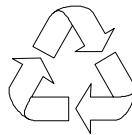


M11A System

User's Guide



100% Recycled Paper

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IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions carefully. Save these instructions for future reference.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
7. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
8. This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.
9. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

-
10. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed 15 amperes.
 11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
 12. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.
 13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power cord or plug is damaged or frayed
 - b. If liquid has been spilled into the product
 - c. If the product has been exposed to rain or water
 - d. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
 - e. If the product has been dropped or the cabinet has been damaged
 - f. If the product exhibits a distinct change in performance, indicating a need for service

-
14. Replace battery with the same type as the product's battery we recommend. Use of another battery may present a risk of fire or explosion. Refer battery replacement to a qualified serviceman.
 15. Warning! Battery may explode if not handled properly. Do not recharge, disassemble or dispose of in fire. Keep away from children and dispose of used battery promptly.
 16. Use only the proper type of power supply cord set (provided in your keyboard/manual accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, type SVT/SJT, rated 6A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

FCC Class B Radio Frequency Interference Statement

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables, if any, must be used in order to comply with the emission limits.

About this Manual

Purpose

This user's guide aims to give you the information you need to operate the system properly and tells you how to install internal components.

Manual Structure

This user's guide consists of three chapters.

Chapter 1 System Board

This chapter describes the system board and all its major components. It contains the system board layout, jumper settings, cache and memory configurations, and information on other internal devices.

Chapter 2 BIOS Utility

This chapter gives information about the system BIOS and tells how to configure the system by changing the settings of the BIOS parameters.

Chapter 3 System Utilities

This chapter tells how to use the AFlash BIOS Utility and the SCSI*Select* Configuration Utility.

Conventions

The following conventions are used in this manual:

Text entered by user

Represents text input by the user.

Screen messages

Denotes messages that appear onscreen.

, , , etc.

Represent the actual keys that you have to press on the keyboard.



NOTE

Gives bits and pieces of additional information related to the current topic.



WARNING

Alerts you to any damage that might result by not following the instructions.



CAUTION

Gives precautionary measures to avoid possible hardware or software problems.



IMPORTANT

Reminds you to take specific actions relevant to the accomplishment of procedures.



TIP

Tells how to accomplish a procedure with minimum steps through little shortcuts.

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System Board

1.1 Features

This high-performance system board supports the new Intel Pentium Pro CPU running at 150/180/200 MHz. Designed to work with Intel chipsets composed of PCI bridge, memory controller, data bus accelerator, and data buffers, the CPU carries a new generation of power not present in its predecessors. The CPU also incorporates the first-level (L1) and second-level (L2) caches, the advanced peripheral interrupt controller (APIC), and the system bus controller.

The system board utilizes both the ISA and the PCI local bus architecture. Three ISA and four PCI bus slots reside on the board to allow installation of either master or slave devices.

The board has three memory banks composed of two 72-pin SIMM sockets each that support a maximum system memory of 384 MB using 64-MB SIMMs. The SIMM sockets support both EDO and fast-page mode SIMMs.

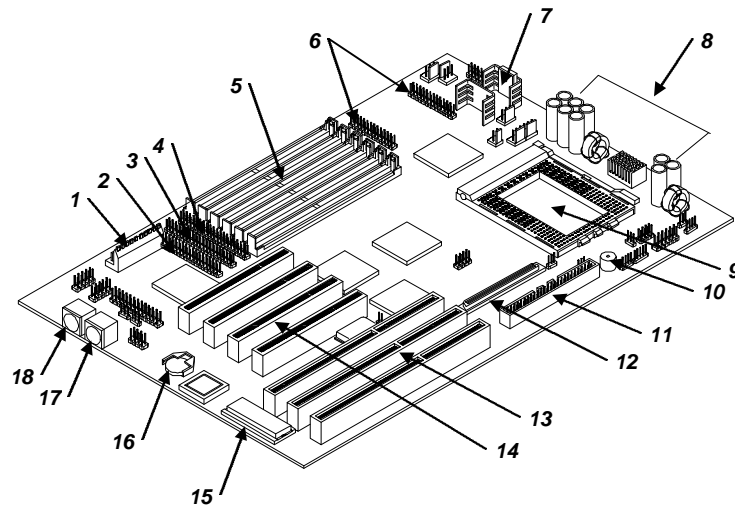
A 50-pin Fast SCSI-II and a 68-pin Wide SCSI interface come with the system board to connect SCSI devices. Standard I/O features such as two enhanced IDE drive interfaces, two serial interfaces, one parallel port interface, a diskette drive interface, and PS/2 mouse and keyboard connectors reside on the system board.

1.2 Major Components

The system board has the following major components:

- One zero-insertion force (ZIF) socket for Intel Pentium Pro CPU
- Three memory banks (Bank 1 to Bank 3) composed of six 72-pin SIMM sockets
- Three ISA and four PCI expansion slots
- 256-KB Flash ROM for system BIOS
- 50-pin Fast SCSI-II and 68-pin Wide SCSI interfaces
- RDM connectors (optional)
- Enhanced IDE hard disk and diskette drive interfaces
- Power connector for 200-watt switching power supply
- I/O, SCSI, and memory, controller chipsets
- ASM controller chipset (optional)
- USB interface for additional peripheral support (optional)
- External ports:
 - PS/2-compatible keyboard port
 - PS/2-compatible mouse port

1.2.1 System Board Layout



- | | |
|----------------------------|----------------------------|
| 1 Power connector | 10 Buzzer |
| 2 Diskette drive connector | 11 Narrow SCSI connector |
| 3 IDE 1 connector | 12 Wide SCSI connector |
| 4 IDE 2 connector | 13 ISA bus slots |
| 5 SIMM sockets | 14 PCI slots |
| 6 RDM connectors | 15 BIOS |
| 7 CPU voltage regulators | 16 Battery |
| 8 VRM components | 17 PS/2 mouse connector |
| 9 Pentium Pro CPU socket | 18 PS/2 keyboard connector |

Figure 1-1 System Board Layout

1.3 Jumpers and Connectors

1.3.1 Jumper and Connector Locations

Figure 1-2 shows the jumper locations on the system board. The blackened pin on a jumper represents pin 1.

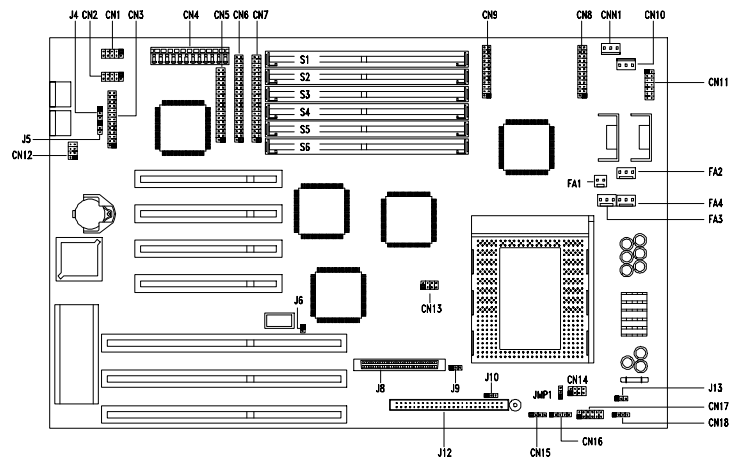


Figure 1-2 Jumper and Connector Locations



The blackened pin of a jumper or connector represents pin 1.

1.3.2 Jumper Settings

Table 1-1 Jumper Settings

Jumper	Setting	Function
BIOS Type J4	1-2* 2-3	Acer BIOS OEM BIOS
Password Security J5	1-2 2-3*	Password check Password bypass
SCSI Selection J6	Open 1-2	Narrow SCSI Wide SCSI
CPU Bus Frequency J9	1-2 2-3*	60 MHz (150/180 MHz) 66 MHz (200 MHz)
SCSI Termination J10	Open 1-2 2-3*	Terminator off for both narrow and wide SCSI Terminator on for either narrow or wide SCSI SCSI terminator switchable to On or Off using the SCSI setup utility
Sound Output J13	1-2* 2-3	Buzzer Speaker
Reset/SMM Switch JMP1	1-2* 2-3	Enables reset switch Disables reset switch and enables SMM switch

* Default setting

Table 1-2 lists the CPU core over bus frequency ratios depending on CN13 settings.

Table 1-2 CN13 Settings for CPU Core/Bus Frequency Ratio

CN13 Settings				CPU Core / Bus Freq. Ratio
1-5	2-6	3-7	4-8	
1	1	1	1	2
1	1	0	1	3
1	1	1	0	4
1	1	0	0	5
0	1	1	1	2.5
0	1	0	1	3.5

0 = Open

1 = Closed

Table 1-3 lists the CPU core voltages depending on CN14 settings.

Table 1-3 CN14 Settings for CPU Core Voltage

CN14 Settings				CPU Voltage
1-5	2-6	3-7	4-8	
1	1	1	1	3.5
1	1	1	0	3.4
1	1	0	1	3.3
1	1	0	0	3.2
1	0	1	1	3.1
1	0	1	0	3.0
1	0	0	1	2.9
1	0	0	0	2.8
0	1	1	1	2.7
0	1	1	0	2.6
0	1	0	1	2.5
0	1	0	0	2.4
0	0	1	1	2.3
0	0	1	0	2.2
0	0	0	1	2.1
0	0	0	0	Reserved

0 = Open 1 = Closed



DO NOT change the settings of CN14 unless you are qualified to do so. Ask a technician if you need help when configuring these jumpers.

1.3.3 Connector Functions

Table 1-4 lists the different connectors on the system board and their respective functions.

Table 1-4 Connector Functions

Connector	Function
CN1	COM1 connector
CN2	COM2 connector
CN3	Parallel port connector
CN4	Power connector
CN5	Diskette drive connector
CN6	IDE1 connector
CN7	IDE2 connector
CN8, CN9	RDM connectors
CN10	Software shutdown power control connector
CN12	Universal serial bus (USB) connector
CN15	Speaker connector
CN16	Power LED and keylock connector
CN17	Reset button and RDM cable connector
CN18	Hard disk LED connector
FA1	CPU fan connector
FA2, FA3, FA4	Reserved (for housing fans)
CNN1	Reserved
CN11	Reserved
J8	Wide SCSI connector
J12	Narrow SCSI connector

USB Bracket Installation

The system board includes a connector (CN12) for the optional universal serial bus (USB) bracket. The USB bracket has two external special connectors to support additional serial peripherals.



The USB bracket is an optional item.

Follow these steps to install the USB bracket:

1. Remove the cover of an expansion slot on the housing rear panel.
2. Insert the USB bracket into the slot until it fits in place.
3. Secure the bracket with a screw.
4. Locate CN12 on the system board. See Figure 1-2.
5. Attach the USB cable connector to CN12.

The USB cable is a 10-pin female connector. Note that one pin on the connector is covered to ensure the correct orientation when you attach it to CN12 which is an 8-pin connector.

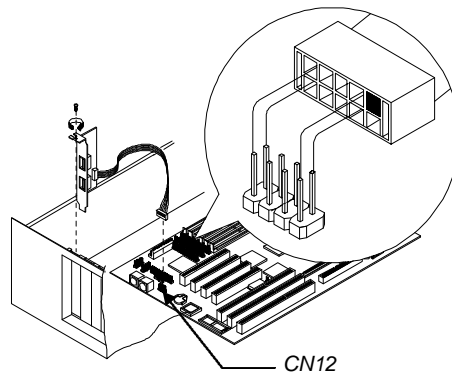


Figure 1-3 USB Bracket Installation

1.4 ESD Precautions

Always observe the following ESD (electrostatic discharge) precautions before installing any system component:

1. Do not remove any system component from its packaging unless you are ready to install it.
2. Wear a wrist grounding strap before handling electronic components. Wrist grounding straps are available at most electronic component stores.



DO NOT attempt the procedures in the following sections unless you are confident of your capability to perform them. Otherwise, ask a service technician for assistance.

