# Applied Digital Data Systems (ADDS) Mentor 6000

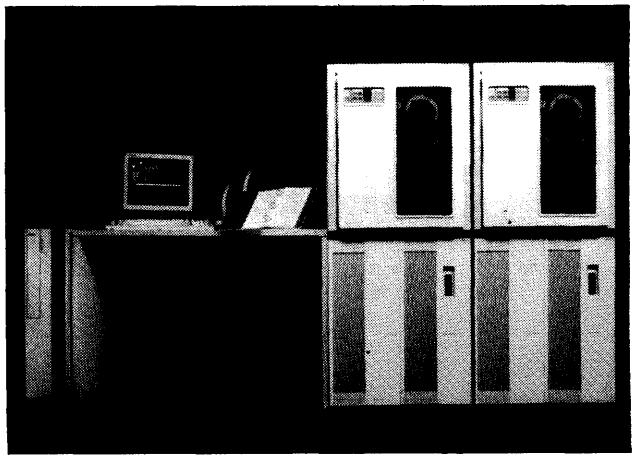
## MANAGEMENT SUMMARY

Applied Digital Data Systems (ADDS) originally started out as a terminal manufacturer in 1977 before it was bought out by the NCR Corporation in 1981. ADDS's relationship with NCR is somewhat unique in the computer industry. Operating as a subsidiary of NCR and selling a system based on NCR's Tower, ADDS appears to have a harmonious marriage with its owner. In order to sell a system that differs from the Tower, ADDS fine-tunes the hardware and ports the Pick operating system onto the Tower platform, instead of using the Tower's Unix operating system. Another distinction between the two systems is that ADDS sells its 32-bit supermicrocomputer systems through Value-Added Resellers (VARs) only, while NCR sells the Tower both to VARs and to end users.

Another major difference in the systems is that the Mentor 6000 comes bundled with the Pick operating system, which includes an Inquiry language, a Basic compiler, a relational data base, an Editor, and an Application Builder. And the Mentor 6000 operating system includes an office automation package that supports a variety of tools, including word processing and spreadsheets; all the hardware and software necessary to build a small office system are supplied. Another point separating the systems is that Pick starts with the data management system, the inverse of a Unix operating system structure. This greater data management capacity results in the Mentor 6000's supporting more users than the Tower Unix system, helping to bring down cost-per-user percentages.

### COMPETITIVE POSITION

The Mentor 6000 is in the thick of the supermicro war. The 6000 excels in a number of areas, in particular in the small business and office automation markets. Competitors in this specific market include the System 1100 from Texas ➢



*The high-end Model 8 of the ADDS Mentor 6000 supermicro supports from 4MB to 16MB of memory and can handle up to 160 users. Disk capacity ranges from 534MB to 3.5GB of storage.*

**The ADDS Mentor 6000 supermicrocomputer is designed for a range of office functions. The 6000 is based on the Pick operating system and comes bundled with office automation and data base management software.**

**MODELS: 2, 4, 6, and 8.**
**MEMORY: 1MB-16MB.**
**DISK CAPACITY: 85MB-3.5GB.**
**WORKSTATIONS: 18-160.**
**PRICE: $37,000-$121,000 (base system prices).**

## CHARACTERISTICS

**VENDOR: Applied Digital Data Systems (ADDS), 100 Marcus Boulevard, Hauppauge, New York 11788. Telephone (516) 231-5400.**

### DATA FORMAT

**BASIC UNIT: 32-bit word.**

**INTERNAL CODE: ASCII.**

### MAIN STORAGE

**The Mentor 6000 can be configured with two RAM units, each with a capacity of 2MB, 4MB, or 8MB. (Model 2 supports only 1 RAM unit.) Either 64KB or 256KB chips are used, depending on RAM capacity, with double-bit error detection and single-bit error correction (ECC).**

