M6Me Pentium Pro PCI/EISA

System Board Manual

MICRONICS

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Revision History

Revision	Revision History	Date
- 01	First Release of the M6Me Manual	8/96

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Introduction

Thank you for choosing the M6Me system board. The M6Me is the highest performing advanced dual processor solution for the industry's most demanding workstation and server applications.

Based on the Intel 440FX PCIset, the M6Me supports the most advanced processor architecture, the Pentium Proâ, which provides the speed and performance necessary to address the most intensive computational applications. Integrated Ultra Wide SCSI (up to 40MB/s transfer rate), 64-bit PCI video, PCI and EISA slots and up to 512K Level 2 cache on the CPU make this board powerful and feature rich.

Designed to fit into the standard AT case, the flexible M6Me also features support for Fast Page Mode (FPM) and Extended Data Out (EDO) DRAM advanced memory and Error Checking and Correction (ECC).

Micronics builds all products to exacting standards, using the highest quality components available. We are proud to provide this system board and believe you will be pleased with your purchase.

Features

The M6Me includes the following features:

- Dual ZIF socket 8 for Intel Pentium Pro 150 - 200MHz.
  Dual VRM headers to supply CPU - specific voltages
- Intel 440FX PCIset
  Intel PCEB/ESC EISA Bridge
  SMC FDC37C93X Ultra I/O chip
- 16K Level 1 Write Back cache on the CPU chip
  256K or 512K Level 2 Cache in CPU package
- Three 32 - bit PCI slots, one is a shared PCI/EISA slot
  Six 32 - bit EISA slots
  Three add - in PCI Bus Master devices
- Eight 32/36 - bit 72 - pin (double - sided) SIMM sockets to accommodate up to 512MB of onboard system memory
- Supports FPM and EDO DRAM memory
  ECC support via chipset
- Fast Wide SCSI Bus Mastering controller, 50 pin SCSI connector, 68 pin SCSI connector (Ultra - Wide SCSI), EZ - SCSI drivers (optional)
- Cirrus Logic 5436 64 - bit graphics accelerator with 1MB frame buffer (expandable to 2MB), Resolutions sup - ported: 640x480x24, 800x600x16, 1024x768x16, 1280x1024x16, Video cable with VGA connector (optional)
- Primary 40 - pin IDE connectors (ISA)
- Floppy controller for two floppy drives (supports 2.88MB, 1.44MB, 1.2MB, 720K or 360K floppy drives) auto detection of add - in floppy controllers
- Two high speed NS16550 compatible serial ports
- PS/2 style keyboard and mouse connectors

- Bi - directional parallel port (ECP and EPP compatible)
- Field upgradeable Flash Phoenix BIOS

Software Compatibility

The M6Me system board has been thoroughly tested for compatibility with a variety of operating systems and environments, including:

- Windows 95 and Windows NT
- OS/2 Warp
- SCO UNIX and Open Desktop
- Novell Netware
- MS - DOS 5.0 and 6.2
- PC - DOS

Before You Begin

This manual will familiarize you with the features, installation and use of your M6Me. There are several symbols and conventions used throughout this manual to help draw your attention to a feature or to focus on important information:

When you see the Magnifying Glass, it refers to something you should take a closer look at before proceeding further.

When you see the Exclamation Mark, it gives important information on avoiding damage.

Common Names

DRAM	Dynamic Random Access Memory
ECC	Error Checking and Correction
EDO	Extended Data Out
EISA	Extended Industry Standard Architecture
FPM	Fast Page Mode
IDE	Integrated Drive Electronics
PCI	Peripheral Component Interconnect
SIMM	Single Inline Memory Module
VRM	Voltage Regulator Module

Chapter

1

Quick Installation

We know that many experienced people prefer to read as little of the documentation as possible. If this sounds like you, here's the short form to get up and running quickly.

STATIC!

Before handling the M6Me, be properly grounded by using a special wrist or ankle strap, or touch a safely grounded object.

Installing the M6Me

1. Make backup copies of your installation and configuration diskettes.
2. Ground yourself to prevent damaging static discharge, then remove the M6Me from its packaging.
3. Configure and verify the system board's jumper settings (refer to Jumper Settings in Chapter 2).
4. Install the CPU and the system memory (refer to Chapter 3).
5. Install the system board into the chassis and make all necessary case connections.
6. Install any PCI and EISA add-on peripherals (refer to Chapter 3).
7. Now you can connect any optional devices (refer to Chapter 3).
8. Turn the computer on and press the <F2> key when you see the screen in Figure 1.1.

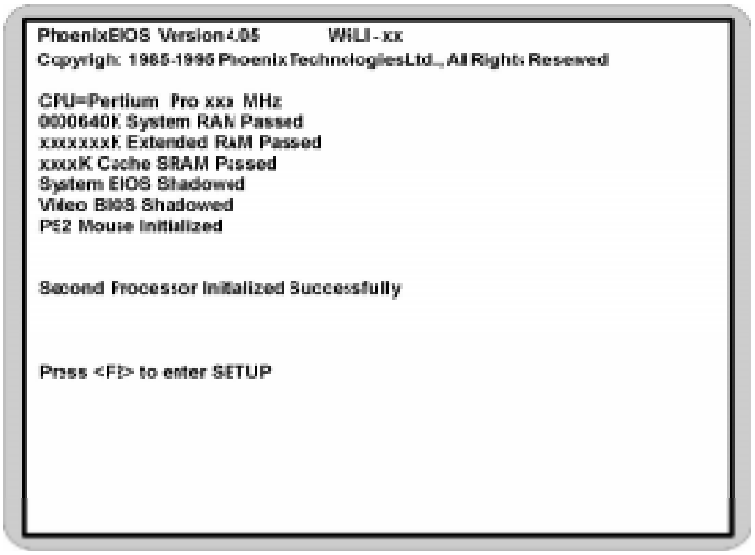


Figure 1.1: Power-Up Screen

9. Set the time and date. Adjust the BIOS settings to match your configuration. If installing an IDE drive, select the IDE device you wish to configure. Press ENTER with Autotype Fixed Disk selected and the BIOS will automatically configure the drive for you (refer to Chapter 4).

10. After you have configured the Main Setup menu, make any desired setting configurations in the Advanced and Security menu. When finished, go to the exit screen, select “Save Changes and Exit” and you are finished with the BIOS configuration (see Chapter 4).

11. Install the SCSI device drivers (optional). Refer to Chapter 6.

12. Install the video device drivers (optional). Refer to Chapter 6.

Chapter

2 Configuring the M6Me

Although the M6Me system board is packaged in protective materials, it is important to use care while unpacking and setting up.

Static Electricity

The M6Me is shipped from the factory in an antistatic bag. To reduce the possibility of damage, it is important to neutralize any accumulated static charges on your body before handling the board. The best way to do this is to ground yourself using a special wrist or ankle strap. If you do not have a strap, you should touch both of you hands to a safely grounded object. After you have grounded yourself, ground the M6Me via the solder pads surrounding one of its mounting holes.

Once the M6Me is removed from its packaging, place it on top of the antistatic bag. Carefully inspect the board for damage which may have occurred during shipment.

Office Environment

Make sure the finished computer system is in an area with good ventilation. The system should not be in direct sunlight, near heaters, or exposed to moisture, dust or dirt.

M6Me System Board

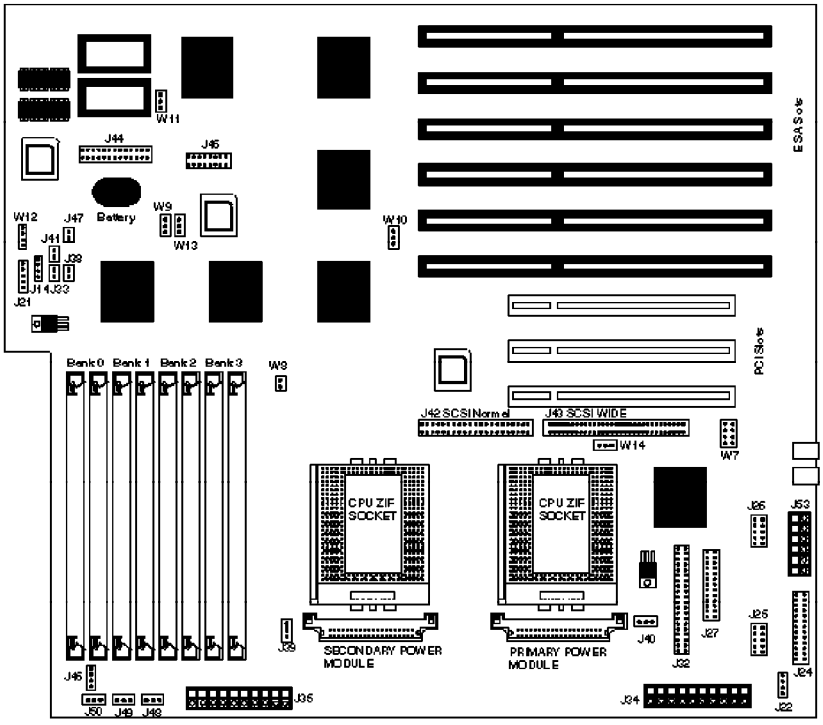


Figure 2.1: M6Me System Board

Jumper Settings

This chapter gives you the jumper settings used for the M6Me system board.

Table 2 - 1: Jumper settings to select the clock ratio speed of the CP

Clock Ratio	Jumper				
	W7	1-2	3-4	5-6	7-8
2:1	"	Close	Close	Close	Close
2.5:1	"	Close	Close	Close	Open
3:1	"	Close	Close	Open	Close
3.5:1	"	Close	Close	Open	Open
4:1	"	Close	Open	Close	Close
4.5:1	"	Close	Open	Close	Open
5:1	"	Close	Open	Open	Close
5.5:1	"	Close	Open	Open	Open

Table 2-1: Clock Ratio Settings

Table 2 - 2: Jumper settings to set the system power on setting. NOTE Set pins 1 - 2 only if your power supply has the Soft Power optio Default setting is 0 - 1.

Jumper	Function	Settings
W12	Soft Power Forced On (for power cycling	1-2 2-3

Table 2-2: Power On Setting

Table 2 - 3: Jumper settings for the CPU clock selection. The CPU speed is determined by the External Bus speed selection jumper (W8) and the Speed Ratio (W7). Table 2 - 3 shows typical settings.

CPU Speed		W8	W7 1-2	W7 3-4	W7 5-6	W7 7-8
120 MHz	60 x 2.0	Close	Close	Close	Close	Close
133 MHz	66 x 2.0	Open	Close	Close	Close	Close
150 MHz	60 x 2.5	Close	Close	Close	Close	Open
166 MHz	66 x 2.5	Open	Close	Close	Close	Open
180 MHz	66 x 3.0	Close	Close	Close	Open	Close
200 MHz	66 x 3.0	Open	Close	Close	Open	Close

Table 2-3: CPU Clock Settings

Table 2 - 4: Jumper settings to clear the EISA CMOS settings. With your computer's power off, close pins 2 - 3, wait ten seconds and place the jumper back on pins 1 - 2. (The jumper must be placed back on pins 1 - 2 for the system to function properly.) *NOTE: This will reset all BIOS default settings. Any changes you have made will be lost*

Jumper	Function	Settings
W9	Normal (default) Clear ECMOS	1-2 2-3

Table 2-4: Clear ECMOS Settings

Table 2 - 5: Jumper settings to reset the realtime clock.

