THE MOSTEK MD SERIES FAMILY OF STD BUS MICROCOMPUTER BOARDS AND SYSTEMS

The Mostek MD Series is a family of bus-expandable micro-computer modules that may be easily combined to provide a user-configurable Z80 microcomputer system. Each module operates from a position-independent STD BUS, using a motherboard interconnect system. The MD Series modules are thus fully expandable and can be organized in unrestricted combinations (i.e., any card works in any position) to form a cost-effective microcomputer system that closely matches your application requirements.

The MD Series, including some 40 different types of easy-to-use, compact boards and accessories, contains everything necessary to build an application system: CPU cards, memory cards, floppy controllers, math cards, serial and parallel I/O, A/D and D/A cards, software, chassis with power supply, card cages and more. By designing with the MD Series family, you have everything necessary to take your product from start to finish.

A major step in expanding the family is the addition of industrial control products such as the digital I/O bus card, the digital I/O panel and the new industrial control enclosure. Using these modules makes the MD Series compatible with industrial control system requirements.

The Mostek MD Series provides you with Z80 power, well-designed OEM boards, sophisticated software and extensive field support. Combined with attractive pricing and a 12-month warranty, these features make the MD Series highly competitive in a "make vs. buy" decision.

STD-Z80 BUS

The STD BUS was jointly designed by Mostek and Pro-Log to satisfy the need for cost-effective OEM microcomputer systems. Definition of the STD BUS and the MD Series of OEM microcomputer modules is the result of years of microcomputer component and module manufacturing experience.

Printed circuit modules for the STD BUS are a compact 4½"x6½" size. This smaller module size makes system packaging easier, while increasing MOS-LSI densities provide high functionality per module.

Mostek has defined the STD-Z80 BUS, a subset of the general-purpose STD BUS, exclusively for the Z80 micropro-cessor and its supporting peripherals. By specifying the STD-Z80 BUS, exact functional pin descriptions and bus timing can be given. An STD-Z80 system will work with all STD-Z80-designed boards. In addition, the STD-Z80 BUS fully supports the power-ful Mode 2 interrupt capability of the Z80 microprocessor.

The MD Series of OEM microcomputer boards and the STD-Z80 BUS offer the most cost-effective system configuration available to the OEM system designer.

MDX-CPU1A
MK77850-0, MK77850-4

The heart of an STD-Z80 BUS system, the MDX-CPU1 is ideal for OEM applications. Simply insert your custom ROM or EPROM memories into the two on-board user-sockets and configure them virtually anywhere within the Z80 memory map.

Features
- STD-Z80 BUS compatible
- 4K x 8 EPROM (two 2716s, customer-provided)
- 256 x 8 Static RAM on-board (compatible with DDT-80 debugger)
- Flexible memory decoding for EPROM and RAM
- Four counter/timer channels
- Restart 0000H or E0000H (strapping option)
- MDX-PFD compatible
- Debug-compatible for single step in DDT-80
- 2.5 MHz version (−0)
- 4 MHz version (−4)
- +5V only
- Fully-buffered signals for system expandability
- Z80 CPU

MDX-CPU2A
MK77856-0, MK77856-4

Forming the basis for many STD-Z80 BUS systems, the MDX-CPU2 features six 24-pin memory sockets which let you populate the module with any combination of designated RAM, ROM, and EPROM.

Features
- STD-Z80 BUS compatible
- Utilizes the powerful Z80 microprocessor
- Six 24-pin sockets which may be strapped to accept any combination of the following industry-standard memory devices:

EPROM	STATIC RAM	ROM
2758 (1K x 8)	MK4118 (1K x 8)	MK34000 (2K x 8)
2716 (2K x 8)	MK4801 (1K x 8)	
2732 (4K x 8)	MK4802 (2K x 8)	

- Flexible memory decoding on any 1K boundary
- Bidirectional address, data and control busses to permit external DMA
- Four cascadable counter/timer channels
- Four STD BUS external interrupt inputs
- Bidirectional reset which allows operation with the MDX-PFD (Power-Fail Detector)
- Automatic, transparent dynamic memory refresh
- Fully-buffered signals for system expandability
- Selectable reset address to either 0000H or E000H
- Selectable wait-state generator
- 4 MHz version available (−4)
- Single +5 Volt supply

MDX-CPU3
MK77857

An STD-Z80 BUS-compatible single-board computer, the MDX-CPU3 has 64K bytes of dynamic memory and 2K to 32K bytes of ROM or EPROM customer-provided memory in a single 28-pin Bytewyde™ memory socket.
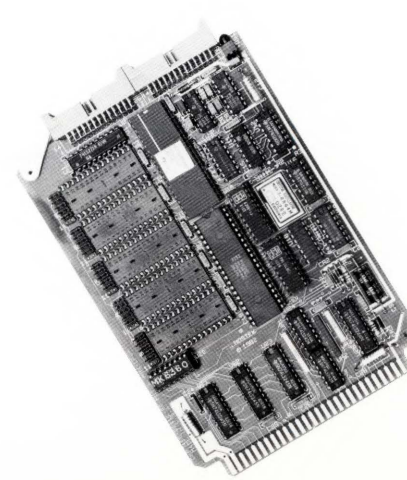
Features
- STD-Z80 BUS compatible
- Complete single-board computer
- Z80A processor, 3.6864 MHz
- 64K bytes of dynamic RAM
- 2K to 32K bytes EPROM/ROM (Bytewyde™)
- Bank-switched RAM/ROM capability
- DMA access to on-board RAM
- 8-bit parallel Centronics interface
- USART with modem control lines
- Two 8-bit timers
- MDX-PFD compatible

MDX-CPU4
MK77858

A powerful Z80-based single board computer, the MDX-CPU4 has five Bytewyde™ memory sockets for ROM, EPROM or RAM.

Features
- STD-Z80 BUS compatible CPU board
- Five 28-pin sockets for industry-standard Bytewyde™ ROMs, EPROMs, or RAMs
- Flexible memory decoding or RAM/ROM memory on any 2K boundary
- Phantom ROM capability
- Bidirectional address, data, and control busses to permit external DMA to on-board memory
- 8-bit output port with handshake (Centronics printer interface)
- Full handshake serial RS232-C I/O Port
- Software programmable baud rates to 9600 baud
- Bidirectional power-on reset allows operation with power-fail controllers
- Two programmable 8-bit timers with off-board outputs
- Fully buffered signals for system expansion
- Supports memory bank switching
- Supports MEMEX (memory expand) capability
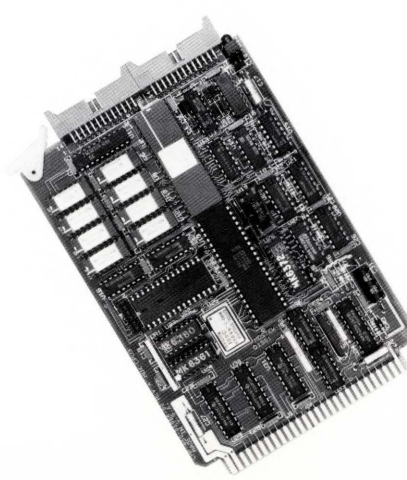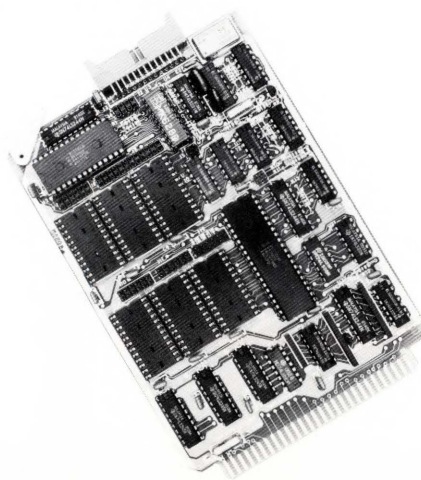
MDX-MATH
MK77852

The MDX-MATH board, based on the AM9511A Arithmetic Processing Unit, provides high performance fixed and floating point trigonometric and mathematical operations for STD-Z80 BUS systems.

Features

- STD-Z80 BUS compatible
- Fixed-point 16 and 32-bit operations
- Binary data formats
- Floating point 32-bit operation
- Add, Subtract, Multiply and Divide
- Trigonometric and inverse trigonometric functions
- Square roots, logarithms, exponentials
- Float-to-fixed and fixed-to-float conversions
- Stack-oriented operand storage
- On-board wait-state insertion circuitry
- 2.5 or 4.0 MHz operation

MD-SBC1
MK77851-0, MK77851-4

The MD-SBC1 is a complete Z80-based microcomputer on a 4.5"x6.5" circuit module. Use it in systems where small size and Z80 processing power are required. A stand-alone computer, the MD-SBC1 is not STD-Z80 BUS expandable.

Features

- Z80 Microprocessor
- 2K byte RAM capacity with 1K included
- Sockets for 8K bytes 2716 EPROM
- Three TTL-latch 8-bit OUTPUT ports
- Two TTL-buffered 8-bit INPUT ports
- External port expansion to 16 ports
- Single +5 volt power supply
- 4 MHz version (−4) available
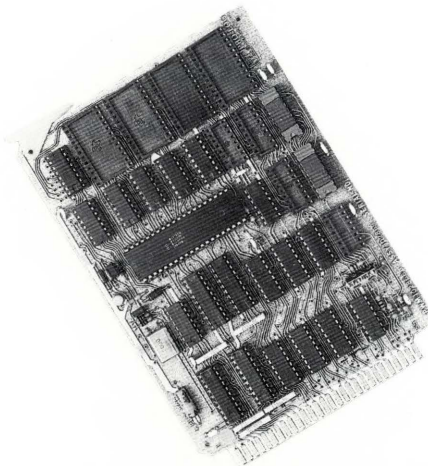
MDX-FLP2
MK77677

An STD-Z80 BUS-compatible floppy disk controller card that controls up to three 5¼-inch or four 8-inch Shugart-compatible floppy disk drives, the MDX-FLP2 provides all required controlling, formatting and interface logic between the STD-Z80 BUS and floppy disk drives. The drives may be in any combination of single- or double-sided, single- or double-density.