1.5 Installing a Pentium Pro CPU

1.5.1 Installation with the Sliding Heat Sink

Follow these installation steps if your CPU board comes with the sliding heat sink:

1. Release the heat sink locks.
2. Attach the heat sink by sliding its rails along the longer sides of the rectangular Pentium Pro CPU. Make sure that the heat sink completely covers the CPU.
3. Hold the CPU and the heat sink firmly together then slide the locks on the sides of the heat sink to secure the CPU.

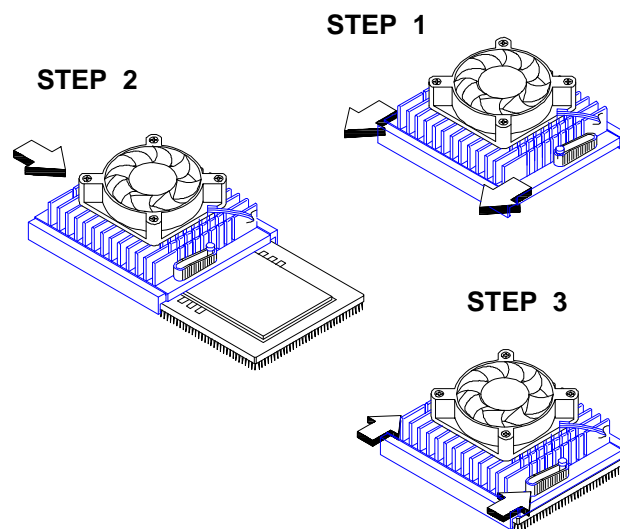


Figure 1-4 Attaching the Sliding Heat Sink to the CPU

-
- Lift up the CPU socket lever.
 - Look at the underside of the CPU and note the area where the pins are denser or closely embedded. Gently insert the CPU pins into the socket, matching the denser pins with the denser holes on the socket.



Be careful not to bend any pins.

- Push down the socket lever.
- Connect the CPU fan cable to the fan connector FA1 on the system board.

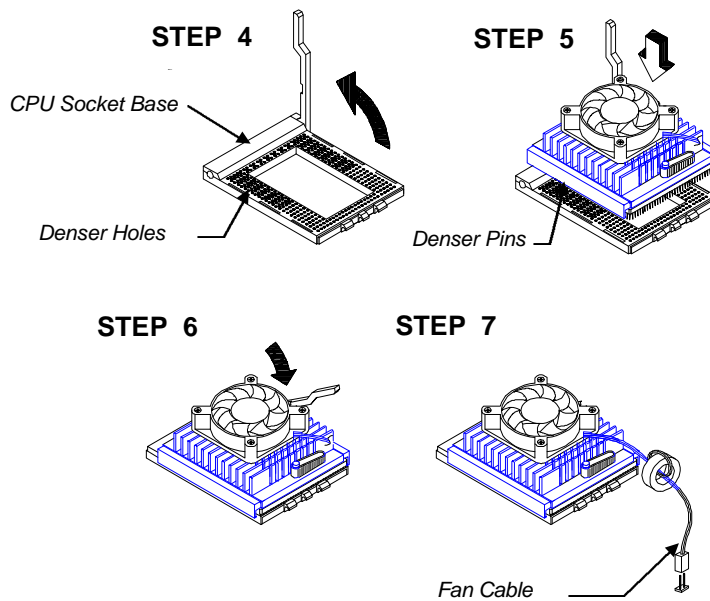


Figure 1-5 Installing a CPU with the Sliding Heat Sink

1.5.2 Installation with the Hook-Type Heat Sink

Follow these installation steps if your CPU board comes with the hook-type heat sink:

1. Lift up the CPU socket lever.
2. Look at the underside of the CPU and note the area where the pins are denser or closely embedded. Gently insert the CPU pins into the socket, matching the denser pins with the denser holes on the socket.
3. Push down the socket lever.
4. Place the heat sink and fan over the CPU such that the rear heat sink hook matches the holding tab on the socket base, and the front heat sink hook (locking hook) matches the tab on the front of the socket.

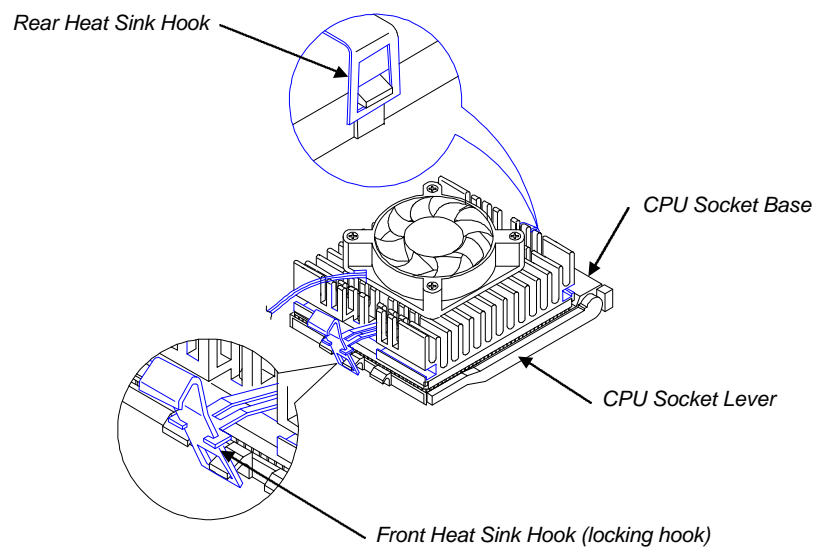


Figure 1-6 Installing the Hook-Type Heat Sink and Fan

-
5. Link the rear heat sink hook to the holding tab at the base of the socket, then the front hook to the holding tab on the front. This locks the heat sink and fan to the CPU socket.



To remove the heat sink and fan, simply press the upper part of the front heat sink hook inward.

6. Attach the CPU fan cable to the fan connector FA1 on the board.

1.6 Memory Upgrade

The six 72-pin SIMM sockets onboard support both Extended Data Output (EDO) and fast-page mode SIMMs. You may install 4-MB and 16-MB single-density as well as 8-MB, and 32-MB double-density SIMMs for a total of 192-MB system memory. The SIMM sockets also support 64-MB SIMMs, when available, to achieve 384-MB system memory.

1.6.1 Rules for Adding Memory

- Use only the same type of SIMM in a given bank
- You may combine different types of SIMMs for a particular memory configuration as long as the SIMMs in each bank are of the same type.
- Always install SIMMs in pairs. For example, for a total memory of 16 MB, install two 8-MB SIMMs into the sockets marked S6 and S5 (bank 1) or S2 and S1 (bank 3). You can not use a 16-MB SIMM alone for a 16-MB memory.
- Always **install** SIMMs starting from an inner socket. For example, install SIMMs in socket S6 before in socket S5, or in socket S2 before socket S1.
- Always **remove** SIMMs starting from an outer socket. For example, remove SIMMs in socket S5 before in socket S6, or in socket S1 before socket S2.

1.6.2 Memory Configurations

Table 1-5 lists the available memory configurations.

Table 1-5 Memory Configurations

Bank 1		Bank 2		Bank 3		Total Memory
S6	S5	S4	S3	S2	S1	
8 MB	8 MB					16 MB
8 MB	8 MB	4 MB	4 MB			24 MB
8 MB	8 MB	8 MB	8 MB			32 MB
16 MB	16 MB					32 MB
16 MB	16 MB	4 MB	4 MB			40 MB
16 MB	16 MB	8 MB	8 MB			48 MB
16 MB	16 MB	8 MB	8 MB	4 MB	4 MB	56 MB
8 MB	8 MB	8 MB	8 MB	16 MB	16 MB	64 MB
4 MB	4 MB	8 MB	8 MB	32 MB	32 MB	88 MB
16 MB	16 MB	16 MB	16 MB	16 MB	16 MB	96 MB
32 MB	32 MB	8 MB	8 MB	16 MB	16 MB	112 MB
32 MB	32 MB	32 MB	32 MB			128 MB
32 MB	32 MB	32 MB	32 MB	16 MB	16 MB	160 MB
32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	192 MB
64 MB	64 MB	64 MB	64 MB	64 MB	64 MB	384 MB



The above configurations are only some of the available memory combinations. You can use other combinations as long as you follow the rules for upgrading memory. See section 1.6.1.

1.6.3 Installing a SIMM

Follow these steps to install a SIMM:

1. Carefully slip a SIMM at a 45° angle into a socket making sure that the curved edge indicating the pin 1 of the SIMM matches pin 1 of the socket.



A SIMM fits only in one direction. If you slip in a SIMM but would not completely fit, you may have inserted it the wrong way. Reverse the orientation of the SIMM.

2. Gently push the SIMM to a vertical position until the pegs of the socket slip into the holes on the SIMM, and the holding clips lock the SIMM into position. The SIMM should be at a 90° angle when installed.

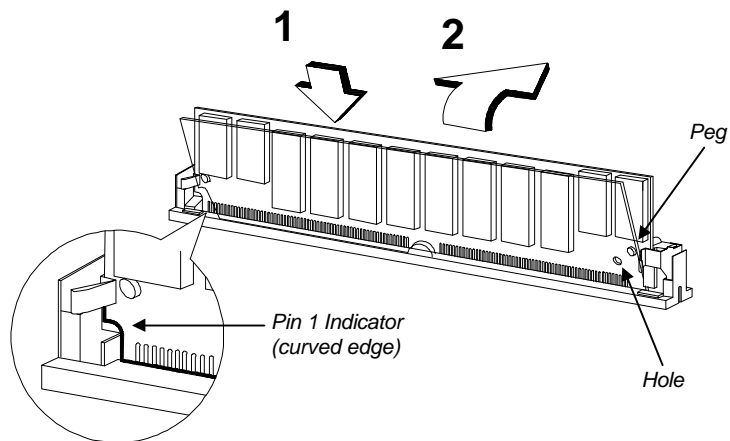


Figure 1-7 Installing a SIMM

1.6.4 Removing a SIMM

Follow these steps to remove a SIMM:

1. Press the holding clips on both sides of the SIMM outward to release it.
2. Push the SIMM downward to a 45° angle.
3. Pull the SIMM out of the socket.

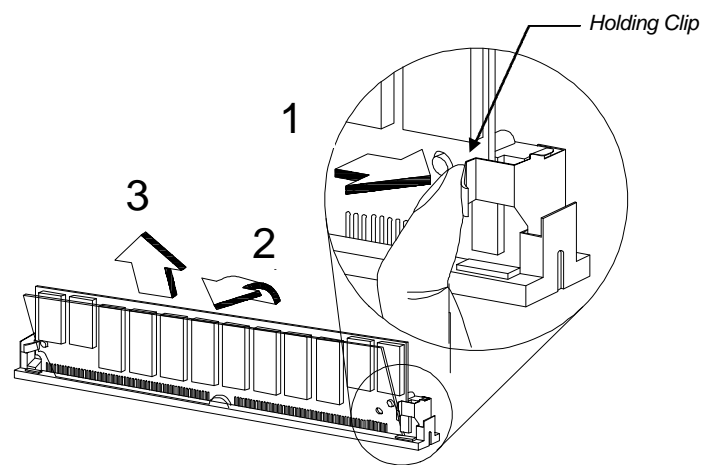


Figure 1-8 Removing a SIMM

1.6.5 Reconfiguring the System

Reconfigure the system after installing or removing SIMMs.

Follow these steps to reconfigure the system:

1. Reboot the system. A memory error message appears, indicating that the total memory does not match the value stored in CMOS.
2. Press **CTRL** + **ALT** + **ESC** during the power-on self-test (POST) routine to run Setup. During POST, a message indicating a wrong memory configuration appears.
3. Press **ESC** twice to exit Setup and reboot the system. The system boots with the new memory configuration.