**The memory is dual ported and uses a private bus to the central processor.**

### PROCESSING COMPONENTS

**The Central Processor and Memory Controller (PMC III) is based on a 32-bit multifunction module that forms the heart of the Mentor 6000 system. The processor is based on a 16.7MHz MC68020 chip that provides 8KB of static RAM cache memory (6KB program cache, 2KB data cache), resulting in no-wait-state operation.**

**The controller provides a two-way interface to the primary system bus (Multibus), thus permitting the processor to access Multibus I/O devices or memory modules through the Memory Management Unit (MMU).**

**Integrity is achieved through allocation of memory among running tasks, through memory access validation for both processor and Multibus DMA masters, and through a 1KB entry address translation cache.**

**Performance is enhanced through an error recovery procedure and error traps.**

### INPUT/OUTPUT CONTROL

**Using two MC68010 microprocessors and peripheral VLSI devices, the Serial I/O Controller operates as a master/slave controller with on-board intelligence, relieving the Mentor 6000 system processor of the overhead associated with serial I/O processing.** ➢

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## CHART A. SYSTEM COMPARISON

| MODEL | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| SYSTEM CHARACTERISTICS | | | | |
| Date of introduction | February 1987 | September 1986 | September 1986 | September 1986 |
| Date of first delivery | March 1987 | September 1986 | September 1986 | September 1986 |
| Microprocessor type | MC68020 | MC68020 | MC68020 | MC68020 |
| Microprocessor cycle time | 16.7MHz | 16.7MHz | 16.7MHz | 16.7MHz |
| Operating system | Pick (Mentor extensions) | Pick (Mentor extensions) | Pick (Mentor extensions) | Pick (Mentor extensions) |
| Upgradable from | Not applicable | — | Model 4 | Models 4 or 6 |
| Upgradable to | — | Models 6 or 8 | — | Not applicable |
| Number of serial/parallel I/O ports | 32/4 | 64/4 | 112/4 | 160/4 |
| Number of expansion slots | 3 | 7 | 7 | 7 |
| MEMORY | | | | |
| Minimum capacity (bytes) | 1M | 2M | 2M | 4M |
| Maximum capacity (bytes) | 4M | 8M | 8M | 16M |
| DISK STORAGE | | | | |
| Minimum capacity (bytes) | 85M | 119M | 389M | 534M |
| Maximum capacity (bytes) | 119M | 238M | 778M | 3.5G |
| NUMBER OF WORKSTATIONS | 18-32 | 18-64 | 18-112 | 18-160 |
| COMMUNICATIONS PROTOCOLS | 2780/3780, 2770, TTY | 2780/3780, 2770, TTY | 2780/3780, 2770, TTY | 2780/3780, 2770, TTY |

*Note: A dash (—) in a column indicates that the information is unavailable from the vendor.*

Instruments (TI), the IBM System/36, Altos' 1086/2086, the Alpha Micro AM Systems, the Plexus P/Series, and AT&T's 3B2.

TI's System 1100 most closely competes with the Mentor 6000. Both systems are targeted for use as departmental machines in an office and both systems are sold through VARs.

The best way to compare the two systems is to work up a cost-per-user analysis. The base price of TI's System 1115 with a 1.2MB diskette, 1.15MB of memory, a 140MB disk drive, and a 60MB tape is $18,995. With the maximum of 24 users on the system, a cost-per-user breakdown comes out to $1,552. The Mentor 6000 Model 2 configured with 1MB of memory, 85MB of disk, and a 45/60MB tape costs $24,000. The Model 2 supports from 18 to 32 users; in this breakdown, the analysis is based on 24 users on the system. A cost-per-user breakdown for the Model 2 breaks out to $1,395 per user. Thus, the ADDS system costs $150 less than the comparable TI system.

Any discussion of the Mentor's competition would be incomplete without addressing the question of why a prospective customer would choose a system from ADDS instead of buying it from NCR. The answer to this question is operating system software. When considering the two systems, it must be decided what type of operating system would be preferred—usually determined by the type of applications that would be running on the system. The Mentor 6000 operating system is based on the Pick system, with Mentor extensions. Pick running on this supermicro is most successful in standalone office automation, wholesale distribution, and direct mail applications. On the other hand, Unix running on the Tower systems is designed for use in a distributed data processing environment, allowing the Tower to communicate with larger host systems. Thus, the Pick system is more suitable for standalone processing, while the Tower is targeted for use in a distributed setting.

