

System Board

The V62X is a high-performance system board that utilizes the new Intel Pentium II processor. This processor has a built-in MMX (Multi-Media Extensions) technology that makes the system capable of handling and enhancing the performance of 32-bit applications and multimedia functions.

The system board supports PnP (Plug-and-Play) and power management functions. In addition, it also offers the hardware monitor function. This DMI (Desktop Management Interface) feature enables you to monitor the system resources of your PC or of systems in a network.

For expansion, the system board integrates in its design three ISA and four PCI slots. It also has a SCSI (Small Computer System Interface) /LAN (Local Area Network) interface to support SCSI devices and network functions. The six SIMM (Single In-line Memory Module) sockets on board allow you to upgrade the system memory to a maximum of 384 MB.

Notice that the board does not come with an external second-level cache. This is because the second-level cache is already integrated in the Pentium II CPU card. The CPU card may come with 256-KB or 512-KB second-level cache size.

The board comes with standard I/O interfaces such as two UART 16C550 serial ports, a parallel port with SPP (Standard Parallel Port)/ECP (Extended Capabilities Port)/EPP (Enhanced Parallel Port) feature, PS/2 keyboard and mouse ports. The board also includes a USB (Universal Serial Bus) interface to enable the system to support additional peripherals.

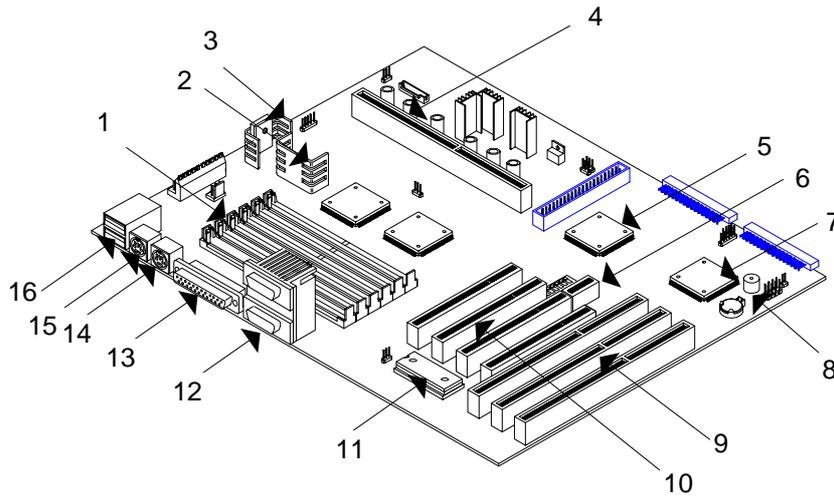
1.1 Major Features

The system board has the following major features and components:

- Supports Intel Pentium II processor running at 233 or 266 MHz
- 256/512-KB PDSRAM (Pipelined-burst SRAM) second-level cache (incorporated in the CPU card)
- Six SIMM sockets that accepts FPM (Fast Page Mode) and EDO (Extended Data Out) RAMs for memory upgrade
- Onboard PCI local bus IDE controller
- Onboard 256K Flash BIOS ROM
- Three ISA and four PCI slots for future expansion
- SCSI and Ethernet combo card interface
- Two PCI enhanced IDE interfaces that support up to four IDE devices
- External ports:
 - PS/2 keyboard and mouse ports
 - Two buffered high-speed serial ports
 - One SPP/ECP/EPP high-speed parallel port
 - Two USB ports
- Power management features
- APM v1.2 (Advanced Power Management)-compliant BIOS
- API (Application Program Interface) feature
- ATA (Advanced Technology Attachment)-compliant hard disk power saving feature
- PnP (Plug-and-Play) feature
- Windows 95 software shutdown support
- ADM (Advanced Desktop Manager) hardware monitor function
- ATX form factor

1.2 Board Layout

Figure 1-1 shows the locations of the system board major components.



