

AV42

**Intel Pentium 4/Celeron
478-pin Processor**

with 400/533 MHz FSB

Based DDR MAINBOARD

User's Manual

Shuttle® AV42

**Intel Pentium 4/Celeron
478-pin Processor
with 400/533 MHz FSB
Based DDR Mainboard
Manual Version 1.0**

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About This Manual

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1 INTRODUCTION

1.1 To Different Users

First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience successful, right from the start, we have designed the **3.1 Hardware Installation** section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new Shuttle AV42mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle AV42mainboard. You will find that installing your new Shuttle AV42 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated AV42 mainboard provides you with a total solution to build the most stable and reliable system. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Drivers/Software Utilities** to find out how to get the best out of your new mainboard. **Chapter 5 BIOS Setup** also contains the relevant information on how to tune up your system to achieve higher performance.

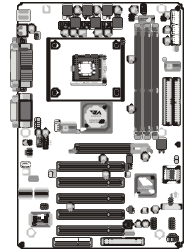
System Integrator

You have wisely chosen this mainboard to construct your system. This mainboard incorporates all the state-of-the-art technology of the P4X333 chipset from VIA. It integrates the most advanced functions you can find to date in a compact ATX board.

1.2 Item Checklist:

Check all items with your AV42 mainboard to make sure nothing is missing. The complete package should include:

- * One piece of the AV42 mainboard



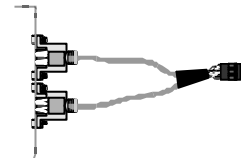
- * One piece of ATA 133/100/66 Ribbon Cable



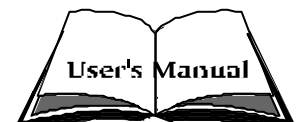
- * One piece of Floppy Ribbon Cable



- * One piece of twin-port USB Cable (optional)



- * AV42 User's Manual



- * One piece of Bundled CD-ROM with containing:
 - AV42 user's manual in PDF format
 - VIA driver
 - Audio device driver
 - USB 2.0 driver
 - Award Flashing Utility



2 FEATURES

This mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

2.1 Specifications

* CPU Support

Intel Pentium 4/Celeron Processor with 400/533 MHz FSB.

* Chipset

Features VIA P4X333 N.B. and VIA VT8235 S.B..

* CPU FSB Configuration

AV42 provides jumper JP5 to configure front side bus at 400/533MHz.

* AC'97 Audio Codec

Compliant with AC'97 2.2 specifications.

Supports 18-bit ADC and DAC resolution and four analog line-level stereo inputs.

* Versatile Memory Support

Three **184-pin DIMM** slots to support up to 3GB of PC2100.

Compliant with **DDR SDRAM** module.

* Expansion Slots

Provide five 32-bit PCI slots, one AGP slot that supports up to 4X AGP device, and one CNR (Communications and Networking Riser) slot.

* 6 USB 2.0 Interfaces Onboard

➤ 2 x USB connectors on back-panel and two sets of dual USB port headers on board.

* I/O Interface

Provides a variety of I/O interfaces:

➤ 1 x Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, or 2.88MB format or for 5.25-inch FDD with 360K or 1.2MB format.

➤ 2 x DB9 serial connectors 16C550 UART compatible.

➤ 1 x Infrared communication port.

(Serial port COM2 can also be redirected to an external IrDA Adapter for wireless connection.)

➤ 1 x DB25 parallel connector that supports SPP, EPP, and ECP.

-
- 1 x PS/2 Mouse connector.
 - 1 x PS/2 Keyboard connector.
 - 1 x Line-Out port.
 - 1 x Line-In port.
 - 1 x Mic-In port.
 - 1 x DB15 MIDI/Game port.

★ **PCI Bus Master IDE Controller Onboard**

Two UltraDMA **133/100/66** Bus Master Dual-Channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements data transfer speeds of up to **133/100/66** MB/sec and also supports Enhanced PIO Modes.

80-pin Cable Backward Compatible Legacy ATAPI Devices, ATAPI IDE CD-ROM, CD-R, CD-RW, and LS-120 Supports.

★ **ATX Power Supply Connector**

ATX power supply unit can connected to the onboard 20-pin Pentium 4 standard ATX power connector, supporting Suspend and Soft-On/Off by dual-function power button.

★ **Advanced Configuration and Power Interface**

Features four power-saving modes: S1 (Snoop), S3 (Suspend to RAM), S4 (Suspend to DISK), and S5 (Soft-Off). ACPI provides more efficient energy-saving features controlled by your operating system that supports OS direct Power Management (OSPM) functionality.