**The 256KB (per 68010) on-board RAM area incorporates drive and buffering functions that reduce processor work load. Eight-port and 16-port boards use twin 68010 processors.**

**The Multibus is the primary system bus.**

**Additionally, the Mentor 6000 supports the Peripheral Expansion Adapter (which is Small Computer System Interface based), which permits the 6000 processor to communicate with the peripheral subsystems.**

### CONFIGURATION RULES

**The Model 2 is the entry model of the Mentor 6000. It consists of a cabinet, 1MB of memory, 85MB of disk, 8 RS-232-C ports, 1 parallel printer port, a 45/60MB ¼-inch streaming cartridge tape, and a console terminal. The Model 2 can be configured with up to 4MB of RAM, 119MB of integrated disk capacity, 32 ports, and 4 parallel printers.**

**The Model 4 is a mid-range member of the Mentor 6000 family. It is packaged in a cabinet that includes 2MB of memory, 119MB of disk, 16 RS-232-C I/O ports, 2 parallel printer ports, a 45/60MB ¼-inch streaming cartridge tape, and a console terminal. The Model 4 can be upgraded to support 8MB of RAM, 238MB of integrated disk capacity, 64 ports, and 4 parallel printer ports.**

**The Model 6 is the mid-range member of the Mentor 6000. The Model 6 consists of a cabinet, a peripheral subsystem, a console terminal, and a workstation. The cabinet includes 2MB of memory, 16 RS-232-C I/O ports, 2 parallel printer ports, and a 45/60MB ¼-inch streaming cartridge tape drive. The peripheral subsystem contains 389MB of disk and a ½-inch, 1600/3200 bpi magnetic tape drive. The Model 6 can be upgraded to support 8MB of memory, 778MB of disk capacity, 112 RS-232-C ports, and 4 parallel printer ports.**

**The Model 8 is the most powerful member of the Mentor 6000 family. It consists of a cabinet, a peripheral subsystem, a console terminal, and a workstation. The cabinet includes 4MB of memory, 16 RS-232-C I/O ports, 2 parallel printer ports, and a 45/60MB streaming cartridge tape drive. The peripheral subsystem contains 534MB of disk and a ½-inch, 1600/6250 bpi PE/GCR magnetic tape drive. The Model 8**

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## CHART B. DISK/DISKETTE DEVICES

| MODEL | 4/6/8 | 6 | 8 |
|---|---|---|---|
| Type | Winchester | Winchester | Winchester |
| Size (inches) | 5.25 | 9 | 9 |
| Number of surfaces | 12 | 12 | 12 |
| Formatted capacity per drive (bytes) | 119M | 270M | 415M |
| Interface/controller | ST506 | SCSI/SMD | SCSI/SMD |
| Number of drives per interface/controller | 2 | 4 | 4 |
| Average access time | 30 ms | 18 ms | 18 ms |
| Data transfer rate | 5M/sec. | 9.7M/sec. | 14.5M/sec. |
| Sectors/tracks per surface | 1,220 tracks | 1,422 tracks | 1,422 tracks |
| Bytes per sector/track | 8,192/track | 20,160/track | 30,240/track |

## CHART C. WORKSTATIONS

| MODEL | 1010 | 2020 |
|---|---|---|
| DISPLAY PARAMETERS | | |
| Max. chars./screen | 1,920 | 2,080 or 3,432 |
| Buffer capacity | — | — |
| Screen size (lines x chars.) | 24 x 80 | 26 x 80 or 132 |
| Tilt/swivel screen | Standard | Standard |
| Symbol formation | 7 x 11 dot matrix | 7 x 12 dot matrix |
| Character phosphor | Green, amber, or white | Green, amber, or white |
| Total colors/no. simult. displayed | Not applicable | Not applicable |
| KEYBOARD PARAMETERS | | |
| Style | Typewriter | Typewriter |
| Character/code set | 96 ASCII | 96 ASCII |
| Detachable | Yes | Yes |
| Program function keys | 6/12 | 16/32 |
| TERMINAL INTERFACE | RS-232-C | RS-232-C |

