NA380

SiS® 645 Motherboard

USER'S MANUAL

Pentium®4 Processor Motherboard

Rev. 1.0

Revision History

Revision	Date	Description
1.0		Initial release of NA380 motherboard user's manual

Item Checklist

1 NA380 Motherboard

1 Floppy Cable

1 ATA Cable 66/100

1 I/O Shield

1 Heatsink Retention Manual

1 CD for Motherboard Driver

1 NA380 Quick Installation Guide

1 NA380 User Manual

Intel® Pentium 4 is a registered trademark of Intel Corporation.

Safety Instructions

Follow these precautions when operating your computer.

1. Always unplug the power cord when inserting any add-on card or module inside the system.

2. Wear a grounding strap attached to a grounded device to avoid damage from static electricity. If one is not available, discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard.

3. Place components on a level grounded antistatic pad or on the packaging that came with the components whenever the components are separated from the system.

4. Keep equipment away from moisture and humidity.

5. Hold all circuit boards by the edges. Do not bend circuit boards.

6. Keep this User's Manual for future reference.

Table of Contents

Chapter 1 Introduction

Motherboard Specifications

Form Factor:
- Standard ATX 305 x 244 mm

Processor:
- Supports single Intel® Pentium® 4 Processor in 478 ball FC-PGA2 package
- Processor socket mPGA478
- 400 MHz system bus

Cache Memory:
- Processor integrated level-1 and level-2 cache

System Memory:
- Three 184-pin DIMM sockets (90 degree, tin plated contact)
- Supports DDR (Double Data Rate) SDRAM at 200/266/333 MHz
- Supports 64/128/256/512 MB and 1 GB SDRAM devices
- Accommodates up to 3 GB memory
- Supports Suspend-to-RAM (STR) sleep state (ACPI S3)

    NOTE: The motherboard only accommodates 2 DDR SDRAM 333 MHz memory modules.

PCI bus:
- PCI 2.2 compliant
- PME# and 3.3V aux signals support power management

Onboard EIDE:
- Two PCI IDE ports support up to four devices
- Supports ATA-33/66/100, PIO up to mode 4

Core Logic Chipset:
- Supports Synchronous/Asynchronous Host/ DRAM clock timing
- Supports DDR266/333
- Supports graphic window size from 4 to 256 MB
- SiS® HyperZip connect interface to SiS® 961
- 1.8V core with mixed 1.2, 1.5, 1.8, 2.5 and 3.3 volt I/O CMOS technology
- Complies with PCI 2.2 specification
- Supports PIO mode 0 ~ 4 and Ultra DMA 33/66/100
- Fast Ethernet MAC Controller
- Complies with IEEE 802.3 and 802.3x standard
- Supports full-duplex 10base-T, 100base-Tx, 1 MB/s and 10 MB/s Home Networking
- AGP controller, AGP v2.0 compliant
- 66 MHz asynchronous clock AGP-to-Host interface

Audio:
- Complies with AC '97 v2.2 specification
- 18-bit stereo full-duplex CODEC with independent and variable sampling rate
- Three Mini-DIN audio jacks (line-out, line-in, and mic-in)
- Two audio headers, locking type: CD-in, Aux-in

Onboard LAN (optional)
- LAN Chip: RTL8100B
- Integrated Fast Ethernet MAC chip and transceiver in one chip
- 10 Mbps and 100 Mbps operation
- PCI local bus single-chip Fast Ethernet controller
- Complies with PCI Revision 2.2
- Supports ACPI, PCI power management
- Complies with PC99 standard
- Supports Wake-On-LAN function and remote wake-up
- Supports auxiliary power-on internal reset
- Half/full-duplex capability

RAID (Optional)
- Supports Ultra ATA/100 drives and backward compatible with Ultra ATA/66/33 & EIDE drives
- Supports UDMA 5/4/3/2/1/0, DMA 2/1/0, PIO 4/3/2/1/0 modes
- Two independent IDE channels support up to four UDMA/100/66/33 or EIDE drives
- Offers double sustained data transfer rate of attached drive (RAID 0, RAID 1)
- Intelligent DMA Engine supports DMA disk drives with bus mastering

BIOS:
- Plug & Play BIOS (AMI)
- ACPI v2.0 – WfM 2.0 – SMBIOS v2.3 – DMI v2.1 – PC2001
- Auto detect for: CPU Speed – AGP 4X – ATA-100
- Wake-on PS/2 (KB, Mouse) & USB devices
- Rapid Boot support
- WOL, ASF support
- Power management: ACPI S3, S4 support

Onboard I/O:
- Low Pin Count (LPC) 3.3V interface
- One serial port – DB9 (16550 UART)
- One parallel port – DB25 with ECP/EPP support
- One PS/2 mouse connector
- One PS/2 keyboard connector
- Three PWM fan controlled output headers
- Four USB Ports: 2 ports on back panel, 2 ports via motherboard 2X5 header for front panel
- One game port
- One RJ-45 LAN port

> **NOTE:** The RJ-45 LAN port is only present when the motherboard has the optional onboard LAN.

