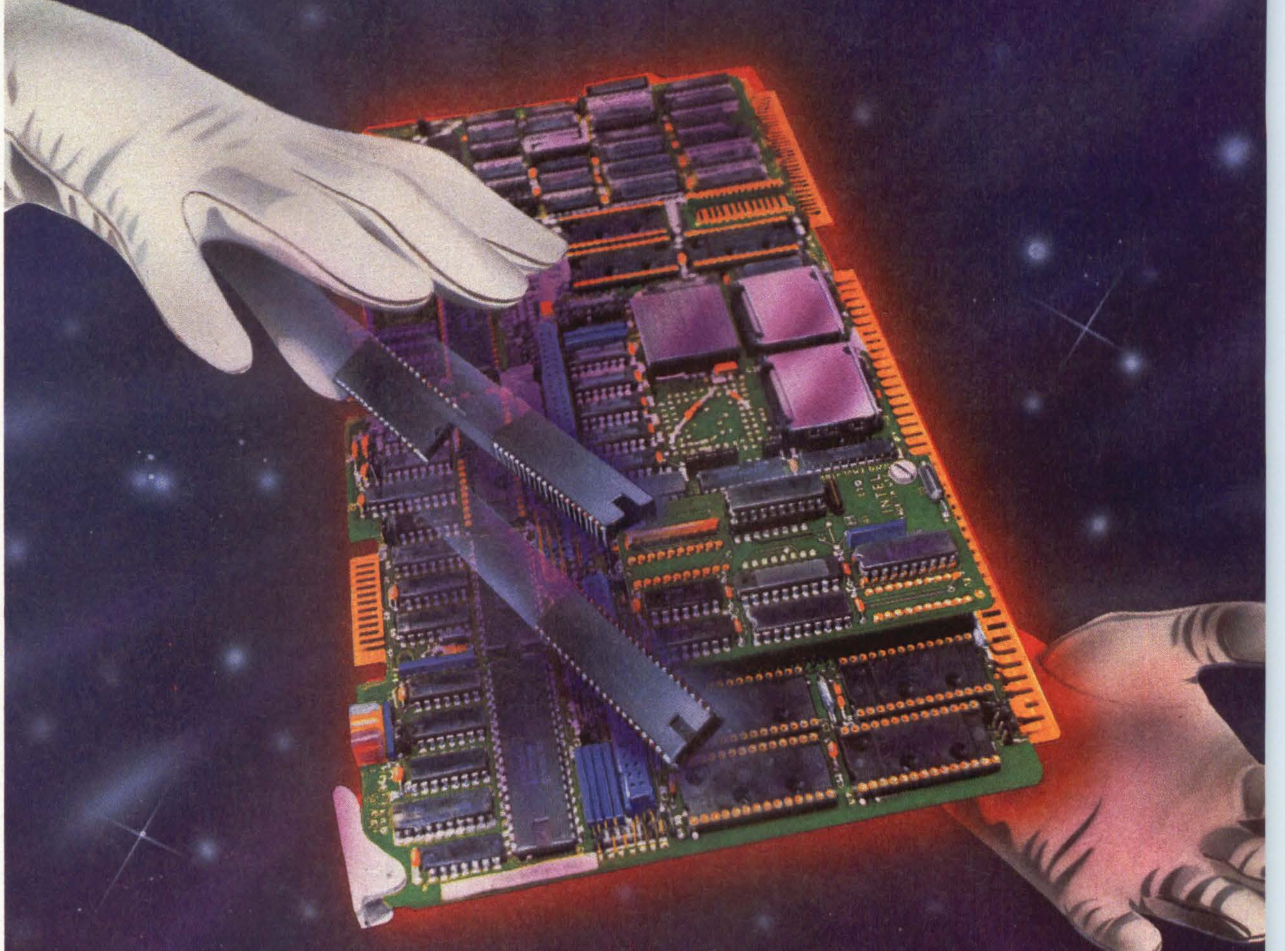

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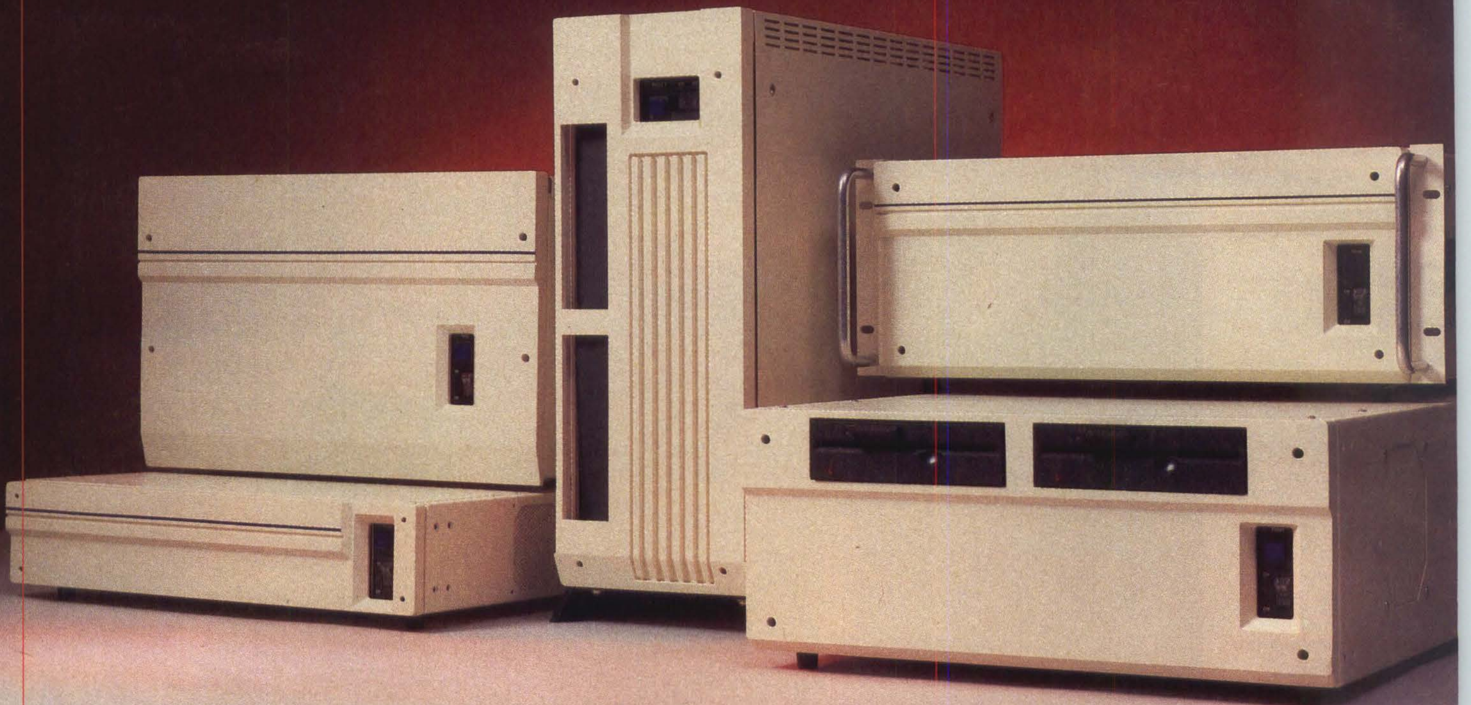

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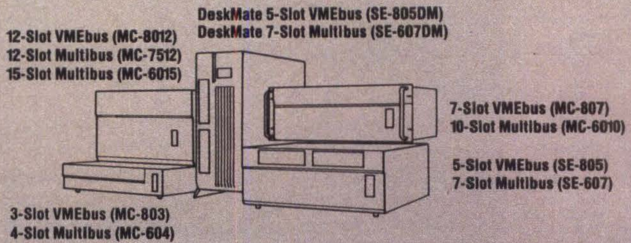
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CIRCLE NO. 15 ON INQUIRY CARD

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
ACKERMAN DIGITAL SYSTEMS INC.									
6809 SBC	6809 (8)	S-100	OS9	debugger, editor, loader, character and graphics generators	BASIC, C Pascal, FORTH	2K (16K)		349(Q1)	one RS232C port, one parallel port
MC68K SBC	68000, 68010 (16)	Multibus	UNIX, CP/M-68K, OS9	debugger, editor, loader, character and graphics generators	BASIC, C, Pascal, FORTH	512K (192K)	6.5 x 12 x .625		dual RS232C ports, real-time clock/ calendar, battery backed
ADPS (ADVANCED DATA PROCESSING SYSTEMS)									
AD-88	8088 (8)	IBM PC bus	CP/M-86, MS-DOS, PC-DOS	IBM PC	IBM PC languages	128K (64K)	9.2 x 8.7 x .5	880(Q1); 685(Q100)	floppy disk controller, monochrome video controller, one RS232C port, one printer port
ID-80	Z80 (8)		CP/M 2.2	CP/M 2.2	CP/M 2.2 languages	64K (8K)	9.2 x 6.5 x .5	395(Q1); 285(Q100)	floppy disc controller, video terminal, two RS232C ports, two parallel ports
ADVANCED DIGITAL CORP.									
Super 186-1M	80186 (8)	S-100	Concurrent CP/M, Turbo-DOS, Network O/S		most languages	1M (32K)	5.125 x 10 x .06	2,495(Q1); 1,577 (Q100)	floppy disk controller, four serial ports, memory mapping; opt. modem and parallel ports
Super Six-128	Z80B (8)	S-100	CP/M, CP/M Plus, Turbo-DOS, Network O/S		most languages	128K (4K)	5.125 x 10 x .06	995(Q1); 597(Q100)	floppy disk controller, two serial ports; opt. modem, parallel and RS422 ports
MultiSlave	Z80H (8)	S-100	CP/M, Turbo-DOS, Network O/S		most languages	384K (8K)	5.125 x 10 x .06	1,650(Q1); 990(Q100)	three separate Z80H sections, intended for dedicated slave applications
AMPRO COMPUTERS INC.									
Little Board/ 186-1	80186 (16)	SCSI/ PLUS	CP/M-86; Turbo-DOS; MS-DOS 2.10, 3.0	all MS-DOS generic software		128K (128K)	5.75 x 7.75 x .75	549(Q1); 384(Q100)	floppy disk controller, two RS232C ports, Centronics printer port, counter/timers
Little Board/ 186-2	80186 (16)	SCSI/ PLUS	CP/M-86; Turbo-DOS; MS-DOS 2.10, 3.0	all MS-DOS generic software		512K (128K)	5.75 x 7.75 x .75	749(Q1); 524(Q100)	floppy disk controller, two RS232C ports, Centronics printer port, counter/timers
Little Board/ PLUS	Z80A (8)	SCSI/ PLUS	CP/M, Turbo-DOS, ZRDOS	all CP/M 2.2 software		64K (32K)	5.75 x 7.75 x .75	349(Q1); 245(Q100)	floppy disc controller, two RS232C ports, Centronics printer port, counter/timers
APPLIED MICRO TECHNOLOGY INC.									
ST4102	Z80A (8)	STD	CP/M	debugger, monitor, BIOS		2K (8K)	6.5 x 4.5 x .5	495(Q1)	RS232C port; 2.5–, 4–MHz version; host/slave handshake
AT&T INFORMATION SYSTEMS									
UNIX PC Model 7300	68010 (32)		UNIX System V			512K (32K)	18 x 18 x 18	5,095(Q1)	10M-byte hard disk drive
CALIFORNIA COMPUTER SYSTEMS									
200 Series	Z80A (8, 16, 32)	S-100	MS-DOS, CP/M, MP/M	debugger, linker, assembler	BASIC, C, Pascal/MT+, FORTRAN, COBOL, PL/1, CBASIC	64K–256K	6.75 x 17.5 x 24		
300 Series	Z80A (8, 16, 32)	S-100	MS-DOS, CP/M, MP/M	debugger, linker, assembler	BASIC, C, Pascal/MT+, FORTRAN, COBOL	64K–256K	6.75 x 17.5 x 24		
400 Series	Z80A (8, 16, 32)	S-100	MS-DOS, CP/M, MP/M	debugger, linker, assembler	BASIC, C, Pascal/MT+, FORTRAN, COBOL	64K–256K	6.75 x 17.5 x 24		
CENTRAL DATA CORP.									
CD21/ 1801	Z8001, Z8003 (16)	Multibus, iBLX	XENIX	montior	C		6.75 x 12	1,600(Q1); 1,025 (Q100)	

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
COLEX TECHNOLOGY CORP.									
VME/186	80186	VME	MS-DOS	debugger, editor	BASIC, C	128K–256K (64K)		1,525(Q1); 995(Q100)	two serial ports, parallel port, clock with battery backup
VME/68K	68010	VME	CP/M-68K, UNIX System V, P-DOS	debugger, editor	BASIC, C	1M–2M (1.024M–2.048M)		2,495(Q1); 1,695 (Q100)	2M-byte dual ported memory
COMPUTER AUTOMATION INC.									
NM 4/10	custom (16)	Maxibus	OS4, RTX4, CAOS II		Pascal, FORTRAN IV, BCPL, CORAL 66	1K–4K (up to 3K)	7.5 x 16.9	650(Q1)	power fail detect, auto restart, auto load, battery backed
NM 4/12	custom (16)	Maxibus	OS4, RTX4, CAOS II		Pascal, FORTRAN IV, BCPL, CORAL 66	128K (32K)	7.5 x 16.9	980(Q1)	power fail detect, auto restart, auto load, battery backed, diagnostics
NM 4/22	custom (16)	Maxibus	OS4, RTX4, CAOS II		Pascal, FORTRAN IV, BCPL, CORAL 66	128K (32K)	7.5 x 16.9	1,250(Q1)	power fail detect, auto restart, auto load, battery backed, diagnostics
COMPUTER SYSTEMS									
PC/XT 8088	8088 (8,16)	IBM PC bus	MS-DOS	DOS utilities, IBM PC software compatible	BASIC, Pascal, FORTRAN, COBOL	64K–256K (32K–128K)	8.5 x 11	478(Q1)	IBM PC/XT-compatible, one serial port, one parallel port; opt. QUINIX
CREATIVE MICRO SYSTEMS									
9619A	68B09 (8)	EXORbus	OS9	debugger, editor, assembler	BASIC, C	8K–32K (8K–48K)			power/restart circuit, battery backup, Quartz day/date clock
CUBIT (DIV. OF PROTEUS INDUSTRIES)									
7510	6502 (8)	STD	DOS/65		BASIC, FORTH	combined 56K	4.5 x 6.6 x .625	230(Q1); 195(Q100)	72 parallel I/O lines
7520	65C02 (8)	STD	DOS/65		BASIC, FORTH	combined 56K	4.5 x 6.5 x .625	275(Q1); 233(Q100)	72 parallel I/O lines
7530	6502 (8)	STD	DOS/65		BASIC, FORTH	combined 56K	4.5 x 6.5 x .625	240(Q1); 204(Q100)	56 parallel I/O lines
7540	65C02 (8)	STD	DOS/65		BASIC, FORTH	combined 56K	4.5 x 6.5 x .625	285(Q1)	56 parallel lines, one serial I/O line
7550	6502 (8)	STD	DOS/65	BASIC, FORTH	BASIC, FORTH	48K (6K)	4.5 x 6.5 x .625	435(Q1)	floppy disk controller, two serial I/O lines
DATA SUD SYSTEMS/U.S. INC.									
DSSEC-PUA 1	68000, 68010 (16)	VME, VMX bus	CP/M-68K, VERSAdos, P-DOS	DSSEbug		256K (up to 64K)	9.2 x 6.3 x .062	2,495(Q1); 1,875 (Q100)	floating point processor, four 8-bit timers; opt. MMU
DATRICON CORP.									
ACS-2A	Z80A (8)	STD	CP/M 2.2	debugger			6.5 x 4.5 x .062	195(Q1); 158(Q100)	
ASC-09	6809 (8)	STD	OS9	debugger	BASIC, FORTH		6.5 x 4.5 x .062	195(Q1); 158(Q100)	
ASC-68SBC	68008 (16)	STD	UNIX	debugger			6.5 x 4.5 x .062	495(Q1); 401(Q100)	
DAVIDGE CORP.									
DPC-1000	IBM PC compatible (16)		PC-DOS, MS-DOS, CP/M-86	video graphics	BASIC, C, FORTH	512K (256K)		625(Q1); 550(Q100)	floppy disk controller, speaker port, TTL video, IBM PC keyboard
DSB-4000	Z80A, Z89B .(8)	SASI	CP/M 2.2		FORTH, OASIS	64K (8K)	1 x 5.75 x 10	315(Q1); 277(Q100)	floppy disk controller, two serial ports, two parallel ports
DSB-6000	Z80B (8)	IEEE-488	CP/M 2.2, 3.0; MP/M-II		FORTH, OASIS	256K (64K)	1 x 5.75 x 10	435(Q1); 383(Q100)	floppy disk controller, two serial ports, two parallel ports

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
DIGITAL EQUIPMENT CORP.									
LSI-11/73	J-11 (16)	Q-bus	RSX, RT-11, ULTRIX-11		BASIC, Pascal, FORTRAN		5.2 x 8.9 x .5	2,180(Q1); 1,395 (Q100)	memory management
SBC-11/21	T-11 (16)	Q-bus	RT-11		BASIC, Pascal, FORTRAN	16K (32K)	5.2 x 8.9 x .5	790(Q1); 506(Q100)	two serial lines
DIVERSIFIED TECHNOLOGY INC.									
CBC80C/ 2408TC	NSC800 (8)	Multibus				8K (24K)	12 x 6.75 x .5	950(Q1); 760(Q100)	battery-backed RAM, power save feature
CBC86C/ 0516TC	80C86 (16)	Multibus				16K (32K)	12 x 6.75 x .5	1,395(Q1); 1,116 (Q100)	battery-backed memory
DUAL SYSTEMS CORP.									
CPU-68000M	68000 (16, 32)	S-100	UNIX System V		C, Pascal, FORTRAN COBOL, Assembly		5 x 10 x .5		68451 MMU
VIOP	68000 (16, 32)	VME			C, Assembly	128K, 512K, (128K)	6.3 x 9.17 x .78		functions as interrupt server
DY-4 SYSTEMS INC.									
DSTD-101	Z80A (8)	STD		monitor, boot		40K (40K)	4.5 x 6.5 x .48	289(Q1)	two parallel ports
DSTD-102	Z80A (8)	STD		monitor, boot		24K (48K)	4.5 x 6.5 x .48	342(Q1)	two serial I/O channels
DSTD-103	Z80A (8)	STD		monitor, boot		40K (80K)	4.5 x 6.5 x .48	310(Q1)	two parallel ports
DSTD-109	9511A (8)	STD					4.5 x 6.5 x .48	559(Q1)	math coprocessor
DSTD-160/360	68000 (16)	STD		monitor		512K	4.5 x 6.5 x .48		one serial I/O channel
DSTD-168	68008 (16)	STD		monitor			4.5 x 6.5 x .48	599(Q1)	two RS232C serial I/O channels
DSTD-187/ DSTD-188	8088, 80130A	STD		montior		8K (16K/ 32K)	4.5 x 6.5 x .48	752/ 546(Q1)	two RS232C serial I/O channels
DVME-102	68000 (16)	VME				up to 1M	9.17 x 8.66	2,258(Q1)	two serial I/O channels; opt. MMU
DVME-105	68000 (16)	VME					9.17 x 8.66	1,350(Q1)	two serial I/O channels, three programmable counter/timer channels
SVME-101	68010 (16)	VME				512K	9.17 x 6.2		one serial I/O channel, parallel I/O bus
EDUCATIONAL MICROCOMPUTER SYSTEMS									
M68K	68000 (16)	proprietary	CP/M-68K, 4X FORTH	editor, monitor, compiler	BASIC, C, FORTH, Assembly	20K (32K)	10 x 14	695(Q1); 495(Q100)	dual RS232C parallel port, five 16-bit counter/timers
VME-1100	68000 (16)	VME	CP/M-68K, 4X FORTH	editor, monitor, compiler	BASIC, C, FORTH, Assembly	16K (32K)	4 x 6	495(Q1); 350(Q100)	
VC8024	Z80 (8)	S-100		monitor		4K (8K)	5 x 10	325(Q1); 225(Q100)	video output 80 x 24, limited graphics mode
ENTERPRISE SYSTEMS CORP.									
10809	6809, 68B09 (8)	STD		debugger, monitor		2K–24K (8K–48K)	4.5 x 6.5	275(Q1)	one RS232C, RS422 serial port; power fail detect; interrupt; battery-backed CMOS RAM
10812	6502, 6502A (8)	STD		debugger, monitor		2K–24K (8K–48K)	4.5 x 6.5	275(Q1)	one RS232C, RS422 serial port; power fail detect; interrupt; battery-backed CMOS RAM
10888	8088 (16)	STD	CP/M-86, MS-DOS	debugger, monitor		2K–24K (8K–48K)	4.5 x 6.5		two RS232C serial ports, 20-bit memory addressing

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
FORCE COMPUTERS INC.									
CPU-2	68000, 68010 (8, 16)	VME	P-DOS	editor, monitor	BASIC, C, Pascal, FORTRAN	1.024M (32K)	9.2 x 6.3 x .7	1,200(Q1); 960(Q100)	floppy disk controller, real-time clock
CPU-3	68000, 68010 (8, 16)	VME	P-DOS, UNIX System V	editor, monitor	BASIC, C, Pascal, FORTRAN	128K (128K)	9.2 x 6.3 x .7	1,825(Q1); 1,460 (Q100)	battery-backed real-time clock, DMA, MMU
CPU-4	68000, 68010 (8, 16)	VME	P-DOS	editor, monitor	BASIC, C, Pascal, FORTRAN	128K (256K)	9.2 x 6.3 x .7	2,050(Q1); 1,640 (Q100)	battery-backed real-time clock, DMA
FORWARD TECHNOLOGY INC.									
FT68X	68000 (16)	Multibus	XENIX	full diagnostics monitor	BASIC, C, Pascal, FORTRAN 77, APL	256K (128K)	6.75 x 12 x .55	2,500(Q1); 1,250 (Q100)	
GENERAL MICRO SYSTEMS INC.									
GMS6506/ 6502	6502, 6502A (8)	EXORbus	Rockwell	debugger, editor	BASIC, FORTH, PL/65	4K (32K)	9.75 x 6 x .7	536(Q1); 320(Q100)	memory mapping, dual parallel I/O port, RS232C serial port, real-time clock
GMS6506/ 6802	6802, 68B02 (8)	EXORbus	M-DOS	debugger, editor, monitor	BASIC, C	4K (32K)	9.75 x 6 x .7	536(Q1); 410(Q100)	memory mapping, dual parallel I/O port, RS232C serial port, real-time clock
GMS6506/ 6809	6809, 68B09 (8)	EXORbus	M-DOS, OS9, FLEX	debugger, editor, loader, monitor	BASIC, C, Pascal	4K (32K)	9.75 x 6 x .7	536(Q1); 410(Q100)	memory mapping, dual parallel I/O port, RS232C serial port, real-time clock
GMS6507/ 6502	6502, 6502A (8)	EXORbus	Rockwell	debugger, editor, loader	BASIC, FORTH	64K (64K)	9.75 x 6 x .7	750(Q1); 507(Q100)	memory mapping, dual serial and printer ports, battery-backed real-time clock
GMS6507/ 6809	6809, 68B09 (8, 16)	EXORbus	M-DOS, OS9, FLEX	debugger, editor, loader, assembler, disassembler	BASIC, C, FORTH	64K (64K)	9.75 x 6 x .7	750(Q1); 520(Q100)	memory mapping, dual serial and printer ports, battery-backed real-time clock
GMS6507/ 68008	68008 (16, 32)	EXORbus	P-DOS	debugger, editor, loader	BASIC,C, Pascal, FORTRAN 77	64K (64K)	9.75 x 6 x .7	750(Q1); 520(Q100)	memory mapping, dual serial and printer ports, battery-backed real-time clock
GMSV06	68000, 68010 (16, 32)	VME	P-DOS	debugger, editor, loader, monitor	BASIC, C, Pascal, FORTH	1M (512K)	9.2 x 6.3 x .7	2,799(Q1); 1,959 (Q100)	two printer ports, real-time clock, auto restart, diagnostics
GOODSPEED SYSTEMS INC.									
GS-32	Z80, 32032 (32)	proprietary	CP/M GENIX 4.1	debugger, editor, assembler, TDS	C	256K–2M (16K)	.75 x 15 x 13	5,500(Q1); 4,175 (Q100)	SCSI port, six RS232C ports, 32-bit expansion port, clock, three 16-bit timers
HEURIKON CORP.									
HK68/M10	68000, 68010 (32)	Multibus	UNIPlus System V, VRTX, C-Executive, CP/M-68K	EMACS, Uniplex II, UltraCalc	C, BASIC, FORTRAN, Pascal, Ada, APL, COBOL	256K–1M (128K)	6.25 x 12 x .5	3,995(Q1)	four serial ports, two iSBX connectors and one iLBX connector
HK68/V10	68000, 68010 (32)	VME	UNIPlus System V, VRTX, C-Executive, CP/M-68K	EMACS, Uniplex II, UltraCalc	C, BASIC, FORTRAN, Pascal, Ada, APL, COBOL	256K–1M (256K)	6.25 x 9.25 x .5		one serial port
MLZ	Z80A (8)	Multibus	CP/M, CP/Net, MP/M	most CP/M software	most CP/M languages	16K–128K (16K)	6.25 x 12 x .5	1,695(Q1)	memory mapping, four serial ports, DMA; opt. floppy disk controller
HEWLETT-PACKARD CO.									
2106BK	custom (16)	AIO	RTE-A	debugger, assembler, database, graphics	BASIC, Pascal, FORTRAN 77, FORTRAN 4X	128K–512K (16K)	.375 x 6.75 x 12	3,410–4,910(Q1); 2,180–3,140 (Q100)	power fail detect, auto restart, self-test
INDOCOMP INC.									
IND-68001	68010 (16)	VME	MTOS-68K	debugger	C, Pascal	36K (112K)	15 x 9.5	942(Q1); 785(Q100)	serial port, four programmable timers, battery-backed SRAM

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Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
IND-68011	68010 (16)	VME	MTOS-68K	debugger	C, Pascal	36K (112K)	15 x 9.5	2,894(Q1); 2,411 (Q100)	serial port, four programmable timers, battery-backed SRAM
IND-68021	68010 (16)	VME	MTOS-68K	debugger	C, Pascal	36K (112K)	15 x 9.5	2,312(Q1); 1,972 (Q100)	serial port, 32 digital I/O lines, four programmable timers, battery-backed SRAM
IND-68031	68010 (16)	VME	MTOS-68K	debugger	C, Pascal	36K (112K)	15 x 9.5	2,200(Q1); 1,880 (Q100)	eight serial ports, one parallel port
INFOSPHERE INC.									
PCP11E	Z80A (8)	Q-bus	SPHERE	assembler, compiler, interpreter	SPHERE	16K (24K)	8.5 x 5.2 x 5	995(Q1); 795(Q100)	dual serial ports, eight parallel lines
INNER ACCESS CORP.									
68000-P	68000 (16)	IEEE-696	Mirage		APL, FORTH, FORTRAN 77, Pascal, Extended BASIC	32K	5 x 10	695(Q1); 383(Q100)	three 16-bit timers; opt. 10-MHz version
INNOVATIVE RESEARCH INC.									
GDC-186	80186 (16)	Multibus		debugger		16K (64K)	12 x 6.75 x .6	795(Q1); 675(Q100)	one serial port, two iSBX connectors; opt. graphics controller
SBC90A	Z80A (8)	Multibus	CP/M	debugger		128K (16K)	12 x 6.75 x .6	895(Q1); 670(Q100)	memory mapping, two serial ports, two parallel ports, timers; opt. floppy disk controller
INTEL CORP.									
iSBC 80/10B	8080A (8)	Multibus	iRMX-80	BASIC, FORTRAN	ICE-80	1K (16K)	6.75 x 12 x .5	540(Q1)	one RS232C port, 48 programmable parallel ports
iSBC 80/20-4	8080A (8)	Multibus	CP/M-80, iRMX-80	BASIC, FORTRAN	ICE-80	4K (8K)	6.75 x 12 x .5	995(Q1)	one RS232C port, 48 programmable parallel ports
iSBC 80/24	8085A-2 (8)	Multibus	CP/M-80, iRMX-80	BASIC, FORTRAN	ICE-85A	4K (32K)	6.75 x 12 x .5	945(Q1)	one RS232C port, 48 programmable parallel ports, iSBX connector
iSBC 80/30	8085A (8)	Multibus	iRMX-80	BASIC, FORTRAN	ICE-85A	16K (8K)	6.75 x 12 x .5	1,800(Q1)	one RS232C port, 24 programmable parallel ports, 12 interrupt levels
iSBC 86/05A	8086-2 (8, 16)	Multibus	CP/M-86, iRMX-86		BASIC, FORTRAN	128K (256K)	6.75 x 12 x .7	1,500(Q1)	one serial port, one parallel port, battery backup, two iSBX connectors
iSBC 86/12A	8086 (8, 16)	Multibus	CP/M-86, iRMX-86		BASIC, FORTRAN	32K (8K)	12 x 6.75 x .6	1,900(Q1)	one serial port
iSBC 86/30	8086-2 (8, 16)	Multibus	CP/M-86, iRMX-86		BASIC, FORTRAN	128K (256K)	6.75 x 12 x .7	2,500(Q1)	one serial port, one parallel port, two iSBX connectors
iSBC 86/35	8086-2 (8, 16)	Multibus	iRMX-86		BASIC, FORTRAN	512K (256K)	6.75 x 12 x .7	3,495(Q1)	one serial port, one parallel port
iSBC 88/25	8088 (8, 16)	Multibus	CP/M-86, iRMX-86, iRMX-88	ICE-88	PL/M-86	4K (64K)	6.75 x 12 x .5	790(Q1)	one RS232C port, 24 parallel ports, two iSBX connectors
iSBC 186/03	80186 (8, 16)	Multibus	iRMX-86		BASIC, FORTRAN	64K (512K)	12 x 7 x .5	1,650(Q1)	two serial ports, one parallel port, two iSBX connectors, battery backup
iSBC 186/78A	80186 (16)	Multibus	iRMX-86, XENIX		C, PL/M	512K	7.05 x 12 x .7	2,995(Q1)	two 8-, 16-bit connectors; video connectors
iSBC 286/10	80286 (8, 16)	Multibus	iRMX-86	debugger, monitor	Pascal, FORTRAN, PL/M-86		6.75 x 12 x .5	2,900(Q1)	two serial ports, one parallel port, 16 vectored interrupts
iSBC 286/100	80286 (8, 16)	Multibus	iRMX-86		BASIC, Pascal		8.6 x 9.2 x .78	3,125(Q1)	one parallel port, one iSBX connector, built-in self-test; opt. 80287 coprocessor

SINGLE-BOARD MICROCOMPUTERS

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INTERCONTINENTAL MICRO SYSTEMS CORP.									
CPS-16	8086 (16)	S-100	Turbo-DOS	debugger, editor, loader	BASIC, C, Pascal, FORTH	1M	5.5 x 10 x .56	2,295(Q1); 1,721 (Q100)	memory refresh
CPS-BMX	Z80A, Z80B (8)	S-100	Turbo-DOS	debugger, editor, loader	BASIC, C, Pascal, FORTH	128K	5.5 x 10 x .56	695–750(Q1); 521–562(Q100)	
CPS-MX	Z80A, Z80B (8)	S-100	Turbo-DOS	debugger, editor, loader	BASIC, C, Pascal, FORTH	64K	5.5 x 10 x .56	475–550(Q1); 356–412(Q100)	
CPZ-186	80186 (16)	S-100	Turbo-DOS	debugger, editor, loader	BASIC, C, Pascal, FORTH	1M (8K)	5.5 x 10 x .56	2,695(Q1); 2,021 (Q100)	floppy disk controller, vectored interrupts, MMU
CPZ-4800X	Z80A, Z80B (8)	S-100	Turbo-DOS	debugger, editor, loader	BASIC, C, Pascal, FORTH	64K (8K)	5.5 x 10 x .56	995–1,045(Q1); 746–784(Q100)	floppy disk controller, vectored interrupts, MMU
WS80-X	Z80A, Z80B (8)	S-100	Turbo-DOS	debugger, editor, loader	BASIC, C, Pascal, FORTH	128K	6 x 10 x .625	995–1,045(Q1); 746–783(Q100)	on-board LAN controller
LANS100	Z80, 8086 (8, 16)	IBM PC bus	CP/M, CP/M-86, PC-DOS, MS-DOS, MP/M, MP/M-86, Concurrent CP/M	debugger, editor, loader	BASIC, C, Pascal, FORTH	up to 256K	5.5 x 10 x .56	495(Q1); 371(Q100)	interfaces between S-100 and ARCnet (LAN)
LANPC	(8, 16)	IBM PC bus	CP/M, CP/M-86, PC-DOS, MS-DOS, MP/M, MP/M-86, Concurrent CP/M	debugger, editor, loader	BASIC, C, Pascal, FORTH	up to 256K	4 x 10.5 x .625	650–995(Q1); 487–746(Q100)	can convert PCs into intelligent or diskless workstations and file processors
256KMB	Z80, 8086 (8)	IBM PC bus	CP/M 2.2, MP/M, CROMIX	debugger, editor, loader	BASIC, C, Pascal, FORTH	256K	5.5 x 10 x .56	895(Q1); 671(Q100)	linear addressable memory
IRONICS INC.									
IV-1600	68000, 68010 (16, 32)	VME	CP/M-68K, UNIX System V			256K–1M (320K)	9.19 x 11	2,995(Q1)	up to four serial ports, counter/timer, real-time clock/calendar
IV-1601	68000, 68010 (16, 32)	VME	UNIX System V	debugger	Pascal, FORTRAN	512K (8K–64K)		2,750(Q1)	counter/timer; opt. NS16081 floating point processor
IV-1602	68000, 68010 (16, 32)	VME	UNIX System V	debugger		128–512K (8K–64K)		2,200(Q1)	two serial ports, two parallel ports; opt. NS16081 floating point processor
IV-3201	68020 (32)	VME	UNIX System V	debugger		512K (8K–64K)			
ISI INTERNATIONAL									
ISB-3101	Z80A (8)	STD	CP/M	debugger, linker	BASIC, C, Pascal, FORTRAN	24 (12K)	6.5 x 4.48 x .062	225(Q1); 195(Q100)	
ISB-3104	Z80A (8)	STD	CP/M 2.2, VRTX-80	debugger, loader, assembler	BASIC, C, Pascal, FORTRAN	64K, 256K (2K–64K)	4.5 x 7.5 x .437	750(Q1); 625(Q100)	floppy disc controller, DMA controller, memory mapping, power restart, 16 parallel I/O lines
ISB-3111	8085 (8)	STD	CP/M	debugger, linker, assembler	BASIC, C, Pascal, FORTRAN	24K (12K)	6.5 x 4.48 x .062	225(Q1); 195(Q100)	
MCB-0186	80186 (16)	Multibus	RMX-86			32K (256K)	12 x 7.05 x .5		8087 coprocessor, 24 parallel I/O lines, two iSBX connectors.
JF MICROSYSTEMS									
4188	8088 (16)	STD		debugger, loader		8K (16K)	4.5 x 6.5 x .4	400(Q1); 300(Q100)	interrupt controller, reset circuit

SINGLE-BOARD MICROCOMPUTERS

Table 1

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8730	8088 (16)	STD	CP/M-86, RMX-86	debugger, loader		(32K)	4.5 x 6.5 x .4	600(Q1);
								450(Q100)
									interrupt controller, math coprocessor, restart circuit, memory mapping

8759	8088 (16)	STD	CP/M-86	debugger, loader		(32K)	4.5 x 6.5 x .4	500(Q1);
								375(Q100)
									interrupt controller, math coprocessor, reset circuit, memory mapping

8800	8088 (16)	STD		debugger, loader		(8K)	4.5 x 6.5 x .4	250(Q1);
								187(Q100)	

LAMAR INSTRUMENTS									

Superkim	6502 (8)	KIM 1	KIM 1	assembler		4K (20K)	11 x 11 x 3	545(Q1);
								450(Q100)
									RS232C port, nine parallel ports, power supply

LOMAS DATA PRODUCTS									
Thunder 186	80186 (16)	S-100	CP/M-86, MS-DOS, Concurrent DOS	debugger, editor	BASIC, C, Pascal, FORTRAN	256K (64K)	5 x 10 x .5	1,595(Q1)	floppy disk controller, two serial ports, one parallel port
Lightning One	8086 (16)	S-100	CP/M-86, MS-DOS, Concurrent CP/M		BASIC, C, Pascal, FORTRAN	(8K)	5 x 10 x .5	525(Q1)	8087 math coprocessor, 8089 I/O coprocessor
Lightning 286	80286		CP/M-86, MS-DOS		BASIC, C, Pascal, FORTRAN	(64K)	5 x 10 x .5		80286 math coprocessor
MATROX ELECTRONIC SYSTEMS LTD.									
AP-2000	32032 (32)	Multibus	EXEC-NAP	debugger, monitor		128K (512K)	6.25 x 12 x .5	5,195(Q1)	two serial ports, one iSBX connector
MBC-86/512B	8086 (16)	Multibus	CP/M-86			512K (128K)	6.25 x 12 x .5	2,995(Q1); 2,565 (Q100)	two serial ports, five timer/counters, 24 parallel lines; opt. 8087 coprocessor
PBC-80	Z80A (8)	Multibus	CP/M			64K (128K)	6.25 x 12 x .5	1,405(Q1); 1,205 (Q100)	interrupt controller, two serial ports, five timer/counters, 24 parallel lines
MICROBAR SYSTEMS INC.									
COM16	8086 (8,16)	Multibus	XENIX, UNIX		C	4K	12 x 6.75 x .5		self-test diagnostics
DBC68K2	68000 (16)	Multibus	XENIX, UNIPlus	debugger, monitor	BASIC, C, Pascal, FORTRAN	128K–512K (128K)	12 x 6.75 x .4	1,995(Q1); 1,397 (Q100)	opt. two-level page-oriented memory mapping and protection

DBC86	8086 (16)	Multibus	CP/M-86, XENIX	debugger, monitor	C	4K (32K)	12 x 6.75 x .4	1,225(Q1);
								858(Q100)
									opt. memory management

GPC86	8086 (16)	Multibus	CP/M-86, CBIOS	debugger, monitor	C	128K (2K–32K)	12 x 6.75 x .4	1,545(Q1); 1,082 (Q100)	programmable asynch/synch RS232C serial interface
MICROCOMPUTER SYSTEMS INC.									