*Note: A dash (—) in a column indicates that the information is unavailable from the vendor.*

## ADVANTAGES AND RESTRICTIONS

As wonderful as members of the Pick Users Groups claim that operating system is, there is a penalty to pay for using it. Pick is a closed architecture, making it difficult to take communications drivers and integrate them into the system. Thus, communications protocols and networks are not as abundant as they are for other operating systems, including Unix. However, an ADDS product manager mentioned that ADDS and its parent company, NCR, are looking into bridging the Pick and Unix operating systems in order to gain the benefits of both systems. However, with both the Mentor 6000 and the Tower systems remaining profitable, it is unlikely that NCR would radically alter the Mentor 6000 operating system and disturb its loyal group of Pick advocates unless the bridge enhanced the Mentor 6000.

Although it is doubtful that NCR will make substantial changes to the Mentor 6000 operating system, it is a sure bet that the vendor will continue to enhance the Mentor's hardware. This is because ADDS and NCR work very closely on hardware enhancements. If an addition is made to the Tower system that would increase the value of the Mentor 6000, then most likely that improvement will be incorporated into the Mentor system. It will be interesting to see if ADDS makes any substantial hardware changes to the Mentor 6000 in light of the recent NCR announcement to upgrade the high end of the Tower line to use as many as four Motorola 68020 processors. With this increase in the Tower's performance, it is likely that the high end of the Mentor family will also have its performance levels boost-

**can be upgraded to support 16MB of memory, 3.5GB of disk, 160 RS-232-C ports, and 4 parallel printer ports.**

### INPUT/OUTPUT UNITS

**Refer to Chart B for disk and diskette devices, to Chart C for workstations, and to Chart D for printers.**

**OTHER PERIPHERALS: The Mentor 6000 supports three tape drives, Models M6-T45, M6-T1600, and M6-T6250. Model M6-T45 is a ¼-inch streaming cartridge tape drive. It features a 90 inch-per-second (ips) tape speed and 45/60MB of user data storage, at a recording density of 8000 bits per inch (bpi). Model M6-T1600 is a 1600/3200 bpi tape drive that communicates with the controller on the Model 6 computer by means of the Small Computer System Interface (SCSI). The multispeed tape drive provides 46MB of unformatted storage on a 2,400-foot tape at 1600 bpi or 92MB at 3200 bpi. Tape recording speed is either 25 or 100 ips at a recording density of 1600 bpi. When recording at 3200 bpi, a tape speed of 50 ips is maintained.**

**Model M6-T6250 is a ½-inch, reel-to-reel tape drive used on the Model 8. It provides the ability to transfer data at up to 469KB per second. This tape drive communicates with the Model 8 by way of the SCSI. The SCSI is used to logically connect the Mentor 6000 to external disk and tape controllers. The unformatted capacity of the tape drive is 180MB at a density of 6250 bpi using GCR format. Tapes can also be read and written using the 1600 bpi, Phase-Encoded (PE) format. The drive has an Adaptive Velocity Control feature that causes the drive to automatically switch from 25 ips start/stop to 25/75 ips streaming, depending on the data transfer rate from the host.**