1.7 SCSI Feature

The system board features a single-chip SCSI host adapter that adds SCSI I/O capability to the system. The chipset consists of an onboard microcontroller, bus master interface controller, and SCSI controllers. A 50-pin Fast SCSI-II interface with 10 MB/s transfer rate and a 68-pin Wide SCSI interface that transfers at 20 MB/s (Wide SCSI) and 40 MB/s (Ultra SCSI) are also onboard to accommodate various SCSI devices.

1.7.1 Using the SCSI Feature

Follow these steps to use the SCSI feature:

1. Install a SCSI device in the system and connect it to the SCSI interface on the system board. See Figure 1-1 for the location.
2. Set jumper J6 and J10 accordingly. Refer to Table 1-1 for the jumper settings.
3. Enter the BIOS utility to set the corresponding SCSI parameters.
4. Enter the SCSI Configuration Utility and make the necessary changes. Refer to Chapter 3 for information on the SCSI Configuration Utility.

For more information about the installation procedures under different operating systems, read the README.XXX in the subdirectory of the target operating system.

1.8 Server Management Features (optional)

1.8.1 ASM Pro

The ASM Pro is a server management tool based on the Simple Network Management Protocol (SNMP). It detects server problems related to the CPU thermal condition, 5V/3.3V detection, or PCI bus utilization calculation.

This feature is designed primarily for server supervisors and management information system (MIS) personnel to help them detect errors or potential trouble spots in their network servers through a single management station.

The ASM Pro consists of two major parts:

- ASM-Station - a Windows-based monitoring station that communicates with the ASM-Agents.
- ASM-Agent(s) - the individual servers managed by the ASM-Station.

Refer to the ASM Pro user's manual for more information.

1.8.2 Remote Diagnostic Management

The Remote Diagnostic Management (RDM) is a network management tool that utilizes modems and telephone lines to control a host of servers from a remote station. It monitors and analyzes the server condition, updates the BIOS settings if necessary, or reboots the server in the event of failure and quickly return it to normal operation. This capability to execute the RDM program from a remote site bridges the distance barrier in fixing server problems and reduces wasted time due to system failure.

Installing the RDM Module

The system board comes with connectors CN8 and CN9 to accommodate the RDM module, and CN17 to connect the RDM cable.

Follow these steps to install the RDM module and connect the cable:

1. See Figure 1-1 for the location of the RDM connectors.
2. Gently insert the RDM module into CN8 and CN9. The module fits only in one direction. Do not force it into to the connectors.

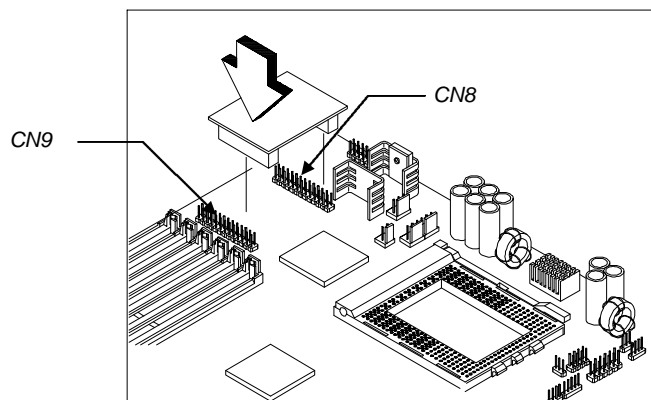


Figure 1-9 Installing the RDM Module

3. Insert the cable end with the RDM button into the slot on the housing front panel.
4. Attach the other end of the RDM cable to CN17 (pins 5-6, 11-12) on the system board. Note that the covered pin of the cable connector does not connect to any pin.

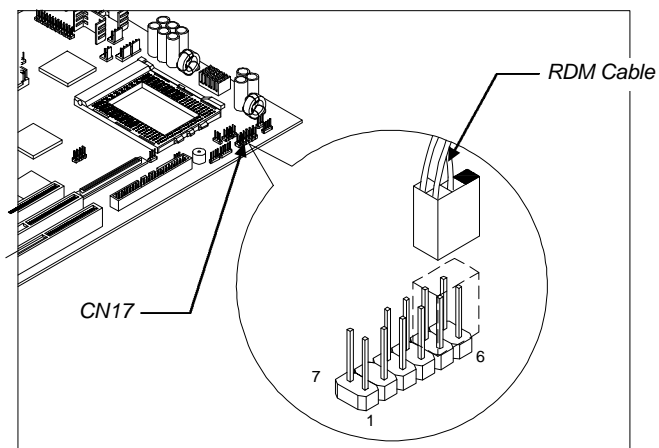


Figure 1-10 Connecting the RDM Cable

Refer to the RDM User's Guide for detailed instructions on RDM installation.

1.9 Error Messages

Do not continue using the computer if you receive an error message of any type. Note the message and take corrective action. This section describes the types of error messages and lists their corresponding corrective measures.

There are two general types of error messages:

- Software
- System

1.9.1 Software Error Messages

Software error messages are returned by your operating system or application. These messages typically occur after you boot the operating system or when you run your application. If you receive this type of message, consult your application or operating system manual for help.

1.9.2 System Error Messages

A system error message indicates a problem with the computer itself. A message of this type normally appears during the power-on self-test, before the operating system prompt appears. Table 1-6 lists the system error messages.

Table 1-6 System Error Messages

Message	Action
CMOS Battery Error	Replace the battery or contact your dealer.
CMOS Checksum Error	Run Setup.
CPU BIOS Update Code Mismatch	Contact your dealer.
Diskette Drive Controller Error or Not Installed	Check and connect the control cable to the diskette controller.
Diskette Drive Error	Check the CMOS settings in Setup and the diskette drive cable connections.
Diskette Drive A Type Mismatch	Run Setup and select the proper drive type.
Diskette Drive B Type Mismatch	Run Setup and select the proper drive type.
Equipment Configuration Error	Modify DRAM configuration to agree with one of the options in Table 1-5.
Hard Disk Controller Error	Run Setup.
Hard Disk 0 Error	Check all cable connections. Replace hard disk.
Hard Disk 1 Error	Check all cable connections. Replace hard disk.
Hard Disk 0 Extended Type Error	Run Setup.
Hard Disk 1 Extended Type Error	Run Setup.
I/O Parity Error	Contact your dealer.
Keyboard Error or No Keyboard Connected	Check and connect the keyboard to the system unit.
Keyboard Interface Error	Replace the keyboard or contact your dealer.

Table 1-6 System Error Messages (continued)

Message	Action
Memory Error at: MMMM:SSSS:OOO (W:XXXX, R:YYYY) where: M: MB, S: Segment, O: Offset, X/Y: write/read pattern	Check SIMMs on the system board. Contact your dealer.
Memory Size Mismatch CPU Clock Mismatch	Check the memory size based on the system specifications. Check the internal cable connections. If you are sure that connections and values are correct, ignore the message. If the message reappears, ask for technical assistance.
Onboard Serial Port 1 Conflict	Run Setup and disable the port.
Onboard Serial Port 2 Conflict	Run Setup and disable the port.
Onboard Parallel Port Conflict	Run Setup and disable the port.
Pointing Device Error	Check and connect pointing device.
Pointing Device Interface Error	Replace the pointing device or contact your dealer.
Press F1 key to continue or Ctrl-Alt-Esc for Setup	Press F1 or CTRL + ALT + ESC to enter Setup.
Real Time Clock Error	Run Setup and set the time and date.
Press Esc to turn off NMI, any key to reboot	Press ESC to disregard the NMI error. Press any other key to reboot the system.
Real-time Clock Error	Run Setup.

1.9.3 Correcting Error Conditions

As a general rule, if an error message says "Press F1 to continue," it is caused by a configuration problem, which can be easily corrected. An equipment malfunction is more likely to cause a fatal error, i.e., an error that causes complete system failure.

Here are some corrective measures for error conditions:

1. Run Setup. You must know the correct configuration values for your system before you enter Setup, which is why you should write them down when the system is correctly configured. An incorrect configuration is a major cause of power-on error messages, especially for a new system.
2. Remove the system cover, following the directions in the housing installation manual. Check that the jumpers on the system board and any expansion boards are set correctly.
3. If you cannot access a new disk, it may be because your disk is not properly formatted. Format the disk first using the FDISK and FORMAT commands.
4. Check that all connectors and boards are secure.

If you go through these steps and still receive an error message, the cause may be an equipment malfunction.

If you are sure that your configuration values are correct and your battery is in good condition, the problem may lie in a damaged or defective chip.

In either case, contact an authorized service center for assistance.

BIOS Utility

Most systems are already configured by the manufacturer or the dealer. There is no need to run Setup when starting the computer unless you get a Run Setup message.



If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

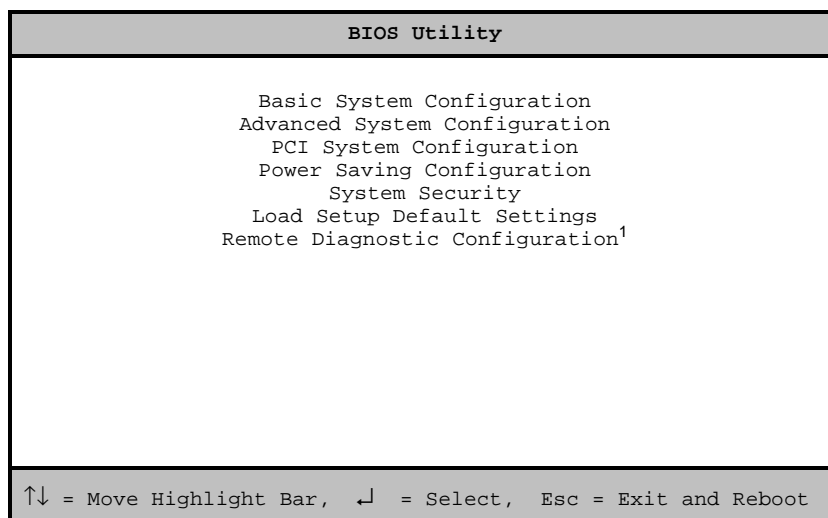
2.1 Entering Setup

To enter Setup, press the key combination **CTRL**+**ALT**+**ESC** .



*You must press **CTRL**+**ALT**+**ESC** while the system is booting. This key combination does not work during any other time.*

The BIOS Utility main menu then appears:



The parameters on the following screens show default values. These values may not be the same as those in your system.

The grayed items (denoted with asterisks) on the following screens have fixed settings and are non-configurable.

¹ This item appears only if an RDM module is installed in the system. Refer to the RDM User's Guide if your system supports this feature.

2.2 Basic System Configuration

Select Basic System Configuration to input configuration values such as date, time, and disk types.

The following screen shows the Basic System Configuration menu.

Basic System Configuration		Page 1/2		
Date	[MM/DD/YY]			
Time	[HH:MM:SS]			
Diskette Drive A	[xx-MB xx-inch]			
Diskette Drive B	[xx-MB xx-inch]			
		Cylinder	Head	Sector
IDE Drive 0 (xxx MB)	[Auto]	xx	xx	xx
IDE Drive 1 (xxx MB)	[Auto]	xx	xx	xx
IDE Drive 2 (xxx MB)	[Auto]			
IDE Drive 3 (xxx MB)	[Auto]			
*Onboard IDE	[Enabled]			
*Base Memory	[xxx] KB			
*Extended Memory	[xxxx] KB			
*Total Memory	[xxxx] KB			
*Math Coprocessor	[Installed]			
*Video Display	[VGA/EGA]			
↑↓ = Move Highlight Bar, → ← = Change Setting				
PgDn/PgUp = Move Screen, F1 = Help, Esc = Exit				

The command line at the bottom of the menu tells you how to highlight items, change settings, and move from one screen to another.

Press **↑** or **↓** on the cursor-edit keypad to highlight the desired parameter.

Press **→** or **←** to select the desired option for a parameter.

Press **PGDN** to move to the next page or **PGUP** to return to the previous page.

* Grayed and non-configurable

Press **ESC** to exit the configuration menu.