Features

- STD-Z80 BUS compatible
- Single/double density, single- or dual-sided
- Compatible with IBM 3740 and IBM System 34 formats
- Controls up to four 8-inch drives; up to three 5¼-inch drives
- DMA on board; connector for off-board use of DMA
- Polled or interrupt-driven operation
- Multiple controllers/system possible
- 2.5 or 4 MHz operation

MDX-SASI 1
MK77678

An STD-Z80 BUS-compatible board designed to interface the STD-Z80 BUS to system peripherals with the Shugart Associates System Interface (SASI),* the MDX-SASI1 allows OEMs to upgrade, mix and interchange peripherals without affecting either the host microcomputer interface or the host software. The five-volt card provides 2.5 or 4.0 MHz operation, with Mode 2 interrupt capability.

Features

- STD-Z80 BUS compatible
- Interface to Winchester controllers
- Supports Shugart Associates System Interface
- Works with both 5¼- and 8-inch Winchester drives
- Polled or interrupt-driven operation
- Four address I/O port block
- Mode 2 interrupt capability
- I/O EXP supported
- Auto handshaking
- External READY output
- Activity LED
- Up to 4 MHz operation
- Connector for DMA (e.g. for FLP2)

*TM of Shugart Associates
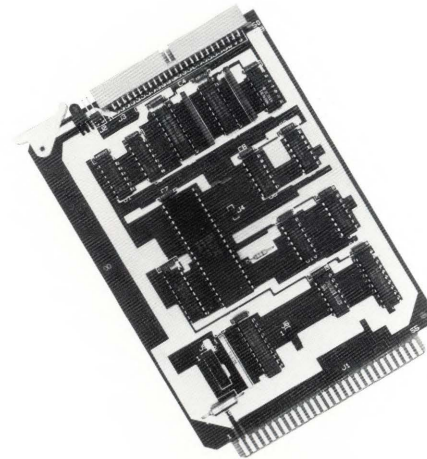
MDX-SASI 2
MK77678

Interfacing STD-Z80 BUS Systems to Shugart Associates System Interface (SASI), the MDX-SASI2 may be strapped for any eight port boundary in the STD-Z80 I/O space.

Features
- STD-Z80 BUS compatible
- 5 Volt operation
- Supports Shugart Associates System Interface (SASI)
- Polled or interrupt driven
- Mode 2 interrupt capability
- 2.5 to 4 MHz operation
- Eight address I/O port block
- I/O EXP supported
- Auto acknowledge logic
- On-board DMA controller
- External DMA request supported
- DMA daisy chain supported
- External wait request supported

MDX-SIO2
MK77670-0, MK77670-4

This is a multi-protocol asynchronous or synchronous I/O module. It provides two full duplex serial channels. Each channel has an independent baud rate clock generator. The MDX-SIO is capable of handling virtually any serial protocol.

Features
- STD-Z80 BUS compatible
- Two independent full-duplex channels
- Independent programmable baud rate clocks
- Asynchronous data rates—12.5 to 19.2K bits per second
- Receiver data registers quadruply buffered
- Transmitter data registers double buffered
- Asynchronous operation
- Binary synchronous operation
- HDLC or SDLC operation
- Both CRC-16 and CRC-CCITT (−0 and −1) hardware implemented
- Modem control
- Configurable as DTE or DCE
- Serial input and output as either RS-232 or 20mA current loop
- Current loop optically isolated
- Current loop selectable for either active or passive mode
- Address programmable
- 4 MHz option (−4)

MDX-422N & I
MK77671(I), MK77676(N)

Both the MDX-422N and the MDX-422I are dual-channel serial RS-422 interfaces for STD-Z80 BUS systems. The modules have RS-422 (balanced, differential) serial synchronous or asynchronous communication for long-distance (4000 feet) communication in noisy industrial environments. The RS-422 interface on the MDX-422N is non-isolated; on the MDX-422I, the RS-422 interface is isolated up to 400 volts above and below ground.

Features
- STD-Z80 BUS compatible
- Two independent asynchronous/synchronous serial channels
- Independent software programmable baud rate clocks
- Asynchronous rates of 50 to 19.2K baud
- Synchronous rates of 800 to 307.2K baud
- BiSync, HDLC or SDLC operation
- Both CRC-16 and CRC-CCITT error detection are hardware implemented
- Receive data registers are quadruply buffered
- Transmitter data registers are double buffered
- RS-422 compatible input and output
- Up to 4000' data communication over RS-422 twisted pair
- MDX-422I: Common mode ground fault protection 400 Volts
- MDX-422I: 400 Volt optically isolated
- 2.5 and 4.0 MHz capability

MDX-488

The MDX-488 is an intelligent STD-Z80 BUS module designed to simplify implementation of IEEE 488 General Purpose Interface Bus.

Features
- STD-Z80 BUS compatible
- IEEE 488-1978 Interface (GPIB)
- Performs all functions of Talker, Listener, and Controller
- On-board Z80 for local intelligence
- Two Bytewyde™ sockets for ROM/RAM
- GPIB data rates of up to 400K bytes per second using on-board DMA
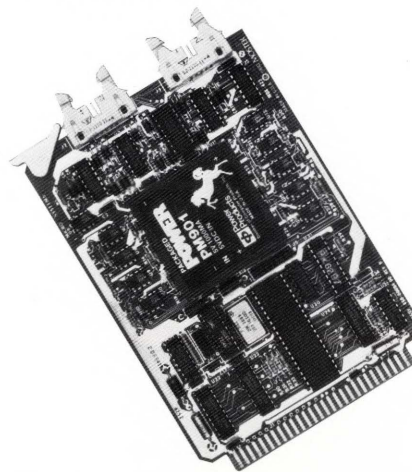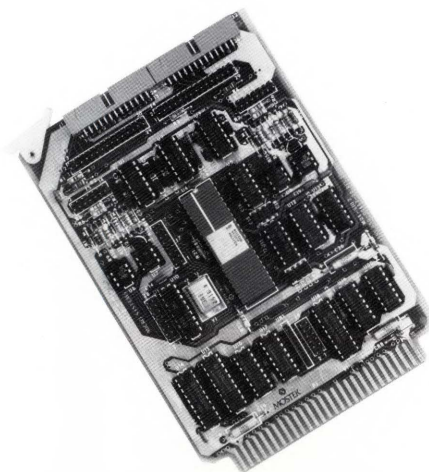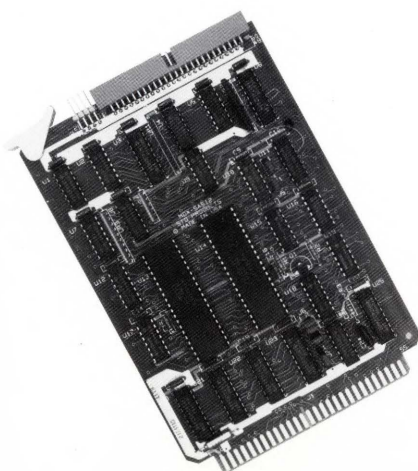
MDX-ISIO

The MDX-ISIO is a general purpose intelligent STD-Z80 BUS module that simplifies implementation of serial communications networks. The architecture lets the user implement any level of control through firmware and software.

Features

- STD-Z80 BUS compatible
- On-board processor
- On-board DMA controller for intra- and inter-bus data transfers
- Two Bytewyde™ memory sockets
- Inter-bus command transfer via a two port register array
- Two serial channels
- Multi-mode operation:
  — Full- and half-duplex operation
  — Synchronous and Asynchronous modes
  — Standard baud rates to 19.2K-baud
- Multi-protocol support
- Supports all Z80 interrupt modes
- Self-test capability with LED indicator

MDX-RIOC
MK78208

The RIOC (remote I/O controller) is an asynchronous serial-to-parallel conversion unit that is used for remote digital control over an RS-422 serial data link. The transmitter/receiver (RS-422, balanced differential) is capable of communicating up to 4000 feet from the host in noisy industrial environments. A system can use up to 40 RIOCs on one RS-422 link.

Features

- Utilizes the MK3873 microprocessor
- Asynchronous serial I/O
- Half-duplex operation
- Data rate of 9600 baud
- 24 parallel I/O bits individually strappable as input or output
- Single 5 volt power supply
- Eight-bit selectable unit address
- Operation with up to 4000' of cable
- Up to 40 units on a RS-422 link
- Serial receiver/transmitter I/O protected against transients with up to 150 watts peak pulse power for 1ms
- Used with MDX-422 module

RSCU
MK77983

Similar to the MDX-RIOC, this remote serial control unit comes ready for industrial environments. Four mounting holes are provided on the back. The unit's 24 parallel bits provide interface for up to 24 I/O devices like opto-isolated solid state relays.

Features

- Utilizes the MK3873 microprocessor
- Asynchronous serial I/O
- Half-duplex operation
- Data rate of 9600 baud
- 24 parallel I/O bits individually strappable as input or output
- Used with MDX-422 module
- Single 5 volt power supply
- Eight-bit selectable unit address
- Operation with up to 4000' of cable
- Up to 40 units on a RS-422 link
- Serial receiver/transmitter I/O protected against transients with up to 150 watts peak pulse power for 1ms

MDX-DIOB1
MK77672

This Digital I/O BUS interface module provides parallel, memory-mapped I/O. Using 16 of Mostek's DIOPs (Digital Input/Output Panels), the MDX-DIOB1 is capable of servicing 256 relay modules.

Features

- STD and STD-Z80 BUS compatible
- Provides parallel, memory-mapped Digital I/O BUS
- Interface up to 16 Digital Input/Output Panels (DIOP) with a single card
- Services up to 256 points
- Balanced, differential transmission with twisted-pair lines
- Address block selectable with jumpers
- Wait-state generator option
- Single +5-volt supply
- STD and STD-Z80 BUS
- 2.5 or 4.0 MHz capability
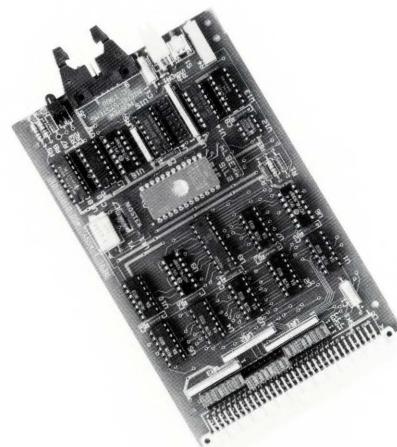
DIOP
MK77673

This digital I/O panel is a Digital I/O BUS peripheral that interfaces between the MDX-DIOB1 module and 16 industrial control signals. DIOP is designed for easy maintainability. Relay modules are socketed and can be easily replaced.