### COMMUNICATIONS

**The Distributed Terminal Control Subsystem (DTCS) is a terminal I/O subsystem for connecting multiple RS-232-C**

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## CHART D. PRINTERS

| MODEL | MLP-1 | MLP-3 | MLP-6 | MCP-4 | BLP-4 | BLP-8 |
|---|---|---|---|---|---|---|
| Type | Matrix | Matrix | Matrix | Serial matrix | Band | Band |
| Speed | 80/150 lpm | 300 lpm | 600 lpm | 100-500 cps | 300 lpm | 600 lpm |
| Bidirectional printing | Yes | Yes | Yes | Yes | — | — |
| Paper size | 3 to 16 in. | 3 to 16 in. | 3 to 16 in. | Up to 15.5 in. wide | Up to 18 in. wide | Up to 18 in. wide |
| Character formation | Dot matrix | Dot matrix | Dot matrix | Dot matrix | Full | Full |
| Horizontal character spacing (char./inch) | 10, 12.5, 16.7 | 10 | 10 | 10 to 16.7 | 10, 15 | 10 |
| Vertical line spacing (char./inch) | 6 or 8 | 6 or 8 | 6 or 8 | 3, 4, 6, 8, 12 | 6, 8 | 6, 8 |
| Character set | 96 ASCII | 96 ASCII | 96 ASCII | 96 ASCII | 96 ASCII | 96 ASCII |
| Controller/Interface | Centronics parallel or RS-232-C | Centronics parallel or RS-232-C | Centronics parallel or RS-232-C | Centronics parallel or RS-232-C | Centronics parallel or RS-232-C | Centronics parallel or RS-232-C |
| No. of printers per controller/ interface | 1 | 1 | 1 | 1 | 1 | 1 |
| Printer dimensions, in. (h x w x d) | 10.5 x 24.6 x 20.7 | 16.5 x 30 x 24.3 | 16.5 x 30 x 24.3 | 6.3 x 25 x 16.1 | 36 x 29 x 27 | 36 x 29 x 27 |
| Graphics capability, dots per inch | — | — | — | 144 x 144 | — | — |
| Comments | Optional Intelligent Graphics Processor | Optional Intelligent Graphics Processor | Optional Intelligent Graphics Processor | | | |

*Note: A dash (—) in a column indicates that the information is unavailable from the vendor.*

ed with the incorporation of this new hardware in the near future.

A distinct benefit of adding terminals to the Mentor 6000 is the cost of those terminals. ADDS nailed down 6.6 percent of the U.S. ASCII/ANSI display market in 1985, according to International Data Corporation (Framingham, MA) calculations. This means that since ADDS is a terminal vendor, the company is able to offer them to Mentor customers at a substantial price break. For example, a Mentor 1010 terminal costs $395; a similar terminal from Wyse, the Wyse WY-50, costs $499. When terminals may account for one third of the purchase price of a system, it certainly is a cost benefit to buy them at a very competitive price. □

**terminals to a Mentor 6000. The subsystem consists of a single-board Distributed Terminal Controller (DTC); one to eight intelligent Remote Terminal Cluster Controllers (RTCCs), each capable of supporting eight asynchronous RS-232-C devices (terminals or printers); and a single RS-62 coaxial cable up to 1,000 feet long, running from the Mentor 6000 computer to the remote controllers. A maximum of two DTC Subsystems may be supported by a single Mentor system. The DTCS takes the place of up to eight traditional eight-line MUX cards. It coordinates the transfer of data between the Mentor 6000 computer and the RTCCs.**

**Each DTCS contains a 10MHz 68010 CPU, 512KB of RAM, and an interface to the 2.5M bit-per-second, token-passing serial bus which connects to the RTCCs. Connection hardware at the system cabinet is limited to a single connector per 64 ports.**

**The RTCCs assemble data received from local terminals, buffer it, and packetize it for transmission to the host over the transport coax. On output, the RTCCs receive packets from the 6000 and disseminate the characters to the destination terminals.**

**Each RTCC unit is packaged in a plastic case suitable for wall mounting or desktop use and provides DB-25 connectors for attachment to nearby terminals. The RTCCs contain a 10MHz MC68000 CPU; 32KB of ROM, which holds diagnostics and terminal-handling firmware; 32KB of RAM, which holds system variables and tables and serves as a dynamically allocated buffer pool; a 2.5M bps transport interface; and four dual-channel Universal Asynchronous Receiver Transmitters (UARTs). Full modem control is provided on 11 channels. The maximum data rate on any one channel is 19.2K bps. Maximum throughput for the RTCC is 8 by 9600 bps, full duplex.**