MSI-C800	NSC800 (8)	STD		execution monitor		8K (8K)	.5 x 4.5 x 6.5	350(Q1);
								297(Q100)
									four real-time clocks, five interrupts, 30 I/O lines

MSI-C850	NSC800 (8)	STD		execution monitor		32K (32K)	.5 x 4.5 x 6.5	295(Q1);
								250(Q100)
									real-time clock, five interrupts

MSI-CZ80	Z80 (8)	STD				64K	.5 x 4.5 x 6.5	295(Q1)	

MSI-7888A	8088 (16)	STD				32K	.5 x 4.5 x 6	295(Q1);
								250(Q100)	

MSI-C8888	CMOS 8088 (16)	STD				32K	.5 x 4.5 x 6.5	325(Q1)	
MICROLOG INC.									
BABY BLUE	Z80B (8)	IBM PC bus	CP/M-80, MS-DOS	BSTAM file transfer	high-level languages	64K	4 x 10		coprocessor, memory mapping

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
BABY BLUE II	Z80B (8)	IBM PC bus	CP/M-80, MS-DOS			64K–256K	4 x 14		coprocessor, memory mapping, two serial ports, one parallel port, battery-backed clock/calendar
BABY TALK	Z80A (8)	IBM PC bus	CP/M-80, MS-DOS			64K	4 x 14		coprocessor, memory mapping, one serial port, one parallel port, battery-backed clock/calendar
MICRO/SYS									
SB8020	Z80 (8)	STD	CP/M	all CP/M languages	all CP/M languages	8K (32K)	4.5 x 6.5	395(Q1)	two serial ports, two parallel ports, battery-backed clock calendar, counter/timer
SB8088	8088 (8, 16)	STD	CP/M-86		C, Pascal, Assembly, STD/BRIDGE	8K (32K)	4.5 x 6.5	395(Q1)	one RS232C port, two 8-bit parallel ports, socket for 8087
SB8275	Z80, 8088 (8, 16)	STD	all		all		4.5 x 6.5	235(Q1)	slave processor, I/O mapped, Z80 code compatible; opt. I/O modules
SB8520	Z80, 8088 (8, 16)	STD	all		all high-level languages		4.5 x 6.5	365(Q1)	universal floppy disk controller, 16- or 20-bit addressing, on-board DMA, supports four drive types
MILLER TECHNOLOGY INC.									

MCPU-800-02	Z80A (8)	STD	CP/M	monitor, BASIC, C COMPILER	BASIC, C, Assembly	16K (32K)	.75 x 4.5 x 7	595(Q1);
								445(Q100)
									memory mapping, serial port

MCPU-800-03	Z80A (8)	STD	CP/M	monitor, BASIC, C COMPILER	BASIC, C, Assembly	64K (32K)	.75 x 4.5 x 7	645(Q1);
								535(Q100)
									memory mapping, serial port

MCPU-900	Z80A (8)	STD	CP/M	monitor, BASIC, C COMPILER	BASIC, C, Assembly	64K (16K)	.75 x 4.5 x 7		floppy disk controller, memory mapping, serial port, printer port
MIZAR INC.									
VME7100	68010 (16)	VME	CP/M-68K, UNIX, polyFORTH, OS9	debugger, monitor		up to 512K (up to 128K)	9.2 x 6.3 x .5	1,595(Q1); 1,215 (Q100)	two serial ports, two parallel ports, dual ported RAM; opt. 10-MHz version
VME7105	68010 (16)	VME	CP/M-68K, UNIX, polyFORTH, OS9	debugger, monitor		up to 512K (up to 128K)	9.2 x 6.3 x .5	2,095(Q1); 1,595 (Q100)	two serial ports, dual ported RAM; opt. 10-MHz version

VME8105	68000 (16)	VME	CP/M-68K, UNIX, polyFORTH, OS9	debugger, monitor		up to 16K (up to 64K)	3.9 x 6.3 x .5	600(Q1);
								425(Q100)
									opt. 10-MHz version

MODULAR COMPUTER SYSTEMS INC. (MODCOMP)									
CLASSIC II/15	custom (16)	CLASSIC I/O bus	MAX IV	debugger, editor, loader	C, Pascal, FORTRAN, COBOL	512K–2M	62.5 x 24.16 x 27.5	13,500(Q1)	512K diskette, local/remote console, self-test, power fail safe, auto restart
MONOLITHIC SYSTEMS CORP.									
MSC8001	Z80A (8)	Multibus			most high-level languages	8K (16K)	6.75 x 12 x .7	870(Q1)	one serial port, two parallel ports
MSC8004	Z80A (8)	Multibus			most high-level languages	64K (32K)	6.75 x 12 x .7	995(Q1)	one serial port, two parallel ports; opt. APU
MSC8007	Z80A (8)	Multibus			most high-level languages	64K (32K)	6.75 x 12 x .7	995(Q1)	three serial ports, one parallel port; opt. APU
MSC8009	Z80A (8)	Multibus	CP/M		most high-level languages	64K (32K)	6.75 x 12 x .7	1,219(Q1)	floppy disk controller, two serial ports; opt. APU
MSC8014	Z80B (8)	Multibus			most high-level languages	128K (32K)	6.75 x 12 x .7	1,116(Q1)	one serial port, two parallel ports; opt. APU
MSC8017	Z80B (8)	Multibus			most high-level languages	128K (32K)	6.75 x 12 x .7	1,116(Q1)	three serial ports, one parallel port; opt. APU

SINGLE-BOARD MICROCOMPUTERS
Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
MSC8186	80186 (16)	Multibus	CP/M, iRMX-86	debugger, monitor	most high-level languages	512K (128K)	6.75 x 12 x .7	2,750(Q1)	one serial port, one parallel port, two iSBX connectors
MOSTEK CORP.									
MDX-CPU1A	Z80 (8)	STD	M/OS-80			256 (4K)	6.5 x 4.5 x .062	150(Q1); 130(Q100)	four counter/timer channels, up to 64K bytes off-board RAM, ROM, EPROM
MDX-CPU2B	Z80 (8)	STD	M/OS-80			48K (192K)	6.5 x 4.5 x .062	195(Q1); 165(Q100)	four counter/timer channels, permits external DMA
MDX-CPU3	Z80 (8)	STD	M/OS-80, MTOS-80, CP/M Plus		C, Assembly	64K (32K)	6.5 x 4.5 x .062	375(Q1); 295(Q100)	RS232C serial port, 8-bit parallel output port
MDX-CPU4	Z80 (8)	STD	M/OS-80, MTOS-80, CP/M Plus		C, Assembly	40K (160K)	6.5 x 4.5 x .062	275(Q1); 235(Q100)	RS232C serial I/O port, two programmable 8-bit timers
MDX-CPU68K	68010 (16)	STD	CP/M-68K, MTOS-68K		C, Pascal, FORTRAN	1.024M (128K)	6.5 x 4.5 x .062	795(Q1); 695(Q100)	DMA
VME-MMCPU/CPU (Memory Managing CPU)	68000, 68010 (16)	VME	UNIX	debugger, linker, assembler	BASIC, C, Pascal, FORTRAN, Assembly	128K, 512K (16K, 64K)	6.3 x 9.2 x .062		68451 MMU
VME-MPCPU	68000, 68010 (16)	VME	MTOS	MTOX drivers		1.024M (32K)	6.3 x 9.2 x .062		one serial port, programmable interrupter, three user timers, watchdog timer.
VME-SBC	68000 (16)	VME		debugger, monitor		12K (48K)	6.3 x 9.2 x .062		three timer/counters, power and push-button reset
MOTOROLA SEMICONDUCTOR PRODUCTS INC. (MICROSYSTEMS)									
M68K-VM01A/M68K-VM01A2	68000 (16)	Versabus	VERSAdos	debugger, editor, loader, linker, assembler	BASIC, Pascal, FORTRAN	32K/64K	9.25 x 14.5 x .6	2,095/ 2,795(Q1)	two serial ports, four parallel ports, three 16-bit programmable timer/counters
M68K-VM02	68000 (16)	Versabus	VERSAdos	debugger, editor, loader	BASIC, Pascal, FORTRAN		9.25 x 14.5 x .6	3,295(Q1)	two serial ports, three 16-bit programmable timer/counters, 14 addressing modes
M68K-VM03-1	68010 (8, 16)	Versabus	VERSAdos	debugger, editor, loader, linker, assembler	BASIC, C, Pascal, FORTRAN	256K	9.25 x 14.5 x .6	3,995(Q1)	dual port controller, two multi-protocol serial ports, programmable timer, real-time clock
M68K-VM04-1/M68K-VM04-2	68020 (8, 16, 32)	Versabus	VERSAdos	debugger, loader, linker, assembler	BASIC, Pascal, FORTRAN		9.25 x 14.5 x .6	6,855/ 6,885(Q1)	on-board 4K cache memory, dual multi-protocol serial ports
MVME101/MVME-110-1	68000 (8, 16)	VME	VERSAdos	debugger, editor, loader, linker, assembler	BASIC, Pascal, FORTRAN		10.3 x 7.4 x .8	995/ 1,295(Q1)	serial port, three counters
MVME-115M	68010 (8, 16)	VME	VERSAdos	debugger, editor, loader, linker, assembler	BASIC, Pascal, FORTRAN		10.3 x 7.4 x .8	1,495(Q1)	memory mapping, one serial port, three counters
MVME120/MVME121	68010 (8,16)	VME	VERSAdos	debugger, editor, loader, linker, assembler	BASIC, Pascal, FORTRAN	128K	10.3 x 7.4 x .8	2,575/ 4,185(Q1)	serial port, three counters, three 16-bit timers, MMU
MVME122/MVME123	68010 (8, 16)	VME	VERSAdos	debugger, editor, loader, linker, assembler	BASIC, Pascal, FORTRAN	512K	10.3 x 7.4 x .8	2,070/ 3,250(Q1)	serial port, three counters, three 16-bit timers, MMU
MVME130/MVME131	68020 (8, 16, 32)	VME	VERSAdos	debugger, editor, loader, linker, assembler	BASIC, Pascal, FORTRAN	16K	10.3 x 7.4 x .8	3,995/ 4,845(Q1)	68881 coprocessor, 16K-byte SRAM

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Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
MRC SYSTEMS INC.									
MBK6801	6801 (8)	EXORbus	EXPRESS multitasking executive, RTX01 real-time executive	debugger, assembler	FORTH, Assembly	11K (10K)		545(Q1)	two serial ports, three-function timer/counter, five modem control signals, eight vectored interrupts
MBK8073	8073 (8)	STD	Tiny BASIC	editor, assembler, BASIC Interpreter	BASIC, Assembly	8K (14.5K)		395(Q1)	two serial ports, real-time clock with battery backup, three 16-bit timer/counters, two interrupt levels
NATIONAL SEMICONDUCTOR CORP.									
BLC-80/05	8085A (8, 16)	Multibus		monitor		512K (8K)	6.75 x 12 x .05	405(Q1)	four vectored interrupts
BLC-80/11A, BLC-80/14A	8080A (8, 16)	Multibus		monitor		1K, 4K (32K)	6.75 x 12 x .05	395(Q1)	two iBLX connectors
BLC-80/316	Z80A (8, 16)	Multibus		monitor		16K (8K)	6.75 x 12 x .5	760(Q1)	battery backup
BLC-80/24, BLC-80/28	8085A-2 (8, 16)	Multibus		monitor		4K, 8K (32K)	6.75 x 12 x .5	875(Q1)	two iBLX connectors
BLC-80/204	8080A (8, 16)	Multibus		monitor		4K (8K)	6.75 x 12 x .05	760(Q1)	eight vectored interrupts, battery backup
BLC-86/05	8086-2 (8, 16)	Multibus		monitor		8K (16K)	6.75 x 12 x .5	1,600(Q1)	two iBLX connectors
BLC-86/12B	8086 (8, 16)	Multibus		monitor		32K (32K)	6.75 x 12 x .5	1,700(Q1)	two iBLX connectors
BLC-86/30	8086-2 (8, 16)	Multibus		monitor		128K (64K)	6.75 x 12 x .5	2,300(Q1)	two iBLX connectors
CIM-802A/ CIM-804	NSC-800 (8, 16)	CIM bus	CP/M BLMX-80D	monitor	BASIC, C, Pascal, FORTH, FORTRAN	2K (4K)	.5 x 3.94 x 6.3	270(Q1)	battery backup, 12 vectored interrupts, two 16-bit counter/timers
CIM-1605	NS32-C016 (16, 32)	CIM bus		monitor	C, UNIX, Assembly	up to 2M (128K)	.5 x 3.94 x 6.3		one serial port, battery backup, three 16-bit counter/timers
OCTAGON SYSTEMS CORP.									

880	8088 (8, 16)	STD	ROBASIC	monitor	ROBASIC	16K (32K)	4.5 x 6.5 x .5	595(Q1);
								475(Q100)
									two RS232C serial ports, interrupt controller, five counter/timers

882	8088 (8, 16)	STD	ROBASIC	monitor	ROBASIC	16K (32K)	4.5 x 6.5 x .5	595(Q1);
								475(Q100)
									two RS232C serial ports, interrupt controller, five counter/timers

890	Z80A (8)	STD	STD BASIC	monitor	STD BASIC	16K (16K)	4.5 x 6.5 x .5	475(Q1);
								385(Q100)
									two RS232C or RS422 serial ports, four counter/timers

OMNIBYTE CORP.									
OB68K1A	68000 (16)	Multibus	polyFORTH, IDRIS	Versabug, Macsbug	C, Pascal, FORTH, FORTRAN 77	32K, 128K, 512K (up to 192K)	6.75 x 12 x .062	2,295(Q1); 1,491 (Q100)	two 16-bit parallel ports, two serial ports, three 16-bit timers
OB68K/ MSBCI	68000, 68010 (16)	Multibus	polyFORTH, IDRIS		C, Pascal, FORTH, FORTRAN 77	256K/2M (256K)	6.75 x 12 x .062	2,850(Q1); 1,995 (Q100)	four serial ports, iSBX port, one 24-bit timer

OB68K/ MMU	68010 (16)	Multibus	IDRIS		C, Pascal, FORTRAN 77	up to 16K (up to 64K)	6.75 x 12 x .062	1,395(Q1);
								976(Q100)
									two serial ports, iLBX memory port, battery-backed calendar clock

VME-1	68000 (16)	VME				4K–112K (8K–448K)	6.3 x 9.19 x .062	1,195(Q1);
								836(Q100)
									two serial ports, two 8-bit parallel ports, one 16-bit timer, one 24-bit timer

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
ONSET COMPUTER CORP.									
CPU-801	NSC800 (8)	C-44	monitor			2K (6K)	4.5 x 5.5 x .5	445(Q1); 365(Q100)	real-time clock
CPU-8085	80C85 (8)	C-44	monitor			2K (2K)	4.5 x 5.5 x .5	275(Q1); 210(Q100)	
CPU-8088	80C88 (8)	C-44	monitor			256 (8K)	4.5 x 5.5 x .5	550(Q1); 420(Q100)	CMOS
CPU-6805A	1468-05E2 (8)	C-44	monitor			1K (2K)	4.5 x 5.5 x .5	360(Q1); 280(Q100)	real-time clock, CMOS
PACIFIC MICROCOMPUTERS INC.									
M68K	68000 (16)	Multibus	UNIX System V	debugger, monitor	BASIC, Pascal, FORTRAN, COBOL, Assembly, Ada	256K (32K)	6.75 x 12 x .5	1,990(Q1); 1,395 (Q100)	two serial I/O ports, five counter/timers
M68D	68000, 68010 (16)	Multibus	UNIX System V	debugger, monitor	BASIC, Pascal, FORTRAN, COBOL, Assembly, Ada	256K (128K)	6.75 x 12 x .5	2,475(Q1); 1,735 (Q100)	two serial I/O ports, eight vectored interrupts, five counter/timers
V68F	68000, 68010 (16)	VME	UNIX System V	debugger, monitor	BASIC, Pascal, FORTRAN, COBOL, Assembly, Ada	256K (128K)	6.3 x 9.19 x .78	2,475(Q1); 1,735 (Q100)	two serial I/O ports, SCSI port, one vectored interrupt
PEGASUS DATA SYSTEMS									
Pegasus I	Z80 (8)		CP/M-80	debugger, editor, loader	BASIC, C, Pascal, FORTH	64K (16K)	6 x 6 x 9	985(Q1); 850(Q100)	floppy disk controller, power/restart circuit, two serial ports
PD1BF	NSC800 (8)		Pegasus		Machine	64K (4K)	5 x 7 x 9	595(Q1); 495(Q100)	power/restart circuit, two serial ports, two parallel ports
PEOPLEWARE SYSTEMS INC.									
10042A	68008 (16)	STD		monitor		16K (8K)	.45 x 4.5 x 6.5	595(Q1)	8-bit parallel port
10017A P-FORTH	6801 (8)	STD	P-FORTH	monitor, assembler	FORTH	2K (8K)	.45 x 4.5 x 6.5	495(Q1)	serial port, programmable timer
PHOENIX DIGITAL CORP.									
DPU-50	6809E (8)	Motorola Ebus	OS9	debugger, editor, loader, GRAFPAC	BASIC, C, Pascal	16K (64K)	6 x 9.75 x 1	1,285(Q1); 790(Q100)	two serial ports, three 16-bit counter/timers
NCM 6809	6809 (8, 16)	Motorola Ebus	OS9	debugger, editor, loader, GRAFPAC	BASIC, C, Pascal	8K (16K)	6 x 9.75 x 1	1,150(Q1); 690(Q100)	three 16-bit counter/timers, programmable baud rates
PCU 6809	6809 (8, 16)	Motorola Ebus	OS9	debugger, editor, loader, GRAFPAC	BASIC, C, Pascal	16K (32K)	6 x 9.75 x 1	1,080(Q1); 600(Q100)	RS232C port, power fail, automatic restart, three 16-bit counter/timers, 20 parallel I/O lines
POWER SOLUTIONS INC.									
Arcus 10P-1	Z80A, Z80B (8)				Machine	up to 48K (8K–48K)	11.5 x 13.5 x 1	2,495(Q1); 1,800 (Q100)	five parallel ports, two serial ports, four counter/timers, battery-backed real-time clock
PRO-LOG CORP.									
7842	Z80A (8)	STD	CP/M-80	debugger, monitor		64K (128K)	4.5 x 6.5 x .5	425(Q1); 336(Q100)	counter/timer
7863	8088 (16)	STD		debugger, monitor		64K (128K)	4.5 x 6.5 x .5	590(Q1); 466(Q100)	8087 coprocessor
7864	8088 (16)	STD		debugger, monitor		64K (128K)	4.5 x 6.5 x .5	650(Q1); 514(Q100)	8087 coprocessor, interrupt, counter/timer
QDP COMPUTER SYSTEMS									
SCS-I	Z80B (8)	S-100	CP/M, MP/M, Turbo-DOS	monitor, loader	BASIC, C, Pascal, Assembly	265K (16K)	9.5 x 10	1,395–1,795(Q1)	two to six serial ports, two parallel ports
QUAY CORP.									
90/MPS	Z80A (8)	Z80 bus	Quay Monitor	debugger, loader, snap, trace	BASIC, Assembly	64K (14K)	1.36 x 16.175 x 7.85	750(Q1); 565(Q100)	power/restart circuit, add-on memory, PROM programmer, PIO, SIO

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options

90F/MPS	Z80A (8)	Z80 bus	CP/M, MP/M	debugger, editor, monitor, boot	BASIC, Pascal, FORTRAN, COBOL	64K (14K)	1.36 x 16.175 x 7.85	895(Q1);
								670(Q100)
									floppy disk controller, power/restart circuit, add-on memory, PROM programmer, PIO, SIO

R.J. BRACHMAN ASSOCIATES INC.									

MMC/03	6503, 65SC-03 (8)	proprietary	6502-based system		Assembly, PL/65	1K (2K)	4.5 x 6.5 x .5	119(Q1);
								90(Q100)
									four parallel ports, power supply, battery backup

MMC/02	65SC-02 (8)	proprietary	6502-based system		Assembly, PL/65	1K, 3K (4K, 6K)	4.5 x 6.5 x .5	166(Q1);
								125(Q100)
									power reset, one serial port, two–four parallel ports, power supply, battery backup, CMOS

MMC/802	65SC-802 (8, 16)	proprietary	65816-based system		Assembly	1K, 3K (4K, 6K)	4.5 x 6.5 x .5	196(Q1)	power reset, one serial port, two–four parallel ports, power supply, battery backup, CMOS
RASTER GRAPHICS INC.									
801	Z80A (8)	Multibus		debugger, disassembler	Trace, Execution	8K (16K)	6.75 x 12	595(Q1)	two RS232C ports, one parallel port
802	Z80A (8)	Multibus	opt. CP/M			64K (4K)		895(Q1)	two RS232C ports, floppy disk controller
RELMS (RELATIONAL MEMORY SYSTEMS INC.)									
RSbc V80/32	Z80A, Z80B, 8080, 8085 (8, 16, 32)	Multibus, IEEE-488	CP/M-86, MS-DOS, XENIX, UNIX System III, OS9	debugger, editor, loader	Assembly			1,095(Q1)	
SBE INC.									

M68K10	68000, 68010 (16, 32)	Multibus	CP/M-68K, REGULUS, VRTX	Probug, Hardbud	BASIC, C, FORTH, FORTRAN, COBOL, DIBOL	1M (64K)	6.75 x 12 x .5	1,595(Q1);
								895(Q100)
									power-up reset, two serial ports, one parallel port, two iSBX connectors, battery-backed RAM

M68COM	68000, 68010 (16, 32)	Multibus	CP/M-68K, UNIX System V, REGULUS, VRTX	Probug, Hardbug	BASIC, C, FORTRAN, COBOL, DIBOL	512K (256K)	6.75 x 12 x .5	1,950(Q1); 1,395 (Q100)	power-up reset, eight serial ports, four DMA channels, mailbox interrupt
M68CPU	68000, 68010 (16, 32)	Multibus	REGULUS	Probug, Hardbug	BASIC, C, FORTRAN, COBOL, DIBOL	(128K)	6.75 x 12 x .5	1,395(Q1); 1,100 (Q100)	power-up reset, two serial ports, two iSBX connectors

M68K10-1	68000, 68010 (16, 32)		REGULUS	Probug, Hardbug	BASIC, C, FORTH, FORTRAN, RM COBOL	128K (128K)	6.75 x 12 x .5	1,595(Q1);
								995(Q100)
									two RS232C serial ports, three 8-bit parallel ports, two iSBX connectors

M68K10-5	68000, 68010 (16, 32)		REGULUS	Probug, Hardbug	BASIC, C, FORTH, FORTRAN, RM COBOL	512K (128K)	6.75 x 12 x .5	2,145(Q1); 1,395 (Q100)	two RS232C serial ports, three 8-bit parallel ports, two iSBX connectors
M68K10-M	68000, 68010 (16, 32)	Multibus	REGULUS	Probug, Hardbug	BASIC, C, FORTH, FORTRAN, RM COBOL	1.024M (128K)	6.75 x 12 x .5	3,165(Q1); 2,115 (Q100)	two RS232C serial ports, three 8-bit parallel ports, two iSBX connectors
SANYO BUSINESS SYSTEMS CORP.									
MBC-550	8088 (16)	proprietary	MS-DOS 2.11	MS-DOS utilities	BASIC, C, Pascal, FORTRAN	128K (8K)	8.5 x 16.25 x 20.5	999(Q1)	one 360K-byte floppy disk controller, parallel port; opt. serial port, and video board
MBC-555	8088 (16)	proprietary	MS-DOS 2.11	MS-DOS utilities	BASIC, C, Pascal, FORTRAN	128K (8K)	8.5 x 16.25 x 20.5	1,499(Q1)	two 360K-byte floppy disk controllers, parallel port; opt. serial port and video board
SERVO COMPUTER CORP.									

Servo 8	Z80B (8)		CP/M-80	debugger, editor, loader, assembler	BASIC, C, Pascal, FORTH	64K (2K)	8 x 5.75 x .5	389(Q1);
								359(Q100)
									floppy disk controller, two serial ports, one parallel port

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
SOLARCOM TECHNOLOGY INC.									
SCMT-11	8085 (8)	proprietary				.25K (2K–8K)	4.5 x 6.5 x .5	169(Q1); 125(Q100)	user-installed ROM
SCMT-85	8085 (8)	STD				.25K (2K–8K)	4.5 x 6.5 x .5	194(Q1); 148(Q100)	user-installed ROM
SCMT-88	8088 (16)	STD				8K–32K (up to 128K)	4.5 x 6.5 x .5	290–1,058(Q1); 225–842(Q100)	user-installed ROM
SPURRIER PERIPHERALS CORP.									
Z80-II	Z80 (8)	STD	CP/M	monitor	BASIC	16K (16K)	4.5 x 6 x .6	369(Q1); 295(Q100)	memory mapping, one serial port; opt. math coprocessor
6809-II	6809 (8, 16)	STD	FLEX	monitor	BASIC, C	64K (64K)	4.5 x 6 x .6	369(Q1); 295(Q100)	one serial port; opt. math coprocessor
68008	68008 (16, 32)	STD	CP/M-68K	monitor	BASIC, C	64K (64K)	4.5 x 6 x .6	379(Q1); 284(Q100)	memory mapping
SRITEK INC.									
32016 Co-processor	32016 (32)	IBM PC bus	GENIX 4.1		C, FORTRAN 77, Assembly	512K–8M	4 x 13 x .75	2,995–3,995(Q1)	uses 8088, 8086, 80286 as I/O coprocessor
68000 Co-processor	68000 (32)	IBM PC bus	XENIX III, UNIX, UNIDOS		BASIC, C, FORTRAN 77, RM COBOL, Assembly, APL	512K–8M	4 x 13 x .75	1,995–3,695(Q1)	uses 8088, 8086, 80286 as I/O coprocessor
SUMMIT CAD CORP.									
ACCEL 68000	68000 (16, 32)	IBM AT bus	custom	assembler	Assembly	2.048M (256K)	1.2 x 4.2 x 13.1	1,125(Q1)	
ACCEL 68008	68008 (8, 32)	IBM XT bus	custom	assembler	Assembly	256K	.6 x 4.2 x 13.1	795(Q1)	
ACCEL 68020	68020 (32)	IBM AT bus	custom	assembler	Assembly	10M (256K)	1.5 x 4.2 x 13.1	2,995(Q1)	68881 math coprocessor
SYNALTA SYSTEMS									
8085-STD64K	8085A (8)	STD		monitor, assembler, disassembler	Assembly, Machine	64K (4K)	4.5 x 6.5 x .062	295(Q1); 250(Q100)	one RS232C serial port, two programmable 8-bit parallel ports, one programmable 6-bit parallel port
DC1C-2	8085A (8)			monitor	Assembly, Machine	4K (4K)	4.5 x 6.5 x .062	495(Q1); 420(Q100)	two programmable asynch/synch RS232C ports, two programmable 8-bit parallel ports
MCG-85	8085A (8)			monitor, assembler, disassembler	Assembly, Machine	4K (4K)	4.5 x 6.5 x .062	135(Q1); 114(Q100)	one RS232C serial port, two programmable 8-bit parallel ports, one programmable 6-bit parallel port
TELETEK ENTERPRISES INC.									
SBC-I	Z80B (8)	S-100	Turbo-DOS			128K (64K)	5.05 x 10 x .625	769(Q1); 449(Q100)	opt. Z80A
SBC-II	Z80A (8)	S-100	Turbo-DOS			64K	5.05 x 10 x .625	1,395(Q1); 809(Q100)	
SBC 86/87	8086, 8087 (16)	S-100	Turbo-DOS			512K (128K)	5.05 x 10 x .625	1,350(Q1); 837(Q100)	
Systemaster	Z80A (8)	S-100	CP/M, Turbo-DOS			64K	5.05 x 10 x .625	795(Q1); 499(Q100)	
Systemaster II	Z80H (8)	S-100	CP/M, Turbo-DOS			128K (64K)	5.05 x 10 x .625	999(Q1); 679(Q100)	opt. Z80B
TEXAS INSTRUMENTS INC.									
990/101-MB	TSM 9900 (16)	TM 990	P-DOS, Power BASIC	debugger, editor, monitor	BASIC, Pascal, FORTH	4K (32K)	.75 x 11 x 7.5	686(Q1)	two RS232C ports, 16 interrupts, three timers, DMA
990/102-3	TMS 9900 (16)	TM 990	P-DOS, Power BASIC	debugger, editor, monitor	BASIC, Pascal, FORTH	128K (16K)	.75 x 11 x 7.5	1,125(Q1)	one RS232C port, 16 interrupts, timer, DMA

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company	Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
	990/103	TMS 99105 (16)	TM 990	Power BASIC	debugger, editor, monitor		8K (16K)	.75 x 11 x 7.5	1,674(Q1)	two RS232C ports, 16 interrupts, three timers
TL INDUSTRIES INC.	509	6809 (16)	STD		debugger, monitor		4K (12K)	4.5 x 6.5 x .5		
VIASYN CORP.	CPU 68K	68000 (16)	S-100	CP/M-68K, FORTH Concurrent DOS		C, FORTH	up to 32K		425(Q1)	
	CPU 80/86	8086 (16)	S-100	CP/M-86, MP/M-86, Concurrent DOS			16M		495(Q1)	
	CPU 286	286/ 10iAPX (16)	S-100	CP/M-86, MP/M-86, Concurrent DOS			16M		999(Q1)	
	CPU 8085/8088	8085, 8088 (8)	S-100	CP/M, MP/M			16M		275–350(Q1)	
	CPU 32016	32016 (16)	S-100	UNIX		C	up to 32K		895(Q1)	
	CPU Z	Z80B (8)	S-100	CP/M, CP/M-86, MP/M, MP/M-86, Concurrent DOS			16M		395(Q1)	two serial ports
WAVE MATE INC.	Bullet-286	80286 (16)	IBM PC bus	PC-DOS, CP/M-86, VENIX, OASIS	debugger, editor, assembler, linker	BASIC, C, Pascal, FORTRAN, COBOL, PL/1, LISP, RPG	640K (32K)	8.5 x 12 x 1	2,496(Q1)	fully compatible with IBM expansion cards and software

	Super Bullet	Z80A (8)	proprietary	CP/M Plus, MP/M II, OASIS	debugger, editor, assembler, linker	BASIC, C, Pascal, FORTRAN, COBOL, PL/1	256K (16K)	8 x 10.7 x 1	895(Q1);
									600(Q100)
										floppy disk controller, four serial ports, Centronics port

WINSYSTEMS INC.	LPM-8088-5	80C88 (16)	STD		debugger, loader	BASIC, C, Pascal, FORTH, FORTRAN	(16K)	7 x 4.5 x .48	575(Q1)	two RS232C serial ports, three 16-bit timers
	LPM-CPU2A	Z80C (8)	STD		debugger, editor, loader, assembler	BASIC, C, Pascal, FORTH, FORTRAN	24K (64K)	6.5 x 4.5 x .48	350(Q1)	four counter/timers
	LPM-CPU3	NSC-800 (8)	STD		debugger, loader	BASIC, C, Pascal, FORTH, FORTRAN	24K (24K)	6.5 x 4.5 x .48	295(Q1)	calendar clock, watchdog timer, two 16-bit timers, 22 parallel I/O lines
	MCM-8088-5	8088 (16)	STD		debugger, editor	BASIC, C, Pascal, FORTH, FORTRAN	(16K)	7 x 4.5 x .48	375(Q1)	three 16-bit counter/timers
	MCM-CPU2A	Z80 (8)	STD		debugger, editor, loader, assembler	BASIC, C, Pascal, FORTH, FORTRAN	24K (64K)	6.5 x 4.5 x .48	185(Q1)	four counter/timers
	MCM-SBC	Z80A (8)	STD	CP/M	debugger, editor, assembler, loader	BASIC, C, Pascal, FORTH, FORTRAN	64K (16K)	7 x 4.5 x .48	695(Q1)	floppy disk controller, four counter/timers
	MCM-SBC-2	Z80A (8)	STD	CP/M	debugger, editor, assembler, loaders	BASIC, C, Pascal, FORTH, FORTRAN	64K (16K)	7 x 4.5 x .48	495(Q1)	two serial RS232C ports, two 8-bit programmable parallel ports, four counter/timers
	MCM-SBC-3	Z80A (8)	STD	CP/M	debugger, editor, assembler, loader	BASIC, C, Pascal, FORTH, FORTRAN	24K (64K)	7 x 4.5 x .48	395(Q1)	two programmable 8-bit parallel ports, four counter/timers
	MCM-SBC-4	Z80A (8)	STD	CP/M	debugger, editor, loader, assembler	BASIC, C, Pascal, FORTH, FORTRAN	64K (16K)	7 x 4.5 x .48	450(Q1)	four counter/timers
WINTEK CORP.	MCH18	6809 (8, 16)	proprietary		debugger	C	2K (24K)	4.5 x 6.5 x .5	285(Q1)	two RS232C serial ports, four parallel ports, watchdog timer
	MCH68	6809 (8, 16)	proprietary		debugger	C	24K (8K)	4.5 x 6.5 x .5	585(Q1)	two RS232C serial ports, four parallel ports, watchdog timer

SINGLE-BOARD MICROCOMPUTERS

Table 1

Company	Model	CPU type (word size/bits)	Bus	Operating system	Software support	Programming languages supported	On-board memory/bytes RAM (ROM)	Dimensions (HxWxD/inches)	Price $ (quantity)	Notes, features, options
	MCV45	6800 (8)	proprietary		debugger	C	.5K (4K)	4.5 x 6.5 x .5	182(Q1)	one serial port, four parallel ports
ZENDEX CORP.	ZX-85	8085 (8)	Multibus	CP/M-80, ISIS-II	monitor, boot		64K (4K)	.5 x 12 x 6.5	2,660(Q1); 1,900 (Q100)	
	ZX-80/15A	8085 (8)	Multibus	CP/M-80, ISIS-II			16K (32K)	.5 x 12 x 6.5	550(Q1); 375(Q100)	
	ZX-86/ 26-528	8086 (16)	Multibus		monitor		128K (32K)	.7 x 12 x 6.75	1,995(Q1)	
	ZX-86-802	8086, 8087 (16)	Multibus	CP/M-86, RMX-86	monitor		16K (64K)	.5 x 12 x 6.5	1,345(Q1); 1,000 (Q100)	
	ZX186/05A	80186 (16)	Multibus	CP/M-86, Concurrent CP/M-86, RMX-86	monitor		48K (64K)	.5 x 12 x 6.75	2,295(Q1)	
	Z86/30	80186 (32)	Multibus	CP/M-86, Concurrent CP/M-86, RMX-86	monitor		128K–1M		2,195(Q1); 1,550 (Q100)	
ZIATECH CORP.	ZT 8806	8088 (16)	STD				(64K)	4.5 x 6.5 x .5	425(Q1); 319(Q100)	one serial port, two 8-bit parallel ports, five counter/timers; opt. 32K-byte RAM
	ZT 8813	8088 (16)	STD	opt. CP/M-86, iRMX-86	opt. debugger, monitor		(16K)	4.5 x 6.5 x .5	475(Q1); 356(Q100)	

Information was solicited but not received from the following maufacturers:

Alcyon Corp.
Applied Business Computer Co.
Century Computer Corp.
Distributed Computer Systems
Integrated Solutions Inc.
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For information on their products, consult the Supplementary Manufacturers' Directory of Digest Products on Page 91.

