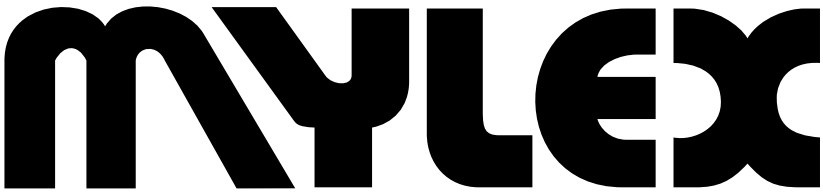

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Introduction

Thank you for making the decision to purchase the Mylex MPE--PNTM. With proper installation and maintenance, the MPE--PNTM will provide years of trouble--free operation.

Package Contents

- MPE--PNTM System Board
- Cable Kit (2 serial cables and 1 parallel cable)
- EISA Configuration Utility diskettes
- Driver diskettes for DOS, NetWare, OS/2, NT and SCO UNIX
- MPE--PNTM BIOS User's Manual
- MPE--PNTM SCSI Software Manual
- EISA Configuration Utility User's Guide
- This manual
- Any pertinent release notes available at the time of shipment
- System Problem Report form
- Warranty card

Handling Precautions

The MPE--PNTM contains electronic components that are highly sensitive to electrostatic discharge. Use extra caution when handling the MPE--PNTM to ensure there is adequate grounding around the work area the board is being installed. **ALWAYS** wear a ground strap or ground your body by touching a grounded object such as an unpainted--painted metal device connected to power ground.

The MPE--PNTM has delicate crystal oscillators that can break if subjected to sudden shock such as being tossed on a table. Use care when moving the MPE--PNTM from point to point.

If Troubles Are Encountered

If, during the course of installation or operation of the MPE--PNTM, the board displays improper operation, first consult this manual's Troubleshooting section, paying particular attention to the jumper settings, as well as the BIOS CMOS options. Then contact your dealer or distributor for additional information. Dealers and Distributors may contact Mylex Technical Support Department at (510) 796--6100. Be sure to have the enclosed System Problem Report completely filled out.

Overview

General Description: The MPE--PNTM is a full sized AT form factor PCI--EISA system board based on the Intel Pentium microprocessor. The highly integrated ASIC design provides high performance coupled with a list of features including: three PCI master slots, seven bus master EISA slots, Pentium processor, optional 256K/512K of secondary write--back cache, up to 192MB of DRAM, integrated I/O for serial, parallel, IDE and high--speed floppy drive control and FLASH PROM BIOS.

EISA BUS Architecture: EISA has emerged as the defacto standard for a 32--bit PC BUS. Backward compatible with the original AT BUS, as well as providing the highest performance available from a PC standard bus -- 33 MB/sec -- , EISA is the architecture of choice. All slots on the MPE--PNTM are “Bus Master” and “Burst Mode” compatible ensuring EISA adapter compatibility.

PCI Bus Architecture: PCI is an emerging de--facto standard local bus for high--end PC systems. PCI supports data burst transfer rates of 132MB/sec. at 33MHz. High speed peripherals and graphics cards can use the PCI bus to transfer data at high speed. The MPE--PNTM supports 3 PCI expansion slots. The board also has a built--in SCSI--II controller residing on the PCI bus.

192MB of DRAM Memory: While most system boards only support 32 or 64MB, the MPE--PNTM quadruples that memory capacity up to 192MB. This is a must for network file servers and multi--user, time--sharing systems. The MPE--PNTM supports the new 72 pin standard single as well as double sided modules of 256Kx36, 512Kx36, 1Mx36, 2Mx36, 4Mx36, 8Mx36.

256K--512K of Write--Back Cache Memory (Secondary Cache): Cache memory is an essential part of maintaining high system performance. In most cases, the larger the cache memory, the greater the system performance. Repetitive programs such as spread--sheet and CAD applications will benefit the most. The standard configuration does not include Cache memory. To allow easy upgrade of cache memory, the SRAM module is used, allowing 256K/512K of cache using standard or burst SRAMs.

Unlike other cache architectures that require the CPU to write directly to DRAM, the write--back cache is the most efficient way for cache to write information back to main memory. This is because the cache can be written to faster than DRAM. Then the cache circuit writes the information to the DRAM by itself. The secondary cache can be set up to operate in write--back or write--through mode.

