AMD 750

P7F200A2

Mainboard Manual

Friday, March 02, 2001

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Using This Manual

This manual is designed to help you build a reliable Personal Computer based on the P7F200A2 platform.

Quick Start

This section is for advanced users who want to quickly assemble a system. The mainboard layout along with jumper and switch settings, and memory configuration is provided.

Chapter 1—Introduction

This chapter includes an introduction, a checklist of the items that ship with this mainboard, and a summary of the principal features and components.

Chapter 2—Hardware Installation

This chapter explains how to prepare your mainboard for use and how to make the various connections to other computer components and peripheral items.

Chapter 3—BIOS Configuration

This chapter explains how to use the system setup utility that is stored in the mainboard's firmware.

Chapter 4—Driver and Utility

This chapter briefly describes the drivers and utility programs that are packaged with the mainboard.

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1. Quick Reference

This section is for advanced users who want to get started using the mainboard straight away.

1.1. Mainboard and I/O Ports Layout

1. ATX power connector	9. CPU fan connector (FAN1)
2. Winbond system monitor	10. AGP slot (3.3V)
3. Floppy drive connector (FLP1)	11. PCI expansion slots
4. IDE connector 2 (IDE2)	12. Winbond W83977ATF I/O chipset
5. IDE connector 1 (IDE1)	13. AMD-756 peripheral bus controller
6. DIMM module sockets	14. Award Flash BIOS
7. AMD-751 system controller	15. RTC battery
8. CPU Slot A	
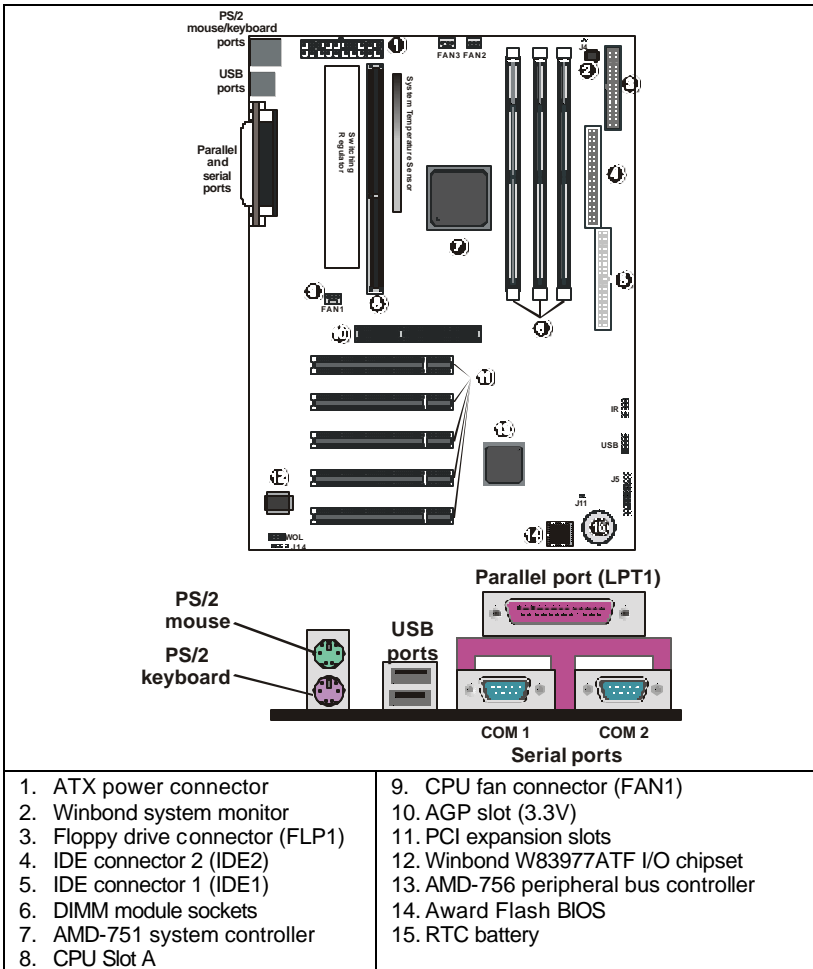
1.2. Front Panel Connector (J5)

1.3. Jumpers

IR		IR	1. +5V	6. +5V
			2. N.C.	7. Ground
			3. IRM_IRR	8. Non
			4. CIRRX	9. IR Trans.
			5. IR Rec.	10. N.C.
USB		USB 3, 4	1. +5V	6. USB D1+
			2. +5V	7. Ground
			3. USB D0-	8. Ground
			4. USB D1-	9. Ground
			5. USB D0+	10. Ground
J4		Case open alarm	1. **Open:** No alarm 2. **Closed:** Alarm set	
J11		Clear CMOS RAM	**Open:** Normal mode	

			To Clear CMOS RAM:
			1. Power off the system.
			2. Place a shunt to short J11.
			3. Power on the system.
			   CMOS is cleared.
			4. Power off the system.
			5. Remove the shunt.
			6. Restart your system.
			   CMOS has been reset.	

1.4. Connectors

FAN1	**Power connector for CPUFAN1**
FAN2	**Power connector for CPUFAN1**
FAN3	**Power connector for system fan**
WOL	**Wake On LAN Connector (WOL)**
J14	**Wake On Modem Connector (WOM)**

1.5. Memory Installation

168-Pin DIMM Memory Configuration

Bank 0 **(DIMM1)**	SDRAM RAM 16, 32, 64, 128, 256 MB
Bank 1 **(DIMM2)**	SDRAM RAM 16, 32, 64, 128, 256 MB
Bank 2 **(DIMM3)**	SDRAM RAM 16, 32, 64, 128, 256 MB
Total	SDRAM RAM 16 MB to 768 MB

1.6. CPU Settings

The CPU clock speed is set automatically through BIOS. You do not have to adjust the speed.

2. Introduction

2.1. Overview

The P7F200A2 is a high quality, high performance, function-enhanced mainboard, based on the powerful P7F200A2 family chipset. The mainboard uses a single Slot A AMD Athlon™ (K7™) processor. This mainboard is designed around the AMD-751™ system controller (Northbridge) and the AMD-756™ peripheral bus controller (Southbridge) in a standard ATX 2.01 form factor.

> *Note: Athlon is AMD's Pentium III-class CPU chip. The first models were introduced in 1999 with clock speeds from 500 MHz to 1G Hz. Using a 200 MHz system bus, the Athlon contains the MMX multimedia instructions used in Pentium MMX and Pentium II CPUs along with an enhanced version of AMD's 3DNow 3-D instruction set for faster rendering of games and animation.*

The mainboard delivers workstation level performance with an integrated AGP (Accelerated Graphics Port) and the two PCI Bus Master Ultra DMA (UDMA) 66 Ports support up to four ATAPI (AT Attachment Packet Interface) devices. The PCI IDE also supports PIO Mode 3 and 4, UDMA66 IDE, and an ATAPI CD-ROM. The mainboard accommodates PC-100 SDRAM (Synchronous DRAM) memory up to 768 MB.

The mainboard achieves the highest reliability by supporting ECC (Error Checking and Correction) memory protection, enabling the mainboard to achieve superior data integrity and fault-tolerance, in respect to memory errors while running applications.

The set of PC I/O ports includes the following:

- Dual channel PCI EIDE interfaces
- A floppy controller
- Two FIFO serial port connectors,
- An EPP/ECP capable bi-directional parallel port connector
- Dual USB (Universal Serial Bus) connectors
- PS/2 keyboard/mouse connectors.

Besides this set of I/O ports, one AGP slot and five PCI local bus slots provide expandability for add on peripheral cards.

The mainboard is OnNow PC, Managed PC, ACPI and PC98 compliant and offers the following dynamic features:

- **Optimized System Performance:** The performance of the P7F200A2 mainboard is dramatically increased with the following features:
  - ◆ AGP improves the graphics performance
  - ◆ Ultra DMA66 speeds up disk drive access
  - ◆ Enhanced PC-100 SDRAM for fast access to memory
  - ◆ Concurrent PCI enables simultaneous data transfer.
- **Integrated Power Management:** ACPI (Advanced Configuration and Power Interface) support enables O/S and application programs to direct system power management.
- **System Manageability:** The Winbond W83782D Hardware Environment Monitoring chip provides the ability for system voltage, temperature and fan-speed monitoring.

2.2. Mainboard Specifications and Features

2.2.1. Hardware

CPU	Single Slot-A supports AMD-K7 processors at all clock speeds and with all cache options
VRM	Voltage regulator module and ATX compatible power supply provide the necessary range of operating voltages
Chipset	P7F200A2 AGP chipset
	Winbond's W83977 I/O chip
	Winbond's W83782D PC Environment Monitor chip
DRAM	3 x 168-pin DIMM sockets
	Supports 8 MB to 768 MB memory
	Supports PC-100 SDRAM memory
EIDE Controller	Supports two IDE devices in two channels
	Supports PIO mode 0 through mode 4 drives
	Supports Bus Mastering Ultra DMA66 drives
Enhanced I/O	One floppy disk controller
	One standard/EPP/ECP parallel port connector
	Two 16550 compatible serial port connectors
	Two USB (Universal Serial Bus) connectors
Mouse and Keyboard	PS/2 mouse connector
	PS/2 keyboard connector
Expansion Slots	One AGP slot
	Five 32-bit PCI slots
Power Management	Three level ACPI LED support
	Power on by keyboard, PS/2 mouse, RTC alarm, modem ring and switch
	Power off by Windows 98 shutdown and software power switch
	Processor fan off in sleep mode
Form Factor	ATX form factor, 20.8cm x 30.5cm (8.2"x 12.0")

2.2.2. Software

BIOS	Soft-Menu (jumperless) design
	AWARD BIOS
	Flash BIOS with ESCD (Extended System Configuration Data) block
	Supports APM, Plug and Play, Multi-Boot, DMI and EIDE devices
	Supports high-capacity LS-120 and ZIP Removable media drive
Driver	IDE Bus mastering Ultra DMA66 driver
Utility	Flash utility for BIOS upgrade
	System Environment Monitoring Utility
Operating System	Operates with MS_DOS, Windows for Work Groups 3.x, Windows 3.x/95/98/2000/NT, OS/2, Novell Netware, Novell UnixWare 1.1 and SCO Unix 4.2

2.3. Specifications - Environment

Ambient Temperature	0°C to 50°C (Operating)
Relative Humidity	0 to 85% (Operating)
Vibration	0 to 500 Hz
DC Voltage	1.3V to 3.50V
DC Voltage	3.15V to 3.50V
DC Voltage	-5V, +12V, -12V, +5VSB 5% tolerance.