Features
- Provides isolated computer interface to 16 industrial I/O points
- Uses industry-standard plug-compatible solid-state or reed-relay modules
- Digital communications via balanced, differential twisted-pair lines
- Industrial barrier strip for field wiring
- Fuse holder, LED status indicator and manual turn-on switch provided for each relay
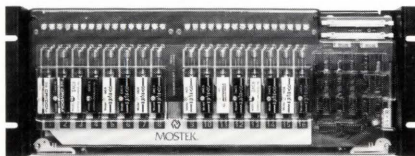- Quick-disconnect leaves field wiring intact
- Single +5 volt supply
- Easily mounts in 19″ RETMA rack
- Provides real-world interface for the STD BUS with the following user-supplied modules:
 AC IN
  AC OUT
  DC IN
  DC OUT

MDX-PIO
MK77650-0, MK77650-4

This module has four independent 8-bit I/O ports (32 lines) with two handshake (data transfer) control lines per port. Two of the 8-bit ports are capable of true bidirectional I/O.

Features
- STD-Z80 BUS compatible
- Four 8-bit I/O ports with two handshake lines per port
- All I/O lines fully buffered
- I/O lines TTL-compatible with provision for termination resistor networks
- Jumper options for inverted or non-inverted handshake
- Two 8-bit ports capable of true bidirectional I/O
- Programmable In only, Out only, or Bidirectional
- Output data buffers selectable to provide inverted or non-inverted drive capability
- Interrupt-driven programmability
- Address strap-selectable
- 4 MHz option (−4)
- Interfaces to Opto-22 PB-4, 8, 16 Panels
- Fully buffered for MD Series expandability
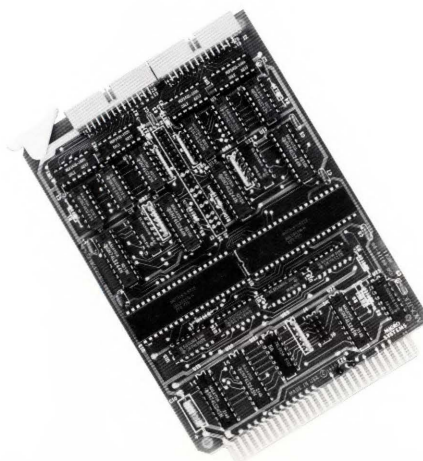
MDX-INT
MK77967

This Interrupt-Timer expansion module provides interrupt expansion capability for STD-Z80 BUS systems.

Features
- STD-Z80 BUS compatible
- User-programmable CTC provides:
  - Four external vectored interrupts
  or
  - Four cascadable counter/timer channels
  or
  - any combination of the above
- Z80 Daisy Chain Interrupt Expansion
  - Allows up to 40 interrupt devices
  - User-selectable expansion of System Interrupt Units (SIU)
  - Required for systems over five SIU's
- Nonmaskable Interrupt Input
- All input/output signals buffered
- 2.5 and 4.0 MHz compatible
- +5 volt only operation
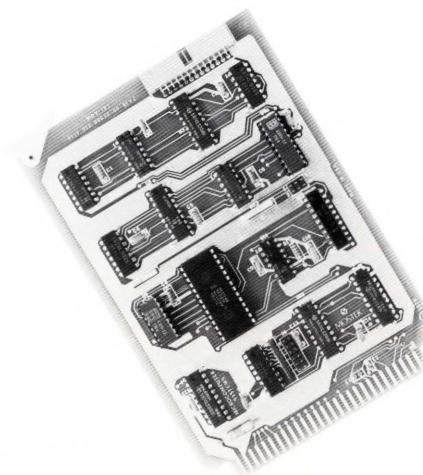
MDX-A/D8
MK77674

This STD-Z80 BUS module is an 8-bit A/D converter with 16 single-ended analog inputs. Additional provisions are available to allow further analog expansion if desired.

Features
- 8-bit A/D Converter with 16 single-ended analog inputs
- 0- to 5-volt input range
- Total error < ± ¾ LSB
- Linearity error < ± ¾ LSB
- No missing codes
- Guaranteed monotonicity
- No zero or full-scale adjustment required
- Provisions for additional channel expansion
- Sample and hold on-board
- Programmable I/O addresses
- Compatible with STD-Z80 BUS
- 2.5 and 4.0 MHz capability

MDX-D/A8
MK77666-0

This digital to analog board features four completely independent analog output channels. Each channel has user-selectable output ranges of ±5V and 0 to 5V. The MDX-D/A8 can be used as either a memory-mapped peripheral or as an I/O port.

Features

□ STD and STD-Z80 BUS compatible

□ 8-bit D/A Converter

□ Four independent channels

□ Output voltage ranges of ±5V, 0 to 5V, ±10V, 0 to 10V

□ Output current range of 4 to 20 mA

□ 15V optional models available

□ Programmable address

□ 2.5 MHz and 4.0 MHz operation

MDX-A/D12
MK77655-0

A 12 bit, 16 channel analog input board.

Features

□ STD-Z80 BUS compatible

□ 12-bit A/D Converter

□ 16 Single-Ended or Eight Differential Input Channels

□ Sample and Hold

□ Two Analog Input Ranges ±5 volts, 0 to 5 volts
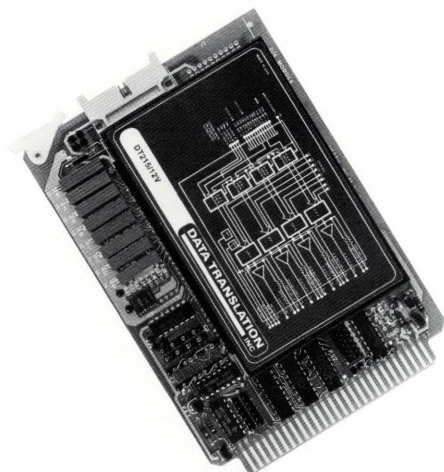
□ Provisions for input channel expansion

□ Address programmable
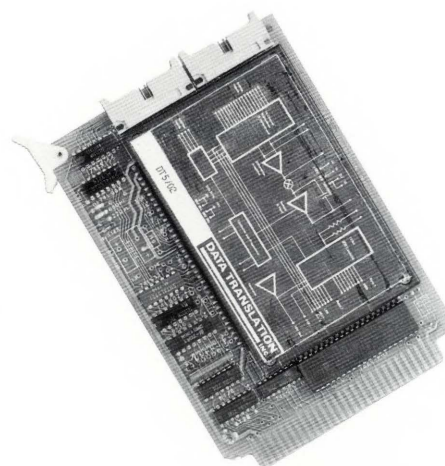
MDX-DRAM

These memory expansion boards for the STD-Z80 BUS are available in 16K or 32K byte versions with 4 MHz versions available.

Features

□ STD-Z80 BUS compatible

□ Two memory sizes:
  16K x 8 (MDX-DRAM16)
  32K x 8 (MDX-DRAM32)

□ Selectable addressing on 4K boundaries

□ 4K notch at E000H to F000H strapping option for use with CPU1A

□ 4 MHz version available (−4)

□ Order

MK77754-0	MDX-DRAM16
MK77754-4	MDX-DRAM16-4
MK77761-0	MDX-DRAM32A
MK77761-4	MDX-DRAM32A-4

MDX-RAM 64/128
MK77765

This memory array card offers 64K or 128K bytes of dynamic memory, and support selection of multiple 64K banks under software control. The bank select structure is the same as used for the MDX-CPU3, MDX-CPU4, MDX-UMC2, and is compatible with commercially available software packages.

Features

□ STD-Z80 BUS compatible

□ 64K (MDX-RAM64) or 128K (MDX-RAM128) bytes of dynamic RAM

□ +5 V only operation

□ Automatic refresh accomplished through use of STD-Z80/REFRESH signal

□ 2.5 MHz or 4.0 MHz operation with no wait states

□ Bank switching accomplished via a user designated I/O port

□ Bank switching is hardware compatible with MDX-UMC2, MDX-CPU3, and MDX-CPU4

□ Common memory area for bank switched systems may reside at any 256 byte boundary within the 64K memory map

□ Common area size is user-defined in 256 byte increments

□ Common area can be made resident on any board

□ Option allows the board to become active upon system reset for use as the system boot memory

□ MEMEX and IOEXP are supported, polarity for each is user-defined
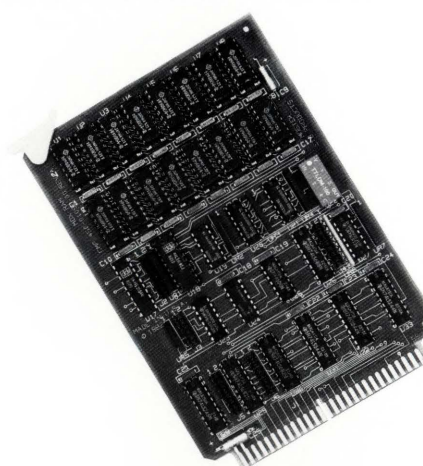
MDX-EPROM/UART
MK77753-0, MK77753-4

This combination board lets you add up to 10K bytes of EPROM memory in five on-board sockets. Also on-board is a full duplex UART to transmit and receive data at the serial port. Operation and UART controls are under software control.

Features
- STD and STD-Z80 BUS compatible
- 10K x 8 EPROM/ROM (2716's not included)
- Selectable addressing on 2K boundaries
- Serial I/O channel:
  RS-232 and 20 mA interface
  Reader-step control for Teletypes
  Baud-rate generator (110-19200 baud)
- 4 MHz version available (−4)
- Strap-selectable address

MDX-BRAM
MK77760, MK77762

The MDX-BRAM is designed to save 2K or 4K bytes of memory during a power failure. Power problems can be detected either by the resident 5 volt monitoring circuitry or by an external input from the Mostek Power-Fail-Detect module (MDX-PFD). Once detected, the on-board battery power is enabled and memory access is blocked to protect the stored data.