Embedded I/O: The MPE--PNTM includes the latest generation of Super I/O controllers which provides 2 serial ports, a parallel port, IDE disk interface and floppy disk controller. The floppy disk controller is capable of supporting the new “4MB” floppy disk drives. Just as important, the floppy controller is capable of data rates of 1MB/sec--—this is a significant benefit in performance on various floppy tape drives compatible with the 1MB/sec transfer rates. In addition, the serial port UARTS are compatible with the National™ 16550 with 16--byte FIFO.

FLASH ROM BIOS: At one time or another, the need can arise to update the system BIOS. Usually this means that the system must be partially disassembled, the old ROM chip removed, discarded, the new ROM chip installed and the system reassembled. With FLASH technology, BIOS updates are made simply by running a program. With the MPE--PNTM there are no chassis to open, no jumpers to set. Simply run a DOS program that reads a BIOS binary image file and then programs the new BIOS into the FLASH memory chip.

SCSI Interface: The MPE--PNTM features an on--board Fast and Wide SCSI Interface. The SCSI Interface is connected to the PCI bus on the motherboard, for the highest data throughput.

Contents:

This systemboard manual is broken down into five chapters, including this one, and two appendixes. Discussed in this manual are:

Installation (Chapter 2) — This describes the major steps for installing the MPE--PNTM into a chassis and making all necessary hardware connections including I/O cables.

Troubleshooting (Chapter 3) — This section provides hints on resolving technical problems with the MPE--PNTM system board.

Upgrading (Chapter 4) — This section describes the steps necessary to upgrade the CPU and cache on the MPE--PNTM.

Technical Reference (Chapter 5) — This section covers some of the major aspects of the MPE--PNTM's design, as well as pin assignments and compatibility and benchmark information.

Also in this manual is a system planning worksheet **(Appendix A)** and upgrade order information **(Appendix B)**.

What You Will Need

Before you begin to install the MPE--PNTM in a chassis, the following tools will be required: A Phillips and flat blade screwdriver, plastic stand--offs (these are normally supplied with the chassis) and assorted screws.

A good working knowledge of computers is highly recommended for installing a system board. It is not advised that a novice attempt installation of the MPE--PNTM.

Chapter 2: Installation

A Quick Look At Connectors and Jumpers

The following is the list of jumpers and the corresponding use for the MPE--PNTM motherboard. See Figure 2--0 for jumper locations.

ALL JUMPERS/CONNECTORS LOCATED ON MPE--PNTM MOTHERBOARD		DEFAULT SETTINGS
J1	IDE DMA: OPEN--NO DMA ON IDE (DEFAULT) CLOSED--IDE DMA ON CHANNEL 6	OPEN
J2	RESERVED	OPEN
J3	COLOR/MONOCHROME VIDEO SELECTION	CLOSED (COLOR)
J4	FRONT PANEL RESET	--—--—
J5	KEYBOARD LOCK (1x5 PIN)	--—--—
J6	SPEAKER CONNECTOR (1x4 PIN)	--—--—
J7	RESERVED	OPEN
J8	RESERVED	2--3 (CLOSED)
J9	IDE CONNECTOR (40 PIN 20x2)	--—--—
J10	POWER CONNECTOR	--—--—
J11	RESERVED	OPEN

J12	RESERVED	OPEN
J13	SERIAL PORT 1 (10 PIN 5x2)	--—--—
J14	SERIAL PORT 2 (10 PIN 5x2)	--—--—
J15	PARALLEL PRINTER 26 PINS (13x2 PIN)	--—--—
J16	FLOPPY CONNECTOR 34 PIN (2x17 PIN)	--—--—
J17	KEYBOARD CONNECTOR 1x5 PIN	--—--—
J18	HEAT SINK FAN POWER (12V)	--—--—
J19	PENTIUM CACHE WRITE--BACK/ WRITE--THRU OPEN -- PENTIUM INTERNAL CACHE IS WRITE--BACK (DE-FAULT) CLOSED -- PENTIUM INTERNAL CACHE IS WRITE--THRU	OPEN
J20	SCSI CONNECTOR 50 PIN (2x25)	--—--—
J21	KEYBOARD CONNECTOR (DB--5 SHIELDED)	--—--—
J22	HARD DISK ACTIVITY LED. PIN 2 IS POSITIVE.	--—--—
J23	TERMINATOR POWER FOR SCSI INTERFACE CLOSED -- MOTHERBOARD SUPPLIES TERMINATION POWER FOR SCSI BUS (DEFAULT) OPEN -- TERMINATION POWER NOT GIVEN BY MOTHERBOARD	CLOSED