2.4. Microprocessor

The P7F200A2 mainboard is designed to operate with the following processors:

Processor Type	Speed	FSB
AMD Athlon (K7)	500M ~ 1G Hz	200 MHz

An onboard switching voltage regulator provides the required 1.3 to 3.5 volts for the processor.

2.5. Mainboard Layout
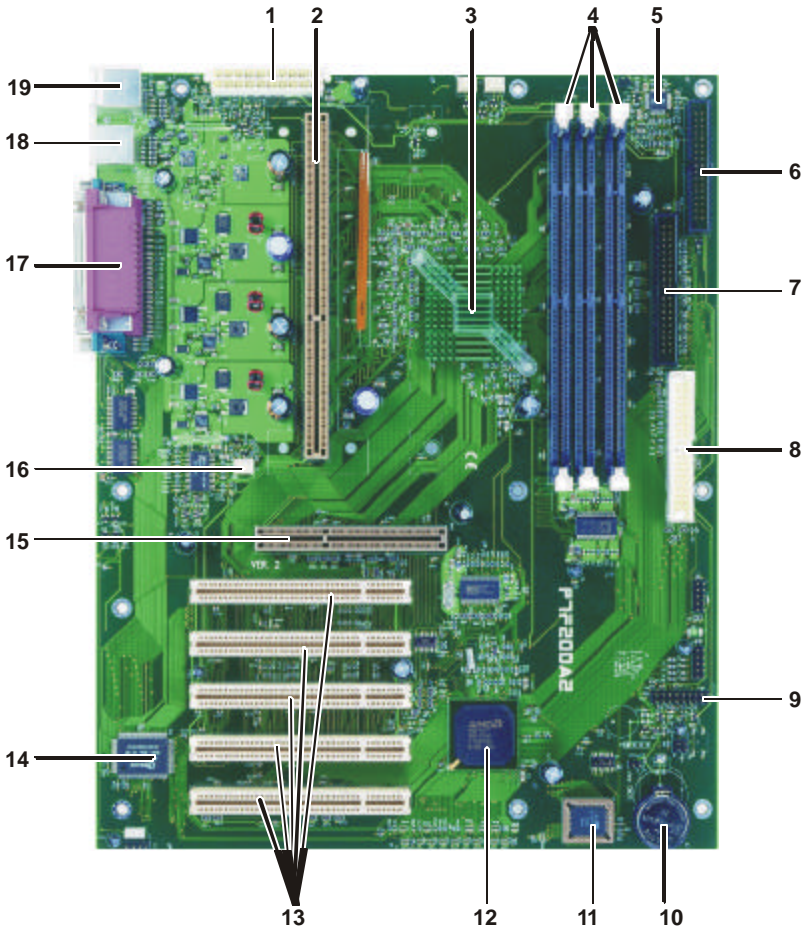
Note: Because of optional items and design changes, your mainboard may not be identical to the one shown in the illustration.

Key to Mainboard Components

No.	Name	Function
1	PWR1	12V ATX power connector
2		CPU Slot A
3		AMD-751 system controller (Northbridge)
4	DIMM 1~3	Three DIMM module slots
5		Winbond system monitor
6	FLP1	Connector for floppy disk drives
7	IDE2	IDE2 connector (black)
8	IDE1	IDE2 connector (white)
9	J5	Connector for front panel switches and indicators
10		Backup battery for CMOS memory and real-time clock (RTC)
11		Flash BIOS
12		AMD-756 peripheral bus controller (Southbridge)
13	PCI Slot 1~5	32-bit PCI expansion slots
14		Winbond I/O chip
15	AGP1	AGP slot (3.3V)
16	FAN1	CPU fan connector
17		Parallel port (top); two serial ports (bottom)
18		Two USB ports
19		PS/2 mouse (top); PS/2 keyboard (bottom)

2.6. AMD Packaging

The AMD processor is packaged in an SEC (Single Edge Connector) cartridge. The SEC cartridge includes the processor core, the second-level cache, a thermal plate, and a back cover. The processor connects to the mainboard through the 242-pin Slot A edge connector.

When the AMD processor is installed in Slot A, it is secured by a retention mechanism attached to the mainboard. The heat sink includes two fans that are supplied with power from connector FAN1 on the mainboard.

2.7. AMD Chipset

The P7F200A2 AGP chipset consists of one AMD-751 system controller, and one AMD-756 peripheral bus controller.

AMD-751
- CPU interface controller (200 MHz FSB)
- AGP Interface controller (AGP 2x 66/133 MHz)
- Integrated DRAM controller (Synchronous 66/100 MHz SDRAM)
- Fully synchronous PCI 2.1 bus interface
- Extensive CPU-to-AGP, CPU-to-DRAM, CPU-to-PCI, AGP-to-DRAM, AGP-to-PCI, PCI-to-AGP and PCI-to-DRAM data buffering

AMD-756
- Power Management Logic
- USB controller
- Seven DMA channels, one timer/counter, two eight-channel interrupt controllers, NMI logic, SMI interrupt logic, and PCI/ISA bus arbitrator
- SMBus interface
- Realtime clock (RTC)

This concludes the Introduction section. The next section covers hardware installation.

3. Hardware Installation

This chapter is explains how to use your mainboard to build a power-ful computer system. At a minimum, you will need the following components in order to build a fully functioning system.

- Computer case with ATX power supply
- AMD Slot A Athlon processor
- One SDRAM memory module
- One floppy disk drive
- One UDMA 66 IDE hard disk drive
- One CD-ROM drive
- One display monitor
- One PS/2 mouse
- One PS/2 keyboard
- One set of loudspeakers

Of course, you can use the system I/O ports and expansion slots to add many more features and components to your system than the essential items listed above.

3.1. Unpacking

The P7F200A2 mainboard package contains the following items:

- ❑ One mainboard
- ❑ One IDE 40-pin ribbon cable
- ❑ One floppy 34-pin ribbon cable
- ❑ Driver and utility CD
- ❑ User's manual
- ❑ CPU retention mechanism

After removing the mainboard from its anti-static bag, place it on a grounded or anti-static surface (component side up). Inspect the mainboard and contact your vendor if it is damaged.

3.2. Installation

The mainboard is designed to fit into a standard ATX form-factor chassis. The pattern of the mounting holes and the position of the back panel connectors meet the ATX system board specification. The chassis may come with various mounting fasteners, which are made of metal or plastic. It is highly recommended to use as many metal fasteners as possible to mount the mainboard in the chassis for better grounding.

To install the mainboard you need to install the CPU and DIMM memory modules, attach the connectors, and set the correct CPU speed in the CMOS setup.

3.3. Safety Measures

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be dangerous. Follow the simple guidelines below to avoid damage to your computer or harm to yourself:

- Always disconnect the mainboard from the ATX power supply, and disconnect the computer from the power outlet whenever you are working inside the computer case.
- If possible, wear a grounded wrist strap when you are installing the mainboard or working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the computer case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress the circuit board.
- Leave each components inside the static-proof packaging that it ships with until you are ready to use the component for the installation.

3.4. Mainboard Connector/Jumper Location
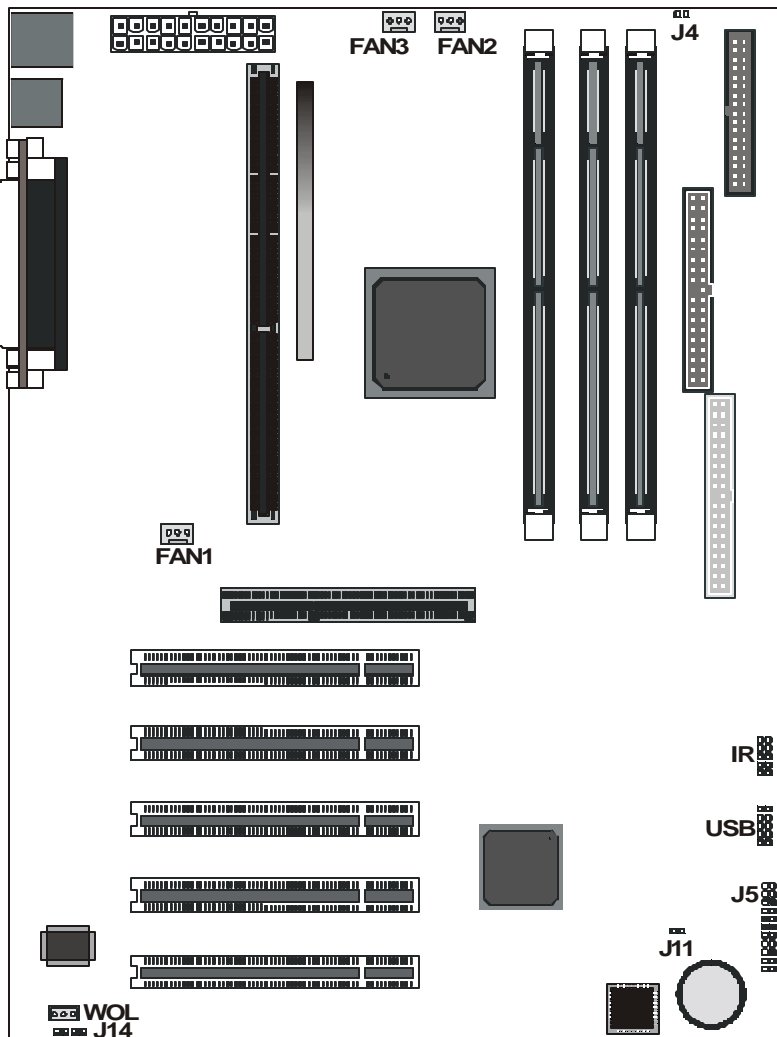
3.5. Attaching Connectors

3.5.1. Front Panel Connectors

There are six connectors on the mainboard for speaker, switches and indicator lights on the system's front panel.