Features
- STD BUS and STD-Z80 BUS compatible
- 4K and 2K memory
- 4K boundary selection
- 4K bytes of memory data retainable for 5 days with fully-charged batteries
- Uses rechargeable batteries
- Strap-selectable wait-state generator
- Use in 2.5 MHz or 4 MHz systems
- Detect +5 Volt power loss or signal from MDX-PFD
- MDX-BRAM 2: MK77762
- MDX-BRAM 4: MK77760

MDX-UMC
MK77759

A universal memory module for the STD BUS, the MDX-UMC lets you configure the exact memory requirements for your system. By using the strapping options, you can mix combinations of ROM/RAM/EPROM on a single board.

Features
- STD and STD-Z80 BUS compatible
- Can be strapped to accept the following industry-standard memory devices:

EPROM	STATIC RAM	ROM
2758 (1K x 8)	MK4118 (1K x 8)	MK34000 (2K x 8)
2716 (2K x 8)	MK4802 (2K x 8)	
2732 (4K x 8)		

- Memories can be mixed to form a combination memory board
- Operates at 2.5 MHz and 4.0 MHz system clocks speeds
- Wait-state generator provided
- Single +5 Volt supply

MDX-UMC2
MK77763

A Bytewyde™ universal memory card, the MDX-UMC2 supports up to 64K bytes of RAM, ROM, and EPROM in any mix.

Features
- STD-Z80 BUS compatible Bytewyde™ memory card
- Up to 64K bytes of RAM, ROM, and EPROM in any mix
- Supports bank switching when multiple boards are used
- Board may function as common memory in a bank switched system
- Jumper option allows bank switching through any port
- Jumper option allows board to be selected upon system reset in multibank systems
- Jumper option allows memory to begin on any 4K boundary
- WAIT states selectable on a per socket basis
- 2.5 or 4 MHz operation
- Eight 28-pin sockets are provided which may be strapped to accept any combination of the following standard memory devices:

EPROM	STATIC RAM	ROM
2716 (2K x 8)	MK4118A (1K x 8)	MK34000 (2K x 8)
2732 (4K x 8)	MK4801 (1K x 8)	MK37000 (8K x 8)
2764 (8K x 8)	MK4802 (2K x 8)	MK38000 (32K x 8)
27128 (16K x 8)		
27256 (32K x 8)		
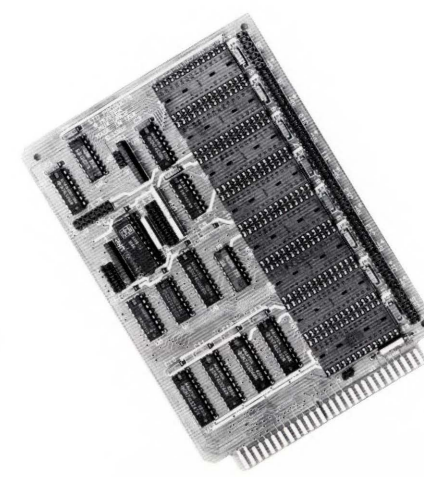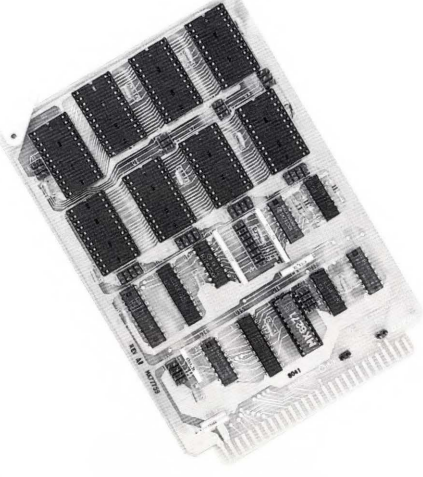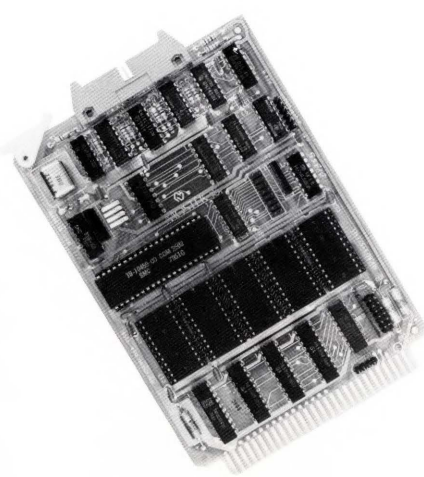
MDX-BCLK
MK77976

On-board batteries let the MDX-BCLK operate for up to five days without system power. Power-fail detect circuitry detects the loss of system power and relays it to the CPU to allow orderly power-down sequencing.

Features
- Five Functions:
  1. Seconds
  2. Minutes
  3. Hours
  4. Days
  5. Months
- Operates with both 2.5 MHz and 4.0 MHz systems
- Maintains functionality for up to 5 days on fully-charged batteries
- Provides one of four interrupts (via CTC on CPU2):
  1. 62.5 milliseconds
  2. 1 second
  3. 1 minute
  4. 1 hour
- Port-addressable
- Single +5 volt supply
- STD and STD-Z80 BUS compatible
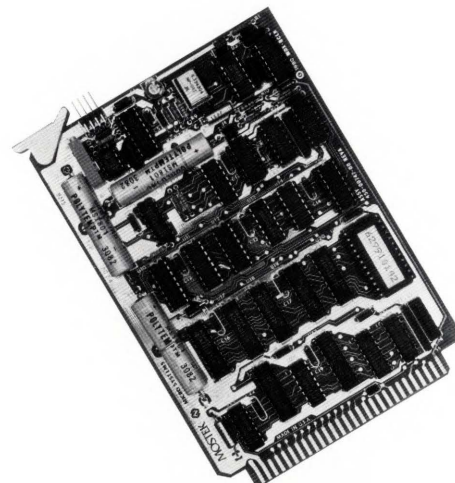
MDX-PFD
MK77979

This module is designed for use in industrial control systems where an orderly system shut-down and start-up sequence is required upon loss and restoration of power.

Features
- Detects loss of AC power after ½ cycle
- Detects brownout condition (AC below 95V)
- Contains logic to sequence pushbutton reset and nonmaskable interrupt
- Battery backup for up to 5 days via rechargeable nicads
- STD-Z80 BUS compatible
- Requires MDX-CPU1A or MDX-CPU2A versions
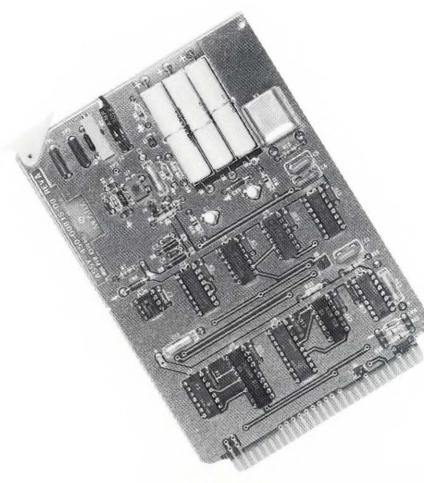
MDX-DEBUG
MK77950-0, MK77950-4

This module has 10K bytes of firmware (DDT-80 and ASMB-80) and provides a low cost way to generate and debug Z80 programs on the STD-Z80 BUS as well as a serial asynchronous port. This module may be used in place of external development equipment.

Hardware Features
- STD-Z80 BUS compatible
- 4 MHz version available (−4)
- Serial I/O Channel
- 10 bytes of ROM contain the following firmware: DDT-80, ASMB-80

Debugger Features
- Z80 Operating System with debug capability
- I/O peripheral drivers supplied

Text Editor Features
- Input and modification of ASCII Text
- Line and character editing

Assembler Features
- Assembles all Z80 mnemonics
- Object output in industry-standard hexadecimal format extended for Relocatable and Linkage Programs

Linking Loader Features
- Loads into memory both relocatable and non-relocatable object output of the assembler
- Loads Relocatable modules anywhere in memory
- Automatically provides linkage of global symbols between object modules as they are loaded
- ROM-based
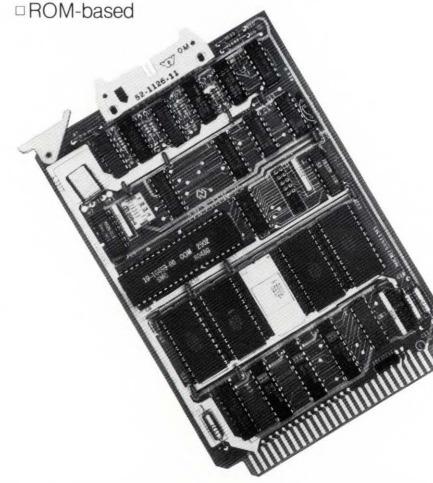
MDX-SC/D
MK77963

A System Controller/Diagnostics card, the MDX-SC/D lets you diagnose your STD BUS system to verify the functionality of the MDX-modules. On-board sockets accommodate up to 10K bytes or EPROM which may contain diagnostic software or your application programs.

Features
- STD-Z80 BUS compatible
- Provides an operator interface; switches and lamps
- 10K x 8 EPROM (2716s not included)
- Dual-purpose card, memory and/or diagnostic interface
- Interrupt-driven programmability
- Strap-selectable address
- Fully-buffered for MD Series expandability
- Diagnostic software package
- 2.5 and 4.0 MHz compatible

MDX-PROTO
MK77951-0, MK77951-4

An inexpensive prototyping kit for STD-Z80 BUS systems.

Features

□ STD-Z80 BUS compatible
□ 6-slot card cage with mother board (MK77954)
□ MDX-CPU1A module (MK77850-0, MK77850-4)
□ MDX-DRAM16 module (MK77754-0): 2.5MHz version
□ MDX-DRAM16-4 module (MK77754-4): 4MHz version
□ MDX-DEBUG module (MK77950-0, MK77950-4)
□ MD-WW2 Wire-wrap board (MK77952)
□ MD-EXT Extender board (MK77593)
□ Cables for RS-232 device (MK77955) or TTY (MK77956)
□ 4MHz option available (MDX-PROTO-4)

MATRIX-80/OEM
MK78231-10, MK78231-14

A single floppy disk drive based micro-computer system, this STD BUS user-configurable computer lets you add the exact functions you need.

Supplied with the MATRIX-80/OEM are the MDX-CPU3 and MDX-FLP2 modules leaving four card slots available for your requirements.