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CIRCLE NO. 17 ON INQUIRY CARD

NETWORKING ABSORBS MICRO MARKET OVERFLOW

Despite a congested market, microcomputer vendors and OEMs may survive by adding value via networking

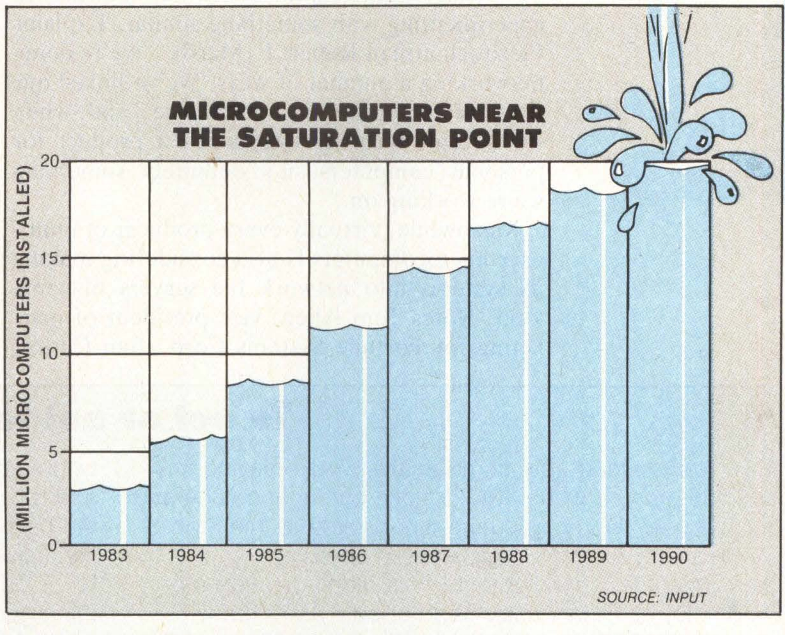
Michael Tucker, Associate Editor

Although microcomputers may be approaching the saturation point in business installations, there's plenty of market life left in the wonderful little machines that were born in Silicon Valley basements a little more than a decade ago.

Microcomputer vendors and OEMs have found that adding value to their systems in the form of networking may help them to survive. Accordingly, they have mapped out three main networking strategies: integrating multiuser microcomputers as powerful servers in local area network-like arrangements; offering multiple-processor systems, which stand between traditional single-user and multiuser microcomputers, as "networks in a box;" and remarketing LAN technology.

Multiuser systems hang in there

Multiuser microcomputers continue to be a viable OEM product, despite the predictions of some analysts who saw LANs ultimately easing the multiuser systems into limbo. Several applications have proved inhospitable to LAN technology. For example, integrators find multiuser machines a better choice than LANs in any application requiring intensive computing power for a specific purpose—computer-aided design/computer-aided manufacturing, the manipulation of large-scale data entry and large databases—regardless of the number of users.


MICROCOMPUTERS NEAR THE SATURATION POINT

SOURCE: INPUT

"The first thing you need to look at is your application," notes Randy Bryant, technical support manager for Wicat Systems Inc., Orem, Utah. "For general-purpose applications, LANs are fine because they're a very general-use technology. But the more vertical your application, the more you'll lean toward a single machine."

Even in non-vertical applications, many multiuser microcomputers have found new life in networking. The easiest way to integrate personal and multiuser systems is to let the smaller machines operate simply as terminals of the larger. This method allows users to do as much as 80 percent of their computing on their processors and upload the remaining 20 percent with little more than emulation software and an RS232 port. The method is inexpensive, efficient and probably in keeping with the general evolution of the technology—which has seen dumb terminals gradually smartening up and becoming difficult to distinguish from microcomputers.

But OEMs can also take advantage of much more sophisticated options. For example, Altos

In 1990, *large businesses will be saturated with microcomputers, putting a limit on sales, say market analysts.*

LANs of heterogeneous personal computers remain more idea than reality.

Computer Systems introduced this year an extremely strong supermicrocomputer—the model 3068—which, for a base OEM price of $7,000, can handle as many as 30 users or can act as a file server and node in Altos' proprietary Worknet LAN. International Data Corp., a market research concern in Framingham, Mass., calls the Altos 3068 "far and away the most exciting multiuser, microprocessor-based system announced this year."

One of the reasons for this is that Altos has developed a proprietary card that fits into IBM PCs and compatibles. The card allows those machines to act as nodes in a Worknet. In other words, with the Altos card, a system integrator can go into almost any office—even one that has a large investment in standalone IBM PCs—and offer both networking and increased CPU power in a single package.

Several other vendors, including Plexus Computers Inc., Santa Clara, Calif., hint that they're experimenting with something similar. Explains Plexus chairman Robert F. Marsh, "We're doing networking a number of ways. We've linked our systems with Ethernet, for instance...and, while we haven't formally introduced a product for personal computers, it's definitely something we're working on."

Meanwhile, virtually every producer of multiuser microcomputers is also considering making its systems into network file servers of some kind. Notes Tom Allen, vice president of marketing for Fortune Systems Corp., San Carlos, Calif., "[Increasingly,] what you're going to see are multiuser systems under a different name. They're going to be called file servers. You've got all those personal computers out there, [and] that population is demanding some way of pulling them together."

'LAN in a box' pops up

Analysts generally believe that, in the long run, LANs will become the best method for OEMs to give their customers data and resource sharing. But LANs are plagued by a long history of high costs, high failure rates and low performance. OEMs find buyers demanding LAN-like performance but in systems that do not lock them into a technology that they perceive as costly and ahead of its time.

OEMs in search of multiuser systems that are LAN-like but don't trigger "LANophobia" may wish to consider a multiple-processor approach. In this technique, each user is assigned a microprocessor that interconnects with other processors by means of a standard bus—a "LAN in a box."

Alloy Computer Products Inc., Natick, Mass., for example, markets a group of products that company president Richard Gorgens says, "essentially allows you to take the PC and make it into a multiuser system." An IBM PC owner who wishes to add a second or third user to a system can purchase a slave processor, insert it directly into the IBM PC and attach dumb terminals by way of RS232 twisted-pair cable. To

To net or not to net

Not too long ago, some analysts were saying that local area networks would make both standalone and multiuser microcomputers as obsolete as the Stanley Steamer. But now, people aren't so sure.

First, the technology of LANs didn't develop as quickly as the industry had hoped. "As of today," notes Tom Allen, vice president of product marketing for Fortune Systems Corp., San Carlos, Calif., "that's mostly smoke in mirrors. A real LAN, running without file servers, is a wonderful objective, but right now we'd all just love to figure how to get there."

Second, there are applications in which a LAN is the last thing you want to install. "It depends on your environment," notes Randy Bryant, technical support manager for Wicat Systems Inc. of Orem, Utah. "If you want to have people doing only one type of task—say, accounting, computer-aided design/computer-aided manufacturing, scientific applications and so on—then a single-user machine is perfect. And, if you walk into someplace where you've got 20 people pounding in data, you don't want a network."

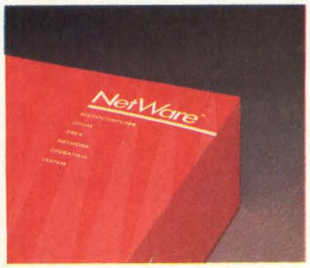
Third, there are people within organizations on whom any computing power is a waste and for whom a dumb terminal attached to a time-sharing system is the best possible machine. "As a rule of thumb," says Jim Isaak, director of product planning for Charles River Data Systems Inc. of Cambridge, Mass., "if the thing can't pay for itself in six months, it's not worth the investment. And in any organization there are a bunch of people who simply don't use a computer that much. It makes sense to take the edges and corners of a 32-bit system and hand them out to people who need only the edges and corners of a computing system."

And, finally, the only difference between a multiuser system and a file server may be their names. "We're not talking about the multiuser market going away," says Plexus Computers Inc. chairman Robert F. Marsh of Santa Clara, Calif. "We're just saying that the architecture is changing. Five years from now, you'll have networks of personal computers around a shared resource manager. Whether you call that resource manager a 'multiuser machine' or a 'UNIX file server,' I simply don't care."

Novell introduces the best way to improve your network reception.

In a relatively short time, the local area network (LAN) market has attracted a host of suppliers. Each has a LAN system to sell. And each is fighting for a proverbial piece of the LAN pie.

Amid all those LAN contenders, only one company is out to make all LAN systems perform better. Only one company offers high-powered LAN operating system software that improves the performance of every major LAN system on the market. Only one company is finishing the job the other LAN makers begin.



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*LAN Benchmark Report, May, 1985, Novell, Inc. and "Software, Not Hardware Key to LAN Performance," *PC Week* 1/15/85.

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CIRCLE NO. 18 ON INQUIRY CARD

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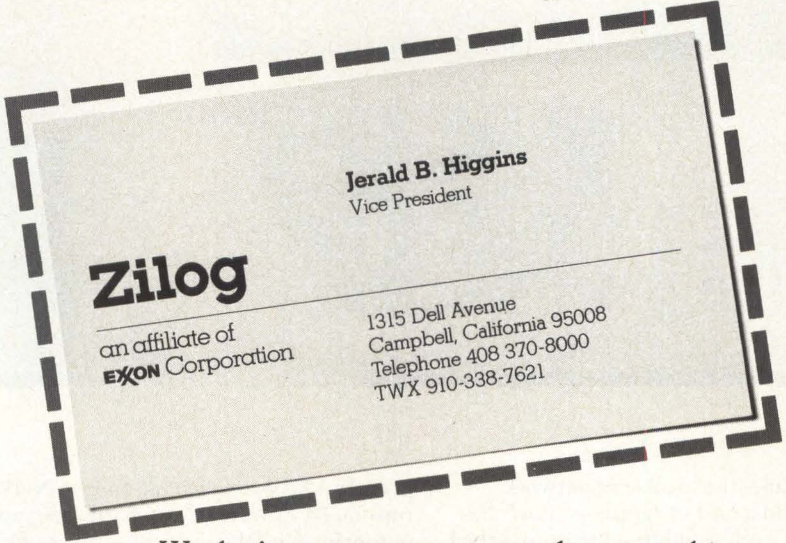

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CIRCLE NO. 19 ON INQUIRY CARD

expand the new multiuser system still further, Alloy offers a 12-slot expansion chassis. Users can run as many as three such chassis off a single IBM PC.

Corona Data Systems Inc., Thousand Oaks, Calif., offers a similar product, the Mega PC (MMS, March, Page 159). This system is based on a single chassis containing as many as eight IBM PC-compatible microprocessors linked by a parallel bus. The system includes a shared Wincester disk drive, one or two 360K-byte floppy disk drives and an optional tape backup. Users can link dumb terminals to the system with coaxial cable. The Mega PC also contains two LAN controllers so that, should its buyers decide networking isn't quite the "bear" they feared, they can easily wire the Mega PC into a more conventional network.

Despite such multiprocessor products, networking is probably the way of the future simply because it can offer more resources than can be contained in a single package. System integrators may well lose interest in all but the most sophisticated LANs. Multiprocessor systems do provide some real advantages; speed is one. Alloy, for example, claims that its products run five to 10 times faster than a typical LAN. Notes company president Gorgens, "It's funny...we originally thought we'd be selling to the one- or two-user add-on market—that is, the lawyer or the doctor who's got a PC in the office and wants to give a dumb terminal to the secretary. But the really big sales have actually been to vertical market companies that want [users] to share data but don't want to give up speed."

Give this office a great big LAN!

Meanwhile, LANs dominate the single-user microcomputer scene. In fact, much of the trade press, many market analysts and not a few vendors have proclaimed 1985 "the Year of the LAN." If hype defined technology then OEMs would be able to "plug and play" almost any microcomputer they liked in almost any network. But, in fact, LANs of heterogeneous personal computers remain more idea than reality. "There's a whole lot of work to be done," says Plexus' Marsh, "to make it both easy and graceful. We think that's a real area of opportunity to add value."

Traditionally, analysts divide the microcomputer LANs available to OEMs into proprietary LANs like Wang Laboratories Inc.'s WangNet and Digital Equipment Corp.'s DECnet; general-purpose LANs; and personal computer LANs (MMS, June, Page 97). All three markets are hot, but the one that's steaming the most is PC LANs—due somewhat to the hothouse effect of Microsoft Corp.'s recent release of the MS-DOS 3.1 operating system. MS-DOS 3.1 incorporates connectors to hook onto communications software (MMS, February, Page 47). Microsoft is also marketing a LAN called MS-Net, which IBM, in turn, has made particularly IBM PC-compatible and is remarketing as the PC Network.

Meanwhile, other PC LAN vendors—all scrambling to take positions atop 3.1—are responding with a flurry of new and retooled products. Networking pioneer Novell Inc., Orem, Utah, for example, has announced that it, too, "supports" MS-DOS 3.1 as the industry-standard operating system for microcomputers. But Novell is also selling its own NetWare LAN in competition with MS-Net and PC Net (MMS, May 1984, Page 161). North Star Computers Inc., San Leandro, Calif., has recently announced that it will release a version of NetWare for its multiuser microcomputer, Dimension. This version allows Dimension to link up with IBM PCs. Moreover, Novell announced in April a bridge product that allows users to link otherwise-incompatible PC LANs.

While PC LANs make headlines, general-purpose microcomputer LANs are making real technical progress. The Radio Shack division of Tandy Corp., Fort Worth, Texas, for example, has just announced that it will include ViaNet, from ViaNetix Inc., Boulder, Colo., in its computer offerings. ViaNet, says Ed Juge, Tandy's director of market planning, will enable its owners to link Tandy multiuser microcomputers—specifically the new Tandy 6000—and personal computers into a LAN that "has the advantage of not requiring a file server."

ViaNetix seems to have shied away from publicity for years. Yet ViaNetix software is being remarketed by such "market-muscle boys" as Wang (as an adjunct to WangNet) and Fortune Systems. ViaNet, in turn, offers the significant advantage of being able to link MS-DOS- and UNIX-based systems. "Basically," says Collier Buffington, ViaNetix's chief executive officer, "it sits atop the [MS-DOS] operating system and performs a constant translation of MS-DOS system calls to UNIX system calls."

In their quest for the networking grail, both microcomputer vendors and OEMs are seeking a standard that would make a super-LAN become reality. Such a standard would enable system integrators to plug and play any microcomputer into any network. To date, proprietary LANs have been the dragon of the story, with their makers trying to lock in customers with unique protocols and system requirements.

Some companies are trying to reach the "Promised LAN" by making their own proprietary networks resemble as closely as possible the

ViaNet offers the significant advantage of being able to link MS-DOS- and UNIX-based systems.

International Standards Organization (ISO) network model developed in 1981. DEC, for instance, has taken this approach with its Digital Network Architecture (DNA).

Some OEMs will find a profitable niche in remarketing microcomputer-based file-serving machines.

Other companies are concentrating on the upper end of the ISO model, the user-application level, to develop software that circumvents hardware incompatibility. For instance, Sun Microsystems Inc., Mountain View, Calif., introduced in January the network file system (NSF) communications application. NSF allows users to swap files between any two machines in a network without having to modify those files significantly with transfer commands.

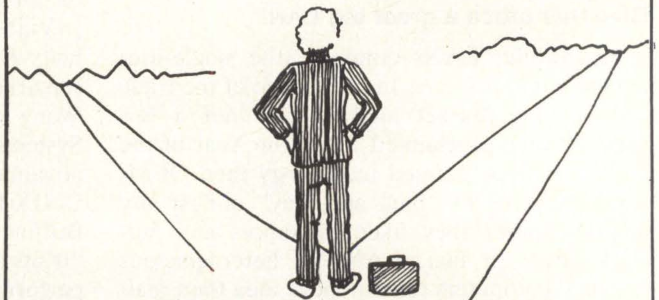
Sun is shipping NSF with every workstation it sells, and the company has announced that it will make NFS technology available at no or low cost to other vendors. At the moment, the system is available only for UNIX-based systems.

"What we're trying to do is come up with a product that works in a heterogeneous environment," says John Hime, Sun's director of product marketing. "We're attempting to set up a standard through a consortium of companies. Just as, say, Ethernet was set up as a base transmission standard by a consortium of interested parties, so we hope to offer a base user-service functionality."

However cross-vendor networking is done, few obervers doubt that an OEM is courting disaster if it tries to sell a product that can't manage the feat.

Finally, with the spread of microcomputer LANs, some OEMs will find a profitable niche in remarketing microcomputer-based file-serving machines to small- or medium-sized organizations that yearn to link single-user machines. Some of the more interesting of such servers to come to market recently are 3Server from 3Com Corp. and the Personal Mini from TeleVideo Systems Inc. The 3Server combines file, printer and electronic-mail servers for up to 50 microcomputer workstations, and the specially configured Personal Mini runs Novell's NetWare to support as many as 16 workstations. Adding a special interface to the Personal Mini allows users to choose IBM PCs as the workstations. ☐

Interest Quotient (Circle One)
High 495 Medium 496 Low 497



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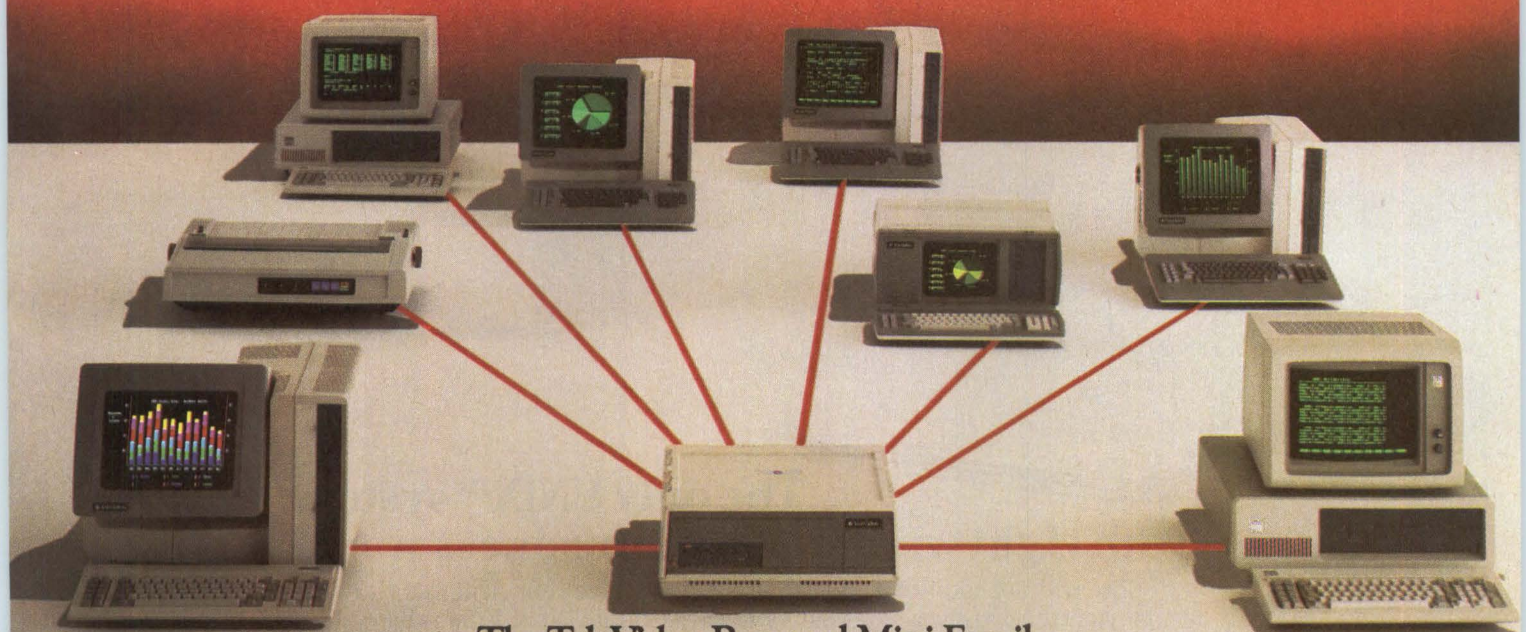

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SINGLE-USER MICROCOMPUTERS

TABLE 2

Company Model	Display size, color Screen format (col. x lines)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
AT&T INFORMATION SYSTEMS							
PC 6300	12-inch, green (80 x 25)	8086	128K–640K	MS-DOS, XENIX 3.0	C, COBOL, FORTRAN, Pascal	2,810	two 5¼-inch, 360K-byte flexible drives and one 10M-byte hard disk drive available; one RS232C, parallel port
ADVANCED DIGITAL CORP.							
Super STAR		Z80B	64K–128K	Turbo-DOS, Network O/S, CP/M		4,900	one 5¼-inch, 360K-byte flexible drive and one 25M-byte hard disk drive available; expandable to 12 users; opt. monitor screen
Super System II		80186	256K–1M	Turbo-DOS, Network O/S, Concurrent CP/M, MS-DOS		5,500	S-100 bus; one 8-inch, 960K-byte flexible drive and one 52M-byte hard disk drive available; expandable to 16 users; opt. monitor screen
ADVANCED ELECTRONICS DESIGN INC.							
Colorware System 73/5	19-inch; 256-color, 16.7-million-color palette (512 x 483)	6502, LSI-11/73	512K–4M	RT-11, RSX-11M	TAP	27,925	printer port; mouse; two 8-inch flexible drives and one 10M-, 40M-byte hard disk drive available
Colorware System 73/7	19-inch; 256-color, 16.7-million-color palette (767 x 575)	6502, LSI-11/73	512K–4M	RT-11, RSX-11M	TAP	29,975	printer port; mouse; two 8-inch flexible drives and one 10M-, 40M-byte hard disk drive available
Colorware System 73/10	19-inch; 256-color, 16.7-million-color palette (1024 x 768)	6502, LSI-11/73	512K–4M	RT-11, RSX-11M	TAP	32,175	printer port; mouse; two 8-inch flexible drives and one 10M-, 40M-byte hard disk drive available
ALCYON CORP.							
APS	12-inch, b&w (80 x 24)	68000	256K–2M	REGULUS	BASIC, C, COBOL, DIBOL, FORTRAN, Pascal	9,950	one 10M-, 112M-byte hard disk drive available; expandable to 8 users
APS.RMS	12-inch, b&w (80 x 24)	68000	256K–4M	REGULUS	BASIC, C, COBOL, DIBOL, FORTRAN, Pascal	9,950	one 10M-, 112M-byte hard disk drive available; expandable to 16 users
APX	12-inch, b&w (80 x 24)	68000	512K–4M	REGULUS	BASIC, C, COBOL, DIBOL, FORTRAN, Pascal	29,900	one or two 76M-, 430M-byte hard disk drives available; expandable to 30 users
AMPRO COMPUTERS INC.							
122		Z80A	64K	CP/M 2.2, Turbo-DOS, ZRDOS	all CP/M 2.2 languages	995	two 5¼-inch, 400K-byte flexible drives available
142		Z80A	64K	CP/M 2.2, Turbo-DOS, ZRDOS	all CP/M 2.2 languages	1,095	two 5¼-inch, 800K-byte flexible drives available
1410		Z80A	64K	CP/M 2.2, Turbo-DOS, ZRDOS	all CP/M 2.2 languages	1,695	one 5¼-inch, 800K-byte flexible drive, one 10M-byte hard disk drive available
ANDROMEDA SYSTEMS INC.							
11/B72-W56		11/23, 11/73	256K–4.096M	RT-11, TSX Plus	APL, BASIC, FORTRAN, Pascal	10,900	one 8-inch, 512K-byte flexible drive and one 56M-byte hard disk drive available
11/B73-W20		11/23, 11/73	256K–4.096M	RT-11, TSX Plus	APL, BASIC, FORTRAN, Pascal	8,995	one 8-inch, 512K-byte flexible drive and one 20M-byte hard disk drive available; expandable to 16 users
11/M12-W20		11/23, 11/73	256K–4.096M	RT-11, TSX Plus	APL, BASIC, FORTRAN, Pascal	6,995	one 5¼-inch, 512K-byte flexible drive and one 20M-byte hard disk drive available; expandable to 4 users
APPLE COMPUTER INC.							
Apple IIc	9-inch, 16-color (80 x 24)	65C02	128K	Apple DOS, Apple ProDOS	BASIC, FORTRAN, Logo, Pascal, Pilot	1,195	two 5¼-inch, 140K-byte flexible drives available
Apple IIe	12-inch, 16-color (80 x 24)	65C02	64K–128K	Apple DOS, Apple ProDOS	BASIC, FORTRAN, Logo, Pascal, Pilot	895	up to six 5¼-inch, 140K-byte flexible drives and one 5M-, 10M-byte hard disk drive available
APPLIED MICRO TECHNOLOGY (A BURR-BROWN CO.)							
MS2000		Z80A	64K–128K	CP/M	Assembly, BASIC, C, FORTH, FORTRAN, Pascal	6,875	two 8-inch, 1M-byte flexible drives and one 5M-, 10M-, 20M-byte hard disk drive available
MS3000		Z80A	64K–128K	CP/M	Assembly, BASIC, C, FORTH, FORTRAN, Pascal	4,500	two 5-inch, 500K-byte flexible drives available

SINGLE-USER MICROCOMPUTERS
TABLE 2

Company Model	Display size, color Screen format (col. x lines)	CPU type	Main memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
BEEHIVE INTERNATIONAL							
TOPPER	12-inch, green (80 x 25)	Z80A	64K	CP/M	CP/M format-compatible	2,795	IBM 3270-compatible; two 5-inch, 400K-byte flexible drives available
TOPPER 2	12-inch, green (80 x 25)	Z80A	64K	CP/M	CP/M format-compatible	3,595	Burroughs-compatible; two 5-inch, 400K-byte flexible drives available
CALLAN DATA SYSTEMS							
UNISTAR 100	12-inch, green (80 x 25)	68000	512K–2M	UNIX System V	Assembly, Ada, C, COBOL, BASIC, FORTRAN, Pascal	12,950	one 5¼-ich, 616K-byte flexible drive; one 21M-, 43M-byte hard disk drive available
CASIO INC.							
FP1000	12-inch (80 x 25)	Z80A	64K	CP/M	Assembly, BASIC, COBOL, FORTRAN	2,840	two 5¼-inch, 640K-byte flexible drives and one 17.5M-byte hard disk drive available
CHRISLIN INDUSTRIES INC.							
CI-MICRO-11		LSI-11	256K–4M	RT-11 V5.1	BASIC, COBOL, FORTRAN, Pascal	7,990	one 8-inch, 1M-byte flexible drive and one 10M-byte hard disk drive available
CIFER PLC							
9030		Z80A, 68000	256K–1M	Bos, CP/M Plus, UNIX System III	BASIC, COBOL, CROLOG, FORTRAN, Pascal	4,850	one 800K-byte flexible drive and one 10M-byte hard disk drive available
COLEX TECHNOLOGY CORP.							
STD/820		Z80A	64K–256K	CP/M	MACRO, BASIC, Assembly	2,000	two 5¼- or 8-inch, 820-byte flexible drives available
STD/850		Z80A	64K–256K	CP/M	MACRO, BASIC, Assembly	3,000	two 5¼- or 8-inch, 820K-byte flexible drives and two 10M-byte hard disk drives available
STD/3240		Z80A	64K–256K	CP/M-68K	MACRO, BASIC, Assembly	3,000	two 5¼- or 8-inch, 820K-byte flexible drives and two 10M-byte hard disk drives available
COLUMBIA DATA PRODUCTS INC.							
MPC 4210/4220	(80 x 24)	8088	128K–640K	MS-DOS		2,195–2,395	bundled software; two 5¼-inch, 360K-byte flexible drives available; opt. CP/M-86
MPC 4620/4820	(80 x 24)	8088	256K–640K	MS-DOS		3,495–4,495	bundled software; one 5¼-inch, 360K-byte flexible drive and one 10M-, 30M-byte hard disk drive available; opt. CP/M-86, MP/M-86
MPC 4750/4950	(80 x 24)	8088	512K–640K	MS-DOS		4,995–5,995	bundled software; one 5¼-inch, 360K-byte flexible drive and one 10M-, 30M-byte hard disk drive available; opt. CP/M-86, MP/M-86
VP2220	9-inch; green, amber (80 x 24)	8088	256K–640K	MS-DOS	GW BASIC	2,395	bundled software; two 5¼-inch, 360K-byte flexible drives available
VP2620	9-inch; green, amber (80 x 24)	8088	256K–640K	MS-DOS	GW BASIC	3,495	one 5¼-inch, 360K-byte flexible drive and one 10M-byte hard disk drive available
COMARK CORP.							
DISKSTOR-M		8086	512K–1.024M	MP/M-86, Concurrent CP/M-86		10,000–12,000	one 8-inch, 512K-byte flexible drive and one 26M-byte hard disk drive available; expandable to 6 users
MB85I	12-inch (80 x 24)	8085	64K	CP/M-80 2.2			one 5¼-inch flexible drive subsystem and one 5¼-inch, 26M-byte Winchester disk drive available
MB86I	12-inch (80 x 24)	8086	128K	MS-DOS, CP/M-86, Concurrent CP/M-86			one 5¼-inch flexible drive subsystem and one 5¼-inch, 26M-byte Winchester disk drive available
COMPAQ COMPUTER CORP.							
DESKPRO Model 1	12-inch; green, amber (80 x 25)	8086	128K–640K	MS-DOS, UNIX-based systems	BASIC	2,495	networking capability; one 5¼-inch, 360K-byte flexible drive available; opt. one 10M-, 30M-byte fixed disk drive; 8087-2 coprocessor
DESKPRO Model 2	12-inch; green, amber (80 x 25)	8086	256K–640K	MS-DOS, UNIX-based systems	BASIC	2,995	networking capability; two 360K-byte flexible drives available
DESKPRO Model 3	12-inch; green, amber (80 x 25)	8086	256K–640K	MS-DOS, UNIX-based systems	BASIC	4,995	networking capability; one 360K-byte flexible drive and one 10M-byte hard disk drive available
DESKPRO Model 4	12-inch; green, amber (80 x 25)	8086	640K	MS-DOS, UNIX-based systems	BASIC	7,195	networking capability; one 360K-byte flexible drive and one 10M-byte hard disk drive available; opt. 8087-2 coprocessor
COMPAQ Plus	9-inch, monochrome (80 x 25)	8088	128K–640K	MS-DOS	BASIC	4,995	networking capability; one 5¼-inch, 360K-byte flexible drive and one 10M-byte hard disk drive available

SINGLE-USER MICROCOMPUTERS
TABLE 2

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COMPAQ Portable	9-inch, monochrome (80 x 25)	8088	128K–640K	MS-DOS	BASIC	2,495	networking capability; one 5¼-inch, 320K-byte flexible drive available; opt. one 320K-byte flexible drive, asynch communications interface
COMPUTER AUTOMATION INC.							
SCOUT	11-inch; b&w, green (80 x 24)	NM 4/04	128K–2M	OS4, RTX-4	BCPL, CORAL 66, FORTRAN IV, Pascal	5,500	battery backup; up to 32 serial ports; one 5¼-inch, 1M-byte flexible drive and one 20M-byte hard disk drive available
COMPUTER SYSTEMS							
PC/8088	13-inch, monochrome (80 x 24)	8088	64K–512K	DOS, MP/M	BASIC, COBOL, FORTRAN, MACRO, Pascal	1,988	IBM PC-compatible; two 5¼-inch, 320K-byte flexible drives and two 10M- to 100M-byte hard disk drives available; opt. 25-inch display, RGB color monitor
CORONA DATA SYSTEMS INC.							
325 Series	9-, 12-inch; green, amber (80 x 25)	8088	256K–512K	MS-DOS	GW BASIC		one or two 5¼-inch, 360K-byte flexible drives and one 10M-byte hard disk drive available
400 Series	9-, 14-inch; green, amber (80 x 25)	8088	256K–512K	MS-DOS	GW BASIC		tilt and swivel, portable or desktop monitor; one or two 5¼-inch, 360K-byte flexible drives and one 10M-byte hard disk drive available
DIGITAL EQUIPMENT CORP.							
Professional 350	12-inch; white, green, amber (160 x 24)	F-11	256K–892K	P/OS, UCSD-P, CP/M-80, VENIX, XENIX	Ada, BASIC, C, COBOL, FORTRAN, Pascal		foreign character sets; two 5¼-inch, 400K-byte flexible drives and one 10M-, 32M-byte hard disk drives available; opt. color monitor, bit-mapped graphics
Professional 380	12-inch; white, green, amber (160 x 24)	J-11	256K–892K	P/OS, UCSD-P, CP/M-80, VENIX, XENIX	Ada, BASIC, C, COBOL, FORTRAN, Pascal		foreign character sets; two 5¼-inch, 400K-byte flexible drives and one 10M-, 32M-byte hard disk drive available; opt. color monitor, bit-mapped graphics
Rainbow 100	12-inch; white, green, amber (160 x 24)	8086, Z80 (dual processor)	64K–256K	CP/M-80, CP/M-86, MS-DOS	Ada, BASIC, COBOL, FORTRAN, Pascal		foreign character sets; two 5¼-inch, 400K-byte flexible drives and one 10M-, 32M-byte hard disk drive available; opt. color monitor, bit-mapped graphics
FORTUNE SYSTEMS CORP.							
32:16	14-inch; green, amber (80 x 25)	68000	512K–2M	UNIX	BASIC, C, COBOL, FORTRAN, Pascal, SIBOL	5,995–14,995	one 5¼-inch, 800K-byte flexible drive and three 45M-byte hard disk drives available; expandable to 13 users
1000	14-inch; green, amber (80 x 25)	8088, 68010	128K–640K	MS-DOS, UNIX	BASIC, C, COBOL, FORTRAN, Pascal, SIBOL	2,790–8,000	two 5¼-inch, 360K-byte flexible drives and one 10M-byte hard disk drive available; expandable to 2 users
FUJITSU MICROELECTRONICS INC.							
Micro 16s	12-inch, 8-color (80 x 25)	8086, Z80A	128K–1M	MS-DOS, Concurrent CP/M	COBOL, PL/1, BASIC, CBASIC compiler, Pascal, FORTRAN, MACRO Assembly	2,350	two 5¼-inch, 320K-byte flexible drives, WordStar, SuperCalc 3, MailMerge available
Micro 16sx	12-inch, 8-color (80 x 25)	8086	384K–1M	MS-DOS, Concurrent CP/M	COBOL, PL/1, BASIC, CBASIC compiler, Pascal, FORTRAN, MACRO Assembly	4,250	one 5¼-inch, 360K-byte flexible drive, one 1M-byte hard disk drive available
HEWLETT-PACKARD CO.							
HP-150	9-inch, green (80 x 24)	8088	256K–640K	MS-DOS	BASIC, COBOL, Pascal	1,270–3,650	one or two 3½-inch, 270K-byte flexible drives, one 5M-, 15M-byte hard disk drive available; two RS232C ports, HP-IB port, two accessory slots
HP-110 Portable PC	flip-up, LCD (80 x 16)	8086	272K	MS-DOS	MS-DOS-based languages	3,000	built-in modem, battery, AC adapter/charger, RS232C port, HP-IL port; opt. 3½-inch, 270K-byte flexible drive
HP-150 Touch Screen II	12-inch, green (80 x 27)	8088	256K–640K	MS-DOS	BASIC, COBOL, Pascal	3,545–4,770	one 3½-inch, 710K-byte flexible drive, one 10M-byte Winchester disk drive available
HEURIKON CORP.							
814/MLZ		Z80A	16K–1M	CP/M, CP/Net, MP/M	most CP/M languages	6,600	two 8-inch, 1.2M-byte flexible drives; up to four 5¼-inch, 670K-byte flexible drives; one 8-inch, 10M-, 20M- or 40M-byte hard disk drive
HONEYWELL INFORMATION SYSTEMS INC.							
microSystem 6/10	12-inch, green (80 x 25)	8086, proprietary	640K–1M	CP/M-86, GCOS 6 proprietary, MS-DOS	Assembly, BASIC, CBASIC, GW BASIC, COBOL, FORTRAN, Pascal	3,995–6,370	two 5¼-inch, 650K-byte flexible drives and one 20M-byte hard disk drive available; expandable to 2 users; opt. workstation, printer, integrated 2400 bps modem