Front Panel Connectors
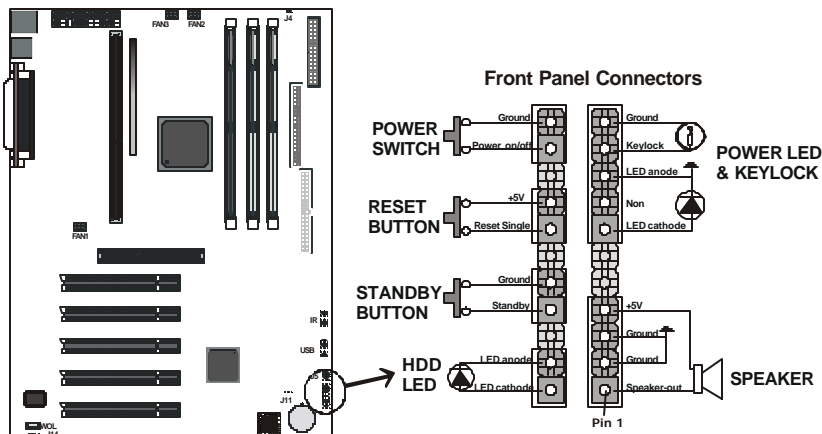
Speaker	This 4-pin connector connects to the case-mounted speaker.
LED & Keylock	This 5-pin connector connects to the case-mounted keylock switch and the power LED. The keylock switch is used to lock the keyboard for security purposes.
HDD LED	This 2-pin connector connects to the case-mounted HDD LED to indicate hard disk activity.
STB BTN	This 2-pin connector connects to the case-mounted STB LED to indicate a standby status.
Reset	This 2-pin connector connects to the case-mounted reset switch and is used to reboot the system.
PW SW	This 2-pin connector connects to the case-mounted Power button.

The front panel on your case may have a turbo switch to deactivate Turbo mode when a slower speed is required for a specific application. The P7F200A2 AGP chipset does not support the hardware turbo deactivation function. Use <CTRL><ALT><+/-> keys to change the speed if necessary.

IrDA-compliant (Infrared) Connector

This 5-pin connector connects to an optional wireless transmitting and receiving infrared module via a cable and a bracket. Configure BIOS to enable the IrDA port if you attach an infrared module to this connector. Refer to *Integrated Peripherals* in Chapter 4 for details.

Infrared Connector

	C2	
+5V		Non
IRM_IRR		CIRRX
IR Receiver		+5V
Ground		Non
IR Transmitter		Non
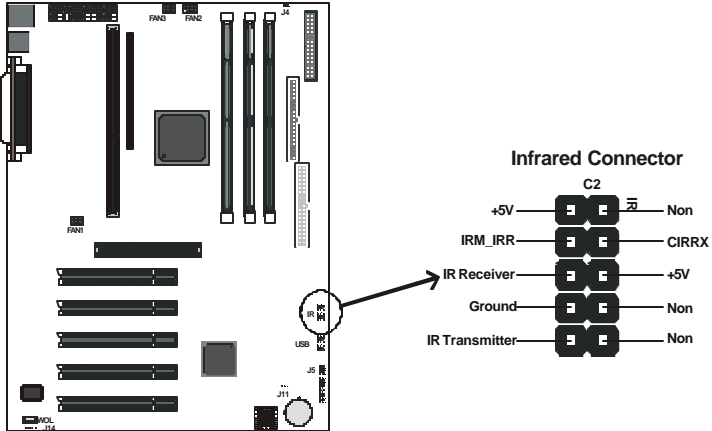
USB Connectors

These 5-pin connector enables you to connect two more USB ports to the front panel of your computer case.

USB Connector

	C4	
+5V		+5V
USB D0-		USB D1-
USB D0+		USB D1+
Ground		Ground
Ground		Ground

Attaching Connectors   15
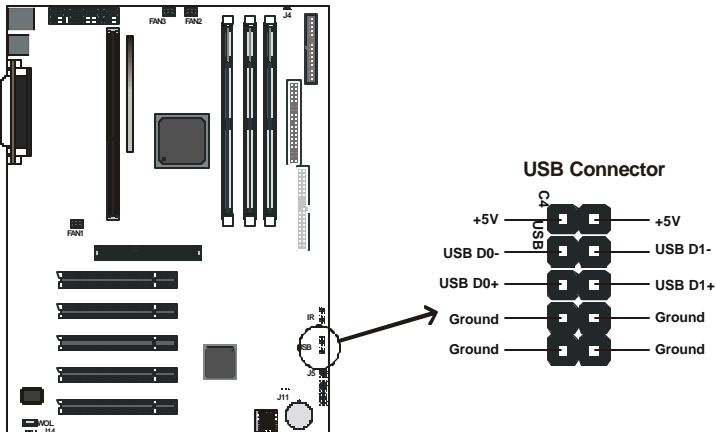
Wake on LAN Connector:

The Wake on LAN (WOL) is a 3-pin header is used for remote wake up of the computer through a network.

Wake On LAN Connector

Wake On Modem Connector
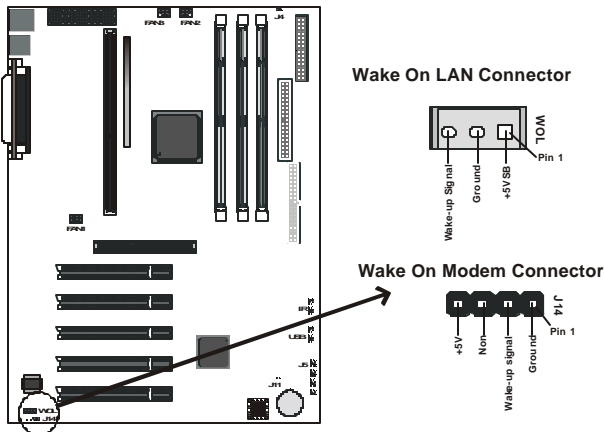
Wake on modem Connector:

This 4-pin header is used for remote wake up of the computer through a modem.

Note: You must enable the Wake On LAN and Wake on Modem features in the BIOS setup if you use this feature. Refer to the Power Management section in Chapter 4 for details.

Floppy Drive Connector (One 34-pin Block)

A floppy disk drive ribbon cable has 34 wires and 2 connectors to support two floppy disk drives. The connector with twisted wires always connects to drive A; the connector with untwisted wires connects to drive B. You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds with pin 1 of the I/O port connector.

Floppy Disk Drive Connector

Pin 1

FLP1
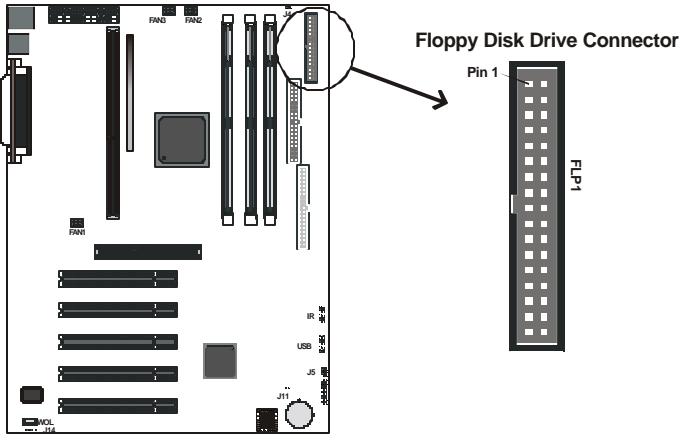
IDE Connectors

An IDE drive ribbon cable has 40 wires and 2 connectors to support two IDE drives. If a ribbon cable connects to two IDE drives at the same time, one of them has to be configured as Master and the other has to be configured as Slave by setting the drive select jumpers on the drive.
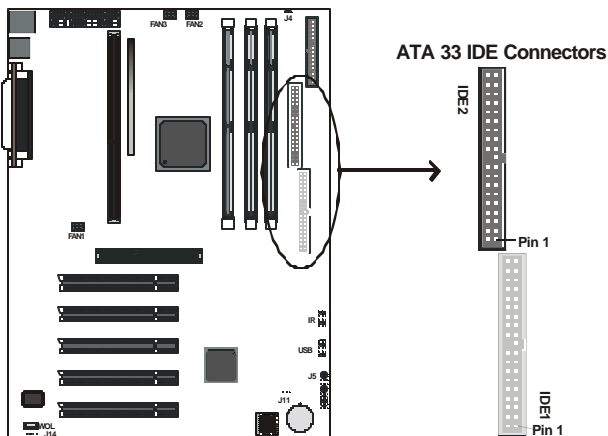
Consult the documentation that came with your IDE drive for details on jumper locations and settings. You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds to pin 1 of the I/O port connector.

3.5.2. Back Panel Connectors

The back panel provides external access to PS/2 style keyboard and mouse connectors, two serial ports, one parallel port and dual USB ports which are integrated on the mainboard. Some mainboards have a game port and audio ports as optional accessories. The figures below show the location of the back panel I/O connectors.

PS/2 Mouse and PS/2 Keyboard

Connect a PS/2 mouse to the green 6-pin mini DIN connector. The system will automatically assign IRQ 12 to the PS/2 mouse if one is connected.
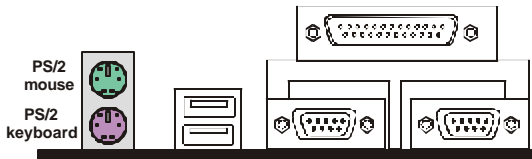
Connect a PS/2 keyboard to the purple 6-pin mini DIN connector. If you want to connect a standard AT size (large DIN) connector, you must use an adapter.