No software is supplied. However, this system does come with the Mostek M/OS-80-5 boot PROM to facilitate installation of Mostek's M/OS-80 CP/M-compatible operating system.

Features

The Mostek MATRIX-80/OEM is a single floppy disk drive based microcomputer system. The system includes the following:
□ MATRIX-80/OEM enclosure with power supply
□ Fan
□ Six-slot card cage (MD-CC6)
□ Power cord
□ Fuse
□ 8-inch floppy disk drive
□ MDX-CPU3
□ MDX-FLP2
□ Table-top version (−14) or rack-mount version (−10) available

MATRIX-010, 100
MK78220, MK78221

These STD-Z80 BUS units are user-configurable microcomputer systems which can be configured to meet your exact requirements.

The MATRIX unit has a 10 slot card cage, power supply and fan. The power supply supplies all the necessary voltages for both the card cage and floppy disk drive.

The MATRIX 010 (MK78220) has no disk drive, which allows the unit to be used as a non-disk based system, or the user can add a floppy-disk drive.

The MATRIX 100 (MK78221) has an 8-inch single-sided, double-density floppy-disk drive.

The MATRIX units are available in rack mount or table top versions, with standard 115 or 230 volt operation. The table top version has structural foam side skins and lid.

Features

□ 8-inch single-sided, double-density floppy disk drive
□ 10-slot card cage, STD BUS compatible
□ Multi-disk expansion capabilities
□ Fully integrated power supply
□ 50 or 60 Hz operation
□ 115/230 VAC operation (factory wired)
□ Standard 19″ rack-mounted chassis
□ Optional table-top version
□ Front panel power-on indicator

MATRIX-200
MK78222

This complete STD-Z80 BUS micro-computer system features Z80 power, 64KB dynamic RAM, and two 8-inch, double-sided double-density floppy disk drives. The MDX-CPU3 and the MDX-FLP2 occupy only two of the 10 card slots leaving the rest available for user expansion.

Ideal for industrial control and instru-mentation applications, the MATRIX-200 is available in either rack-mount or table-top versions.

Features

□ Z80-based, using STD BUS
□ 64KB memory
□ Two 8-inch, double-sided, double-density floppy-disk drives
□ 3.2 MB storage capacity (unformatted)
□ Includes:
  • Two cards (MDX-CPU3 single-board computer and MDX-FLP2 floppy disk controller), leaving 8 of 10 slots available for user expansion
  • Centronics-compatible parallel printer interface
  • RS-232C-compatible serial interface
□ Power supply: 115 VAC, 60 Hz or 230 VAC, 50 Hz
□ Standard 19″ rack-mount chassis or table-top version
□ M/OS-80, Mostek's CP/M™-compatible operating system is available, providing access to large application software base
□ Also available: Microsoft's Z80 Assembler, BASIC and FORTRAN
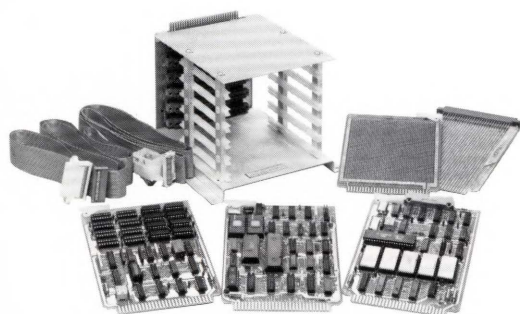
M/OS-80

M/OS-80 is a CP/M™ compatible, floppy disk operating system for the MD series of microcomputer board systems. It offers a comprehensive solution to a wide variety of system design problems. The software is provided on an 8-inch single-sided, single-density floppy diskette which can be booted on Mostek disk-development systems or user-configured systems (see "Hardware Required" paragraph). M/OS-80 can be altered for different input/output hardware configurations by using the MOSGEN Utility (sold separately).

Several powerful utilities are provided with M/OS-80. These programs give the user a broad base of support and will improve design efficiency. These include:

Editor (Edit)
Designer's Development Tool (Debugger)
Transfer Utility (XFER)
File/Disk Dumps (DSKDUMP)
Print Utility (PRINT)
Print Spooler (SPOOL)
Several System Utilities

Because of M/OS-80's C/PM compatibility, a large number of pre-written programs are available. M/OS-80 is designed to run programs written for other CP/M-compatible operating systems, such as CDOS™, I/OS™, and SDOS™, provided these programs conform to the standards described by Digital Research in versions 1.4 through 2.2. Virtually all compilers and interpreters now sold for use on CP/M (versions 1.4-2.2) will work.

System Features

M/OS-80 is a more sophisticated and powerful floppy disk operating system than any other micro-operating system available. It provides the user with a unique, but invisible, library structure. By assigning one system disk as a Master Library disk, the system can free the user to place all application-related files on another disk while still having the utility of the various system programs on-line.

Unlike other operating systems, M/OS-80 provides the user with comprehensive error messages. In most cases, methods of recovery are displayed and the operator is given several options from which to choose.

Hardware Required

M/OS-80 is currently supplied in three versions. V3 (MK71010C-81) is designed to run on Mostek's MATRIX systems and on systems built with MD Series boards. An MD Series system must contain the following boards:

Item	Hardware Required
Processor	MDX-CPU1A or MDX-CPU2A
Console Interface	MDX-EPROM/UART or MDX-SIO
Printer Interface	MDX-PIO or MDX-SIO
Floppy Interface	MDX-FLP1 or MDX-FLP2
Memory	(2) MDX-DRAM with 64K of RAM

The V5 system (MK71011C-81) is for use with a Mostek Phantom PROM system configuration. The following boards are required:

Item	Hardware Required
Processor	MDX-CPU3 or MDX-CPU4
Floppy Interface	MDX-FLP2
Memory	(2) MDX-DRAM with 64K of RAM (required only for MDX-CPU4)

The V6 MK71012C-81 system is for use with a Mostek Phantom hard-disk system. The following boards are required:

Item	Hardware Required
Processor	MDX-CPU3 or MDX-CPU4
Floppy Interface	MDX-FLP2
Memory	(2) MDX-DRAM with 64K of RAM (required only for MDX-CPU4)
Hard Disk Interface	MDX-SASI1 or MDX-SASI2

With either the V3, V5 or V6, M/OS-80 requires 64K bytes of RAM for operation. Four bootstrap PROMs are supplied with V3, and one bootstrap PROM is supplied with V5 or V6. The system initially must have at least one 8-inch, single-sided, single-density floppy disk drive in order to boot-up M/OS-80. Up-to-four disk drives are supported. The V6 configuration can also boot-up from hard disk.

Table 1 details the peripheral and CPU configurations required for the M/OS-80 versions.

M/OS-80 Configuration Summary Table 1

PERIPHERALS	CPU1A	CPU2A	CPU3	CPU4*
UART Console	V3	V3	N/A	N/A
SIO Console	V3	V3	N/A	N/A
STI Console	N/A	N/A	V5	V5
SIO Console	V3**	V3**	V5**	V5**
PIO Line Printer	V3	V3	N/A	N/A
STI Line Printer	N/A	N/A	V5	V5
FLP1	V3	V3	N/A	N/A
FLP2	V3***	V3***	V5	V5
SASI1 or SASI2	*	*	V6	V6

N/A   Not Applicable.
*   Future Design
**   SIO line printer configuration is supplied as alternate on systems disk.
***   Single-density only.

NOTE:
MOSEGEN Utility may be purchased to configure systems for different peripherals and smaller sizes of RAM. See the MOSGEN Data Sheet for more information.

CP/M is a Trademark of Digital Research, Inc.
CDOS is a Trademark of Cromemco, Inc.
SDOS is a Trademark of SD Systems, Inc.
I/OS is a Trademark of Infosoft Systems, Inc.

MOSGEN

Mostek's MOSGEN Utility MK7100C-80 is a system generation package used to generate unique configurations of the M/OS-80 Operating System. MOSGEN allows the user to modify the M/OS-80 by rewriting existing I/O drivers or creating new drivers for specialized I/O operation, and configuring different system RAM sizes.

User Features
□ Adapts M/OS-80 to customized MDX systems
□ Allows tailoring M/OS-80 for different I/O devices and RAM sizes
□ Works on systems configured around the DDT/DCF PROMs or Phantom PROM
□ Menu driven format to speed the configuration process

MOSGEN allows creation of a command file which will link a newly customized system. The MOSGEN package also includes a set of object and source files to provide the user with a valid set of device drivers. These drivers are provided to help the user create new drivers based on known-working examples. Users are permitted to modify or select drivers for the following logical-unit devices:

• System Console (output)
• Keyboard (input)
• List
• Punch
• Reader
• Disk
• Clock

MOSGEN is supplied on two single-sided, single-density 8-inch diskettes. They are the System Generation diskette and the Device Drivers/Library diskette.

MOSGEN may be used to configure M/OS-80 for different sizes of RAM in the user system down to a minimum of 24K bytes.

Mosgen System Requirements

MOSGEN and all related software require the user to have a running 64K M/OS-80 system in place. Depending on the requirements of the user's development languages, the system memory requirements may be in excess of the 32K bytes of RAM required for a minimum M/OS-80 system.

MICROSOFT SOFTWARE

A series of Microsoft program development tools are now available from Mostek. They offer a comprehensive solution to a wide variety of system and application design problems. The software is provided on 8-inch single-sided single-density floppy diskettes and operates under M/OS-80.

M80/L80
MK71002C-80

M80 is a relocatable macro assembler for Z80 microcomputer systems, incorporating almost all "big computer" assembler features without sacrificing speed or memory space. The M80/L80 package is comprised of the M80 assembler, L80 linking loader, and a cross reference utility.

BASIC-80
MK71003C-80

BASIC-80 is the most extensive implementation of BASIC available for the Z80 microprocessor. In three years of use, it has become the world standard for microcomputer BASICs, meeting the requirements for the ANSI subset standard for BASIC, and supporting many unique features rarely found in other BASICs.

BASCOM
MK71004C-80

Microsoft's BASIC compiler (BASCOM) is a powerful new tool for programming BASIC applications or microcomputer system software. The single-pass compiler produces extremely efficient, optimized machine code that is in standard Microsoft relocatable binary format. Execution speed is typically 3–10 times faster than interpreter BASICs. The M80/L80 assembler/linker package is included with BASCOM.