Additional Features:
- Thermal sensor & CPU monitoring
- NIC with integrated MBA boot (complete WOL support)
- BIOS recovery & Boot-Block overwrite via jumper
- Hardware Monitor Capability (SMsC LPC47M15x/LPC47M192)

Expansion Slots:
- One AGP Slot (2X/4X mode)
- Five PCI Slots (including 1 shared PCI/CNR slot)

Other:
- Front panel I/O 2X9 header, key pin 14
- On-board buzzer

NA380 Motherboard Layout
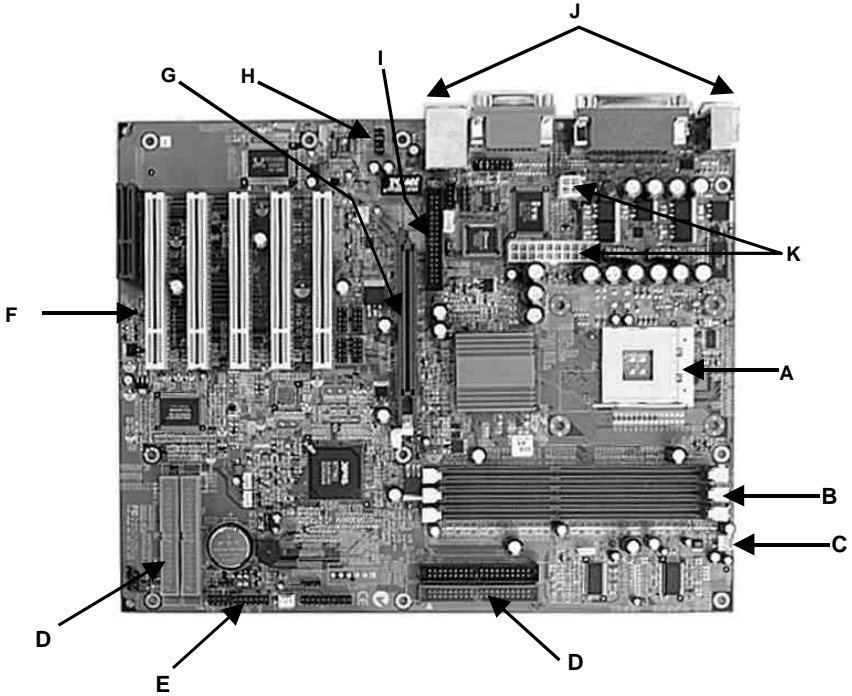
A	CPU Socket	G	AGP Slot
B	Memory Sockets	H	Audio Connector
C	CPU Fan Connector	I	Floppy Connector
D	IDE Connectors	J	Back Panel Connectors
E	Front Panel Connectors	K	Power Supply Connectors
F	Expansion Slots		

Front Panel Connector Pin Definition

LPANEL 1
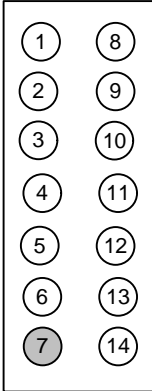
Pin	Signal Name	Pin	Signal Name
1	HLED+	8	HLED-
2	PLEDY	9	VCC
3	PLEDG	10	GND
4	PLED	11	GND
5	PS	12	SPKR
6	GND	13	RESET
7	KEY	14	GND

PANEL1
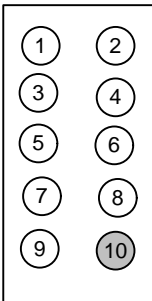
Pin	Signal Name	Pin	Signal Name
1	HD_LED_P	2	PWR_SLP
3	HD_LED_N	4	PWR_SLP
5	RST_SW_N	6	PWR_SW_P
7	RST_SW_P	8	PWR_SW_N
9	RSVD	10	KEY

6

Chapter 2 Hardware Installation Process

Installing the Central Process Unit (CPU)

CPU Installation

1. Unlock the CPU socket by pulling the locking lever up to a 90-degree angle.

2. Position the CPU above the socket so that its **marked** corner (pin1) matches the corner near the base of the lever.

3. Place the CPU into the socket. (If you cannot insert the CPU easily, check its orientation and attempt to re-install it.)

   Warning! Do not force the CPU into the socket. Doing so will bend the CPU pins and damage the CPU.

4. Secure the CPU to the socket by lowering the lever and locking the lever in place.

Step 1   **90-degree angle**

Step 2

Pin1
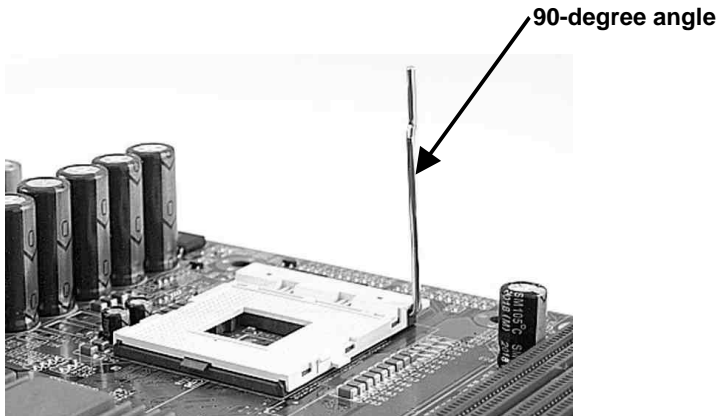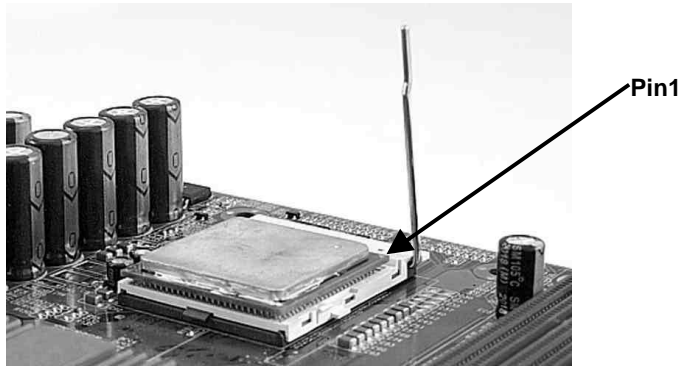
CPU Heat Sink Installation

1. Read the related CPU heat sink user's manual for more detailed installation procedures.

2. Connect the CPU fan power cable to the CPU fan connector on the motherboard.

CPU fan
power cable

CPU fan
connector
(CPUFAN1)