J24	SCSI TERMINATION CLOSED -- ENABLE MOTHER-BOARD TERMINATION FOR SCSI BUS (DEFAULT) OPEN -- DIS-ABLE MOTHERBOARD TERMINA-TION FOR SCSI	CLOSED
J26	RESERVED	OPEN
J29	RESERVED	OPEN
J30	EXTERNAL CACHE PARITY SUP-PORT 1--2, 3--4 CLOSED -- NO PARITY ON EXTERNAL CACHE (DEFAULT) 1--3, 2--4 CLOSED -- EXTERNAL CACHE SUPPORTS PARITY	CLOSE 1--2 & 3--4
J25	CACHE CONFIGURATION	SEE INSTALLING CACHE MEMORY SEC-TION
J27	CACHE CONFIGURATION	SEE INSTALLING CACHE MEMORY SEC-TION
J28	CACHE TYPE (1--2) CLOSED -- STANDARD SRAM CACHE (DEFAULT) (2--3) CLOSED -- BURST SRAM CACHE	CLOSED

Installation

Complete the following steps for installing the MPE--PNTM system board into a chassis.

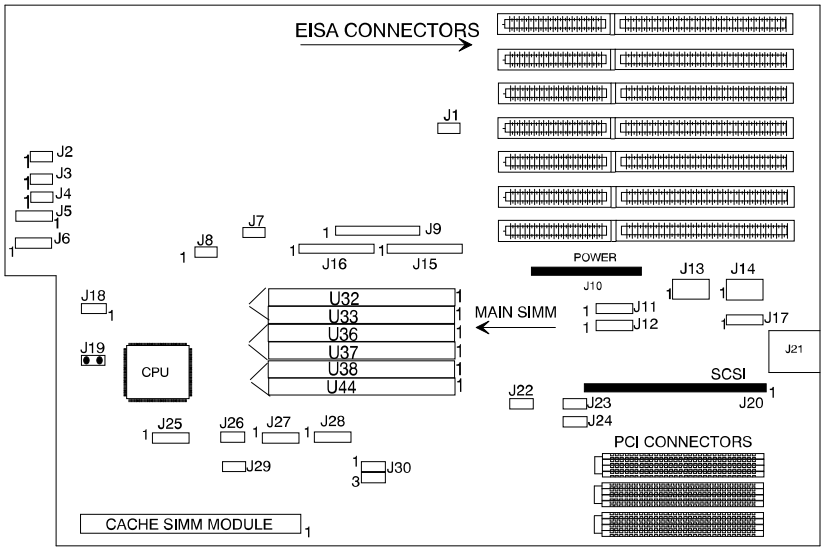

Figure 2-1. MPE-PNTM System Board

Installation

1. Planning the system configuration.
2. Installing SIMM memory.
3. Changing any of the hardware jumpers, if the system configuration requires them to be changed.
4. Installing the board into the chassis.
5. Powering--up the system and setting the CMOS configuration information.

Planning the System

Using the simple form located in Appendix A, the resources available can be planned and any problems such as hardware conflicts can be avoided ahead of time. It would be a good idea to complete this form before system assembly is performed.

Installing Memory

The MPE--PNTM provides six 72--pin SIMM sockets capable of taking single as well as double--sided SIMMs. The MPE--PNTM supports different SIMM sizes. All SIMMs should be 60 or 70 ns SIMMs.

The six SIMM sockets can be viewed as three BANKS of DRAM.

BANK0 is made up of U44 and U38. BANK1 is made up of U37 and U36 and BANK2 is made up of U33 and U32.

Two SIMM DRAM modules form one BANK. SIMM modules within a BANK must be of the same type. The minimum number of SIMM modules required is two and must be in BANK0. At any moment, one must have two, four, or six SIMM modules. One could use different type of SIMM modules across BANKS.

The minimum memory required is 2MB, and the maximum supported is 192MB. 256Kx36, 512Kx36, 1MBx36, 2MBx36, 4MBx36 and 8MBx36 SIMM DRAM modules are supported. BANK0 must be populated. Additional memory can be added by first populating BANK1 and then BANK2.