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IBM CORP.							
PC	256-color	8088	256K–640K	DOS 1.00 or higher, VCSD p-System	APL, Assembly, BASIC, COBOL, Logo, Pascal	1,995	two 5¼-inch, 720K-byte flexible drives and two 20M-byte hard disk drives available
PCjr	13-inch, 16-color (80 x 25)	8088	64K–512K	DOS 2.10 or higher	Assembly, BASIC, COBOL, FORTRAN, Logo, Pascal	999	one 5¼-inch, 360K-byte flexible drive available
PC-XT	256-color	8088	256K–640K	DOS 2.00 or higher, PC-IX 1.00 or higher	APL, BASIC, COBOL	4,395	two 5¼-inch, 720K-byte flexible drives and two 20M-byte hard disk drives available
Portable PC	9-inch, 256-color (80 x 25)	8088	256K–640K	DOS 2.10 or higher	APL, Assembly, BASIC, COBOL, FORTRAN, Logo, Pascal	2,595	two 5¼-inch, 720K-byte flexible drives and two 20M-byte disk drives available
IMS INTERNATIONAL							
5000 IS	12-inch, green (80 x 24)	Z80B, 80186	728K–1.024M	Turbo-DOS, CP/M-80, Concurrent CP/M	BASIC, COBOL, FORTRAN, Pascal	3,775–5,645	two serial I/O ports; one 5¼-inch, 800K-byte flexible drive and one 10M-, 40M-byte hard disk drive available; expandable to five users
5000 SX		Z80B, 80186	128K–1.024M	Turbo-DOS, CP/M-80, Concurrent DOS	BASIC, COBOL, FORTRAN, Pascal	2,925–5,145	two serial I/O ports; one 5¼-inch, 400K- or 800K-byte flexible drive and one 10M-, 20M-byte hard disk drive available; expandable to nine users
INTEL CORP.							
SYS310-1		8086	128K–1M	RMX-86	BASIC; PL/M-86, -88; FORTRAN-86, -88; Pascal-86, -88	4,995	one 5¼-inch, 320K-byte flexible drive available
SYS310-3A		8086	128K–1M	RMX-86, MS-DOS	BASIC; PL/M-86, -88; FORTRAN; Pascal-86, -88	9,500	one 5¼-inch, 320K-byte flexible drive and one 19M-byte hard disk drive available
SYS310-17A		80286	512K–2.5M	RMX-86, XENIX 286, MS-DOS	BASIC: PL/M-86, -88; FORTRAN 286; COBOL II; C	11,500	one 5¼-inch, 320K-byte flexible drive and one 19M-byte hard disk drive available
SYS310-40A		80286	1M–3M	RMX-86, XENIX 286, MS-DOS	BASIC, PL/M-86, -88; FORTRAN 286; C; COBOL II	14,800	one 5¼-inch, 320K-byte flexible drive and one 40M-byte hard disk drive available; expandable to two users
SYS310-41A		80286	1M–3M	RMX-86, XENIX 286, MS-DOS	BASIC; PL/M-86, -88; FORTRAN 286; C; COBOL II	15,700	one 5¼-inch, 320K-byte flexible drive and one 40M-byte hard disk drive available; expandable to eight users
INTERTEC DATA SYSTEMS							
HeadStart ATS-86	12-inch, green (80 x 25)	80286	256K–1M	MS-DOS	BASIC, COBOL, FORTRAN		two 5¼-inch, 360K-byte flexible drives and one 20M-, 50M-, or 225M-byte hard disk drive available; expandable to 300 users
HeadStart A-286	12-inch, green (80 x 25)	80286	256K–3M	MS-DOS	BASIC, COBOL, FORTRAN	2,495	two 5¼-inch, 360K-byte flexible drives and one 20M-, 50M- or 225M-byte hard disk drive available; expandable to 300 users
ISI INTERNATIONAL							
5160		8088	128K–640K	MS-DOS, VRTX-86	GW BASIC	1,525	two 5¼-inch, 360K-byte flexible drives and two 30M-byte hard disk drives available; opt. monitor
6160		8088	128K–640K	MS-DOS, VRTX-86	GW BASIC	2,885	two 5¼-inch, 360K-byte flexible drives and two 10M-byte hard disk drives available; opt. monitor, keyboard
KAYPRO CORP.							
Kaypro 2X	9-inch, green (80 x 25)	Z80A	64K–784K	CP/M 2.2	CBASIC, MBASIC, SBASIC	1,595	built-in modem; battery backup; two RS232C serial ports; one Centronics parallel port; two 5¼-inch, 400K-byte flexible drives available
Kaypro 286i		80286	512K–15M	MS-DOS 3.0	GW BASIC	4,550	eight I/O slots; two parallel ports; one serial port; battery backup; two 5¼-inch, 1.2M-byte flexible drives available; opt. monitor
Kaypro 10	9-inch, green (80 x 25)	Z80A	64K–10M	CP/M 2.2	CBASIC, MBASIC, SBASIC	2,795	built-in modem; battery backup; two RS232C serial ports; one Centronics parallel port; two 5¼-inch, 400K-byte flexible drives available
Kaypro 16	9-inch, green (80 x 25)	8088	256K–640K	MS-DOS		3,295	bundled software; serial, parallel port, one 5¼-inch, 400K-byte flexible drive and one 10M-byte hard disk drive available

SINGLE-USER MICROCOMPUTERS
TABLE 2

Company Model	Display size, color Screen format (col. x lines)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
New Kaypro 2	9-inch, green (80 x 25)	Z80A	64K–784K	CP/M 2.2	MBASIC	995	two RS232C serial ports; one Centronics parallel port; two 5¼-inch, 392K-byte flexible drives available
Robie	9-inch, green (80 x 25)	Z80A	64K–2.6M	CP/M		2,295	built-in modem; two 5¼-inch, 2.6M-byte flexible drives available
LOBO SYSTEMS INC.							
MAX-80	12-inch, green, amber	Z80B	128K	CP/M Plus 3.0, CP/M 2.2, LDOS, MULTIDOS, MAXDOS		945	opt. two 5¼-inch, 360K-byte or two 8-inch, 1M-byte flexible drives; 5M-, 10M- or 20M-byte hard disk drive
LOMAS DATA PRODUCTS INC.							
S100-PC-CM	13-inch, 16-color (80 x 25)	8086	256K–1.024M	MS-DOS, Concurrent DOS	BASIC, C, FORTRAN, Pascal	3,595	IBM PC-compatible; two 5¼-inch, 360K-byte flexible drives and one 53M-byte hard disk drive available; opt. 8 MHz 8087 coprocessor
MAD COMPUTER INC.							
MAD-1	12-inch; green, amber (80 x 25)	80186	128K–512K	MS-DOS 2.0, 2.11; PC-DOS 2.0, 2.1; VENIX 2.0; XENIX 1.0	BASIC, COBOL, FORTRAN, LISP, Pascal		RS232C, RS422 high speed ports; two 5¼-inch, 360K-byte flexible drives and one 10M-byte hard disk drive available
MDB SYSTEMS INC.							
MICRO/11-1		LSI-11/23	256K–4M	RT-11, TSX Plus	BASIC, COBOL, FORTRAN, Pascal	9,250	two 500K-byte flexible drives and one 20M-byte hard disk drive available; expandable to eight users
MICRO/11-73		LSI-11/73	256K–4M	RT-11, TSX Plus	BASIC, COBOL, FORTRAN, Pascal	13,150	two 500K-byte flexible drives and one 20M-byte hard disk drive available; expandable to eight users
MICRO/73		LSI-11/73	256K–4M	RT-11, TSX Plus	BASIC, COBOL, FORTRAN, Pascal	21,295	one 60M-byte tape drive and one 105M-byte hard disk drive available; expandable to eight users
MIL COMPUTER SYSTEMS							
MIL-AT99	12-inch, 16-color (132 x 80)	80286, 80287	640K–16M	MS-DOS, XENIX	Ada, Assembly, C, FORTRAN, Pascal	9,120	IBM AT-compatible, ruggedized; one 360K-, 1.2M- or 2.7M-byte flexible drive and one 20M-byte hard disk drive available; opt. one or two 50M-byte hard disk drives
MIL-AT99/32	15-inch, 4096-color (132 x 80)	68020, 68881, 80286, 80287	640K–16M	MS-DOS, XENIX	Ada, Assembly, C, FORTRAN, Pascal	12,800	IBM AT-compatible, ruggedized; one 360K-, 1.2M- or 2.7M-byte flexible drive and one 20M-byte hard disk drive available; opt. one or two 50M-byte hard disk drives
MASSCOMP							
MC-500	13-to-19-inch; monochrome or color (138 x 84)	68010	1M–6M	RTU	C, FORTRAN, Pascal, BASIC, LISP, COBOL	26,900	one 5¼-inch, 640K-byte flexible drive, up to 16 50M-to-474M-byte hard disk drives available; expandable to 16 users
MC-500DP	13-to-19-inch; monochrome or color (138 x 84)	68010 (2)	2M–8M	RTU	C, FORTRAN, Pascal, BASIC, LISP, COBOL	39,900	one 5¼-inch, 640K-byte flexible drive, up to 16 50M-to-474M-byte hard disk drives available; expandable to 32 users
WS-500	19-inch; monochrome or color (104 x 37)	68010	1M–6M	RTU	C, BASIC, FORTRAN, Pascal, LISP, COBOL	25,900	one 5¼-inch, 640K-byte flexible drive, up to two 50M-, 85M-byte hard disk drives available
MICRO CRAFT CORP.							
Dimension 68000		68000	256K–12.5M	UNIX, CP/M-68K p-System	C, FORTRAN, Pascal, Assembly, BASIC, COBOL	3,995	four 5¼-inch, 400K-byte flexible drives and four 8-inch, 800K-byte flexible drives available
MICRO-LINK CORP.							
APPROACH II	12-inch, green (80 x 40)	Z80A	64K–128K	CP/M 2.2, polyFORTH	Assembly, MACRO, Z SID	4,995	STD bus-compatible; serial, parallel ports; two 5¼-inch, 350K-byte flexible drives available; expandable to 10 users
MONROE SYSTEMS FOR BUSINESS INC.							
MS 2111/MS 2112	12-inch, amber (80 x 25)	80186	128K–896K/ 256K–896K	MS-DOS, CP/M-86	GW BASIC	3,095/ 3,295	one 5¼-inch, 720K-byte flexible drive available
MS 2121	14-inch, 16-color (80 x 25)	80186	128K–896K	MS-DOS, CP/M-86	GW BASIC	3,895	one 5¼-inch, 720K-byte flexible drive available
MS 2122	14-inch, 16-color (80 x 25)	80186	256K–896K	MS-DOS, CP/M-86	GW BASIC	4,095	one 5¼-inch, 720K-byte flexible drive available
MS 2211/ MS 2212	12-inch, amber (80 x 25)	80186	128K–896K/ 256K–896K	MS-DOS, CP/M-86	GW BASIC	3,395/ 3,595	two 5¼-inch, 720K-byte flexible drives available
MS 2221/ MS 2222	14-inch, 16-color (80 x 25)	80186	128K–896K/ 256K–896K	MS-DOS, CP/M-86	GW BASIC	4,195/ 4,395	two 5¼-inch, 720K-byte flexible drives available

SINGLE-USER MICROCOMPUTERS
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MS 2311	12-inch, amber (80 x 25)	80186	128K–896K	MS-DOS, CP/M-86	GW BASIC	5,295	one 5¼-inch, 720K-byte flexible drive and one 10M-byte hard disk drive available
MS 2312	12-inch, amber (80 x 25)	80186	256K–896K	MS-DOS, CP/M-86	GW BASIC	5,495	one 5¼-inch, 720K-byte flexible drive and one 10M-byte hard disk drive available
MS 2321/ MS 2322	14-inch, 16-color (80 x 25)	80186	128K–896K/ 256K–896K	MS-DOS, CP/M-86	GW BASIC	6,095/ 6,295	one 5¼-inch, 720K-byte flexible drive and one 10M-byte hard disk drive available
MS 3114	12-inch, amber (80 x 25)	80186	512K–768K	MS-DOS, CP/M-86, Concurrent CP/M-86	GW BASIC	7,195	one 5¼-inch, 720K-byte flexible drive and one 10M-byte hard disk drive available; expandable to nine users
MS 3124/ MS 3134	12-inch, amber (80 x 25)	80186	512K–768K	MS-DOS, CP/M-86, Concurrent CP/M-86	GW BASIC	12,890/ 14,995	one 5¼-inch, 720K-byte flexible drive; three 33M-byte fixed hard disk drives; one 5M-byte cartridge disk drive available; expandable to nine users
MORROW DESIGNS INC.							
Micro Decision 3	12-inch, amber (80 x 24)	Z80A	64K–128K	CP/M 2.2	MBASIC, Pilot	1,595	bundled software, one terminal; includes two 372K-byte flexible drives
Micro Decision 5/11/16/34	12-inch, amber (80 x 24)	Z80A	64K–128K	CP/M-3(+)	MBASIC, Pilot	2,295	includes one 384K-byte flexible drive and one 5K-, 11K-, 16K- or 34K-byte hard disk drive
PIVOT		80C86	128K–640K	MS-DOS 2.11		2,595–3,795	battery operated; two built-in 5¼-inch, 360K-byte flexible drives
NEC HOME ELECTRONICS (USA) INC.							
PC 8200	(40 x 8)	80C85	16K	proprietary	BASIC	399	one 360K-byte flexible drive available; built-in software
PC 8800	(80 x 25)	8086	64K–128K	MS-DOS 1.25, CP/M-80	BASIC	1,399	two 360K-byte flexible drives available; monitor, bundled software
Starlet	(80 x 16)		64K	CP/M		999	one 720K-byte flexible drive available
NIXDORF COMPUTER CORP.							
8810/65	12-, 15-inch; green, amber (132 x 27)	80186	256K–768K	Concurrent DOS, PC-DOS filter		4,800–8,600	two 5¼-inch, 1M-byte flexible drives and two 10M-byte hard disk drives available
OMNIBYTE CORP.							
OB68K/SYS+		68000, 68010	128K–16M	IDRIS, polyFORTH/32	BASIC, C, FORTH, FORTRAN 77, Pascal	13,495	six serial, two parallel ports; one 8-inch, 1.2M-byte flexible drive and one 80M-byte hard disk drive available; expandable to 40+ users
OB68K/SYSII		68000, 68010	128K–16M	IDRIS, polyFORTH/32	BASIC, C, FORTH, FORTRAN 77, Pascal		eight serial, two parallel ports; tape backup; one 8-inch, 1.6M-byte flexible drive and one 378M-byte hard disk drive available; expandable to 40+ users
OSBORNE COMPUTER CORP.							
OSBORNE Executive	7-inch, amber (80 x 24)	Z80A	128K	CP/M 3.0	COBOL, FORTRAN, Pascal		two 5¼-inch, 490K-byte flexible drives available
OSBORNE Vixen	7-inch, amber (80 x 24)	Z80A	64K	CP/M 2.2	COBOL, FORTRAN, Pascal	1,298	two 5¼-inch, 490K-byte flexible drives available; opt. one 5M-byte hard disk drive
PERSONAL MICRO COMPUTERS INC.							
PMC-101	12-inch, green (80 x 24)	Z80A	128K	CP/M 3.0	CBASIC, CP/M-supported languages		bundled software; up to four 5¼-inch, 400K-byte flexible drives and one 10M-byte hard disk drive available
PHAZE INFORMATION MACHINES CORP.							
P9020	12-inch; green, white (80 x 25)	8088	256K–1M	MS-DOS, PC-DOS, CP/M	IBM PC-compatible languages	2,500	3278 emulator; parallel, serial ports; two 5¼-inch flexible drives available
PRONTO COMPUTERS INC.							
16/10-35	12-inch; green, amber (80 x 25)	80186	256K–1M	MS-DOS	Assembly, BASIC, C, FORTH, FORTRAN, Pascal, PL/1	7,295	communications software; one 5¼-inch, 800K-byte flexible drive and one 35M-byte hard disk drive available
16/20	12-inch; green, amber (80 x 25)	80186	256K–1M	MS-DOS	Assembly, BASIC, C, FORTH FORTRAN, Pascal, PL/1	3,795	communications software; two 5¼-inch, 800K-byte flexible drives available
16/110	12-inch; green, amber (80 x 25)	80186	256K–1M	MS-DOS	Assembly, BASIC, C, FORTH, FORTRAN, Pascal, PL/1	4,995	communications software; one 5¼-inch, 800K-byte flexible drive and one 5.6M-byte hard disk drive available
QDP COMPUTER SYSTEMS							
16	12-inch, monochrome	8088	128K–640K	MS-DOS, XENIX, UNIX	Assembly, BASIC, C, COBOL, FORTRAN		two 5¼-inch, 360K-byte flexible drives and two 5M- to 55M-byte hard disk drives available

SINGLE-USER MICROCOMPUTERS
TABLE 2

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QUAY CORP.							
500		Z80A	64K	CP/M, UCSD	BASIC, COBOL, FORTRAN, Pascal	1,995	two 5¼-inch, 400K-byte flexible drives available; opt. 5M-, 20M-byte hard disk drive
520		Z80A	64K	CP/M, UCSD	BASIC, COBOL, FORTRAN, Pascal	2,395	two 5¼-inch, 800K-byte flexible drives available; opt. 5M-, 20M-byte hard disk drive
540		Z80A	64K	CP/M, UCSD	BASIC, COBOL, FORTRAN, Pascal	2,995	two 5¼-inch, 1.6M-byte flexible drives available; opt. 5M-, 20M-byte hard disk drive
550		Z80A	64K	CP/M, UCSD	BASIC, COBOL, FORTRAN, Pascal	4,595	one 5¼-inch, 1.25M-byte flexible drive and one 5M-byte hard disk drive available; opt. 10M-, 20M-byte hard disk drive
900		Z80A	64K	CP/M, UCSD	BASIC, COBOL, FORTRAN, Pascal	3,795	two 8-inch, 2.5M-byte flexible drives available; opt. 33M-byte hard disk drive
900/33		Z80A	64K	CP/M, UCSD	BASIC, COBOL, FORTRAN, Pascal	10,995	two 8-inch, 2.5M-byte flexible drives and one 33M-byte hard disk drive available
REGENCY SYSTEMS INC.							
R2-C	13-inch, 256-color (512 x 512)	Z80A	64K–320K	USE, CP/M-80	USE		bundled software; two 5¼-inch, 1M-byte flexible drives; one, up to 1G-byte, hard disk drive available; expandable to 30 users
RIDGE COMPUTERS							
32S	19-inch, monochrome	proprietary	2M–8M	Berkeley UNIX Version 4.2	C, FORTRAN 77, Mainsail, Pascal	39,900	plotter port; one 1M-byte flexible drive and one 78M-byte hard disk drive; up to eight terminals available
SANYO BUSINESS SYSTEMS CORP.							
MBC 550		8088	128K–256K	MS-DOS 1.25, 2.11	SBASIC, Pascal	949–999	one 5¼-inch, 160K- or 360K-byte flexible drive available
MBC 555		8088	128K–256K	MS-DOS 1.25, 2.11	SBASIC, Pascal	1,299–1,499	two 5¼-inch, 160K- or 360K-byte flexible drives and one 10M-byte hard disk drive available
MBC 775	9-inch, color (80 x 25)	8088	256K	MS-DOS 2.11	SBASIC, Pascal	2,599	two 5¼-inch, 360K-byte flexible drives available
SHARP ELECTRONICS CORP. (SYSTEMS DIV.)							
PC-1250A	(24 x 1)	custom	4.2K	custom	BASIC	110	
PC-1260	(24 x 2)	custom	4.4K	custom	BASIC	129	
PC-1261	(24 x 2)	custom	10.4K	custom	BASIC	195	
PC-1350	(24 x 4)	custom	5K–21K	custom	BASIC	195	
PC-1500A	(26 x 1)	custom	8.5K–24.5K	custom	BASIC	220	
PC-2500	(24 x 4)	custom	5K–21K	custom	BASIC		includes printer, plotter and business software
PC-5000	9-inch, b&w (80 x 8)	8088	128K–320K	MS-DOS	BASIC, C, COBOL, FORTRAN	1,695	two 5¼-inch, one 3½-inch, 360K-byte flexible drives available
SOLARIS COMPUTER CORP.							
SOLARIS 1000	monochrome (132 x 24)	8088, 8088-2	128K–640K	MS-DOS	Assembly, BASIC, FORTRAN, Pascal	2,495	two 5¼-inch, 360K-byte flexible drives and one 10M-byte hard disk drive available
SONY CORP. OF AMERICA (SONY INFORMATION PRODUCTS DIV.)							
SMC-70	8-, 12-, 13-inch; 16-color (80 x 25)	Z80A	64K–768K (with supercharger)	CP/M, CP/M-86	CB-80, SONY DISK BASIC, Pilot Plus	995	graphics editor, light pen; two 3½-inch, 280K-byte flexible drives and one 45M-byte hard disk drive available; opt. 12-, 19-, 25-inch RGB monitor; printer
SUMITRONICS INC. (FORMERLY SUMICOM INC.)							
Sumicom 330	12-inch, monochrome (80 x 25)	8088	128K–256K	MS-DOS 1.25, CP/M-86, SMC/Thoroughbred	ABASIC, MBASIC-86, COBOL, MACRO-86, Pascal	3,425	multi-user capability provided by SMC T/BOS; two 5¼-inch, 729K-byte flexible drives and one 32M-byte hard disk drive available
TEXAS INSTRUMENTS INC.							
Professional Computer		8088	128K–768K	CP/M-86, MS-DOS, UCSD p-System	BASIC, COBOL, FORTRAN, Pascal	2,495	one flexible drive, printers available
Professional Transportable Computer		8088	128K–768K	CP/M-86, MS-DOS, UCSD p-System	BASIC, COBOL, FORTRAN, Pascal	2,295	one flexible drive
TOSHIBA AMERICA INC. (INFORMATION SYSTEMS DIV.)							
T300	12-, 14-inch; 8-color, green	8088	256K–512K	MS-DOS 2.0, CP/M-86	CBASIC-86, TBASIC-16	1,795	two 5¼-inch, 600K-byte flexible drives and one 10M-byte hard disk drive available

SINGLE-USER MICROCOMPUTERS
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VECTOR GRAPHICS							
Vector SX Series	13-inch (80 x 24)	Z80, 8086	128K–896K	CP/M, CP/M-86, Concurrent CP/M-86, MS-DOS	BASIC, C, COBOL, FORTRAN, PL/1, Pascal, Assembly	4,295–16,995	one 737K-byte flexible drive, one 5M-, 10M-, 28M-, 36M-, 112M-byte hard disk drive, streaming tape backup available; opt. printers
Vector 4 Series	13-inch (80 x 24)	Z80, 8088	128K–256K	CP/M, CP/M-86, MS-DOS	BASIC, COBOL, C, FORTRAN, PL/1, Pascal, Assembly	3,995–9,995	one 630K-byte flexible drive, one 5M-, 10M-, 36M-byte hard disk drive, one cartridge tape drive subsystem backup available; opt. printers
VISUAL TECHNOLOGY INC.							
COMMUTER	10-inch, b&w (80 x 25)	8088	256K–512K	MS-DOS	BASIC, C, COBOL, Pascal	2,495	parallel, serial ports; two 5¼-inch, 360K-byte flexible drives available
WANG LABORATORIES INC.							
Professional Computer	12-inch, monochrome (80 x 25)	8086	256K–756K	MS-DOS, PC-DOS, CP/M-80	Advanced BASIC, Assembly, BASIC, COBOL, FOCUS, FORTRAN, Pascal	2,445	workstation emulation, WangNet; two 5¼-inch, 360K-byte flexible drives and one 10M-, 30M-byte hard disk drive available
Office Assistant	12-inch, green (80 x 25)	80186	256K–512K	Wang multitasking		2,395	two 5¼-inch, 360K-byte flexible drives available
WAVE MATE INC.							
Super Bullet 510		Z80A	128K–256K	MP/M II, OASIS, CP/M Plus	BASIC, C, FORTRAN, Pascal, PL/1	3,295	one 5-inch, 800K-byte flexible drive and one 10M-byte hard disk drive available; expandable to four users
Super Bullet 520		Z80A	128K–256K	MP/M II, OASIS, CP/M Plus	BASIC, C, FORTRAN, Pascal, PL/1	3,795	one 5-inch, 800K-byte flexible drive and one 20M-byte hard disk drive available; expandable to four users
XEROX CORP.							
16/8 OEM	12-inch, b&w (80 x 24)	Z80A, 8086	128K–256K	CP/M-80, CP/M-86, MS-DOS	BASIC-80, -86; CBASIC; COBOL; FORTRAN 77; Pascal; PL/1	4,890	one 5¼-inch, 322K-byte flexible drive and one 5¼-inch, 10M-byte hard disk drive available; opt. printer
820-II	12-inch, b&w (80 x 24)	Z80A	64K	CP/M-80	BASIC-80, CBASIC, COBOL		two 5¼-inch, 322K-byte flexible drives; two 8-inch, 500K-byte flexible drives; 8-inch, 8M-byte hard disk drive available
ZENDEX CORP.							
94/136		80186	512K–1M	CP/M-86	ASM-86	6,995	one 360K-byte flexible drive and one 10M-byte hard disk drive available
95/36B		8086	256K–512K	CP/M-86	ASM-86	8,495	two 1M-byte flexible drives available
835		8085	64K	ISIS II, CP/M-80	ASM-85	8,995	two 500K-byte flexible drives available
ZENITH DATA SYSTEMS							
Z-100		8088, 8085	192K	MS-DOS, CP/M	BASIC, COBOL, FORTRAN, Pascal	3,629	two 5¼-inch, 320K-byte flexible drives available; opt. monitor, printer
Z-150/Z-160		8088	320K–720K	MS-DOS	BASIC, COBOL, FORTRAN	2,799/2,999	two 5¼-inch, 320K- or 360K-byte flexible drives available; opt. monitor, printer

Information was solicited but not received from the following manufacturers:

Avatar Corp.
Burroughs Corp.
Canon U.S.A. Inc.
Century Computer Corp.
Commodore Business Machines
Compucorp
Convergent Technologies Inc.
Corvus Systems Inc.
Cromemco Inc.
Data General Corp.
Datavue Corp.
Delta Data Systems Corp.
Eagle Computer Inc.
Epson America Inc.
Esprit Computer Products Inc.
Grid Systems Corp.
Logical Business Machines
Motorola Semiconductor Products
Multitech Electronics Inc.
NCR Corp.
Q1 Corp.
Radio Shack/Tandy
Southwest Technical Products Corp.
Sperry Corp.
Sun Microsystems
Wicat Systems

For information on their products, consult the Supplemetary Manufacturers' Directory of Digest Products on Page 91.

WHO ELSE COULD FIT 520 MB, 20 YEARS OF EXPERIENCE, AND AN $8 BILLION COMPANY INTO A 9" DISK DRIVE?

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We've been pioneering advancements in electronics for almost 85 years. Including disk drives from the time they were developed back in 1959.

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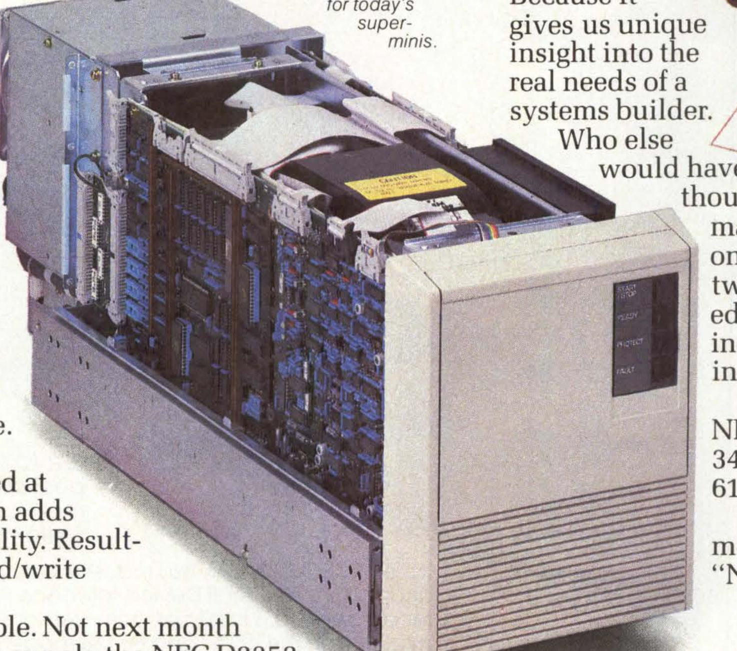

520 MB in a 9″ drive, sized for today's super-minis.

Our latest achievement in large drives is the NEC D2352. It features 520 megabytes of storage capacity (unformatted). And with a 15 millisecond average access time and data transfer rate of 1.859 megabytes it's also the fastest drive going.

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A field-tested technology.

The capacity and speed of our D2352 is revolutionary but the technology behind it is evolutionary. It's based on our successful 402 MB plated media 8″ drive that NEC customers have been using for the past several years.

C&C Computers and Communications

We know what systems builders need. We're builders too.

We can put you in the 9″ driver's seat with no waiting.

That gives NEC an edge over other drive companies. Because it gives us unique insight into the real needs of a systems builder.

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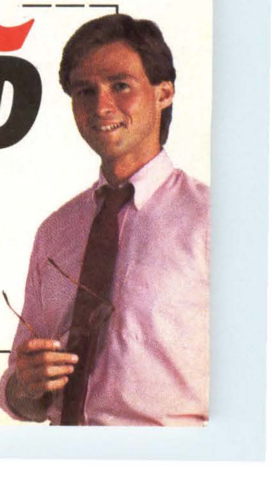

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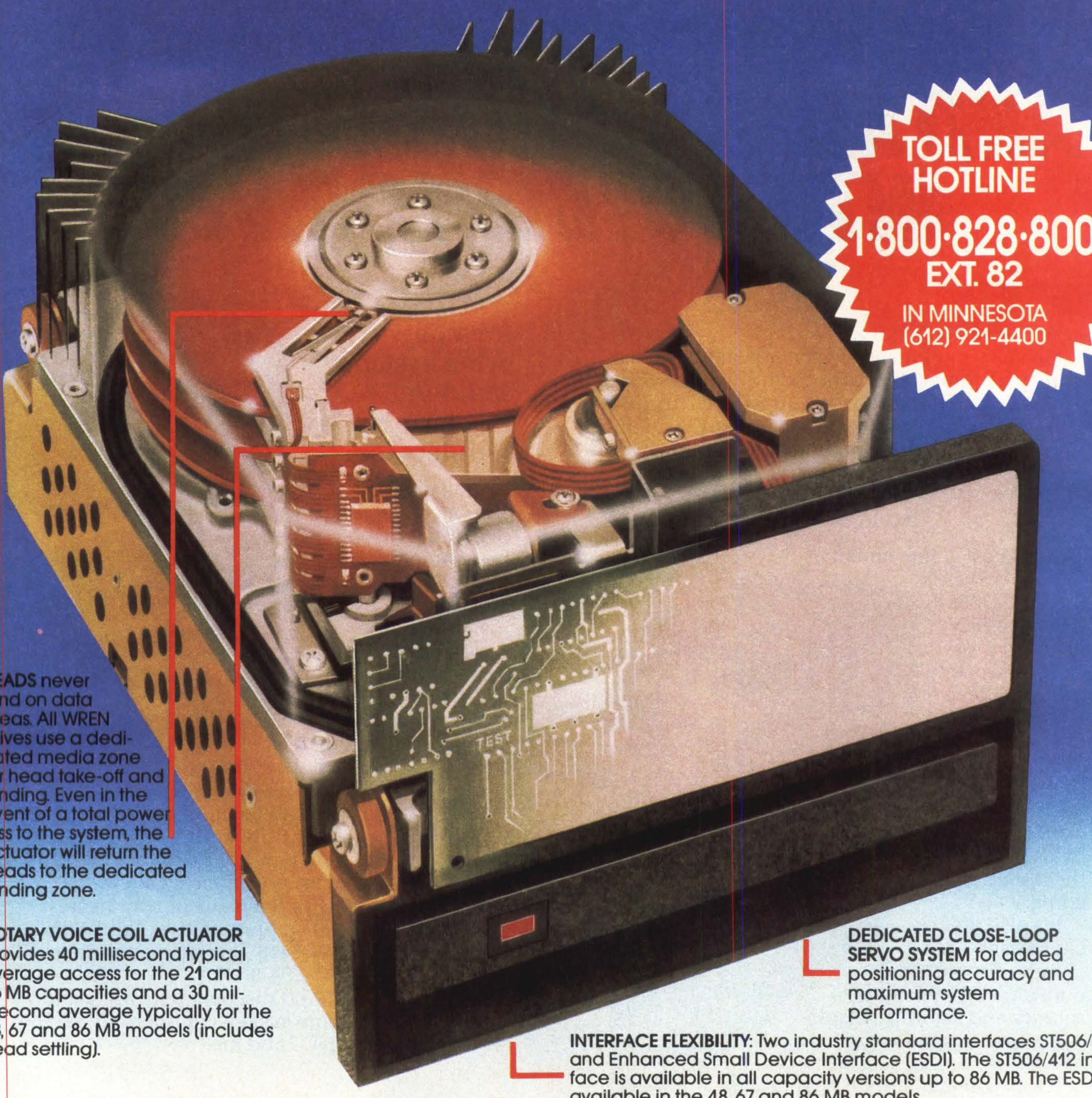

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CONTROL DATA

MULTI-USER MICROCOMPUTERS

TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
ACTION COMPUTER ENTERPRISE INC.							
Discovery 500	8, 16	Z80A, 8086, 8088, 80186	96K–7M	CP/M Plus, CP/M-86, dpc/OS, Concurrent DOS	BASIC, FORTRAN COBAL, Pascal, PL/1, C	5,995	one 640K-byte flexible drive, one 20M-byte hard disk drive; opt. cartridge tape drive
Discovery 1600	8, 16	Z80A, 8086, 8088, 80186	96K–16M	CP/M Plus, CP/M-86, dpc/OS, Concurrent DOS	BASIC, FORTRAN, COBOL, Pascal, PL/1, C	10,435	one 640K-byte flexible drive, one 65M-byte hard disk drive; opt. cartridge tape drive
ALLOY COMPUTER PRODUCTS							
PC-Slave 16	16	8088	256K–1M	MS-DOS	all	1,095	up to 31 host computers; opt. extension bus
ALPHA MICROSYSTEMS							
1000 Series	16	68000	128K–896K	AMOS, UNIX	BASIC, COBOL, FORTRAN, Pascal	7,585	one 10M-, 30M- or 55M-byte hard disk drive; dot matrix printer
1072	16	68000	512K–4M	AMOS, UNIX	BASIC, COBOL, FORTRAN, Pascal	18,300	one 70M-byte hard disk drive, dot matrix printer
1092	16	68000	512K–4M	AMOS, UNIX	BASIC, COBOL, FORTRAN, Pascal	28,000	one 400M-byte hard disk drive, dot matrix printer
ALTOS COMPUTER SYSTEMS							
186	8	80186	512K	XENIX, Concurrent CP/M-86	BASIC, COBOL, FORTRAN, Pascal, Softbol	5,990	one 720K-byte flexible drive, one 10M-byte hard disk drive, one terminal
486	8	80186	512K–872K	XENIX, Concurrent CP/M-86	BASIC, COBOL, FORTRAN, Pascal, Softbol	6,490	one 720K-byte flexible drive; one 20M-, 40M-byte hard disk drive; one terminal
580	8	Z80	192K	CP/M, MP/M-II, OASIS	BASIC, COBOL, FORTRAN, Pascal	4,490	one 720K-byte flexible drive; one 20M-, 40M-byte hard disk drive
586	16	8086	512K–1M	XENIX, MP/M-86, Concurrent CP/M-86	BASIC, COBOL, Pascal, FORTRAN, Softbol	7,990	one 720K-byte flexible drive; one 20M-, 40M-byte hard disk drive; one terminal
986	16	8086	1M	XENIX, MP/M-86, CP/M-86	BASIC, COBOL, FORTRAN, Pascal, Softbol	11,990	one 720K-byte flexible drive, one 40M-byte hard disk drive, one terminal
986T	16	8086	1M	XENIX, MP/M-86	BASIC, COBOL, Pascal, FORTRAN, Softbol	13,490	one 720K-byte flexible drive; one 40M-, 80M-byte hard disk drive; one terminal; streaming tape drive
2086	16, 32	80286	1M–16M	XENIX 3.0	BASIC, C, COBOL, FORTRAN	20,990	one 1.2M-byte flexible drive, one 68M-byte hard disk drive, streaming tape drive
Altos 6800	16, 32	6800	1M	RM/COS, AOS		11,990	one 720K-byte flexible drive; one 20M-, 40M-byte hard disk drive; one terminal
ANDROMEDA SYSTEMS INC.							
11/B73-W20	16	11/23, 11/73	256K–4M	RT-11, TSX Plus	BASIC, FORTRAN, Pascal, APL	8,995	one 512K-byte flexible drive, one 20M-byte hard disk drive
11/B73-W56	16	11/23, 11/73	256K–4M	RT-11, TSX Plus	BASIC, FORTRAN, Pascal, APL		
11/M12-W20	16	11/23, 11/73	256K–4M	RT-11, TSX Plus	BASIC, FORTRAN, Pascal, APL	6,995	one 512K-byte flexible drive, one 20M-byte hard disk drive
AT&T INFORMATION SYSTEMS							
AT&T UNIX PC	32	68010	512K–2M	UNIX System V		5,095	one 320K-byte flexible drive, one 10M-byte hard disk drive
BURROUGHS CORP.							
B25	16	80186	256K–1M	BTOS, MS-DOS, CP/M-86	BASIC, COBOL, FORTRAN, Assembly, Pascal	7,330	one 630K-byte flexible drive, one 10M-byte hard disk drive
CADMUS COMPUTER SYSTEMS							
9700	32	68010	1M–4M	UNIX	FRANZ LISP, FORTRAN 77, APL, Pascal		one 65M-byte hard disk drive, one terminal, one printer
9800	32	68020	1M–8M	UNIX	FRANZ LISP, FORTRAN 77, APL, Pascal		one hard disk drive, one terminal, one printer