8
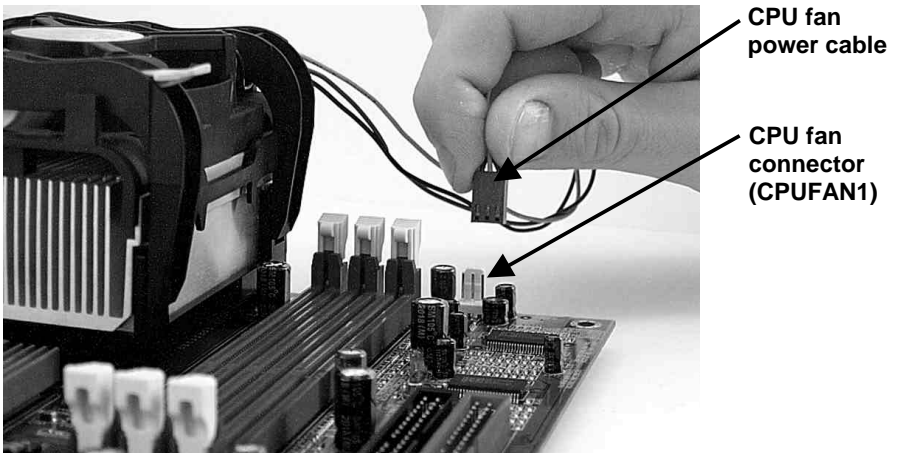
Installing Memory Modules

1. Push the white retaining clips on the memory socket outwards.

2. Match the notches on the contact edge of the memory module to the ridge in the memory socket.

3. Insert the memory module vertically into place. When properly inserted, the white retaining clips move inward to lock in the module.

4. Repeat the installation process to add additional modules.

Retaining Clip
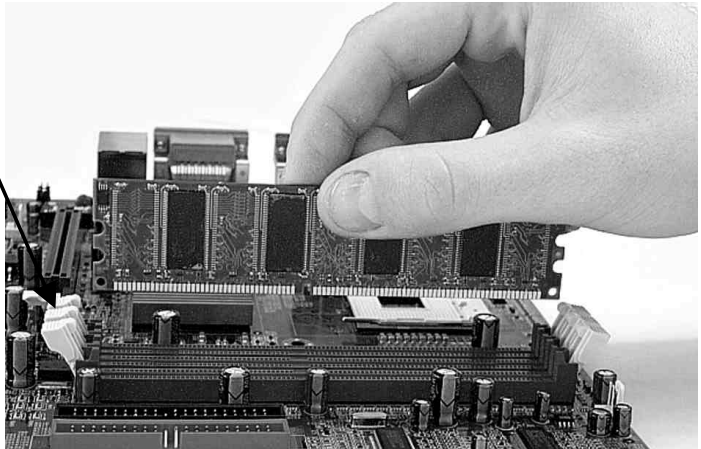
Total Memory Sizes with Unbuffered SDRAM DIMM

DIMM Type	1 DIMMx64/x72	2 DIMMsx64/x72	3 DIMMsx64/x72
64 Mbit (2Mx8x4 banks)	128 MBytes	256 MBytes	384 MBytes
64 Mbit (1Mx16x4 banks)	64 MBytes	128 MBytes	192 MBytes
128 Mbit (4Mx8x4 banks)	256 MBytes	512 MBytes	786 MBytes
128 Mbit (2Mx16x4 banks)	128 MBytes	256 MBytes	384 MBytes
256 Mbit (8Mx8x4 banks)	512 MBytes	1 GByte	1.5 GBytes
256 Mbit (4Mx16x4 banks)	256 MBytes	512 MBytes	768 Mbytes
512 Mbit (16Mx8x4 banks)	1 GByte	2 GBytes	3 GBytes
512 Mbit (8Mx16x4 banks)	512 MBytes	1 GByte	1.5 GBytes

Connecting IDE and Floppy Disk Cables

Connecting the floppy disk ribbon cable into the motherboard. The side of the cable with the red stripe needs to be inserted into the Pin1 side of the floppy disk connector. Pin1 is marked with a white triangle.

Red Stripe to Pin1

Floppy Connector (FLOPPY1)
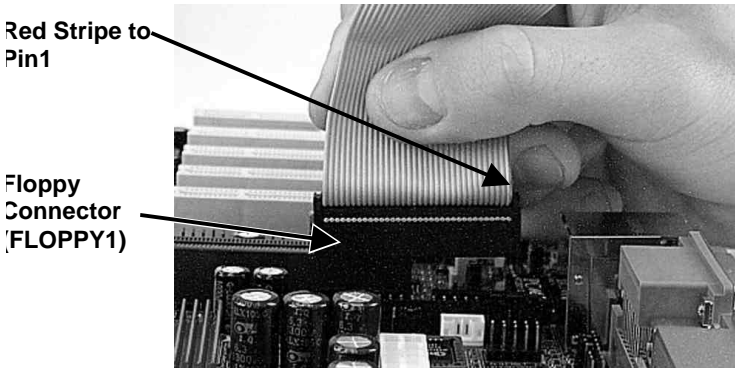
Connecting the IDE ribbon cable into the motherboard. The side of the cable with the red stripe should be inserted into the Pin1 side of the IDE connector. Pin1 is marked with a white triangle.

Red Stripe to Pin1

IDE Connectors (IDE1/IDE2)
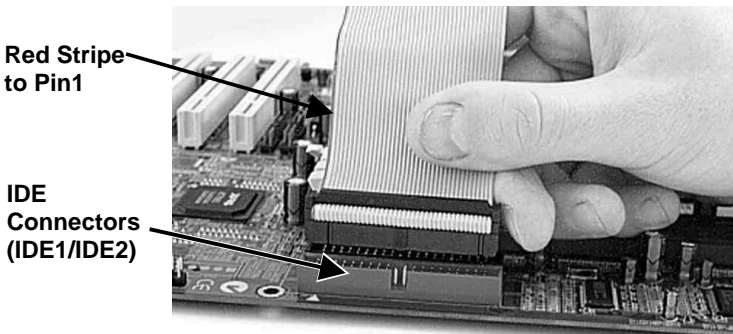
> **Note:** The motherboard has two IDE connectors. You can connect the IDE devices to either of these connectors.