**The Serial I/O Controller provides RS-232-C communications for up to 16 channels. Dual Centronics-compatible parallel printer interfaces are optionally available on the controller.**

### SOFTWARE

**OPERATING SYSTEM: The Mentor 6000 operating system is based on the generic Pick operating system. Pick is designed around a relational data base, incorporating virtual memory and addressing capabilities.**

**All Mentor systems are bundled with the Mentor Pick operating system, including a Relational Database, Inquiry language (Info Access) Basic compiler, Editor, and JCL processor (PROC). Included in the bundling package are an application builder (Implementor) and an office automation package consisting of word processing, a multiuser spreadsheet, and other office automation tools.**

**DATA BASE MANAGEMENT: An ADDS-supplied relational data base comes bundled with the operating system.**

**LANGUAGES: The Mentor 6000 comes bundled with programming languages that include a compiler and debugger, the Mentor terminal control language, and a high-level procedure language.**

**COMMUNICATIONS: ADDS offers three communications packages for the Mentor 6000.**

**The first communications package consists of a PC-to-Mentor connection known as *Protege*, which consists of a MS-DOS shell (Menu Processor) and a File Transfer Utility which permits MS-DOS/Mentor Pick transfer for data and allows the Mentor to be used either as an MS-DOS backup file storage device or as a centralized printer. Protege also consists of an ADDS Viewpoint Terminal emulator with 40 function keys capable of overlaying MS-DOS.**

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The second type of supplied communications package is a Mentor-to-Mentor data transfer utility, *Mentor Link*, which allows multiple systems to coexist in a Mentor network.

The third communications package, called *Mentor/Bisync*, uses an intelligent communications processor to communicate with remote computer systems via 2780, 3780, 2770, and 2968 bisynchronous protocols.

APPLICATIONS: As mentioned previously, the Mentor 6000 is bundled with an Application Builder called *Implementor*.

Also bundled with the 6000 is an office automation package called *Office Augmentor*, which consists of word processing, multiuser spreadsheet, and general office automation tools.

There are over 1,000 Pick proprietary and third-party applications that run on the Mentor 6000. A selection of these packages includes *Mentor/Write*, *Compusheet+*, and *Accu/Plot II*. Mentor/Write is a word processing system with 140 commands and functions. Compusheet+ is a financial and mathematical spreadsheet system that can be integrated with existing Mentor applications, allowing the use of data bases to retrieve information from files for incorporation into the spreadsheet. Accu/Plot II employs a business graphics system that is an extension of the Mentor 6000 data base and of the Info/Access query language.

## OPERATING ENVIRONMENT

The Mentor 6000 models (except Model 2) are housed in cabinets 29 inches high, 7 inches wide, and 27 inches deep; each model weighs 123 pounds. Model 2 is housed in a cabinet 24 inches high, 5 inches wide, and 25.5 inches deep; the system weighs 34 pounds.

The Mentor 6000 requires standard power of 100/127 VAC, 220/240 VAC, and 50 to 60 Hz. Operating temperature is 50 degrees Fahrenheit to 104 degrees Fahrenheit at 20 percent to 80 percent humidity.

## SUPPORT SERVICES

DOCUMENTATION: The Mentor 6000 is shipped with a set of manuals including *Installation*, *Systems Reference*, *Operations*, *Data Base Processors*, and *Data Basic*.

TRAINING/EDUCATION: Training on the Mentor operating system and Data Basic is scheduled regularly. Contact ADDS for specific course dates.

MAINTENANCE: Hardware support and maintenance are provided by the NCR field service organization on a worldwide basis. Software support is available through the customer support team in Hauppauge, New York.

## PRICING

POLICY: The Mentor 6000 system is available through authorized VARs only; ADDS does not sell direct to end users.