★ **System BIOS**

Provides licensed Award BIOS V6.0 PG on 2Mb Flash core and supports Green PC, Desktop Management Interface (DMI).

★ **ATX Form Factor**

System board conforms to the ATX specification.
Board dimension: 305mm x 190mm.

★ **Advanced Features**

- **Low EMI** - Built in spread spectrum and automatic clock shut-off of unused PCI/SDRAMS slots to reduce EMI.
- **Dual Function Power Button** - The system can be in one of two states, one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode.

When the power button is pressed for longer than 4 seconds, the system enters Soft-Off mode.

- **CPU Clock Setting** - This item allows users to adjust CPU Host Clock in BIOS.
- **CPU Multiplier Setting** - This item allows users to adjust CPU Multiplier in BIOS.

* **Intelligent Features**

- **Voltage Monitoring** - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure stable current passing through mainboard components.
- **Fan Status Monitoring** - To prevent CPU from overheating, the CPU fan is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required.)
- **Temperature Monitoring** - This item allows users to make sure whether the CPU or system runs in a suitable temperature.

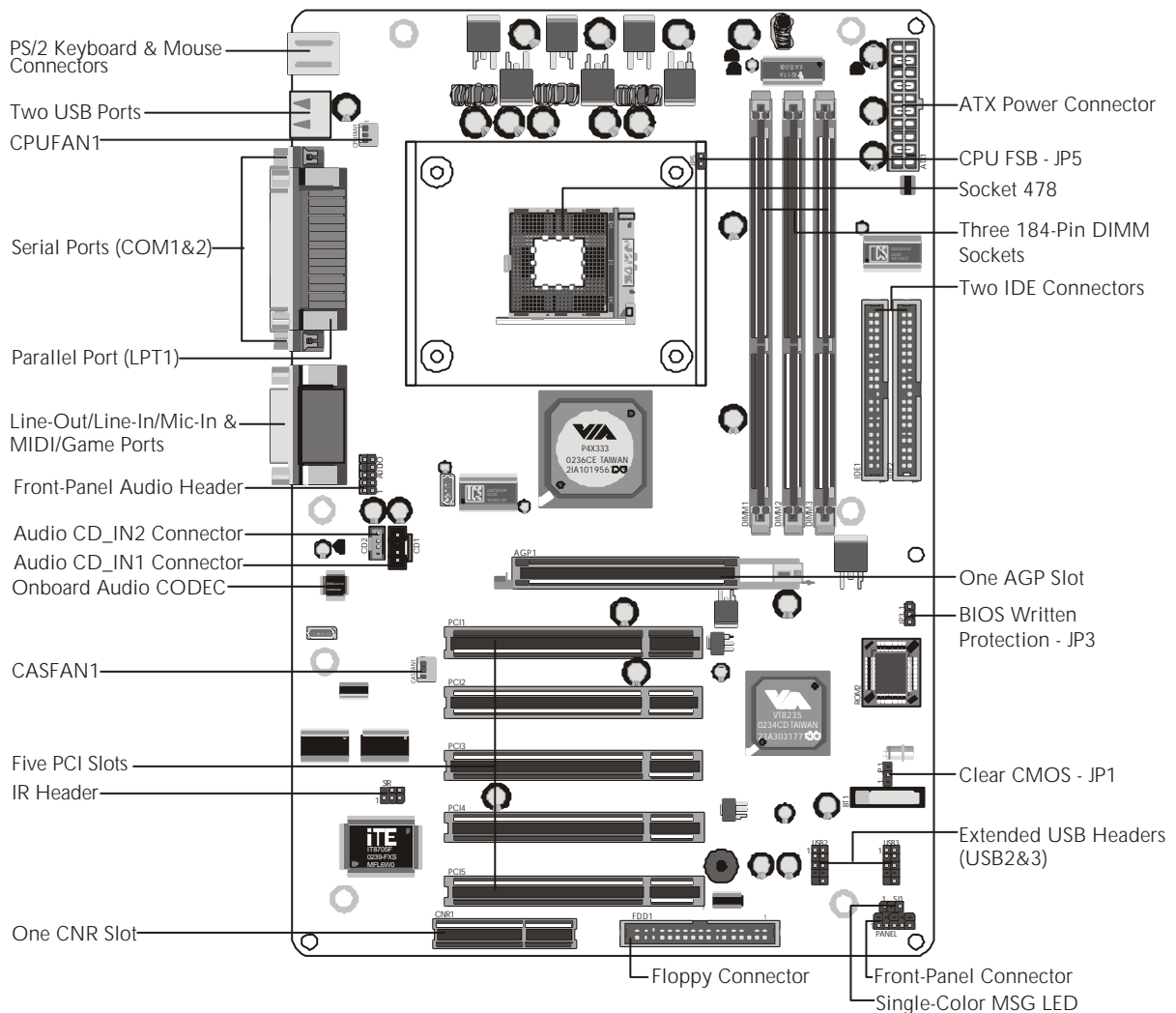
3 HARDWARE INSTALLATION

Before removing or installing any of these devices including CPU, DIMMs, Add-On Cards, Cables, please make sure to unplug the onboard power connector.

This section outlines how to install and configure your mainboard. Refer to the following mainboard layout to help you to identify various jumpers, connectors, slots, and ports. Then follow these steps designed to guide you through a quick and correct installation of your system.

3.1 Step-by-Step Installation

Accessories Of the AV42 Mainboard



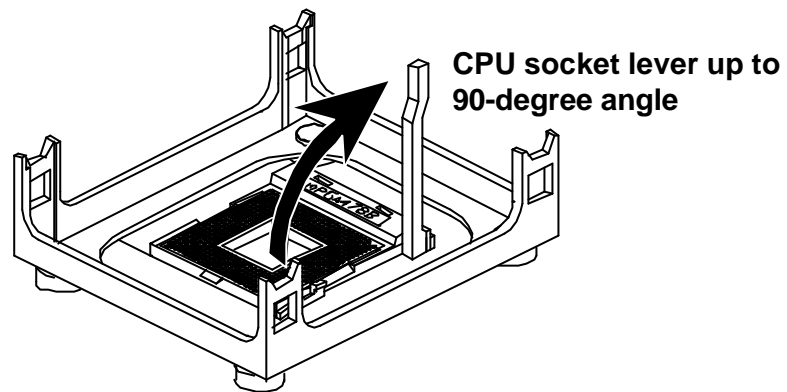
Step 1

CPU Installation:

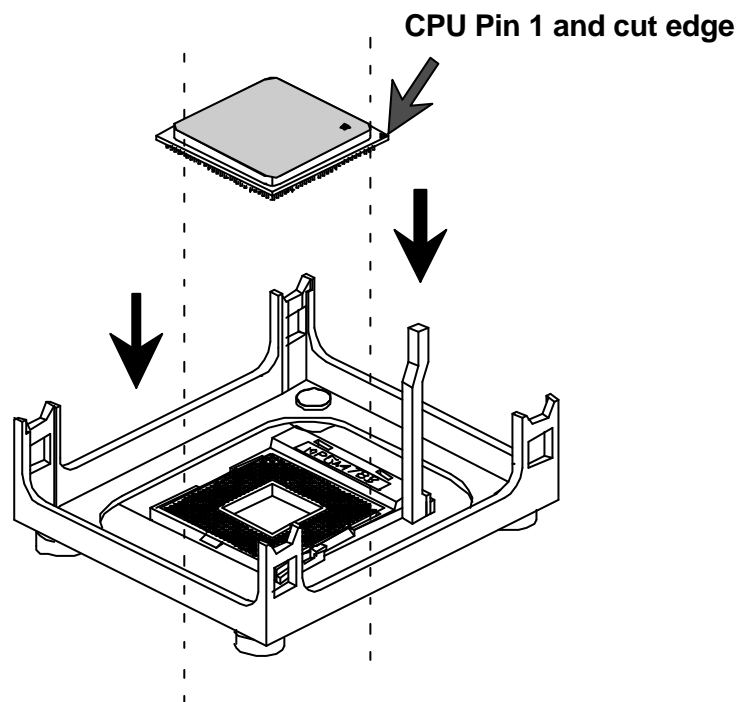
This mainboard supports Intel Pentium 4/Celeron Socket 478 series CPU. Please follow the steps as follows to finish CPU installation.

Note the CPU orientation when you plug it into CPU socket.