FORTRAN-80
MK71005C-80

Microsoft's FORTRAN-80 package provides new capabilities for users of Z80 microcomputer systems. FORTRAN-80 is comparable to FORTRAN compilers on large mainframes and minicomputers. All of ANSI standard FORTRAN X3.9-1966 is included except the COMPLEX data type. Therefore, users may take advantage of the many application programs already written in FORTRAN. The M80/L80 assembler/linker package is included with FORTRAN-80.

SOFTWARE MODULAR LIBRARY

The Mostek Software Modular Library (MK71009C-80) is a set of software subroutines/modules which provide example programs for users of STD MDX boards. Each module is supplied in source form in Z80 assembly language. Complete documentation is included as comments in the source program which describes the interface, operation, and use of the module. Adaptation of the example program to the user's specific hardware configuration is the user's responsibility. All general/standard MDX I/O interfaces are included in the software modules.

The Modular Library is supplied on an M/OS-80 single-sided, single-density 8-inch diskette. A file named "READ ME" is supplied with the product which gives a general description of each module. This file can be listed to the console or printer. A complete printed listing is also supplied with the product. M/OS-80 and a Z80 assembler such as Microsoft's M80/L80™ package is required.

The printed listing (MK71009D) may be ordered separately for those users who do not have access to an operational disk system.

Features
□ Software subroutines/modules supplied in source form

□ Software modules supplied for STD-Z80 MDX-Modular Board Series
 • MDX-CPU1A/2A/3/4
 • MDX-PIO
 • MDX-UART
 • MDX-SIO1/2/422
 • MDX-FLP1/2
 • MDX-SASI1/2

□ Software modules supplied for Z80 chip set
 • MK3881   PIO
 • MK3882   CTC
 • MK3883   DMA
 • MK3884/5/7   SIO
 • MK3801   STI

□ General Software Modules
 • PROM Programmer software for PROLOG M900 Programmer

□ Assembly language source supplied on M/OS-80™ diskette

CRASM-70

The Mostek 3870 Cross Assembler (CRASM-70) MK71007C-80 runs under the M/OS-80 operating system, and assembles standard 3870/F8 assembly language. The output is an absolute object file (load module) in F8HEX format. A conversion utility is provided to convert F8HEX files to Mostek Hex for use with the AIM-7X in-circuit-emulator system. The Mostek MATRIX-80/SDS disk development system can be used for stand-alone assembly and debug capability, with the AIM-7X plugged directly into the system. The assembler object module may also be downloaded from a M/OS-80-based system to a Mostek RADIUS development system containing an AIM-7X.

CRASM-70 produces an assembly listing which can be directed to a disk file or directly to the M/OS-80 LST: list device (printer). The listing shows program address, machine code, and line number for each statement, along with each source program statement. Any errors which are found in the source program are indicated in the listing. A symbol reference table is printed at the end of the listing. Up to 500 symbols may be used in the source program.

CRASM-70 is supplied on a standard 8-inch single-sided single-density CP/M-compatible diskette, precompiled, ready to run under M/OS-80.

Features
□ Assembles standard 3870 and F8 source
□ Produces absolute load module in F8HEX format
□ Runs under M/OS-80 on any Mostek disk system
□ Produces complete assembly listing to disk or printer
□ Produces symbol reference table
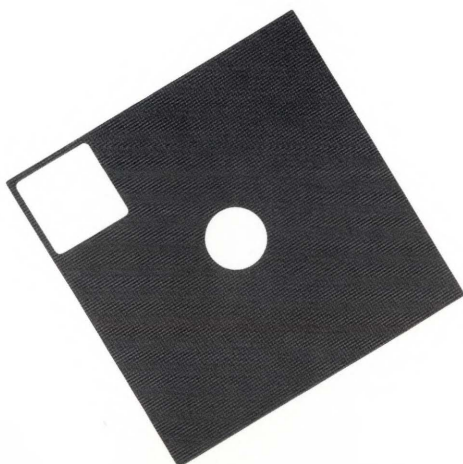
INDUSTRIAL CONTROL APPLICATIONS

The Mostek family of STD BUS boards, modules, and sub-systems make excellent industrial controllers. Already in use in plants across the country, applications range from integrated circuit testing concentrators to factory-automation and robotic control.

The following examples illustrate how the Mostek STD BUS family could be used. Start with your own choice of card cage and power supply, and package it in your own system. Or begin with the MATRIX-series of user-configurable computers to reduce your system integration time. Use floppy disks at the control stations, and RAM modules on the application's site.

Mostek's CP/M-compatible operating system M/OS-80 lets you use the wide range of applications software already available off-the-shelf. Or use Mostek's Microsoft BASIC or FORTRAN.

10 Slot Card Cage

MDX-CPU4 or MDX-CPU3	RAM-64/128	D/A or A/D	PIO or SIO	MDX-BRAM	MDX-BLCK	MDX-PFD	MDX-SC/D

MDX-DIOB1
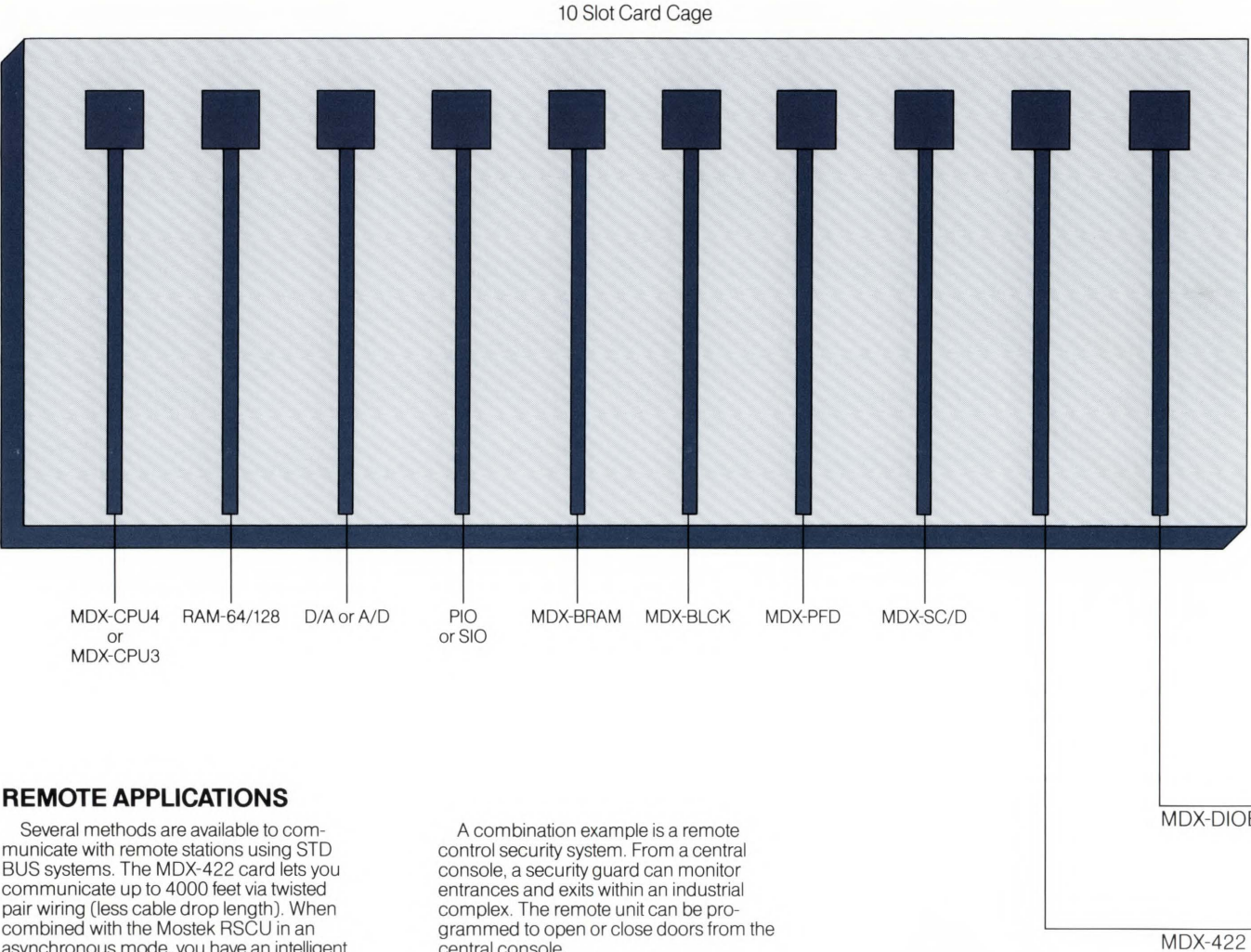
MDX-422

REMOTE APPLICATIONS

Several methods are available to communicate with remote stations using STD BUS systems. The MDX-422 card lets you communicate up to 4000 feet via twisted pair wiring (less cable drop length). When combined with the Mostek RSCU in an asynchronous mode, you have an intelligent remote control system. Each RSCU can monitor up to 24 parallel I/O bits individually strappable as input or output bits. Plus the MDX-422 module can control up to 40 RSCU units.

A combination example is a remote control security system. From a central console, a security guard can monitor entrances and exits within an industrial complex. The remote unit can be programmed to open or close doors from the central console.

Another use would be in intelligent buildings. Wire your system to control temperature, control security, turn lights on-or-off, etc.