# EQUIPMENT PRICES

| | | List Price ($) | Monthly Maint. ($) |
|---|---|---|---|
| **BASE SYSTEMS** | | | |
| M6000-2D | Mentor 6000 Model 2 consists of cabinet, CPU, 1MB RAM Memory Unit, RAM battery backup, disk and tape controller for integrated drives, 85MB integrated disk drive, 45/60MB ¼-inch cartridge tape drive, 8-port Serial I/O Controller, single-port parallel printer adapter, M80 software license | 24,000 | 190 |
| M6000-2E | Model 2 enhanced disk system consists of same components as M6000-2D except substitute 140MB integrated disk drive for 85MB disk drive | 26,400 | 220 |
| M6000-2EE | Model 2 enhanced memory and port system consists of same components as M6000-2D except substitute 2MB RAM Memory Unit for 1MB Memory Unit and 16-port Serial I/O Controller for 8-port | 27,500 | 225 |
| M6000-2EF | Model 2 enhanced memory and port system consists of same components as M6000-2D except substitute 2MB RAM Memory Unit for 1MB Memory Unit, 16-port Serial I/O Controller for 8-port, add dual-port parallel printer adapter for single-port adapter, and 119MB disk drive for 85MB drive | 29,900 | 255 |
| M6000-2EG | Model 2 enhanced memory and port system consists of same components as M6000-2D except substitute 4MB RAM Memory Unit for 1MB Memory Unit, 16-port Serial I/O Controller for 8-port, dual-port parallel printer adapter for single-port adapter, and 119MB disk drive for 85MB disk | 32,900 | 280 |
| M6000-4D | Mentor 6000 Model 4 consists of cabinet, CPU, 2MB RAM, RAM battery backup, disk and tape controller, 119MB integrated disk drive, 45/60MB integrated cartridge tape drive, 16-port serial I/O controller, dual-port parallel printer adapter, console terminal, M80 software license | 37,000 | 285 |
| M6000-4DE | Mentor 6000 Model enhanced memory system consisting of same components as M6000-4D except substitute 4MB RAM memory unit for 2MB memory unit | 41,000 | 340 |
| M6000-6D | Mentor 6000 Model 6 consisting of cabinet, CPU, 2MB RAM, RAM battery backup, disk and tape controller for integrated drives, 119MB integrated disk drive, 45/60MB integrated cartridge tape drive, 16-port serial I/O controller, dual-port parallel printer adapter, Peripheral Expansion Adapter, disk controller, magnetic tape controller, 270MB disk drive, ½-inch 1600/3200 bpi magnetic tape drive, console terminal and workstation, M80 software license | 80,000 | 510 |
| M6000-6DE | Mentor 6000 Model 6 consisting of same components as M6000-6D except substitute 4MB RAM Memory Unit for 2MB memory unit | 84,000 | 565 |
| M6000-8D | Mentor 6000 Model 8 consisting of cabinet, CPU, 4MB RAM, RAM battery backup, disk and tape controller for integrated drive, 119MB integrated disk drive, 45/60MB integrated cartridge tape drive, 16-port serial I/O controller, dual-port parallel printer adapter, Peripheral Expansion Adapter, disk controller, magnetic tape controller, 415MB disk drive, ½-inch 1600/6250 bpi magnetic tape drive, console terminal and workstation, M80 sotware license | 121,000 | 640 |
| M6000-8DE | Mentor 6000 Model 8 consisting of same components as M6000-8D except substitute 8MB RAM Memory Unit for 4MB Memory Unit | 129,000 | 769 |