Jumper	Function	Settings
W13	Normal (default) Reset RTC	1-2 2-3

Table 2-5: Reset Realtime Clock

Table 2 - 6: Jumper settings to select the onboard SCSI.

Jumper	Function	Settings
W10	Normal (default) Disable SCSI	1-2 2-3

Table 2-6: Onboard SCSI Setting

Table 2 - 7: Jumper settings to select the onboard VGA.

Jumper	Function	Settings
W11	Normal (default) Disable VGA	1-2 2-3

Table 2-7: Onboard VGA Setting

Table 2 - 8: Jumper settings to select the Ultra Wide SCSI detection.

Jumper	Function	Settings
W14	Auto-detect (default) Ultra-Wide SCSI	1-2 2-3

Table 2-8: Onboard Ultra Wide SCSI Setting

Table 2 - 9: Case and peripheral connections.

Connectors	Function	Notes
J14	Speaker	14 - Speaker; 17 - +5V DC
J21	Keylock	21 - Keylock; 22 - Ground
J22	Infared Port Connector	1 - IRRX; 2 - Ground; 3 - IRTX; 4 - +5 V
J24	Parallel Port	Can be disabled at the CMOS configuration screen
J25, J26	COM1, COM2 Ports	Can be disabled at the CMOS configuration screen
J27	Floppy Drive	
J28	PS/2 Mouse	
J30	PS/2 Keyboard	
J32	IDE Connector	
J33	IDE LED	23 - Positive; 24 - Negative
J34	AT Power Supply	±5.5 V and ±12 V
J35	Power Supply	3.3 V
J36, J37	Voltage Regulator	
J38	Turbo LED	25 - Positive; 26 - Ground
J39, J40	CPU Fan	1 - 12+V Power; 2 - Ground
J41	Reset	12 - Reset; 13 - Ground
J42	SCSI 50-pin Cable Connector (optional)	Fast Wide SCSI
J43	SCSI 68-pin Cable Connector (optional)	Ultra Wide SCSI
J44	VESA Feature Connector	Standard 26-pin
J45	VGA Cable Connector	Standard 15-pin D-shell
J46	Soft Power Standby +5V and Signal Connector	
J47	Soft Power Switch	
J53	Additional +5V Power	

Table 2-9: Case & Peripheral Connections

Chapter

3 Installing the M6Me

Introduction

This chapter explains how to install the M6Me system board, memory, CPU and peripherals.

WARNING: Before installing or removing any peripherals or components, make sure you have a clear work space and that you adhere to all anti-static precautions described in Chapter 1. Micronics recommends only trained technicians install and configure the system board.

Damage which occurs to the board while adding or removing peripherals or components may void the warranty. If problems arise while installing peripherals, contact the computer dealer where you purchased the peripheral or Micronics' Technical Support Department.

System Memory Support

The flexibility of the M6Me is augmented by its support for Error Checking and Correction (ECC), Extended Data Out (EDO) DRAM memory and Fast Page Mode (FPM) DRAM memory. The M6Me allows vast memory capability without worrying about memory errors. It does this by providing ECC which enables parity checking to detect and correct memory errors.

EDO memory is designed to keep data available to the processor for an extended period of time. The EDO memory support extends the performance of conventional DRAM memory. The result is an improvement in memory-access performance on the M6Me system board.

Installing the M6Me

Installation of the M6Me system board depends on the type of case you use. The M6Me is designed for the standard AT form factand is likely to be limited to tower cases.NOTE: If you are unfamiliar with installing a system board, Micronics highly recommends that you read the computer user's manual or contact your dealer's technical support department.

Tools Required

Micronics recommends using the following tools to install the M6Me:

- Small Phillips screwdriver
- Tweezers or a pair of needle-nose pliers
- Tray (to hold loose screws)

Equipment Required

Micronics recommends using the following equipment with the M6Me for a typical configuration:

- Chassis with standard hardware (tower case preferable).
- A high-quality power supply capable of providing continuous power within a 5 volt range. A power filter may be used with a noisy AC power source.
- PS/2 mouse and compatible keyboard.
- Eight ohm speaker.
- Standard ribbon cables for internal connections.
- Standard power cord (grounded).
- Heat sink with cooling fan for CPU (required).

System Memory

System memory devices, commonly known as SIMMs, are necessary to operate the M6Me system board. The M6Me has eight 32/36 - bit SIMM sockets and can be upgraded to 512 Megabytes of RAM. In addition, support is provided for Error Checking (ECC), Extended Data Out (EDO) DRAM memory and Fast Page Mode (FPM) DRAM memory. This chapter will explain the type of SIMMs supported, list the rules for adding memory to the M6Me, give some examples of common memory configu - rations and show how to physically install the new SIMMs.

For long term reliability, Micronics recom- mends using SIMMs with tin-plated contacts. The use of gold-plated contacts may conflict with the tin-alloy on the SIMM socket.

SIMMs Supported

The M6Me supports the following types of 60 or 70ns SIMMs:

4MB (1MBx32/36)
8MB (2MBx32/36)
16MB (4MBx32/36)
32MB (8MBx32/36)
64MB (16MBx32/36)

Upgrading Rules

The following is a list of rules to follow when upgrading SIMMs. If you follow these rules, your upgrade should be trouble - free:

- Use 70ns or faster SIMMs.
- Upgrade SIMMs one bank at a time. Each bank must contain two SIMMs of the same size and preferably from the same manufacturer. For example, to add 16MB of memory to the system board, install two 8MB SIMMs into the same bank.

Mixing EDO and FPM Memory

The M6Me can handle a combination of EDO and FPM memory. The memory will default to the speed of the slowest RAM installed.

Follow the rules below:

- Install the two types of memory in separate banks. (For example, install EDO memory in Bank 0 and FPM memory in Bank 1.)

NOTE: Mixing EDO and FPM memory is not recommended.

Memory Configurations

There is no need to set any jumpers. When you reboot, the size and type of memory are automatically detected.

The following tables list the most common memory configurations. The memory available depends on the number of SIMMs installed.

Memory	Bank 0	Bank 1	Bank 2	Bank 3
8MB	(2) 1MBx32/36			
16MB	(2) 1MBx32/36	(2) 1MBx32/36		
16MB	(2) 2MBx32/36			
24MB	(2) 1MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	
24MB	(2) 2MBx32/36	(2) 1MBx32/36		
32MB	(2) 1MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
32MB	(2) 2MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	
32MB	(2) 2MBx32/36	(2) 2MBx32/36		
32MB	(2) 4MBx32/36			
40MB	(2) 2MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
40MB	(2) 2MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	
40MB	(2) 4MBx32/36	(2) 1MBx32/36		
48MB	(2) 2MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
48MB	(2) 2MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	
48MB	(2) 4MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	
48MB	(2) 4MBx32/36	(2) 1MBx32/36		
56MB	(2) 2MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36
56MB	(2) 4MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
56MB	(2) 4MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36	
64MB	(2) 2MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36
64MB	(2) 4MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
64MB	(2) 4MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	
64MB	(2) 4MBx32/36	(2) 4MBx32/36		
64MB	(2) 8MBx32/36			

Table 3-1: Memory Configurations

Memory	Bank 0	Bank 1	Bank 2	Bank 3
72MB	(2) 4MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36
72MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36	
72MB	(2) 8MBx32/36	(2) 1MBx32/36		
80MB	(2) 4MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36
80MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
80MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36	
80MB	(2) 8MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	
80MB	(2) 8MBx32/36	(2) 2MBx32/36		
88MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36
88MB	(2) 8MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
88MB	(2) 8MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36	
96MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36
96MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	
96MB	(2) 8MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
96MB	(2) 8MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	
96MB	(2) 8MBx32/36	(2) 4MBx32/36		
104MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36
104MB	(2) 8MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36
104MB	(2) 8MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36	
112MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36
112MB	(2) 8MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
112MB	(2) 8MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36
112MB	(2) 8MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36	
120MB	(2) 8MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36
128MB	(2) 4MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36
128MB	(2) 8MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36
128MB	(2) 8MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	
128MB	(2) 8MBx32/36	(2) 8MBx32/36		
128MB	(2) 16MBx32/36			

Table 3-1: Memory Configurations

Memory	Bank 0	Bank 1	Bank 2	Bank 3
192MB	(2) 16MBx32/36	(2) 8MBx32/36		
200MB	(2) 8MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 1MBx32/36
200MB	(2) 16MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36
200MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 1MBx32/36	
208MB	(2) 8MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 2MBx32/36
208MB	(2) 168MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36
208MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
208MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 2MBx32/36	
216MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36
224MB	(2) 8MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 4MBx32/36
224MB	(2) 16MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36
224MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36
224MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 4MBx32/36	
232MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36
240MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36
256MB	(2) 8MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36
256MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36
256MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	
256MB	(2) 16MBx32/36	(2) 16MBx32/36		
264MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 1MBx32/36
264MB	(2) 16MBx32/36	(2) 16MBx32/36		
272MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 2MBx32/36
272MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 1MBx32/36	(2) 1MBx32/36
272MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 2MBx32/36	
280MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 2MBx32/36	(2) 1MBx32/36
288MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 4MBx32/36
288MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 2MBx32/36	(2) 2MBx32/36
288MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 4MBx32/36	
296MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 4MBx32/36	(2) 1MBx32/36

Table 3-1: Memory Configurations

Memory	Bank 0	Bank 1	Bank 2	Bank 3
304MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 4MBx32/36	(2) 2MBx32/36
320MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 4MBx32/36	(2) 4MBx32/36
320MB	(2) 16MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36
320MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 8MBx32/36	
328MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 8MBx32/36	(2) 1MBx32/36
336MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 8MBx32/36	(2) 2MBx32/36
352MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 8MBx32/36	(2) 4MBx32/36
384MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 8MBx32/36	(2) 8MBx32/36
384MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 16MBx32/36	
392MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 16MBx32/36	(2) 1MBx32/36
400MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 16MBx32/36	(2) 2MBx32/36
416MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 16MBx32/36	(2) 4MBx32/36
448MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 16MBx32/36	(2) 8MBx32/36
512MB	(2) 16MBx32/36	(2) 16MBx32/36	(2) 16MBx32/36	(2) 16MBx32/36

Table 3-1: Memory Configurations

Installing the SIMMs

To install the SIMMs, locate the memory banks on the system board and perform the following steps:

1. Hold the SIMM so that the notched edge is aligned with the notch on the SIMM socket (Figure 3 - 1).
2. Insert the SIMM at a 45 degree angle.
3. Gently push the SIMM into an upright position until it locks into place (past the release tabs).

