# Product Descriptions

IMSAI

January, 1979

| CATALOG NAME | DESCRIPTION |
|---|---|
| | **INTEGRATED COMPUTER SYSTEMS** |
| **VDP-80 SERIES** | Video Data Processor. Integrated terminal/computer system with 12-inch video display (see VIO-C for display characteristics), extended keyboard (includes numeric keypad and cursor control keypad), PerSci dual 8-inch floppy disk drives, Intel 8085-based processor (with 2K ROM monitor), 32/64K of RAM memory, all housed in a single desk-top cabinet. Additional interfaces included: one serial port and provisions for the addition of a second dual PerSci disk drive (see PCS-80/26). In double density, formatted on-line disk storage capacity is up to 1.35M bytes. Software included: IMDOS disk operating system and BASIC-E. Uses S-8 diskettes (see SOFTWARE).<br><br>SPECIAL CABLE NOTE: Special CABLE configurations have been prepared to connect certain interface boards and printers to the VDP-80. Items effected will be referred back to this note. Please consult your salesperson for cable information for these products. |
| VDP-80/1000 | VDP-80 Video Data Processor, with 32K of RAM memory and two unused S-100 bus motherboard slots with connectors. |
| VDP-80/1050 | VDP-80 Video Data Processor, with 64K of RAM memory and two unused S-100 bus motherboard slots with connectors. |
| **VDP-4X SERIES** | Video Data Processor. Integrated terminal/computer system with 9-inch video display (see VIO-C for display characteristics), keyboard, dual 5¼-inch floppy disk drives, Intel 8085-based processor board (with 2K ROM monitor), 32/64K of RAM memory, all interfaces housed in a single desk-top cabinet. Additional interface included: one serial port. Software included: IMDOS disk operating system and BASIC-E. |
| VDP-40/32 | VDP-40/32 has 32K of RAM memory. The dual 5¼-inch floppy disks supplied with this system are single density, 40-track drives. Formatted on-line disk storage capacity is up to 180K bytes. A MDIO Disk Controller is supplied, which will support up to four 5¼-inch floppy disk drives. Has six unused motherboard slots with connectors. Uses M-35 diskettes (see SOFTWARE). |
| VDP-40/64 | Same as VDP-40/32 with 64K of RAM memory. |

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|---|---|
| VDP-42/32 | VDP-42/32 has 32K of RAM memory. The dual 5¼-inch floppy disks supplied with this system are single and/or double density, 40-track drives. In double density, formatted on-line disk storage capacity is up to 400K bytes. A DIO-D Disk Controller is supplied, which will support up to four 5¼-inch floppy disk drives. Has five unused motherboard slots with connectors. Uses M-35 diskettes (see SOFTWARE). |
| VDP-42/64 | Same as VDP-42/32 with 64K of RAM memory. |
| VDP-44/32 | VDP-44/32 has 32K of RAM memory. The dual 5¼-inch floppy disks supplied with this system are single and/or double density, 77-track drives. In double density, formatted disk storage capacity is up to 780K bytes. A DIO-D Disk Controller is supplied, which will support up to four 5¼-inch floppy disk drives. Has five unused motherboard slots with connectors. Uses M-77 diskettes (see SOFTWARE). |
| VDP-44/64 | Same as VDP-44/32 with 64K of RAM memory. |
| **PCS-4X SERIES** | Desk-top computer system with integrated 5¼-inch floppy disk drives. Features an Intel 8085-based processor board with 2K ROM monitor. System includes 32/64K RAM, dual 5¼-inch floppy disk drives, and serial and parallel I/O in a single desk-top cabinet. Software included: IMDOS disk operating system and BASIC-E. |
| PCS-40/32 | PCS-40/32 has 32K of RAM memory. The dual 5¼-inch floppy disks supplied with this system are single density, 40-track drives. Formatted on-line disk storage capacity is up to 180K bytes. A MDIO Disk Controller is supplied, which will support up to four 5¼-inch floppy disk drives. Has 7 unused slots with connectors. Uses M-35 diskettes (see SOFTWARE). |
| PCS-40/64 | Same as PCS-40/32, with 64K of RAM memory. |
| PCS-42/32 | PCS-42/32 has 32K of RAM memory. The dual 5¼-inch floppy disks supplied with this system are single and/or double density, 40-track drives. In double density, formatted on-line disk storage capacity is up to 400K bytes. A DIO-D Disk Controller is supplied, which will support up to four 5¼-inch floppy disk drives. Has 6 unused slots with connectors. Uses M-35 diskettes (see SOFTWARE). |
| PCS-42/64 | Same as PCS-42/32, with 64K of RAM memory. |
| PCS-44/32 | PCS-44/32 has 32K of RAM memory. The dual 5¼-inch floppy disks supplied with this system are single and/or double density, 77-track drives. In double density, formatted on-line disk storage capacity is up to 780K bytes. A DIO-D Disk Controller is supplied, which will support up to four 5¼-inch floppy disk drives. Has 6 unused slots with connectors. Uses M-77 diskettes (see SOFTWARE). |
| PCS-44/64 | Same as PCS-44/32, with 64K of RAM memory. |