Connecting Floppy and IDE Drives

Follow these instructions to connect a floppy disk drive (FDD) and IDE drive to your motherboard.

Floppy Disk Drive

1. Mount the drive into the case.

2. Connect the floppy disk ribbon cable and power cable to the FDD.

3. Connect the FDD ribbon cable to the motherboard FDD connector FLOPPY1 (refer to the previous section "Connecting IDE and Floppy Disk Cables").
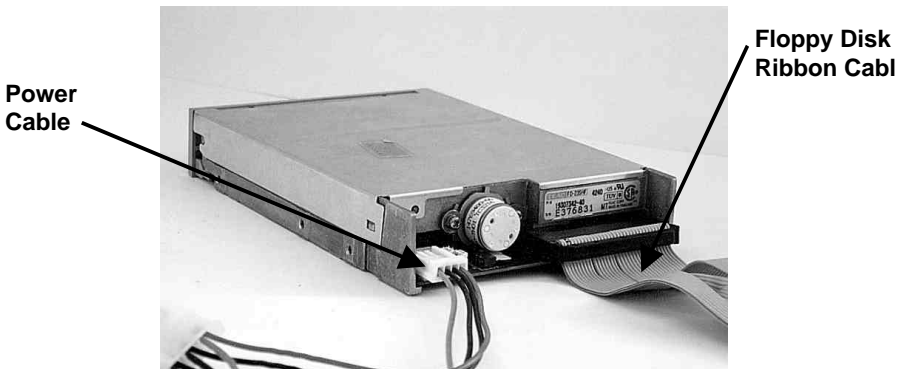
Hard Disk Drive

NOTE: If installing two IDE devices on the same ribbon cable, one device is to be set as "master" and the second as "slave". Refer to IDE device manual for master and slave settings.

1. Mount the drive into the case.

2. Connect the IDE disk ribbon cable and power cable to the IDE device.

3. Connect the IDE ribbon cable to the motherboard IDE connector IDE1 or IDE2 (refer to the previous section "Connecting IDE and Floppy Disk Cables").

Power Cable

IDE Ribbon Cable
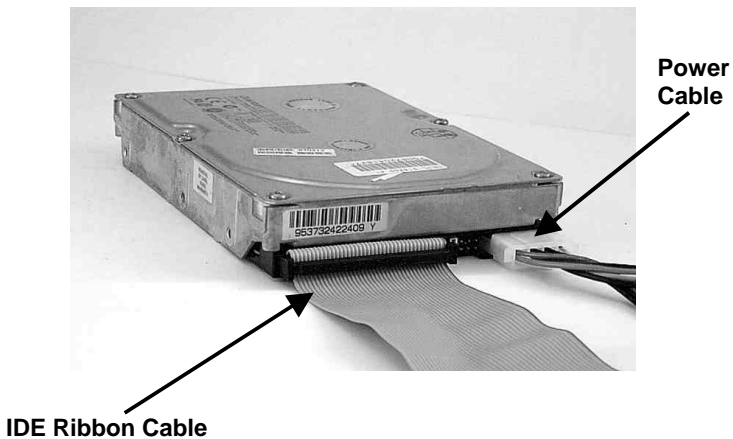
NOTE: If you are installing a CD-ROM or DVD-ROM IDE device, connect the audio cable supplied with the device to CDIN1 or CDIN2.

Installing Expansion Cards

1. Read the expansion card installation instructions before inserting the expansion card into the motherboard.

2. Remove the slot cover from the chassis case where the expansion card will be placed.

3. Press the expansion card firmly into the expansion slot of the motherboard.

4. Secure the card with the screw provided.

5. Repeat the procedure to add additional expansion cards.

Expansion Card

PCI Expansion Slot
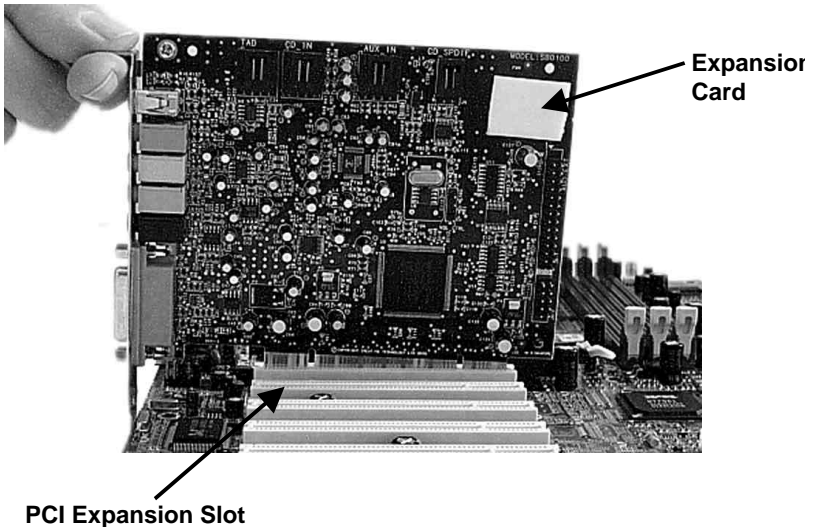
Connecting the Power Supply Cables

NOTE: This motherboard has two power connectors to support the Pentium 4 processor.

Connect the power connectors to the motherboard power connectors. The plastic clips on the connectors should lock into the plastic tabs on the motherboard connectors.