MULTIUSER MICROCOMPUTERS

TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
CALIFORNIA COMPUTER SYSTEMS							
TurboStar IV	8, 16, 32	Z80A	64K–256K	Turbo-DOS, MS-DOS, CP/M, MP/M		8,811	one 20M-, 50M-byte hard disk drive; opt. four terminals
TurboStar VIII	8, 16, 32	Z80A	64K–256K	Turbo-DOS, MS-DOS, CP/M, MP/M		14,613	one 20M-, 50M-byte hard disk drive; opt. eight terminals
CALLAN DATA SYSTEMS							
UNISTAR 300	32	68010	512K–2M	UNIX System V	BASIC, C, COBOL, FORTRAN, Ada, Assembly, Pascal	23,900	one 616K-byte flexible drive, up to four 43M-byte hard disk drives, streaming tape drive
CHARLES RIVER DATA SYSTEMS							
68/35	32	68000	256K–8M	UNIX System V, UNOS	BASIC, C, COBOL, FORTRAN, Pascal	14,900	one 1M-byte flexible drive, one 35M-byte hard disk drive
68/67	32	68000	512K–8M	UNIX System V, UNOS	BASIC, C, COBOL, FORTRAN, Pascal	24,900	one 60M-byte hard disk drive, one 40M-byte tape drive
68/137	32	68000	512K–8M	UNIX System V, UNOS	BASIC, C, COBOL, FORTRAN, Pascal	26,900	one 120M-byte hard disk drive, one 40M-byte tape drive
Universe 2400	32	68000	512K–10M	UM/System V	BASIC, C, COBOL, FORTRAN, Pascal		312K-byte flexible drive; 20M-, 30M-byte hard disk drive; ¼-inch streaming tape drive
CHRISLIN INDUSTRIES, INC.							
CI-MICRO-11A	16	LSI-11/23+	256K–4M	ULTRIX, RSX-11, RT-11	BASIC, COBOL, FORTRAN	6,695	two 1M-byte flexible drives; one 10M-, 20M-byte hard disk drive
CI-MICRO-11B	16	LSI-11/23+	256K–4M	ULTRIX, RSX-11, RT-11	BASIC, COBOL, FORTRAN	7,695	two 1M-byte flexible drives; one 10M-, 20M- or 40M-byte hard disk drive
CI-MICRO-11C	16	LSI-11/73	1M–4M	ULTRIX, RSX-11, RT-11	BASIC, COBOL, FORTRAN	9,695	two 1M-byte flexible drives; one 10M-, 20M- or 40M-byte hard disk drive
CI-MICRO-11D	16	LSI-11/73	1M–4M	ULTRIX, RSX-11, RT-11	BASIC, COBOL, FORTRAN	13,595	two 1M-byte flexible drives, one 100M-byte hard disk drive
CIE SYSTEMS INC.							
680/100	16, 32	68000	512K–1M	REGULUS, Pick, RM/COS	C, SMC BASIC, RM COBOL, FORTRAN, Pascal	17,695	one 500K-byte flexible drive, one 46M-byte hard disk drive, four terminals
680/200	16,32	68000	512K–1M	REGULUS, Pick, RM/COS	C, SMC BASIC, RM COBOL, FORTRAN, Pascal	29,275	one 500K-byte flexible drive, two 336M-byte hard disk drives, four terminals
CIFER PLC							
9050	16	68000	512K–1.024M	UNIX SYSTEM III, SYSTEM IV: MBOS	BASIC, COBOL, FORTRAN, PROLOG, Pascal	6,050	one 800K-byte flexible drive, one 21M-byte hard disk drive, 12 terminals, four printers
COLEX TECHNOLOGY CORP.							
STD/880	8	Z80A	64K–256K	Turbo-DOS	BASIC, MACRO, Assembly	3,000	one 820K-byte flexible drive, one 10M-byte hard disk drive
VME/681MP	32	68010, 80186	1.024M–2.048M	UNIX System V, CP/M-68K, P-DOS	BASIC, C, FORTRAN 77, MACRO, Assembly, Pascal	8,000	one 740K-byte flexible drive, one 20M-byte hard disk drive
COLUMBIA DATA PRODUCTS INC.							
MPC 4210	16	8088	128K–640K	MS-DOS, CP/M-86	ABASIC	2,185	two 360K-byte flexible drives, 15 software packages
MPC 4620	16	8088	256K–640K	MS-DOS, CP/M-86, MP/M-86	ABASIC	3,495	one 360K-byte flexible drive, one 10M-byte hard disk drive, 15 software packages
MPC 4750	16	8088	512K–640K	MS-DOS, CP/M-86, MP/M-86	ABASIC	4,995	one 360K-byte flexible drive, one 10M-byte hard disk drive, 15 software packages
COMPUTER AUTOMATION INC.							
OMNIX III	16	NM 4/08, 4/04	8K–2M	CAOS II, OS4, RTX-4	FORTRAN IV, MACRO, Assembly, BCPL, CORAL 66, PANIC, Pascal	4,395	one 1M-byte flexible drive
COMPUTER SYSTEMS							
CS/86	16, 32	80286	128K–1M	MP/M, UNIX	BASIC, C, FORTH, Pascal	3,980	two 320K-byte flexible drives, up to eight terminals, CRT, keyboard

MULTIUSER MICROCOMPUTERS
TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
CONTEL CODATA SYSTEMS CORP.							
3400 Series	16	68000	20M–320M	Berkeley UNIX Version 7, UNIX System V	FORTRAN, BASIC Plus, SMC BASIC, RM COBOL, APL, Pascal	9,950	one 1M-byte flexible drive; one 20M-, 47M-, 84M-, 168M- or 320M-byte hard disk drive
6000 Series	32	68010	20M–320M	UNIX System V	FORTRAN, BASIC Plus, SMC BASIC, RM COBOL, APL, Pascal		
CONVERGENT TECHNOLOGIES							
Miniframe Plus	16	68010	512K–2M	CTIX	BASIC, COBOL, C, FORTRAN 77, Pascal		one 640K-byte flexible drive; one 26M-, 50M-byte hard disk drive
DATA GENERAL CORP.							
10/SP	16	microEclipse	128K–1.75M	CP/M-86, MS-DOS, RDOS	BASIC, COBOL, FORTRAN, C, PL/1, Pascal	3,310	one 368K-byte flexible drive; one 15M-, 38.6M- or 70M-byte hard disk drive; one terminal
20/SP	16	microEclipse	256K–2M	RDOS	BASIC, COBOL, FORTRAN, Pascal		one 368K-byte flexible drive; one 15M-, 38.6M- or 70M-byte hard disk drive
30/SP	16	microEclipse	512K–1.5M	RDOS	BASIC, COBOL, FORTRAN, Pascal	11,570	one 368K-byte flexible drive; one 15M-, 38.6M- or 70M-byte hard disk drive
DATAMEDIA CORP.							
20P	16	68000	512K–1M	Pick	BASIC	16,675	one 5M-byte hard disk drive; 20M-byte tape drive
30P	16	68000	1M–2M	Pick	BASIC	19,975	one 52M-byte hard disk drive, 20M-byte tape drive
1610	16	68000	512K–12M	UNIX System V, Pick	BASIC, COBOL, C	16,750	one 52M-byte hard disk drive, 20M-byte tape drive
1620	16	68010	1M–12M	UNIX System V, Pick	BASIC, COBOL, C	21,950	one 52M-byte hard disk drive, 20M-byte tape drive
1624	16	68010	1M–10M	UNIX System V, Pick	BASIC, COBOL, C	29,950	one 143M-byte hard disk drive, 20M-byte tape drive
DATAPOINT CORP.							
VISTA-PC	16	80186	256K–1M	CTOS, MS-DOS	GW BASIC, COBOL, FORTRAN, Pascal, Databus	3,195	two 630K-byte flexible drives, one 20M-byte hard disk drive, up to six terminals, printer
DIGITAL EQUIPMENT CORP.							
MicroVAX I	32	MicroVAX I	256K–2M	Micro VMS, ULTRIX-32m, VAXELN	Ada, FORTRAN, BASIC, COBOL, C, CORAL 66, DSM (Mumps), DIBOL, Pascal	13,730	two 400K-byte flexible drives; one 10M-, 32M-byte hard disk drive; floor stand
MicroPDP-11	16	LSI-11/23	256K–4M	RSX-11M-Plus, RT-11, ULTRIX-11, DSM-11, RSTS/E	FORTRAN, BASIC, COBOL, C, CORAL 66, DSM (Mumps), DIBOL, Pascal	9,100	two 400K-byte flexible drives; one 10M-, 32M-byte hard disk drive; floor stand
MicroPDP-11/73	16	J-11	256K–4M	RSX-11M-Plus, RT-11, ULTRIX-11, DSM-11, RSTS/E	FORTRAN, BASIC, COBOL, C, CORAL 66, DSM (Mumps), DIBOL, Pascal	11,100	two 400K-byte flexible drives; one 10M-, 32M-byte hard disk drive; floor stand
DUAL SYSTEMS CORP.							
83/80	16	68000	512K–3.25M	UNIX System V	FORTRAN 77, Pascal, RM COBOL, BASIC Plus	21,990	one 1M-byte flexible drive, one 80M-byte hard disk drive, C compiler, EPROM board
83/500	16	68000	2M–6M	UNIX System V	FORTRAN 77, Pascal, RM COBOL, BASIC Plus	65,940	one 1M-byte flexible drive, one 513M-byte hard disk drive, C compiler, EPROM board
DYNABYTE BUSINESS COMPUTERS							
6000	8	Z80B	256K	MP/M-II, CP/M-80, OASIS-8	BASIC, FORTRAN, COBOL, Assembly, Pascal	5,995	one 800K-byte flexible drive, one 19M-byte hard disk drive, diagnostic software
6600	8, 16	Z80B, 8086	256K–1M	OASIS-8, OASIS-86, MP/M-II, MP/M-86, CP/M-80, CP/M-86	BASIC, FORTRAN, COBOL, Assembly, Pascal	6,995	one 800K-byte flexible drive; one 19M-, 46M-byte hard disk drive

MULTIUSER MICROCOMPUTERS

TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
6900	8, 16	Z80B, 8086	256K–1M	OASIS-8, OASIS-86, MP/M-II, MP/M-86, CP/M-80, CP/M-86	BASIC, FORTRAN, COBOL, Assembly, Pascal	8,995	one 800K-byte flexible drive; one 19M-, 46M- or 92M-byte hard disk drive; diagnostic software
ESPRIT COMPUTER PRODUCTS INC.							
DBS 16 Desktop	16	80186	256K–512K	Concurrent DOS 3.1, MP/M-86	CBASIC, CBASIC-86	6,395	one 820K-byte flexible drive; one 6M-, 12M- or 19M-byte hard disk drive
DBS 16 Deskside	16	80186	256K–3.58M	Concurrent DOS 3.1, MP/M-86	CBASIC, CBASIC-86	7,490	one 820K-byte flexible drive; one 6M-, 12M-, 19M-, 40M- or 105M-byte hard disk drive
X16	16	80186	512K–1M	XENIX 3.0	SMC BASIC	9,295	one 820K-byte flexible drive; one 40M-, 105M-byte hard disk drive
FIRST COMPUTER CORP.							
Gemini 23 Plus	32	PDP-11/23-Plus	256K–4M	RT-11, RSTS/E, RSX-11M, RSX-11M-Plus, UNIX	BASIC, COBOL, FORTRAN		one 80M-byte flexible drive, one 160M-byte hard disk drive
Gemini 73	32	PDP-11/73	256K–4M	RT-11, RSTS/E, RSX-11M, RSX-11M-Plus, UNIX			one 80M-byte flexible drive, one 160M-byte hard disk drive
Taurus 73	32	PDP-11/73	256K–4M	RT-11, RSTS/E, RSX-11M, RSX-11M-Plus, UNIX			one 160M-byte hard disk drive, one 46M-byte tape drive
SPIRIT 23/ SPIRIT 73	32	PDP-11/23		RT-11, RSTS/E, RSX-11M, RSX-11M-Plus			
Spirit 68	32	68010		UNIX System V			
FLEXIBLE COMPUTER CORP.							
Flex/32 MultiComputer	32	32032	1M–156M	UNIX System V, MMOS	C, FORTRAN 77	150,000	one 800K-byte flexible drive, one 168M-byte hard disk drive, 128 terminals, printer
FUJITSU MICROELECTRONICS INC.							
Micro 16s	16	Z80A, 8086	256K–1.2M	Concurrent CP/M-86	BASIC, COBOL, CBASIC, FORTRAN, Macro Assembly, Pascal, PL/1, DR Graph	2,550	two 360K-byte flexible drives; one 10M-, 20M-byte hard disk drive
Micro 16sx	16	8086	256K–1.24M	Concurrent CP/M-86	BASIC, COBOL, CBASIC, FORTRAN, MACRO Assembly, Pascal, PL/1, DR Graph	4,895	one 10M-, 20M-byte hard disk drive; printer
GENERAL AUTOMATION INC.							
1700	16, 32	68010	512K–2.48M	XENIX	RM COBOL, RM FORTRAN, COBOL MBASIC, CBASIC, SMC BASIC	9,495	one 20M-, 40M-byte hard disk drive; ¼-inch streaming tape drive
3000	16, 32	68010	1.24M–1.536M	XENIX	RM COBOL, RM FORTRAN, COBOL, MBASIC, CBASIC, SMC BASIC	25,500	one 64M-byte hard disk drive, ½-inch streaming tape drive
ZEBRA 1750	16, 32	68000	128K–1.24M	Pick	BASIC, ACCESS, PROC	9,950	one 20M-byte hard disk drive
ZEBRA 2500	16, 32	68000	256K	Pick	BASIC, ACCESS, PROC	19,900	one 64M-byte hard disk drive, streaming cartridge tape drive
ZEBRA 3500	16, 32	68000	256K–1.24M	Pick	BASIC, ACCESS, PROC	25,500	one 64M-byte hard disk drive, ¼-inch streaming cartridge tape drive
ZEBRA 5500	16, 32	68000	1.280M–2.48M	Pick	BASIC, ACCESS, PROC	86,500	one 260M-byte hard disk drive, ½-inch steaming tape drive
ZEBRA 6700	16, 32	68000	1.280M–3.328M	Pick	BASIC, ACCESS, PROC	86,500	one 260M-byte hard disk drive, ½-inch streaming tape drive
GIFFORD COMPUTER SYSTEMS INC.							
MC 186	8, 16	80186, Z80H	1M	Concurrent DOS		12,495	one 1.2M-byte flexible drive; two 23M-, 44M- or 62M-byte hard disk drives
GIMIX INC.							
6809-79	8	6809	64K–1M	OS9, FLEX, UNIFLEX	BASIC, C, FORTRAN, Assembly, Pascal	3,998	two 500K-byte flexible drives; opt. 20M-, 42M- or 85M-byte hard disk drive
HARRIS CORP. (COMPUTER SYSTEMS DIV.)							
Harris Station	32	68000	1M–6M	UNIX	C, FORTRAN, Pascal	32,500	one 50M-byte hard disk drive, one terminal

MULTIUSER MICROCOMPUTERS

TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
HEURIKON CORP.							
Minibox	32	68000, 68010	256K–1M	UNIPlus System V, CP/M-68	C, BASIC, COBOL, FORTRAN, APL, Ada, Pascal	13,875	two 670K-byte flexible drives; two 30M-, 65M-or 140M-byte hard disk drives
814/68010	32	68000, 68010	256K–8M	UNIPlus System V VRTX, CP/M-68	C, BASIC, COBOL, FORTRAN, APL, Ada, Pascal	14,075	two flexible drives, two hard disk drives
HEWLETT-PACKARD CO.							
216S	16, 32	68000	128K–768K	HP Pascal, HP BASIC, Multi-FORTH	HP Pascal, BASIC, FORTH, MC68000, ASM	5,150	monitor, RS232C port
220S	16, 32	68000	128K–3.9M	HP Pascal, HP BASIC, HP UX (UNIX System III)	HP Pascal, BASIC, FORTH, MC68000, ASM	5,700	
226S	16, 32	68000	128K–2M	HP Pascal, BASIC, FORTH, MC68000, ASM FORTRAN, C	HP Pascal, BASIC, FORTH, MC68000, ASM, FORTRAN, C	11,000	monitor, one flexible drive
236CS	16, 32	68000	128K–2M	HP Pascal, HP BASIC, HP UX	HP Pascal, BASIC, FORTH, MC68000, ASM, FORTRAN, C	17,000	two 256K-byte flexible disk drives
236S	16, 32	68000	128K–2M	HP Pascal, HP BASIC, HP UX	HP Pascal, BASIC, FORTH, MC68000, ASM, FORTRAN, C	14,000	two 256K-byte flexible drives
HP 260	16	proprietary	256K–1M	proprietary	BASIC	10,430	one 700K-byte flexible disk drive, one 15M-byte hard disk drive, one terminal
520	32	NMOS III (proprietary)	256K–5M	HP BASIC, HP UX	BASIC, C, HP Pascal, FORTRAN 77	35,000	one 270K-byte flexible drive, one 10M-byte hard disk drive, one printer
530	32	NMOS (proprietary)	512K–5M	HP UX	C, HP PCL, FORTRAN 77	23,105	one 65M-byte hard disk drive, four terminals, one printer
540	32	NMOS III (proprietary)	512K–5M	HP UX	C, HP PCL, FORTRAN 77	42,300	one 65M-byte hard disk drive, four terminals, one printer
550	32		512K–1.5M	HP UX	HP Pascal, C, FORTRAN 77	36,000	
IBC/INTEGRATED BUSINESS COMPUTERS INC.							
Ensign	8	68010	1M–8M	UNIX	BASIC Plus, COBOL, SMC BASIC, ASM-68, FORTRAN, Ada, Pascal	29,995	one flexible drive; one 85M-, 167M-byte hard disk drive
Multi-Star	8	Z80B	256K–512K	OASIS	COBOL, C, BASIC	4,595	two 1M-, 1.6M-byte flexible drives; three 10M-, 20M- or 40M-byte hard disk drives
Super Cadet	8	Z80H	320K–640K	OASIS	COBOL, C, BASIC	13,395	one flexible drive; one 85M-, 167M-byte hard disk drive
IBM CORP.							
PC AT	16	80286	256K–3M	DOS 3.0 or higher, PC/IX 1.10, XENIX	APL, BASIC, COBOL	7,390	one 1.2M-byte flexible drive, two 20M-byte hard disk drives, three terminals, printer
IMS INTERNATIONAL							
5000 IS	8	Z80B, 80186	128K	Turbo-DOS	BASIC, COBOL, FORTRAN, Pascal	3,735	one 400K-byte flexible drive; one 12M- 24M- or 40M-byte hard disk drive; one terminal
5000 IS	16	Z80B, 80186	256K–1.24M	Turbo-DOS, Concurrent DOS	BASIC, COBOL, FORTRAN, Pascal	4,925	one 400K-byte flexible drive; one 12M-, 24M- or 40M-byte hard disk drive; one terminal
5000 SX	8	Z80B	128K	Turbo-DOS	BASIC, COBOL, FORTRAN, Pascal	2,925	one 400K-byte flexible drive; one 12M-, 24M- or 40M-byte hard disk drive
5000 SX	16	80186	256K–1.024M	Turbo-DOS	BASIC, COBOL, FORTRAN, Pascal	4,125	one 400K-byte flexible drive; one 12M-, 24M, 40M-byte hard disk drive
8000 S	8	Z80B	128K	Turbo-DOS	BASIC, COBOL, FORTRAN, Pascal	9,495	one 1.2M-byte flexible drive; one 40M-, 85M-byte hard disk drive
8000 S	16	80186	256K–1.024M	Turbo-DOS	BASIC, COBOL, FORTRAN, Pascal	11,845	one 1.2M-byte flexible drive; one 40M-, 85M-byte hard disk drive
8000 SX	8	Z80B	128K	Turbo-DOS	BASIC, COBOL, FORTRAN, Pascal	6,325	one 1.2M-byte flexible drive; one 40M-, 85M-byte hard disk drive
8000 SX	16	80186	256K–1.024M	Turbo-DOS	BASIC, COBOL, FORTRAN, Pascal	7,525	one 1.2M-byte flexible drive; one 40M-, 85M-byte hard disk drive

MULTIUSER MICROCOMPUTERS

TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
INDEPENDENT BUSINESS SYSTEMS							
Ultraframe	8, 16	Z80B, 80186, 8086	128K–18M	Turbo-DOS, UCSD Pascal, IBS P-Net	BASIC, C, COBOL, FORTRAN, Pascal	6,995	one 1.2M-byte flexible drive, one 10M-byte hard disk drive
INFOREX INC.							
Gen-V	32	68000	512K–12M	UNOS	BASIC, FORTRAN, RM COBOL	22,500	one 1M-byte flexible drive, one 10M-byte hard disk drive, one terminal
INTEL CORP.							
286/310	16	80286, 80287	1M–8M	XENIX, MS-DOS, RMX	C, COBOL, BASIC, FORTRAN, Pascal	16,800	one 320K-byte flexible drive, one 40M-byte hard disk drive
INTERTEC DATA SYSTEM CORP.							
HeadStart ATS-86	16	8086	256K–1M	MS-DOS	APL, BASIC, COBOL, FORTRAN	2,590	two 360K-byte flexible drives
HeadStart ATS-286	16	80286	256K–3M	MS-DOS	APL, BASIC, COBOL, FORTRAN, any IBM PC	3,090	two 360K-byte flexible drives
IRONICS INC.							
	16	68000, 68010	128K–1M	UNIX System V, CP/M-68, psos	FORTRAN, CBASIC, SMC BASIC, BASIC Plus, RM COBOL, ASM-68, Pascal		one 10K-byte flexible dive; one 30M-, 80M-byte hard disk drive
J.C. INFORMATION SYSTEMS							
JCS 507	8, 16	Z80A, Z80B, Z80H, 80186	64K–32.768M	Turbo-DOS, CP/M-80, CP/M-86	BASIC, COBOL, FORTRAN, Pascal	3,995	one 800K-byte flexible drive; one 20M-, 50M-, 70M- or 140M-byte hard disk drive
JCS 510	8, 16	Z80A, Z80B, Z80H, 80186	64K–32.768M	Turbo-DOS, CP/M-80, CP/M-86	BASIC, COBOL, FORTRAN, Assembly, Pascal	4,195	one 800K-byte flexible drive; one 20M- 36M-, 50M- or 70M-byte hard disk drive
JCS 810	8, 16	Z80A, Z80B, Z80H, 80186	64K–32.768M	Turbo-DOS, CP/M-80, CP/M-86	BASIC, COBOL, FORTRAN, Assembly, Pascal	4,495	one 1.2M-byte flexible drive; one 20M-, 36M-, 50M- or 70M-byte hard disk drive
LANIER BUSINESS PRODUCTS (DIV. OF HARRIS CO.)							
Lanier 1200	8, 16	Z80B, 8088	256K	PC-DOS, MS-DOS, CP/M, H-DOS	BASIC	3,200	one 65K-byte flexible drive; one 10M-byte hard disk drive, one terminal
Lanier 1400	8, 16	Z80B, 8086	512K	CP/M, H-DOS	BASIC	4,500	one 5M-, 10M-byte hard disk drive; one terminal
LOMAS DATA PRODUCTS INC.							
S100-PC	16	8086	256K–1.024M	Concurrent CP/M, MS-DOS	BASIC, C, FORTRAN, Pascal	2,995	two 360K-byte flexible drives
S100-PC-T	16	80186	256K–1.024M	Concurrent CP/M, MS-DOS	BASIC, C, FORTRAN, Pascal	2,895	two 360K-byte flexible drives
S100-PC-M	16	80186	512K–1.024M	Concurrent CP/M	BASIC, C, FORTRAN, Pascal		one 360K-byte flexible drive, one 53M-byte hard disk drive
M/A-COM INFORMATION SYSTEMS INC.							
One Touch	16	80186	512K–1M	CTOS, MS-DOS, CP/M-86	BASIC, COBOL, FORTRAN, Pascal	7,500	one 630K-byte flexible drive, one 40M-byte hard disk drive, one terminal; opt. printer
MAI BASIC FOUR INC.							
MAI 2000	16	68010	768K–1.536M	BOSS/IX	COBOL, C, Business BASIC	14,420	one 6M-byte flexible drive, one 22M-byte hard disk drive, one terminal
MASSCOMP							
MC-500	32	68010	1M–6M	RTU-16	BASIC, Pascal	27,900	one 640K-byte flexible drive; up to 16 50M-, 474M-byte hard disk drives
WS-500	32	68010	1M–6M	RTU-16	C, FORTRAN	26,900	one 640K-byte flexible drive; two 50M-, 80M-byte hard disk drives
MC-500DP	32	(2) 68010	2M–8M	RTU-16, RTU-32	COBOL, LISP	40,900	one 640K-byte flexible drive; up to 16 50M-, 474M-byte hard disk drives
MDB SYSTEMS INC.							
MDB MICRO/11	16	Q-bus-compatible	256K–4M	RT-11, RSTS/E, RSX, TSX, UNIX	BASIC, COBOL, FORTRAN, Pascal	7,800	two 500K-byte flexible drives, one 20M-byte hard disk drive
MDB MICRO/23	16	11/23	256K–4M	RT-11, RSTS/E, RSX, TSX, UNIX	BASIC, COBOL, FORTRAN, Pascal	13,950	one 20M-byte hard disk drive
MDB MICRO/73	16	11/73	256K–4M	RT-11, RSTS/E, RSX, TSX, UNIX	BASIC, COBOL, FORTRAN, Pascal	21,295	one 105M-byte hard disk drive

MULTIUSER MICROCOMPUTERS

TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
MEGADATA CORP.							
8300/1	16, 32	68000	768K–8M	UNIX System III	C, COBOL, FORTRAN, BASIC, Pascal, Assembly	8,000	two 600K-byte flexible drives; one 20M-, 36M-byte hard disk drive
8300/2	16, 32	68000	768K–8M	UNIX System III	C, COBOL, FORTRAN, BASIC, Pascal, Assembly	20,000	20M-byte streaming tape drive
8300/3	16, 32	68000	768K–8M	UNIX System III	BASIC, COBOL, FORTRAN, Pascal, Assembly	8,500	two 600K-byte flexible drives, 20M-byte streaming tape drive
8300/4	16, 32	68000	512K–8M	UNIX System III	C, COBOL, FORTRAN, BASIC, Pascal, Assembly	7,500	two 600K-byte flexible drives; one 20M-, 36M-byte hard disk drive; 20M-byte streaming tape drive
8300/5	16, 32	68000	512K–1M	UNIX System III	C, COBOL, FORTRAN, BASIC, Pascal, Assembly	4,000	one 600K-byte flexible drive; one 20M-, 36M-byte hard disk drive
MICRO FIVE CORP.							
Series 1000	16	8088-2	128K–512K	CP/M-86, MP/M-86, Stardos, SMC Business BASIC	BASIC, COBOL	4,995	1M-byte flexible drive; two 12M-, 19M-, 40M- or 80M-byte hard disk drives; opt. 20M-byte tape drive
Turbo 1000	16	80186	256K–786K	SMC Business BASIC	BASIC	17,995	one 1M-byte flexible drive; two 72M-, 140M-byte hard disk drives; 60M-byte streaming tape drive
MICRO-LINK CORP.							
Approach II	8	Z80A	64K–128K	CP/M, polyFORTH	Approach II		
MOLECULAR COMPUTER							
Series 4	8	Z80	64K	n/STAR (proprietary), CP/M-86, MP/M, MP/M-86, MS-DOS		4,995	one 360K-byte flexible drive, one 10M-byte hard disk drive, up to four terminals
Series 9	8, 16	Z80, 80186	64K–1M	n/STAR (proprietary), CP/M, CP/M-86, MP/M, MP/M-86, MS-DOS, OASIS		5,995	one 36M-byte flexible drive; 10M-, 20M-,40M-or 60M-byte hard disk drives; up to nine terminals
Series 12, Model 1	16	80186	128K–640K	MS-DOS2.X, Concurrent CP/M 3.X	FORTRAN, C, MBASIC, COBOL, PL/1, Pascal		one 819K-byte flexible drive; one 10M-, 20M-or 40M-byte hard disk drive
Series 12, Model II	16	80186, 80286	640K–1.12M	XENIX 3.X	C, BASIC, COBOL, FORTRAN, Pascal		one 1.2M-byte flexible drive: one 20M-, 40M-byte hard disk drive
Series 36	8, 16	Z80, 80186	64K–1M	n/STAR (proprietary), CP/M, CP/M-86, MP/M, MP/M-86, MS-DOS, OASIS		24,995	one 36M-byte flexible drive; three 60M-, 120M- or 180M-byte hard disk drives; up to 36 terminals
MORROW DESIGNS							
Tricep	16, 32	68000	512K–2M	UNIX System V, MS-DOS	C, SMC BASIC, FORTRAN 77, RM COBOL, Assembly, Pascal	8,495	one 16M-byte hard disk drive, one flexible drive
MOTOROLA/FOUR-PHASE SYSTEMS							
6300	16, 32	68010	512K–2M	UNIX-based systems	COBOL, RM COBOL, BASIC, C, Pascal, SIBOL		
6600	16, 32	68010	512K–4M	UNIX-based systems	COBOL, RM COBOL, BASIC, C, Pascal, SIBOL		
NEC INFORMATION SYSTEMS INC.							
APC III	16	8086-2	128K–640K	MS-DOS, UNIX System III	BASIC, C, COBOL, FORTRAN	1,995	one 360K-byte flexible drive, one terminal
NIXDORF COMPUTER CORP.							
8890	32	proprietary	1M–8M	proprietary, IBM DOS/VS, VM/SP, SSX/VSE	COBOL	88,385	two 200M-byte hard disk drives, one terminal, streaming tape drive
Micro 7	16		256K	NIROS	BASIC	12,795	one 800K-byte flexible drive, one 10M-byte hard disk drive, one terminal
NORTH STAR COMPUTERS INC.							
Dimension	16	80186, 8088-2	128K–512K	MS-DOS-based systems	IBM PC/XT-compatible languages	8,250	one 360K-byte flexible drive; one 30M-, 60M-byte hard disk drive; two terminals

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TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
OMNIBYTE CORP.							
OB68K/SYS+	16, 32	68000, 68010	128K–16M	IDRIS, polyFORTH/32	C, Pascal, BASIC, FORTRAN 77, FORTH	10,895	one 1.2M-byte flexible drive, one 20M-byte hard disk drive
OB68K/SYSII	16, 32	68000, 68010	512K–16M	IDRIS, polyFORTH/32	C, Pascal, BASIC, FORTRAN 77, FORTH		one 1.6M-byte flexible drive, one 80M-byte hard disk drive
ONYX SYSTEMS INC.							
186 Series	16	80186	256K–768K	Concurrent DOS, Thoroughbred	C, BASIC, COBOL	7,495	one 12M-, 18M- or 40M-byte hard disk drive; one terminal
5010 Series	8	Z80B	384K–896K	OASIS	BASIC, COBOL	6,490	one 14M-, 21M- or 40M-byte hard disk drive
5011 Series	8	Z80A	192K	CP/M, MP/M, OASIS	BASIC, RM, COBOL	5,990	one 14M-, 21M-byte hard disk drive
5012 Series	16	Z8001A	512K–1.024M	UNIX System III	C, BASIC, COBOL, FORTRAN, Pascal	9,990	one 14M-, 21M- or 40M-byte hard disk drive; one terminal
6810 Series	16, 32	68010	1M–8M	UNIX System III	C, RM COBOL, FORTRAN 77		one 18M-byte hard disk drive, one terminal
OSM COMPUTER CORP.							
Zeus PC	16	8088	256K–640K	MS-DOS	GW BASIC		two 360K-byte flexible drives
Zeus XPC	16	8088	256K–640K	MS-DOS	GW BASIC		one 360K-byte flexible drive; one 10M-, 20M-byte hard disk drive
Zeus V.I.PC	16	8088	256K–640K	MS-DOS	GW BASIC		one 360K-byte flexible drive; one 10M-, 20M-byte hard disk drive; 20M-byte tape drive
ZeusMate	16	8088-2, 8087	256K–640K	MS-DOS			monitor, keyboard; opt. flexible drive
PARALLEL COMPUTERS INC.							
300	32	68010, 8085, 80186	1M–4M	Berkeley UNIX Version 4.2	C, COBOL, FORTRAN 77	5,080	two 84M-, 168M-byte hard disk drives
PCE SYSTEMS							
Voyager I/II/III	8, 16, 32	Z80, 32032	64K–18M	CP/M, MP/M, MU-UNIX	Assembly, ALGOL, APL, BASIC, C, COBOL, FORTH, FORTRAN, Pascal, PL/1	10,000–50,000	one 1M-byte flexible drive, one 47M-byte hard disk drive, one 20M-byte tape drive, printer
PACIFIC MICROCOMPUTERS INC.							
PM200	16	68010	1M–4M	UNIX	BASIC, C, COBOL, FORTRAN, Ada, Pascal	15,500	one 1M-byte flexible drive; one 20M-, 40M- or 85M-byte hard disk drive
PM400	16	68010	1M–4M	UNIX	BASIC, C, COBOL, FORTRAN, Ada, Pascal	29,900	one 80M-, 130M- or 300M-byte hard disk drive; streaming tape drive
PARADYNE CORP.							
7812	16	80188	64K–640K	CDOS, MS-DOS, CP/M-86	BASIC, COBOL, C, Pascal	1,500	two 360K-byte flexible drives, one 10M-byte hard disk drive, 32 terminals
7814	16	80188	192K–640K	CDOS, MS-DOS, CP/M-86	BASIC, COBOL, C, Pascal	2,400	two 360K-byte flexible drives, one 10M-byte hard disk drive, 32 terminals
7913	16	80188	192K–640K	CDOS, MS-DOS, CP/M-86	BASIC, COBOL, C, Pascal	3,100	two 360K-byte flexible drives, one 10M-byte hard disk drive, 32 terminals
PERKIN-ELMER CORP. (DATA SYSTEMS GROUP)							
7350A	32	68000	512K–3M	UNIPlus	C, FORTRAN, RM COBOL, SIBOL, BASIC Plus		one 320K-byte flexible drive; one 28M-, 40M-byte hard disk drive; four terminals; printer
PERTEC COMPUTER CORP.							
3215	16, 32	68000, Z80A	256K–1M	O/S 3200, Unisoft System V	BASIC, COBOL, C, FORTRAN, Pascal	10,310	one 819K-byte flexible drive, one 13M-byte hard disk drive, one terminal
3220	16, 32	68000, Z80A	512K–1M	O/S 3200, Unisoft System V	BASIC, COBOL, C, FORTRAN, Pascal	16,000	one 26M-byte hard disk drive, one terminal, 48M-byte cartridge tape drive
3230	16, 32	68000, Z80A	512K–2M	O/S 3200, Unisoft System V	BASIC, COBOL, C, FORTRAN, Pascal	26,000	one 70M-byte hard disk drive, one terminal, one 21M-byte cartridge tape drive
3240	16, 32	68000, Z80A	1M–4M	O/S 3200, Unisoft System V	BASIC, COBOL, C, FORTRAN, Pascal	34,000	two 70M-byte hard disk drives, one terminal, 21M-byte cartridge tape drive

MULTIUSER MICROCOMPUTERS

TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
PIXEL COMPUTER INC.							
80 A/P	32	68000	500K–6M	UNIX System III, Berkeley Version 7	ABSOFT, FORTRAN 77, RM COBOL, CBASIC, MBASIC	16,000	one 620K-byte flexible drive; two 42M-, 65M-, 105M- or 140M-byte hard disk drives
100 A/P	32	68000	500K–6M	UNIX System III, Berkeley Version 7	UNIFY, MDBS, SIBOL, SUPERCOMP 20	19,000	one 500K-byte flexible drive; four 40M-, 85M-byte hard disk drives
PLEXUS COMPUTERS INC.							
P/15	32	68010	512K–2M	UNIX	COBOL, FORTRAN, C, Pascal	10,950	one 1M-byte flexible drive; one 12M-, 23M-, 27M- or 47M-byte hard disk drive
P/35	32	68000	512K–2M	UNIX	COBOL, FORTRAN, C, CBASIC, Pascal	16,950	one 22M-, 36M-, 72M- or 145M-byte hard disk drive; cartridge tape drive
P/60	32	68000	512K–4M	UNIX	COBOL, FORTRAN, C, CBASIC-16, Pascal		one 72M-, 145M-, 265M- or 600M-byte hard disk drive; streaming tape drive
POLYMORPHIC SYSTEMS							
Poly 186	16	80186	512K–2M	Concurrent DOS, UNIX System 88	BASIC, MACRO, FORTRAN, COBOL, C, Assembly, Pascal		one 360K-byte flexible drive, one 20M-byte hard disk drive
QDP COMPUTER SYSTEMS							
300	8	Z80B	128K–768K	CP/M, MP/M II	BASIC, Assembly, FORTRAN, COBOL, C	3,495–11,795	two 1.2M-byte flexible drives; one 15M-, 32M-byte hard disk drive
400	8	Z80B	256K–2.296M	Turbo-DOS	BASIC, Assembly, FORTRAN, COBOL, C	6,095–26,195	one 1.2M-byte flexible drive; three, 15M- to 55M-byte hard disk drives
500	8	Z80B	128K–768K	CP/M, MP/M II	BASIC, Assembly, FORTRAN, COBOL, C	1,995–5,295	two 1.2M-byte flexible drives; one 10M-, 20M-byte hard disk drive
QUAY CORP.							
500 Series	8	Z80A	64K–256K	CP/M, MP/M, UCSD-P	COBOL, FORTRAN, BASIC, APL	1,695	two 400K-byte flexible drives, one terminal
900 Series	8	Z80A	64K–256K	CP/M, MP/M, UCSD-P	COBOL, FORTRAN, BASIC, APL	3,495	two 1.2M-byte flexible drives, one terminal
QUBIX GRAPHIC SYSTEMS INC.							
I	32	68010	2M–3M	Berkeley UNIX Version 4.2	C	60,000	one 80M-byte hard disk drive, two terminals, printer
II	32	68010	4M–6M	Berkeley UNIX Version 4.2	C	115,000	one 160M-byte hard disk drive, four terminals, printer
III	32	68010	6M–9M	Berkeley UNIX Version 4.2	C	160,000	one 160M-byte hard disk drive, eight terminals, printer
RAIR COMPUTER CORP.							
3/65		8085, 8088	512K–1.024M	Concurrent CP/M-86	COBOL, BASIC, FORTRAN, Pascal	9,500	one 1M-byte flexible drive, one 20M-byte hard disk drive
Supermicro		80286	512K–4.096M	Concurrent CP/M-86, Berkeley UNIX Version 2	COBOL, BASIC, FORTRAN, Pascal	15,500	one 1M-byte flexible drive, one 50M-byte hard disk drive
REXON BUSINESS MACHINES CORP.							
RX100	16	8086	128K–1M	RECAP	Business BASIC, IDOL DBMS	9,995	one 1.2M-byte flexible drive; one 10M-, 15M-byte hard disk drive; streaming tape drive
RX200	16	8086	128K–1M	RECAP	Business BASIC, IDOL DBMS	13,900	one 1.2M-byte flexible drive, one 28M-byte hard disk drive, streaming cartridge tape drive
RX400	16	8086	128K–1M	RECAP	Business BASIC, IDOL DBMS	20,980	one 1.2M-byte flexible drive; one 56M-, 140M-byte hard disk drive; streaming cartridge tape drive
RX105	16	80286	512K–2M	XENIX 3.0	C, COBOL, SMC, BASIC	14,900	one 40M-byte hard disk drive, streaming cartridge tape drive; opt. one 1.2M-byte flexible drive
RX205	16	80286	512K–2M	XENIX 3.0	C, COBOL, SMC BASIC	18,500	one 70M-byte hard disk drive, streaming cartridge tape drive; opt. one 1.2M-byte flexible drive
RX405	16	80286	512K–2M	XENIX 3.0	C, COBOL, SMC BASIC	22,300	opt. one 1.2M-byte flexible drive; one 116M-, 165-byte hard disk drive