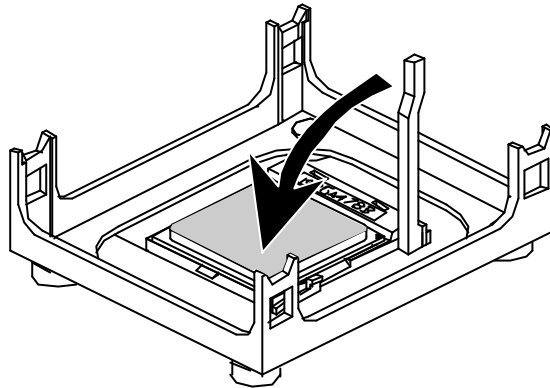
1. Pull up the CPU socket lever to 90-degree angle.



2. Locate Pin 1 in the socket and look for a black dot or cut edge on the CPU upper interface. Match Pin 1 and cut edge, and insert the CPU into the socket.



-
3. Press down the CPU socket lever and finish CPU installation.



Note: The CPU might be damaged if you do not match the CPU socket Pin 1 and cut edge well.

4. Intel Pentium 4/Celeron processor requires a set of heatsink and fan to cool down the processor. You need to purchase a heatsink and fan if they are not bundled with your CPU. Required is that install the set and plug its cable in the CPU fan power connector. Note that there are kinds of CPU fan connectors. Normally, if your mainboard supports a hardware monitoring function, a 3-pin fan power connector can have your system detect the CPU fan's speed. A CPU fan with a 2-pin or 4-pin fan power connector does not support the detection of the CPU fan's speed, and must directly be connected to the system's power supply unit.

Step 2.

Set Jumpers

This mainboard is jumperless! The default jumper settings have been set for the common usage standard of this mainboard. Therefore, you do not need to reset the jumpers unless you require special adjustments as any of the following cases:

- Clear CMOS setting
- BIOS written protection
- CPU FSB setting

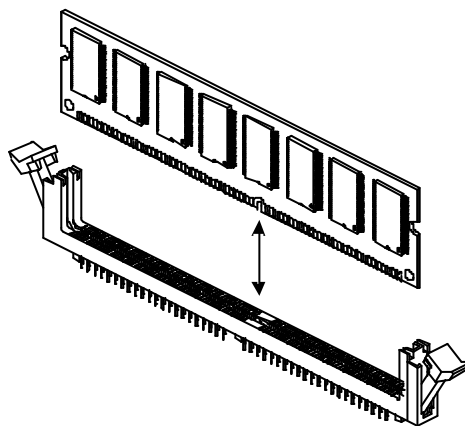
For first-time DIY system builders, we recommend that you not change the default jumper settings if you are not totally familiar with the mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their system, section **3.2 Jumper Settings** will provide detailed information on how to configure your AV42 mainboard manually.

Step 3

Install DDR SDRAM System Memory

To install memory, insert DDR SDRAM memory module(s) in DIMM slot(s). Note that DDR SDRAM modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM slot, lift the clips of both sides of the DIMM slot to lock the module in place.

DDR SDRAM



Step 4

Install Internal Peripherals in System Case

Before you install and connect the mainboard into your system case, we recommend that you first assemble all the internal peripheral devices into the computer housing, including but not limited to the hard disk drive (IDE/HDD), floppy disk drive (FDD), CD-ROM drive, and ATX power supply unit. This will greatly facilitate in making the connections to the mainboard described below.

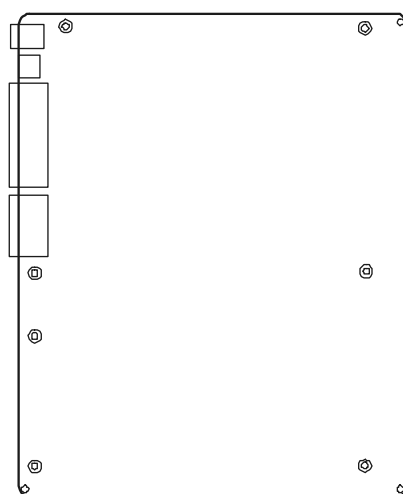
To install IDE & FDD drives, follow this procedure:

1. Set the required jumpers on each device according to the instructions provided by the manufacturer. (IDE devices, HDD, and CD-ROM have to set jumpers to Master or Slave mode depending on whether you install more than one device of each kind.)
2. Connect IDE cable and FDD cable on the back-panel of the internal peripheral devices to the corresponding headers on board. Note that the cable should be oriented with its colored stripe (usually red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.
3. Connect an available power cable from your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if not properly positioned.

Step 5

Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose correct mounting holes, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.