Power Supply Connectors
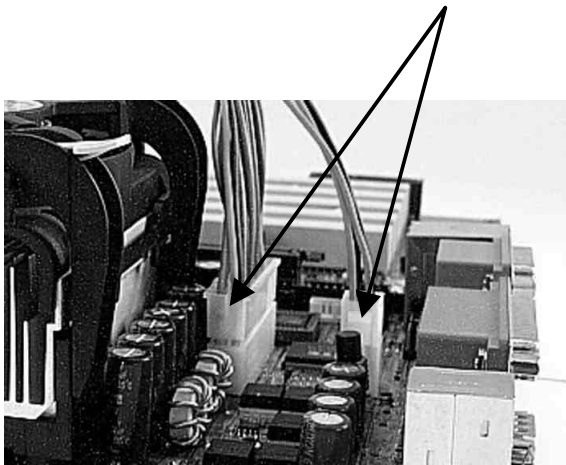
NOTE: The ATX power connectors are keyed for proper insertion.

I/O Back Panel Introduction
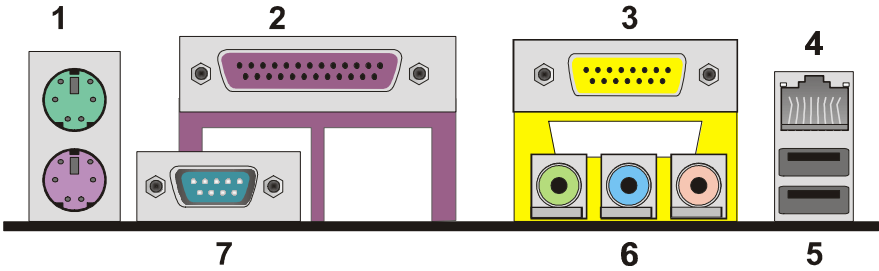
(1) PS/2 Keyboard and PS/2 Mouse Connector

PS/2 Mouse Connector (6-pin Female)

PS/2 Keyboard Connector (6-pin Female)
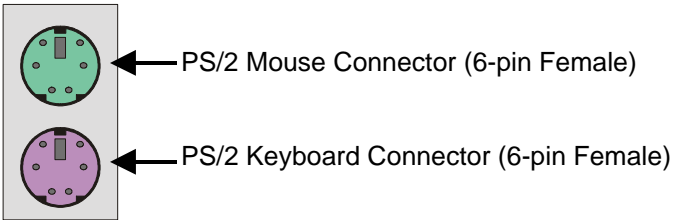
This connector supports a standard PS/2 keyboard and PS/2 mouse.

(2) Parallel Port

Parallel Port (25-pin Female)
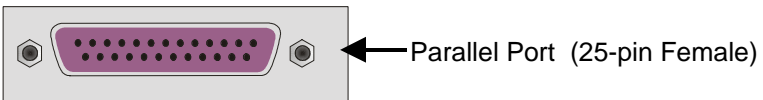
Devices such as a printer can be connected to the parallel port.

16

(3) Game Port

Game Port (15-pin Female)

This connector supports a joystick, MIDI keyboard, and other related audio devices.

(4) RJ-45 LAN Connector

LAN Connector (8-pin RJ-45)
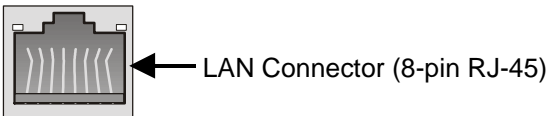
Connect an RJ-45 jack to this connector to access a network.

(5) USB Connector
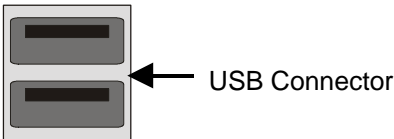
USB Connector

Before connecting a device to the USB connectors, determine if the device has a standard USB interface.

Make sure your computer Operating System (OS) supports the USB controller. Contact your OS or device vendor for more information.

(6) Audio Connectors

Line-out
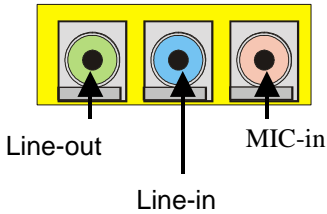
MIC-in

Line-in

Once the onboard audio driver has been installed, speakers can be connected to the line-out jack, audio devices (such as a stereo or tape player) to the line-in jack, and a microphone to the MIC-in jack.

(7) Serial Connector

Serial Port – COM1 (9-pin Female)
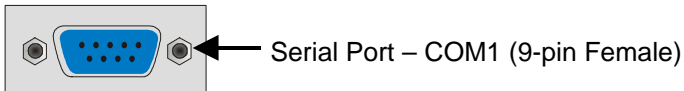
Devices such as a mouse or modem can be connected to the serial port. The serial port is identified by the system as COM1.

Jumper Introduction

JP2

JP1
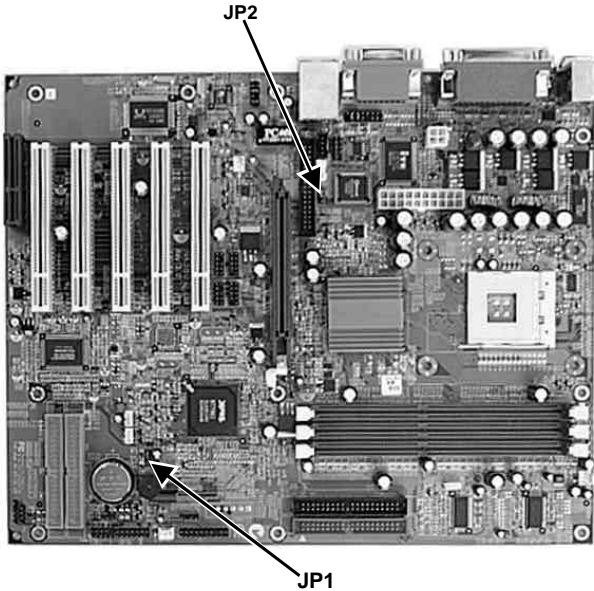
Jumper Settings

The following graphic shows a jumper without a cover and with a cover.