BANK	SIMM MODULES
BANK0	U44, U38
BANK1	U37, U36
BANK2	U33, U32

Installing the SIMM Memory

While installing the SIMM (cache or main memory), the Pin 1 edge of the SIMM should be towards the Pin 1 side of the SIMM socket on the motherboard. Cache SIMM module socket (U60) is located on the edge of the board near the crystal oscillator.

SIZE	BANK 0	BANK 1	BANK 2
2MB	1MB X 2	NONE	NONE
4MB	1MB X 2	1MB X 2	NONE
4MB	2MB X 2	NONE	NONE
6MB	1MB X 2	1MB X 2	1MB X 2
8MB	2MB X 2	2MB X 2	NONE
8MB	4MB X 2	NONE	NONE
12MB	2MB X 2	2MB X 2	2MB X 2
12MB	4MB X 2	2MB X 2	NONE
16MB	4MB X 2	2MB X 2	2MB X 2
16MB	4MB X 2	4MB X 2	NONE
16MB	8MB X 2	NONE	NONE
20MB	4MB X 2	4MB X 2	2MB X 2
20MB	8MB X 2	2MB X 2	NONE
24MB	4MB X 2	4MB X 2	4MB X 2
24MB	8MB X 2	2MB X 2	2MB X 2
24MB	8MB X 2	4MB X 2	NONE
32MB	16MB X 2	NONE	NONE

SIZE	BANK 0	BANK 1	BANK 2
32MB	8MB X 2	8 MB X 2	NONE
32MB	8MB X 2	4MB X 2	4MB X 2
48MB	16MB X 2	8MB X 2	NONE
48MB	16MB X 2	4MB X 2	4MB X 2
48MB	8MB X 2	8MB X 2	8MB X 2
64MB	32MB X 2	NONE	NONE
64KB	16MB X 2	16MB X 2	NONE
64MB	16MB X 2	8MB X 2	8MB X 2
96MB	32MB X 2	16MB X 2	NONE
96MB	32MB X 2	8MB X 2	8MB X 2
96MB	16MB X 2	16MB X 2	16MB X 2
128MB	32MB X 2	32MB X 2	NONE
128MB	32MB X 2	16MB X 2	16MB X 2
192MB	32MB X 2	32MB X 2	32MB X 2

1MB=256KB X 36 8MB=2MB X 36

2MB=512KB X 36 16MB=4MB X 36

4MB=1MB X 36 32MB=8MB X 36

Installing or Upgrading the CPU

The MPE--PNTM is equipped with a special IF socket (Zero Insertion Force) to install or upgrade:

PENTIUM 60MHz

PENTIUM 66MHz

Once the processor that will be installed has been obtained, follow these simple steps.

1. Locate the pin 1 indicator on the PENTIUM processor chip. This is usually indicated by a small black dot or a diagonal notch on one corner of the chip.
2. Place the chip into position so that the pin one indicator is properly aligned with socket.
3. Once the pin 1 orientation is confirmed, gently press down the Pentium processor chip so that it sits flat on the ZIF socket.
4. The crystal oscillator Y2 (near the cache module) should be 60MHz/66MHz depending on the Pentium speed. However, the 60MHz crystal can be used for the Pentium 60/66MHz chip.

Color or Mono Video Selection

Jumper J3 is used set the type of video adapter. The jumper placed over the two pins (closed), indicates a color video adapter is installed. The jumper removed (open), indicates a monochrome adapter is installed. If both a color and mono adapter are installed, place the jumper in the position to indicate which video adapter will be the primary video adapter.

Chassis Installation

The MPE--PNTM is designed to fit "Full AT" style chassis. Some chassis may have slightly off--set dimensions due to manufacturing tolerances or design implementation. Therefore, it is suggested that before the system board is physically installed, the board be put into place to assure proper fit. Note the locations where screws can be installed and where the nylon stand--offs can be used. For proper grounding, at least two screws should be used to lock the system down. These two locations are the most commonly used points for screw mounting locations. If more screw mounting locations are available, it is highly recommended that they be used as well. See Figure 2--1.

Once the locations for both the screws and the nylon stand--offs have been identified, remove the board, insert the nylon stand--offs, making sure all the stand--offs are in their proper position and are not causing the board to warp. Then install the board into the chassis. Then lock the system board into place by installing the screws. Do not over--tighten. Usually 1/8 turn after the screw--head makes contact is sufficient to assure a good ground.