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| | | List Price ($) | Monthly Maint. ($) |
|---|---|---|---|
| **UPGRADES** | | | |
| M6000-4/6U | Model 4 to Model 6 upgrade consisting of ½-inch 1600/3200 bpi magnetic tape unit, 270MB disk drive, Peripheral Expansion Adapter, magnetic tape controller, disk controller, console desk, M80 software license upgrade | 47,000 | 510 |
| M6000-4/8U | Model 4 to Model 8 upgrade consisting of ½-inch 1600/6250 bpi tape, 415MB disk drive, Peripheral Expansion Unit, peripheral expansion adapter, magnetic tape controller, disk controller, console desk, M6000/8-M80 software license upgrade | 85,500 | 640 |
| M6000-6/8U | Model 6 to Model 8 upgrade consisting of ½-inch 1600/6250 bpi tape, 415MB disk drive, magnetic tape controller, disk controller, M6000/8-M80 software license upgrade (requires a minimum of 4MB which must be ordered separately if not already installed in Model 6) | 83,500 | 640 |
| **MASS STORAGE** | | | |
| M6-R2M | 2MB ECC RAM Memory Unit | 6,000 | 25 |
| M6-R4M | 4MB ECC RAM Memory Unit | 12,000 | 80 |
| M6-R8M | 8MB ECC RAM Memory Unit | 24,000 | 200 |
| M6-D140 | 119MB disk drive unit | 8,500 | 80 |
| M6-D340 | 270MB disk drive unit | 20,500 | 85 |
| M6-D516 | 415MB disk drive unit | 22,500 | 90 |
| M6-DC516 | Disk controller (required for fifth through eighth M6-D516) | 5,250 | 30 |
| **I/O** | | | |
| M6-T16 | 16-port serial I/O controller | 6,000 | 36 |
| M6-T8 | 8-port serial I/O Controller | 3,000 | 18 |
| M6-P2 | Dual-port parallel printer adapter | 1,000 | 5 |
| M6-DTC | Distributed Terminal Controller (DTC) | 4,000 | 30 |
| M6-RTC | 8-port Remote Terminal Cluster Controller (RTCC) | 3,000 | 12 |
| **TAPE** | | | |
| M6-TPS | ½-inch magnetic tape peripheral subsystems includes Peripheral Expansion Adapter, magnetic tape controller with 64KB cache, ½-inch 1600/3200 bpi magnetic tape unit, console desk, and license upgrade | 16,000 | 100 |
| M6-T6250 | Peripheral subsystem cabinet with ½-inch 1600/6250 bpi GCR tape unit | 20,000 | 130 |
| **TERMINALS** | | | |
| MT1010 | Mentor 1010 terminal | 395 | 18 |
| MT2020 | Mentor 2020 terminal | 695 | 18 |
| **PRINTERS** | | | |
| MLP-1 | 150-lpm matrix line printer with parallel interface | 4,000 | 97 |
| MLP-3 | 300-lpm matrix line printer with parallel interface | 6,500 | 130 |
| MLP-6 | 600-lpm matrix line printer with parallel interface | 9,000 | 170 |
| MCP-4 | 400-cps character printer with parallel and serial interface | 2,995 | 45 |
| BLP-4 | 300-lpm band line printer with parallel interface | 7,000 | 95 |
| BLP-8 | 600-lpm band line printer with parallel interface | 9,000 | 140 |

## SOFTWARE PRICES

| | | List* Price ($) | Monthly Maint. ($) |
|---|---|---|---|
| **SYSTEM SOFTWARE** | | | |
| M6000/ 2-M80 | Mentor virtual memory operating system software license for Model 2 includes Info/Access, Data/Basic, Proc, Editor/Runoff, and Documentation | 8,000 | 25 |
| M6000/ 4-M80 | Mentor virtual memory operating system software license for Model 4 includes Info/Access, Data/Basic, Proc, Editor/Runoff, and Documentation | 12,000 | 35 |
| M6000/ 6-M80 | Mentor virtual memory operating system software license for Model 6 includes Info/Access, Data/Basic, Proc, Editor/Runoff, and Documentation | 25,000 | 45 |
| M6000/ 8-M80 | Mentor virtual memory operating system software license for Model 8 includes Info/Access, Data/Basic, Proc, Editor/Runoff, and Documentation | 40,000 | 50 |

**Software prices are included in the basic system price and are shown here for reference purposes only.* ■