PIN 1

PIN 1

OFF   **ON (1-2)**

Clear CMOS

This jumper allows you to clear the CMOS.
Reference: JP1 (3-pin)

JP1	Jumper setting	Description
1-2	▶ ■ ■ □	Normal operation
2-3	▶ □ ■ ■	Clear content of CMOS

BIOS Protect

This jumper allows you protect the BIOS from being accidentally updated.
Reference: JP2 (3-pin)

JP2	Jumper setting	Description
1-2	▶ ■ ■ □	Write protect disable
2-3	▶ □ ■ ■	Write protect enable

Chapter 3: Award® BIOS Setup

About the Setup Utility

The motherboard uses the latest Award BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Pressing the delete key ▣ accesses the BIOS Setup Utility:

The Main menu allows you to select and modify your computer system. To navigate through the menu, use the arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

```
        CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
┌───────────────────────────────────┬──────────────────────────────────┐
│►Standard CMOS Features            │►Frequency/Voltage Control         │
│►Advanced BIOS Features            │  Load Fail-Safe Defaults          │
│►Advanced Chipset Features         │  Load Optimized Defaults          │
│►Integrated Peripherals            │  Set Password                     │
│►Power Management Setup            │  Save & Exit Setup                │
│►PnP/PCI Configurations            │  Exit Without Saving              │
│►PC Health Status                  │                                   │
├───────────────────────────────────┴──────────────────────────────────┤
│ Esc: Quit              F9 : Menu in BIOS-  ¯  ®   ¬ : Select Item     │
│ F10: Save & Exit Setup                                                │
├───────────────────────────────────────────────────────────────────────┤
│                    Time, Date, Hard Disk Type . . .                   │
└───────────────────────────────────────────────────────────────────────┘
```

23

The BIOS navigation keys are listed below:

Key	Function
Esc	Exits the current menu
←↑↓→	Scrolls through the items on a menu
+/–/PU/PD	Modifies the selected field's values
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions
F5	Loads previously saved values to CMOS
F6	Loads a minimum configuration for troubleshooting
F7	Loads an optimum set of values for peak perform-ance

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing. Refer to Chapter 2 for jumper settings.

2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)

3. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)

4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.

5. Turn off your computer and insert the system diskette in your computer's diskette drive. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive.)

6. At the A:\ prompt, type the Flash Utility program name and press <Enter>. You see a screen similar to the following:

```
            FLASH MEMORY WRITER V7.33
    (C) Award Software 1999 All Rights Reserved

For (MOTHERBOARD NAME)DATE: 10/26/2000
Flash Type
File Name to Program :



Error Message
```

7. Type the filename of the new BIOS in the "File Name to Program" text box. Follow the onscreen directions to update the motherboard BIOS.

8. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten.

Standard CMOS Features

This option displays basic information about your system.

```
        CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                          Standard CMOS Features

   Date (mm:dd:yy)         Tue, July 11  2001        Item Help
   Time (hh:mm:ss)         12 :  8 :  59
►  IDE Primary Master                            Menu Level       ►
►  IDE Primary Slave
►  IDE Secondary Master                          Change the day, month,
►  IDE Secondary Slave                           year and century.

   Drive A                 [1.44M, 3.5 in.]
   Drive B                 [None]
   Floppy 3 Mode Support   [Disabled]

   Video                   [EGA/VGA]
   Halt On                 [All Errors]

   Base Memory                  640K
   Extended Memory            31744K
   Total Memory               32768K


-¯®¬:Move  Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit  F1:General Help
   F5:Previous Values     F6:Fail-Safe Defaults        F7:Optimized Defaults
```

Advanced BIOS Setup Option

This option displays advanced information about your system.

```
        CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                         Advanced BIOS Features
```

Anti-Virus Protection	[Disabled]	Item Help
CPU L1 & L2 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	Menu Level ►
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	Allows you to choose
Third Boot Device	[CDROM]	the VIRUS warning
Boot Other Device	[Enabled]	feature for IDE Hard
Swap Floppy Drive	[Disabled]	Disk boot sector
Boot Up Floppy Seek	[Disabled]	protection. If this
Boot Up NumLock Status	[On]	function is enabled
Gate A20 Option	[Fast]	and someone attempts
Typematic Rate Setting	[Disabled]	to write data into this
x Typematic Rate (Chars/Sec)	6	area, BIOS will show a
x Typematic Delay (Msec)	250	warning message on
Security Option	[Setup]	screen and alarm beep
APIC Mode	[Enabled]	
OS Select For DRAM > 64MB	[Non-OS2]	
HDD S.M.A.R.T Capability	[Disabled]	
Report No FDD For Win 95	[Yes]	

```
-¯®¬:Move  Enter:Select    +/-/PU/PD:Value   F10:Save    ESC:Exit  F1:General Help
   F5:Previous Values      F6:Fail-Safe Defaults       F7:Optimized Defaults
```

27

Advanced Chipset Features Option

These items define critical timing parameters of the motherboard. You should leave the items on this page at their default values unless you are very familiar with the technical specifications of your system hardware. If you change the values incorrectly, you may introduce fatal errors or recurring instability into your system.

```
         CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                          Advanced Chipset Features
┌─────────────────────────────────────────────────┬──────────────────────────┐
│ ▶ Advanced DRAM Control 1     [Press Enter]      │        Item Help         │
│   Prefetch Caching            [Disabled]         ├──────────────────────────┤
│   Memory Hole at 15M-16M      [Disabled]         │ Menu Level        ▶      │
│   AGP Aperture Size           [64MB]             │                          │
│   Graphic Window WR Combin    [Enabled]          │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
│                                                  │                          │
└─────────────────────────────────────────────────┴──────────────────────────┘
 -¯®¬:Move  Enter:Select    +/-/PU/PD:Value  F10:Save   ESC:Exit  F1:General Help
    F5:Previous Values      F6:Fail-Safe Defaults       F7:Optimized Defaults
```