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TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
SBE INC.							
SBE 200		68000	128K–1.024M	REGULUS, CP/M-86	BASIC, ABSOFT, FORTRAN, C, FORTH, RM COBOL, Pascal	5,230	two 320K-byte flexible drives, two terminals
SBE 300		68000	512K–8.192M	REGULUS	BASIC, ABSOFT, FORTAN, C, FORTH, RM COBOL, Pascal	6,855	one 10M-, 20M-, 40M-, 80M-, 140M- or 280M-byte hard disk drive; two terminals; opt. 68010
SBE 350		68000	512K–8.192K	REGULUS	ABSOFT, FORTRAN	6,655	one 10M-, 40M- or 140M-byte hard disk drive; two terminals; opt. 68010
SCI SYSTEMS INC.							
SCI 1000	16	80186	512K–1M	UNIX	Assembly, BASIC, C, COBOL, FORTRAN, Pascal	7,995	one .5M-byte flexible drive; one 25M-, 43M- or 52M-byte hard disk drive; four terminals, serial printer
SENTINEL COMPUTER CORP.							
DS-130	16	8086	128K–1M	DBOS	DBL, BASIC, COBOL, Pascal, FORTRAN	16,700	one 1.6M-byte flexible drive, one 19.1M-byte hard disk drive, one terminal
DS-140	16	8086	160K–1M	DBOS	DBL, BASIC, COBOL, Pascal, FORTRAN	21,200	one 1.6M-byte flexible drive, one 51.4M-byte hard disk drive, terminal
DS-170	16	8086	288K–1M	DBOS	DBL, BASIC, COBOL, FORTRAN, Pascal	39,700	one 1.6M-byte flexible drive, one 168.5M-byte hard disk drive, one terminal, cartridge tape drive
DS-180	16	8086	288K–1M	DBOS	DBL, BASIC, COBOL, Pascal, FORTRAN	36,500	one 1.6M-byte flexible drive, one 80M-byte hard disk drive, one terminal
SEQUENT COMPUTER SYSTEMS INC.							
Balance-8000	32	National Semiconductor 32000	2M–28M	Dynix	C, FORTRAN, Pascal	57,000	
STM ELECTRONICS CORP.							
STM AT	16	80286	512K–3M	MS-DOS 3.0, UNIX	BASIC, C, COBOL, FORTRAN, Pascal		one 1.2M-byte flexible drive, one hard disk drive
STM Laptop	16	80C88	256K–512K	MS-DOS 2.1	BASIC, C, COBOL, FORTRAN, Pascal		one flexible drive
STM PC	16	80186	296K–512K	MS-DOS 2.1	BASIC, C, COBOL, FORTRAN, Pascal	3,449	two 360K-byte flexible drives
STRIDE MICRO							
Stride 420	32	68000	256K–2M	CP/M-68K, UNIX System V, RM/COS, BOS	Assembly, APL, C, BASIC, CBASIC, COBOL, FORTH, FORTRAN, LISP, Pascal	2,900	one 640K-byte flexible drive, one terminal
Stride 440	32	68000	256K–8M	CP/M-68K, UNIX System V, RM/COS, BOS	Assembly, APL, C, BASIC, CBASIC, COBOL, FORTH, FORTRAN, LISP, Pascal	5,900	one 640K-byte flexible drive; one 10M-, 15M or 33M-byte hard disk drive; one terminal
Stride 460	32	68000	256K–12M	CP/M-68K, UNIX System V, RM/COS, BOS	Assembly, APL, C, BASIC, CBASIC, COBOL, FORTH, FORTRAN, LISP, Pascal	8,900	one 640K-byte flexible drive; one 15M-, 33M-, 67M-, 112M- or 224M-byte hard disk drive
SYKES DATATRONICS INC.							
GENUS-G3/3	16	8086	512K–1M	XENIX, MS-DOS	C, BASIC, COBOL, FORTRAN	15,140	
SYSTIME COMPUTERS LTD.							
S300	16	8086, 8087	256K–1M	MP/M-86, CP/M-86, Concurrent DOS, MPS	BASIC, COBOL, ANS74, ANS77, FORTRAN, Pascal		two .8M-byte flexible drives, five terminals, printer
S600	16	8086, 8087	256K–1M	MP/M-86, CP/M-86, Concurrent DOS, MPS	BASIC, COBOL, ANS74, ASN77, FORTRAN, Pascal		one .8M-byte flexible drive, two 40M-byte hard disk drives, nine terminals, printer

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TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
S400	16	80286, 80287	512K–2M	UNIX, XENIX, Concurrent DOS, MPS	BASIC, COBOL, FORTRAN, Pascal		one 800K-byte flexible drive; one 40M-, 80M-byte hard disk drive; one terminal, streaming tape drive
S2600	16	8086, 8087	1M	MPS	BASIC, COBOL, ANS74, ANS77, FORTRAN, Pascal		one .8M-byte flexible drive, one 128M-byte hard disk drive, 13 terminals, printer
S4000	16	80286, 80287	1.024M–8.192M	UNIX, XENIX, Concurrent DOS, MPS	BASIC, COBOL, FORTRAN, Pascal		one 800K-byte flexible drive, one 128M-byte hard disk drive, one terminal, printer, streaming tape drive
UNIVERSAL DATA RESEARCH							
2400m	16	68B09	256K–1M	FLEX, UNIFLEX, OS9, INOS	BASIC, COBOL, C	13,000	one flexible drive; one 55M-, 70M- or 140M-byte hard disk drive; 12 terminals; printer
VECTOR GRAPHICS							
MX Series	8, 16	Z80, 8086	128K–896K	Concurrent CP/M-86	BASIC, C, COBOL, FORTRAN, Assembly, Pascal, PL/1	7,380	
VIASYN CORP.							
816/D	16	8086	512K–1M	Concurrent DOS 8-16	Assembly, BASIC, COBOL, FORTRAN, Pascal	12,995	two 1.2M-byte flexible drives; one 40M-, 80M-byte hard disk drive; bundled software
816/E	16	68000	256K–1M	CP/M-68K	FORTH	9,995	two 1.2M-byte flexible drives; one 40M-, 80M-byte hard disk drive
816/F	16	80286	512K–1M	Concurrent DOS 8-16	Assembly, BASIC, COBOL, FORTRAN, Pascal	14,995	two 1.2M-byte flexible drives; one 40M-, 80M-byte hard disk drive
CompuPro 10 Plus	8, 16	8088, Z80	1M	Concurrent DOS 8-16		4,995	two 1.6M-byte flexible drives; one 20M-, 40M- or 80M-byte hard disk drive; bundled software
CompuPro 286	8, 16	80286, Z80	512K–1M	Concurrent DOS 8-16		9,995	800K-byte flexible drive, 40M-byte hard disk drive
CompuPro 816/C	8, 16	8085, 8088	512K–1M	Concurrent DOS 8-16		8,995	2.4M-byte flexible drive; opt. one 20M-, 40M- or 80M-byte hard disk drive
XYZTEK CORP.							
Maxima 16	32	68020	1M–64M	XYZNIX (proprietary)	C, COBOL, FORTRAN	45,000	one 500M-byte hard disk drive, streaming tape drive, one terminal
ZENDEX CORP.							
94/186	16	80186	512K–1M	RMX-86	FORTRAN, PL/M-86, C, ASM, Pascal	6,995	one 360K-byte flexible drive, one 40M-byte hard disk drive
95/86B	16	8086, 80186	512K–1M	RMX-86	FORTRAN, PL/M-86, C, ASM, Pascal	14,495	two 1M-byte flexible drive, one 40M-byte hard disk drive
ZENTEC CORP.							
2000	16	8086	256K–1.024M	XENIX	C, COBOL	9,500	one 720K-byte flexible drive, one 20M-byte hard disk drive, one terminal
ZILOG INC.							
System 8000/11	16	Z8001	512K–2M	UNIX System III	C, BASIC, COBOL, DIBOL, RM COBOL, SOFTBOL, SMC BASIC, Ada, Pascal	14,950	one 19M-byte hard disk drive, eight terminals, diagnostic software
System 8000/11 Plus	16	Z8001	512K–2M	UNIX System III	C, BASIC, COBOL, DIBOL, RM COBOL, SOFTBOL, SMC BASIC, Ada, Pascal	16,950	one 52M-byte hard disk drive, eight terminals
System 8000/12	16	Z8001A	512K–4M	UNIX System III	C, BASIC, COBOL, DIBOL, RM COBOL, SOFTBOL, SMC BASIC, Ada, Pascal	19,950	one 52M-byte hard disk drive, eight terminals, diagnostic software
System 8000/22	16	Z8001A	512K–8M	UNIX System III	C, FORTRAN, Ada, Pascal, RM COBOL, DIBOL, SOFTBOL, SMC BASIC	23,950	one 52M-byte hard disk drive, eight terminals, diagnostic software

MULTIUSER MICROCOMPUTERS

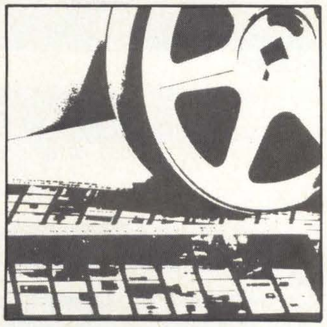
TABLE 3

Company Model	CPU word size (bits)	CPU type	Main memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
System 8000/32	16	Z8001A	512K–8M	UNIX System III	C, FORTRAN, Ada, Pascal, RM COBOL, DIBOL, SOFTBOL, SMC BASIC	29,950	one 52M-byte hard disk drive, eight terminals, diagnostic software

Information was solicited but not received from the following manufacturers:

- Alcyon Corp.
- Auragen Systems Corp.
- Compucorp
- Corona Data Systems Inc.
- Corvus Systems
- Cromemco Inc.
- Durango Systems Inc.
- Financial Business Computers
- Fortune Systems Corp.
- Grid Systems Corp.
- Honeywell Information Systems
- Intellimac Inc.
- McDonald Douglas Computer Systems Co. (formerly Microdata Corp.)
- Musys Corp.
- NCR Corp.
- Q1 Corp.
- Radio Shack/Tandy
- Smoke Signal
- Southwest Technical Products Corp.
- Sperry Corp.
- Stratus Computer Inc.
- TeleVideo Systems Inc.
- Wicat Systems

For information on their products, consult the Supplementary Manufacturers' Directory of Digest Products on Page 91.



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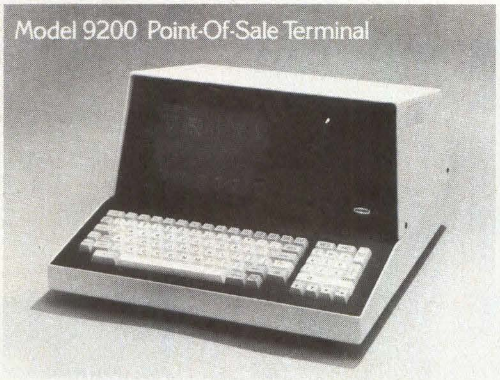
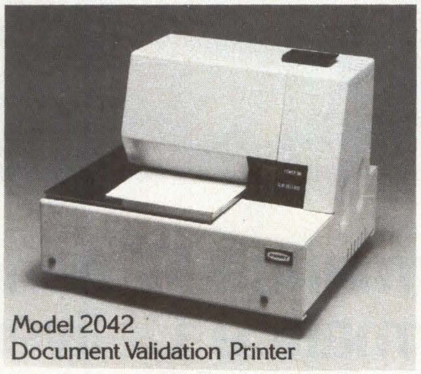
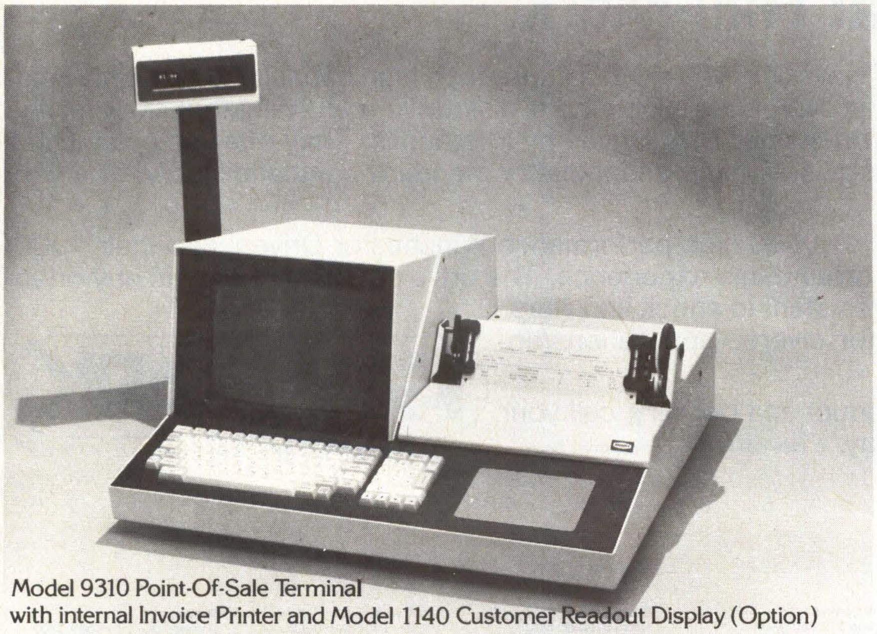


Model 9200 Point-Of-Sale Terminal

Model 2014 Receipt Printer



Model 2042 Document Validation Printer



Model 9310 Point-Of-Sale Terminal with internal Invoice Printer and Model 1140 Customer Readout Display (Option)

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Model 9460 Point-Of-Sale Terminal with internal Receipt Printer and Model 1112 Cash Drawer

Features: 12″ green-phosphor CRT with 80x24 display • full data-entry keyboard with numeric pad and function keys • built-in 40 col. receipt printer with audit copy • internal 2000-character print buffer • RS-232-C aux. port • RS-232-C interface with host • supports up to two cash drawers • optional bar code wand reader

Model 9200 Point-Of-Sale Terminal

Features: 9″ green-phosphor CRT with 80x24 display • full data-entry keyboard with numeric pad and function keys • internal 2000-character print buffer • RS-232-C aux. port • RS-232-C interface with host • supports up to two cash drawers • optional bar code wand reader • optional coin change dispenser

Model 2014 Receipt Printer

Features: 40-col. receipt printer with audit copy • uses 3½″ roll paper, one or two-ply • internal 2000-character print buffer with continuous and block mode printing • RS-232-C interface with host • supports up to two cash drawers • supports one-line check validation

Model 2042 Document Validation Printer

Features: 40-col. document printer • document may be multi-part form • internal 2000-character buffer with continuous and block mode printing • RS-232-C interface with host • supports up to two cash drawers

Model 9310 Point-Of-Sale Terminal with internal Invoice Printer and Model 1140 Customer Readout Display (Option)

Features: 12″ green-phosphor CRT with 80x24 display • full data-entry keyboard with numeric pad and function keys • built-in invoice printer with tractor feed paper handling • internal 2000-character print buffer • RS-232-C aux. port • RS-232-C interface with host • supports up to two cash drawers • optional bar code wand reader

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Application hardware for electronic POS systems

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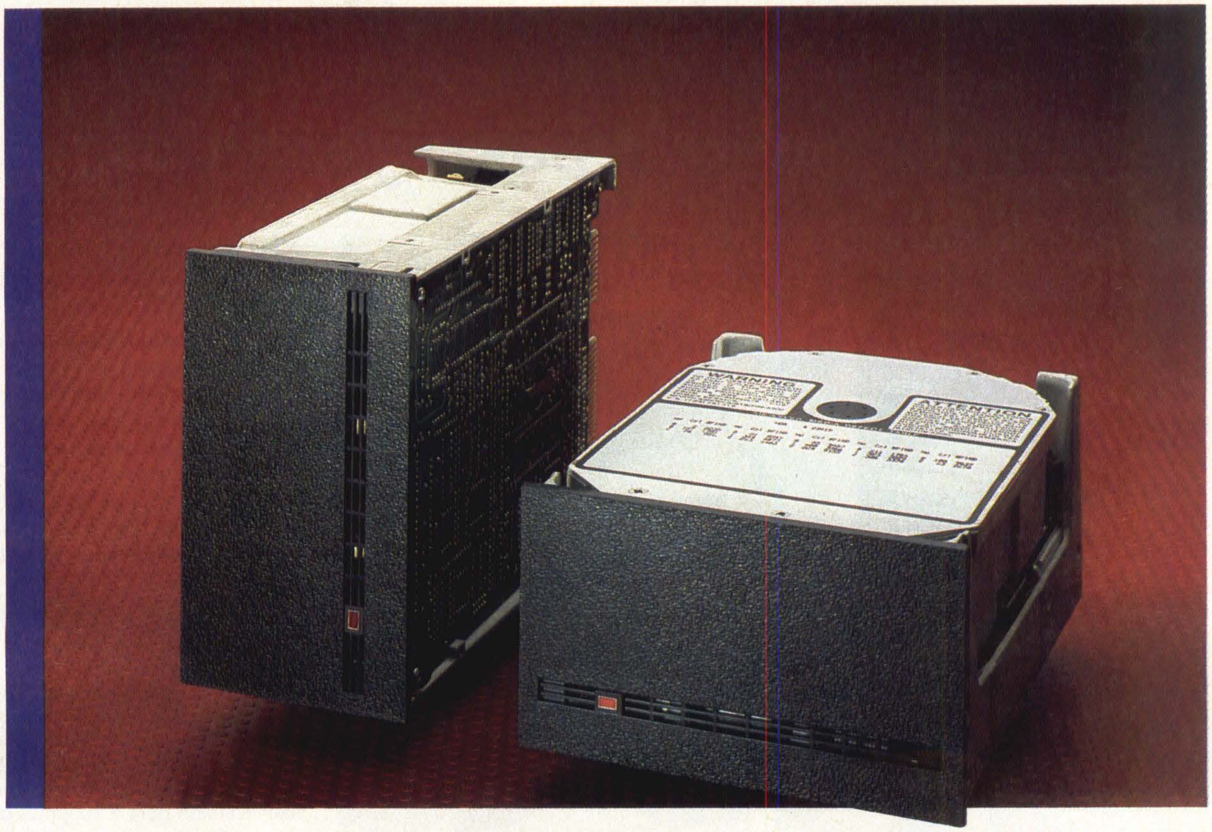

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MINI VENDORS SCRAMBLE FOR NEW BUSINESS

Rather than wait out the slack economy, minicomputer vendors are pushing into new markets, extending product lines

David Bright, Assistant Editor

"The economy stinks!" declares John Levinson, who tracks the minicomputer industry for Goldman, Sachs & Co., a New York investment securities concern. At the very least, demand for minicomputer systems—as for many other products in the computer/electronics industry—is soft. The strong dollar hurts vendors by pushing up prices on their products overseas, where many make nearly half of their sales.

How tough are the times? Wang Laboratories Inc., which had seen revenues and net profits increase every quarter for 10 years, experienced its first earnings decline in the first quarter of this year. Even mighty IBM Corp. experienced an earnings drop of 18 percent on a revenue increase of just 2 percent in its most recent quarter. "Because people are deciding not to lay out the money for new systems, minicomputer vendors must just suffer with the economy," Levinson says.

But many minicomputer manufacturers are not content to wait out the economy. They are pushing their way into new markets and extending their product lines to generate business from existing customers. For example, most of the manufacturers have recently brought out new high-end systems in an effort to attract customers who want increased computing power. Most of the new systems offer improved price/performance ratios. The VAX 8600, which Digital Equipment Corp. began shipping in April, processes approximately 4.2 million instructions per second (MIPS), which is more than four times the performance of the VAX-11/780, DEC's previous flagship product. The 8600 does this at two and a half times the price of the 11/780. The price of the 8600, which immediately became the standard for this new class of superminicomputers, begins at $350,000, while the 11/780 starts at $145,000.

The standard *by which most new high-end superminicomputer systems will be measured is DEC's VAX 8600, shown in background.*

Mainframes challenged

To reach banks and other customers in high-transaction environments—typically IBM mainframe turf—DEC is promoting the 8600 as a key part of the VAXcluster. The VAXcluster is a networking configuration that loosely links as many as 16 VAX processors or hierarchical storage controllers. In several areas, such as print queueing, batch queueing and file sharing, the VAXcluster performs much like a distributed system. Bruce Ryan, manager of the VAX marketing group at DEC, contends that a

Wang and DG recently signed $65 million agreements with NYNEX Business Information Systems Co.

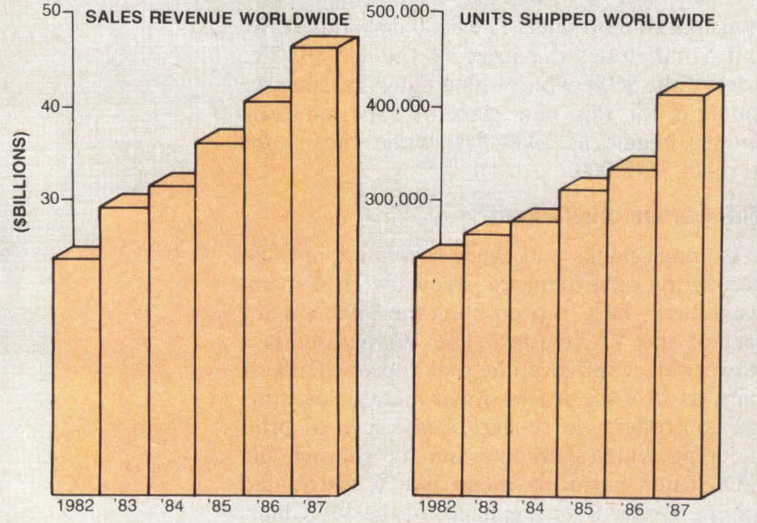
VAXcluster can equal the performance of IBM's 3084 mainframe but at a much lower price. A $6.7 million VAXcluster comprising seven 8600s, one 11/780 and 40G bytes of disk storage provides the same power as a $10 million IBM 3084 configuration with 40G bytes of disk storage, claims Ryan.

Other new superminicomputers approximating the VAX 8600's performance include Wang's VS 300, Data General Corp.'s MV/10000 SX, Harris Corp.'s 1200 and Prime Computer Inc.'s 9955. Until the VAX 8600's introduction last fall, DG's MV/10000, running at 2.5 MIPS, bested the performance of the fastest VAXes. Targeted for scientific customers, the MV/10000 SX—which is actually an enhancement to the MV/10000—processes 3.6 MIPS through the use of Motorola Inc. emitter-coupled logic (ECL) circuits. Prices begin at $223,000, or about $62,000 per MIPS. That compares to about $83,000 per MIPS for the 8600. DG and DEC have traditionally leapfrogged one another with faster machines, and a completely new, more powerful DG machine—expected to be called the MV/12000—is believed to be in the works.

These more powerful systems should provide healthy upgrade business for the vendors. "Their own customer bases are asking for bigger and bigger machines," says Grant Bushee, executive vice president of InfoCorp, a market research company in Cupertino, Calif. Because of the demand, revenues of superminicomputer systems in the $350,000 to $700,000 range will grow 16.7 percent this year, compared with 11.6 percent for small systems revenues, according to InfoCorp.

SMALL SYSTEMS REBOUND SEEN IN 1987

(Systems in $25,000-$350,000 price range)



SOURCE: INFOCORP

DG president Edson de Castro agrees. He predicts that arch-rival DEC will see a lot of upgrade business from its installed base even though its VAX 8600 is priced "fairly high." "DEC is in a very fortuitous position with the 8600," de Castro says. "The VAX-11/780 had to be the longest lived machine in our industry without a successor of higher performance. DEC has to have an enormous number of people who are crying for something to relieve their problems of capacity." De Castro adds that DG is working on a high-MIPS competitor to the VAXcluster, although that product may not use the cluster approach.

Supermicros steal low-end action

InfoCorp's Bushee points out that the VAX-11/780, which accounts for the largest portion of DEC's revenues, is 8 years old and needs to be replaced. If a replacement for the 11/780 is not found soon, he says, sales of the system will decline, leaving a gap in the heart of DEC's product line that could hurt the company's growth in revenue and earnings.

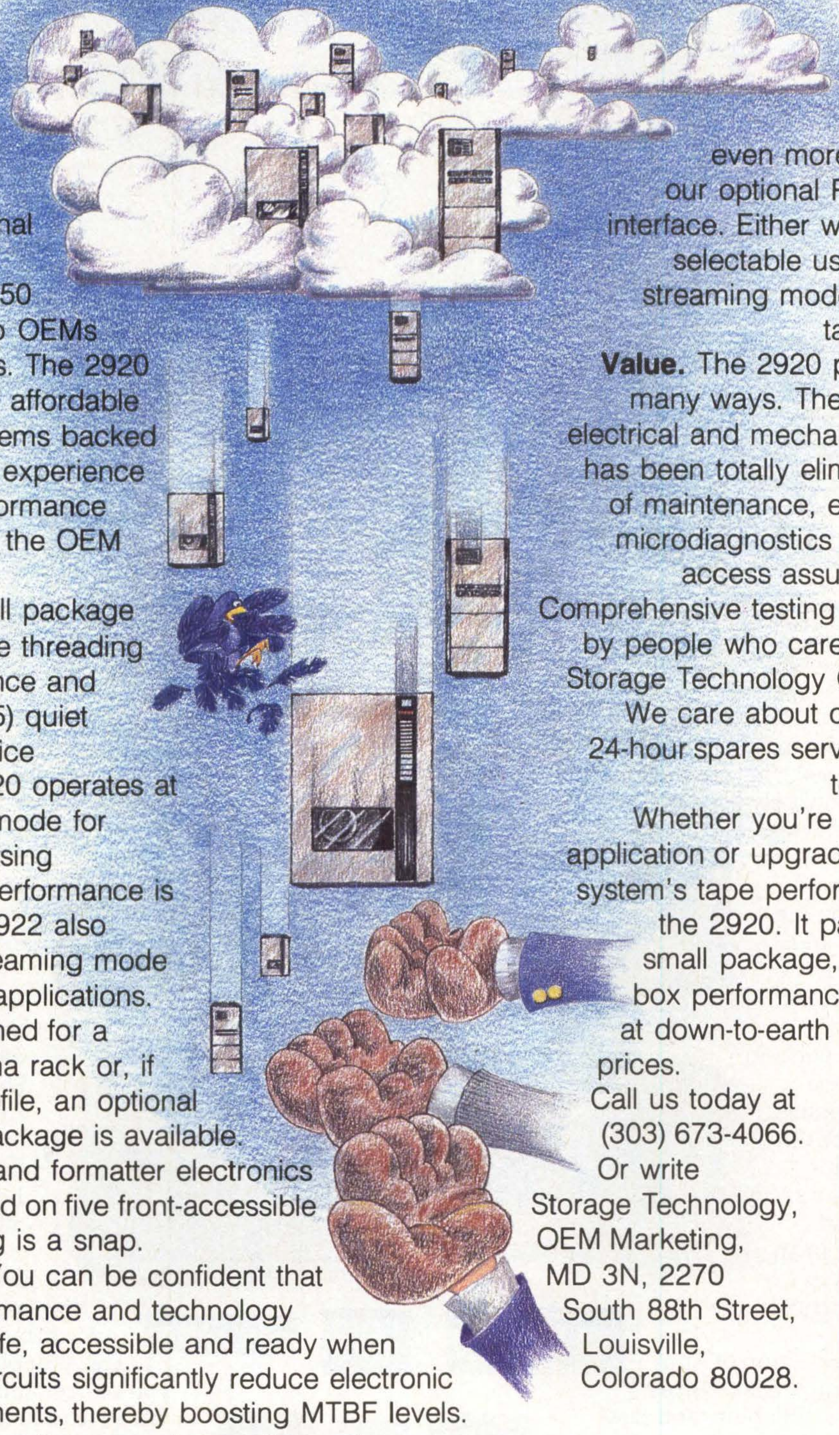
Minicomputer vendors have overlooked the low ends of their lines, says Bushee. This gives supermicrocomputer vendors a chance to move up and steal some of the action.

One minicomputer vendor not neglecting its low-end product line is Hewlett-Packard Co. While HP is busy developing the 32-bit Spectrum upgrade to its aging, 16-bit HP 3000 minicomputer line, it has found that offering attractive prices at the low-end is a handy interim sales strategy. Bill Walker, HP 3000 product manager, claims that the low-end Series 37 business system, introduced just nine months ago at $20,000, has broken all company sales records.

HP pits its 3000 Series 37 against IBM's System/36. Walker says the HP system's price and compatibility with the entire HP 3000 family has helped the company sell it as an entry-level machine to new customers and also to existing customers as a system for remote offices. The Series 37 is suited to vertical applications in small business and has helped HP gain more value-added resellers, Walker says. To make a profit, HP has to sell the system in volume. "It's not a system we want to sell one-by-one," Walker concedes. Nevertheless, the Series 37 is "exactly what the market needs," in Bushee's opinion.

Some minicomputer vendors, such as HP with its Series 37, are using the VAR channel to bolster sales. Prime, which has traditionally sold its superminicomputers to end users and distributors, began a VAR program last fall. Prime quickly signed up four companies with expertise in vertical-market software: Main Hurdman,

Compact 6250 tape at down-to-earth prices



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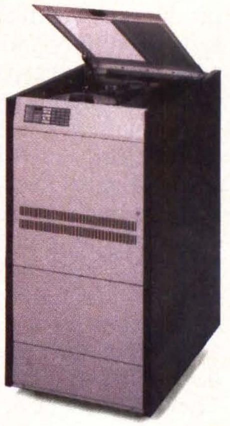

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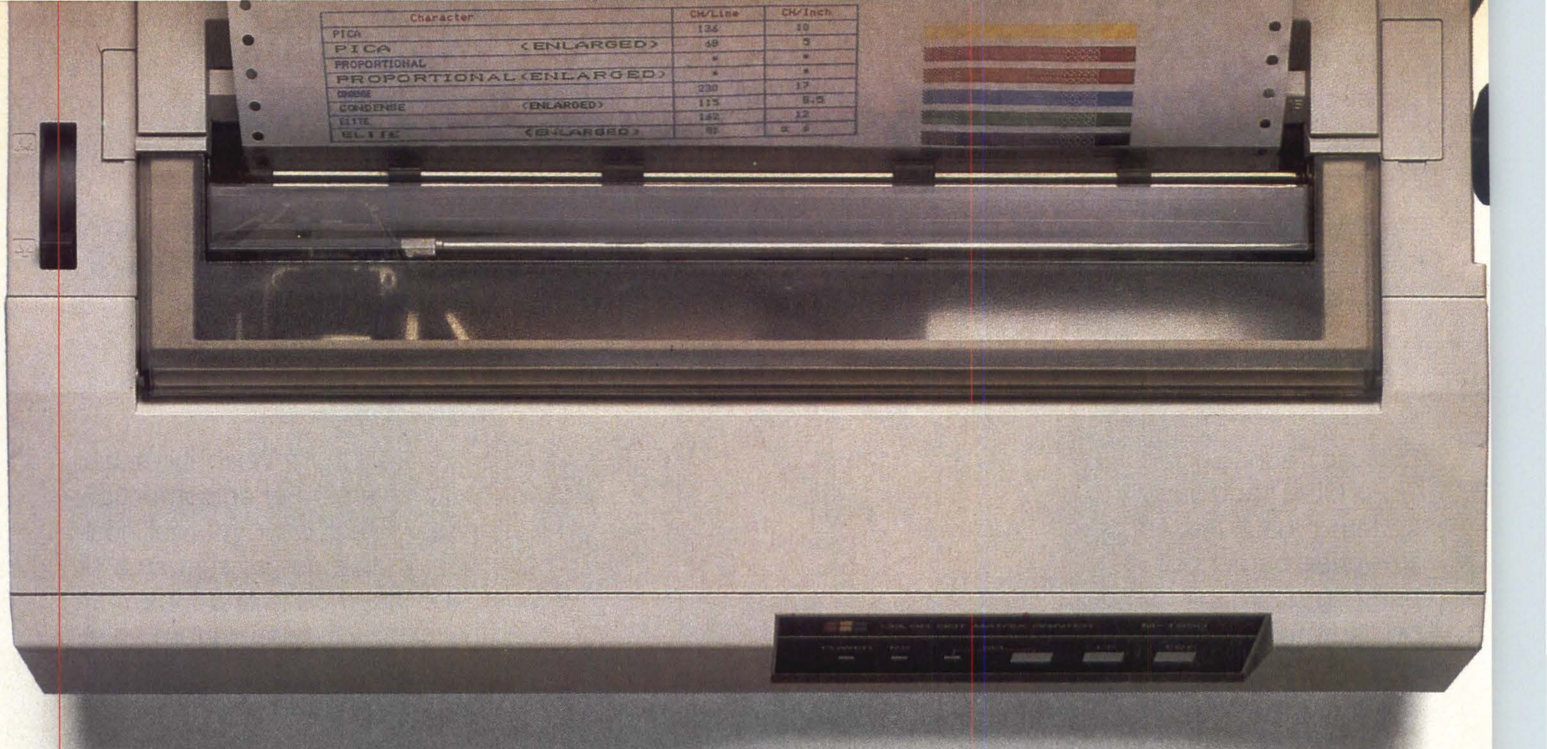
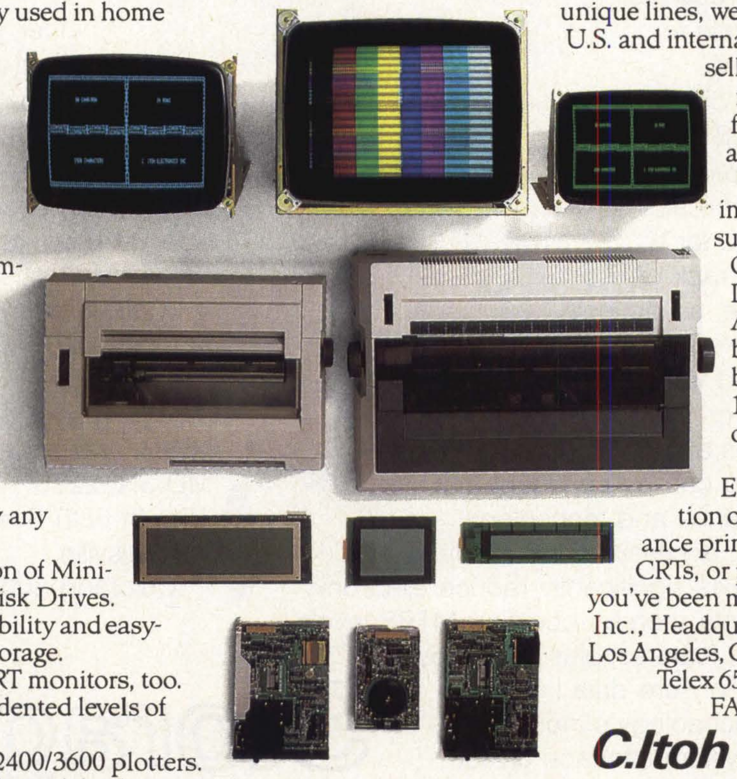


If you've only seen our fine print, you're missing some great lines.



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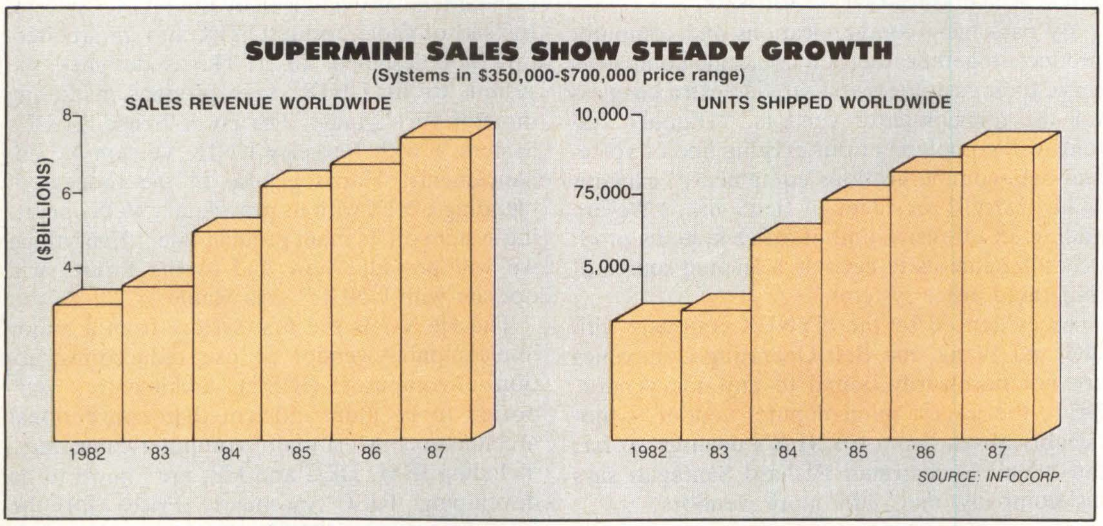

SUPERMINI SALES SHOW STEADY GROWTH

(Systems in $350,000-$700,000 price range)

SOURCE: INFOCORP.