The following screen shows page 2 of the Basic System Configuration menu.

```
Basic System Configuration                               Page 2/2
Communication Settings
  Baud Rate ..... [9600] BPS
  Parity ..... [None]
  Stop Bits ..... [1] Bits
  Data Length ..... [8] Bits
Enhanced IDE Features
  Hard Disk Block Mode ..... [Enabled ]
  Advanced PIO Mode ..... [Enabled ]
  Hard Disk Size > 504MB ..... [Enabled ]
  Hard Disk 32-bit Access ..... [Enabled ]
  Large Memory Support Mode ..... [ Normal ]
  Num Lock After Boot ..... [Enabled ]
*Memory Test ..... [Disabled]
  Auto Configuration Mode ..... [Enabled ]
  Fast Boot Mode ..... [Enabled ]
  Quiet Boot ..... [Enabled ]
  Configuration Table ..... [Enabled ]

↑↓ = Move Highlight Bar,   → ← = Change Setting
PgDn/PgUp = Move Screen,  F1 = Help,   Esc = Exit
```

The following sections explain the different parameters and their settings.

2.2.1 Date and Time

The real-time clock keeps the system date and time. After setting the date and time, you need not enter them every time you turn on the system. As long as the internal battery remains good (approximately seven years) and connected, the clock continues to keep the date and time accurately even when the power is off.

* Grayed and non-configurable

Date

Highlight the items on the date parameter and press **→** or **←** to set the date following the month-day-year format.

Valid values for month, day, and year are:

- Month 1 to 12
- Day 1 to 31
- Year 00 to 99

Time

Highlight the items on the time parameter and press **→** or **←** to set the time following the hour-minute-second format.

Valid values for hour, minute, and second are:

- Hour 00 to 23
- Minute 00 to 59
- Second 00 to 59

2.2.2 Diskette Drives

To enter the configuration value for the first diskette drive (drive A), highlight the Diskette Drive A parameter. Press **→** or **←** key to view the options and select the appropriate value.

Possible settings for the Diskette Drive parameters:

- [None]
- [360 KB, 5.25-inch]
- [1.2 MB, 5.25-inch]
- [720 KB, 3.5-inch]
- [1.44 MB, 3.5-inch]
- [2.88 MB, 3.5-inch]

Follow the same procedure for Diskette Drive B. Choose None if you do not have a second diskette drive.

2.2.3 IDE Drives

Move the highlight bar to the IDE Drive 0 parameter to configure the first IDE drive (drive C). Press **→** or **←** to display the IDE hard disk types with their respective values. Select the type that corresponds to your drive. Follow the same procedure for the other drives, if any. Choose **None** if you do not have other drives.

Selecting the “Auto” Option

If you do not know the exact type of your IDE drive, select the option **Auto**. During the power-on self-test (POST), when the system performs self-testing and self-initialization before loading the operating system and applications, the BIOS utility automatically determines your IDE drive type. You can see the drive type and its values when you enter the BIOS Utility.

	Cylinder	Head	Sector
IDE Drive 0 (xx MB) ... [Auto]	xx	xx	xx

If desired, you can save the values under the option **User**.

	Cylinder	Head	Sector
IDE Drive 0 (xx MB) ... [User]	xx	xx	xx

The next time you boot the system, the BIOS utility does not have to auto-configure your IDE drive as it detects the saved disk information during POST.



We recommend that you copy the IDE disk drive values and keep them in a safe place in case you have to reconfigure the disk in the future.

Follow the same procedure to auto-configure other IDE drives.

Selecting the “User” Option

There are cases when you cannot use the option `Auto`, instead you have to select `User`. Choose the `User` option when you have installed an hard disk that was previously formatted but does not use the disk native parameters or structure, that is, the disk type may be in the hard disk types list but the number of cylinders, heads, and sectors differ.

Follow these steps to configure a hard disk with the `User` option:

1. Highlight an hard disk parameter.
2. Select the option `User` and press `ENTER`.
3. Type in the number of cylinders, heads, and sectors of the drive under the appropriate columns.



Be sure to have the correct hard disk information beforehand.

4. Choose `YES` when asked if you want to save CMOS data.

2.2.4 Onboard IDE

This parameter enables or disables IDE channels 1 and 2 which support up to two IDE drives each. The onboard IDE channel 1 uses the system resource IRQ14 while IDE channel 2 uses IRQ15.

When set to `Enabled`, this parameter enables all of the IDE drives installed in the system. Setting to `Disabled` deactivates the IDE drives and grays the IDE Drive parameters.

Disabling this option frees IRQ14 and IRQ15 making them available for add-on cards use. However, if there is no drive connected to IDE channel 2, the system automatically frees IRQ15 for other devices even if this parameter is enabled.

2.2.5 System Memory

The system automatically detects the total amount of onboard memory during the POST and sets the memory parameters accordingly. If you install additional memory, the system automatically adjusts the Total Memory parameter to display the new memory size.

2.2.6 Math Coprocessor

The CPU includes a math coprocessor so this parameter shows Installed by default.

2.2.7 Video Display

The video display is the monitor on which the operating system prompt appears when you boot the system. The system automatically detects the video mode of your primary display and sets the configuration value accordingly.

2.2.8 Communication Settings

The Communication Settings parameters allow you to set the baud rate, parity, stop bit and data length for the first serial port (COM 1). The values for this parameter are:

- Baud rate : 300 to 9600 bits per second (bps)
- Parity : odd, even, or none
- Stop bit : 1 or 2 stop bits
- Data length : 7- or 8-bit data word



The baud rate maximum value 9600 BPS applies only to POST under UNIX environment. The system I/O chipset SMC 37C665 supports up to 115.2K bps.

2.2.9 Enhanced IDE Features

Hard Disk Block Mode

This function enhances disk performance depending on the hard disk in use. If you set this parameter to *Enabled*, it allows data transfer in block (multiple sectors) by increasing the data transfer rate to 256 bytes per cycle. If your system does not boot after enabling this parameter, change the setting to *Disabled*. This parameter is normally set to *Disabled*.

Advanced PIO Mode

Enabling this parameter improves system performance by allowing the use of faster hard drives. If your hard disk does not support this function, set this parameter to *Disabled*. The default is *Enabled*.

Hard Disk Size > 504 MB

This enhanced IDE feature works only under DOS and Windows 3.x environments. If enabled, it allows you to use a hard disk with a capacity of more than 504 MB. This is made possible through the Logical Block Address (LBA) mode translation. Other operating systems require this parameter to be set to *Disabled*.

To prevent data loss, set this parameter set to *Enabled* if you are using a hard disk with more than 504 MB capacity that was previously configured through LBA mode. If you use a hard disk configured through cylinder-head-sector (CHS) mode, set this parameter to *Disabled*.

Hard Disk 32-bit Access

Enabling this parameter improves system performance by allowing the use of the 32-bit hard disk access. This enhanced IDE feature only works under DOS, Windows 3.x, Windows 95, and Novell NetWare. If your software or hard disk does not support this function, set this parameter to *Disabled*. The default is *Enabled*.

2.2.10 Large Memory Support Mode

This parameter allows the system to support an extended memory higher than 64 MB. Set this parameter to *Advanced* if you are working with Windows NT 3.1 and the system memory size is greater than or equal to 64 MB, otherwise, set it to *Normal*.

2.2.11 Num Lock After Boot

This parameter allows you to activate the Num Lock function upon booting. The default setting is *Enabled*.

2.2.12 Memory Test

When set to *Enabled*, this parameter allows the system to perform a RAM test during the POST routine. When set to *Disabled*, the system detects only the memory size and bypasses the test routine. The default setting is *Disabled*.

This item is fixed to *Disabled* and is not user-configurable if you enabled the *Auto Configuration Mode* and the *Fast Boot Mode* parameters on page 2 of the *Basic System Configuration* menu. See sections 2.2.13 and 2.2.14.

2.2.13 Auto Configuration Mode

When enabled, this parameter automatically sets the system configuration values to their optimized settings. At the same time, it causes the Memory Test parameter to be fixed to `Disabled` and the shadow RAM regions for system and video BIOS to `Enabled`. See sections 2.2.12 and 2.3.1.

Set this parameter to `Enabled` if you do not know the IDE drive type and the onboard communication port configurations.

2.2.14 Fast Boot Mode

When enabled, this parameter allows the system to boot faster by skipping some POST routines. It bypasses memory test, enables Shadow RAM, and enables primary- and second-level cache.

When set to `Enabled`, this parameter causes the Memory Test parameter to be fixed to `Disabled` and the shadow RAM regions for system and video BIOS to `Enabled`. See sections 2.2.12 and 2.3.1.

2.2.15 Quiet Boot

This parameter enables or disables the quiet boot function. When set to `Enabled`, BIOS is in graphical mode and displays only an identification logo during POST and while booting. After which the screen displays the operating system prompt (such as DOS) or logo (such as Windows 95). If any error occurred while booting, the system automatically switches to the text mode.

Even if your setting is `Enabled`, you may also switch to the text mode while booting by pressing `F8` after you hear a beep that indicates the activation of the keyboard.

When set to `Disabled`, BIOS is in the conventional text mode where you see the system initialization details on the screen.

2.2.16 Configuration Table

This parameter allows you to display the configuration table after POST but before booting. The configuration table gives a summary of the hardware devices and settings that BIOS detected during POST. Following is a sample configuration table.

```
CPU/CLK      : Pentium Pro/xxx MHz   Base Memory:   :   xxx KB
Math Coprocessor: Installed         Extended Memory: xxxx KB
IDE Drive 0  : xxx MB               Shadow RAM    :   xxx KB
IDE Drive 1  : xxx MB               Internal Cache: xxx KB, Enabled
IDE Drive 2  : xxx MB               External Cache: xxx KB, Enabled
IDE Drive 3  : xxx MB               Serial Port(s): 3F8h, 2F8h
Diskette Drive A: xx-MB, xx-inch    Parallel Port  : 378h
Diskette Drive B: None              Pointing Device: None
```

2.3 Advanced System Configuration

The Advanced System Configuration option allows you to configure the advanced system memory functions.



Do not change any settings in the Advanced Configuration if you are not a qualified technician to avoid damaging system.

The following screen shows page one of the Advanced System Configuration parameters.

```
Advanced System Configuration Page 1/1

Shadow RAM
*E0000h - FFFFFh (System BIOS) ... [Enabled ]
*C0000h - C7FFFh (Video BIOS) ..... [Enabled ]
C8000h - CBFFFh ..... [Disabled]
CC000h - CFFFFh ..... [Disabled]
D0000h - D3FFFh ..... [Disabled]
D4000h - D7FFFh ..... [Disabled]
D8000h - DBFFFh ..... [Disabled]
DC000h - DFFFFh ..... [Disabled]

L1 & L2 Cache (CPU Cache) ..... [Enabled ]
Cache Scheme ..... [Write through]

ECC/Parity Mode Selection ..... [ ECC ]
Operation of ECC ..... [Correction Enabled ]
Setting for SNA Cards ..... [Disabled]
Memory at 15MB-16MB Reserved for ..... [ System ] Use

↑↓ = Move Highlight Bar, → ← = Change Setting
PgDn/PgUp = Move Screen, F1 = Help, Esc = Exit
```

* Grayed and non-configurable

2.3.1 Shadow RAM

The system reserves 384 KB of random access memory (RAM) for the shadow RAM function. This parameter has eight range addresses. When you set these addresses to *Enabled*, the system BIOS, video BIOS, and I/O ROM functions run directly from the shadow RAM for faster operation. When you set them to *Disabled*, the functions run normally from ROM.

The address range E0000h - FFFFFh is for shadowing the system BIOS. This item is always set to *Enabled* and is not user-configurable. The address range C0000h - C7FFFh is for shadowing the video BIOS. This item is fixed to *Enabled* and is not user-configurable if the Auto Configuration Mode and the Fast Boot Mode parameters on page 2 of the Basic System Configuration menu are enabled. Otherwise, you can disable this item.