*Note: I*n order to use all available slots (seven EISA, three PCI), you'll need a "full--size 12--slot AT--sheet chassis." A tower chassis is recommended for better ventilation.

Important Note: The Pentium processor requires proper cooling (forced air circulation) for reliable operation. J18 is used to supply 12 volts for a heat--sink fan. Ensure that the heat--sink fan assembly is securely fastened onto the Pentium System Board, and that the fan power cable (2 wire) is connected to J18. Usually the black wire is the ground wire and the red/yellow wire is +12v. Pin 1 (marked as +12V) provides +12V input to the fan. If this cable is inserted with the wrong polarity, the fan may not rotate at all. After powering on the system, make sure the fan is rotating properly.

Connecting Cables

Connect the power cables from the power supply to the system board. Then install any ribbon cables from the internal peripheral controllers to the disk drive(s) and I/O port connectors. Be sure the red or blue stripe along the edge of the ribbon cable is connected to Pin 1 on the connector.

Note: Pin 1 for all the I/O interfaces is marked by the number 1 and/or a white bar located in the corner of the connector.

SCSI Interface

The MPE--PNTM systemboard supports an on--board SCSI--II interface. The SCSI--II support is through the NCR53C810. Both standard and Fast SCSI drives are supported. The SCSI chip NCR53C810 resides on the PCI Bus. Connect the SCSI drive cable to J20 -- SCSI connector 50 pin (2x25). Please refer to the MPE--PNTM SCSI Software Manual for more information on SCSI installation.

The motherboard can supply termination power required by the SCSI bus. This is selected through a jumper on the motherboard. The motherboard also has SCSI terminators built in. To use the on--board SCSI device, enable the SCSI chip the BIOS SETUP. Install the jumpers J23 and J24 as per your system configuration, after referring to the table below.

SCSI INTERFACE JUMPER INSTALLATION		+
JUMPER	CLOSED	OPEN
J23	MOTHERBOARD SUPPLIES TERMINATOR POWER FOR SCSI BUS (DEFAULT)	EXTERNAL SOURCE SUPPLIES POWER FOR SCSI BUS

J24	ENABLES MOTHER-BOARD TERMINATION FOR SCSI BUS (DEFAULT)	EXTERNAL TERMINATION FOR SCSI BUS

Note: When one end of the SCSI cable is on the mother-board, close Jumpers J23 and J24. When the mother-board is not at the end of the SCSI cable, open Jumpers J23 and J24.

Finishing Hardware Installation

Once the system board has been mounted and screwed in place, install the video adapter and any other peripheral adapters into the board. Check each of the cables to ensure they are properly installed.

The BIOS that is installed on the MPE--PNTM has a built--in CMOS setup program like many other BIOS available. To access the setup screen, press the proper key at any time when prompted during the POST. (Power On Self Test)

Use the setup screen to configure the floppy drives, hard drives, video display type, and other I/O options. For cursor movement and other commands, follow the on--screen prompts.

Please refer to the MPE--PNTM BIOS Manual for more details.

Expansion Slots

There are seven EISA bus mastering slots where EISA/ISA expansion cards can be plugged in. The slot number 1, for both the PCI and EISA bus, is the slot nearest to the motherboard power connector.

Chapter 3: Upgrading

There are two major components that may be upgraded on the MPE-PNTM system board. They are the Cache memory and system DRAM memory (memory). This section covers the Cache upgrade in detail.

Please refer to Chapter 1 for information on installing memory.

Upgrading The Cache

The MPE-PNTM supports three different Cache sizes: 0K (no Cache), 256K and 512K. Generally, increasing the Cache size, increases system performance. While the increase in performance is not linear, programs with repetitive routines or average size data blocks will benefit the most from a larger cache size. These programs include spread sheets and CAD programs.

To allow an easy Cache upgrade, the MPE-PNTM uses a Cache SIMM module. This not only allows easy Cache upgrade, but also enables one to use standard SRAMs (asynchronous) or Burst SRAMs (synchronous)

Jumpers J27 and J25 determine the Cache size (0K, 256K or 512K) and J28 determines the Cache type (standard SRAM or Burst SRAM). Burst SRAM operates faster than a standard SRAM. The Cache jumpers must be set appropriately as these jumpers are sampled at reset time to determine the secondary Cache size and the Cache type. Jumper J29 also needs to be set based on whether the cahce SIMM module supports parity bit or not.