Removing SIMMs

To remove SIMMs, follow the steps below:

1. With both thumbs (or fingers), press the release tabs away from the socket.
2. With the SIMM free from the release tabs, lift the module up and place in an anti - static bag or package.

Installing a CPU

The M6Me is designed to support dual Pentium Pro processors. Follow the steps below to install the main or second processor:

1. Turn off the computer and remove its cover.
2. Locate the ZIF socket illustrated in Figure 2 - 1.
3. Lift the lever of the socket.
4. Locate pin 1 on the processor and pin 1 on the socket (refer to Figure 2 - 1). Gently place the processor into the socket, making sure pin 1 on the processor and pin 1 on the socket are aligned.
5. Push the lever down until it locks into place.
6. Make sure the speed selection jumpers are set correctly (refer to Chapter 2 - Jumper Settings).
7. If you are only installing the upgrade processor, you do not need to change any jumpers or BIOS settings. The system will automatically recognize the new processor.

NOTE: If your operating system supports dual processors, you may need to reconfigure or reinstall your operating system. Refer to your software documentation for more information.

WARNING: Pentium Pro processors require a heat - sink with a cooling fan. Failure to provide adequate cooling of the processor may seriously affect system performance or cause permanent damage to the processor.

Installing a PCI Peripheral Card

Micronics PCI slots accommodate all PCI peripherals that meet the PCI 2.1 specifications. Follow the steps below to install a PCI card:

1. Turn the computer system off and remove its cover.
2. Choose an unused PCI slot and remove the slot cover.
3. Insert the card with the bottom edge level to the slot. *Never insert the card at an angle.*
4. Carefully push the card straight down, making sure the card is fully inserted.
5. Replace the screw which holds the card into place.
6. Replace the computer cover.
7. Refer to the PCI card's documentation additional instructions regarding installation and software drivers.

Installing an EISA Peripheral Card

Micronics EISA slots accommodate all EISA peripherals that meet the EISA standard. Follow the steps below to install an EISA card:

1. Turn the computer system off and remove its cover.
2. Choose an unused EISA slot and remove the slot cover.
3. Insert the card with the bottom edge level to the slot. *Never insert the card at an angle.*
4. Carefully push the card straight down, making sure the card is fully inserted.
5. Replace the screw which holds the card into place.
6. Replace the computer cover.
7. Refer to the card's documentation for additional instructions regarding installation and software drivers.
8. Run the EISA configuration utility discussed in Chapter 5.

Installing a Plug & Play Card

Micronics EISA slots accommodate all ISA Plug & Play peripherals that meet the Plug and Play standard. Follow the steps below to install a Plug and Play peripheral card:

1. Turn the computer system off and remove its cover. *Note the slot number where you choose to install the Plug and Play card. You will need this information when you run the EISA configuration utility.*
2. Choose an unused EISA slot and remove the slot cover.
3. Insert the card with the bottom edge level to the slot. *Never insert the card at an angle!*
4. Carefully push the card straight down, making sure the card is fully inserted. Replace the screw which holds the card into place.
5. Replace the computer cover.
6. Refer to the card's documentation for additional instructions regarding installation and software drivers.
7. Run the EISA configuration utility discussed in Chapter 5.

Connecting the Graphics Option

The M6Me is designed to accommodate an optional VGA video connector and comes with a 15-pin monitor cable. NOTE: The connector pin-outs for both the 15-pin VGA onboard connector and monitor cable connector are the same as the standard 15-pin D-shell connector pin-outs.

The graphics option comes with up to 2MB of DRAM memory. The 64-bit graphics processor provides high-speed acceleration in all graphic modes. It uses a full 64-bit non-interleaved DRAM interface, which is twice the throughput of 32-bit controllers. Full motion digital video can be scaled up to full screen at 1024x768 resolution.

Connecting the Video Cable

1. Turn the computer system off.
2. Locate the monitor's power switch and make sure it is turned OFF.
3. Plug the end of the video cable with the 15-pin connector (which is larger than the other connector) into the video socket on the back of your monitor. Then tighten the two thumbscrews on the cable connector.
4. Plug the other end of the video cable into the video socket on the M6Me and tighten the thumbscrews (see Figure 2.1).

See Chapter 6 for information on installing video device drivers.

Connecting the SCSI Option

The M6Me is designed to accommodate optional integrated Ultra Wide SCSI PCI throughput (up to 40MBytes/sec data rate). Connectors are provided for Normal (Fast Wide) SCSI (50-pin connector) and Wide (Ultra Wide) SCSI (68-pin connector). The Wide SCSI configuration allows up to 15 SCSI peripherals to be connected. The M6Me SCSI interface is Plug and Play compliant and is fully compatible with the PCI 2.0 specification.

Refer to the "Adaptec AHA-2940Ultra/2940Ultra Wide User's Guide" for information on installing and connecting SCSI devices.

Chapter 4

The BIOS Setup Utility

Configuration

After the M6Me system board and all hardware is installed, the system is ready for configuration. Before turning on the computer, make sure all cables are correctly connected and all jumpers are correctly set.

It is recommended you keep the computer cover off the first time you boot the system. This will make it easier to correct any difficulties that might arise.

Initial Boot Up

Power up the M6Me. If the system does not properly boot, check all your cables and peripherals for bad connections. You may also get beep codes or error messages. If this occurs, consult Appendices B and/or C for a guide to possible solutions.

After the system properly boots, it is ready to be configured. The following information explains the proper procedures for BIOS configuration.

Setup

The Setup program is used to configure the computer's BIOS (Basic Input/Output System). The computer's BIOS is responsible for configuring the system board and providing hardware information to the operating system. In order for the computer to run properly, run the Setup procedure after first installing the system board and whenever you make a hardware change to the system.

After the system is turned on and goes through a memory test, the Power - Up screen (Figure 4 - 1) will appear on your monitor:

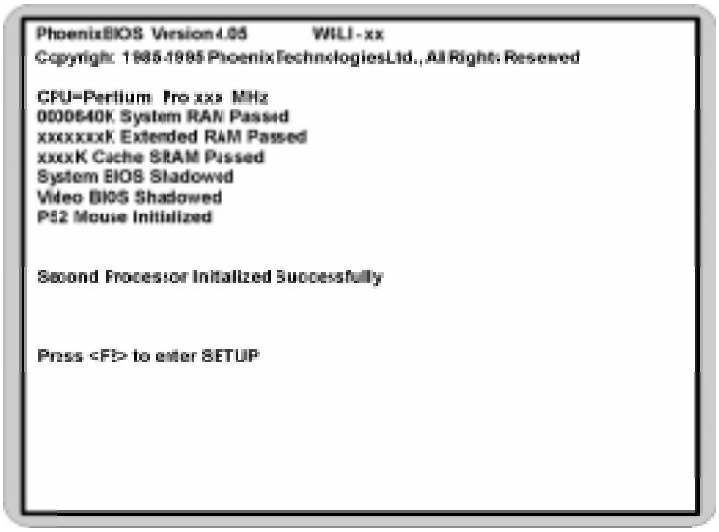


Figure 4-1: Power-Up Screen

When "Press <F2> to enter SETUP" appears at the bottom of the screen, press the <F2> key to begin the Setup procedure. The CMOS Main Screen (Figure 4 - 2) should appear and the prompt should be on the time line. The Setup procedure can only be activated during the boot sequence.

Running the Setup Procedure

The M6Me system board has five primary CMOS configuration screens: Main Screen, Advanced Screen, Boot Screen, Security Screen and Exit Screen. To toggle between the screens, press the right arrow <→> and the left arrow <←> keys.

Setting the Main Screen

The CMOS Main screen (Figure 4-2) is used to set the time and date, to set the floppy drive types, to configure IDE hard disks and to configure the video. This chapter explains how to configure each of these categories. To move between the categories, use the up and down arrow <↑/↓> keys.

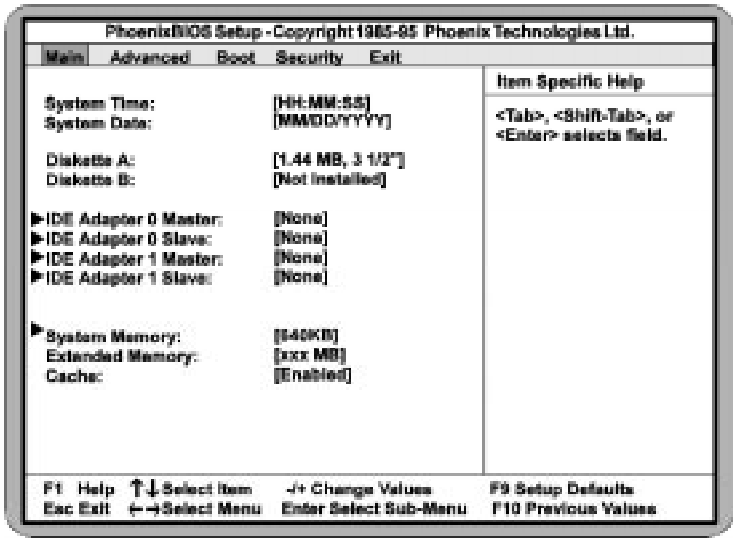


Figure 4-2: CMOS Main Screen

System Time and Date

To set the time, use the < - > key to decrease the number and the < + > key to increase the number. To move the prompt forward, use the <Tab> key; to move the prompt backward, use the <Shift - Tab> key. To set the date, use the up and down arrows <↑/↓> to highlight the System Date and follow the same procedure used to set the time.

Diskette A or B

To configure a floppy drive added to or removed from your computer, use the up and down arrow keys <↑/↓> to select the desired drive. Use the < + / - > keys to change the setting until it matches the floppy drive you installed. The BIOS supports 2.88MB, 1.44MB, 1.2MB, 720KB, and 360KB floppy drives.

IDE Adapters (Hard Disk Setup)

If you are setting up a SCSI hard disk, select None in the IDE Device parameters (see your SCSI card manual for more details). To install an IDE device, select the device to configure and press ENTER. An IDE Device submenu will appear (see Figure 4 - 3).

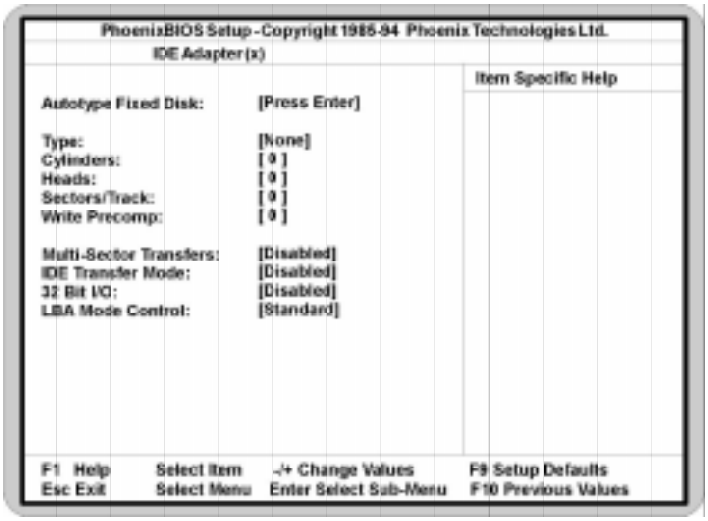


Figure 4-3: IDE Device Submenu

Autotype Fixed Disk

The easiest way to set your IDE devices is to let the BIO do it for you. When the IDE Device submenu first appears, the Autotype Fixed Disk selection is high - lighted. Simply press ENTER and the remaining informa - tion is entered automatically.