The remaining address ranges are for I/O ROM functions.

2.3.2 L1 & L2 Cache (CPU Cache)

This parameter enables or disables the first- and second-level cache memory integrated in the Pentium Pro CPU. This item is fixed to *Enabled* and is non-configurable if you enabled the Auto configuration Mode and Fast Boot Mode parameters on page 2 of the Basic System Configuration menu. Otherwise, you can disable this item.

2.3.3 Cache Scheme

This parameter allows you to select *Write back* or *Write through* for the cache mode. *Write back* updates the cache but not the memory when there is a write instruction. It updates the memory only when there is an inconsistency between the cache and the memory. *Write through* updates both the cache and the memory whenever there is a write instruction.

2.3.4 ECC/Parity Mode Selection

This parameter allows you to select `ECC`, `Parity`, or `Disabled`. The `ECC` option allows single-bit error detection and automatic correction. The automatic correction depends on the setting of the parameter `Operation of ECC`. See section 2.3.5 for details.

`ECC` also detects multiple-bit errors but does not correct them. Instead, it issues a non-maskable interrupt (NMI) signaling the operating system of the multiple-bit error detection.

The `Parity` option allows parity check. If it detects any parity errors, it sets up the parity error flag in the chipset. This signals the operating system of the parity error detection.

Fast-page mode SIMMs with parity support both `ECC` and parity mode. EDO SIMMs with parity support only `ECC` mode.



Both the `ECC` and parity check features require parity SIMMs. You must disable this parameter if you installed SIMMs without parity.

2.3.5 Operation of ECC

This parameter allows you to enable or disable the error correction function. In the option `Correction Enabled`, `ECC` automatically corrects any single-bit errors detected. For multiple-bit errors detected, `ECC` only issues an NMI to signal the operating system of the multiple-bit error detection.

In the option `Correction Disabled`, `ECC` detects both single-bit and multiple-bit errors but does not correct either one. It only issues an NMI to signal the operating system of the error detection.

This parameter is grayed if the `ECC/Parity Mode Selection` parameter is set to either `Parity` or `Disabled`. Refer to section 2.3.4.

2.3.6 Setting for SNA Cards

System network architecture (SNA) cards are 8-bit IBM-compatible network cards. Should you need to install an SNA card, make sure to set this parameter to *Enabled*.

2.3.7 Memory at 15MB-16MB

To prevent memory address conflicts between the system and expansion boards, reserve this memory range for the use of either the system or an expansion board. Before setting this parameter, check your add-on card manual to determine if your add-on card needs this memory space. If not, set this parameter to *System Use*.

2.4 PCI System Configuration

The PCI System Configuration allows you to specify the settings for your PCI devices.

PCI System Configuration		Page 1/1			
PCI IRQ Setting	[Auto]				
		INTA	INTB	INTC	INTD
*PCI Slot 1	[--]	[--]	[--]	[--]	[--]
*PCI Slot 2	[--]	[--]	[--]	[--]	[--]
*PCI Slot 3	[--]	[--]	[--]	[--]	[--]
*PCI Slot 4	[--]	[--]	[--]	[--]	[--]
*Onboard SCSI	[--]				
VGA Palette Snoop	[Disabled]				
Onboard SCSI	[Enabled]				
Boot Device	[Disabled]				

↑↓ = Move Highlight Bar, → ← = Change Setting
PgDn/PgUp = Move Screen, F1 = Help, Esc = Exit

2.4.1 PCI IRQ Setting

This parameter allows for Auto or Manual configuration of PCI devices. If you use plug-and-play (PnP) devices, set this parameter to Auto. The system then automatically assigns IRQ to the PnP devices. If your PCI device is not a PnP, you can manually assign the interrupt for each device. Refer to your manual for technical information about the PCI card.



When the PCI IRQ Setting is set to Auto, all the IRQ setting fields become gray and non-configurable.

* Grayed and non-configurable





PCI Slots

These parameters allow you to specify the appropriate interrupt for each of the PCI devices. You can assign IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, IRQ12, IRQ14, or IRQ15 to the slots.

The items PCI Slot 4 and Onboard SCSI share the same IRQ. Setting an interrupt for the former automatically sets that same interrupt for the latter.



Make sure that the interrupt you assign in any of the PCI slots are not used by other devices to avoid conflicts.





Press  or  to move between fields. Press  or  to select options.

Onboard SCSI

This item allows you to manually assign the interrupt for the onboard SCSI hard disk when the PCI IRQ Setting parameter is set to *Manual*. This parameter is grayed and not user-configurable when the PCI IRQ Setting is set to *Auto* and when the Onboard SCSI parameter is set to *Disabled*. See sections 2.4.1 and 2.4.3.



Make sure to assign an IRQ to this item if you set the PCI IRQ Setting parameter to Manual.

Press  or  to move between fields. Press  or  to select options.

2.4.2 VGA Palette Snoop

This parameter permits you to use the palette snooping feature if you installed more than one VGA card in the system.

The VGA palette snoop function allows the control palette register (CPR) to manage and update the VGA RAM DAC (Digital Analog Converter, a color data storage) of each VGA card installed in the system. The snooping process lets the CPR send a signal to all the VGA cards so that they can update their individual RAM DACs. The signal go through the cards continuously until all RAM DAC data have been updated. This allows display of multiple images on the screen.



Some VGA cards have required settings for this feature. Check your VGA card manual before setting this parameter.

2.4.3 Onboard SCSI

This parameter allows you to enable or disable the SCSI feature. Setting this parameter to `Enabled` and assigning it an IRQ causes the corresponding IRQ in the Power Saving Configuration screen to be set to `Enabled` as well. The particular IRQ setting turns gray and non-configurable.

Boot Device

This parameter allows you to enable or disable the onboard SCSI boot priority.

2.5 Power Saving Configuration

The Power Saving Configuration parameters are configurable only if your system supports the power management feature.

The following screens show the Power Saving Configuration parameters and their default settings:

Power Saving Configuration		Page 1/1
Power Management Mode [Enabled]		
IDE Hard Disk Standby Timer [15] Minutes		
System Suspend Timer [15] Minutes		
System Wakeup Events		
IRQ 0..... [Disabled]*	IRQ 8..... [Disabled]	
IRQ 1..... [Enabled]*	IRQ 9..... [Disabled]	
IRQ 3..... [Disabled]	IRQ 10..... [Disabled]	
IRQ 4..... [Disabled]	IRQ 11..... [Disabled]	
IRQ 5..... [Disabled]	IRQ 12..... [Enabled]*	
IRQ 6..... [Enabled]	IRQ 13..... [Enabled]	
IRQ 7..... [Disabled]	IRQ 14..... [Enabled]	
	IRQ 15..... [Disabled]	
↑↓ = Move Highlight Bar, → ← = Change Setting		
PgDn/PgUp = Move Screen, F1 = Help, Esc = Exit		

* Grayed and non-configurable

2.5.1 Power Management Mode

This parameter allows you to reduce power consumption. When this parameter is set to `Enabled`, you can configure the system timers. Setting to `Disabled` deactivates the power management feature and all the timers.



For system models with RDM module installed, enabling the RDM feature disables the power management parameters.

IDE Hard Disk Standby Timer

This parameter allows the hard disk to enter standby mode after inactivity of 1 to 15 minutes, depending on your setting. When you access the hard disk again, allow 3 to 5 seconds (depending on the hard disk) for the disk to return to the normal speed. Set this parameter to `Off` if your hard disk does not support this function.

System Suspend Timer

This parameter sets the system to a "fast-on" power saving mode. It automatically enters the standby mode after a specified period of inactivity. Any keyboard or mouse action, or any enabled monitored activities occurring through the IRQ channels, resume system operation. See section 2.5.2.

2.5.2 System Wakeup Events

This parameter allows you to monitor system activities occurring through the IRQ and determine whether or not to enter power saving mode.

For example, if you assign IRQ3 to a fax/modem and you set this item to `Enabled`, any fax/modem activity wakes up the system from suspend mode.

2.6 System Security

The Setup program has a number of security features to prevent unauthorized access to the system and its data.

Enter the Setup program and select System Security to display the following screen.

```
System Security                                     Page 1/1

Disk Drive Control
Diskette Drive..... [      Normal      ]
Hard Disk Drive..... [      Normal      ]
System Boot Drive..... [Drive A then C]
Boot from CD-ROM..... [Disabled]

Onboard Communication Ports
Serial Port 1 Base Address..... [ 3F8h  ]
Serial Port 2 Base Address..... [ 2F8h  ]
Parallel Port Base Address..... [378 (IRQ 7]
Operation Mode..... [Standard Parallel Port (SPP)] Mode
*ECP DMA Channel ..... [-]

Onboard PS/2 Mouse (IRQ12) ... [Enabled ]

Setup Password ..... [ None ]
Power On Password ..... [ None ]

↑↓ = Move Highlight Bar,   → ← = Change Setting
PgDn/PgUp = Move Screen,   F1 = Help,   Esc = Exit
```

2.6.1 Disk Drive Control

The disk drive control features allow you to enable or disable the read/write functions of a disk drive. These features can also control the diskette drive or the hard disk drive boot function to prevent loading operating systems or other programs from a certain drive while the other drives are operational.

Table 2-1 lists the drive control settings and their corresponding functions.

Table 2-1 Drive Control Settings

Diskette Drive	
Setting	Description
Normal	Diskette drive functions normally
Write Protect All Sectors	Disables the write function on all sectors
Write Protect Boot Sector	Disables the write function only on the boot sector
Disabled	Disables all diskette functions
Hard Disk Drive	
Setting	Description
Normal	Hard disk drive functions normally
Write Protect All Sectors	Disables the write function on all sectors
Write Protect Boot Sector	Disables the write function only on the boot sector
Disabled	Disables all hard disk functions
System Boot Drive	
Setting	Description
Drive A then C	The system checks drive A first. If there is a diskette in the drive, the system boots from drive A. Otherwise, it boots from drive C.
Drive C then A	The system checks drive C first. If there is a hard disk (drive C) installed, the system boots from drive C. Otherwise, it boots from drive A.
C:	The system always boots from drive C.
A:	The system always boots from drive A.
Boot from CD-ROM	
Setting	Description
Enabled	The system looks for a bootable CD in the CD-ROM. If a CD is present, the system boots from the CD-ROM. Otherwise, it boots from the drive specified in the System Boot drive parameter.
Disabled	System boots from the drive specified in the System Boot Drive parameter.

2.6.2 Onboard Communication Ports

Serial Port 1 Base Address

This parameter allows you to set the serial port 1 logical base address.

Table 2-2 Serial Port 1 Settings

Setting	Description
3F8h	Serial port 1 with address 3F8h using IRQ4
2F8h	Serial port 1 with address 2F8h using IRQ3
3E8h	Serial port 1 with address 3E8h using IRQ4
2E8h	Serial port 1 with address 2E8h using IRQ3
Disabled	Disables serial port 1

Serial Port 2 Base Address

This parameter allows you to set the serial port 2 logical base address.

Table 2-3 Serial Port 2 Settings

Setting	Description
3F8h	Serial port 2 with address 3F8h using IRQ4
2F8h	Serial port 2 with address 2F8h using IRQ3
3E8h	Serial port 2 with address 3E8h using IRQ4
2E8h	Serial port 2 with address 2E8h using IRQ3
Disabled	Disables serial port 2



If you assign 3F8h to serial port 1, you may only assign 2F8h or 2E8h to serial port 2.

If you assign 2F8h to serial port 1, you may

only assign 3F8h or 3E8h to serial port 2.

Parallel Port Base Address

The system has one parallel port. Table 2-4 lists the options for selecting the parallel port address. You also have the option to disable the parallel port.

Table 2-4 Parallel Port Settings

Setting	Function
3BCh (IRQ 7)	Corresponds to the parallel port with address 3BCh
378h (IRQ 7)	Corresponds to the parallel port with address 378h
278h (IRQ 5)	Corresponds to the parallel port with address 278h
Disabled	Disables the parallel port

To deactivate the parallel port, select the *Disabled* option. If you install an add-on card with a parallel port whose address conflicts with the onboard parallel port, the system automatically disables the onboard functions.