- | | |
|--------------------------------|-----------------------|
| 1 72-pin SIMM sockets | 9 ISA slots |
| 2 3.3V regulator | 10 PCI slots |
| 3 1.5V regulator | 11 Flash BIOS ROM |
| 4 Pentium II connector | 12 COM1/2 ports |
| 5 PCI local bus IDE controller | 13 Printer port |
| 6 SCSI/LAN card slot | 14 PS/2 mouse port |
| 7 Ultra I/O controller | 15 PS/2 keyboard port |
| 8 Buzzer | 16 USB ports |

Figure 1-1 System Board Layout

1.3 Jumpers and Connectors

1.3.1 Jumper and Connector Locations

Figure 1-2 shows the jumper and connector locations on the system board.

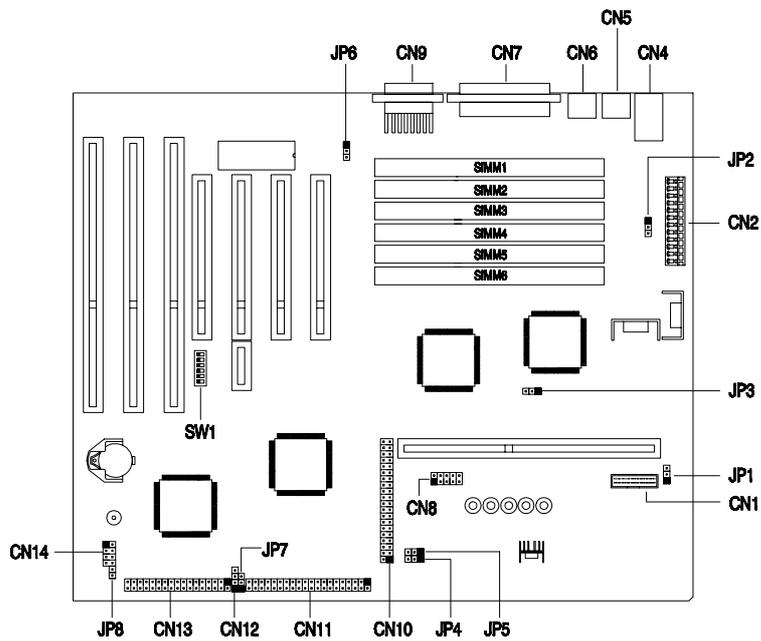


Figure 1-2 System Board Jumper and Connector Locations



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

1.3.2 Jumper Settings

Table 1-1 lists the system board jumpers with their corresponding settings and functions.

Table 1-1 Jumper Settings

Jumper	Setting	Function
Power On Setting (only for S/W power supply) JP1	1-2 2-3 *	Test mode Normal mode
CPU select JP3, JP4, JP5	Jumpers JP3 1-2 2-3 * JP4 1-2 2-3 * JP5 1-3, 2-4 3-5, 4-6 * CPU Pentium Pro Pentium II	
ROM Select JP6	1-2 2-3 Open *	EPROM Flash EEROM & 28F001 29EE010/020
Frequency Select SW1	Switch No. 1 On Off On * Off 2 On On Off * Off Host Clock Reserved 60 MHz 66 MHz XIN/2 PCI Clock Reserved 30 MHz 33 MHz XIN/4	
Password Check SW1 (Switch No. 3)	On * Off	Bypass password Check password
BIOS Logo SW1 (Switch No. 4)	On Off *	OEM BIOS Acer BIOS

* Default setting

Table 1-1 Jumper Settings (continued)

Jumper	Setting				Function
Core/Bus Ratio SW1	Switch No.				
	5	6	7	8	Core/Bus Ratio
	On	On	On	On	2
	On	On	Off	On	3
	On *	On *	On *	Off *	4
	On	On	Off	Off	5
	On	Off	On	On	2.5
	On	Off	Off	On	3.5
	On	Off	On	Off	4.5
	On	Off	Off	Off	5.5
	Off	On	On	On	6
	Off	On	Off	On	7
	Off	On	On	Off	8
	Off	Off	On	On	6.5
	Off	Off	Off	On	7.5
	Off	Off	On	Off	1.5
Off	Off	Off	Off	2	
Off	On	Off	Off	Reserved	

1.3.3 Connector Functions

Table 1-2 lists the different connectors on the system board and their respective functions.