Do not adjust the rest of the settings unless absolutely necessary. The BIOS automatically enters the optimal settings.

Type

This category selects the drive type installed in the system. The options are Auto, 1 - 39, User and None (default). If Autotype Fixed Disk does not find your drive's parameters, fill this information in manually un - der the User category. This information may be in the manual that came with your system. If not, contact your dealer or the hard drive manufacturer to fill in this

category. If you are using a SCSI hard drive, select None and refer to the documentation which came with the SCSI adapter.

Multiple-Sector Transfers

This category determines the number of sectors per block for multiple sector transfers. The options are Disabled (default), 2 Sectors, 4 Sectors, 8 Sectors, and 16 Sectors.

LBA Mode Control

Enable LBA (Logical Block Addressing) to support IDE drives larger than 528MB in size. The default setting is Disabled.

32-Bit I/O

This category allows the user to enable the 32-bit I/O function of the PCI IDE controller. Select Disabled if your drive will not run at this speed. The default setting is Disabled.

Transfer Mode

This category provides the transfer modes for internal and external devices. The Standard option is the default setting for internal devices. The Fast PIO 1, Fast PIO 2, Fast PIO 3 and Fast PIO 4 options are for external devices.

System Memory

The System Memory category identifies the size of the base memory. It cannot be changed.

Extended Memory

The Extended Memory category automatically detects the amount of memory installed above the amount in the System Memory category. Because the BIOS automatically calculates the amount of memory installed in your system, you cannot change this category without adding or removing memory.

Cache

This selection allows you to enable the memory cache. For optimal performance, select Enabled (default).

Setting the Advanced Screen

To move to the Advanced screen, use the left and right arrow keys<←/→> keys until you see the screen below.

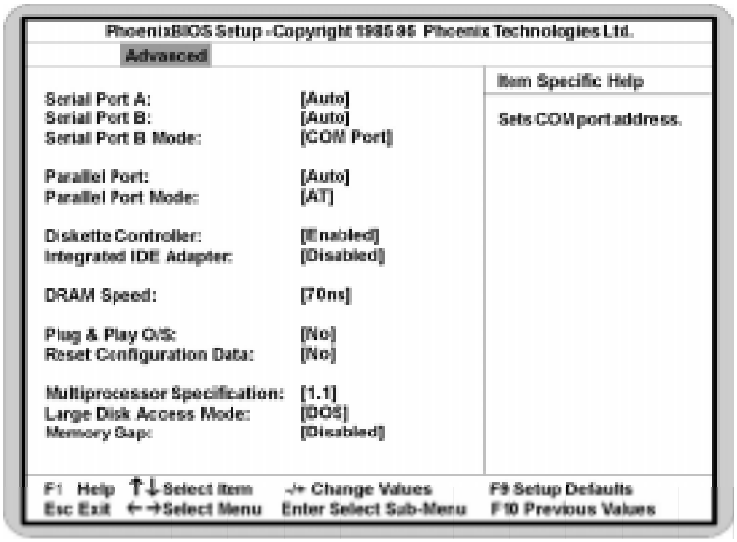


Figure 4-4: Advanced Screen

Serial Port A

Serial Port A may be set for Auto (default), COM1, COM2, COM3, COM4 or Disabled.

Serial Port B

Serial Port B may be set for Auto (default), COM1, COM2, COM3, COM4 or Disabled.

Serial Port B Mode

Serial Port B Mode may be set for COM Port (default), IrDA or ASKIR. This selection sets the interface to standard or infrared.

Parallel Port

The parallel port may be set for Auto (default), LPT1, LPT2 or may be disabled.

Parallel Port Mode

The parallel port may be set for output mode (AT) (default), bidirectional mode (PS/2) and Extended Capa - bilities Port (ECP).

Diskette Controller

The floppy disk controller may be enabled or disabled.

Integrated IDE Adapter

Enables the integrated Local Bus IDE adapter. The IDE controller may be enabled or disabled.

DRAM Speed

The memory speed can be set for 50ns, 60ns or 70ns (default).

Plug & Play O/S

This selection, when set to Yes, allows the system to work with a Plug and Play operating system such as Windows 95. The default setting is No.

Reset Configuration Data

Select Yes to clear the system configuration data. The default setting is No.

Multiprocessor Selection

This selection allows you to select the 1.1 (default) or 1.4 multiprocessor specification.

Large Disk Access Mode

If you are using a DOS operating system (MS - DOS, Novell DOS or PC - DOS), set to DOS (default). If you are using anything else, set to OTHER.

Memory Gap

When enabled, this category removes the memory between 15 and 16 megabytes from the system. This one megabyte hole will allow some ISA network cards to map into this memory space. Banyan network cards require this feature. Enable this feature only if needed. The default is Disabled.

Boot Screen

The Boot screen allows you to configure the power - up system configuration settings.

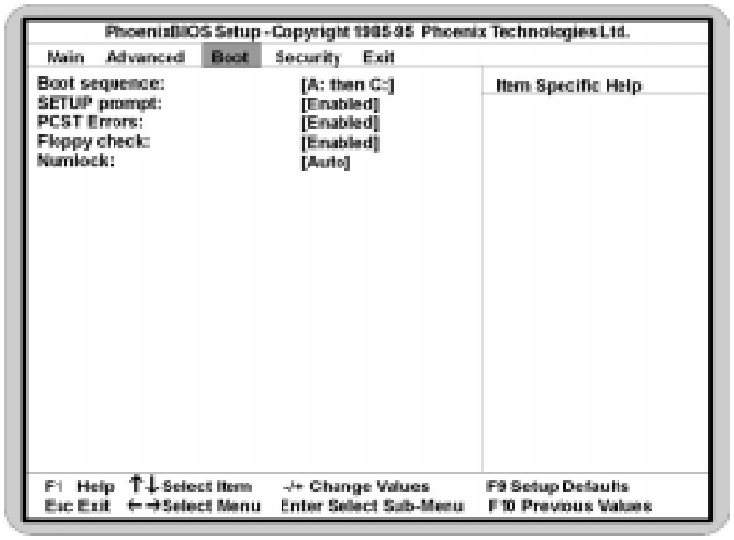


Figure 4-5: Boot Screen

Boot Sequence

This selection will read the diskette drive (default) and the hard drive in sequence on boot.

Setup Prompt

If this selection is enabled, the message "Press F2 to ente Setup" is displayed on boot. The default setting is En - abled.

POST Errors

If this selection is enabled (default) and an error occurs on boot, the BIOS will display a SETUP entry or resume prompt. If this selection is disabled, the system will always attempt to boot.

Floppy Check

This selection checks for the existence of a floppy drive.

Numlock

Setting this to Enabled activates Numlock upon boot. Setting this to Auto activates Numlock if the BIOS detects a numeric keyboard. It may also be disabled.

Security Screen

The Security screen controls access to the computer. The security screen allows for settings of two passwords. The Supervisor Password allows access to the system and Setup. The User Password allows access to the system, but not to all Setup features.

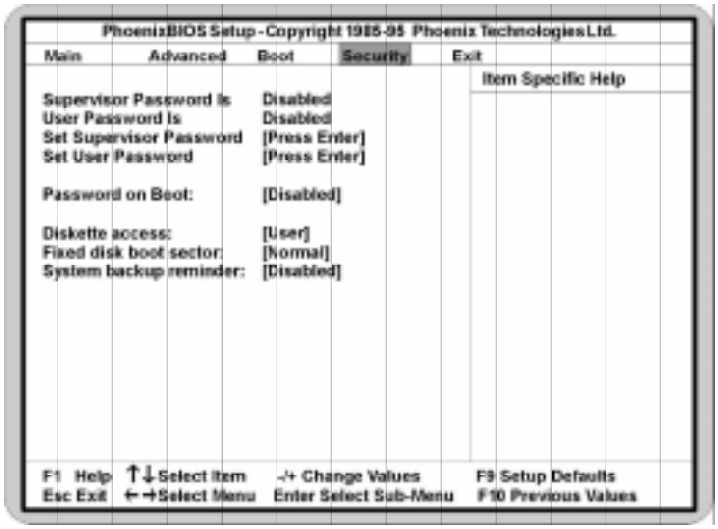


Figure 4-6: Security Setup Screen

Supervisor Password Is

If a Supervisor Password is set up for the system, it reads Enabled. If the password is not set up, it reads Disabled (default).

User Password Is

If a User Password is set up for the system, it reads Enabled. If the password is not set up, it reads Disabled (default).

Set Supervisor Password

Press the ENTER key to enter the Supervisor Password submenu.

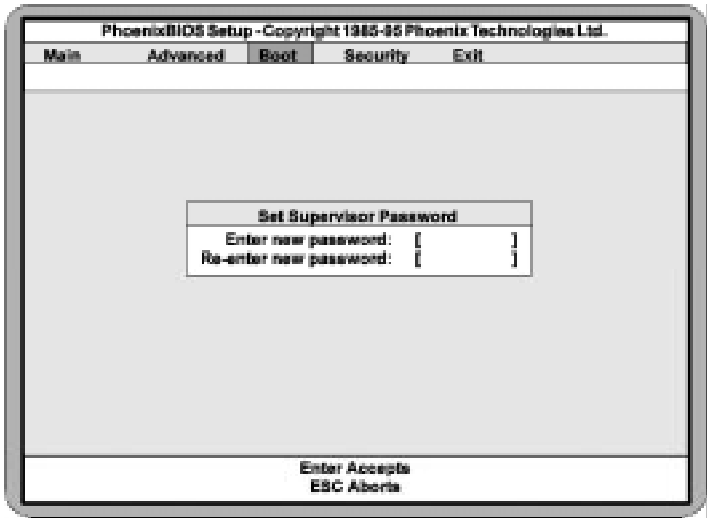


Figure 4-7: Supervisor Password Submenu

Type the password and press the ENTER key. Retype the password and press the ENTER key again. Write down the password somewhere safe so it will not be forgotten. The password may be disabled by setting the new password to nothing (pressing the ENTER key without first typing a password).

WARNING: If you forget the Supervisor Password, it cannot be disabled without discharging the CMOS.

Set User Password

Follow the same procedure used to set the Supervisor Password.

NOTE: After a password is entered, it is saved immediately. All other changes may still be discarded (see Exit Screen).

Password on Boot

When enabled, the system requires a password upon powerup. Either the Supervisor or User Password may be entered.

Diskette Access

This selection allows floppy disk access with an option of the supervisor or user. Selecting Supervisor gives floppy disk access to the supervisor only. Selecting User (default) gives floppy disk access to both the user and the supervisor. If the passwords are enabled, this option may only be changed by the supervisor.