Check the parallel port address on the add-on card and change the address to one that does not conflict.

OPERATION MODE

This item allows you to set the operation mode of the parallel port. Table 2-5 lists the different operation modes.

Table 2-5 *Parallel Port Operation Mode Settings*

Setting	Function
Standard Parallel Port (SPP)	Allows normal speed one-way operation
Standard and Bidirectional	Allows normal speed operation in a two-way mode
Enhanced Parallel Port (EPP)	Allows bidirectional parallel port operation at maximum speed
Extended Capabilities Port (ECP)	Allows parallel port to operate in bidirectional mode and at a speed higher than the maximum data transfer rate

ECP DMA CHANNEL

This item becomes active only if you select *Extended Capabilities Port (ECP)* as the operation mode. It allows you to select DMA channel 1 or DMA channel 3 depending on the available system resource.

2.6.3 Onboard PS/2 Mouse (IRQ12)

This parameter enables or disables the onboard PS/2 mouse. When set to *Enabled*, it allows you to use the onboard PS/2 mouse assigned with IRQ12. When set to *Disabled*, it deactivates the mouse and frees IRQ12 for the use of other devices.

2.6.4 Setup Password

The setup password prevents unauthorized access to the BIOS utility.



Setting a Setup Password

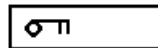
1. Make sure that jumper JP5 is set to pins 2-3 (bypass).



You cannot enter the BIOS utility if a setup password does not exist and jumper JP5 is set to pins 1-2 (check).

The jumper JP5 is set to pins 2-3 (bypass) by default.


2. Enter BIOS utility and select System Security.
3. Highlight the Setup Password parameter and press the  or  key. The password prompt appears:

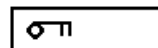
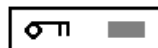



4. Type a password. The password may consist of up to seven characters.



Be very careful when typing your password because the characters do not appear on the screen.

5. Press . A prompt asks you to retype the password to verify your first entry.



6. Retype the password then press .

After setting the password, the system automatically sets the Setup Password parameter to `Present`.

-
7. Press **ESC** to exit the System Security screen and return to the main menu.
 8. Press **ESC** to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.
 9. Select Yes to save the changes and reboot the system.
 10. While rebooting, turn off the system then open the housing.
 11. Set jumper JP5 to pins 1-2 to enable the password function.

The next time you want to enter the BIOS utility, you must key-in your Setup password.

Changing or Removing the Setup Password

Should you want to change your setup password, do the following:

1. Enter the BIOS utility and select System Security.
2. Highlight the Setup Password parameter.
3. Press the **←** or **→** key to display the password prompt and key-in a new password.
or
Press the **←** or **→** key and select None to remove the existing password.
4. Press **ESC** to exit the System Security screen and return to the main menu.
5. Press **ESC** to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.
6. Select Yes to save the changes and reboot the system.

Bypassing the Setup Password

If you forget your setup password, you can bypass the password security feature by hardware. Follow these steps to bypass the password:

1. Turn off and unplug the system.
2. Open the system housing and set JP5 to pins 2-3 to bypass the password checking.
3. Turn on the system and enter the BIOS utility. This time the system does not require you to type in a password.



*You can either change the existing Setup password or remove it by selecting **None**. Refer to the previous section for the procedure.*

2.6.5 Power On Password

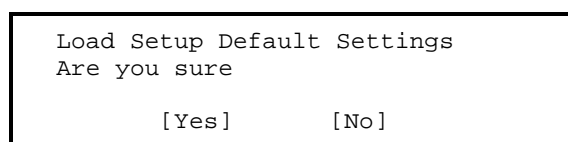
The power on password secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system.

To set a power on password, highlight the Power On Password parameter and follow the same procedure as in setting a setup password. See section 2.6.4.

2.7 Load Setup Default Settings

Use this option to load the default settings for the optimized system configuration. When you load the default settings, some of the parameters are grayed-out with their fixed settings. These grayed parameters are not user-configurable. If you want to change the settings of these items, disable the Fast Boot Mode parameter in the Basic System Configuration menu.

The following dialog box appears when you select Load Setup Default Settings from the main menu.



Select [Yes] to load the default settings.

2.8 Remote Diagnostic Configuration

The Remote Diagnostic Configuration allow you to set the remote diagnostic management (RDM) parameters. This option appears on the main screen of the BIOS Utility only when there is an RDM module installed in the system.

Refer to the RDM User's Guide for information if your system supports this feature.

2.9 Leaving Setup

Examine the system configuration values. When you are satisfied that all the values are correct, write them down. Store the recorded values in a safe place. In the future, if the battery loses power or the CMOS chip is damaged, you will know what values to enter when you rerun Setup.

Press **[ESC]** to leave the system configuration setup. If there is any change in the BIOS utility functions, the following screen appears:

```
Do you want to save CMOS data?
      [Yes]      [No]
```

Use the arrow keys to select your response. Select **Yes** to store the new data in CMOS. Select **No** to retain the old configuration values. Press **[ENTER]**.

2.10 IDE Hard Disk Types

Type	Cylinders	Heads	Sectors Per Track
None	(indicates SCSI or no hard disk)		
1	306	4	17
2	615	4	17
3	615	6	17
4	940	8	17
5	940	6	17
6	615	4	17
7	462	8	17
8	733	5	17
9	900	15	17
10	820	3	17
11	855	5	17
12	855	7	17
13	306	8	17
14	733	7	17
15	(reserved)		
16	612	4	17
17	977	5	17
18	977	7	17
19	1024	7	17
20	733	5	17
21	733	7	17
22	733	5	17
23	306	4	17
24	612	4	17
25	306	4	17
26	612	4	17
27	698	7	17

Type	Cylinders	Heads	Sectors Per Track
28	976	5	17
29	306	4	17
30	611	4	17
31	732	7	17
32	1023	5	17
33	751	8	17
34	755	16	17
35	731	13	26
36	980	15	17
37	936	16	17
38	981	5	17
39	981	10	17
40	762	8	39
41	980	5	17
42	832	8	33
43	683	12	38
44	513	16	38
45	776	8	33
46	683	16	38
47	832	6	33
48	615	2	34
49	989	16	63
50	823	4	38
51	1001	15	17
52	1024	17	22
53	723	13	51
54	548	8	38
55	1013	4	41
56	929	15	17

Type	Cylinders	Heads	Sectors Per Track
57	817	14	36
58	723	13	81
59	802	4	39
60	1024	9	17
61	895	5	55
62	(reserved)		
63	966	10	34
64	1024	8	17
65	1024	11	17
66	918	11	17
67	969	14	49
68	1024	10	17
69	1024	12	17
70	1024	13	17
71	1024	14	17
72	959	11	50
73	1024	16	17
74	918	15	17
75	1010	16	51
76	1024	5	17
77	1024	8	17
78	(reserved)		
79	1001	15	32
80	1024	16	63
81	1024	7	17
82	988	16	52
83	1024	15	17
84	776	8	33
85	926	13	17

Type	Cylinders	Heads	Sectors Per Track
86	805	4	26
87	976	5	17
88	685	16	38
89	1011	15	22
90	997	10	53
91	985	13	32
92	816	15	32
93	968	5	17
94	903	8	46
95	966	5	34
96	535	10	50
97	715	10	50
98	1016	16	63
99	996	16	63
Auto			
User			

System Utilities

This chapter contains information about system utilities that you need when you upgrade your system. These utilities are the AFlash BIOS Utility and SCSISelect Configuration Utility.



The AFlash BIOS Utility diskette does not come with the system package. Ask your dealer for assistance if you need the utility.

3.1 AFlash BIOS Utility



Do not install memory-related drivers (XMS, EMS, DPMI) when you use AFlash.

The AFlash functions support all the operations required for system Flash ROM. The functions are divided into four steps as follows.

1. **Load BIOS file to buffer** reads a specified file from a diskette to memory for future program use or for check only. It supports the 64-KB, 128-KB, 192-KB, or 256-KB files.
2. **Save BIOS to disk file** reads BIOS from the current BIOS area and writes to the file specified by the user.
3. **Edit OEM string** reads specified file from a diskette to memory, edits OEM string and writes to a file.

-
4. **Program flash memory** programs Flash memory according to the data loaded in step 1. This function also shows the BIOS checksum and BIOS type to make sure that the operation is correct.



AFlash features password security to prevent unauthorized access.

3.1.1 Executing AFlash

Follow these steps to execute AFlash:

1. Copy the MSG.DAT and AFLASH.EXE files from the system utilities diskette into the subdirectory of your choice.
2. From that subdirectory, type:

```
aflash 
```
3. A help message appears. Press any key to continue.
4. The main menu appears. Use the or key to highlight the options. Press to select.
5. If you want to save a copy of the current BIOS into a file, select Save BIOS to Disk File.
6. Select Load BIOS File to load the BIOS file into memory.

-
7. Select Program Flash Memory to erase the current BIOS, and program Flash ROM.




Never turn off the system power while Flash BIOS is programming. This will destroy the BIOS.

8. Reboot the system.

3.1.2 Quick Way to Execute AFlash

When you have already copied the AFlash files into your hard disk, you can simply type the following on the DOS prompt (subdirectory where the files are located) to quickly execute the program.

```
aflash (filename) 
```

The program automatically performs the loading and programming functions, then reboots the system.

If the program cannot find the BIOS file, it returns to the main menu and flashes the following message:

```
Can't Read This File !!! Press any key to continue...
```

In this case, follow the procedures for loading and programming the BIOS file using the main menu.

3.2 SCSI*Select* Configuration Utility

The SCSI*Select* utility allows you to change SCSI controller settings without opening the system or changing jumpers.

3.2.1 Overview

Default Values

Table 3-1 lists the settings that you can change using the SCSI*Select* utility and the default value for each setting. Some settings apply globally to the SCSI controller and all SCSI devices on the bus. Other settings apply individually to each device on the bus.

Table 3-1 Settings for the SCSI Controller and All Devices

Item	Default
Host Adapter SCSI ID	7
SCSI Parity Checking	Enabled
Host Adapter SCSI Termination	Enabled Low OFF/High ON
Boot Device Option	0 (zero)
Host Adapter BIOS ¹	Enabled
Support Removable Disks under BIOS as Hard Disks	Boot only
Extended BIOS Translation for DOS Drives > 1 GB	Enabled
Display <Ctrl-A> Message During BIOS Initialization	Enabled
Multiple Lun Support	Disabled
BIOS Support for Bootable CD-ROM	Enabled
BIOS Support for Int13 Extensions	Enabled
Support for Ultra SCSI Speed	Disabled

¹ The settings are valid only if the host adapter BIOS is enabled.

Table 3-2 *Individual Settings for SCSI Drives*

Item	Default
Initiate Sync Negotiation	Yes
Maximum Sync Transfer Rate	20 MB/sec.
Enable Disconnection	Yes
Send Start Unit SCSI Command ¹	No
Initiate Wide Negotiation	Yes

When to Use the SCSISelect Utility

Use the SCSISelect utility if you need to do either one of the following:

- Change any of the default values listed in Table 3-1.
- Check and/or change SCSI device settings that may conflict with those of other devices
- Perform low-level formatting on new SCSI disk devices

Running the SCSISelect Utility

A screen message giving the option to access the SCSISelect utility appears after the BIOS and POST routine.

To start SCSISelect, press **CTRL**+A when the following message appears during power on or system reset:

```
Press <Ctrl> <A> for SCSISelect™ Utility!
```

¹ The settings are valid only if the host adapter BIOS is enabled.



Your screen may show the key sequence as **CTRL**+<Hot Key> instead of **CTRL**+A. The correct sequence is **CTRL**+A.

3.2.2 Utility Options

When the SCSISelect utility detects that AIC-7880 SCSI controller in the system, it displays the following Options menu.