Universal Serial Bus Ports

You can connect two USB devices or USB hubs to the USB ports.
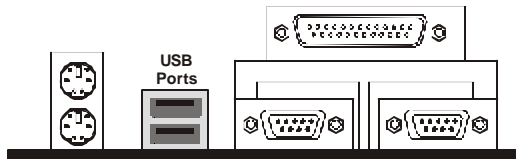
The USB ports provide a hardware interface for low-speed peripherals such as the keyboard, mouse, joystick, scanner, printer and telephony devices, and also support MPEG-1 and MPEG-2 digital video. The USB ports have a maximum bandwidth of 12 Mbits/sec (equivalent to 1.5 Mbytes/sec), and up to 127 devices can be attached. Fast devices can use the full bandwidth, while lower-speed ones can transfer data using a 1.5 Mbits/sec subchannel.

Parallel Port Connector

Connect a printer or other parallel device to the burgundy-colored 25-pin parallel port. You can set the parallel port IRQ and parallel port mode in BIOS. Refer to *Integrated Peripherals* in Chapter 4 for details.

Parallel Port
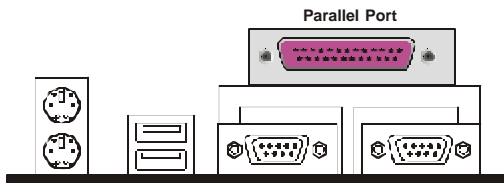
Serial Port Connectors

Connect a serial device such as a mouse or modem to the turquoise 9-pin serial ports. You can set the serial port IRQs in BIOS. Refer to *Integrated Peripherals* in Chapter 4 for details.

Serial
Port 1
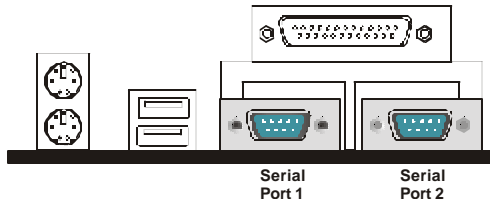
Serial
Port 2

Note: Serial printers must be connected to the serial port.

Power Supply Connector

The ATX power supply has a single lead connector with a clip on one side of the plastic housing. There is only one way to plug the lead into the ATX power connector. Press the lead connector down until the clip snaps into place and secures the lead onto the connector

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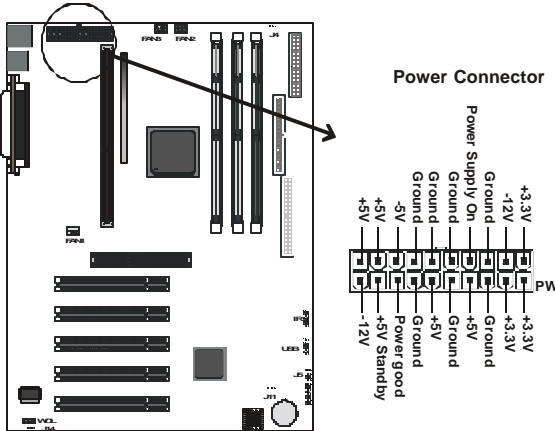
Warning: Incorrect installation of the power supply could result in serious damage to the mainboard and connected peripherals. Make sure the power supply is unplugged from the AC outlet before connecting the leads from the power supply.

CPU Fan Power Supply

There are two fan connectors on the mainboard for the cooling fans. The connectors support fans of 12V DC/500mA (six watt) or less. When the system goes into sleep state, fans should be shut down to eliminate audible noise and reduce power consumption. You can monitor the fan speed by way of the W83782D chip (providing the fan comes with a tachometer output).
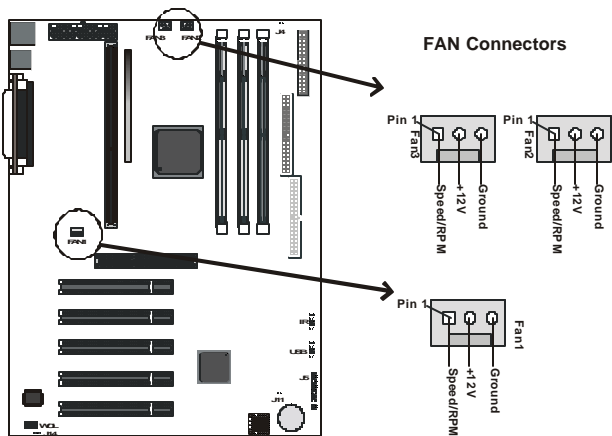
You can monitor the fans' RPM with the Hardware Doctor utility. Refer to *Hardware Doctor Setup* in Chapter 5 for details.

3.6. Installing the CPU

3.6.1. Before You Begin

1. Be sure that your AMD processor kit includes the following items:
   - ♦ One processor with the fan or heat sink attached
   - ♦ One retention mechanism (two black plastic supports)
   - ♦ One power cable (for CPU with cooling fan attached)

2. Place the mainboard on a workbench (not in a chassis). Be sure that the mainboard is empty (that is, no DIMMs, cables, or cards are installed) and that the holes for the fan or heat sink support pegs are empty.

3.6.2. Installing the Boxed Processor

1. Insert the two retention mechanism supports into the mainboard. Each support has two plastic pegs that insert into holes in the mainboard. Push each peg into its hole firmly until you hear it "click" into place.

   Plastic pegs

   Retention mechanism
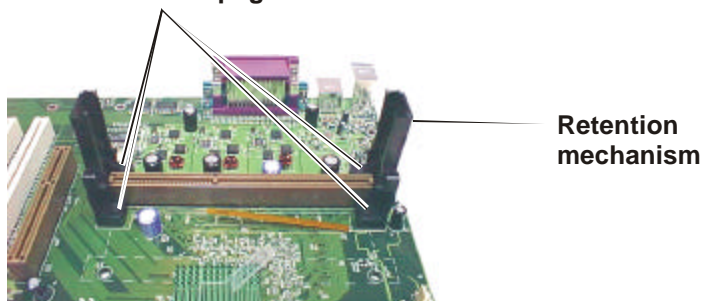
2. Slide the processor into the retention mechanism supports. The CPU fan faces towards the DIMM slots. Push the processor down firmly into the Slot A with even pressure on both sides of the top until it is securely seated.

CPU fan connector FAN1

Insert CPU

CPU fan

DIMM slots
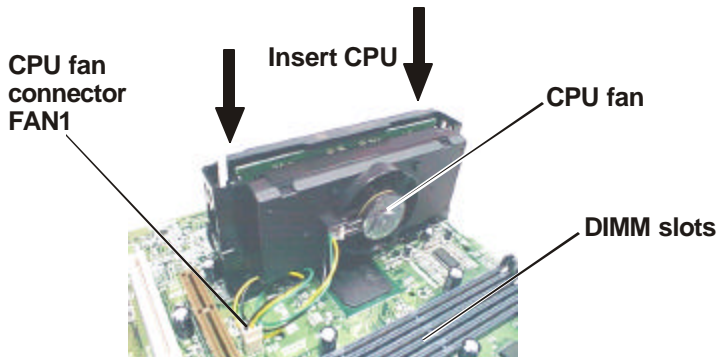
3. Connect the CPU cooling fan to CPU fan connector FAN1.

3.6.3. Removing the Processor

First, remove the mainboard from the chassis. To remove the processor from the mainboard, follow these steps:

1. Disconnect the fan power cable from the mainboard connector FAN1.

2. Push the latches at the ends of the processor towards the center of the processor to release it from the retention mechanism support struts.

3. Lift one end of the processor until it is free from Slot A and then lift the other end of the processor until it is also free. Lift the entire processor (with the fan or heat sink supports attached) until it is free from the retention mechanism.

Warning: When handling the processor, avoid placing direct pressure on the label area of the fan.

When removing the processor, avoid pressing down on the mainboard or components. Instead, press down on the plastic connectors.

3.6.4. Installing System Memory

Maximum system memory supported by the mainboard is 768 MB.

The mainboard has three DIMM Sockets. Memory can be installed using 168-pin SDRAM DIMM memory modules. There are no jumper settings required for the memory size or type, which is automatically detected by the BIOS.
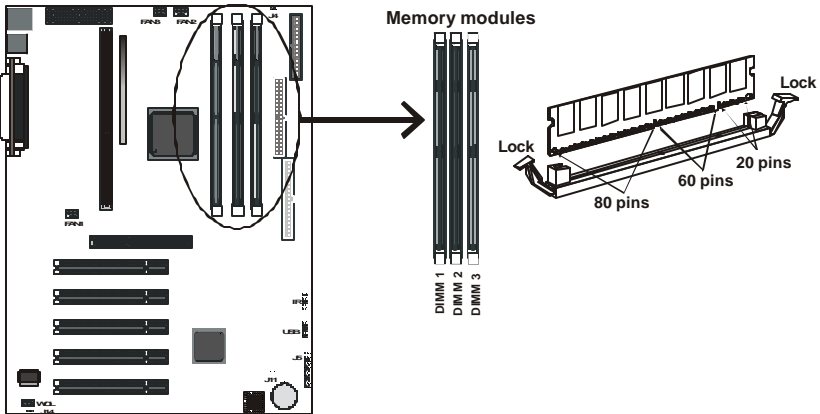
You must use 3.3V unbuffered DIMMs in the mainboard. To determine the DIMM type, check the notches on the DIMMs.