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| | **BASIC COMPUTERS** |
| **I-8080 SERIES** | Table top version of basic computer system with 8080 processor on a MPU-A processor board. Includes CP-A front panel assembly, 32K or 64K of RAM memory, PS-28 power supply and 22-slot motherboard. Includes seven edge connectors. Has five unused motherboard slots with connectors and fifteen unused motherboard slots without connectors. A minimum system configuration would include an input/output interface. |
| I-8080/32 | I-8080 with 32K of RAM memory. |
| I-8080/32-RM | Rack mount version of I-8080/32. |
| I-8080/64 | I-8080 with 64K of RAM memory. |
| I-8080/64-RM | Rack mount version of I-8080/64. |
| **PCS-80/15 SERIES** | Table top version of basic computer, with dress front panel. Features an 8085 processor on a MPU-B processor board (with 2K ROM monitor), 32K or 64K of RAM memory, PS-28 power supply and 10-slot motherboard. Includes 10 edge connectors. Has 8 unused motherboard slots for expansion. Additional interfaces included: one serial port and one parallel port. |
| PCS-80/15-32 | PCS-80/15, with 32K of RAM memory. |
| PCS-80/15-32-RM | Rack mount version of PCS-80/15-32. |
| PCS-80/15-64 | PCS-80/15, with 64K of RAM memory. |
| PCS-80/15-64-RM | Rack mount version of PCS-80/15-64. |
| | **DISK SYSTEMS*** |
| **HD-10 SERIES** | HD-10 Hard Disk System features the CDC Hawk Model 9427H hard disk. Provides 10 megabytes of formatted on-line disk storage, 5 fixed and 5 removable. Up to two controllers may be used with any IMSAI microcomputer system. Each controller supports up to four hard disks, giving an 80 megabyte on-line storage capability. |
| HD-10 | 10 megabyte drive system, controller, S-100 bus I/O interface, cables, pedestal and power supplies. Software included: IMDOS II (an enhanced version of IMDOS with hard disk capability added) and BASIC-E. |
| HD-10E | 10 megabyte expansion drive, including power supplies, cables and pedestal. |
| HDC | Removable hard disk cartridge. IBM 5440-type for HD-10. Single platter, double sided. |
| **PCS-80/22 SERIES** | 8-inch Standard Floppy Disk System. System configurations are based on the FIF Controller or the DIO-C Controller (see DISK CONTROLLERS). Each controller can support up to four drives. |

*All disk systems with controllers include IMDOS or IMDOS II.