Fixed Disk Boot Sector

This selection allows the boot sector of the fixed disk to be write protected. The default setting is Normal. When set for Write Protected, it serves as a form of virus protection. If the passwords are enabled, this option may only be changed by the supervisor.

System Backup Reminder

When enabled, this selection displays a message during system bootup to remind you to backup your system. The default setting is Disabled.

Exit Screen

After you complete configuring the BIOS, select the Exit screen.

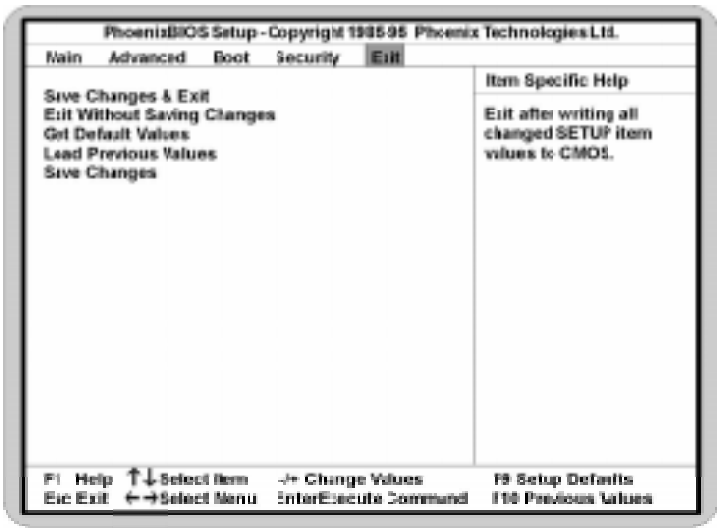


Figure 4-8: Exit Screen

Choose “Save Changes and Exit” and reboot the computer. Your computer is ready for use.

Chapter

5

The EISA Utility

Introduction

The M6Me is shipped with the Micro Computer System EISA Configuration Utility. The EISA Configuration Utility is a software utility designed to configure EISA peripherals.

For more information on the EISA Configuration Utility, consult the manual on the CF diskette.

The MCS EISA utility is designed to optimize the performance of your EISA peripherals and to maintain conflict-free configuration information. This is achieved through a series of initialization commands stored in nonvolatile memory. The EISA Utility determines the configuration, creates the initialization commands and makes sure the configuration is correct.

When Should You Run the EISA Utility?

The EISA utility retains the configuration information in nonvolatile memory. If this information is lost, the utility retains a backup copy (the file with the .sci extension) on your hard disk. Run the EISA utility the first time your computer is booted up and every time you add or remove EISA peripheral cards.

What You Will Need

Prior to running the EISA utility, you will need to do the following:

- ❑ Install all peripheral cards.
- ❑ Locate and set aside the EISA Utility diskette and all diskettes that came with your EISA peripherals. They contain the .cfg and .ovl files necessary for configuration.

Starting the Utility

Follow the steps below to start the EISA utility:

1. Insert the EISA Configuration diskette into Drive A (or B).
2. At the A: prompt, type "cf" and press <ENTER>. The ConfigurationIntroduction screen will appear:

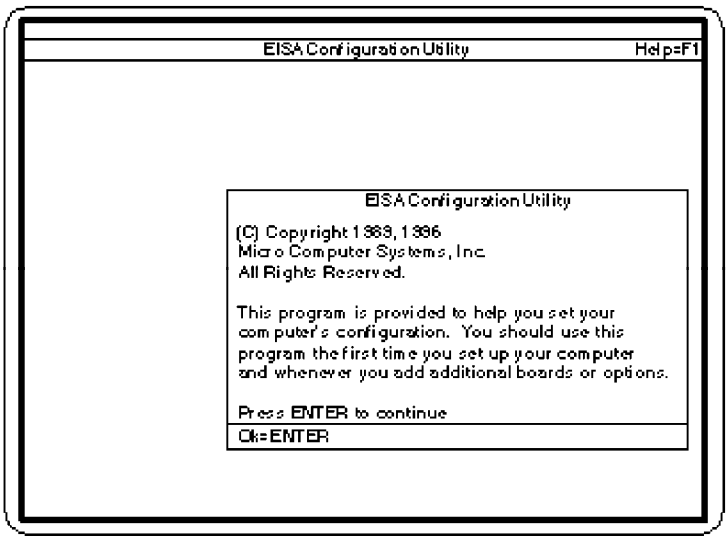


Figure 5-1: EISA Configuration Introduction Screen

Main Menu

After pressing <ENTER>, the main menu appears. The main menu lists five steps for configuring the system board. To select a step, highlight the appropriate selection, and press <ENTER>. Figure 5-2 shows the main menu.

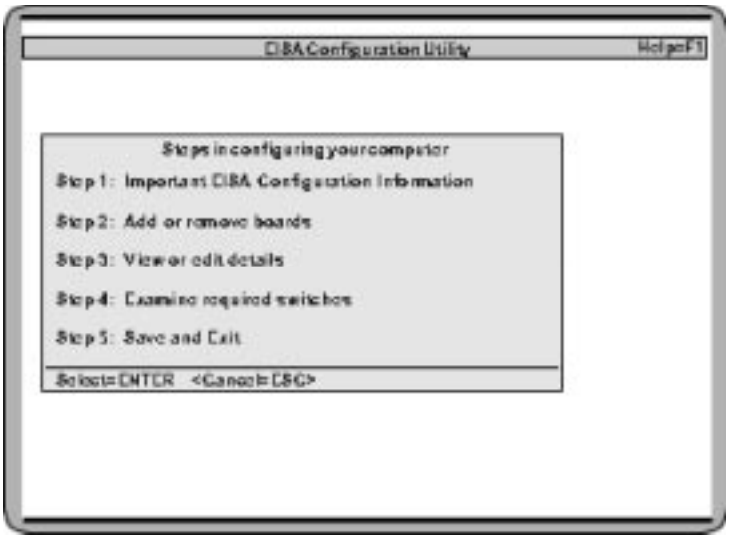


Figure 5-2: EISA Configuration Main Menu

Step 1: Important EISA Configuration Information

Step 1 provides several pages of useful information on the configuration utility. Read this prior to using the utility.

Step 2: Add or Remove Boards

When you select Step 2, the utility scans and locates the EISA boards installed. This chapter allows you to add or remove EISA, PCI and ISA Plug and Play peripherals. Beyond physically adding or removing the boards, it is important that you run this utility in order for your system to run properly.

When you select "Step 2: Add or Remove Boards," the following screen will appear:

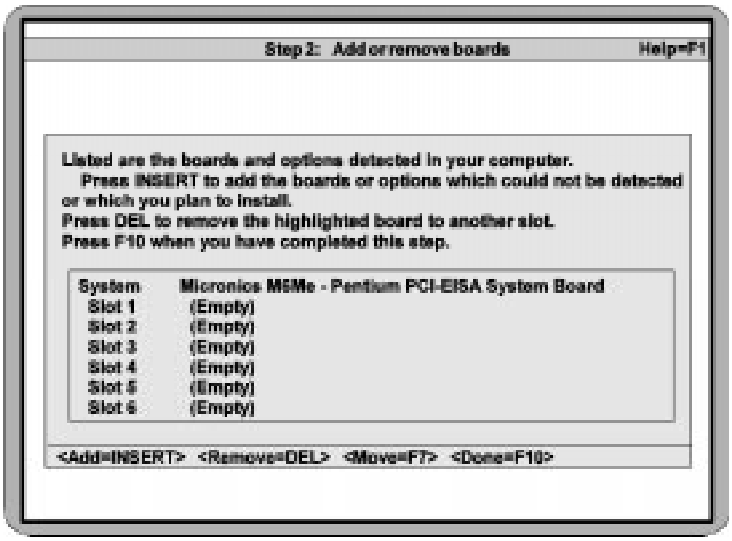


Figure 5-3: Add or Remove Boards Screen

Press <Insert> to add the boards that could not be detected or boards you plan to install. After you press the <Insert> key, the following screen (Figure 5 - 4) will appear.

You will need to have the configuration disks that came with each of the add - on cards you are installing. Insert the configuration disk for the peripheral you are install - ing and press <ENTER>.

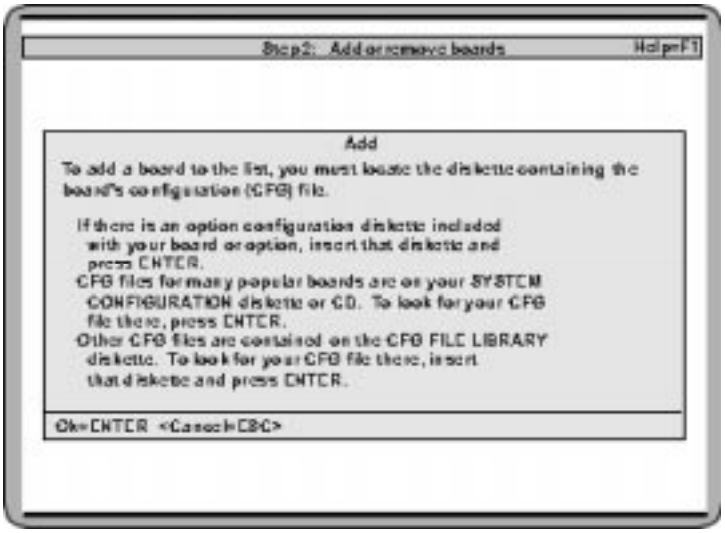


Figure 5-4 Adding an EISA Configuration (CFG) File

When you are finished installing the EISA CFG files, press the <F10> key.

Step 3: View or Edit Details

When you select the "View or Edit Details" menu (Figure 5 - 5), a display of your system resources appears. You may edit this menu to optimize the system performance and allocation of resources. If you need to change information on this menu, select the item you wish to change and press <ENTER>.

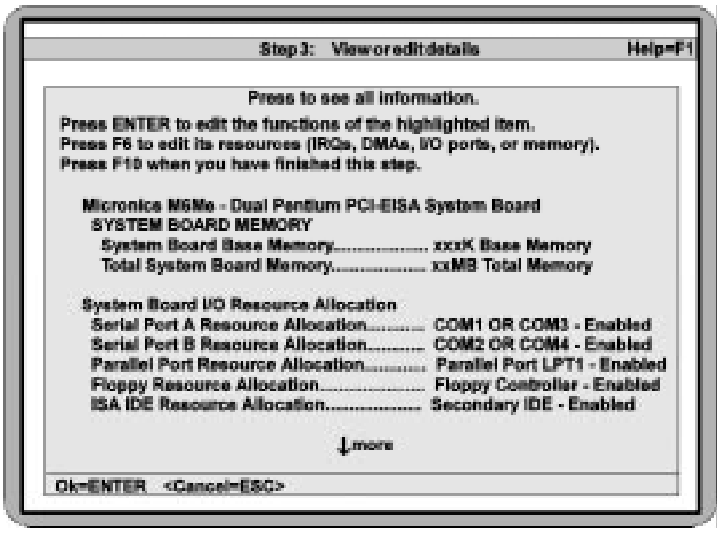


Figure 5-5: View or Edit Details Menu

Advanced Submenu

The Advanced submenu (Figure 5 - 6) will allow you to make specialized configuration adjustments. To select this menu, press the <F7> key.