168-pin DIMM
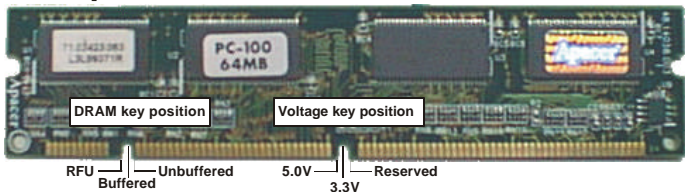
Due to the high-speed design of the mainboard, the memory modules must meet the following requirements:

DRAM TYPE	SDRAM (Synchronous DRAM)
Module Size	*Single Sided Asymmetric* 1Mx64, 4Mx64, 8Mx64, 16Mx64
	Double-Sided Asymmetric 2Mx64, 4Mx64, 8Mx64, 16Mx64, 32Mx64
Requirements	3.3V unbuffered DIMM module Speed grade: Memory must match the CPU Bus clock speed (66 MHz or 100 MHz in P6F116V). CAS latency: 3 or faster

Install the 168-pin SDRAM modules in any combination as follows:

BANK 0 (DIMM1)	8/16/32/64/128/256 MB
BANK 1 (DIMM2)	8/16/32/64/128/256 MB
BANK 2 (DIMM3)	8/16/32/64/128/256 MB
Total System Memory	8 ~ 768 MB

3.6.5. Clear CMOS and Password

You may need to clear the CMOS if your system cannot boot up because you forgot your password, or the CMOS settings need to be reset to default values after the system BIOS has been updated.

There are two methods for resetting your CMOS setting.

Method 1: Press and hold the <INS> key and then power on the computer. The BIOS will clear the CMOS RAM and reset the CMOS settings to the default values.

Method 2: Through jumper setting. Follow these instructions:

1. Power off system.
2. Place a shunt to short J11.
3. Power on the system. CMOS is cleared.
4. Power off the system.
5. Remove the shunt.
6. Restart your system. CMOS has been reset.

3.6.6. Auto Power On

After losing AC power, the system will not turn on automatically when the power comes back unless you set the options in BIOS.

3.6.7. Setting CPU Speed

The CPU clock speed is set automatically through BIOS. You do not have to adjust the speed.

This concludes the hardware installation section. The next section covers the system BIOS.

4. BIOS Configuration

After the hardware configuration of the mainboard is finished, and the system hardware has been assembled, the system may be powered up. At this point, CMOS setup should be run to ensure that system information is correct.

The mainboard employs the latest Award BIOS CMOS chip with support for Windows Plug and Play. This CMOS chip contains the ROM Setup instructions for configuring the mainboard's BIOS. The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

Using easy-to-use pull down menus, you can configure such items as:

- 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 program intimately affect how the computer performs. It is important, therefore, first to try to understand all the Setup's options, and second, to make settings appropriate for the way you use the computer. This chapter provides clear explanations for all Setup options.

This program should be executed under the following conditions:

- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the Setup program
- When resetting the system clock
- When setting the CPU clock speed so that it automatically runs either fast or slow
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

4.1. Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

1. If the error occurs before the display device is initialized, a series of beeps will be transmitted.

2. If the error occurs after the display device is initialized, the screen will dis play the error message.

Listed below are explanations of the keys displayed at the bottom of the screen:

Key	Function
Esc	From Main Menu, exits without saving changes or exits the current menu.
↑ ↓ → ←	Select item.
SHIFT +F2	Change color.
PgUp or +	Modify
PgDn or -	Modify
F1	General help on Setup navigation keys
F5	Load previous values from CMOS
F6	Load the fail-safe defaults from BIOS default table
F7	Load the fail-safe defaults from BIOS default table
F10	Save and Exit Setup

4.2. Getting Help

Press F1 to display a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

4.3. In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award BIOS supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings that you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

4.4. Starting the Setup Utility

You can only start the setup utility shortly after the computer has been turned on. A prompt appears on the computer display that says *"Press DEL to run Setup"*. When you see this prompt, press the **Delete** key and the system will start the setup utility and display the main menu of the utility.

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►Standard CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management Setup	Set User Password
►PnP/PCI Configurations	Save & Exit Setup
►PC Health Status	Exit Without Saving

Esc :   Quit   F9 :   Menu in BIOS   – ¯ ⊛ ¬   : Select Item
F10 :   Save & Exit Setup

Time, Date, Hard Disk Type . . .

4.5. Using the Setup Utility

When you start setup, the main menu appears. The main menu of the setup utility shows a list of the options that are available. A highlight shows which option is currently selected. You can use the cursor arrow keys to move the highlight to other options. When an option is highlighted, you can execute the option by pressing the **Enter** key.

Some options lead to dialog boxes which ask you to verify that you wish to execute that option. You usually answer these dialogs by typing **Y** for yes and **N** for no. Some options lead to dialog boxes which ask for more information. Setting passwords have this kind of dialog box:

Enter Password:

Selecting some fields and pressing the enter key displays a list of options for that field. In the Standard CMOS Features screen, selecting "Drive A" and pressing **Enter** displays this screen:

```
┌─────────────────────────────────────────────┐
│ Drive A                                       │
├─────────────────────────────────────────────┤
│ None            . . . . .  [  ]               │
│ 360K  , 5.25 in.  . . . . .  [  ]             │
│ 1.2M  , 5.25 in.  . . . . .  [  ]             │
│ 720K  , 3.5 in.   . . . . .  [  ]             │
│ 1.44M , 3.5 in.   . . . . .  [  ]             │
│ 2.88M , 3.5 in.   . . . . .  [  ]             │
│                                               │
│                                               │
├─────────────────────────────────────────────┤
│ –  ‾ : Move  Enter  : Accept    ESC: Abort    │
└─────────────────────────────────────────────┘
```

Select the value you want with the cursor keys. Press **Enter** to select, or **ESC** to discard changes and return to the previous menu. Alternatively, you can select a field and press the minus, plus, Page Up or Page Down keys to scroll through the options for that field.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu. When an item is highlighted, you can change the value by pressing the **PageUp** or **PageDown** keys, or the **Plus** (+) or **Minus** (-) keys. The **PageUp** and **Plus** keys cycle forward through the available values; the **Page-Down** and **Minus** keys cycle backward through the values.

When you are in the main menu, you can exit the utility by pressing the **Escape** key. You can save the current selections and exit the utility by pressing the **F10** key. When you are in one of the options that displays a dialog box, you can return to the main menu by pressing the **Escape** key.

When you are in an option that displays a table of items, you can return to the main menu by pressing the **Escape** key. For some items, you can display a help message by pressing the **F2** key. You can display a general help screen by pressing **F1**. Press **F5** to discard any changes you have made and return all items to the value that they held when the setup utility was started. Press **F6** to load the displayed items with a standard list of fail-safe values. Press **F7** to load the displayed items with a high-performance list of default values.

The following table outlines the BIOS menu commands:

Key	Function
Esc	**Escape key:** Exits the current menu
↑ ↓ → ←	**Cursor keys:** Scrolls through the items on a menu
+/–/PU/PD	**Plus, minus, Page Up and Page Down keys:** Modify the selected field's values
F10	**F10 key:** Saves the current configuration and exits setup
F1	**F1 key:** Displays a screen that explains all key functions.
F5	**F5 key:** Loads previously saved values to CMOS.
F6	**F6 key:** Loads a minimum configuration for troubleshooting.
F7	**F7 key:** Loads an optimum set of values for peak performance.

4.6. Standard CMOS Features Option

This option displays a table of items defining basic information about your system.

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Standard CMOS Features

Date (mm:dd:yy) Time (hh:mm:ss)	Tue, Feb 15 20000 12 : 8 : 59	Item Help
► IDE Primary Master ► IDE Primary Slave ► IDE Secondary Master ► IDE Secondary Slave	Press Enter 8488 MB Press Enter None Press Enter None Press Enter None	Menu Level ► Change the day, month, year and century.
Drive A Drive B	1.44M, 3.5 in. None	
Video Halt On	EGA/VGA All,But Keyboard	
Base Memory Extended Memory Total Memory	640K 63488 64512K	

← ↑ ⊕ → : Move   Enter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General Help
         F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Set Date: Month, Day, Year

Set Time: Hour, Minute, and Second. Use 24 Hour clock format (for PM numbers, add 12 to the hour, you would enter 4:30 p.m. As 16:30).

► **IDE Devices:** Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel.

Press **Enter** to display the IDE sub-menu:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level ►►
Access Mode	Auto	
		To auto-detect the
Capacity	8448 MB	HDD's size, head . . . on
		this channel
Cylinder	16368	
Head	16	
Precomp	0	
Landing Zone	16367	
Sector	63	

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

Hard Disks: There are four hard disks listed—Primary Master, Primary Slave, Secondary Master and Secondary Slave. For Each IDE channel, the first device is the "Master" and the second device is "Slave".

Hard disk Types from 1 to 45 are standard ones. Type "Auto" enables BIOS to perform IDE HDD auto detection. Type "User" is defined by the user. Type "None" is not installed (for example, a SCSI device).

There are six categories of information you must enter for a HDD:

- CYLS (number of cylinders)
- HEAD (number of heads)
- PRECOMP (write pre-compensation)
- LANDZ (landing zone)
- SECTOR (number of sectors)
- MODE (Normal, LBA, LARGE or AUTO)

The hard disk vendor's or system manufacturer's documentation should provide you with the information needed. The MODE option is for IDE hard disk drives only. MODE has four options Normal, LBA, Large, and Auto.

Standard CMOS Features Option   35

Set MODE to "NORMAL" for IDE hard disk drives smaller than 528 MB. Set MODE to "LBA" for IDE hard disk drives larger than 528 MB which support Logical Block Addressing mode. Set MODE to "LARGE" for IDE hard disk drives larger than 528 MB that do not support LBA mode. The LARGE type of drive is very uncommon and can only be used under MS-DOS. Currently most IDE hard disk drives over 528 MB support LBA mode. Set MODE to AUTO to enable auto detection of your IDE hard disk drive during bootup.

Floppy Drive A and Floppy Drive B: Options for these fields are:

- 360K, 5.25 in.
- 1.2M, 5.25in.
- 720K, 3.5in.
- 1.44M, 3.5in.
- 2.88M, 3.5in.
- None (Not Installed)

The "Not Installed" option could be used as an option for diskless workstations.