Table 1-2 Onboard Connectors

Connector	Function								
CN1	Power connector								
CN3	USB port(s)								
CN4	PS/2 keyboard port								
CN5	In-Target Probe (ITP) debug port								
CN6	PS/2 mouse port								
CN7	Parallel/printer port								
CN9	COM1/2 port(s)								
CN10	HDD channel 2 connector								
CN11	HDD channel 1 connector								
CN12	InfraRed (IrDA) connector								
CN13	FDD connector								
CN14	Multifunction connector <table><thead><tr><th>Pin No.</th><th>Function</th></tr></thead><tbody><tr><td>2-6</td><td>Power LED</td></tr><tr><td>7-8</td><td>Reset</td></tr><tr><td>1-3</td><td>Speaker</td></tr></tbody></table>	Pin No.	Function	2-6	Power LED	7-8	Reset	1-3	Speaker
Pin No.	Function								
2-6	Power LED								
7-8	Reset								
1-3	Speaker								
JP2	Standby power cable connector								
JP8	Software power control connector								
JP7	HDD LED connector								

1.4 ESD Precautions

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

1. Do not remove a component from its anti-static packaging until 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 described in the following sections unless you are a qualified technician.

1.5 Pre-installation Instructions

Always observe the following before you install a system component:

1. Turn off the system power and all the peripherals connected to the unit before opening it.
2. Open the system according to the instructions in the housing installation manual.
3. Follow the ESD precautions in section 1.4 before handling a system component.
4. Remove any expansion boards or peripherals that block access to the SIMM sockets or CPU socket.
5. See the following sections for specific instructions on the component you wish to install.



Do not attempt the procedures described in the following sections unless you are a qualified service technician.

1.6 Pentium II Processor

The board supports the Pentium II processor - a module that consists of a Pentium Pro technology-based CPU and a second-level cache. It utilizes the new enclosed packaging technology called S.E.C (single-edge contact) cartridge, that allows the second-level cache to remain tightly coupled to the processor. It is capable of increasing the performance of 32-bit software and multimedia applications

The Pentium II processor also supports the following features:

- 64-bit Pentium Pro technology-based CPU running a 233 or 266 MHz
- MMX technology support for multimedia functions
- 32-KB internal cache size
- 256-/512-KB write-back second-level cache size
- Non-blocking architecture to prevent CPU stalls during cache, memory and I/O accesses

1.6.1 Installing a Pentium II Processor



Observe the ESD precautions when installing or removing a system component.

Follow these steps to install a Pentium II processor:

1. Place the retention mechanism over the CPU connector on the system board. Secure it with the screws that came with the package.

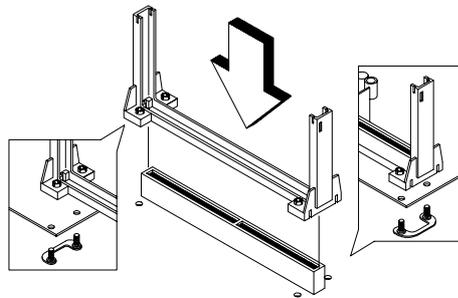


Figure 1-3 Installing the Retention Mechanism

2. Remove the Pentium II processor from its protective packaging. Make sure that the latches on the sides of the module are not pressed.
3. With the processor card golden fingers pointing downward, align the processor to the posts of the retention mechanism.
4. Lower the processor into to the CPU connector on the system board until the golden fingers touch the connector.

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5. Press down the processor until the golden fingers completely fit into the connector and the latches on the sides lock the processor into place.

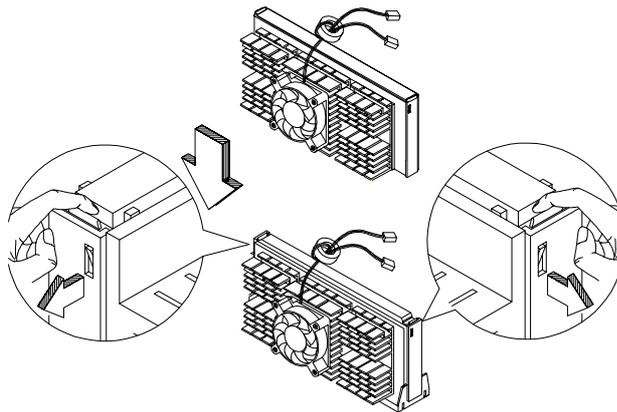


Figure 1-4 Installing a Pentium II Processor

1.6.2 Removing a Pentium II Processor



Observe the ESD precautions when installing or removing a system component.