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|---|---|
| PCS-80/22A | Two 8-inch CalComp floppy disk drives, two power supplies and FIF Controller in a two-drive table-top cabinet. Single density format. Formatted on-line disk storage capacity is up to 512K bytes. Note: FIF Controller is only compatible with the I-8080 computer. Software supplied: IMDOS and BASIC-E. |
| PCS-80/22A-RM | Rack mount version of PCS-80/22A. |
| PCS-80/22B | A dual drive expansion unit for PCS-80/22A. Includes two 8-inch CalComp floppy disk drives and two power supplies in a two-drive table-top cabinet. |
| PCS-80/22B-RM | Rack mount version of PCS-80/22B. |
| PCS-80/22C | Two 8-inch Cal/Comp floppy disk drives, two power supplies and DIO-D Controller in a two-drive table-top cabinet. Single and/or double density formats. In double density, formatted on-line disk storage capacity is up to 1.25M bytes. Software supplied: IMDOS and BASIC-E. |
| PCS-80/22C-RM | Rack mount version of PCS-80/22C. |
| PCS-80/22D | A dual drive expansion unit for PCS-80/22C. Includes two 8-inch CalComp floppy disk drives and two power supplies in a two-drive table-top cabinet. |
| PCS-80/22D-RM | Rack mount version of PCS-80/22D. |
| **PCS-80/25, 26 SERIES** | Floppy Disk System. Dual PerSci floppy disk drive units. Single and/or double density. |
| PCS-80/25 | Dual PerSci 8-inch floppy disk drive, power supply, DIO-C Controller and cables in a desk-top cabinet. Formatted on-line disk storage capacity is up to 1.25M bytes. Software supplied: IMDOS and BASIC-E. |
| PCS-80/26 | A dual drive expansion unit for the PCS-80/25 Floppy Disk System and for the VDP-80 Video Data Processor. Includes a dual PerSci 8-inch floppy disk drive, power supply and cables in a desk-top cabinet. For connection to a VDP-80, CABLE AZ is required. |
| **MD-X SERIES** | MD-X Floppy Mini-Disk System. Features 5¼-inch floppy disk drives and DIO-D Controller (see DISK CONTROLLERS). Each controller will support up to 4 disk drives. Disk drive models must not be mixed on the same interface. |
| MD-2 | Two dual density, 40-track floppy mini-disk drives, power supplies, DIO-D Controller, fan and all necessary cables. In double density, up to 400K bytes of formatted on-line storage are provided. Software supplied: IMDOS and BASIC-E. |
| MD-2E | A dual drive expansion unit for the MD-2. MD-2E may also be used as an expansion unit for IMSAI's VDP and PCS 40 and 42 computer systems. Early PCS and VDP units may require modification firmware and/or cables. Controller not included with MD-2E. |

| CATALOG NAME | DESCRIPTION |
|---|---|
| MD-4 | Two dual density, 77-track floppy mini-disk drives, power supplies, DIO-D Controller, fan and all necessary cables. In double density, up to 780K bytes of formatted on-line storage are provided. Software supplied: IMDOS and BASIC-E. |
| MD-4E | A dual drive expansion unit for the MD-4. MD-4E may also be used as an expansion unit for IMSAI's VDP-44 and PCS-44 microcomputer systems. Early PCS and VDP units may require modification firmware and/or cables. Controller not included with MD-4E. |
| | **INTERFACE BOARDS** |
| | **MEMORY** |
| RAM III-64 | 64K byte Dynamic Random Access memory.<br>Access Time: 375 ns (maximum).<br>Cycle Time: 500 ns (minimum). |
| RAM III-32 | 32K byte Dynamic Random Access memory.<br>Access Time: 375 ns (maximum).<br>Cycle Time: 500 ns (minimum). |
| RAM 16 | 16K byte Dynamic Random Access memory.<br>Access Time: 400 ns.<br>Cycle Time: 560 ns (maximum). |
| | **FLOPPY DISK CONTROLLERS** |
| DIO-C | Floppy disk interface compatible with all 8080/85-based IMSAI computers. Supports up to four single and/or double density CalComp or PerSci 8-inch disk drives. Disk drive models must not be mixed on the same interface. Two board set. |
| DIO-D | Floppy disk interface compatible with all 8080/85-based IMSAI computers. Supports up to four 40-track MPI or 77-track Micropolis, single and/or double density 5¼-inch disk drives. Disk drive models must not be mixed on the same interface. Two board set. |
| MDIO | Floppy disk interface compatible with all 8080/85-based IMSAI computers. Supports up to four single density 5¼-inch disk drives (35-track Shugart or 40-track MPI). Disk drive models must not be mixed on the same interface. Single board interface. |
| FIF | Floppy disk interface compatible with IMSAI's I-8080 computer. Supports up to four single density 8-inch CalComp disk drives. The FIF moves data between the system's memory and the peripherals via a **Direct Memory Access** channel (DMA). Two board set. |