Video: Set this field to the type of graphics card installed in your system. If you are using a VGA or higher resolution card, choose the "EGA/VGA" option. The options are:

- EGA/VGA (default)
- MONO
- CGA 40
- CGA 80

Halt On: This setting determines which type of errors will cause the system to halt during bootup. The options are:

- All Errors (default)
- No Errors
- All, But Keyboard
- All, But Diskette
- All, But Disk/Key

Base/Extended/Total Memory: These items are automatically detected by the system at start up time. These are display-only fields. You cannot make changes to these fields.

After you have made your selections in the Standard CMOS Setup screen, press <ESC> to go back to the main screen.

4.7. Advanced BIOS Features Setup Option

This option displays a table of items that define advanced information about your system. You can make modifications to most of these items without introducing fatal errors to your system. Note that the page has a scroll-bar to scroll down to more items.

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Advanced BIOS Features

		Item Help
Virus Warning	Disabled	
CPU Internal Cache	Enabled	Menu Level ▶
External Cache	Enabled	
Quick Power On Self Test	Disabled	Allows you to choose
First Boot Device	Floppy	the VIRUS warning
Second Boot Device	HDD0	feature for IDE Hard
Third Boot Device	LS/ZIP	Disk boot sector
Boot Other Device	Enabled	protection. If this
Swap Floppy Drive	Disabled	function is enabled
Boot Up Floppy Seek	Enabled	and someone attempts
Boot Up NumLock Status	On	to write data into this
Gate A20 Option	Fast	area, BIOS will show a
Typematic Rate Setting	Disabled	warning message on
x Typematic Rate (Chars/Sec)	6	screen and alarm beep
x Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Video BIOS Shadow	Enabled	
C8000-CBFFF Shadow	Disabled	

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

Virus Warning: When this item is enabled, it provides some protection against viruses which try to write to the boot sector and partition table of your hard disk drive. This item is *Disabled* by default. You need to disable it so that you can install an operating system. We recommend that you enable Anti-Virus Protection as soon as you have installed your disk with an OS.

CPU Internal Cache: All the processors that can be installed in this mainboard use internal (level 1) cache memory to improve performance. Leave this item at the default value Enabled for better performance.

External Cache: Most processors that can be installed in this system use external (L2) cache memory to improve performance. The exceptions are older SEPP Celeron CPUs running at 266 or 300 MHz. Enable this item for all but these two processors.

Quick Power On Self Test: You can enable this item to shorten the power on testing (POST) and have your system start up a little faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

First/Second/Third Boot Device: The BIOS will load the operating system from the disk drives in the sequence selected here. Options are:

- Disabled
- Floppy
- LS120
- HDD-0
- SCSI
- CDROM
- HDD-1
- HDD-2
- HDD-3
- ZIP100
- LAN

Boot Other Device: If you enable this item, the system will search all other possible locations for an operating system if it fails to find one in the devices specified under the first, second and third boot devices.

Swap Floppy Drive: This setting enables you to swap the A and B floppy disk drives. Floppy drive A is usually connected to the end of the FDD cable. If you set this option to "Enabled", the drive at the end of the cable will be swapped to B. The default setting is "Disabled."

Boot Up Floppy Seek: If set to "Enabled", BIOS will check for installed bootup disk in the floppy disk drives during bootup. The default setting is "Disabled."

Boot Up Numlock Status: If set to "Off", the cursor controls will function on the numeric keypad. The default setting is "On."

Gate A20 Option: This option accesses memory above 1 MB using the fast gate A20 line when set to "Fast" (default). The other option is "Normal."

Typematic Rate Setting: If set to "Enabled," enables you to set the Typematic Rate and Typematic Delay. The default setting is "Disabled."

- **Typematic Rate (Chars/Sec):** This setting controls the speed at which the system registers repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is "6" Chars/Sec.
- **Typematic Delay (Msec):** This setting controls the time between the display of the first and second characters. There are four delay choices: 250ms, 500ms, 750ms and 1000ms. The default setting is "250" ms.

Security Option: This setting controls the password feature. The options are "Setup" (default) and "System." Selecting "Setup" will protect the configuration settings from being tampered with. Select "System" if you want to use the password feature every time the system boots up. You can create your password by using the "SUPERVISOR/USER PASSWORD" utility in the main program screen.

OS Select For DRAM > 64 MB: This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default Non-OS2.

Video BIOS Shadow: When set to "Enabled" (default), copies the VGA BIOS into system DRAM.

C8000-CBFFF Shadow to DC000-DFFFF Shadow: When set to "Enable," the ROM with the specified address is copied into system DRAM. It will also reduce the size of memory available to the system. The default setting for the shadow feature is "Disabled."

After you have made your selections in the Advanced BIOS Features setup screen, press <ESC> to go back to the main screen.

4.8. Advanced Chipset Features Option

This option displays a table of items that define critical timing parameters of the mainboard components including the memory, and the system logic. Generally, 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 – 2000 Award Software
Advanced Chipset Features

		Item Help
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Memory Hole At 15M –16M	Disabled	Menu Level ►
AGP Aperture Size	64M	
AGP-ISA Aliasing	Enabled	
K7 CLK_CTL Select	Optimal	
SDRAM ECC Setting	Disabled	
Super Bypass Mode	Disabled	
Post Memory Write Enable	Disabled	
SDRAM Timing setting by	Manual	
SDRAM PH Limit	32 Cycle	
SDRAM Idle Limit	8 Cycle	
SDRAM Trc Timing Value	7 Cycle	
SDRAM Trp Timing Value	3 Cycle	
SDRAM Tras Timing Value	5 Cycle	
SDRAM CAS Latency	3 Cycle	
SDRAM Trcd Timing Value	2 Cycle	

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

System BIOS Cacheable: When set to "Enabled" (default), the System BIOS will be cached for faster execution. Caching of the system BIOS ROM occurs at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video RAM Cacheable: When set to "Enabled," the graphics card's local memory will be cached for faster execution. However, if any program writes to this memory area, a system error may result. The default setting is "Disabled."

Memory Hole At 15M-16M: If Set to "Enabled", when the system memory size is equal to or greater than 16M bytes, the physical memory address from 15M to 16M will be passed to PCI or ISA and there will be a 1 MB hole in your system memory. This option is de-signed for some OS with special add-in cards which need 15-16 MB memory space. The default setting is "Disabled."

AGP Aperture Size (MB): This option determines the effective size of the AGP Graphic *Aperture*, where memory-mapped graphic data structures are located.

AGP ISA Aliasing: Enabling this item provides greater compatibil-ity with ISA VGA. The options are "Enabled" (default) and "Disable."

K7 CLK_CTL Select: Use this item to specify the clock control for the ramp rate. Select "Default" for the default time value, and "Op-timal" (default) for an optimum time value that depends on different CPU ratios.

SDRAM ECC Setting: Enable this item to allow BIOS to perform a parity/ECC check to the POST memory tests. Select "Enabled" only if the system DRAM supports parity/ECC checking.

Super Bypass Mode: Enable this to increase performance; however, the system may become unstable.

POST Memory Write Enable: Enables and disables POST memory write. The default setting is "Disabled."

SDRAM Timing setting by: This item enables you to set the timing and CAS latency for SDRAM memory manually or by automatic configuration. We recommend that you leave this item at the default value "Auto."

SDRAM PH Limit: Use this item to specify the number of consecu-tive Page-Hit requests to allow before the system chooses a non-Page-Hit request. The options are:

- 1
- 4
- 32 (default)
- 64

SDRAM Idle Limit: This item specifies the number of idle cycles to wait before precharging an idle bank. The options are:

- 1
- 8 (default)
- 32
- 64

SDRAM Trc Timing Value: This item sets the minimum time from activation to activation of the same memory bank. The options are:

- 3
- 4
- 5
- 6
- 7
- 8 (default)

SDRAM Trp Timing Value: Use this item to set the delay from precharge command to activation command. The options are:

- 3 (default)
- 2
- 1

SDRAM Tras Timing Value: Use this item to specify the minimum time a bank is active. The options are:

- 2
- 3
- 4
- 5 (default)
- 6
- 7

SDRAM CAS Latency Time: Enables you to select the CAS latency time in HCLKs of 2/2 or 3/3. The value is set at the factory depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The options are "2" and "3" default.

SDRAM Trcd Timing Value: Use this item to specify the delay from the activation of a bank to the time that a read or write command is accepted. Options are:

- 1
- 2 (default)
- 3
- 4

After you have made your selections in the Advanced Chipset Features setup screen, press <ESC> to go back to the main screen.

4.9. Integrated Peripherals Option

This option displays a list of items that defines the operation of some peripheral components on the system's input/output ports.

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
Integrated Peripherals

			Item Help
IDE Read/Write Prefetch	Enabled		
IDE Primary MasterPIO	Auto		Menu Level ►
IDE Primary Slave PIO	Auto		
IDE Secondary Master PIO	Auto		
IDE Secondary Slave PIO	Auto		
IDE Primary MasterUDMA	Auto		
IDE Primary Slave UDMA	Auto		
IDE Secondary Master UDMA	Auto		
IDE Secondary Slave UDMA	Auto		
On-Chip Primary PCI IDE	Enabled		
On-Chip SecondaryPCI IDE	Enabled		
USB Host Controller	Enabled		
USB Keyboard Support	Disabled		
Init Display First	PCI Slot		
IDE HDD Block Mode	Enabled		
ACPI Disable Method	Disabled		
Onboard FDC Controller	Enabled		
Onboard Serial Port 1	Auto		
Onboard Serial Port 2	Auto		

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

IDE Read/Write Prefetch: The onboard IDE drive interfaces supports IDE prefetching, for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to "Disabled" if the interface does not support prefetching. The default setting is "Enabled."

IDE Primary/Secondary Master/Slave PIO: When set to "Auto" the BIOS will automatically set the mode to match the transfer rate of hard disk. If the system won't boot up when set to "Auto" set it manually to a lower mode, e.g., from Mode 3 to Mode 2. All IDE drives should work with PIO mode 0. There are six options:

- Auto (default)
- Mode 0
- Mode 1
- Mode 2
- Mode 3
- Mode 4

IDE Primary/Secondary Master/Slave UDMA: Ultra DMA technology provides faster access to IDE devices. When set to "Auto" the BIOS will automatically load the Ultra DMA 33 driver to match the transfer rate of IDE hard disk drives that support Ultra DMA 33 mode. The options are "Auto" (default) and "Disabled."