Follow these steps to remove the Pentium II processor:

1. Press the latches on both sides of the processor to release it from the retention mechanism. You will hear a click sound once the latch is released.
2. Pull the processor to totally detach it from the CPU connector.

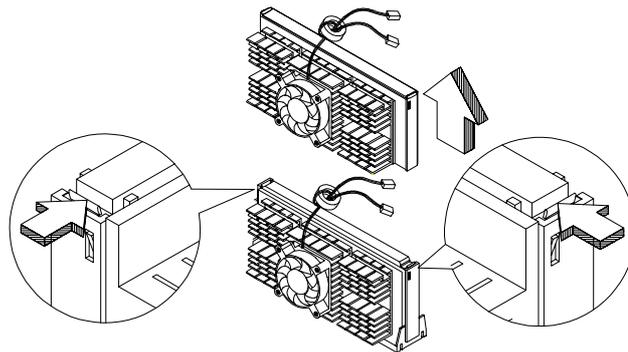


Figure 1-5 Removing a Pentium II Processor

1.7 Memory Configurations

The system board comes with six 72-pin SIMM sockets that allows you to expand memory to a maximum of 384 MB. The SIMM sockets support 5V FPM/EDO DRAMs with 4-, 8-, 16-, 32-, and 64-MB capacities and 60ns (or less) access time. The FPM DRAM is the standard DRAM type. The EDO DRAM is actually very similar to FPM. The only difference is that EDO DRAM holds the memory data valid until the next memory access cycle, that is similar to pipeline effect and therefore reduces one clock state, while traditional FPM tri-states the memory output data to start the pre-charge activity.

Table 1-3 lists the possible memory configurations.

1.7.1 Rules for Adding Memory

- Use only one type of SIMM in a given bank.
- You may combine different types of SIMMs for a 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 8 MB, install two 4-MB SIMMs into the sockets marked SIMM1 and SIMM2 or SIMM3 and SIMM4. You can not use an 8-MB SIMM alone for an 8-MB memory.
- Always install SIMMs from the outermost socket first. For example, socket SIMM1 before socket SIMM2, or socket SIMM3 before socket SIMM4.
- Always remove SIMMs from the innermost socket first. For example, socket SIMM4 before socket SIMM3, or socket SIMM2 before socket SIMM1.

Table 1-3 Memory Configurations

Bank 1		Bank 2		Bank 3		Total Memory
SIMM1	SIMM2	SIMM3	SIMM4	SIMM5	SIMM6	
4 MB	4 MB					8 MB
4 MB	4 MB	4 MB	4 MB			16 MB
4 MB	4 MB	4 MB	4 MB	4 MB	4 MB	24 MB
8 MB	8 MB					16 MB
8 MB	8 MB	4 MB	4 MB			24 MB
8 MB	8 MB	4 MB	4 MB	4 MB	4 MB	32 MB
8 MB	8 MB	8 MB	8 MB			32 MB
8 MB	8 MB	8 MB	8 MB	4 MB	4 MB	40 MB
8 MB	8 MB	8 MB	8 MB	8 MB	8 MB	48 MB
16 MB	16 MB					32 MB
16 MB	16 MB	4 MB	4 MB			40 MB
16 MB	16 MB	4 MB	4 MB	4 MB	4 MB	48 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
16 MB	16 MB	8 MB	8 MB	8 MB	8 MB	64 MB
16 MB	16 MB	16 MB	16 MB			64 MB
16 MB	16 MB	16 MB	16 MB	4 MB	4 MB	72 MB
16 MB	16 MB	16 MB	16 MB	8 MB	8 MB	80 MB
16 MB	16 MB	16 MB	16 MB	16 MB	16 MB	96 MB
32 MB	32 MB					64 MB
32 MB	32 MB	4 MB	4 MB			72 MB
32 MB	32 MB	4 MB	4 MB	4 MB	4 MB	80 MB
32 MB	32 MB	8 MB	8 MB			80 MB
32 MB	32 MB	8 MB	8 MB	4 MB	4 MB	88 MB
32 MB	32 MB	8 MB	8 MB	8 MB	8 MB	96 MB
32 MB	32 MB	16 MB	16 MB			96 MB
32 MB	32 MB	16 MB	16 MB	4 MB	4 MB	104 MB
32 MB	32 MB	16 MB	16 MB	8 MB	8 MB	112 MB

