

The FMPX High Speed MiNT Flash Memory Programming System from MiNT System is a state of the art modular flash memory programming system designed to easily interface with many commercially available handler and prober systems. FMPX features a highly modular architecture that permits the user to configure the system for the volume and throughput speeds that are required to meet the production shipment requirements.

The user can easily expand the system to meet future device programming needs as new products and customer requirements demand. FMPX is designed to provide a high speed programming capability for a wide variety of flash memory semiconductor components. The small footprint and low power consumption makes the FMPX system the best choice for the economy minded flash user. The highly accurate and reliable FMPX system is easy to integrate, operate, and maintain. Programming algorithms are available from MiNT Systems Corporation for nearly all commercially available flash memory components in all package sizes and configurations

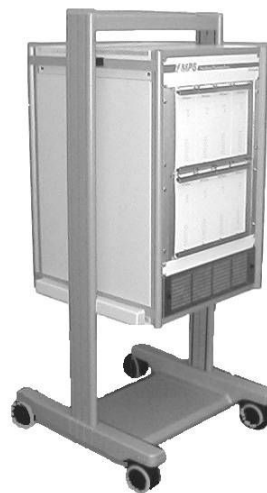
Hardware Features

The FMPX Flash Memory Programmer is a computer controlled, programming system designed to program flash memory semiconductor components in parallel at high speeds. The FMPX Flash Memory Programmer functions support chip erasing and programming, sector erasing and programming, sector/block protect and unprotect, and data verification functions of common flash memory semiconductor components. It may be interfaced to a variety of commercial component handlers having parallel operations of various device types. The FMPX's parallel multi-module architecture provides the flexibility to simultaneously program up to 640 device types simultaneously.

The FMPX Programming System is generally configured to program eight device types simultaneously. It may be reconfigured for fewer or more device types as required by the individual user.

Features:

- Up to 640 flash device types in parallel
- High throughput
- Easily interfaced to most handlers
- Interface to multi-site Pick & Place and gravity feed handlers
- Easily interfaced to most probers
- Multi-site independent programming algorithm support
- Asynchronous Programming operations
- Network Ready
- Easily Expanded multiple programmer modules
- Windows® Software Environment
- Based on Proven Technology for High Reliability



FMPX MS7880

High Speed Flash Memory Programming System, with its flexible multi-channel programming capability, simplifies production tasks ranging from Flash memory manufacturers to distributors and users.

System Configurations

The FMPX System consists of a System Supervisory Module and a Programmer Mainframe bay. The System Supervisory Module consists of a System Supervisory computer, display monitor, standard keyboard, and a mouse pointing device. The Programmer Mainframe consists Programming Modules, interface connectors for the handler and programming sockets, power control entrance, system power supplies, and Local Area Network facilities. Software used to control the functions of the MiNT Flash Memory Programmer (FMPX) includes the Microsoft Windows Operating System, user and MiNT Systems developed device programming algorithms, and a set of handler/prober interface programs, miscellaneous drivers and utility software. The FMPX can be used in any combination of programming modules. Data files are easily loaded via the local area network and controlled via the status report structure.

Operation

The Supervisory Module (SM) is a PC-based computer with network facilities to communicate with the Programming Modules (PM). Device drivers are downloaded to each Programming Module at the beginning of operations. The operator, then initiates operations by starting the test flow, which consists of test blocks sequenced together. When the devices are ready at the test sites, the Supervisory Module starts the Programming Modules, where the test flow is run sequentially until it is completed or a failure condition is detected. The Supervisory Module communicates with the handler or prober system through the GPIB interface. It monitors the handler or prober status for devices ready at the test sites and issues the bin command to the handler or prober.

The device driver is specific to each device type. This means that the test blocks supported by the device driver will also vary among the flash devices. Each time a new device is selected, the driver has to be specified and loaded in order to create the required test flows.

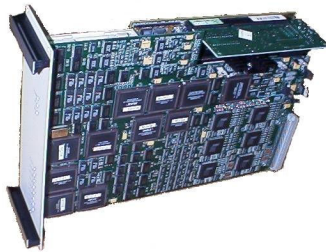
Software Environment

The Supervisory Module (SM) software is designed and built under the Windows platform.

System files are maintained by the SM software to keep track and save configuration settings on the last PM setup. These files help in bringing the system back on track every time it is launched. The user may either be in the operator or administrator mode. Editing of the software setup can only be performed when the user is in the administrator mode.

An Optional RS232 interface is provided to control the tower lights when system failure is encountered. A GPIB (IEEE-488) interface is provided to control the handler. The SM software constantly queries the handler status through this GPIB interface. When the devices are ready at the test sites, the software stops the queries and starts the test flow at each PM. When all the PM's are done, the software bins the devices and repeats the query process again. The Operator should stop the software at the end of the job to give control back to the handler.

An optional Bar Code Scanner may be attached to the Supervisory Module providing an alternative input to the software's dialog boxes. This is useful in entering such information as Lot Number, Operator ID, and other entries in the PM Setup dialog box.



FMPX MS7880
Flash Memory Programming Module

FMPX Module Features

- Auto Device Identification
- Blank Socket Check
- Serial and parallel device programming support
- Word/Block/Sector Programming
- Word/Block/Sector /Device Verification
- Block/Sector/Device Protection
- Sector/Device Erasure
- Bad block identification and masking
- Embedded Algorithms
- Conventional Programming Algorithms
- Windows based platform
- Network Ready
- Menu GUI based controls
- Binning support
- Socket alarm and lockout
- Algorithm and Data File storage capability

Specifications¹:

FMPX MS7880 High Speed Flash Memory Programming System

General

System Configuration:	multiple modules for up to 640 devices
Standard Interface:	RS232, LAN, USB, IEEE488
Humidity:	20% to 80% RH, non-condensing
Operating Temperature:	10°C to 27°C

Programmable Device Power Supply

Number:	2 per module
Voltage Range:	0 to 5V/ 0-12V
Accuracy:	± 25mV/ ± 50mV
Resolution:	1.5mV/ 3mV
Current	0 to 1A

Pattern Vector

DUT Address:	32 Bits, A[31:0]
DUT Data	16 Bits, DQ[15:0]
DUT Control	12 Bits, CE, WE, CNT[5:0] RE[4:1]
DUT Status	12 Bits, RB[4:1], DQ[7:0]
Pattern Memory:	Dynamically set, virtually unlimited
Data Rate	up to 20MHz

Ordering Information

MS7880-1	Single FMPX Module
MS7880-n	n Module FMPX System

MINT Systems[®]

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¹ Preliminary specifications subject to change.