At Machine Site

DIOP

Up To 16 DIOPs
Can Be Controlled
With One Card
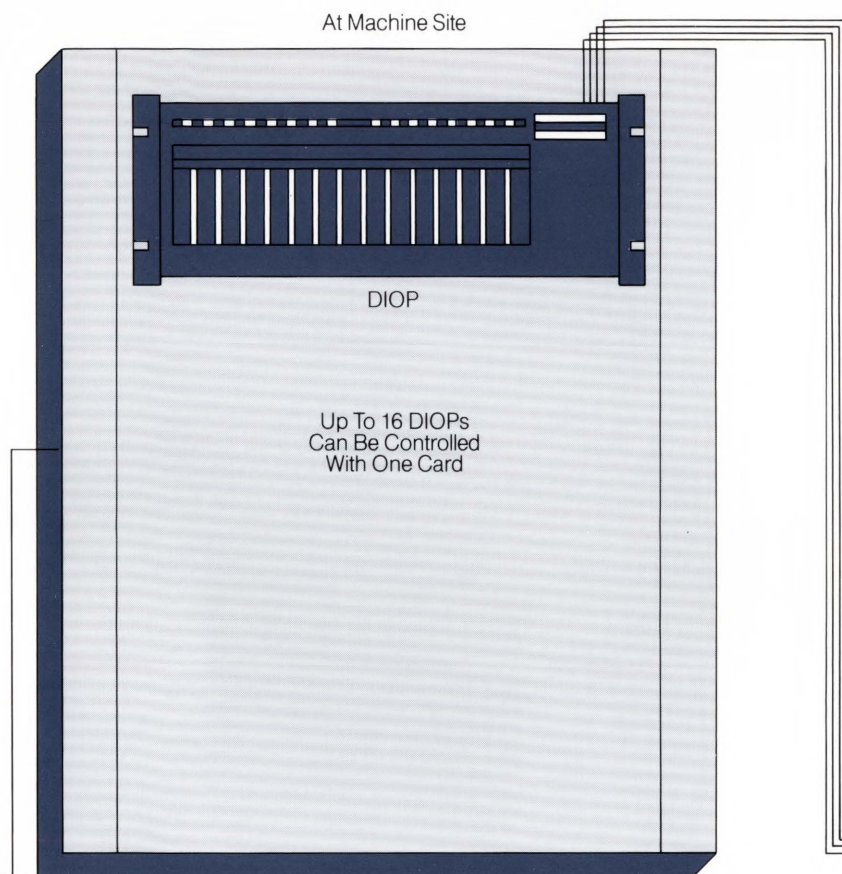
INDUSTRIAL APPLICATIONS

Use the Mostek digital I/O bus by combining an MDX-DIOB1 module with the Mostek Digital I/O Panel (DIOP). The MDX-DIOB1 interfaces with up to 16 DIOPs. As each DIOP controls up to 16 industrial control signals, you can monitor and control up to 256 different points using only one MDX-DIOB1 card.

The DIOPs provide real world interface to the STD BUS using industry-standard plug-compatible solid state or reed-relay modules. Relay modules are socketed and can be easily replaced.

The DIOP mounts in 19-inch RETMA racks. A quick-disconnect feature leaves field wiring intact.

Field Wire to Control Application

4000 Foot Length via Twisted Pair

Up to 40 RSCUs

RSCU

RSCU

RSCU

RSCU

RSCU

24 Independent I/O Channels

MATRIX-80/SDS
MK78188, MK78189

Microcomputer Development System

A stand-alone microcomputer development system, the Matrix-80/SDS not only provides all the tools necessary for software developm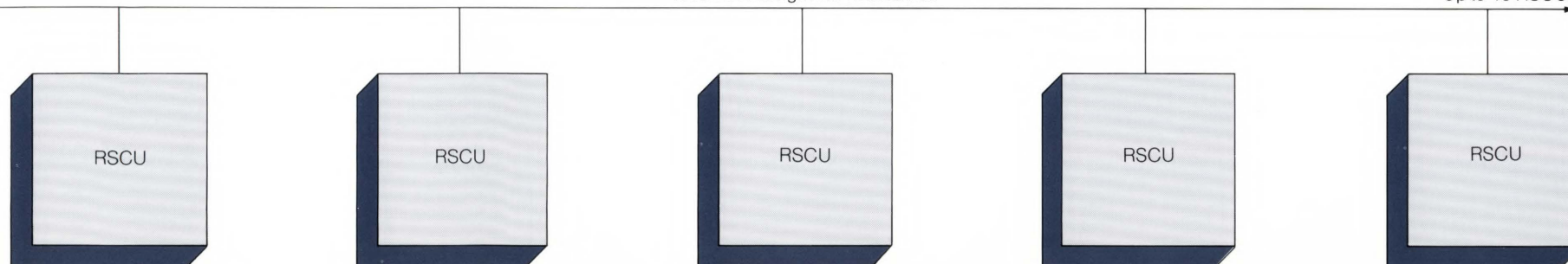ent, but also it can be used with Mostek's AIM series of in-circuit emulator cards to provide complete hardware/software debug and integration.

The Matrix-80/SDS comes complete with a OEM-80E CPU card, RAM-80BE memory modules, and FLP-80E floppy disk controller leaving three slots available for AIM cards or others.

Additionally, the MATRIX has been designed to be the basis of an end-product thus making the MATRIX an excellent test bed for developing systems applications.

Matrix System Specifications

□ Z80 CPU

□ 4K byte PROM bootstrap and Z80 debugger

□ 60K bytes user RAM (56K contiguous)

□ 8 x 8 bit I/O ports (4 x PIO) with user-definable drivers/receivers

□ Serial port, RS 232 and 20 mA current loop

□ 4 channel counter/timer (CTC)

□ 2 single-density, single-sided disk drives; 250K bytes per floppy disk

□ 3 positions for AIM modules, A/D cards, Serial Interface, etc.

□ Device drivers for paper tape readers, punches, card readers, line printers, Silent 700's, Teletypes and CRT's are included. Others can be added

RADIUS
MK78213

Remote Development Station

Mostek RADIUS is a state-of-the-art microcomputer development system designed specifically to be used in a host computer environment. RADIUS provides software development capability via the host computer and hardware development and software integration using the advanced in-circuit-emulation capability of Mostek AIM modules.

RADIUS is installed between the user's CRT terminal and the host computer via an ASCII RS-232 serial interface.

Features

□ Microcomputer development with host computer
  • Software development on the host
  • Download to RADIUS
  • Hardware debug and software integration on RADIUS

□ Utilizes standard Mostek SDE series AIM modules

□ Host software available
  • Preconfigured for selected hosts
  • Reconfigurable for other hosts

□ Upload/download performed with error tolerant protocol

□ Emulation possible while disconnected from the host

□ Serial I/O Baud rate up to 9600

□ Supports optional local line printer and PROM programmer
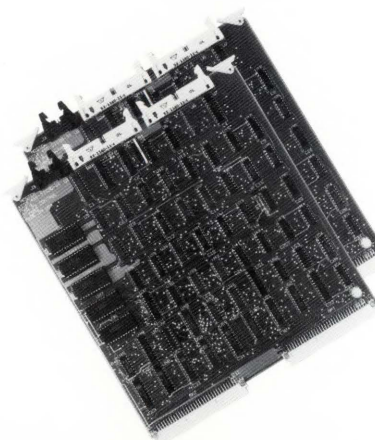
□ Self-diagnostic test

AIM-Z80BE
MK78204

Z80 Application Interface Module

AIM-Z80BE is an advanced development tool which provides debug assistance for both software and hardware via in-circuit-emulation of the Z80 microprocessor. Use of the AIM-Z80BE is transparent to the user's final system configuration. No memory space or user ports are used, and all signals, including RESET INT, and NMI are functional during emulation. No memory wait states are required.

Features

□ Direct interface of Mostek's RADIUS Development Station and MATRIX-80/SDS Development System

□ In-circuit-emulation of the Z80 microprocessor

□ Real-time execution (to 6 MHz with no wait states)

□ Flexible breakpoints (one hardware, eight software, and one timer)

□ Single-step execution

□ 16K bytes of emulation RAM

□ Memory mappable into target or AIM system memory in 256 byte blocks

□ Illegal write-to-memory detection

□ Non-existent memory mapping and access detection

□ Forty-eight-channel-by-1024-words history memory for tracing BUS events

□ T-state timer to measure execution time

□ English-oriented command structure

AIM-7XE
MK79094

3870 Application Interface Module

AIM-7XE is an advanced development tool which provides debug assistance for both software and hardware via in-circuit-emulation of the MK3870 and MK3873 family of microprocessors. Use of the AIM-7XE is completely transparent to the user's final system configuration. No memory space or user ports are used, and all signals, including/RESET and/EXT INT, are functional during emulation. No memory wait states are required.

Features

□ Direct interface to Mostek's RADIUS Development Station and MATRIX-80/SDS Development System

□ In-circuit-emulation of all MK3870 and MK 3873 family microprocessors (does not include piggy-back parts)

□ Real-time execution (to 4 MHz with no wait states)

□ Flexible breakpoints (one hardware, eight software, and one timer breakpoint) and any number of manually-inserted break-points

□ Single-step execution

□ 4K bytes of emulation RAM

□ Option of on-board oscillator or user clock

□ Illegal write-to-memory detection

□ Forty-eight-channel-by-1024-words history memory for tracing BUS events

□ Event counter and delay counter for monitoring BUS events

3870
REMOTE DEVELOPMENT

RADIUS — MK78213
- Host S/W (Host Dependent: See Chart 1)
- Local Line Printer
- EPP-1 PROM Programmer MK78229-0
- Microtec Cross Assembler for F8/3870
- Use F8MOS Conversion Utility

AIM-7XE — MK79094
- AIM-7X Software (Host Dependent: See Chart 1)

APM-70 (3870) MK79093 | APM-73 (3873) MK79092

→ User's Target System

Z80
REMOTE DEVELOPMENT

RADIUS — MK78213
- Host S/W (Host Dependent: See Chart 1)
- Local Line Printer
- EPP-1 PROM Programmer MK78229-0
- Microtec Cross Assembler for the Z80
- Use Intmos Conversion Utility

AIM-Z80AE 4 MHZ MK78181-4 | AIM-Z80BE 6 MHZ MK78204

AIM-Z80 Software (Host Dependent: See Chart 1)

→ User's Target System

MK68000
REMOTE DEVELOPMENT

RADIUS — MK78213
- Host S/W (Host Dependent: See Chart 1)
- Local Line Printer
- EPP-1 PROM Programmer MK78229-0
- ASM-68000 MK71020C33 Pascal-68000 MK71030C33

AIM-68K — MK78228

AIM-68K Software (Host Dependent: See Chart 1)

→ User's Target System

REMOTE DEVELOPMENT SOFTWARE

Chart 1

RADIUS — MK78213

HOST?

| DEC PDP-11 RSX-11M | DEC VAX VMS | OTHER LARGE HOST | M/OS-80 |
| MK78224-33 | MK78224-34 | MK78224-45 | MK78224-11 |

IN-CIRCUIT-EMULATOR — AIM-7XE AIM-Z80AE or BE AIM-68000

| DEC PDP-11 RSX-11M | DEC VAX VMS | OTHER LARGE HOST | M/OS-80 |
| MK78xxx-30 | MK78xxx-30 | MK78xxx-40 | MK78xxx-10 |