Table 1-3 Memory Configurations (continued)

Bank 1		Bank 2		Bank 3		Total Memory
SIMM1	SIMM2	SIMM3	SIMM4	SIMM5	SIMM6	
32 MB	32 MB	16 MB	16 MB	16 MB	16 MB	128 MB
32 MB	32 MB	32 MB	32 MB			128 MB
32 MB	32 MB	32 MB	32 MB	4 MB	4 MB	136 MB
32 MB	32 MB	32 MB	32 MB	8 MB	8 MB	144 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					128 MB
64 MB	64 MB	4 MB	4 MB			136 MB
64 MB	64 MB	4 MB	4 MB	4 MB	4 MB	144 MB
64 MB	64 MB	8 MB	8 MB			144 MB
64 MB	64 MB	8 MB	8 MB	4 MB	4 MB	152 MB
64 MB	64 MB	8 MB	8 MB	8 MB	8 MB	160 MB
64 MB	64 MB	16 MB	16 MB			160 MB
64 MB	64 MB	16 MB	16 MB	4 MB	4 MB	168 MB
64 MB	64 MB	16 MB	16 MB	8 MB	8 MB	176 MB
64 MB	64 MB	16 MB	16 MB	16 MB	16 MB	192 MB
64 MB	64 MB	32 MB	32 MB			192 MB
64 MB	64 MB	32 MB	32 MB	4 MB	4 MB	200 MB
64 MB	64 MB	32 MB	32 MB	8 MB	8 MB	208 MB
64 MB	64 MB	32 MB	32 MB	16 MB	16 MB	224 MB
64 MB	64 MB	32 MB	32 MB	32 MB	32 MB	256 MB
64 MB	64 MB	64 MB	64 MB			256 MB
64 MB	64 MB	64 MB	64 MB	4 MB	4 MB	264 MB
64 MB	64 MB	64 MB	64 MB	8 MB	8 MB	272 MB
64 MB	64 MB	64 MB	64 MB	16 MB	16 MB	288 MB
64 MB	64 MB	64 MB	64 MB	32 MB	32 MB	320 MB
64 MB	64 MB	64 MB	64 MB	64 MB	64 MB	384 MB

1.7.2 Installing a SIMM



Observe the ESD precautions when installing or removing a system component.

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.

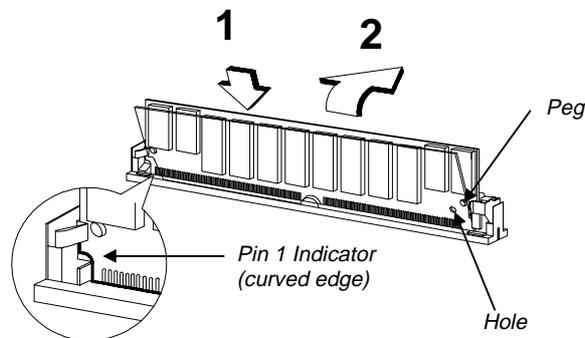


Figure 1-6 Installing a SIMM

1.7.3 Removing a SIMM



Observe the ESD precautions when installing or removing a system component.