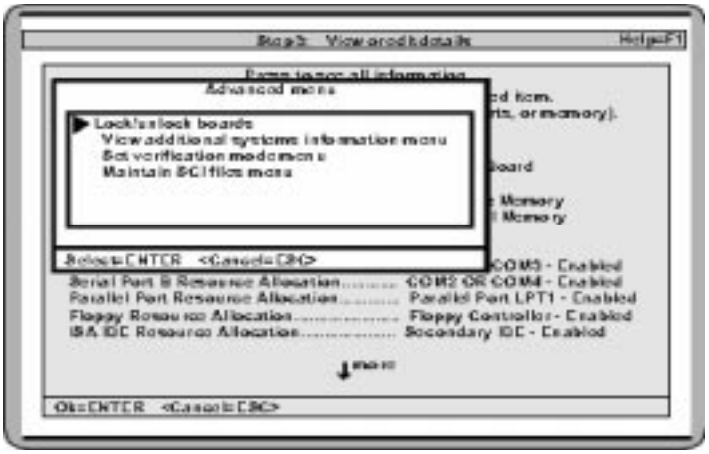


Figure 5-6: Advanced Submenu

Lock/Unlock Boards

Locking a board will prevent changes from being made to a board's settings. You may lock or unlock each board individually.

View Additional Systems Information Menu

This is another submenu that will allow you to view board specifications, system specifications, used resources and available resources.

Set Verification Mode Menu

You may set this for Automatic (default) or Manual. Automatic Verification turns on automatic detection and resolution of resource conflicts caused by configuration changes.

Maintain SCI Files Menu

"Open" will allow you to load a SCI file to replace your existing EISA configuration.

When you have finished making changes to the Advanced Submenu, press <F10> until you are back to the Main Menu.

Step 4: Examine Switches or Print Report

Examine Switches

This chapter displays a listing of the motherboard jumper settings.

Print Report

This feature is not currently supported.

Step 5: Save and Exit

Save the new configuration when you exit the utility. When you select Step 5, the Save and Exit Screen appears. It will give you the option of saving the new configuration or returning to the Main menu. If you have finished configuring your EISA utility, select "Save the configuration and restart the computer."

The Reboot Screen will then appear. Press the <ENTER> key and the computer will reboot. The changes are now complete and you are ready to use your computer.

Chapter 6

Installing Device Drivers

This chapter explains how to install the software device drivers and utilities necessary to utilize the optional video and SCSI support. Drivers are included for Windows 95 and Windows NT. Other drivers and utilities are available through our online services.

About Device Drivers

Device drivers are necessary for the computer system to communicate with devices such as CD-ROM drives, sound controllers, graphics adapters or devices that are not natively supported by the system BIOS. Once started, device drivers remain active in the background of the computer system. Usually a device driver is added to the CONFIG.SYS file, the AUTOEXEC.BAT file or both.

Installing the Video Drivers

Windows 95

1. Start Microsoft Windows 95. The New Hardware Found screen appears.
2. Insert the M6Me Drivers and Utilities disk into your floppy drive.
3. From the New Hardware Found screen, select the Driver From Disk Provided by Hardware Manufacturer option. Click on Next.
4. Type in the driver location: A:\ (where A is the floppy drive letter). Click on OK.
5. Windows 95 copies the M6Me drivers and utilities to your hard drive.

Windows NT

1. Boot Windows NT in VGA mode.
2. From the Main group, double - click on Control Panel, then double - click on Display.
3. Select Change Display Type.
4. From the Change Display Type screen, select Change for the adapter type.
5. Select the Other button.
6. Insert the M6Me Drivers and Utilities disk into your floppy drive. Click on OK.
7. Click on the Install button.
8. Click on Yes to install the driver.
9. When the Windows NT Setup dialog box appears, select drive A:\, then click on Continue.
10. When a message appears stating that the drivers were successfully installed, click on OK.
11. Restart your computer for the changes to take effect.

Installing the SCSI Drivers

Refer to the "Adaptec 7800 Family Manager Set User's Guide" for driver and configuration information for your operating system.

Appendix A

Specifications

Part Number:	09 - 00271 - 01
Processor:	Dual ZIF socket 8 for Intel Pentium Pro processor support for 150 - 200MHz processors. Dual VRM headers to supply CPU - specific voltages.
CPU Clock Select	Frequency synthesizer chip. Support for 60 and 66MHz CPU bus.
Chipset:	Intel 440FX PCIset. Intel PCEB/ESC EISA Bridge. SMC FDC37C93X Ultra I/O chip.
Form Factor:	Standard AT footprint.
Expansion:	Three 32 - bit PCI slots. Six 32 - bit EISA slots. One is a shared PCI/EISA slot.
BIOS:	Phoenix 4.0X Plug and Play BIOS on 1MB Flash. Auto - detection of memory size. Auto - detection and display of ECC and EDO memory. Auto - configuration of IDE hard disk types.
RAM Capacity:	Maximum memory 512MB. Supports FPM and EDO DRAM memory. ECC supported via chipset.
Cache:	16K Level 1 Write Back on CPU chip. 256K/512K Level 2 cache in CPU package.

Fast Wide SCSI: (optional)	Adaptec 7880 Fast Wide SCSI Bus Mastering controller. Resident 50 - pin SCSI connector. Resident 68 - pin SCSI connector (Ultra Wide SCSI).
Onboard Video: (optional)	Cirrus Logic 5436 chipset with up to 2MB DRAM Video cable with VGA monitor connector.
Keyboard/Mouse:	PS/2 compatible. Optional AT style DIN keyboard connector.
I/O Ports:	Two high speed serial ports (16550 compatible). Enhanced Parallel Port with ECP support.
Floppy Port:	Auto - detection and support of two floppy drives (2.88MB, 1.44MB, 1.2MB, 720K, 360K).
PCI IDE Ports:	One resident 40 - pin IDE connector (ISA). Multiple sector transfer support. Auto detection of add - in IDE board.

Environmental Specifications

The environment in which the M6Me is located is critical. Micronics recommends the following environmental specifications:

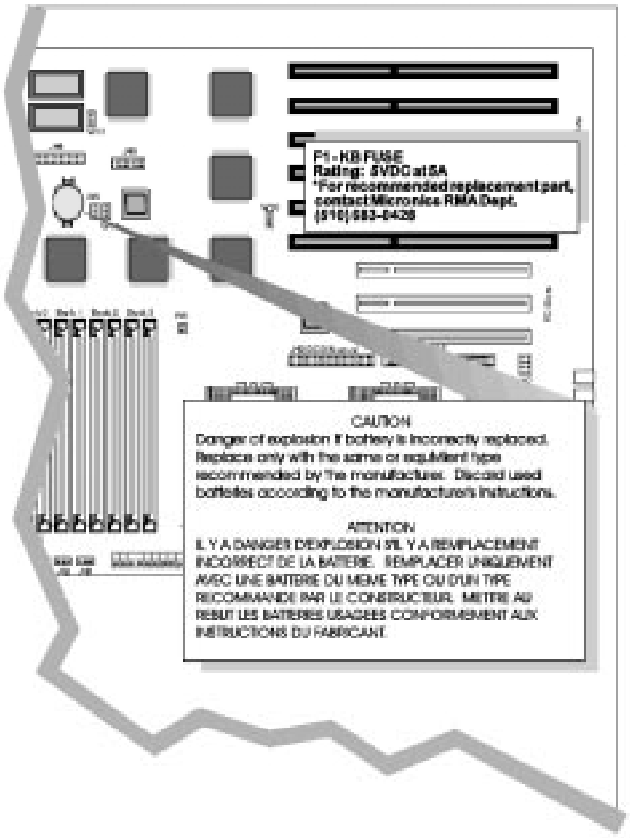
Temperature Range

Operating: 50 to 104 degrees Fahrenheit (10 to 40 degrees Celsius). Non - Operating: 50 to 140 degrees Fahrenheit (10 to 60 degrees Celsius). Shipping: - 22 to 140 degrees Fahrenheit (- 30 to 60 degrees Celsius).

Relative Humidity

Operating: 20% to 80%.
Non - Operating: 5% to 90%.

Battery Disposal



WARNING:

Please do not open battery, dispose of in fire, recharge, put in backward or mix with used or other battery types. The battery may explode or lea and cause personal injury.

Technical Support

If you need technical assistance, our Technical Support staff will be glad to assist you. You can contact us via telephone, fax or Bulletin Board System (BBS). Before calling please have the following information ready:

- ❑ The model name and 09 part number of your Micron - ics product.
- ❑ Your computer information such as CPU type, operat - ing system, amount of installed memory and other peripherals installed in your computer.
- ❑ Try to call from the location of your computer.

NOTE: For Return Material Authorization (RMA) pur - poses, please keep a copy of your product receipt.

In the United States:

Technical Support	(510) 661 - 3000
Technical Support Fax	(510) 651 - 6982
RMA Department	(510) 683 - 0428

In Europe:

UK Technical Support	+44 (0) 1256 844899
UK Technical Support Fax	+44 (0)1256 54476
Germany Technical Support	+49 (0) 89 68 81 646
Germany Technical Support Fax	+49 (0) 89 42 95 17
France Technical Support	+33 (1) 48 10 75 85
France Technical Support Fax	+33 (1) 48 10 75 55

Online Services

Bulletin Board (BBS)

In the United States:

Technical Support BBS (510) 651 - 6837
14400 baud rate, Parity = N, Data Bits = 8, Stop Bits = 1, YMODEM and ZMODEM (recommended file transfer protocols)

In Europe:

UK Technical Support BBS +44 (0) 1256 63373
Germany Technical Support BBS +49 (0) 89 68 81 686
France Technical Support BBS +33 (1) 48 10 75 95

World Wide Web

You will find information on product support, new product releases and other categories of information. Access the Internet and type: http://www.micronics.com

Appendix B

POST Messages

The following table lists the Power On Self Test (POST) messages, possible causes and solutions.

Message	Possible Cause	Solution
DISKETTE DRIVE A FAILURE	Drive A failed or is missing.	Check Setup and cable connections.
DISKETTE DRIVE B FAILURE	Drive B failed or is missing.	Check Setup and cable connections.
EXTENDED RAM FAILED AT OFFSET: nnnn	Extended memory not working or configured properly.	Replace defective memory.
FAILING BITS: nnnn	Memory failure in System, Extended, or Shadow memory.	Replace defective memory.
FIXED DISK X FAILURE (where X =0 or 1)	The hard disk is not configured or working properly.	Rerun SETUP and check connections, or replace hard disk.
FIXED DISK CONTROLLER FAILURE	The controller card has failed.	Check configuration and connections, or replace controller card.
INCORRECT DRIVE A TYPE	Floppy drive A: not set correctly in Setup.	Run Setup.
INCORRECT DRIVE B TYPE	Floppy drive A: not set correctly in Setup.	Run Setup.
INVALID NVRAM MEDIA TYPE	NVRAM chip is bad.	Requires repair of system board.
KEYBOARD ERROR, or KEYBOARD CONTROLLER ERROR	The keyboard or keyboard controller failed.	Check connections. You may have to replace the keyboard or controller.
KEYBOARD ERROR nn	A key is jammed or was held down during boot.	Make sure the keys are not jammed or dirty.
KEYBOARD LOCKED	Keyswitch on the front of the case is locked.	Unlock the keyswitch.