On-Chip Primary/Secondary PCI IDE: This option enables or disables the onboard IDE controller. The default setting is "Enabled."

USB Host Controller: This option enables or disables the onboard USB Host controller. The default setting is "Enabled."

USB Keyboard Support: Enable this item if you are using a keyboard connected through the USB Port. The default setting is "Disabled."

Init Display First: This item sets whether the PCI Slot or AGP is activated first. The options are "PCI Slot" and "AGP."

IDE HDD Block Mode: Enable this field if your IDE hard drive supports block mode. Block mode enables BIOS to automatically detect the optimal number of block read and writes per sector that the drive can support. The default setting is "Enabled."

ACPI Disable Method: Enables and disables the ACPI function. The default setting is "Disabled."

Onboard FDC Controller: This option enables the onboard floppy disk drive controller. The default setting is "Enabled."

Onboard Serial Port 1 and Onboard Serial Port 2: These options are used to assign the I/O addresses for the two onboard serial ports. They can be assigned as follows:

- 3F8/ IRQ4 (Serial Port 1 default)
- 2F8/ IRQ3 (Serial Port 2 default)
- 3E8/ IRQ4
- 2E8/ IRQ3
- Auto
- Disabled (disables the onboard serial port)

Onboard IR Controller: This option enables and disabled the on-board infrared (IR) controller. The default setting is "Enabled."

IR Address Select: Enables you to specify the memory address for the IR. Options are:

- 3F8H
- 2F8H
- 3E8H
- 2E8H (default)
- 3E0H
- 2E0H

IR Mode: Enables you to select the infrared communication proto-col—IrDA (normal—default), FIR, or ASKIR. FIR is Hewlett Packard's infrared communication protocol with a maximum baud rate up to 115.2K bps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6K bps.

IR Transmission Delay: When set to "Enabled," utilizes the capa-bility of the mainboard to allow faster infrared transmission rates. The options are "Enabled" and "Disabled."

IR IRQ Select: Enables you to set the IRQ for the IR. Options are:

- IRQ3
- IRQ4
- IRQ10 (default)
- IRQ11

IR Mode Use DMA: Enables and disables the IR DMA. Setting options are "Disabled," "3"(default), or "1."

Onboard Parallel Port: This option is used to assign the I/O address for the onboard parallel port. The options are:

- 378/IRQ7 (default)
- 278/IRQ5
- 3BC/IRQ7
- Disabled (disables the onboard parallel port).

Parallel Port Mode: There are four options—"Normal" (default), "EPP" (Enhanced Parallel Port), "ECP" (Extended Capabilities Port), and "ECP+EPP." Change the mode from "Normal" to the enhanced mode only if your peripheral device can support it.

ECP Mode Use DMA: When the onboard parallel port is set to ECP mode, the parallel port has the option to use DMA "3"(default) or DMA "1."

EPP Mode Select: Sets the EPP specification. There are two options—"EPP1.9" (default) and "EPP1.7."

If you make any changes to the onboard FDD controller, serial ports or parallel ports in this setup, save the changes and turn off the system. After powering up the system, ensure that the changes have taken effect.

4.10. Power Management Setup Option

This option displays items that let you control the system power management. Modern operating systems take care of much of the power management. This mainboard supports ACPI (advanced configuration and power interface).

The system has various power saving modes including powering down the hard disk, turning off the video, suspending to RAM, and a software power down that allows the system to be automatically resumed by certain events.

4.10.1.   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.

4.10.2.   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 – 2000 Award Software
Power Management Setup

ACPI Function	Enabled		Item Help
Power Management	User Define		
Video Off Method	DPMS Support		Menu Level ►
Suspend type	PwrOn Suspend		
Standby Mode	Disabled		
HDD Power Down	Disabled		
HDD Down In Suspend	Disabled		
Soft-Off by PBTN	Instant-Off		
CPU Fan On in Suspend	Disabled		
Wake-Up by PCI Card	Disabled		
RI Resume/WOL	Disabled		
MODEM Use IRQ	3		
RTC Resume	Disabled		
x Date (of Month) Alarm	0		
x Time (hh:mm:ss) Alarm	0 0 0		
Primary IDE 0	Enabled		
Primary IDE 1	Enabled		
Secondary IDE 0	Enabled		
Secondary IDE 1	Enabled		

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

ACPI Function: When set to "Enabled," turns on the ACPI Function. The default setting is "Disabled."

> *Note: ACPI (Advanced Configuration and Power Interface) is a power management specification that makes hardware status information available to the operating system. ACPI enables a PC to turn its peripherals on and off for improved power management. It also allows the PC to be turned on and off by external devices, so that mouse or keyboard activity wakes up the computer.*

Power Management: This setting controls the System Doze Mode, Standby Mode, and Suspend Mode Timer features. There are four options:

- *User Define:* allows you to customize all power saving timer features
- *Min Saving:* sets all timers at lower values for minimum power savings.
- *Max Saving:* sets all timers at higher values for maximum power savings.

Video Off Method: This setting controls the video off method in power saving mode. The default setting is "V/H SYNC+Blank" which disables V/H SYNC signals and blanks the screen. Other options are "DPMS Support" and "Blank Screen." The "DPMS" option allows the BIOS to control the video card if it has the DPMS (Display Power Management System) feature. The "Blank Screen" option is used when you do not have a "Green" monitor.

Suspend Type: This field enables you to select the type of Suspend. The options are:

- PwrON Suspend
- Stop Grant (default)

Standby Mode: When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed. Options are from "1 Min" to "1 Hour" and "Disabled."

HDD Power Down: The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from "1 Min" to "15 Min" and "Disabled."

HDD Down In Suspend: Enables the IDE hard drive to spin down during suspend mode. Options are "Enabled" and "Disabled" (default).

Soft-Off by PBTN: Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to "Delay 4 Sec." then you have to hold the power button down for four seconds to cause a software power down.

CPU Fan On in Suspend: Enables you to set the CPU fan to turn off during suspend mode. The options are "OFF" (default), and "ON."

Wake-Up by PCI card: When set to "On," the system power will be turned on if there is any PCI card activity.

RI Resume/WOL: When set to "Enabled," any activity on the LAN port will wake up the system from a power saving mode. The options are "Enabled" and "Disabled" (default).

MODEM Use IRQ: If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to a mainboard Wake On Modem connector for this feature to work. Options are:

- NA
- 3
- 4
- 5
- 7
- 9
- 10
- 11

RTC Resume: When set to "Enabled," the following two fields become available and you can set the date (day of the month), hour, minute and second to turn on your system.

When set to set "0" (zero) for the day of the month, the alarm will power on your system every day at the specified time.

Primary/Secondary IDE 0/1: When these items are enabled, the system will restart the power-saving timeout counters when any activity is detected on the hard disk drive.

Parallel/Serial Port: When these items are enabled, the system will restart the power-saving timeout counters when any activity is detected on the serial ports or the parallel port.

IRQ 3 – 15: These items enable you to set IRQs that will resume the system from a power saving mode. Set any IRQ to "Enabled" to allow activity at the IRQ to wake up the system from a power saving mode.

Press the <ESC> key to go back to the main program screen, after you have made your selections in the Power Management Setup screen.

4.11. PNP/PCI Configuration Option

This option displays a table of items that configures how PNP (Plug and Play) and PCI expansion cards operate in your system. Both ISA and PCI buses on the Mainboard 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; otherwise, the mainboard will not work properly. Selecting "PnP/PCI Configurations" on the main program screen displays this menu:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
PnP/PCI Configurations

		Item Help
PNP OS Installed	Yes	
Reset Configuration Data	Disabled	
		Menu Level ►
Resources Controlled by	Auto(ESCD)	
x IRQ Resources	Press Enter	Select Yes if you are
x DMA Resources	Press Enter	using a Plug and Play
		capable operating
PCI/VGA Palette Snoop	Disabled	system. Select No if
PCI Latency Timer	32	you need the BIOS to
		configure non-boot
		devices.

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

PNP OS Installed: Setting this option to "Yes" allows the PnP OS (instead of BIOS) to assign the system resources such as IRQ and I/O address to the ISA PnP device. The default setting is "No."

Reset Configuration Data: If you enable this item and restart the system, any PNP configuration data stored in the BIOS setup is cleared from memory. New updated data is created. The default setting is "Disabled."

Resources Controlled By: You should leave this item at the default Auto(ESCD). Under this setting, the system dynamically allocates resources to plug and play devices as they are required.

If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the IRQ Resources and Memory Resources sub-menus.

In the *IRQ Resources* sub-menu, if you change any of the IRQ assignations to Legacy ISA, then that Interrupt Request Line is reserved for a legacy ISA expansion card. Press **Esc** to close the IRQ Resources sub-menu.

In the *Memory Resources* sub menu, use the first item Reserved Memory Base to set the start address of the memory you want to reserve for the ISA expansion card.

Use the second item Reserved Memory Length to set the amount of reserved memory. Press **Esc** to close the Memory Resources sub-menu.

PCI/VGA Palette Snoop: This item is designed to overcome some problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled. The default setting is "Disabled."

PCI Latency Timer (CLK): The latency timer defines the minimum amount of time, in PCI clock cycles, that the bus master can retain the ownership of the bus. The options are "0" to "255."

After you have made your selections in the PNP/PCI Configuration Setup, press the <ESC> key to go back to the main program screen.