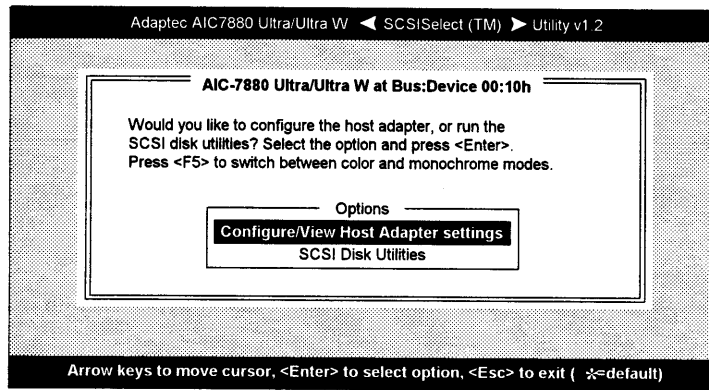


Figure 3-1 Options Menu Screen

Use the **↑** and **↓** keys and press **ENTER** to make selections in the SCSISelect utility. Press **ESC** at any time to return to the previous menu.



You can press **F5** to toggle the display between color and monochrome modes.

This feature may not work with some kinds of monitors.

Configure/View Host Adapter Settings Menu

The Configure/View Host Adapter Settings menu lists three settings under SCSI Bus Interface Definitions and three additional options.

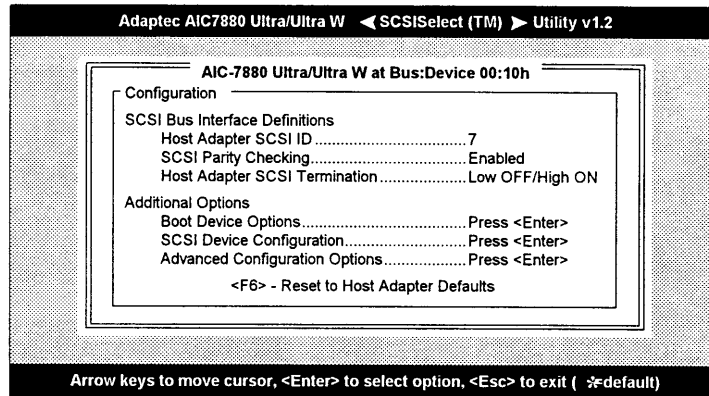


Figure 3-2 Configure/View Host Adapter Settings Screen

Use the **↑** and **↓** keys to select a parameter. Press **ENTER** to display a pop-up menu with a list of possible settings for the parameter. Press **ESC** at any time to return to the previous menu.



Press to reset all settings to the SCSI controller defaults. SCSI controller default settings are marked with an asterisk (*) throughout the selection submenus.

HOST ADAPTER SCSI ID

This parameter allows you to change the host controller SCSI ID. Figure 3-3 shows the available IDs for use with the AIC-7880. The default setting is SCSI ID 7, which has the highest priority on the SCSI bus. We recommend that you keep the default setting since most system applications run only in this setting.

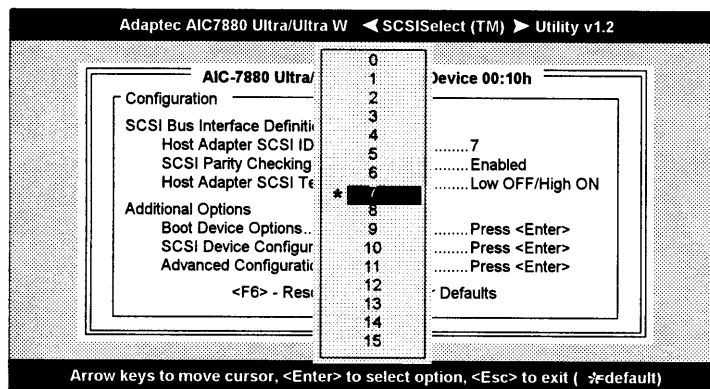


Figure 3-3 Host Adapter SCSI ID Selections

Each device on the SCSI bus, including the SCSI controller, must be set to a unique SCSI ID. The SCSI ID serves two purposes. It uniquely identifies each SCSI device on the bus, and it determines the device's priority on the bus during the arbitration phase. The arbitration phase determines which device controls the bus when two or more devices request for the use of it.

Use the **↑** or **↓** keys then press **ENTER** to select the SCSI ID if you need to change it. Press **ESC** at anytime to return to the previous menu.

SCSI PARITY CHECKING

Select this option to enable or disable the SCSI parity checking function on the SCSI controller. Figure 3-4 displays the selections. The default setting is **Enabled**.

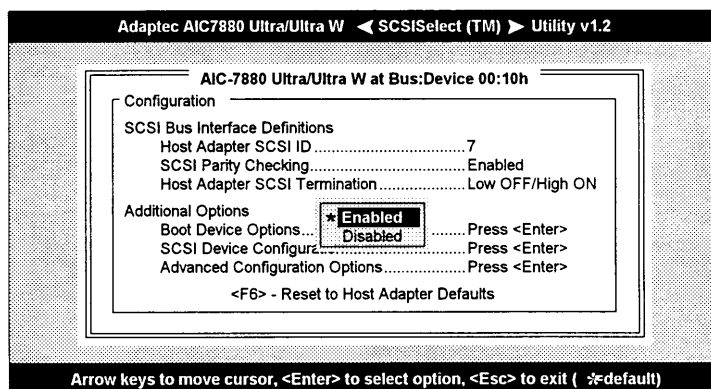


Figure 3-4 SCSI Parity Checking Selections

The SCSI controller always checks parity when reading from the SCSI bus to verify the correct transmission of data from the SCSI devices. You should disable the SCSI Parity Checking parameter if any of the installed SCSI devices does not support SCSI parity. Most currently available SCSI devices support this feature.

Use the **↑** or **↓** keys then press **ENTER** to select options. Press **ESC** at anytime to return to the previous menu.

HOST ADAPTER SCSI TERMINATION

This parameter allows you to configure the host controller SCSI termination function. Figure 3-5 shows the possible settings. The default setting is Low OFF/High ON.

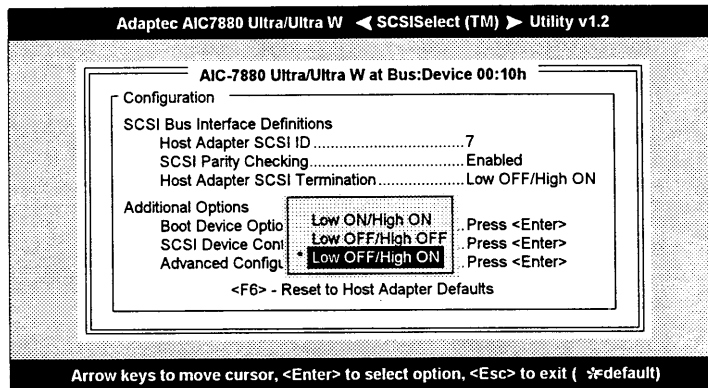


Figure 3-5 Host Adapter SCSI Termination

Use the  or  keys then press  to make a selection. Press  at anytime to return to the previous menu.



If the AIC-7880 is not at one end of the SCSI cable, the terminating resistors located on the system board must be disabled by setting the SCSI terminator to Low OFF/High OFF. See Figure 3-5. The three resistors are in the SIP packages installed in the sockets.

BOOT DEVICE OPTIONS

This parameter shows the target ID of your boot device. The default setting is 0 (zero). We recommend that you keep the default setting since most system applications run only in this setting. Figure 3-6 shows the boot device configuration menu.

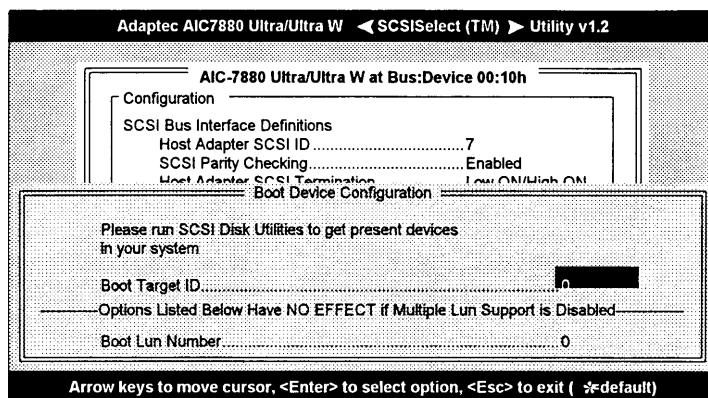


Figure 3-6 Boot Device Configuration

SCSI DEVICE CONFIGURATION

This parameter allows you to configure details of each SCSI device on the SCSI bus. A screen similar to Figure 4-7 appears. The screen shows a column of information for each SCSI ID, even if some SCSI IDs are not assigned to a device. To configure a specific SCSI device, you need to know which SCSI ID it uses. See the SCSI Disk Utilities later in this section for instructions on how to determine the SCSI ID used by a device.

The screenshot shows the 'SCSI Device Configuration' utility for an Adaptec AIC7880 Ultra/Ultra W. The utility is titled 'AIC-7880 Ultra/Ultra W at Bus:Device 00:10h' and 'SCSI Device Configuration'. It displays a table of settings for SCSI IDs #0 through #15. The settings include 'Initiate Sync Negotiation', 'Maximum Sync Transfer Rate', 'Enable Disconnection', and 'Initiate Wide Negotiation'. Below the table, there is a note: 'Options Listed Below Have NO EFFECT if the BIOS is Disabled'. The utility also includes a 'Send Start Unit Command' option. At the bottom, it provides instructions: 'Arrow keys to move cursor, <Enter> to select option, <Esc> to exit (*default)'. The utility version is 'Utility v1.2'.

SCSI Device ID	#0	#1	#2	#3	#4	#5	#6	#7
Initiate Sync Negotiation.....	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Transfer Rate.....	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Enable Disconnection.....	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Wide Negotiation.....	yes	yes	yes	yes	yes	yes	yes	yes
Options Listed Below Have NO EFFECT if the BIOS is Disabled								
Send Start Unit Command.....	no	no	no	no	no	no	no	no
SCSI Device ID	#8	#9	#10	#11	#12	#13	#14	#15
Initiate Sync Negotiation.....	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Transfer Rate.....	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Enable Disconnection.....	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Wide Negotiation.....	yes	yes	yes	yes	yes	yes	yes	yes
Options Listed Below Have NO EFFECT if the BIOS is Disabled								
Send Start Unit Command.....	no	no	no	no	no	no	no	no

Figure 3-7 SCSI Device Configuration

Use the or keys to move between options, then press to display a pop-up menu with a list of values.

Use the or keys to select a value, then press .

Initiate Sync Negotiation

This option determines whether the SCSI controller initiates synchronous negotiation with the SCSI device.

When set to *Yes*, the SCSI controller initiates synchronous negotiation with the SCSI device. When set to *No*, the SCSI controller does not initiate synchronous negotiation. The SCSI controller, however, always responds to synchronous negotiation if the SCSI device initiates it. The default setting is *Yes*.

Data is transferred in asynchronous mode if neither the SCSI controller nor the SCSI peripheral negotiates for synchronous data transfers.



Some older SCSI-1 devices do not support synchronous negotiation. This may cause the system to operate erratically or hang when the Initiate Sync Negotiation is enabled. Set this item to No if you installed SCSI-1 devices.

Maximum Sync Transfer Rate

This option determines the maximum synchronous data transfer rate that the SCSI controller can support. The SCSI controller supports rates up to the Fast Wide SCSI maximum of 20.0 MB per second. The default value is 20.0.

In most cases, you can use the maximum value of 20.0. However, if the SCSI controller is not set to negotiate data transfer (i.e., Initiate Sync Negotiation is set to *No*), the value selected here is the maximum rate that the SCSI controller accepts from the device during negotiation. This is a standard SCSI protocol.