Message	Possible Cause	Solution
MONITOR TYPE DOES NOT MATCH CMOS	Monitor type not correctly identified in Setup.	Run Setup and enter correct monitor type.
OPERATING SYSTEM NOT FOUND	Operating system cannot be located on Drive C: or Drive A:	Check Setup to see if Drive A: and C: are properly configured, or put a bootable disk in Drive A:
PARITY CHECK 1 nnnn	Parity error found in the system bus.	Check Setup. Board repair may be required.
PARITY CHECK 2 nnnn	Parity error found in the I/O bus.	Check Setup. Board repair may be required.
PREVIOUS BOOT INCOMPLETE - DEFAULT CONFIGURATION USED	Previous POST did not complete successfully.	Run Setup, load default BIOS settings, make any necessary adjustments, and save the changes
REAL TIME CLOCK ERROR	Real-time clock failed BIOS test.	May require battery replacement or board repair.
SHADOW RAM FAILED AT OFFSET	Shadow RAM failed.	May require repair of system board.
SYSTEM BATTERY IS DEAD	System battery died.	Replace the system battery and run Setup to reconfigure the system.
SYSTEM CACHE ERROR - CACHE DISABLED	External (L2) cache failed BIOS test.	System will still run, but slower. Replace cache at convenience.
SYSTEM CMOS CHECKSUM BAD - RUN SETUP	System CMOS has been corrupted or modified incorrectly.	Run Setup and reconfigure the system.
SYSTEM RAM FAILED AT OFFSET: nnnn	System RAM failed.	Replace defective RAM.
SYSTEM TIMER ERROR	Timer test failed.	Requires repair of system board.

Appendix C

Beep and POST Codes

Beep codes are a series of beeps sent through the speaker which indicate a problem during the Power On Self Test (POST). If text appears on the video screen, the M6Me has completed POST; any other tone from the speaker indicates something other than a POST error. These tones *are not* described in the tables on the following pages.

The beep error codes are a series of beeps. The duration of the beep tones are constant, but the length of the pauses between the beeps varies. For example: a 1 - 3 - 3 beep code will sound like one beep, a pause; three beeps consecutively, another pause and then three more beeps.

One beep code is often misunderstood. If a video card is not installed or is failing, the system board will generate a long - short - long - short beep code. This is often interpreted as a 1 - 2 - 1 beep code. But POST errors always vary in the length of the pause and not the duration of the beep tone.

The following tables list all beep codes and POST routines.

Code	Beeps	POST Routine Description
02		Verify Real Mode.
04		Get CPU type.
06		Initialize system hardware.
08		Initialize chipset registers with initial POST values.
09		Get in POST Reg.
0A		Initialize CPU registers.
0C		Initialize cache initial POST values.
OE		Initialize I/O.
OF		Initialize the localbus IDE.
10		Initialize Power Management.
11		Load alternate registers with initial POST values.
12		Jump to UserPatch0.
14		Initialize keyboard controller.
16	2-2-3	BIOS ROM checksum.
18		8254 timer initialization.
1A		8237 DMA controller initialization.
1C		Reset Programmable Interrupt Controller.
20	3-1-1	Test DRAM refresh.
22	3-1-3	Test 8742 Keyboard Controller.
24		Set ES segment register to 4 GB.
28		Autosize DRAM.
2A		Clear 512K base RAM.
2C	3-4-1	Test 512K base address lines.
2E	3-4-3	Test 512K base memory.
32		Test CPU bus-clock frequency.
34		Test CMOS RAM.
35		Initialize alternate chipset registers.
37		Reinitialize the chipset (MB only).
38		Shadow system BIOS ROM.
39		Reinitialize the cache (MB only).
3A		Autosize cache.
3C		Configure advanced chipset registers.
3D		Load alternate registers with CMOS values.
40		Set initial CPU speed.
42		Initialize interrupt vectors.
44		Initialize BIOS interrupts.
46	2-1-2-3	Check ROM copyright notice.
47		Initialize manager for PCI Option ROMs.
48		Check video configuration against CMOS.
49		Initialize PCI bus and devices.

Code	Beeps	POST Routine Description
4A		Initialize all video adapters in system.
4C		Shadow video BIOS ROM.
4E		Display copyright notice.
50		Display CPU type and speed.
51		Initialize EISA board.
52		Test keyboard.
54		Set key click if enabled.
56		Enable keyboard.
58	2-2-3-1	Test for unexpected interrupts.
5A		Display prompt “Press F2 to enter SETUP”.
5C		Test RAM between 512 and 640k.
60		Test extended memory.
62		Test extended memory address lines.
64		Jump to UserPatch1.
66		Configure advanced cache registers.
68		Enable external and CPU caches.
6A		Display external cache size.
6C		Display shadow message.
6E		Display non-disposable segments.
70		Display error messages.
72		Check for configuration errors.
74		Test real-time clock.
76		Check for keyboard errors.
7C		Set up hardware interrupt vectors.
7E		Test coprocessor if present.
80		Disable onboard I/O ports.
82		Detect and install external RS232 ports.
84		Detect and install external parallel ports.
86		Re-initialize on-board I/O ports.
88		Initialize BIOSData Area.
8A		Initialize Extended BIOS Data Area.
8C		Initialize floppy controller.
90		Initialize hard-disk controller.
91		Initialize localbus hard-disk controller.
92		Jump to UserPatch2.
93		Build MPTABLE for multi-processor boards.
94		Disable A20 address line.
96		Clear huge ES segment register.
98		Search for option ROMs.
9A		Shadow option ROMs.

Code	Beeps	POST Routine Description
9C		Set up Power Management.
9E		Enable hardware interrupts.
A0		Set time of day.
A2		Check key lock.
A4		Initialize typematic rate.
A8		Erase F2 prompt.
AA		Scan for F2 keystroke.
AC		Enter SETUP.
AE		Clear in-POST flag.
B0		Check for errors.
B2		POST done - prepare to boot operating system.
B4		One beep.
B6		Check password (optional).
B8		Clear global descriptor table.
BC		Clear parity checkers.
BE		Clear screen (optional).
BF		Check virus and backup reminders.
C0		Try to boot with INT 19.
D0		Interrupt handler error.
D2		Unknown interrupt error.
D4		Pending Interrupt.
D6		Initialize option ROM error.
D8		Shutdown error.
DA		Extended Block Move.
DC		Shutdown 10 error.
		The following are for boot block in Flash ROM:
E2		Initialize the chipset.
E3		Initialize refresh counter.
E4		Check for Forced Flash.
E5		Check HW status of ROM.
E6		BIOS ROM is OK.
E7		Do a complete RAM test.
E8		Do OEM initialization.
E9		Initialize interrupt controller.
EA		Read in the bootstrap code.
EB		Initialize all vectors.
EC		Boot the Flash program.
ED		Initialize the boot device.
EE		Boot code was read OK.

Appendix D

Hard Disk Drive Types

The following table lists the IDE hard disk types supported by the M6Me.

Type	Cylinders	Heads	Write Precomp	Sectors	Size
1	306	4	128	17	10
2	615	4	300	17	21
3	615	6	300	17	32
4	940	8	512	17	65
5	940	6	512	17	99
6	615	4	none	17	21
7	462	8	256	17	32
8	733	5	none	17	31
9	900	15	none	17	117
10	820	3	none	17	21
11	855	5	none	17	37
12	855	7	none	17	52
13	306	8	128	17	21
14	733	7	none	17	44
15	N/A	N/A	N/A	N/A	N/A
16	612	4	0	17	21
17	977	5	300	17	42
18	977	7	none	17	59
19	1024	7	512	17	62
20	733	5	300	17	31
21	733	7	300	17	94
22	733	5	300	17	31
23	306	4	0	17	10
24	612	4	305	17	21
25	612	2	300	17	10
26	614	4	none	17	21
27	820	6	none	17	42
28	977	5	none	17	42
29	1218	15	none	36	336
30	1224	15	none	17	159

Type	Cylinders	Heads	Write Precomp	Sectors	Size
31	823	10	512	17	71
32	809	6	128	17	42
33	830	7	none	17	50
34	830	10	none	17	72
35	1024	5	none	17	44
36	1024	8	none	17	71
37	615	8	128	17	42
38	1024	8	none	26	109
39	925	9	none	17	72

Appendix E Updating the System BIOS

The Micronics system boards are designed so that the BIOS can be reprogrammed using a BIOS file. You can easily FLASH a BIOS by following the steps below:

1) After downloading the appropriate BIOS file from our BBS or Website, extract it to a bootable MS-DOS 6.X diskette.

2) Reboot your system with the MS-DOS 6.X diskette in the A: drive. To make sure a clean DOS environment is loaded, press the F5 key while "Starting MS-DOS" is displayed. After the system has rebooted, the cursor will appear at the A:> prompt.

3) Now you can run the FLASH utility. The filename should be "PHLASH.EXE." Type this filename at the A:> prompt (but don't include its extension), followed by a space and the BIOS ROM image's filename. This file will be included in the download and has a file length of about 131K. For example, to update the M6Me to BIOS version 01, you would type:

   PHLASH M6Me_01.ROM [ENTER]

If you encounter any problems during this process, or if you have questions about the procedure, please call Technical Support.

4) Once the FLASH process has begun, select [Y]es, if prompted, to allow auto-sensing of the part (the FLASH chip itself).

5) After the update process has completed and the system reboots, verify that the new BIOS version appears on-screen. If you have problems during this process, or if you have questions about the procedure, please call Technical Support.

NOTE: If the BIOS is somehow erased or doesn't seem to accept the upgrade, you can have your original BIOS chip reprogrammed manually by Technical Support. There is a $29.95 fee for this service, which includes shipping charges to send your FLASH EPROM chip

back to you. Also, a preprogrammed FLASH EPROM chip can be purchased from Technical Support for $50.00. Overnight shipping costs an additional $10.00. (Price and availability subject to change.)

If you prefer to send your system board in for the upgrade, the RMA department offers this service free of charge if your system board is under warranty.

Limited Warranty

Except as described below, Micronics warrants the products to be free from defects in material and workmanship in normal use for a period of one (1) year from date o purchase. Should any product fail to perform according to this warranty at any time during the warranty period, except as provided below, Micronics or its authorized service centers will, at Micronics' option, repair or replace the product at no additional charge.

The warranty does not cover loss or damage which occurs in shipment or which is due to: (1) improper installation or maintenance, misuse, neglect or any cause other than ordinary commercial application, including without limita - tion, accidents or acts of God; (2) adjustment, repair, or modification by other than a Micronics authorized service center; (3) improper environment, excessive or inadequate heating or air conditioning, or electrical power failures, surges or other irregularities; (4) any statement about the product other than those set forth in this warranty; or (5) nonconformity to models or samples shown to the pur - chaser. Any models or samples were for the sole purpose of suggesting the character of the product and are not in - tended to form the basis of the bargain.