Installing The Cache Memory

Warning: SRAM chips are highly static sensitive devices. Precautions should be taken to prevent static damage to these components.

Installation Steps:

1. Locate U60 which is the connector for the cache SRAM module.
2. Carefully insert the Cache module into U60. Make sure to orient Pin 1 in the correct position. Visually inspect the module to check that it is properly installed into the connector U60.
3. Set the jumpers for the new cache size. See the tables below.
4. When the system is powered back on, setup the Cache type (standard or Burst) and enable the secondary Cache, in the CMOS, through the BIOS SETUP.

Note: You can also setup secondary Cache to operate in Write-Thru or Write-Back mode.

CACHE CONFIGURATION JUMPERS - SIZE		
J25	J27	CONFIGURATION
(1-2) CLOSED	(1-2) CLOSED	NO CACHE (DEFAULT)
(1-2) CLOSED	(2-3) CLOSED	256K CACHE
(2-3) CLOSED	(2-3) CLOSED	512K CACHE
(2-3) CLOSED	(1-2) CLOSED	RESERVED - DO NOT USE

CACHE CONFIGURATION JUMPERS - CACHE TYPE	
J28	
(1-2) CLOSED	STANDARD (ASYNCHRONOUS) SRAM (DEFAULT)
(2-3) CLOSED	BURST (SYNCHRONOUS) SRAM

CACHE CONFIGURATION JUMPERS - CACHE PARITY		
J30		
(1-2) CLOSED and (3-4) CLOSED	NO PARITY SUPPORT FOR SECONDARY CACHE (DEFAULT)	
(1-3) CLOSED and (2-4) CLOSED	SECONDARY CACHE SUPPORTS PARITY	

Add-On Cards

The MPE-PNTM board supports seven EISA bus-mastering slots and 3 PCI slots.

EISA Slots

An EISA slot can take either an EISA or ISA card. All EISA slots are “Bus Master” slots. EISA cards installed in the system should be configured using the EISA Configuration Utility.

PCI Slots

Three PCI slots are supported on the MPE-PNTM motherboard. The PCI slots are 5V (five volt) slots. PCI compliant cards can plug into the PCI slots. PCI allows high-speed peripherals to Burst data at 132MB/sec. (peak) at 33MHz. Graphic cards and high-performance controllers (disk, FDDI, etc.) can benefit the maximum from PCI.

PCI system boards are automatically configured by the BIOS. The PCI slots (seen by the BIOS as slot D, E and F) support interrupts. The BIOS allows certain interrupts to be assigned either to PCI slots or EISA/ISA slots.

Chapter 4: Troubleshooting

This section contains a brief series of problems and solutions that comprise the most common questions posed during the troubleshooting of an EISA bus system board. Please review these questions before contacting your supplier's technical support. In addition to this section, please review the BIOS Users Guide for additional information on BIOS generated error messages.

P. No video and a series of beeps.

S. Check the BIOS manual to identify the beep codes and follow the procedures identified; check the video card in a different slot and/or different computer.

P. Floppy light is always on.

S. The floppy cable was installed backwards. Reverse the cable.

P. System will not boot from floppy.

S. Confirm the setting within the CMOS table is correct; make sure the cable is good; make sure there is a terminating resistor on the floppy drive.

P. The IDE hard disk will not spin up.

S. Check the power cable and IDE cable.

P. The HD LED on the system board does not operate.

S. Some IDE disk drives do not support the LED function on the IDE cable. Rather they provide an LED on the disk drive itself or, an LED connection on the disk drive. Connect the control panel LED to the disk drive.

P. The system's I/O ports do not work.

S. Confirm the CMOS setup has been correctly configured; check the ribbon cable installation.

P. Ethernet adapter does not work.

S. Most ethernet cards use IRQ3 as a default setting. The MPE--PNTM uses IRQ3 for the COM2 serial port. Either disable COM2 or change the ethernet adapter settings.

P. Serial ports will not properly run a serial mouse.

S. Make sure the power supply has adequate +/-- 12 volt supply being delivered to the system board.

P. OS/2 will not print from the parallel port.

S. OS/2 requires the IRQ for the parallel port to be active. Make sure the parallel port(s) have the IRQ line correctly configured.

P. No video, no beep.

S. Make sure the BIOS is installed properly and the IDE cable (if IDE drive is connected) orientation is OK. If in doubt, remove the IDE cable.