Follow these steps to remove a SIMM

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

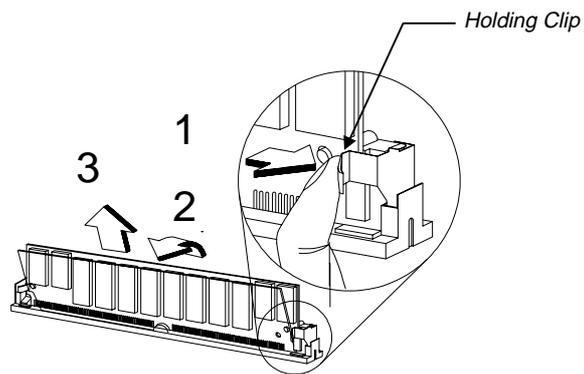


Figure 1-7 Removing a SIMM

1.7.4 Reconfiguring the System

You must enter Setup after installing or removing SIMMs to reconfigure the system.

Follow these steps to reconfigure the system:

1. Turn on 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** to enter Setup. A warning message appears indicating a wrong memory configuration.
3. Press **ESC** twice to exit and reboot the system.

The system boots with the new memory configuration.

1.8 IDE Hard Disk Support

The system board supports four IDE hard disks, or any other IDE devices, through the two onboard PCI IDE interfaces. See Figure 1-2 for the location of the IDE interfaces.

Follow the instructions in the housing installation manual on how to install a hard disk in the system. Connect the cables according to the IDE hard disk configuration in Table 1-4.

Table 1-4 IDE Hard Disk Configuration

IDE Connector	Master	Slave
HDD Channel 1	Hard disk 0	Hard disk 1
HDD Channel 2	Hard disk 2	Hard disk 3/ IDE CD-ROM drive

1.9 Add-on Card Installation



Observe the ESD precautions when installing or removing a system component.

1.9.1 Installing ISA Cards

Both PnP and non-PnP ISA cards require specific IRQs. When installing ISA cards make sure that the IRQs required by these cards are not previously assigned to PCI devices to avoid resource conflicts.

Follow these steps when installing ISA cards:

1. Turn off the system and remove all PnP cards installed, if any.
2. Turn on the system, enter BIOS utility and set the Reset Resource Assignment parameter to *Yes* to clear the resource data assigned to the PnP devices. Refer to section 2.4.5.
3. Turn off the system.
4. Locate the ISA slots on the system board and install the non-PnP ISA cards.
5. Turn on the system.
6. Use Windows 95 or ICU to manually assign the appropriate IRQs to the cards. This ensures that BIOS will not use the resources assigned to the non-PnP ISA cards.



BIOS detects and configures only PnP cards.

7. Turn off the system.

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8. Locate the ISA slots on the system board and install the PnP ISA cards.

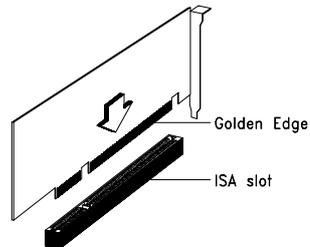


Figure 1-8 Installing an ISA Card

9. Turn on the system. This time PnP BIOS automatically configures the PnP ISA cards with the remaining free IRQs.

1.9.2 Installing a PCI Card



Before you proceed, make sure that you have already installed the non-PnP ISA cards and have assigned the appropriate IRQs to the cards.

Follow these steps to install a PCI card:

1. Turn off the system.
2. Locate the PCI slot on the system board.
3. Align the golden fingers of the PCI card to the slot.
4. Press the PCI card until it is properly seated.

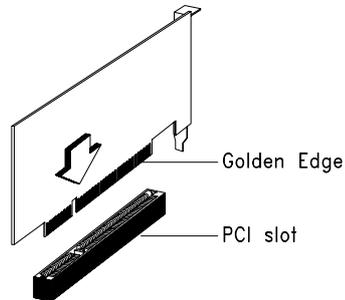


Figure 1-9 Installing a PCI Card

5. Turn on the system. The PnP BIOS automatically configures the PnP ISA and PCI cards with the remaining free IRQs.

1.9.3 Installing a SCSI/LAN Card



Before you proceed, make sure that you have already installed the non-PnP ISA cards and have assigned the appropriate IRQs to the cards.