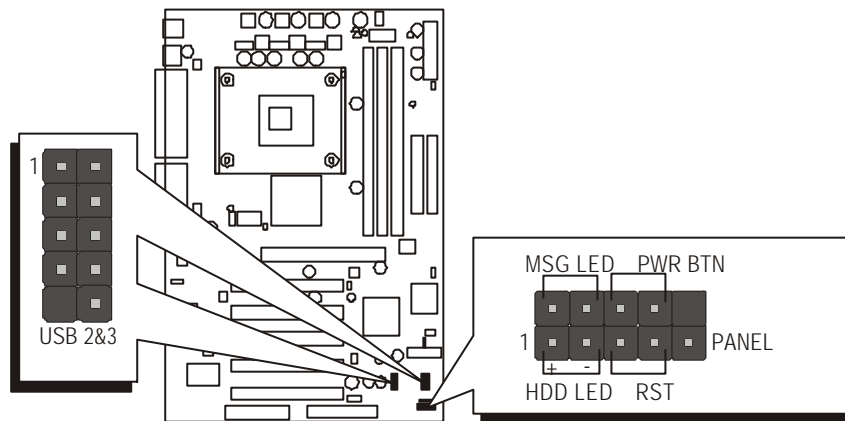
2. After deciding on the proper mounting holes, position the studs between the frame of the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system's chassis and the mainboard, in order to avoid any electrical shorts between the board and the metal frame of the chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

Note: In most computer housings, you will be able to find 4 or more attachment points to install mounting studs and then fix the mainboard. If there are not enough matching holes, then make sure to install at least 4 mounting studs to ensure proper attachment of the mainboard.

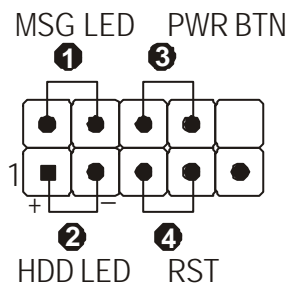
Step 6

Connect Front-Panel LEDs/Switch/USBs

You can find there are several different cables already existing in the system case and originating from computer's front-panel devices (MSG LED, HDD LED, PWR BTN, RST switch, or USB devices etc.). These cables serve to connect the front-panel LEDs, switch, and USB connectors to mainboard's front-panel connector groups (Panel and USB2&3), as shown below.



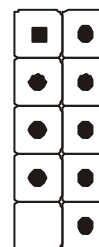
1. Green-LED and Power-LED (MSG LED)
2. HDD-LED (HDD LED)
3. ATX Soft Power On/Off (PWR BTN)
4. Hardware Reset Switch Button (RST)
5. Extended USB Headers (USB 2&3)



⑤

VREG_FP_USBPWR0
 USB_FP_P0-
 USB_FP_P0+
 GND
 KEY

1



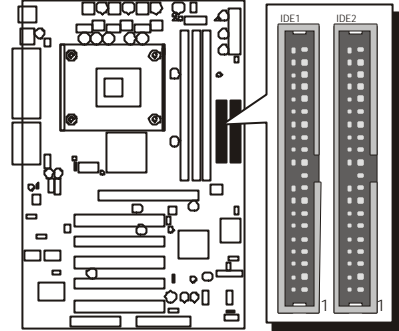
VREG_FP_USBPWR0
 USB_FP_P1-
 USB_FP_P1+
 GND
 USB_FP_OC0