►Advanced DRAM Control 1

Scroll to this item and press <Enter> to view the following screen:

```
       CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                        Advanced DRAM Control 1

   System Performance        [Normal Mode]              Item Help
   CAS Latency Setting        [2.5T]
   DRAM Addr/Cmd Rate         [AUTO Mode]     Menu Level        ►




   -¯®¬:Move  Enter:Select    +/-/PU/PD:Value   F10:Save    ESC:Exit  F1:General Help
     F5:Previous Values       F6:Fail-Safe Defaults          F7:Optimized Defaults
```

29

Integrated Peripherals Option

These items define the operation of peripheral components on the system's input/output ports.

```
            CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                             Integrated Peripherals
┌───────────────────────────────────────────────────┬─────────────────────────┐
│ ▶  SIS OnChip IDE Device     [Press Enter]         │        Item Help        │
│ ▶  SIS OnChip PCI Device     [Press Enter]         ├─────────────────────────┤
│ ▶  Onboard SuperI/O Device   [Press Enter]         │ Menu Level      ▶       │
│    USB Controller            [Enabled]             │                         │
│    USB Keyboard Support      [Disabled]            │                         │
│    Onboard LAN               [Enabled]             │                         │
│    Onboard LAN Boot ROM      [Disabled]            │                         │
│    IDE HDD Block Mode        [Enabled]             │                         │
│    Init Display First        [PCI Slot]            │                         │
│    AGP Auto Calibration      [Enabled]             │                         │
│    IDE Access Interface      [Auto]                │                         │
│    USB1 Access Interface     [Embedded Bus]        │                         │
│    USB2 Access Interface     [Embedded Bus]        │                         │
│    Audio Access Interface    [Embedded Bus]        │                         │
│                                                    │                         │
│                                                    │                         │
└───────────────────────────────────────────────────┴─────────────────────────┘
 -¯®¬:Move  Enter:Select    +/-/PU/PD:Value  F10:Save   ESC:Exit  F1:General Help
   F5:Previous Values       F6:Fail-Safe Defaults       F7:Optimized Defaults
```

► SIS OnChip IDE Device

Scroll to this item and press <Enter> to view the following screen:

```
       CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                        SIS OnChip IDE Device

    Internal PCI/IDE           [Both]              Item Help
    IDE Primary Master  PIO    [Auto]
    IDE Primary Slave   PIO    [Auto]      Menu Level      ►►
    IDE Secondary Master  PIO  [Auto]
    IDE Secondary Slave   PIO  [Auto]
    Primary Master   UltraDMA  [Auto]
    Primary Slave    UltraDMA  [Auto]
    Secondary Master UltraDMA  [Auto]
    Secondary Slave  UltraDMA  [Auto]
    IDE DMA Transfer Access    [Enabled]
    IDE Burst Mode             [Enabled]




-¯®¬:Move  Enter:Select   +/-/PU/PD:Value  F10:Save   ESC:Exit  F1:General Help
  F5:Previous Values     F6:Fail-Safe Defaults      F7:Optimized Defaults
```

31

► SIS OnChip PCI Device

Scroll to this item and press <Enter> to view the following screen:

```
CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                    SIS OnChip PCI Device
```

SIS-7012 AC97Audio	[Enabled]	Item Help
SIS-7013 S/W Modem	[Enabled]	
System Memory Size	[32MB]	Menu Level ►►

```
-¯®¬:Move  Enter:Select   +/-/PU/PD:Value   F10:Save    ESC:Exit  F1:General Help
   F5:Previous Values     F6:Fail-Safe Defaults        F7:Optimized Defaults
```

32

► **Onboard SuperIO Device**

Scroll to this item and press <Enter> to view the following screen:

```
        CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                          Onboard SuperIO Device

  Onboard FDC Controller    [Enabled]              Item Help

  Onboard Serial Port 1     [3F8/IRQ4]
  Onboard Serial Port 2     [2F8/IRQ3]    Menu Level      ►►
  UART Mode Select          [Normal]
  UR2 Duplex Mode           [Half]
  Onboard Parallel Port     [378/IRQ7]
  Parallel Port Mode        [ECP]
  ECP Mode Use DMA          [3]
  Game Port Address         [201]
  Midi Port Address         [330]
  Midi Port IRQ             [10]




-¯®¬:Move  Enter:Select   +/-/PU/PD:Value  F10:Save   ESC:Exit  F1:General Help
  F5:Previous Values      F6:Fail-Safe Defaults       F7:Optimized Defaults
```

Power Management Setup Option

This option lets you control system power management. The system has various power-saving modes including powering down the hard disk, turning off the video, suspending to RAM, and software power down that allows the system to be automatically resumed by certain events.

Power Management Timeouts

The power-saving modes can be controlled by timeouts. If the system is inactive for a time, the timeouts begin counting. If the inactivity continues so that the timeout period elapses, the system enters a power-saving mode. If any item in the list of Reload Global Timer Events is Enabled, then any activity on that item will reset the timeout counters to zero.