Chapter 5: Technical Reference

The following pages cover the basic specifications, benchmarks and pin--out assignments of connectors on the MPE--PNTM. Please note that this data is provided for informational purposes only and is subject to change without notice.

Specifications

System	Description
Processor Type	Intel Pentium
CPU Speed	60/66MHz
PCI Bus Speed	30MHz, 33MHz
EISA/ISA Bus Speed	7.5/8.22MHz
Slots	Seven 32--bit EISA bus master slots, three PCI bus master slots
Memory	**Description**
Memory Type	36--bit, 60 or 70 ns. fast page--mode SIMM
Memory Sizes	256Kx36, 512Kx36, 1Mx36, 2Mx36, 8Mx36, 4Mx36
Cache Type	Standard SRAM or Burst SRAM module with or without parity
Cache Size	0K, 256K or 512K

I/O Interfaces	Description
Serial Ports	Two, COM1 and COM2, up to 54Kbaud on DB9 connectors with 16 Byte FIFO.
Parallel Ports	Centronics--compatible DB25
FloppyControls	Two, 5--1/4" or 3--1/2" 2.88M, 1.44M, 1.2M, 720K and 360 K sizes
IDE	For drives with Integrated Drive Electronics (AT BUS) interface
I/O settings	All I/O configurations executed through BIOS

BIOS Subsystem	Description
BIOS Type	Pentium BIOS (Flash)
BIOS Features	Built--in setup, Power--on self--test (POST), drive table optimized for IDE drives, user--definable drive type, password protection, plug & play support.

Operating Environment	Description
Power Requirements	7 amps typical at 5 volts, 50 milliamps at 12 volts
Temperature	32°F to 132°F (0°C to 50°C)
Humidity	Up to 90% non--condensing

Physical Specifications	Description
On--Board Battery	Integrated in real time clock chip
Size	13.8" x 12." (AT form factor)

I/O Port Connections

Serial Port		Parallel Port	
PIN	Function	PIN	Function
1	DCD	1	STB
2	DSR	2	AFD
3	RxD	3, 5, 7, 9, 11, 13, 15,17	D0--7
4	RTS	4	ERR
5	TxD	6	INIT
6	CTS	8	SLIN
7	DTR	19	ACK
8	RI	21	BUSY
9	GND	23	PE
10	N/C	25	SLCT
		10, 12, 14, 16, 18, 20, 22, 24, 26	GND

Appendix A: System Planning Worksheet

ADAPTER	IRQ	I/O Address	Memory Address
COM1	4	3F8--3FF	N/A
COM2	3	2F8--2FF	N/A
LPT1	7	378--37F	N/A
LPT2	5	278--27F	N/A
EGA/VGA--RAM	2/9	3C0--3CF	A000:0 -- A7FF:0
EGA/VGA--ROM			C000:0 -- C7FF:0
Mono		3B0--3BF	B000:0 -- B7FF:0
Bus Mouse			
FAX/Modem			
Hard Disk Ctlr.			
Network Card 1			
Network Card 2			
Other 1			
Other 2			

Instructions: For each adapter that is installed in the system, fill out the pertinent information in the space provided. Make sure that no two components occupy the same IRQ, I/O Address and Memory Address.

Appendix B: Upgrade Order Information

The MPE--PNTM can be upgraded in three areas: The CPU, the DRAM memory, and Cache size. Your supplier should be able to provide all three upgrades. SRAM modules can be hard to find, it may be necessary to contact Mylex to identify a local dealer or distributor who carries these parts. The Mylex customer service phone number is (510) 796--6100 and can be reached Monday through Friday 8:00 a.m. -- 5:00 p.m., Standard Pacific Time.

The following information may assist in locating approved parts or ordering upgrade kits/parts from Mylex.

Cache Memory

	CACHE	CACHE SIZE	SRAM TYPE	MYLEX UPGRADE KIT
60MHz	256K SRAM	256K	STANDARD	CKIT--60--256K
	MODULE	256K	BURST	DKIT--60--256K
60MHz	512K SRAM	512K	STANDARD	CKIT--60--512K
	MODULE	512K	BURST	DKIT--60--512K
66MHz	256K SRAM	256K	STANDARD	CKIT--66--256K
	MODULE	256K	BURST	DKIT--66--256K
66MHz	512K SRAM	512K	STANDARD	CKIT--66--512K
	MODULE	512K	BURST	DKIT--66--512K