→ User's Target System

RESIDENT DEVELOPMENT

MATRIX — MK78188
- Operating System M/OS-80 V3 (Supplied)
- Line Printer
- PPG-8/16 PROM Programmer MK79081-1
- CRASM-70 Cross Assembler MK71007C80
- Use F8MOS Conversion Utility

AIM-7XE — MK79094
- AIM-7X Software M/OS-80 Resident Version MK78225-11

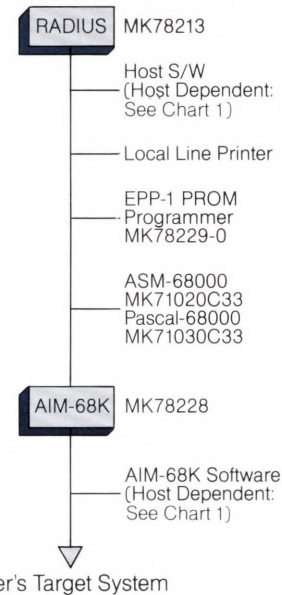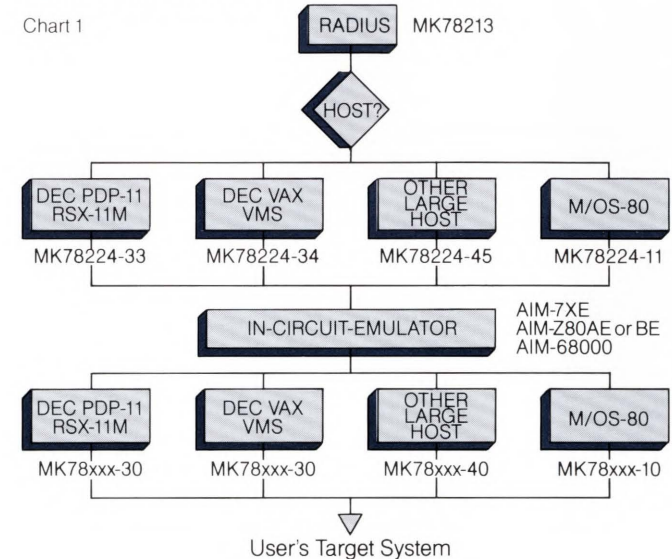APM-70 (3870) MK79093 | APM-73 (3873) MK79092

→ User's Target System

RESIDENT DEVELOPMENT

MATRIX — MK78188
- Operating System M/OS-80 V3 (Supplied)
- Line Printer
- PPG-8/16 PROM Programmer MK79081-1
- Microsoft M80 Assembler MK71002C80
- Use /X Option on L80 and Intmos Conversion Utility

AIM-Z80AE 4 MHZ MK78181-4 | AIM-Z80BE 6 MHZ MK78204

AIM-Z80 Software M/OS-80 Resident Version MK78226-11

→ User's Target System

RESIDENT DEVELOPMENT

MATRIX — MK78188
- Operating System M/OS-80 V3 (Supplied)
- Line Printer
- PPG-8/16 PROM Programmer MK79081-1
- Whitesmith's Assembler

AIM-68K — MK78228

AIM-68K Software M/OS-80 Resident Version MK78232-11

→ User's Target System

RESIDENT DEVELOPMENT SOFTWARE

MATRIX — MK78188

M/OS-80 V3 (Supplied) — MK71010C81

Z80 DEVELOPMENT	3870 DEVELOPMENT	68000 DEVELOPMENT
MICROSOFT M80 MK71002C80	CRASM-70 MK71007C80	ASM-68000 WHITE-SMITH'S
USE /X OPTION ON L80 AND INTMOS	USE F8MOS CONVERSION UTILITY	
AIM-Z80AE OR AIM-Z80BE	AIM-7XE & APM-70 OR APM-73	AIM-68000
AIM-Z80 MK78226-11	AIM-7X MK78225-11	AIM-68000 MK78232-11

→ User's Target System

MDX-WW1
MK77959

A wire-wrap card with bussed power and ground lines on board.

MDX-WW2
MK77952

A general purpose wire-wrap card.

MD-EXT
MK77953

Extender card.

MD-PWR1
MK77964

Open frame power supply: 115/230 VAC to +5V, +12V, –12V.

MD-RMC12
MK77966

12 slot rack mount chassis with power supply and fan: 60 Hz.

MD-RMC12—50
MK77975

12 slot rack mount chassis with power supply and fan: 50 Hz.

RMDFSS
MK78183

Rack-mounted dual floppy disk single-sided drives with power supply and enclosure.

RMDFSS—50
MK78185

Rack-mounted dual floppy disk single-sided drives with power supply and enclosure: 50 Hz.

MD-CC6
MK77973

6 slot card cage, 0.75 inch centers.

MD-CC12A
MK77969

12 slot card cage, 0.75 inch centers.

MD-CC16
MK77977

16 slot vertical card cage, 0.75 inch centers.

MD-CC6-WM
MK77978

Wall-mountable 6 slot card cage with 0.75 inch centers.

MD-CC10
MK77989

10 slot steel vertical card cage.

ENCL
MK77980

Industrial enclosure, 16 slot card cage, 115V, 300W supply

ENCL1
MK77987

Industrial enclosure, 16 slot card cage, 115V, 150W supply.

ENCL2
MK77981

Industrial enclosure, 16 slot card cage, 230V, 300W supply.

ENCL3
MK77988

Industrial enclosure, 16 slot card cage, 230V, 150W supply.

PPG8/16C
MK79081 01

PROM PROGRAMMER

The PPG-8/16C PROM Programmer is a peripheral which provides a low-cost means of programming 2708, 2758, or 2716 PROMs. It is compatible with Mostek's MATRIX Microcomputer Development System and the MDX-PIO.

Features
☐ Programs, reads, and verifies 2708-, 2758-, and 2716-type PROMs (2758 and 2716 PROMS must be 5-Volt only type).
☐ Interface to MATRIX and MDX-PIO
☐ Driver software included on system diskette for M/OS-80
☐ Zero-insertion-force socket
☐ Power and programming indicators
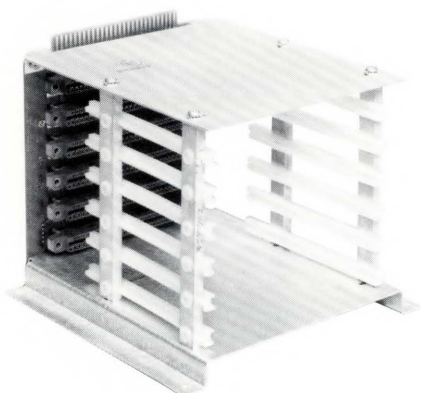
EPP-1
MK78229

EPROM PROGRAMMER

The EPP-1 is a microcomputer controlled MOS EPROM programmer capable of programming most MOS EPROMs currently available. It can be upgraded by adding a bipolar PROM to allow programming of new EPROMs when they become available.

Features
☐ Provides EPROM programming capability for RADIUS
☐ May be adapted for use with other computers
☐ Communicates with host via half-duplex RS232 or TTL serial link
☐ Programs, reads, and verifies most +5V EPROMs available today
☐ 4 Selectable Baud rates: 300, 1200, 2400, 9600
☐ Emulates a subset of DATA I/O's System 19 command set
☐ Includes wall mount transformer power supply
☐ 8K x 8 bits of on-board RAM
☐ 28 pin zero-insertion-force socket for 24 and 28 pin EPROMs
☐ LED indicators for "programming" and "power on"
☐ High level commands for ease of use with RADIUS
☐ COMING SOON

MDX-WW1

MO-RMC12

MD-CC6

ENCL

COMPONENT

PERIPHERALS

	Centronics Printer	CRT (Male)	CRT (Female)	PPG-8/16	RMDFSS	Teletype	EPP-1	RADIUS
MDX-CPU3	5	1,7	4,7	—	—	—	—	4,7
MDX-CPU4	5	1,7	4,7	—	—	—	—	4,7
MDX-EPROM/UART	—	1,7	4,7	—	—	2	—	4,7
MDX-DEBUG	—	1,7	4,7	—	—	2	—	4,7
MDX-SIO	—	1,7	4,7	—	—	2	—	4,7
MDX-SIO2	—	1,7	4,7	—	—	2	—	4,7
MDX-PIO		—	—	3	—	—	1,7	—
MATRIX-80/OEM	6	—	8	—	11	—		8
MATRIX-010	5	7	7	3	—	2	1,7	4,7
MATRIX-100	5	7	7	3	—	2	1,7	4,7
MATRIX-200	5	7	7	3	—	2	1,7	4,7
MATRIX-80/SDS	9	—	8	10	11	—	12	8
RADIUS	—	—	8	—	—	—	12	—

KEY	MK #	DESIGNATOR	DESCRIPTION
1.	77955	MD-232DCE-C	26-pin socket to 25-pin "D"-type female connector
2.	77956	MD-TTY-C	26-pin socket to 10-pin Molex Teletype connector
3.	77957	MD-PPG-C	26-pin socket to 25-pin "D"-type female connector
4.	77970	MD-232DTE-C	26-pin socket to 25-pin "D"-type male connector
5.	79098	MD-PTR1-C	26-pin socket to 36-pin solder ribbon connector
6.	79099	MD-PTR2-C	25-pin "D"-type male to 36-pin solder ribbon connector
7.	79100	MD-UNICRT-C	26-pin socket to 25-pin "D"-type male and female connectors
8.	78152	SDE-CRT-C	25-pin "D"-type male to 25-pin "D"-type male connector
9.	79089	SDE-CPTR-C	25-pin "D"-type male to 36-pin solder ribbon connector
10.	79090	SDE-PPG-C	25-pin "D"-type male to 25-pin "D"-type female connector
11.	79088	SDE-DFE-C	50-pin "D"-type male to 50-pin "D"-type male connector
12.	79082	SDE-EPP1-C	25-pin "D"-type male to 25-pin "D"-type female connector

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For more detailed technical information, the Mostek 1983 Computer Products Data Book is available for $10.00. Write to Literature Distribution, Mostek Corporation, 1215 West Crosby Road, Carrollton, TX 75006.