4.12. PCI Health Status Option

On mainboards that support hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds. You cannot make any changes to these fields. They are display only:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
PC Health Status

		Item Help
CPU Warning Temperature	49°C/1120°F	
Current System Temp.	26°C/78°F	
Current CPUFAN1 Speed	5152 RPM	Menu Level ►
Current CPUFAN2 Speed	4800 RPM	
Vccp	+1.98 V	
Vcc3	+3.31 V	
+5V	+7.98 V	
+12V	+12.78 V	
-12V	-12.78 V	
-5V	-7.98 V	
Shutdown Temperature	Disabled	

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

CPU Warning Temperature: This feature enables you to set the warning temperature for CPU overheating. When the CPU temperature exceeds the set temperature, the PC speaker will beep. The beep sound will not turn off unless you power down the computer and allow your CPU to cool down.

Current System Temperature: This field displays the current system temperature. This feature gives you the ability to monitor your system's temperature without opening the chassis.

Current CPU FAN1/FAN2 Speed: These fields display the CPU FAN or FAN2 RPM (Revolution Per Minute) reading. You cannot make changes to these fields. This feature gives you the ability to monitor CPU FAN and FAN2 conditions.

Vcc3, Vccp, +5V, -5V, +12V, -12V: This feature gives you the ability to monitor the condition of the system's power. These fields display the voltages of the following components

- Vcc3 (onboard 3.3 volt)
- Vccp (CPU Core voltage)
- +5V (power supply's +5 volt)
- -5V (power supply's -5 volt)
- +12V (power supply's +12 volt)
- -12V (power supply's -12 volt)

Shutdown Temperature: This field enables you to set the temperature at which the system shuts down to prevent overheating. The options are:

- Disabled (default)
- 60°C/140°F
- 65°C/149°F
- 70°C/158°F
- 75°C/167°F

After you have made your selections in the Chipset Features Setup screen, press <ESC> to go back to the main screen.

4.13. Frequency Control Option

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 – 2000 Award Software
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum Modulated	Enabled	
CPU Host/PCI Clock	Default	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

Auto Detect DIMM/PCI Clk: When this item is enabled, BIOS will disabled the clock signal of free DIMM and PCI slots.

Spread Spectrum Modulated: If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

CPU Host/PCI Clock: These items appear if you have set the CPU Internal Core Speed to Manual. Use the CPU/DIMM/PCI Clock to set the system bus frequency for the installed processor (usually 133 MHz, 100 MHz, or 66 MHz). Then use CPU Clock Ratio to set a multiple. The multiple times the system bus must equal the core speed of the installed processor e.g. 3.5 (multiple) x 100 MHz (system bus) = 350 MHz (installed processor clock speed).

After you have made your selections in the Frequency/Voltage Control setup screen, press <ESC> to go back to the main screen.

4.14.   Load Fail-Safe Defaults Option

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the whole setup utility.

Use this option if you have changed your system and it does not operate correctly or does not power up. When you select "Load Fail-Safe Defaults" from the main menu, you see the following screen:

> Load Fail-Safe Defaults (Y/N)? N

Press the "Y" key and then [Enter] to install the defaults. Press the "N" key and then [Enter] to return to the previous screen without installing 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 the F6 key.

4.15.   Load Optimized Defaults Option

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the whole setup utility.

Use this option if you want to load the optimal settings for your system. These settings were configured at the factory. When you select "Load Optimized Defaults" from the main menu, you see the following screen:

> Load Optimized Defaults (Y/N)? N

The defaults loaded only affect the BIOS Features Setup, Chipset Features Setup, Power Management Setup, PnP/PCI configuration setup and Integrated Peripherals Setup. There is no effect on the Standard CMOS Setup.

Press the "Y" key and then [Enter] to install the defaults. Press the "N" key and then [Enter] to return to the previous screen without installing 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 the F7 key.

4.16.   Set Supervisor and User Passwords

These items can be used to install a password. A Supervisor password takes precedence over a User password, and the Supervisor can limit the activities of a User. To install a password, follow these steps:

1. Highlight the item Set Supervisor/User password on the main menu and press **Enter**.

2. The password dialog box appears.

> Enter Password:

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

4. The system will ask you to confirm the new password by asking you to type it in a second time.

> Confirm Password:

5. Carefully type the password again and press [Enter], or just press [Enter] if you are deleting a password that is already installed.

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

To disable the password, press the enter key instead of entering a new password when the "Enter Password" dialog box appears. A message appears confirming that the password has been disabled:

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

If you have set supervisor and user passwords, only the supervisor password allows you to enter the BIOS Setup Program.

4.17.   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 program.

```
SAVE to CMOS and EXIT (Y/N)?  Y
```

Press the "Y" key and then press [Enter] if you want to save the new settings. Press "N" if you do not want to proceed.

4.18.   Exit Without Saving Option

Highlight this item and press [Enter] to discard any changes that you have made in the setup utility and exit the setup program.

```
Quit Without Saving  (Y/N)?  N
```

Press the "Y" key and then press [Enter] if you want to quit without saving the new settings. Press "N" if you do not want to proceed.

This concludes the BIOS section. The Section 5 covers driver installation.

5. Driver and Utility

5.1. Flash Utility

The BIOS of the P7F200A2 mainboard can be upgraded by using a Flash utility. A new version of the BIOS can be downloaded from the factory's BBS and Web site. The system BIOS is stored in a 1M-bit Flash EEPROM that can be erased and reprogrammed by the Flash utility.

There are two files in the FLASH directory.

- FLASH.EXE   Flash utility for AWARD BIOS upgrade
- README.TXT   Text file of instructions

The Flash utility will not work with any memory manager software running in the system. In order to make sure no memory manager software is running, boot your system from a bootable floppy diskette which does not contain CONFIG.SYS and AUTOEXEC.BAT files. If you are using MS-DOS 6.x, you can press the <F5> function key when the "Starting MS-DOS..." message appears on the screen to bypass the CONFIG.SYS and AUTOEXEC.BAT.

5.2. **System Environment Monitor**

The System Environment Monitoring utility along with the onboard Winbond 83782D system monitor chip enables you to monitor your system's operating characteristics such as temperature, fan speed and CPU voltage. Using this utility, you can define the upper and lower limits of these monitored parameters. A pre-warning message will pop up on the screen when the monitored parameters move out of the preset range. This software must be installed under Windows9x. However, the feature version may run on different operating systems, such as Windows NT.

5.2.1. Hardware Doctor Setup

The Installation Steps:

Step 1: Insert the manufacturer's CD-ROM into your CD-ROM drive.

Step 2: Install Hardware Doctor from the directory "Monitor\Setup.exe" on the CD-ROM to start the installation.
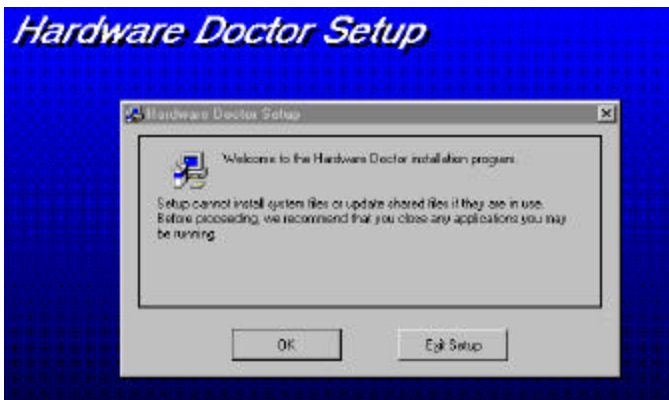

Step 3: Follow the instructions on the screen to complete the installation. After setup is completed, you need to restart the computer before you can activate the program.

The "Hardware Doctor" option will be added to the "program" directory. Click on the "Hardware Doctor" icon to access the program.
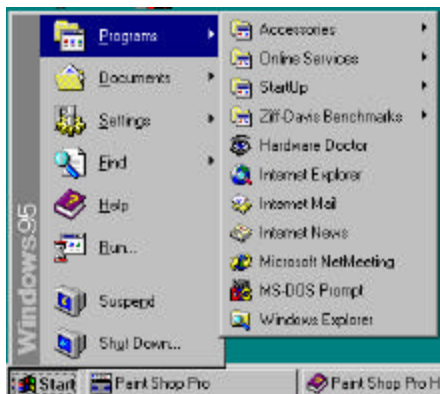
5.2.2. Setting the Threshold

Set the threshold for system temperature, voltages and fan speeds by moving the slide bars or by clicking the increase/decrease buttons
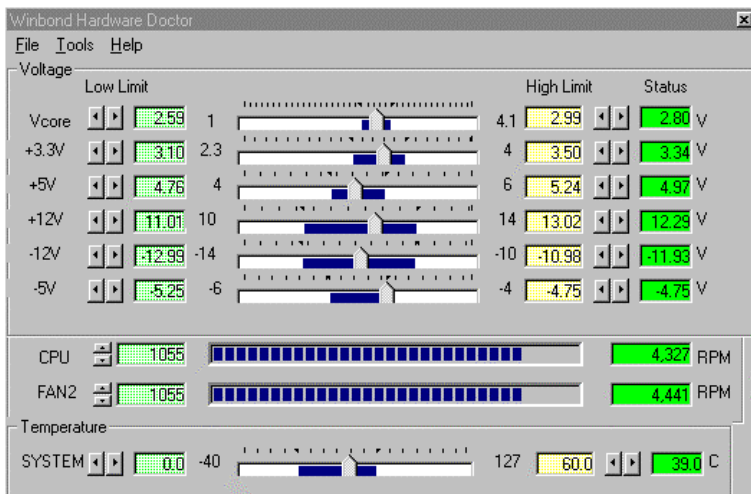
5.2.3. Online Services

Flexus Computer Technology, under the Freetech brand name, has consistently won recognition for excellence in the design and manufacturing of high quality mainboards!

Our products are globally recognized among the leading cost-performance mainboards in the industry today and we are a certified ISO-9002 manufacturer!

Our customers are our partners! Flexus practices partnership service "not customer service"! Our attention to partnership service is aggressive and proactive, by using our global partnership service system. We create value for our partners in the high-end market and we are always ready to see to our partners' requirements, because at Flexus, we believe our partners success is our success!

If you need technical support, information on products, or updated versions of the BIOS, drivers and utilities access the Internet and point your browser to:

www.freetech.com