Wake Up Calls

If the system is suspended, or has been powered down by software, it can be resumed by a wake up call that is generated by incoming traffic to a modem, a LAN card, a PCI card, or a fixed alarm on the system realtime clock,

```
         CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                          Power Management Setup
─────────────────────────────────────────────────────────────────────────
   ACPI function                [Enabled]              Item Help
   ACPI Suspend Type            [S1(POS)]
   Video Off Option             [Suspend --> Off]    Menu Level    ►
   Video Off Method             [DPMS Supported]
   MODEM Use IRQ                [Auto]
   Hot Key Function as          [Power Off]
   Hot Key Power On Function    [Disabled]
   USB S3 WakeUp Function       [Disabled]
   HDD Off After                [Disable]
   Power Button Override        [Instant-Off]
   Power State Resume Control    [Always Off]
 ► PM Wake Up Events            [Press Enter]

─────────────────────────────────────────────────────────────────────────
-¯®¬:Move  Enter:Select    +/-/PU/PD:Value   F10:Save    ESC:Exit  F1:General Help
   F5:Previous Values      F6:Fail-Safe Defaults        F7:Optimized Defaults
```

► **PM Wake Up Events**

Scroll to this item and press <Enter> to view the following screen:

```
        CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
                           PM Wake Up Events
┌──────────────────────────────────────────────┬─────────────────────────┐
│  IRQ [3-7, 9-15], NMI        [Enabled]        │       Item Help         │
│  IRQ 8 Break suspend         [Disabled]       │                         │
│  Ring/WOL/WOM PowerUp Contl  [Disabled]       │ Menu Level      ►►      │
│  PCIPME Power Up Control      [Enabled]        │                         │
│  Power Up by Alarm           [Disabled]       │                         │
│ x Month Alarm                  NA             │                         │
│ x Date (of Month)              0              │                         │
│ x Time (hh:mm:ss)           0    0    0       │                         │
│                                               │                         │
│                                               │                         │
│                                               │                         │
│                                               │                         │
│                                               │                         │
│                                               │                         │
└──────────────────────────────────────────────┴─────────────────────────┘
-¯®¬:Move  Enter:Select   +/-/PU/PD:Value   F10:Save    ESC:Exit  F1:General Help
   F5:Previous Values      F6:Fail-Safe Defaults     F7:Optimized Defaults
```

35

PNP/PCI Configuration Option

These options configure how PnP (Plug and Play) and PCI expansion cards operate in your system. Both the ISA and PCI buses on the motherboard use system IRQs (Interrupt ReQuests) and DMAs (Direct Memory Access). You must set up the IRQ and DMA assignments correctly through the PnP/PCI Configurations Setup utility for the motherboard to work properly. Selecting PnP/PCI Configurations on the main setup screen displays this menu:

```
          CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                          PnP/PCI Configurations
```

Reset Configuration Data	[Disabled]	Item Help
Resources Controlled by	[Auto(ESCD)]	Menu Level ►
к IRQ Resources	Press Enter	
		Default is Disabled.
PCI/VGA Palette Snoop	[Disabled]	Select Enabled to
INT Pin 1 Assignment	[Auto]	reset Extended System
INT Pin 2 Assignment	[Auto]	Configuration Data
INT Pin 3 Assignment	[Auto]	(ESCD) when you exit
INT Pin 4 Assignment	[Auto]	Setup if you have
INT Pin 5 Assignment	[Auto]	installed a new add-
INT Pin 6 Assignment	[Auto]	on and the system
INT Pin 7 Assignment	[Auto]	reconfiguration has
INT Pin 8 Assignment	[Auto]	caused such a serious
		conflict that the OS
		cannot boot

```
-¯®¬:Move  Enter:Select    +/-/PU/PD:Value  F10:Save   ESC:Exit  F1:General Help
   F5:Previous Values      F6:Fail-Safe Defaults      F7:Optimized Defaults
```

PC Health Status Option

On motherboards that support hardware monitoring, this item lets you
monitor the parameters for critical voltages, critical temperatures, and fan
speeds.

```
        CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                              PC Health Status
```

Shutdown Temperature	[Disabled]	Item Help
CPU Core Voltage		
Vcc 1.8V		Menu Level ►
Vcc 3.3V		
Vcc 5.0V		
+12V		
StandBy 3.3V		
StandBy 5.0V		
Voltage Battery		
CPU Temperature		
System Temperature		
CPU Fan Speed		
CHS Fan1 Speed		
BAK Fan1 Speed		

```
-¯®¬:Move  Enter:Select    +/-/PU/PD:Value   F10:Save    ESC:Exit  F1:General Help
   F5:Previous Values       F6:Fail-Safe Defaults        F7:Optimized Defaults
```

37

Frequency/Voltage Control

This item enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.

```
          CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                            Frequency/Voltage Control
 ┌─────────────────────────────────────────────────────┬──────────────────────┐
 │ CPU Clock Ratio              [Auto]                  │      Item Help       │
 │ Auto Detect DIMM/PCI Clk     [Enabled]              ├──────────────────────┤
 │ Spread Spectrum              [Enabled]              │ Menu Level      ►    │
 │ CPU Host/SDRAM/PCI Clock     [Default]              │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 │                                                      │                      │
 └─────────────────────────────────────────────────────┴──────────────────────┘
 ↑↓→←:Move  Enter:Select    +/-/PU/PD:Value   F10:Save    ESC:Exit  F1:General Help
    F5:Previous Values       F6:Fail-Safe Defaults         F7:Optimized Defaults
```

Load Fail-Safe Defaults Option

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:

Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

Load Optimized Defaults Option

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press <F7>.

Set Password Option

This item can be used to install a password. To install a password, follow these steps:

1. Highlight the item Set Password on the main menu and press <Enter>.

2. The password dialog box appears.

   ```
   Enter Password:
   ```

3. If you are installing a new password, type in the password. You cannot use more than eight characters or numbers. The Set Password item differentiates between upper and lower case characters. Press <Enter> after you have typed in the password. If you are deleting a password that is already installed press <Enter> when the password dialog box appears. You see a message that indicates that the password has been disabled.

   ```
   PASSWORD DISABLED !!!
   Press any key to continue . . .
   ```

4. Press any key. You are prompted to confirm the password:

   ```
   Confirm Password:
   ```

5. Type the password again and press <Enter>, or press <Enter> if you are deleting a password that is already installed.

6. If you typed the password correctly, the password will be installed.

Save & Exit Setup Option

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu:

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

> **Note:** If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <Y> to discard any changes you have made.