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|---|---|
| | **VIDEO DISPLAY** |
| VIO-C | Upper/lower case and graphics. Screen formats are 80x24, 80x12, 40x24 and 40x12. 256 character set on PROM. 2K ROM firmware and 2K refresh memory. |
| | **INPUT/OUTPUT INTERFACES** |
| SIO 2-2 | Two channel serial I/O interface board. Provides RS232 and current loop, plus asynchronous and synchronous modes. Two CABLEs A required. (For use with VDP-80, see VDP-80 description for CABLE NOTE). |
| PIO 4-1 | One port parallel I/O board. One or two CABLEs B required. (For use with VDP-80, see VDP-80 description for CABLE NOTE). |
| PIO 4-4 | Four port parallel I/O board. Two CABLEs B required. (For use with VDP-80, see VDP-80 description for CABLE NOTE). |
| MIO | Multiple I/O board. Two parallel ports, one serial port, one control port and TARBELL tape cassette interface. Requires one to three CABLEs A and one CABLE M. (For use with VDP-80, see VDP-80 description for CABLE NOTE). |
| PIC-8 | 8-level priority interrupt/interval clock board. Can service single or multiple interrupt requests. Clock circuit generates program-controlled interrupts at intervals preset from 0.1 millisecond to 1 second. |
| | **BREADBOARD (KIT ONLY)** |
| GP-88 | General purpose S-100 prototyping board. Space for up to 31 16-pin dip devices and two 40-pin DIPs. Or 3 24-pin DIPs may be installed in the 2 40-pin spaces. Holes for wire-wrap or solder sockets provided. |
| | **EXTENDER BOARD** |
| EXT | Extender Board. Extends circuit board out of the card cage for service. |

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| | **PERIPHERALS** |
| IKB-1 | Microprocessor-controlled keyboard, mode programmable, upper and lower case ASCII encoded, with serial or parallel interface. Includes 5-foot CABLE C. Requires MIO Multiple Input/Output board, plus one CABLE A; or PIO 4-4 or PIO 4-1 Parallel Input/Output board, plus one CABLE B; or MPU-B Microprocessor board plus one CABLE AF. |
| PTR-300A | 300 lpm Teletype line printer, 80 characters per line. Includes cable to computer backframe. Requires SIO 2-2 Serial Interface board, plus one CABLE A; or MPU-B Microprocessor board, plus one CABLE AF. (For use with VDP-80, see VDP-80 description for CABLE NOTE). |
| PTR-300B | Same as PTR 300A, except it has 132 characters per line. |
| PTR-45A | 45 cps HyType II character printer, 132 characters per line. Includes cable to computer backframe. Requires PIO 4-4 Parallel Input/Output board and two CABLEs B. (For use with VDP-80, see VDP-80 description for CABLE NOTE). |
| PTR-45A-TF | Same as PTR-45A with tractor feed. |
| HCT-45A-TF | HiTerm Model 1620 printer/keyboard hard copy terminal, with tractor feed, 45 cps, 132 characters per line, HyType II mechanism, with six-foot cable. Requires SIO 2-2 Serial Interface board or MIO Multifunction Input/Output board, plus one CABLE A; or MPU-B Microprocessor board, plus one CABLE AF. (For use with VDP-80, see VDP-80 description for CABLE NOTE). |
| | **CABLES** |
| CABLE A | 18" flat cable to carry signals from SIO 2-2 and MIO serial and parallel port interfaces to cabinet backframe. Internal cable. |
| CABLE B | 18" flat cable connects PIO 4-4 input and output ports to cabinet backframe. |
| CABLE C | 60" cable to connect floppy disk drives, modems or terminals (backframe to backframe). |
| CABLE L | 18" coax cable to connect VIO board to cabinet backframe. Internal cable. |
| CABLE M | 18" coax cable to connect MIO cassette port to backframe. Internal cable. |
| CABLE AE | 29" flat cable to connect SIO 2-2 or MIO serial or parallel ports to cabinet backframe in VDP-80 line. |