Some older SCSI-1 devices do not support Fast SCSI data transfer rates 10.0, 8.0, and 6.7. This may cause the system to operate erratically or hang if the transfer rate is too high. Select a Maximum Sync Transfer Rate of 5.0 for these devices.

Enable Disconnection

This option determines whether the SCSI controller allows a SCSI device to disconnect from the SCSI bus (sometimes called Disconnect/Reconnect). Disconnect/Reconnect allows the SCSI controller to perform other operations on the SCSI bus while the SCSI device is temporarily disconnected.

When set to *Yes*, the SCSI device may disconnect from the SCSI bus. The SCSI device, however, may choose not to disconnect, even if permitted by the SCSI controller. When set to *No*, the SCSI device is not allowed to disconnect from the SCSI bus. The default setting is *Yes*.

Keep this item set to *Yes* if two or more SCSI devices are connected to the SCSI controller. This optimizes SCSI bus performance. If only one SCSI device is connected to the SCSI controller, set this item to *No* to achieve better system performance.

Initiate Wide Negotiation

This option allows communication between all devices (lower 8-bit or upper 8-bit) on the wide (16-bit) SCSI bus. When set to *Yes*, each device can connect on the bus. When set to *No* (disabled), communication can only occur on the lower eight bits of the 16-bit SCSI bus. The default setting is *Yes*.

Send Start Unit Command

This option determines whether the Start Unit Command (SCSI command 1B) is sent to the SCSI device (most devices do not require this). Enabling this item reduces the load on the system power supply by allowing the SCSI controller to power-up SCSI devices one at a time upon booting. Otherwise, all the devices power up at the same time. Most devices require you to set a jumper before they can respond to this command.

When set to *Yes*, the Start Unit Command is sent to the SCSI device at system boot. When set to *No*, each SCSI device powers-up in the normal procedure.



The Send Start Unit Command setting is valid only if the host adapter BIOS is enabled.

If this option is enabled for more than one SCSI device, the Start Unit Command is sent first to the device with the lowest SCSI ID. When this device responds to the SCSI controller, the Start Unit Command is sent to the next highest SCSI ID with a setting of *Yes*. The process continues until all supported devices respond to the SCSI controller.

If many drives are set to *Yes* for Send Start Unit Command, the boot time varies depending on how long it takes each drive to spin up.

ADVANCED CONFIGURATION OPTIONS

Selecting the Advanced Configuration Options displays a screen as in Figure 3–8. Do not change the settings of the items under this parameter unless it is absolutely necessary.

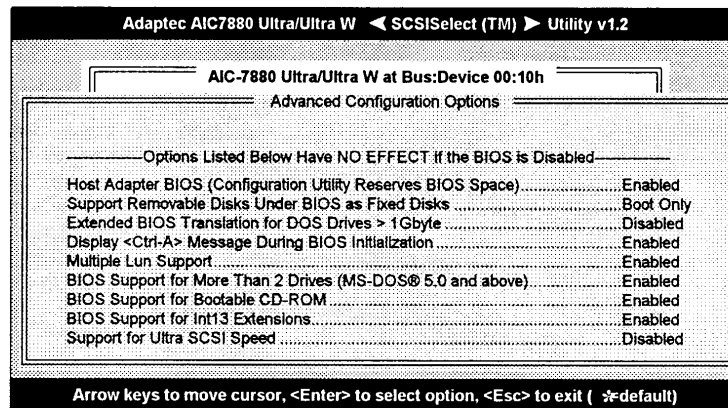





Figure 3-8 Advanced Configuration Options

Use the  or  keys to move between options, then press  to display a pop-up menu with a list of options.

Use the  or  keys to select an option, then press .

Host Adapter BIOS

This option enables or disables the SCSI controller BIOS. The default setting is `Enabled`.

The SCSI controller BIOS must be enabled if you want the system to boot from a SCSI hard disk drive connected to the SCIS controller. Several `SCSISelect` options cannot be used unless the SCSI controller BIOS is enabled.

Support Removable Disks Under BIOS as Fixed Disks

This option allows you to control which removable-media drives are supported by the SCSI controller BIOS. This is only valid when the SCSI controller BIOS is enabled. The default setting is `Boot Only`. The following choices are available:

- `Boot Only` - Only the removable-media drive designated as the boot device are treated as a hard disk drive.
- `All Disks` - All removable-media drives supported by the BIOS are treated as hard disk drives.
- `Disabled` - No removable-media drives are treated as hard disk drives. In this case, software drivers are needed because the drives are not controlled by BIOS.

Support for removable-media drives means that the SCSI controller BIOS allows use of a removable-media drive as if it is a hard disk drive. It does not mean that you can remove the disk media during operation.



If a removable-media SCSI device is controlled by the SCSI controller BIOS, do not remove the media while the drive is powered-on or you may lose data!.

Extended BIOS Translation fro DOS Drives > 1 GByte

This option allows you to enable or disable extended translation for SCSI hard disks with a capacity greater then 1 GB. This is valid only if the SCSI controller BIOS is enabled. The default factory setting is *Enabled*.

When enabled, this options use the following translation schemes:

- SCSI hard disks < 1 GB use a translation scheme of 64 heads, 32 sectors per track
- SCSI hard disks > 1 GB use a translation scheme of 255 heads, 63 sectors per track

See the section *Disk Drives Over 1 GB* in this chapter, for more information on this option. This option should be left disabled for most operating systems except DOS.

Display <Ctrl-A> Message During BIOS Initialization

This option allows entering the *SCSISelect* utility during BIOS initialization. The default setting is *Enabled*.

Multiple Lun Support

This option allows access to multiple logical unit numbers (Lun) per SCSI ID, The default setting is *Disabled*.

BIOS Support for Bootable CD-ROM

When enabled, this option allows you to use a bootable CD-ROM device to directly load an operating system. The default setting is *Enabled*.

BIOS Support for Int13 Extensions

This option allows access to attached SCSI devices through BIOS Int13 functions. The default setting is *Enabled*.

Support for Ultra SCSI Speed

This option enables wide SCSI data transfers at 40 MB per second. Most hard disk drives or other SCSI devices do not currently support a communication rate this high. If enabled, make sure that the device you installed is capable of running at this rate. The default setting is Disabled.

SCSI Disk Utilities

When you select SCSI Disk Utilities from the Options menu, the *SCSISelect* Utility scans the SCSI bus and lists all SCSI devices installed on the SCSI bus. The list shows the individual SCSI IDs assigned to each device on the SCSI bus.

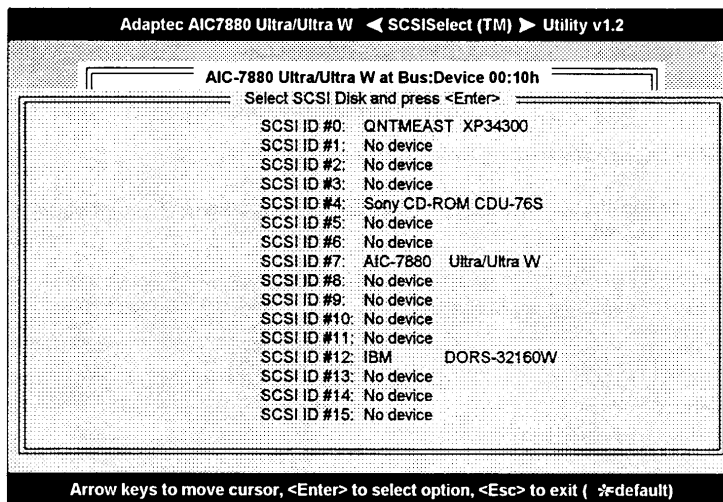





Figure 3-9 SCSI Disk Utilities Screen

Select a disk device to display a small menu window. From this menu, select *Format Disk* or *Verify Media*.

Use the  or  keys to move between options, then press  to display a pop-up menu with a list of values.

Use the  or  keys to select a value, then press .

FORMAT DISK

The Format Disk utility performs a low-level format on disk devices.

Most SCSI disk devices are preformatted and do not need to be formatted again. The Adaptec Format Disk utility is compatible with the vast majority of SCSI disk drives. Run it on hard disk drives or removable-media drives that were previously used with a non-Adaptec SCSI controller.




A low-level format destroys all data on the drive. Be sure to back up your data before performing this operation. You cannot abort a low-level format once it is started.

VERIFY MEDIA

The Verify Media utility scans the selected device's media for defects. If the utility finds bad blocks, it prompts you to reassign them. If you select **Yes**, those blocks will no longer be used.



You can press  at any time to abort the Verify Disk Media utility.

3.2.3 Configuring Multiple SCSI Controllers



The following procedure uses AHA-2940/W/UW SCSI controller as an example.

Follow these steps to configure multiple SCSI controllers:

1. Install the boot SCSI controller in the lowest PCI Device number. The Device number is determined by the slot number on the PCI bus.
 - a. To find out the Device number of the AHA-2940 SCSI controller(s), run the *SCSISelect* utility by pressing the key combination **CTRL**+A at power on.
 - b. On the first screen of *SCSISelect*, look for the following on the upper right hand corner.
`Bus:Device xx:xxxh` (given in hexadecimal)
 - c. If the device number is high, move the AHA-2940 to a PCI slot at the other end of the system board then rerun *SCSISelect* to see if the number is lower.



Step 1.3 is a recommended solution for most PCI systems. You can move the AHA-2940 SCSI controller to another PCI slot if the boot order is not what is desired.

- d. Refer to your system documentation for further details on determining the PCI slot number and slot number order in the system.
2. If you are booting from the AHA-2940 and using ISA/EISA-based host adapters as secondary devices, you must disable the BIOS on all ISA/EISA-based SCSI controllers.

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3. If you are booting from ISA/EISA-based controllers and using AHA-2940 as a secondary device, see your ISA/EISA-based SCSI controller documentation to ensure that the SCSI controller is at the lowest BIOS base address. ISA/EISA-based SCSI controllers with their BIOS enabled boot before the AHA-2940.

3.2.4 Disk Drives Over 1 GByte

Extended Translation

Adaptec SCSI controller have always supported the full range of disk drive capacities under all major operating systems. As disk drives have recently grown beyond 1 GB in formatted capacity, they have run up against the DOS 1024-cylinder limit.

To continue its support for all SCSI disk drive capacities under DOS, Adaptec has included an extended translation scheme for the AIC-7880 SCSI controllers. This feature supports disk drives of up to 8 GB capacity under DOS. The section Extended BIOS Translation for DOS Drives > 1 GB explains how to change the setting of this option. Most operating systems leave this option disabled.

DOS 1 GByte Limit

All current versions of DOS are limited to 1024 cylinders per drive. The standard translation scheme for SCSI host controllers, using 64 heads and 32 sectors, gives a maximum capacity of 1 GB.

To eliminate the 1-GB limit, Adaptec's extended translation feature uses 255 heads and 63 sectors, extending the disk drive capacity limit under DOS to 8 GB.



If you have already partitioned a large hard disk drive with one translation method, conversion to another method erases the data on the drive. Be sure to back up your disk drive prior to any change in the translation method.

When to Use the Extended Translation

WITH DOS 5.0 AND ABOVE

NetWare 386 (version 3.0 and above) and the version of UNIX do not share the 1024 cylinder limit of DOS and do not require extended translation to support large disk drives and should not be enabled.

DRIVES WITH MIXED PARTITIONS

Use standard translation (not extended translation) on drive formatted with two or more partitions for different operating systems. Partitions for UNIX and NetWare can be larger than 1 GB when using standard translation.



The term UNIX, as used here includes all version of AT&T/USL UNIX, SCO v3.2.4 (or later), and ISC v3.0 (or later).

USING FDISK

TO install a new disk, or to re-partition an existing disk, use the FDISK DOS utility as you normally would. The cylinder size increases to 8 MB when you enable extended translation. The size of the partition you request must therefore be a multiple of 8 MB. If you request a partition size that is not a multiple of 8 MB, FDISK rounds up to the nearest whole multiple of 8 MB.