A receipt or copy of the invoice with the date of purchase from a Micronics reseller is required before any warranty service can be rendered. Service can be obtained by calling Micronics for a Return Merchandise Authorization (RMA) Number.

The RMA Number should be prominently displayed on the outside of the shipping carton of the returned product. Returned product should be shipped prepaid or hand car - ried to Micronics. The purchaser assumes risk of loss or damage in transit, and unless otherwise agreed to in writing by Micronics, will pay inbound shipping charges.

The exclusive remedy of the purchaser under this warranty above will be repair or replace at Micronics' option, but if for

any reason that remedy should fail of its essential purpose, the exclusive remedy of the purchaser shall then be actual damages up to amounts paid for the defective product by the purchaser. This limited warranty shall be deemed to "fail of its essential purpose" if, after repeated efforts, Micronics is unable to make the product operate as warranted. Micronics' liability for damages to the purchaser for any cause whatsoever; regardless of the form of action and whether in contract or in tort, shall be limited to the purchase price in effect when the cause of action arose for the product that is the basis of the claim.

Micronics will not be liable for any lost profits or any indirect, special incidental or consequential damages in connection with the product, even if Micronics has been advised of the possibility of such damages.

Micronics makes no warranties or representations as to performance of products or as to service to distributor or to any person, except as set forth in Micronics; limited warranty accompanying delivery of product.

Micronics disclaims all other warranties whether oral, written, expressed, or implied, including without limitation, the warranties of design, merchantability, or fitness for a particular purpose, if applicable, or arising from a course of dealing, usage or trade practice.

Non-Warranty Service

After the one year warranty service is no longer in effect, repair service is still available for Micronics products. For more information, contact Micronics' RMA department at (510) 683-0428. The RMA department is open between 8:30 A.M. and 5 P.M. Pacific Standard Time.

FCC Statement

This equipment has been tested and found to comply within the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not used in accordance with the instructions, may cause harmful interference to radio communications. Interference to radio or television reception can be determined by turning the equipment off and on. You are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician for help.

To meet FCC requirements, shielded cables are required.

NOTE: Changes or modifications not expressly approved by Micronics could void your authority to operate the equipment.

Declaration of Conformity

Application of Council Directives 89/336/EEC. Standards to which the conformity is declared:

EN55022 EN50082 - 1

Manufacturer's Name: Micronics Computers, Inc.

Manufacturers Address: 221 Warren Avenue
Fremont, California 94539
USA
Telephone: (510) 651 - 2300
Fax: (510) 651 - 9450

Type of Equipment: Dual Pentium Pro Motherboard
(AT Form Factor)
Full Tower Personal Computer

Model Name: M6Me

Tested by: Micronics Computers, Inc.
221 Warren Avenue
Fremont, CA. 94539
USA

Rockford Engineering Services, Inc.
9959 Calaveras Road
P.O. Box 543
Sunol, CA. 94586 - 0543
Telephone: (510) 862 - 2944
Fax: (510) 862 - 9013

Test Engineers John Y. Chan/Micronics (EN55022)
Paramjeet Singh/RES (EN50082 - 1)

I, the undersigned, hereby declare that the specified equip - ment conforms to the directives and standards listed above.

Thomas Lui

Thomas Lui
Compliance Engineering Manager
July 19, 1996

Glossary

16550 UART - A high speed chip for controlling serial ports. Although unnecessary for a mouse, it is required for modems that are 14,400 baud or faster.

486DX - A type of 32-bit CPU with a built-in math-coprocessor and internal cache.

486DX2 - A 486DX CPU where the internal speed of the CPU operates at twice the external speed.

486DX4 - A 486DX CPU where the internal speed of the CPU operates at three times the external speed.

486SX - A 486DX CPU with no math coprocessor.

ATX - A system board size measuring approximately 12" x 9.6".

Asynchronous - Operations that do not require the clocks of communicating devices to be coordinated. See Synchronous.

Bidirectional Parallel Port - A type of parallel port that can send and receive information.

BIOS - An Acronym for Basic Input/Output System. Configures the system board and provides hardware information to the operating system.

Bit - A contraction of Binary digit. The smallest unit of information in a binary number system. A bit represents a choice between either zero or one.

Boot - To start up the computer and load the operating system software. See cold boot and warm boot.

Bus - A group of electronic paths used to send data between parts of the system. On a system board, the bus connects the peripheral cards with the microprocessor via the expansion slots.

Bus Mastering - The ability of an peripheral card to control the bus without requiring intervention of the CPU.

Byte - A group of adjacent bits treated as a unit. Eight bits are typically considered one byte. Also called a character.

Cache - A process where information is copied from the slower memory (DRAM) to the faster memory (SRAM). Information that is likely to be read or edited is stored in the cache providing significant performance increases.

Cache Hit - The percentage of request for data from memory that can be served from the cache.

Cache Miss - A memory access which cannot be supplied from cache.

Cold Boot - Starting the computer by turning on the power or pressing the RESET button. A cold boot makes the processor execute all of the diagnostics. See boot and warm boot.

CPU - An acronym for Central Processing Unit. A CPU performs arithmetic calculations, makes logical decisions, and directs the operation of the computer in conjunction with the operating system.

Disk Drive - A hardware device which provides for the storage of data on diskettes or hard metal disks that have a magnetic coating. A disk drive functions by spinning at high speed while moving a device called the read/write head across the disk's surface in order to read or write data in magnetic code.

DRAM - An acronym for Dynamic Random Access Memory. A type of memory chip that only keeps its memory if supplied with regular clock pulses and a chance to regularly refresh its data. It is slower and more cost effective than SRAM. See SRAM.

ECC - An acronym for Error Checking and Correction. ECC enables parity checking and can detect and correct memory errors on the system board.

ECP - An acronym for Expanded Capabilities Port. A standard set by Hewlett Packard and Microsoft Corporation to expand the capabilities of the parallel port.

EDO Memory - An acronym for Extended Data Out. A type of DRAM with built-in cache for enhanced performance.

EISA - An acronym for Extended Industry Standard Architecture. EISA is a bus design standard which is fully backward compatible with the ISA bus. Although it is a 32-bit bus, it only runs at 8MHz. See *PCI, VESA Local Bus and ISA*.

EPP - An acronym for Enhanced Parallel Port. A standard which increases the capabilities of the parallel port.

EPROM - Acronym for Erasable Programmable Read Only Memory. A type of ROM chip that can be programmed with relatively simple tools that will retain its data until erased. It can only be erased by exposing the circuitry in the chip to ultraviolet light. See also Flash ROM.

Fast SCSI - A SCSI data transfer rate standard that allows a rate of up to 10 MBytes/sec on an 8-bit SCSI bus and up to 20 MBytes/sec on a 16-bit (Wide) SCSI bus.

Flash ROM - A type of ROM chip that will retain its data until erased. It can be erased or reprogrammed by supplying it with +12V of voltage. See ROM and EPROM.

Gigabyte - A disk storage capacity measurement. Approximately one thousand megabytes or 1,073,741,824 bytes.

IDE - An acronym for Integrated Device Electronics. A standard for communicating between a hard drive and a computer.

Internal Cache - Cache which is built into the CPU. See Cache.

ISA - An acronym for Industry Standard Architecture. A well-established bus standard that originated with the IBM AT. See *PCI, VESA Local Bus and EISA*.

Parallel - A form of data transmission in which the data is sent one byte at a time over several wires that each carry one byte. In parallel transmission, all the bytes arrive simultaneously, as opposed to serial transmission in which bits arrive one by one.

Parallel Port - A connection for a printer or similar peripheral. Generally, parallel ports are output only. See Bidirectional Parallel Port and ECP.

PCI - An acronym for Peripheral Component Interconnect. A high performance 32-bit or 64-bit bus developed by Intel Corporation. PCI is designed to be independent of the hardware architecture to ensure compatibility with future computer systems. See *EISA, VESA Local Bus and ISA*.

Pentium - A high performance 64-bit CISC processor designed and manufactured by Intel Corporation. As of this writing, Pentium is the highest performing X86 processor available.

Plug and Play - A standard developed to ensure easy installation of peripherals. Theoretically, a newly installed card will automatically configure itself and work properly without requiring jumper configuration or device drivers.

POST - An acronym for Power On Self Test. A diagnostic program that is run whenever the system is cold booted.

RAM - An acronym for Random Access Memory. A type of memory that is used as the "working memory" of a computer system. See DRAM and SRAM.

ROM - An acronym for Read Only Memory. A type of memory that retains its data without requiring power. Once written, it cannot be modified. See EPROM and Flash ROM.

SCSI - Small computer system interface. A bus interface standard that defines physical and electrical characteristics for hardware devices. SCSI provides a standard interface that enables many different kinds of devices, such as disk drives and CD-ROM drives to interface with the host computer.

Serial - A type of data transmission in which the data is sent one bit at a time over a single wire. See Parallel.

Serial Port - A communications port used to connect peripherals such as modems and mice.

Setup - A program that allows you to make changes to the system configuration.

Shadow RAM - A technique used to load a duplicate copy of BIOS from slower ROM into faster RAM. This

enhances system performance because it provides higher access speed to the BIOS.

SIMM - An acronym for Standard Inline Memory Module. A small printed circuit board containing memory chips.

Small Computer System Interface See SCSI.

SRAM - An acronym for Static Random Access Memory. A type of memory that can retain data without requiring a regular clock signal. Although they are faster than DRAM, they hold less data and are more expensive.

Synchronous - Protocols that require the clocks of communicating machines or devices to be coordinated.

Synchronous Cache - A type of cache that uses a clock signal to latch the inputs and the data output. This structure spreads the cache access across two or three cycles while maintaining a bandwidth of one access per cycle. Improves performance by 5 - 10%.

Terabyte - A measurement for very large storage capacity. One Terabyte is equivalent one - thousand gigabytes, one - million megabytes, or 1,099,511,627,766 bytes.

VESA - An acronym for Video Electronics and Standards Association.

VESA Local Bus (VL - Bus) A high performance bus designed by VESA. A 32 - bit version of the ISA bus which operates at the speed of the computer's CPU. See *PCI, EISA and ISA*.

VGA - An acronym for Video Graphics Array. A standard for monitor displays.

VR - Pentium CPU voltage ranging from 3.300 - 3.465 Volts.

VRE - Pentium CPU voltage ranging from 3.400 - 3.600 Volts.

Warm Boot - Restarting the system by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys.

Wide SCSI - A SCSI - 2 enhancement that allows data to be transferred 16 or 32 bits at a time on the SCSI bus instead of 8 bits at a time.

Write - Back Cache - Upon a cache hit, the cache is updated and the main memory is not affected. Upon a cache miss, only the main memory is updated.

Write - Through Cache - Upon a cache hit, the cache and the main memory are updated. Upon a cache miss, only the main memory is updated.

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