| CATALOG NAME | DESCRIPTION |
|---|---|
| | **CABLES** |
| CABLE AF | 14½" flat cable to connect MPU-B serial or parallel port to cabinet backframe. (Not for use in VDP-80 line). |
| CABLE AM | 36" flat cable to connect DIO to CABLE AN in cabinet backframe. Internal cable. |
| CABLE AN | 60" flat cable to connect the cabinet backframe to PerSci disk drive. External cable. |
| CABLE AR | 28" flat cable to connect PIO 4-4 to cabinet backframe in VDP-80 line. |
| CABLE AZ | 60" cable to connect the DIO in a VDP-80 to a PCS-80/26. |
| | **SOFTWARE** |
| | When ordering SOFTWARE, specify S8 for standard 8-inch diskette, M35 for 35-track mini-diskette (40-track compatible) or M77 for 77-track mini-diskette. |
| | **OPERATING SYSTEMS** |
| IMDOS | IMSAI Multi-Disk Operating System. Compatible with CP/M*. The operating system will simultaneously support 35, 40 and 77 track 5¼-inch disk drives, as well as standard 8-inch drives.<br><br>IMDOS contains over twenty utilities, including a video/context editor, assembler, peripheral interchange program (PIP), dynamic debugging tool, floppy disk and memory testing program, as well as facilities for data management. Includes BASIC-E.<br><br>BASIC-E contains all the usual disk-interactive BASIC features, including floating point numbers, trigonometric functions and string handling functions.<br><br>The Video Context Editor allows video cursor editing, as well as contextual string-matching and character pointer position editing.<br><br>The IMDOS Assembler is compatible with the Intel standard, including conditional assembly instructions, but not including macro-instructions. Enhancements include 16-character labels with embedded $ signs, multiple statements per line and the 8085 SIM and RIM instructions for handling interrupts. |

*Compatible with CP/M Version 1.33. CP/M is a registered trademark of Digital Research Corporation.

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| | The Dynamic Debugging Tool has extensive facilities for debugging programs. Utility functions of DDT allow disk file patching and file back-up or transfer in a single disk system.<br><br>IMDOS, when used in conjunction with FORTRAN IV's M80 utility, may be used to add or modify I/O driver routines. |
| IMDOS II | IMDOS, with hard disk capability added. Available only with HD-10. |
| | **LANGUAGES** |
| CBASIC | Commercial BASIC compiler and run-time modules. CBASIC is a compiled BASIC with 14-digit precision decimal arithmetic, N-dimensional string arrays, numeric variables, string operator functions, sequential and random access to files, and machine interface facilities. Direct access to absolute memory addresses and I/O ports is provided, as well as an interface to assembly language program routines.<br><br>CBASIC provides a comprehensive PRINT-USING formatted output statement capability for both printed and file output.<br><br>CBASIC generates and processes ASCII data in terms of fixed and variable length records. Sequential and random access to files is provided. Records are packed together, without regard for sector boundaries, providing maximum space utilization. |
| MBASIC | Microsoft BASIC. MBASIC is an interpretive BASIC with 6-digit single or 16-digit double precision arithmetic, as well as N-dimensional arrays and logical operator and complete string-operator functions. Direct access to absolute memory addresses and I/O ports is provided, as well as an interface to assembly language program routines. MBASIC provides a comprehensive PRINT-USING formatted output statement capability for both printed and file output. MBASIC includes comprehensive disk file operation with both sequential and random-fixed length records; also includes a chain-run capability. |
| FORTRAN IV | Microsoft FORTRAN IV is a software package consisting of six main components: a FORTRAN compiler, linking loader, compatible relocating assembler, system subroutine library, library manager and cross reference generator. Facilities are available for generating and managing relocatable object modules. The FORTRAN compiler meets the ANSI standard.<br><br>Microsoft FORTRAN IV is a compiler, with random disk file access, transfer of control at end of file or error condition, mixed mode arithmetic, hexadecimal constants, logical variables which can be used as integer quantities, logical DO LOOPS and sixteen digit double precision arithmetic. Subroutines can be FORTRAN or Assembler. |
| | **ACCESSORIES** |
| EXPM-5 | Set of five edge connectors and card guides. |
| FM | Cooling fan for all basic computers. (I-8080 and PCS-80/15). |

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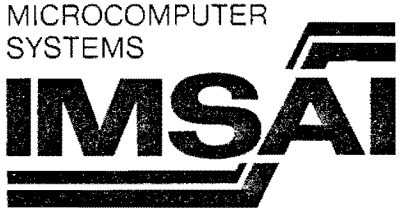


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