To take full advantage of the board's SCSI and network functions, you need to install a SCSI/LAN combo card. To install, follow these steps:

1. Turn off the system.
2. Locate the SCSI/LAN card slot on the system board.
3. Align the golden fingers of the SCSI/LAN card to the slot.
4. Press the card until it is properly seated.

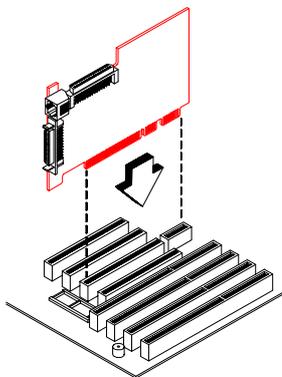


Figure 1-10 Installing a SCSI/LAN Card

5. Turn on the system. The PnP BIOS automatically configures the installed card with the remaining free IRQs.



Refer to your SCSI/LAN combo card user's guide for detailed information on SCSI/LAN functions.

Special Instruction After Installing the SCSI/LAN Card

If you installed a SCSI/LAN card in your system, only PCI cards that support IRQ sharing function can be installed on PCI slot 4.

Before you install a PCI card on PCI slot 4, make sure that you do the following:

- Read your card documentation and check if your PCI card supports the PCI IRQ sharing function.
- Set the PCI IRQ Sharing parameter in the BIOS Setup to *Yes*. For more details on BIOS, see Chapter 2.

1.10 Post-installation Instructions

Observe the following after installing a system component:

1. See to it that the components are installed according to the step-by-step instructions in their respective sections.
2. Make sure you have set all the required jumpers. See section 1.3.2 for the correct jumper settings.
3. Replace any expansion boards or peripherals that you removed earlier.
4. Replace the system cover.
5. Connect the necessary cables and turn on the system.

1.11 USB

USB is a new serial bus design that is capable of cascading low-/medium-speed peripherals (less than 12 Mbps) such as keyboard, mouse, joystick, scanner, printer and modem/ISDN. With USB, complex cable connections at the back panel of your PC can be eliminated.

See Figure 1-1 for the location of the USB interface on the system board.

1.12 Hardware Monitor Function

The hardware monitor function of the system board allows you to check the system resources, either locally or in a computer network, via software such as ADM (Advanced Desktop Management) or Intel LDCM (LAN Desk Client Manager). ADM and Intel LDCM are desktop management programs that offer SMART (System Monitoring Analysis and Reporting Technology) monitor function for checking local or network connected systems. In addition, it also enables the PC products and applications to be OS independent.

To enable the hardware monitor function, you need to install either ADM or Intel LDCM. Contact your dealer for information on the availability of the software. Refer to the software documentation for more details on the hardware monitor function.

1.13 Error Messages

In the event that you receive an error message, do not continue using the computer. Note the message and take corrective action immediately. This section describes the different types of error messages and suggests corrective measures.

There are two general types of error messages:

- Software
- System

1.13.1 Software Error Messages

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

1.13.2 System Error Messages

A system error message indicates a problem with the computer itself. These messages normally appear during the power-on self-test, before the operating system prompt appears. Table 1-5 lists the system error messages in alphabetical order.

Table 1-5 System Error Messages

Message	Action
CMOS Battery Error	Replace the RTC chip or contact your dealer.
CMOS Checksum Error	Check the RTC chip and the necessary jumper. If the battery is still good, run Setup.
Display Card Mismatch	Run Setup
Diskette Drive Controller Error or Not Installed	Check and connect the control cable to the diskette controller.
Diskette Drive Error	Diskette may be defective. If not, replace the diskette drive.
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 the memory configuration to agree with one of the options in Table 1-3.
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.
Keyboard Error or No Keyboard Connected	Check and connect the keyboard to the system unit.

Table 1-5 System Error Messages (continued)

Message	Action
Keyboard Interface Error	Replace the keyboard or contact your dealer.
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.
CPU Clock Mismatch	Run Setup. Check if the CPU clock is correct. If correct, exit Setup and reboot the system. If the error 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	Check the RTC chip. If it is still good, run Setup. If not, replace the RTC chip.

1.13.3 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 unit cover. 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 securely plugged in.

If you go through the corrective steps above 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 both cases, contact an authorized service center for assistance.