Cincinnati; Tradenet, Tempe, Ariz.; Interactive Inc., San Diego; and Alpine Engineered Products, Pompano Beach, Fla. Main Hurdman will supply its customers with accounting systems based on Prime superminicomputers; Tradenet will supply various accounting systems for its worldwide communications network; Interactive will market Prime machines with its manufacturing and distribution package and Alpine will integrate the superminicomputers into its building-design systems.

"The program's goal is to bring information management technologies to new end-user markets," explains Chuck Reilly, Prime vice president of indirect sales. "The VAR program reinforces Prime's commitment to broadening its presence in highly competitive vertical markets with industry-specific solutions."

Naomi Kalmus, an analyst at International Resource Development Inc., a market research company in Norwalk, Conn., says Prime is a good example of some minicomputer companies turning to VARs for help. This is a wise economic move, she says, because "you can be in all the places you want to be in without needing a dedicated sales force." InfoCorp's Bushee adds that most of the VAR activity normally occurs with low-end systems because the higher priced superminicomputers are usually sold singly.

Wang's strategy also includes heavy emphasis on VARs, which they call independent sales organizations (ISOs). "In times like these, it's probably an area that you want to concentrate on," remarks Richard Connaughton, vice president of ISO marketing at Wang. About 15 percent of Wang's business currently comes from ISOs, but Connaughton plans to double that figure by 1990.

In line with that strategy, Wang early this year added Control Data Corp. (CDC) to its list of ISOs. The two companies entered a development agreement and announced their first jointly developed product: Control Data Distributed Service for Wang Virtual Storage. The product, which is an integrated information system with decision-support and office-automation functions, combines CDC's management-application systems with Wang's VS minicomputer hardware and software. Distributed Service is being marketed by CDC's Business Information Services group to Fortune 1,000 companies. Such liaisons help Wang get into broader markets. "These people bring a level of expertise that we might never have," says Connaughton of the CDC agreement.

Some minicomputer vendors, such as HP with its Series 37, are using the VAR channel to bolster sales.

Bell contracts sought

One lucrative new market for minicomputer vendors is represented by the Regional Bell Operating Companies. Federal regulations prohibit these companies from manufacturing their own computers, but they are allowed to sell equipment made by other vendors. Wang and DG recently signed $65 million agreements with NYNEX Business Information Systems Co., White Plains, N.Y. DEC, for its part, has struck a contract of undetermined value with BellSouth Advanced Systems Inc., Birmingham, Ala. All three contracts are for three years.

The agreements involve office-automation systems centered on minicomputers. Under the DEC contract, for instance, BellSouth will market DEC's All-In-1 Office and Information System to large users and the A-to-Z Integrated System to small users. All-In-1 includes the VAX superminicomputer as well as the Rainbow personal computer and DECmate word processor. A-to-Z is based on the Micro PDP-11 microcom-

P-E's government business (both military and civilian) has increased 25 percent in the past year.

puter, which runs PDP-11 software.

By packaging communications and computer products together, the Bell operating companies serve their customers and provide extra business for the minicomputer vendors. "Digital's systems will complement our existing line of voice-and-data-communications equipment," explains Mike Harrell, president of BellSouth. "We are adding an extensive line of office systems products to enable us to become a leading source of integrated office systems."

As evidenced by the NYNEX contracts with DG and Wang, the Bell Operating Companies are not necessarily bound to any one vendor. DEC, the largest minicomputer vendor, is noticeably absent from NYNEX's dealings so far, but NYNEX chairman Richard Santagati says his company may add more vendors.

UNIX: the byword at Harris

At superminicomputer builder Perkin-Elmer Corp., the strategy is to focus on the company's "heartland" markets and to stick with existing industry standards, says Bill Elliott, P-E's Data Systems Group marketing director. Those markets, which include aerospace, weapons and financial services, tend to grow faster than other sectors, Elliott maintains. In fact, P-E's government business (both military and civilian) has increased 25 percent in the past year, says Elliott. P-E runs its proprietary OS/32 operating system on its 32-bit superminicomputers, but also actively promotes the latest release of AT&T Co.'s UNIX System V. By endorsing such standards as UNIX System V and the X.25 and IBM Systems Network Architecture networking protocols, P-E will broaden its appeal.

Like P-E, superminicomputer maker Harris is putting more emphasis on its bread-and-butter technical markets such as aerospace, computer-aided design and computer-aided manufacturing. Harris was expected to bring out two high-performance systems this month: the 5-MIPS Harris 1200 and the 7-MIPS HCX-7.

The 1200, with a starting price of $294,000, is said to improve system throughput by as much as 55 percent over the Harris 1000, its previous top-of-the-line product. The system does this by using advanced ECL circuitry, new, high-speed memory and as much as 288K bytes of bulk cache memory. "We have extended our 18-year commitment to the real-time market and [our commitment] to be at the leading edge of computer technology," says vice president and general manager James Oyler. "The Harris 1200 moves us even further ahead in aggressively targeting this rapidly expanding area."

Harris is strongly committed to UNIX technical markets, as evidenced by the HCX-7 system. Instead of shoehorning UNIX into an architecture not designed for it, Harris designed the system to fit UNIX, says product marketing director Rick Maule. The HCX-7 runs AT&T's System V with Berkeley UNIX Version 4.2 enhancements. Harris is also in the process of blending UNIX with its proprietary VOS operating system on its main product line. "Everything we will provide, now and in the future, will operate with UNIX," says Maule.

The HCX-7 is the first system from a major minicomputer vendor to use reduced-instruction-set-computer (RISC) architecture, purported to be more efficient than conventional architectures. Most major computer companies, including IBM, DEC and HP, are known to be developing RISC machines. Prices for the HCX-7 start at $225,000. Because the system lacks the 1200's precision, it will not compete against the 1200 in real-time markets.

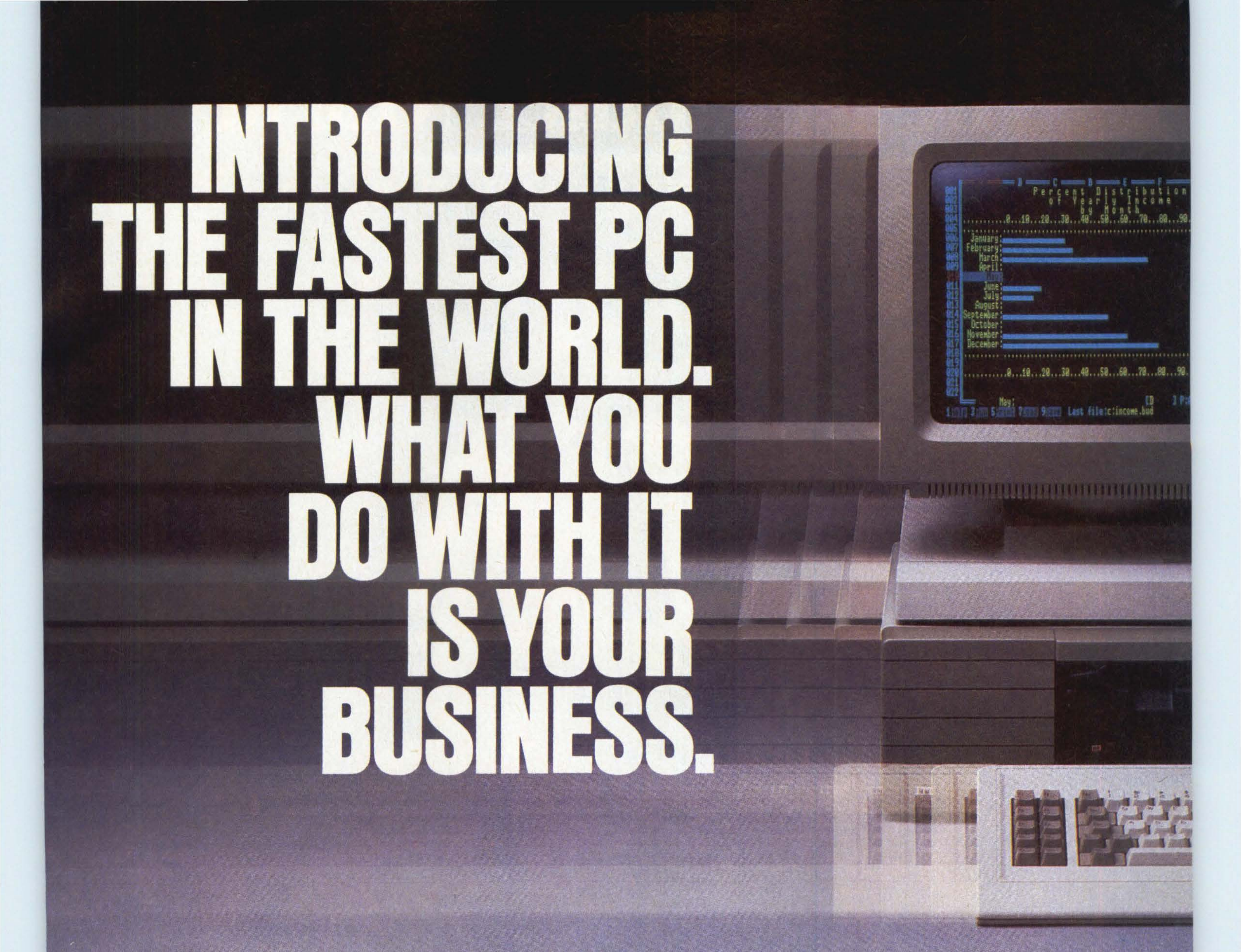
Honeywell repackages minis

In its effort to increase sales, Honeywell Information Systems Inc. has taken to repackaging its DPS 6 minicomputers for business markets. Its most recent venture is a dedicated videotex system called InfoNow. Honeywell intends to sell InfoNow to government agencies and large corporations—organizations that demand timely access to catalogs, directories and other material normally distributed on paper.

By keeping such information on-line on a dedicated system, the organizations can update and retrieve data almost instantaneously, without contending with other data-processing operations for system resources. This tight control leads to greater efficiency, says Kenneth Terminini, director of the videotex program. Prices for systems with the menu-driven software start at $93,000. The dedicated Minitel terminals cost $650 each.

Honeywell's OMS 40 and OMS 90 office systems, also based on DPS 6 minicomputers, include a range of draft- and letter-quality printers. The systems come prepackaged with the disk drives and controllers enclosed in cabinets with no expansion slots. "The new systems are ideal for departments that have sophisticated electronic-support needs but lack extensive technical expertise," says group vice president Eugene Manno. Prices start at $80,000 for a configuration with eight terminals and four letter-quality printers. ☐

Interest Quotient (Circle One)
High 498 Medium 499 Low 500



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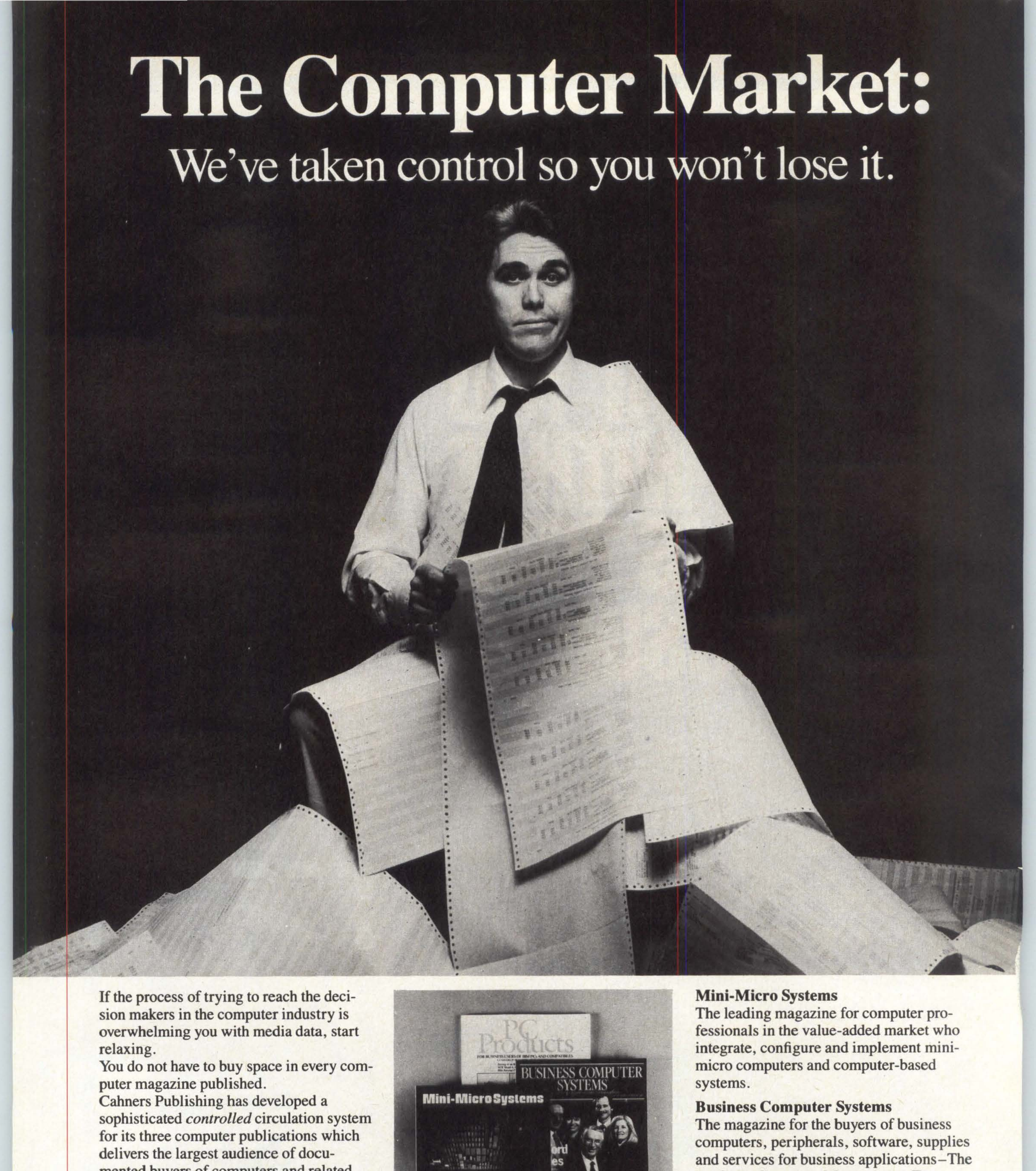

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CIRCLE NO. 31 ON INQUIRY CARD

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MINICOMPUTER SYSTEMS

TABLE 4

Company Model	CPU word size (bits)	CPU type	Memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
APOLLO COMPUTER INC.							
DN300/DN320	32	68010	1M–3M	AEGIS, UNIX	C, FORTRAN, LISP, Pascal	9,900/18,900	one 34M-, 70M-byte hard disk drive; keyboard; mouse; opt. Genicom multimode printer
DN460/DN660	32	bit-slice proprietary	1M–4M	AEGIS, UNIX	C, FORTRAN, LISP, Pascal	39,500/54,500	one 80M-, 167M-byte hard disk drive; keyboard; mouse; opt. Genicom multimode printer
DN550	32	68010	1M–3M	AEGIS, UNIX	C, FORTRAN, LISP, Pascal	31,500	one 50M-, 86M-byte hard disk drive; keyboard; mouse; opt. Genicom multimode printer
APPLIED DIGITAL DATA SYSTEMS INC.							
2000	16	Z8000	256K–1.024M	ADDS-enhanced, PICK	BASIC	15,000	one 20M-, 33M- or 50M-byte hard disk drive; eight serial ports; one parallel port; ¼-inch cartridge tape drive; UPS P/S
4000EP	16	Z8000	512K–1.024M	ADDS-enhanced, PICK	BASIC	41,500	one 60M-, 150M-byte hard disk drive; one ½-inch tape drive; eight serial ports; one parallel port; UPS P/S
5000EP	16	Z8000	512K–1.024M	ADDS-enhanced, PICK	BASIC	68,225	one 300M-byte hard disk drive, one ½-inch dual density tape drive, 16 serial ports, one parallel port, UPS P/S
ARETE SYSTEMS							
Arete 1100/1200	32	68000	1M–16M	Berkeley UNIX Version 5.2, RM/COS	BASIC, C, COBOL, FORTRAN, Pascal	70,000	one to fourteen 80M- to 700M-byte hard disk drive(s); up to four 9-track tape drives; one 45M-byte cartridge tape drive
BTI COMPUTER SYSTEMS							
6000	16	proprietary	64K–1M	proprietary	BASIC X	41,950	one 27M-, 54M-byte hard disk drive
8000	32	proprietary	1M–16M	proprietary	COBOL, FORTRAN, Pascal, BASIC X, Assembly	79,950	one 80M-, 160M- or 300M-byte hard disk drive
BURROUGHS CORP.							
XE520	16	multiple 80186	1M	BTOS, GENTIX		26,130	one 37.5M-byte hard disk drive, one 5M-byte cartridge disk drive, three RS232C ports, two RS422 ports
BYTRONIX CORP.							
4000/4300	16	2901 bit-slice	128K	BITS, BLIS/COBOL, IRIS, MICOS	Business BASIC, COBOL		one 20M-byte hard disk drive, four terminals, Centronics-compatible printer, one ¼-inch tape drive backup, self-test
5000/5300	16	2901 bit-slice	256K–512K	BITS, BLIS/COBOL, IRIS, MICOS	Business BASIC, COBOL		one 20M-byte hard disk drive, four terminals, Centronics-compatible printer one ¼-inch tape drive backup, self-test
Mikron	16	F-9445	128K	BITS, BLIS/COBOL, IRIS, MICOS	Business BASIC, COBOL	11,200	one 20M-byte hard disk drive, four terminals, Centronics-compatible printer, ¼-inch tape drive backup, self-test
CANAAN COMPUTER CORP.							
5100/5400	32	proprietary	1M–4M	VM/CMS	BM/CMS	24,000	two 85M-byte hard disk drives; three terminals; three Centronics-, Dataproducts-compatible printers
COMARK CORP.							
DISKSTOR	16	8086	512K–1.024M	MP/M-86, Concurrent CP/M-86		12,995	one 512K-byte flexible drive, one 20M-byte hard disk drive, four terminals
COMPUTER AUTOMATION INC.							
dataCASE/5	16	NM 4/85, 4/95	128K–8M	CARTOS, UNIX, CAOS II	FORTRAN 77, IV; MACRO, Assembly, BCPL, CORAL 66, PANIC, Pascal, C	14,600	one 1M-byte flexible drive; one 65M-, 140M-byte hard disk drive
dataCASE/5R	16	NM 4/10, 4/12, 4/22, 4/30, 4/90	4K–2M	CAOS II, OS4, RTX 4	FORTRAN IV, MACRO, Assembly, BCPL, CORAL 66, PANIC, Pascal	4,990	one 1M-byte flexible drive; one 65M-, 140M-byte hard disk drive
COMPUTER AUTOMATION INC. (COMMERCIAL SYSTEMS DIV.)							
SyFA 170	16	LSI 2/60 (proprietary)	128K–256K	SyCLOPS (proprietary)	SyBOL (proprietary)	24,940	one 36M-byte fixed hard disk drive, one 10M-byte streaming tape drive, one terminal, eight asynch ports, dot matrix printer

MINICOMPUTERS

TABLE 4

Company Model	CPU word size (bits)	CPU type	Memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
SyFA 300	16	LSI 2/60 (proprietary)	128K–384K	SyCLOPS (proprietary)	SyBOL (proprietary)	47,340	one 80M-byte cartridge disk drive, one terminal, eight asynch ports, 300- lpm band printer
SyFA 1000	16	LSI 2/60 (proprietary)	128K–384K	SyCLOPS (proprietary)	SyBOL (proprietary)	51,740	one 80M-byte disk drive, one terminal, eight asynch ports, 300- lpm band printer
COMPUTER CONSOLES INC. (OFFICE SYSTEMS GROUP)							
POWER 5/20	16, 32	68000	2M–4M	UNIX System III, PERPOS (proprietary)	C, COBOL 74, FORTRAN 77, SMC BASIC	39,400	one 70M-byte hard disk drive, one 20M-byte streaming tape drive
POWER 5/30	32	68012	2M–8M	Berkeley UNIX Version 4.2, PERPOS (proprietary)	C, COBOL 74, FORTRAN 77, SMC BASIC	52,370	one 70M-byte hard disk drive, one 45M-byte streaming tape drive
POWER 6/32	32	proprietary	4M–8M	Berkeley UNIX Version 4.2 with System V	Ada, C, COBOL, FORTRAN, Pascal	174,650	one 160M-byte hard disk drive, one terminal, battery backup
CONTROL DATA CORP.							
810/830	64		2M–16M	NOS, NOS/VE	APL, ALGOL, BASIC, C, COBOL, FORTRAN, LISP, Pascal, PL/1	147,000–249,500	
DATA GENERAL CORP.							
MV/4000DC	32	Eclipse	8M	AOS/VS, DG/UX, MV/UX	COBOL	38,800	one 73K-byte flexible drive, one 70M-byte hard disk drive, 16 terminals
MV/8000II	32	Eclipse	1M–8M	AOS/VS, AOS/RT32, DG/UX, MV/UX	COBOL	123,400	one 73M-byte hard disk drive, one terminal, 1.6K bpi tape drive
MV/10000	32	Eclipse	2M–32M	AOS/VS, AOS/RT32, DG/UX, MV/UX	BASIC, COBOL	158,000	one flexible drive, one 354M-byte hard disk drive, 1.6K bpi tape drive
DATAPOINT CORP.							
3200 SYSTEM	32	68000	1M–8M	UNOS	C, COBOL, Databus	15,430	one 1M-byte flexible drive, one 160M-byte hard disk drive, up to 28 terminals, printer
8600	16	proprietary	128K–1M	Datapoint DOS, RMS	Databus, Datashare	13,450	one 1M-byte flexible drive, one 130M-byte hard disk drive, 16 terminals, printer
DIGITAL EQUIPMENT CORP.							
PDP-11/24	16	F11	128K–4M	RSX-11M-PLUS, RT-11, ULTRIX-11, RSTS/E, CTS 500	BASIC, C, COBOL, CORAL 66, DIBOL, FORTRAN, DSM(MUMPS), Pascal	10,000	
PDP-11/44	16		256K–2M	RSX-11M-Plus, RT-11, ULTRIX-11, DSM-11, RSTS/E, CTS 500	BASIC, C, COBOL, CORAL 66, DIBOL, FORTRAN, DSM(MUMPS), Pascal	29,300	
PDP-11/84	16	J11	1M–4M	RSX-11M-Plus, RT-11, ULTRIX-11, DSM-11, RSTS/E, CTS 500	BASIC, C, COBOL, CORAL 66, DIBOL, FORTRAN, DSM(MUMPS), Pascal	16,000	
VAX-11/730	32		1M–32M	VMS, ULTRIX-32, VAXELN	Ada, APL, BASIC, C, COBOL, CORAL 66, DIBOL, DSM(MUMPS), FORTRAN, Pascal, PL/1, RPGII	19,900	
VAX-11/750	32		1M–32M	VMS, ULTRIX-32, VAXELN	Ada, APL, BASIC, C, COBOL, CORAL 66, DIBOL, DMS(MUMPS), FORTRAN, Pascal, PL/1, RPGII	51,000	
ELXSI							
System 6400	64	proprietary	8M–192M	EMBOS, UNIX	FORTRAN, COBOL, C, Mainsail, Pascal	369,000	two terminals, one modem
FORMATION INC.							
F4000	32	2900	256K–8.196M	DOS/VSE, VM/SP, OS/VS1, OS/MVS	PL/1, FORTRAN, COBOL, RPGII	74,900	one 100M-byte hard disk drive, one terminal, printer, 45 ips magnetic tape service processor
HARRIS CORP. (COMPUTER SYSTEMS DIV.)							
Harris 60	48	proprietary	768K–12M	Harris VOS, UNIX	Pascal, C, FORTRAN, BASIC, COBOL, Ada, APL, RPG, Assembly, SNOBOL, FORGO	69,900	one 80M-byte hard disk drive, one terminal, cartridge tape backup
Harris 700	48	proprietary	384K–12M	Harris VOS, UNIX	Pascal, C, FORTRAN, BASIC, COBOL, Ada, APL, RPG, Assembly, SNOBOL, FORGO	49,900	one terminal, communications processor

MINICOMPUTERS

TABLE 4

Company Model	CPU word size (bits)	CPU type	Memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
Harris 800	48	proprietary	768K–12M	Harris VOS, UNIX	FORTRAN, BASIC, COBOL, C, Ada, Pascal, APL, RPG, Assembly, SNOBOL, FORGO	139,000	one terminal, communications processor
Harris 1000	48	proprietary	1.5M–12M	Harris VOS, UNIX	FORTRAN, BASIC, COBOL, C, Ada, Pascal, APL, RPG, Assembly, SNOBOL, FORGO	250,000	one terminal, cache memory, communications processor
HEWLETT-PACKARD CO.							
A600	16	AMD 2901C bit-slice	128K–8M	RTE-A	Pascal, FORTRAN, BASIC, MACRO	5,600	power supply, 12 I/O slots
A700	16		128K–8M	RTE-A	Pascal, FORTRAN, BASIC, MACRO	12,600	one 270K-byte flexible drive, one 15M-byte hard disk drive, 10 I/O slots, power supply
A900	16		768K–24M	RTE-A	Pascal, FORTRAN, BASIC, MACRO	23,600	one 270K-byte flexible drive, one 15M-byte hard disk drive, power supply, nine I/O slots
HP 3000 Series 37	16	proprietary	.5M–2M	MPE	BASIC, COBOL, FORTRAN, Pascal, RGB	12,000	one 55M-byte Winchester disk drive, one ½-inch cartridge tape drive backup
HP 3000 Series 37XE	16	proprietary	1M–2M	MPE	BASIC, COBOL, FORTRAN, Pascal, RGB	20,000	
HP 3000 Series 42	16	proprietary	1M–3M	MPE	BASIC, COBOL, FORTRAN, Pascal, RGB	39,800	
HP 3000 Series 48	16	proprietary	2M–4M	MPE	BASIC, COBOL, FORTRAN, Pascal, RGB	67,500	
HP 3000 Series 68	32	proprietary	3M–8M	MPE	BASIC, COBOL, FORTRAN, Pascal, RGB	186,000	
HONEYWELL INFORMATION SYSTEMS INC.							
6/22 Cartridge	16	DPS 6/22	512K–1.792M	GCOS 6, MOD 400	COBOL, FORTRAN, BASIC, Pascal, RPG, C	20,405	one 650K-byte flexible drive, two 40M-byte hard disk drives, one terminal, dot matrix printer, five workstation ports
6/22 Fixed Disk	16	DPS 6/22	512K–1.792M	GCOS 6, MOD 400	COBOL, FORTRAN, BASIC, Pascal, RPG, C	16,400	one 650K-byte flexible drive, one 28M-byte hard disk drive, one terminal, dot matrix printer, five workstation ports
6/40	16	DPS 6/40	512K–2M	GCOS 6, MOD 400	BASIC, C, COBOL, FORTRAN, Pascal, RPG	45,600	six terminals, one printer; two 40M-byte hard disk drives
6/42	16	DPS 6/42	1M–2M	GCOS 6, MOD 400	BASIC, C, COBOL, FORTRAN, Pascal, RPG	35,700	one terminal, one 650K-byte flexible drive, one 132M-byte hard disk drive, printer
6/45	16	DPS 6/45	512K–2M	GCOS 6, MOD 400	BASIC, C, COBOL, FORTRAN, Pascal, RPG	42,090	four terminals, matrix character printer, one 40M-byte hard disk drive
6/75	16	DPS 6/75	1M–2M	GCOS 6, MOD 400	BASIC, C, COBOL, FORTRAN, Pascal, RPG	72,160	eight terminals, matrix character printer, two 40M-byte flexible drives
6/85	32	DPS 6/85	2M–4M	GCOS 6, MOD 400	BASIC, C, COBOL, FORTRAN, Pascal, RPG	78,400	one terminal, one 650K-byte flexible drive, one 132M-byte hard disk drive, printer available
6/95	32	DPS 6/95	2M–16M	GCOS 6, MOD 400	BASIC, C, COBOL, FORTRAN, Pascal, RPG	213,170	15 terminals, one 600-lpm printer, two letter quality printers, two 256M-byte hard disk drives
IBM CORP.							
4381 Model Group 3	64		8M–32M	MVS/370, VM/SP		825,000	
INTELLIMAC							
IN/7000K	16, 32	68000	5M–8M	UNIX System V	Ada, Assembly, C, COBOL, FORTRAN, LISP, Pascal	43,000	one 50M-byte flexible drive, bundled software
IN/7000M	16, 32	68000	5M–16M	UNIX System V	Ada, Assembly, C, COBOL, FORTRAN, LISP, Pascal	79,000	one 1.6M-byte flexible drive, one printer, bundled software
INTERLINK COMPUTER SCIENCES INC.							
IBMmvs/ DECnet GATEWAY	16	PDP-11/23+	512K	RSX-11M-Plus	MACRO-11	85,000	two flexible drives, one 10M-byte hard disk drive, one terminal, Interlink software
MAI BASIC FOUR INC.							
MAI 1600	8	proprietary	128K–512K	BOSS	Business BASIC	16,429	one 22M-byte hard disk drive, one terminal, one printer

MINICOMPUTERS

TABLE 4

Company Model	CPU word size (bits)	CPU type	Memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
MDS QANTEL INC.							
System 10/2	8	Q29	128K–256K	BEST/AOS	Qantel COBOL, QUIC BASIC	13,950	one 1.3M-byte flexible drive; one 23M-, 45M-, 75M-, 150M-byte hard disk drive; one terminal; printer; one ½-inch start/stop magnetic tape drive
System 40/2	8	Q30	128K–512K	BEST/AOS	Qantel COBOL, QUIC BASIC	69,150	one 150M-, 430M-byte hard disk drive; one terminal; one 300- ipm printer; one ½-inch start/stop magnetic tape drive
System 40/4	8	Q30	256K–1M	BEST/AOS	Qantel COBOL, QUIC BASIC	80,825	one 150M-, 430M-byte hard disk drive; one terminal; one 300- lpm printer; one ½-inch start/stop magnetic tape drive
System 64	64	Q64	1M–4M	BEST/AOS	Qantel COBOL, QUIC BASIC	151,550	one 75M-, 150M-, 430M-byte hard disk drive; one terminal; one 600- lpm printer; one ½-inch streaming magnetic tape drive
MODULAR COMPUTER SYSTEMS INC. (MODCOMP)							
CLASSIC 32/85	32	custom	2M–64M	MAX real-time	FORTRAN, COBOL, Pascal, CORAL 66	148,500	one 13.5M-byte fixed disk drive, one 13.5M-byte cartridge disk drive
CLASSIC II/25	16	custom	512K–1M	MAX real-time	FORTRAN, COBOL, Pascal, CORAL 66	23,200	one 650K-byte flexible drive, one 20M-byte hard disk drive, one terminal; opt. printer
CLASSIC II/45	16	custom	512K–2M	MAX real-time	FORTRAN, COBOL, Pascal, CORAL 66	41,200	one 650K-byte flexible drive, one 20M-byte hard disk drive, one terminal; opt. printer
CLASSIC II/75	16	custom	1M–4M	MAX real-time	FORTRAN, COBOL, Pascal, CORAL 66	86,600	one 650K-byte flexible drive, one 20M-byte hard disk drive, one terminal; opt. printer
MOTOROLA/FOUR-PHASE SYSTEMS INC.							
700/800	24	proprietary	1.536M				opt. workstations; 600-, 1200-, 1350- lpm printer
IV/80	24	proprietary	288K–864K	MFE/IV	Assembly, COBOL		
IV/95	24	proprietary	480K–1.5M	MFE/IV	Assembly, COBOL		
NEC INFORMATION SYSTEMS INC.							
Astra 330 VS	32	custom	512K–1.024M			15,000	one or two 1M-byte flexible drive(s), one 256M-byte hard disk drive, up to nine printers
Astra 350 VS	32	custom	1.024M–2.048M			20,000	one or two 1M-byte flexible drive(s), one 500M-byte hard disk drive, up to 18 printers; ¼-inch magnetic tape cartridge, ½-inch reel-to-reel tape available
Astra 370 VS	32	custom	1.024M–4.096M			25,000	one or two 1M-byte flexible drive(s), one 1G-byte hard disk drive, up to 35 printers, 32 workstations; ¼-inch magnetic tape cartridge, ½-inch reel-to-reel tape available
NIXDORF COMPUTER CORP.							
8850	16	128 virtual	OPEX			24,250	one 630K-byte flexible drive, one 8M-byte hard disk drive, one terminal
8870	16		256K–1.024M	NIROS	BASIC	19,200	one 16M-, 32M-byte hard disk drive; one terminal, one printer
PERKIN-ELMER CORP. (DATA SYSTEMS GROUP)							
3203	32	proprietary	512K–4M	OS/32, XELOS	FORTRAN, Pascal, BASIC, COBOL, C, CORAL 66, RPGII, PL/1	16,600	one 51M-byte Winchester disk drive, one terminal, one ¼-inch streaming cartridge tape drive, eight communication ports
3205	32	proprietary	1M–4M	OS/32, XELOS	BASIC, C, COBOL, CORAL 66, FORTRAN, Pascal, PL/1	28,000	one 25M-byte Winchester or cartridge disk drive, one terminal, eight communication ports
3210	32	proprietary	1M–16M	OS/32, XELOS	BASIC, C, COBOL, CORAL 66, FORTRAN, Pascal, PL/1	52,500	one 25M-byte Winchester or cartridge disk drive, one terminal, eight communication ports
3230	32	proprietary	1M–16M	OS/32, XELOS	BASIC, C, COBOL, CORAL 66, FORTRAN, Pascal, PL/1, RPGII	101,850	one 80M-byte Winchester disk drive, one terminal, one tape drive

MINICOMPUTERS

TABLE 4

Company Model	CPU word size (bits)	CPU type	Memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
3250XP	32	proprietary	1M–16M	OS/32, XELOS	BASIC, C, COBOL, CORAL 66, FORTRAN, Pascal, PL/1, RPGII	161,500	one 300M-byte Winchester disk drive, one terminal, one tape drive
3260MPS	32	proprietary	2M–16M	OS/32, XELOS	BASIC, C, COBOL, CORAL 66, FORTRAN, Pascal, PL/1, RPGII	221,500	one 300M-byte Winchester disk drive, one terminal, one tape drive
POINT 4 DATA CORP.							
Mark 2	16	proprietary	64K–128K	IRIS, BLIS/COBOL	Business BASIC, COBOL	8,995	one 1M-byte flexible drive; one 13M-, 19M- or 46M-byte hard disk drive; seven terminals
Mark 5	16	proprietary	128K	IRIS, BLIS/COBOL	Business BASIC, COBOL	26,700	one 35M-, 84M- or 168M-byte hard disk drive; 64 terminals; battery backup
Mark 9	16	proprietary	256K–512K	IRIS, BLIS/COBOL	Business BASIC, COBOL	30,900	one 35M-, 84M- or 168M-byte hard disk drive; 64 terminals; battery backup
PRIME COMPUTER INC.							
2250	32	50 Series	512K–4M	Primos	BASIC, C, COBOL, FORTRAN, Pascal, PL/1-G, RPGII	29,900	one 68M-byte hard disk drive, one streaming magnetic tape drive subsystem
2550	32	50 Series	2M–4M	Primos	BASIC, C, COBOL, FORTRAN, Pascal, PL/1-G, RPGII	98,500	two 315M-byte hard disk drives, one streaming magnetic tape drive subsystem
9650	32	50 Series	2M–8M	Primos	BASIC, C, COBOL, FORTRAN, Pascal, PL/1-G, RPGII	145,500	two 315M-byte hard disk drives, one streaming magnetic tape drive subsystem
9750	32	50 Series	4M–12M	Primos	BASIC, C, COBOL, FORTRAN, Pascal, PL/1-G, RPGII	250,500	two 315M-byte hard disk drives, one controller, one streaming magnetic tape drive subsystem
9955	32	50 Series	4M–16M	Primos	BASIC, C, COBOL, FORTRAN, Pascal, PL/1-G, RPGII	370,500	two 315M-byte hard disk drives, one controller, one streaming magnetic tape drive subsystem
PYRAMID TECHNOLOGY CORP.							
90x	32		4M–32M	OSx	C, FORTRAN, FRANZ LISP, Pascal		one 150M-, 450M-byte hard disk drive; 16 terminals; 600- lpm printer; 9-track tape drive
RIDGE COMPUTERS							
32C	32	proprietary	4M–8M	Berkeley UNIX Version 4.2	C, FORTRAN 77, Mainsail, Pascal	62,400	one 1M-byte flexible drive, one 142M-byte hard disk drive, eight terminals; one Centronics, Dataproducts printer
STRATUS COMPUTER INC.							
FT250	32	68000	2M–8M	VOS, USF(UNIX)	C, COBOL, FORTRAN, Pascal, PL/1	115,000	two 2M-, 8M-byte hard disk drives; 64 terminals; printer; text editor; two memory controllers
XA400	32	68010	2M–8M	VOS, USF(UNIX)	BASIC	185,000	two 2M-, 8M-byte hard disk drives; 128 terminals; printer; text editor; two memory controllers
XA600	32	68010	2M–16M	VOS, USF(UNIX)		275,000	two 4M-, 16M- byte hard disk drives; 256 terminals; printer; text editor; four memory controllers
SUPERSET INC.							
PGM-2	48	AMD 2900-based	400K–1.6M	proprietary	FORTRAN	35,000	four 160M- to 635M-byte hard disk drives; tape controller
PGM-3	48	AMD 2900	800K–3.2M	proprietary	FORTRAN	40,000	four 160M- to 635M-byte hard disk drives; tape controller
TEXAS INSTRUMENTS INC.							
673A/674A/675A	16	T1 990/10A	512K–2M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	22,995	one 38M-byte Winchester disk drive, one 14.5M-byte cartridge tape drive, up to 16 terminals; opt. printer
690A/691A	16	TI 990/10A	512K–2M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	42,950	one 138M-byte Winchester disk drive, one 91M-byte streaming tape drive, 13 slot chassis, up to 16 terminals; opt. printer
861A/B	16	TI 990/12	512K–2M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	45,600	one 67M-byte fixed disk drive, one 13M-byte cartridge disk drive, two video display terminals, 13 slot chassis; opt. printer