USB 2&3

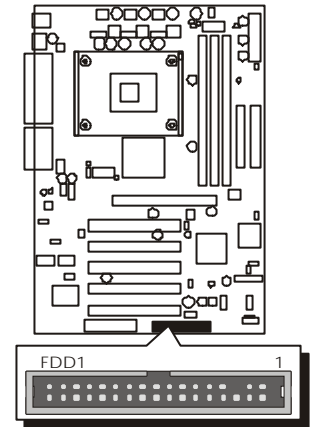
Step 7

Connect IDE and Floppy Disk Drives

1. IDE cable connectors



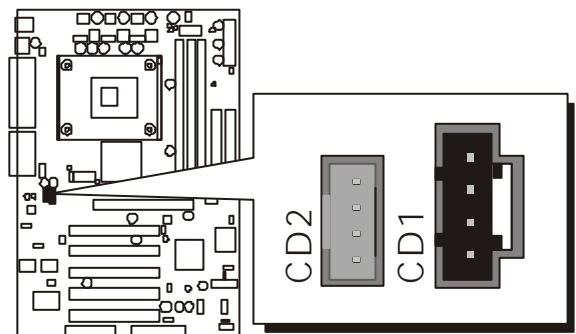
2. Floppy cable connector



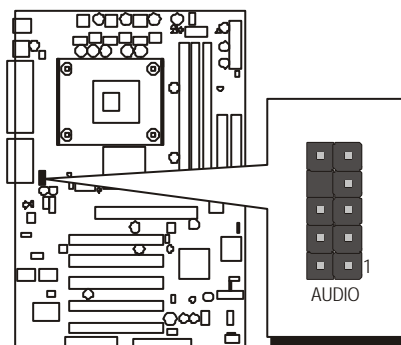
Step 8

Connect Other Internal Peripherals

1. Audio CD_IN1/2 connectors



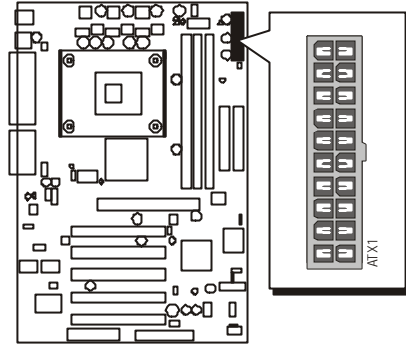
2. Front-panel audio header



Step 9

Connect the Power Supply

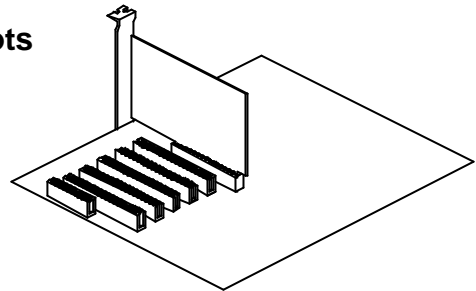
1. System power connector



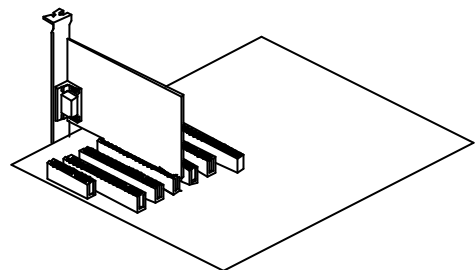
Step 10

Install Add-on Cards in Expansion Slots

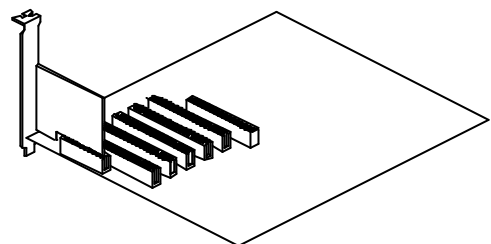
1. AGP card



2. PCI card



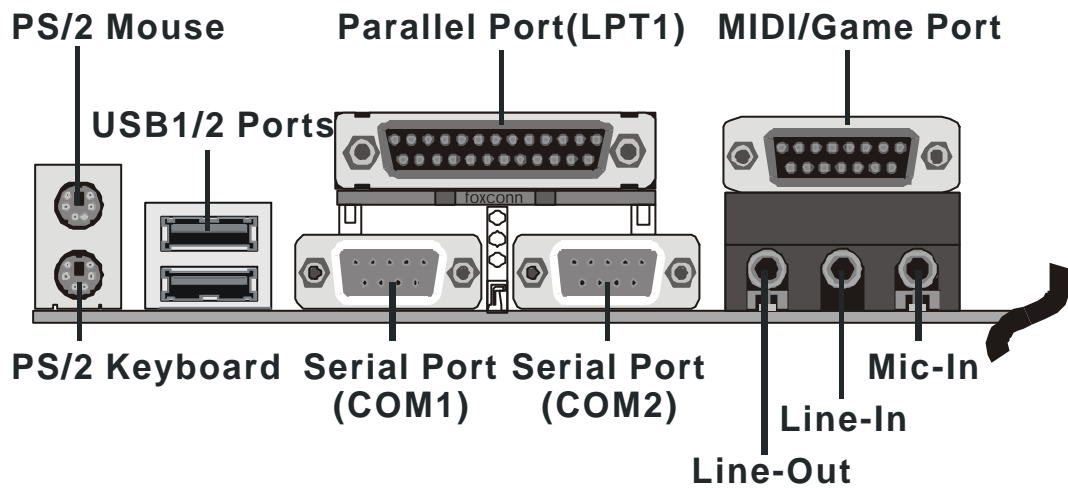
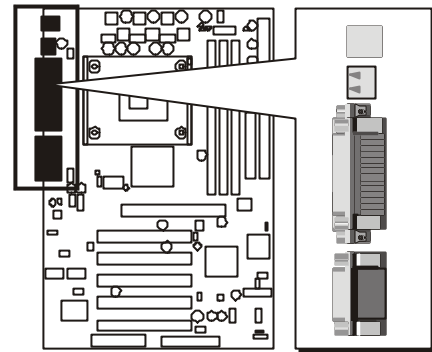
3. CNR card



Step 11

Connect External Peripherals to Back-Panel

You are now ready to put the computer case back together and get on to the external peripheral connections to your system's back-panel.