MINICOMPUTERS

TABLE 4

Company Model	CPU word size (bits)	CPU type	Memory min.–max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
874A/B, 875A/B	16	TI 990/12	512K–2M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	38,995	one 69M-byte Winchester disk drive, one 14.5M-byte cartridge tape drive, 13 slot chassis, up to 40 terminals; opt. printer
890A/B, 891A	16	TI 990/12	512K–2M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	54,950	one 138M-byte Winchester disk drive, one 91M-byte streaming tape drive, 13 slot chassis, up to 40 terminals; opt. printer
Business Systems 352A	16	TI 99000	256K–1M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	9,995	one 1.2M-byte flexible drive, one 17M-byte Winchester disk drive, up to seven terminals; opt. printer
Business Systems 373A/374A/375A	16	TI 99000	256K–1M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	15,995	one 38M-byte Winchester disk drive, one 14.5M-byte cartridge tape drive, up to seven terminals; opt. printer
Business Systems 661A	16	TI 990/10A	512K–2M	DNOS, DXIO (proprietary)	BASIC, COBOL, FORTRAN, Pascal	34,800	one 67M-byte fixed disk drive, one 13M-byte cartridge disk drive, 13 slot chassis, up to 16 terminals; opt. printer
TOLERANT SYSTEMS INC.							
Eternity Series	32	National Semiconductor Series 32000	2M–12M	TX (Transaction Executive)	C, COBOL, FORTRAN, Pascal	80,000–750,000	
THE ULTIMATE CORP.							
750	16	DEC LSI-11	128K–256K	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	20,000	one 19M-byte hard disk drive, four asynch terminals, 150- to 600- lpm printer
1000	16	DEC LSI-11	128K–256K	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	32,000	one 70M-byte hard disk drive, eight terminals, 150- to 600- lpm printer
1500/1510	16	DEC LSI-11	256K–512K	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	34,000	one 19M-, 40M-byte hard disk drive; eight terminals; 150- to 600- lpm printer
2000/2000S	16	DEC LSI-11	128K–512K	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	34,000	one 33M-, 66M- or 154M-byte hard disk drive; eight terminals; 150- to 600- lpm printer
2020	16	DEC LSI-11	512K–1M	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	45,000	one 33M-, 66M- or 154M-byte hard disk drive; eight terminals; 150- to 600- lpm printer
C/2	16	DPS 6	256K–2M	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	80,000	one 80M-byte hard disk drive, eight terminals, 150- to 2000- lpm printer
D/2	16	DPS 6	512K–2M	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	107,000	one 288M-byte hard disk drive, eight terminals, 150- to 2000- lpm printer
E/2	16	DPS 6	512K–2M	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	180,000	one 288M-byte hard disk drive, 32 terminals, 150- to 2000- lpm printer
CHIRON	16	DPS 6	512K–1M	ULTIMATE (PICK-based)	Assembly, Extended BASIC, PROC, Recall	36,000	one 40M-, 80M-byte hard disk drive; eight terminals; 150- to 2000- lpm printer
WANG LABORATORIES INC.							
2200LVP	8	proprietary	32K–256K	BASIC 2 Multiuser	BASIC 2	8,600	one 1.024M-byte flexible drive
2200LVPC	8	proprietary	64K–512K	BASIC 2 Multiuser	BASIC 2	10,300	one 1.024M-byte flexible drive; opt. expanded language
2200MVP	8	proprietary	32K–256K	BASIC 2	BASIC 2	4,300	nine I/O slots
2200MVP-P10	8	proprietary	64K–512K	BASIC 2	BASIC 2	9,800	one 320K-byte flexible drive, one 10M-byte hard disk drive, two terminals
2200MVPC	8	proprietary	64K–512K	BASIC 2	BASIC 2	5,050	seven I/O slots; opt. expanded language
2200SVP	8	proprietary	32K–128K	BASIC 2	BASIC 2	5,500	one 1.024M-byte flexible drive
VS15	32	proprietary	256K–2.048M	VS/OS	Assembly, BASIC, COBOL, FORTRAN, PL/1, Procedure, RPGII	21,000	one 360K-byte flexible drive, one 76M-byte hard disk drive, two terminals, 16 serial ports

MINICOMPUTERS
TABLE 4

Company Model	CPU word size (bits)	CPU type	Memory min.-max. (bytes)	Operating systems available	Programming languages supported	Unit price $	Configuration
VS65	32	proprietary	1.024M–4.096M	VS/OS	Assembly, BASIC, COBOL, FORTRAN, PL/1, Procedure, RPGII	54,300	one 360K-byte flexible drive, one 147M-byte fixed disk drive, one 76M-byte cartridge disk drive
VS85	32	proprietary	1.024M–4.096M	VS/OS, UNIX	Assembly, BASIC, COBOL, FORTRAN, PL/1, RPGII	86,000	one 360K-byte flexible drive, two 147M-byte fixed disk drives, one cartridge tape drive, five terminals
VS100	32	proprietary	1.024M–8.192M	VS/OS, UNIX	Assembly, BASIC, COBOL, FORTRAN, PL/1, RPGII	96,000	one 360K-byte flexible drive, 4 terminals, 16 serial ports
VS300	32	proprietary	4.096M–16.384M	VS/OS, UNIX	Assembly, BASIC, COBOL, FORTRAN, PL/1, RPGII	181,000	one 5¼-inch, 360K-byte flexible drive; 4 terminals; 32 serial ports; modem; keyboard
WICAT SYSTEMS INC.							
S150	16	68000	512K–1.5M	WMCS, UNIPlus System V	Assembly, APL, BASIC, C, COBOL, FORTRAN 77, Pascal	10,900	one 616K-byte flexible drive, one 10M-byte hard disk drive, one terminal, three serial ports, one parallel port
S155	16	68000	512K–4.5M	WMCS, UNIPlus System V	APL, Assembly, BASIC, COBOL, FORTRAN, C, Pascal	14,120	one 616K-byte flexible drive, one 10M-byte hard disk drive, six serial ports, one parallel port
S160	16	68000	512K–4.5M	WMCS, UNIPlus System V	APL, Assembly, BASIC, C, COBOL, FORTRAN, Pascal	15,860	one 10M-byte hard disk drive, one ¼-inch cartridge tape drive, six serial ports, one parallel port
S200	16	68000	1M–5M	WMCS, UNIPlus System V	APL, Assembly, BASIC, C, COBOL, FORTRAN, Pascal	37,685	one 80M-byte hard disk drive, one ¼-inch cartridge tape drive, eight serial ports, one parallel port
S220	16	68000	1M–12M	WMCS, UNIPlus System V	APL, Assembly, BASIC, C, COBOL, FORTRAN, Pascal	47,435	one 80M-byte hard disk drive, one ¼-inch cartridge tape drive, eight serial ports, one parallel port
S2220	16	68000	1M–12M	WMCS, UNIPlus System V	APL, Assembly, BASIC, C, COBOL, FORTRAN, Pascal	48,240	one 80M-byte hard disk drive, one ¼-inch cartridge tape drive, eight serial ports, one parallel port

Information was solicited but not received from the following manufacturers:

Ardent Computer Products
AT&T Information Systems
Convex Computer Corp.
Gould Inc.
McDonald Douglas Computer Systems Co. (formerly Microdata Corp.)
Polycomputers Inc.
Symbolics Inc.
Tandem Computers Inc.

For information on their products, consult the Supplementary Manufacturers' Directory of Digest Products on Page 91.

MANUFACTURERS' DIRECTORY OF DIGEST PRODUCTS

ADPS (ADVANCED DATA PROCESSING SYSTEMS)
P.O. Box 10417
San Jose, Calif. 95157
(408) 446-9332
Table 1
Circle 224

ACKERMAN DIGITAL SYSTEMS INC.
216 W. Stone Court
Villa Park, Ill. 60181
(312) 530-8992
Table 1
Circle 225

ACTION COMPUTER ENTERPRISE INC.
430 N. Halstead St.
Pasadena, Calif. 91006
(818) 351-5451
Table 3
Circle 226

ADVANCED DIGITAL CORP.
5432 Production Drive
Huntington Beach, Calif.
92649
(714) 891-4004
Table 1, 2
Circle 227

ADVANCD ELECTRONICS DESIGN INC.
440 Potrero Ave.
Sunnyvale, Calif. 94086
(408) 733-3555
Table 2
Circle 228

ALCYON CORP.
8716 Production Ave.
San Diego, Calif. 92121
(619) 578-0860
Table 2
Circle 229

ALLOY COMPUTER PRODUCTS
100 Pennsylvania Ave.
Framingham, Mass. 01706
(617) 875-6100
Table 3
Circle 230

ALPHA MICROSYSTEMS
17332 Von Karman
Irvine, Calif. 92713
(714) 957-8500
Table 3
Circle 231

ALTOS COMPUTER SYSTEMS
2641 Orchard Parkway
San Jose, Calif. 95134
(408) 946-6700
Table 3
Circle 232

AMPRO COMPUTERS INC.
67 E. Evelyn Ave.
Mountain View, Calif. 94041
(415) 962-0230
Table 1, 2
Circle 233

ANDROMEDA SYSTEMS INC.
9000 Eton Ave.
Canoga Park, Calif. 91304
(818) 709-7600
Table 2, 3
Circle 234

APOLLO COMPUTERS INC.
330 Billerica Road
Chelmsford, Mass. 01824
(617) 256-6600
Table 4
Circle 235

APPLE COMPUTER INC.
20525 Mariani Ave.
Cupertino, Calif. 95014
(408) 996-1010
Table 2
Circle 236

APPLIED DIGITAL DATA SYSTEMS INC.
100 Marcus Blvd.
Hauppauge, N.Y. 11788
(516) 231-5400
Table 4
Circle 237

APPLIED MICRO TECHNOLOGY INC. (A BURR BROWN CO.)
P.O. Box 3042
Tucson, Ariz. 85713
(602) 622-8605
Table 1, 2
Circle 238

ARETE SYSTEMS
2040 Hartog Drive
San Jose, Calif. 95131
(408) 263-9711
Table 4
Circle 239

AT&T INFORMATION SYSTEMS
100 Southgate Parkway
Morristown, N.J. 07960
(201) 898-8000
Table 1, 2, 3
Circle 240

BEEHIVE INTERNATIONAL
4910 Amelia Earhart Drive
Salt Lake City, Utah 84125
(801) 355-6000
Table 2
Circle 241

BTI COMPUTER SYSTEMS
870 W. Maude Ave.
P.O. Box 3428
Sunnyvale, Calif. 94088-3428
(408) 733-1122
Table 4
Circle 242

BURROUGHS CORP.
One Burroughs Place
Detroit, Mich. 48232
(313) 972-7000
Table 3, 4
Circle 243

BYTRONIX CORP.
2701 E. Chapman Ave.
Suite 102
Fullerton, Calif. 92631
(714) 871-8763
Table 4
Circle 244

CADMUS COMPUTER SYSTEMS
600 Suffolk St.
Lowell, Mass. 01854
(617) 453-2899
Table 3
Circle 245

CALIFORNIA COMPUTER SYSTEMS
740 S. Milpitas Blvd.
Milpitas, Calif. 95035
(408) 945-0500
Table 1, 3
Circle 246

CALLAN DATA SYSTEMS
2645 Townsgate Road
Westlake Village, Calif.
91361
(805) 497-8185
Table 2, 3
Circle 247

CANAAN COMPUTER
39 Lindeman Drive
Trumbell, Conn. 06611
(203) 372-8100
Table 4
Circle 248

CASIO INC.
15 Gardner Road
Fairfield, N.J. 01006
(201) 575-7400
Table 2
Circle 249

CENTRAL DATA CORP.
1602 Newton Drive
Champaign, Ill. 61821
(217) 359-8010
Table 1
Circle 250

CHARLES RIVER DATA SYSTEMS
983 Concord St.
Framingham, Mass. 01701
(617) 626-1000
Table 3
Circle 251

CHRISLIN INDUSTRIES INC.
31352 Via Colinas
Westlake Village, Calif.
91362
(818) 991-2254
Table 2, 3
Circle 252

CIE SYSTEMS INC.
2515 McCabe Way
Irvine, Calif. 92713
(714) 660-1800
Table 3
Circle 253

CIFER PLC.
ArvoWay
Bowerhill, Melksham
Wilts, SN12 6TP
England
0225-706361
Table 2, 3
Circle 254

COLUMBIA DATA PRODUCTS INC.
9150 Rumsey Road
Columbia, Md. 21045
(301) 992-3400
Table 2, 3
Circle 255

COMARK CORP.
93 West St.
P.O. Box 474
Medfield, Mass. 02052
(617) 359-8161
Table 2, 4
Circle 256

COMPAQ COMPUTER CORP.
20555 FM 149
Houston, Texas 77070
(713) 370-0670
Table 2
Circle 257

COMPUTER AUTOMATION INC.
18651 Von Karman Ave.
Irvine, Calif. 92713
(714) 833-8830
Table 1, 2, 3, 4
Circle 258

COMPUTER AUTOMATION INC. (COMMERCIAL SYSTEMS DIV.)
1800 Jay Ell Drive
Richardson, Texas 75081
(214) 783-0993
Table 4
Circle 259

COMPUTER CONSOLES INC. (OFFICE SYSTEMS GROUP)
11490 Commerce Park Drive
Reston, Va. 22091
(703) 648-3300
Table 4
Circle 260

COMPUTER SYSTEMS
26401 Harper Ave.
St. Clair Shores, Mich. 48081
(313) 779-8700
Table 1, 2, 3
Circle 261

CONTEL CODATA SYSTEMS CORP.
285 N. Wolfe Road
Sunnyvale, Calif. 94086
(408) 735-1744
Table 3
Circle 262

CONTROL DATA CORP.
8100 34th Ave. South
P.O. Box 0
Minneapolis, Minn. 55440
(612) 853-5130
Table 4
Circle 263

CONVERGENT TECHNOLOGIES
30 E. Plumeria Drive
San Jose, Calif. 95134
(408) 945-8877
Table 3
Circle 264

CORONA DATA SYSTEMS INC.
275 E. Hillcrest Drive
Thousand Oaks, Calif.
91360
(805) 495-5800
Table 2
Circle 265

CREATIVE MICRO SYSTEMS
3822 Cerritos Ave.
Los Alamitos, Calif. 90720
(213) 493-2484
Table 1
Circle 266

CUBIT (DIV. OF PROTEUS INDUSTRIES
190 S. Whisman Road
Mountain View, Calif. 94041
(415) 962-8237
Table 1
Circle 267

DATA GENERAL CORP.
4400 Computer Drive
Westboro, Mass. 01580
(617) 366-8911
Table 3, 4
Circle 268

DATAMEDIA CORP.
7401 Central Highway
Pennsauken, N.J. 08109
(609) 665-5400
Table 3
Circle 269

DATAPOINT CORP.
9725 Datapoint Drive
San Antonio, Texas 78284
(512) 699-7542
Table 3, 4
Circle 270

DATA SUD SYSTEMS/ U.S. INC.
5025 S. Ash
Bldg. B, Suite 5
Tempe, Ariz. 85282
(602) 345-0940
Table 1
Circle 271

DATRICON CORP.
16398 S.W. 72nd Ave.
Portland, Ore. 97244
(503) 684-3232
Table 1
Circle 272

DAVIDGE CORP.
292 E. Highway 246
P.O. Box 1869
Buellton, Calif. 93427
(805) 688-9598
Table 1
Circle 273

DIGITAL EQUIPMENT CORP.
146 Main St.
Maynard, Mass. 01754
(617) 897-5111
Table 1, 2, 3, 4
Circle 274

DIVERSIFIED TECHNOLOGY INC.
P.O. Box 748
Ridgeland, Miss. 39158
(601) 856-4121
Table 1
Circle 275

DUAL SYSTEMS CORP.
2530 San Pablo Ave.
Berkeley, Calif. 94702
(415) 549-3854
Table 1, 3
Circle 276

DY-4 SYSTEMS INC.
888 Lady Ellen Place
Ottawa, Ontario
K12 5MI, Canada
(613) 728-3711
Table 1
Circle 277

DYNABYTE BUSINESS COMPUTERS
4201 Burton Drive
Santa Clara, Calif. 95054
(408) 980-1414
Table 3,
Circle 278

EDUCATIONAL MICROCOMPUTER SYSTEMS
P.O. Box 16115
Irvine, Calif. 92715
(714) 854-8545
Table 1
Circle 279

ENTERPRISE SYSTEMS CORP.
P.O. Box 698
Dover, N.H. 03820
(603) 742-7363
Table 1
Circle 280

ESPRIT COMPUTER PRODUCTS INC.
P.O. Box 425
Montgomeryville, Pa.
18936
(215) 628-4810
Table 3
Circle 282

FIRST COMPUTER CORP.
645 Blackhawk Drive
Westment, Ill. 60559
(312) 920-1050
Table 3
Circle 284

FLEXIBLE COMPUTER CORP.
1801 Royal Lane
Building 8
Dallas, Texas 75229
(214) 869-1234
Table 3
Circle 285

FORCE COMPUTERS INC.
727 University Ave.
Los Gatos, Calif. 95030
(408) 354-3410
Table 1
Circle 286

FORMATION INC.
823 E. Gate Drive
Mt. Laurel, N.J. 08054
(609) 234-5020
Table 4
Circle 287

FORTUNE SYSTEMS CORP.
101 Twin Dolphin Pkwy.
Redwood City, Calif. 94065
(415) 595-8444
Table 2
Circle 288

FORWARD TECHNOLOGY INC.
227 Devcon Drive
San Jose, Calif. 95112
(408) 971-6700
Table 1
Circle 289

FUJITSU MICROELECTRONICS INC.
3320 Scott Blvd.
Santa Clara, Calif.
95054-3197
(408) 980-0755
Table 2, 3
Circle 290

GENERAL AUTOMATION INC.
1045 S. East St.
P.O. Box 4883
Anaheim, Calif. 02903
(714) 778-4800
Table 3
Circle 291

GENERAL MICRO SYSTEMS INC.
4740 Brooks St.
Montclair, Calif. 91763
(714) 621-7532
Table 1
Circle 292

GIFFORD COMPUTER SYSTEMS INC.
2446 Verna Court
San Leandro, Calif. 94577
(415) 895-0798
Table 3
Circle 293

GIMIX INC.
1337 W. 37th Place
Chicago, Ill. 60609
(312) 927-5510
Table 3
Circle 294

GOODSPEED SYSTEMS INC.
23 Main St.
P.O. Box 29
East Haddam, Conn. 06423
(203) 873-1481
Table 1
Circle 295

HARRIS CORP. (COMPUTER SYSTEMS DIV.)
2101 W. Cypress Creek Road
Ft. Lauderdale, Fla. 33309
(305) 973-5000
Table 3, 4
Circle 297

HEURIKON CORP.
3201 Latham Drive
Madison, Wis. 53713
(608) 271-8700
Table 1, 2, 3
Circle 298

HEWLETT-PACKARD CO.
19447 Pruneridge Ave.
Cupertino, Calif.
95014
(408) 725-8111
Table 2, 3, 4
Circle 299

HEWLETT-PACKARD CO.
11000 Wolfe Road
Cupertino, Calif.
95014-9974
(408) 257-7000
Table 1, 4
Circle 300

HEWLETT-PACKARD CO.
3400 E. Harmony Road
Fort Collins, Colo. 80521
(303) 226-3800
Table 3
Circle 301

HONEYWELL INFORMATION SYSTEMS INC.
200 Smith St.
Waltham, Mass. 02154
(617) 895-6000
Table 2, 4
Circle 302

IBC/INTEGRATED BUSINESS COMPUTERS INC.
21621 Nordhoff St.
Chatsworth, Calif. 91311
(818) 882-9007
Table 3
Circle 303

IBM CORP.
P.O. Box 1328
Boca Raton, Fla. 33432
(305) 998-2000
Table 2, 3
Circle 304

IBM CORP.
900 King St.
Rye Brook, N.Y. 10573
(914) 934-4836
Table 4
Circle 305

IMS INTERNATIONAL
2800 Lockheed Way
Carson City, Nev. 89701
(702) 883-7611
Table 2, 3
Circle 306

ISI INTERNATIONAL
1275 Hammerwood Ave.
Sunnyvale, Calif. 94089
(408) 743-4300
Table 1, 2
Circle 307

INDEPENDENT BUSINESS SYSTEMS
5915 Graham Court
Livermore, Calif. 94550
(415) 443-3131
Table 3
Circle 308

INDOCOMP INC.
5409 Perry Drive
P.O. Box 157
Drayton Plains, Mich.
48020
(313) 674-2294
Table 1
Circle 309

INFOREX INC.
182 Middlesex Turnpike
Burlington, Mass. 01803
(617) 272-6470
Table 3
Circle 310

INFOSPHERE INC.
4730 S.W. Macadam Ave.
Portland, Ore. 97201
(503) 226-3515
Table 1
Circle 311

INNER ACCESS CORP.
3206 E. Laurel Creek
Belmont, Calif. 94002
(415) 591-8295
Table 1
Circle 312

INNOVATIVE RESEARCH INC.
17071 Kamden Lane
Huntington Beach, Calif.
92647
(714) 842-0492
Table 1
Circle 313

INTEL CORP.
3065 Bowers Ave.
Santa Clara, Calif. 95051
(408) 987-8080
Table 1, 2
Circle 314

INTEL CORP.
2402 W. Beardsley Road
Phoenix, Ariz. 85027
(602) 869-3805
Table 3
Circle 315

INTELLIMAC
6001 Montrose Road
Rockville, Md. 20852
(301) 984-8000
Table 4
Circle 316

INTERLINK COMPUTER SCIENCES INC.
39055 Hastings St.
Fremont, Calif. 94538
(415) 792-6212
Table 4
Circle 317

INTERCONTINENTAL MICRO SYSTEMS CORP.
4015 Leaverton Court
Anaheim, Calif. 92807
(714) 630-0964
Table 1
Circle 318

INTERTEC DATA SYSTEMS CORP.
2300 Broad River Road
Columbia, S.C. 29210
(803) 798-9100
Table 2, 3
Circle 319

IRONICS INC. (COMPUTER SYSTEMS DIV.)
742 Cascadilla St.
Ithaca, N.Y. 14850
(607) 277-4060
Table 1, 3
Circle 320

J.C. INFORMATION SYSTEMS
469 Valley Way
Milpitas, Calif. 95035
(408) 945-0317
Table 3
Circle 321

JF MICROSYSTEMS
3641 Frontier Road
Pasco, Wash. 99301
(509) 297-4294
Table 1
Circle 322

KAYPRO CORP.
533 Stevens Ave.
Solana Beach, Calif.
92705
(619) 481-4300
Table 2
Circle 323

LAMAR INSTRUMENTS
2107 Artesia Blvd.
Redondo Beach, Calif.
90278
(213) 374-1673
Table 1
Circle 324

LANIER BUSINESS PRODUCTS (DIV. OF HARRIS CO.)
1700 Chantilly Drive
Atlanta, Ga. 30324
(404) 329-8000
Table 3
Circle 325

LOBO SYSTEMS INC.
318 E. Gutierrez St.
Santa Barbara, Calif.
93101
(805) 564-3356
Table 2
Circle 326

LOMAS DATA PRODUCTS
66 Hopkinton Road
Westboro, Mass. 01581
(617) 366-6434
Table 1, 2, 3
Circle 327

M/A-COM INFORMATION SYSTEMS INC.
5515 Security Lane
Rockville, Md. 20852
(301) 984-3636
Table 3
Circle 328

MAD COMPUTER INC.
2950 Zanker Road
San Jose, Calif. 95134
(408) 943-1711
Table 2
Circle 329

MAI BASIC FOUR INC.
14101 Myford Road
Tustin, Calif. 92680
(714) 731-5100
Table 3, 4
Circle 330

MDB SYSTEMS INC.
1995 N. Batavia St.
P.O. Box 5508
Orange, Calif. 92667-0508
(714) 998-6900
Table 2, 3
Circle 331

MDS QANTEL INC.
4142 Point Eden Way
Hayward, Calif. 94545
(415) 887-7777
Table 4
Circle 332

MIL COMPUTER SYSTEMS INC.
One Texas Center
Austin, Texas 78704
(713) 476-1171
Table 2
Circle 333

MASSCOMP
One Technology Park
Westford, Mass. 01886
(617) 692-6200
Table 2, 3
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MATROX ELECTRONIC SYSTEMS LTD.
1055 St. Regis Blvd.
Dorval, Quebec
H9P 2T4, Canada
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MEGADATA CORP.
35 Orville Drive
Bohemia, N.Y. 11716
(516) 589-6800
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MICROBAR SYSTEMS INC.
785 Lucerne Drive
Sunnyvale, Calif. 94086
(408) 720-9300
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MICROCOMPUTER SYSTEMS INC.
1814 Ryder Drive
Baton Rouge, La. 70808
(504) 769-2154
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MICRO CRAFT CORP.
4747 Irving Blvd.
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Dallas, Texas 75247
(214) 630-2562
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MICRO FIVE CORP.
3560 Hyland Ave.
Costa Mesa, Calif. 92626
(714) 957-1517
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MICRO-LINK CORP.
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Carmel, Ind. 46032
(317) 846-1721
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MICROLOG INC.
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Suffern, N.Y. 10901
(914) 368-0353
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Glendale, Calif. 91201
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302 Chester St.
St. Paul, Minn. 55107
(612) 224-8941
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MODULAR COMPUTER SYSTEMS INC. (MODCOMP)
1650 W. McNab Road
Ft. Lauderdale, Fla. 33310
(305) 974-1380
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251 River Oaks Parkway
San Jose, Calif. 95134
(408) 262-2122
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Englewood, Colo. 80112
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The American Road
Morris Plains, N.J. 07950
(201) 993-2000
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600 McCormack St.
P.O. Box 5755
San Leandro, Calif. 94577
(415) 430-1970
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MOSTEK CORP.
1215 W. Crosby Road
Carrollton, Texas 75006
(214) 466-8801
Table 1,
Circle 351

MOTOROLA/FOUR-PHASE SYSTEMS INC.
10700 N. DeAnza Blvd.
Cupertino, Calif. 95014
(408) 255-0900
Table 3, 4
Circle 353

MOTOROLA SEMICONDUCTOR PRODUCTS INC. (MICROSYSTEMS)
P.O. Box 20912
Phoenix, Ariz. 85036
(602) 244-6900
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MRC SYSTEMS INC.
7320 Ashcroft
Houston, Texas 77801
(713) 771-7511
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NEC HOME ELECTRONICS (USA) INC.
700 Nicholas Blvd.
Elk Grove, Ill. 60007
(312) 288-5900
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Circle 357

NEC INFORMATION SYSTEMS INC.
1414 Massachusetts Ave.
Boxborough, Mass. 01719
(617) 264-8000
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2900 Semiconductor Drive
P.O. Box 58090
Santa Clara, Calif.
95052-8090
(408) 721-5100
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NIXDORF COMPUTER CORP.
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Waltham, Mass. 02154
(617) 890-3600
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NORTH STAR COMPUTERS INC.
1440 Catalina St.
San Leandro, Calif. 94577
(415) 357-8500
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OCTAGON SYSTEMS CORP.
650 W. 91st. Ave.
Westminister, Colo. 80030
(303) 426-8540
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OSM COMPUTER CORP.
665 Clyde Ave.
Mountain View, Calif. 94043
(415) 961-8680
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OMNIBYTE CORP.
245 W. Roosevelt Road
Bldg. 1-5
West Chicago, Ill.
60185
(312) 231-6880
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ONSET COMPUTER CORP.
199 Main St.
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North Falmouth, Mass.
02556
(617) 563-2267
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OSBORNE COMPUTER CORP.
42683 Christy St.
Fremont, Calif. 94538
(415) 490-6885
Table 2
Circle 368

ONYX SYSTEMS INC.
25 E. Trimble Road
San Jose, Calif. 95131
(408) 946-6330
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Circle 369

PCE SYSTEMS
4219 S. Market Court
Unit M
Sacramento, Calif. 95834
(916) 921-5454
Table 3
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PACIFIC MICROCOMPUTERS INC.
160 Chesterfield Drive
Cardiff, Calif. 92007
(619) 436-8649
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PARADYNE CORP.
8550 Ulmerton Road
Largo, Fla. 34294
(813) 530-2000
Table 3
Circle 372

PARALLEL COMPUTERS INC.
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Santa Cruz, Calif. 95060
(408) 429-1338
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Middlesex, N.J. 08846
(201) 356-9200
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5190 W. 76th St.
Minneapolis, Minn. 55435
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PERKIN-ELMER CORP. (DATA SYSTEMS GROUP)
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Oceanport, N.J. 07757
(201) 870-4500
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(408) 737-8444
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92713-9602
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(602) 278-3591
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93111
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25 Main St.
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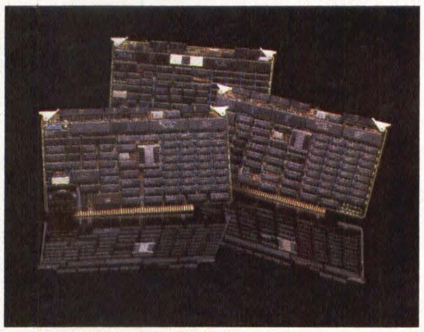

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Mountain View, Calif. 94043
(415) 965-7200
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QDP COMPUTER SYSTEMS
10330 Brecksville Road
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(216) 526-0838
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(201) 542-7340
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(503) 626-5700
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(201) 930-6499
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England
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37605-1255
(615) 461-2500
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(800) 527-3500
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(408) 946-5667
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(516) 488-6700

CENTURY COMPUTER CORP.
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(214) 233-3238

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1200 Wilson Drive
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(215) 431-9100

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2211 Michigan Ave.
Santa Monica, Calif. 90404
(213) 829-7453

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(408) 559-7000

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280 Bernardo Ave.
Mountain View, Calif. 94043
(415) 964-7400

DATAVUE CORP.
225 Technology Park
Norcross, Ga. 30092
(404) 449-5961

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2595 Metropolitan Drive
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(617) 890-8200

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(408) 946-5000

EAGLE COMPUTER INC.
7100 Chapman
Garden Grove, Calif. 92641
(714) 891-2665

EPSON AMERICA INC.
2780 Lemita Blvd.
Torrance, Calif. 90505
(213) 539-9140

FINANCIAL BUSINESS COMPUTERS INC.
1225 E. Union Blvd.
Suite 120
Midvale, Utah 84047
(801) 561-0124

GOULD INC.
6901 W. Sunrise Blvd.
Ft. Lauderdale, Fla. 33340-9148
(305) 587-2900

GRID SYSTEMS INC.
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Mountain View, Calif. 94043
(415) 961-4800

INTEGRATED SOLUTIONS INC.
2240 Lundy Ave.
San Jose, Calif. 95131
(408) 943-1902

INTELLIMAC INC.
6001 Montrose Road
Rockville, Md. 20852
(301) 984-8000

LOGICAL BUSINESS MACHINES
264 Santa Ana Court
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(408) 737-1911

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(714) 250-1000

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(714) 870-7660

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(817) 390-3011

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(206) 575-1830

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San Antonio, Texas 78216
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Blue Bell, Pa. 19426
(215) 542-4213

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Mountain View, Calif. 94043
(415) 960-1300

SYMBOLICS INC.
11 Cambridge Center
Cambridge, Mass. 02142
(617) 577-7500

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19333 Valco Parkway
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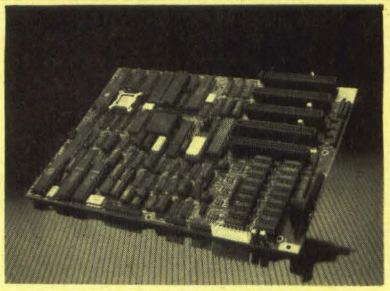

8088 SINGLE BOARD COMPUTER IS IBM PC compatible in form and function. 4.77 MHz Intel 8088 CPU, 8087 socket, 64K to 640K bytes RAM with parity, two 28 pin EPROM sockets, 4 DMA channels, 2 software controlled timers, 5 user available interrupts, floppy controller for up to 4 drives, TTL compatible video output, IBM PC compatible keyboard port, 2 RS-232 serial ports, Centronics printer port, speaker & reset ports, 5 IBM PC compatible I/O expansion slots. BIOS ROM supports MS-DOS, PC-DOS, CP/M-86, Concurrent CP/M, PC-iRMX. DAVIDGE CORP., PO Box 1869, Buellton, CA 93427 (805) 688-9598.

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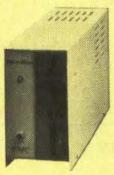

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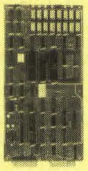

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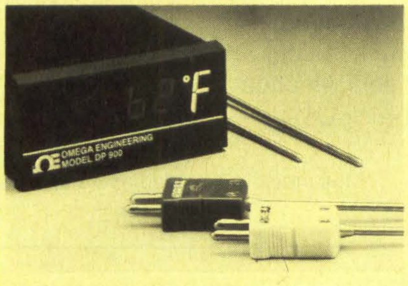

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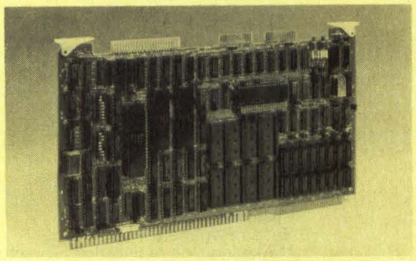

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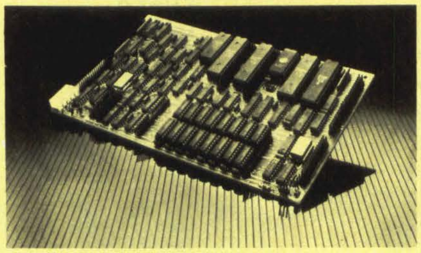

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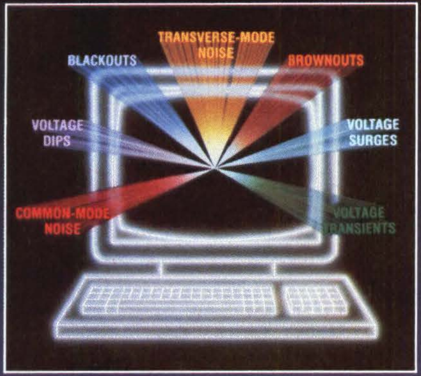

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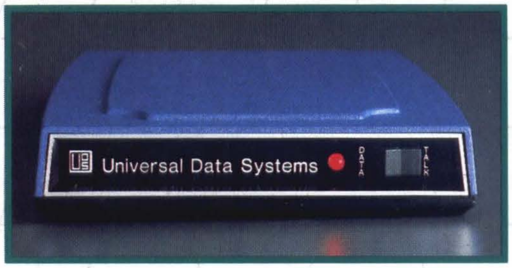
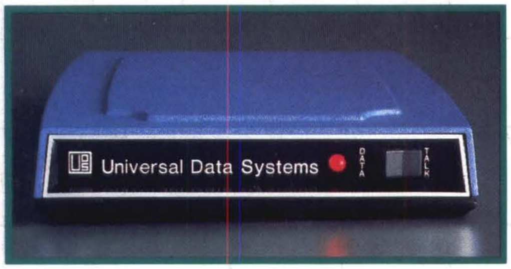
UDS UPDATE:

Bigger performance, smaller size for the 212 modem family





While the members of the UDS 300/1200 bps modem family have grown progressively smaller, the family itself has grown larger. The family now consists of:

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- **The line-powered 212 LPs.** These ultra-compact units are also 300/1200 bps. They draw their operating energy directly from the telephone circuit and need no external power source. The 212 LP is an originate/answer unit which requires manual answering; as an alternative, you may specify the 212A LP, a line-powered unit with auto-answer capability.

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212A	$495	212 LP	$295
212A/D	$545	212A LP	$345

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