Step 12

System Boot Up For the First-Time

To ensure your system completely and correctly installed, please refer to the above installation steps once again before first booting up your system.

1. Insert a system-bootable floppy disk (DOS 6.2X, Windows 9X/NT, or others), which contains the FDISK and FORMAT utilities.
2. Turn on the system power.
3. First, you need to use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partitions to occupy all the space available to the extended partition. The FDISK utility will assign a drive letter (i.e. C:, D:, E:,.....) to each partition shown in the FDISK program. After the FDISK procedure, reboot your system by using the same disk.

Note: DOS 6.2X and Windows 95A can only support up to 2.1GB of HDD partition. If you use the FDISK utility with one of the operating systems mentioned above, you can only install your HDD into any partitions no larger than 2.1GB.

4. Now, use the FORMAT utility to format all the partitions you've created. When formatting the primary partition (C:), key in the command, "FORMAT C:/S."

Note: FORMAT C:/S can transfer all the necessary system files into the primary partition of your hard disk. Afterwards, your HDD will become a bootable drive.

5. Install all the necessary drivers for CD-ROM, Mouse, etc.
6. Setup the complete operating system according to your OS installation guide.

Step 13

Install Drivers & Software Components

Please note that all the system utilities and drivers are designed for Win 9x/2000/ME/XP/NT operating systems only. Make sure your operating system is already installed before running the driver's installation CD-ROM programs.

1. Insert the bundled AV42 CD-ROM into your CD-ROM drive. The auto-run program will display the driver's main installation window on screen.
2. Choose "Install VIA Driver" and complete it.
3. Choose "Install Audio Device Driver" and complete it.
4. Choose "Install USB2.0 Driver" and complete it.
5. Exit from the autorun driver's installation program.

✿ Please refer to section **Chapter 4 Software Utility** to install drivers.

3.2 Jumper Settings

Several hardware settings are made through the use of mini jumpers to connect jumper pins on the mainboard. Pin #1 could be located at any corner of each jumper, you just find the location with a white right angle which stands for pin 1#. There are several types of pin 1# shown as below:

3-pin and multi (> 3) pin jumpers shown as following:

Pin #1 to the left:



Pin #1 on the top:





Pin #1 to the right:



Pin #1 on the bottom:



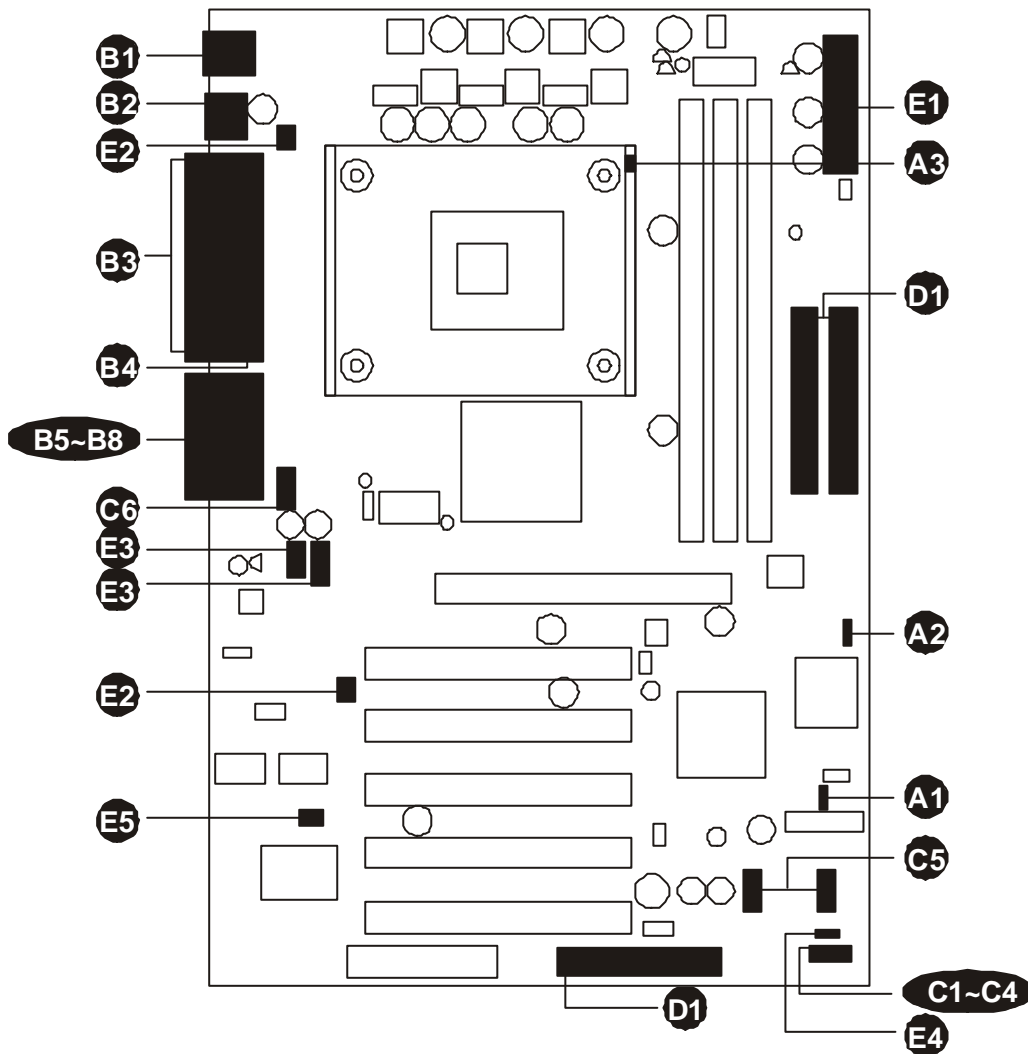
Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To short jumper pins, simply place a plastic mini jumpers over the desired pair of pins.

Caution!

1. Do not remove the mainboard from its antistatic protective packaging until you are ready to install it.
2. Carefully hold the mainboard by its edges and avoid touching its components. When putting the mainboard down, place it on top of its original packaging film, on an even surface, and components side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) whenever handling this equipment.

Jumpers & Connectors Guide

Use the mainboard layout on page 11 to locate CPU socket, memory banks, expansion slots, jumpers and connectors on the mainboard during the installation. The following list will help you to identify jumpers, slots, and connectors along with their assigned functions:



CPU/Memory/Expansion Slots

- Socket 478 : CPU Socket for Intel Pentium 4/Celeron processor
- DIMM1/2/3 : Two 184-pin DIMM Slots for 128, 256, 512 MB, and 1GB of 2.5V DDR SDRAM
(The total installed memory does not exceed 3GB.)
- Expansion Slots : Five 32-bit PCI Slots; one AGP Slot; one CNR Slot

Jumpers

- A1** JP1 : Clear CMOS setting
- A2** JP3 : BIOS written protection
- A3** JP5 : CPU FSB setting

Back-Panel Connectors

- B1** MS : PS/2 mouse port
- B1** KB : PS/2 keyboard port
- B2** USB1/2 : 2 USB(Universal Serial Bus) ports
- B3** COM1/2 : Serial ports 1/2 (DB9 male)
- B4** LPT1 : Parallel port (DB25 female)
- B5** LINE-OUT : Line-Out port
- B6** LINE-IN : Line-In port
- B7** MIC-IN : Mic-In port
- B8** MIDI/GAME : MIDI/Game port

Front-Panel Connectors

- C1** MSG LED : Green/Power LED
- C2** HDD LED : IDE drive active LED
- C3** PWR BTN : ATX power on/off momentary type switch
- C4** RST : Hardware reset switch
- C5** USB2/3 : Extended USB headers
- C6** AUDIO : Front-panel audio header

Internal Peripheral Connectors

- D1** FDD1 : Floppy disk drive interface
- D1** IDE1 : IDE primary interface (dual-channel)
- D1** IDE2 : IDE secondary interface (dual-channel)

Other Connectors

- E1** ATX1 : ATX power connector
- E2** CPUFAN1 : CPU fan connector
- E2** CASFAN1 : System fan connector
- E3** CD1/2 : Audio CD_IN connectors
- E4** SJ1 : Single-color MSG LED connector
- E5** SIR : IR header

Jumpers

A1 Clear CMOS Setting (JP1)

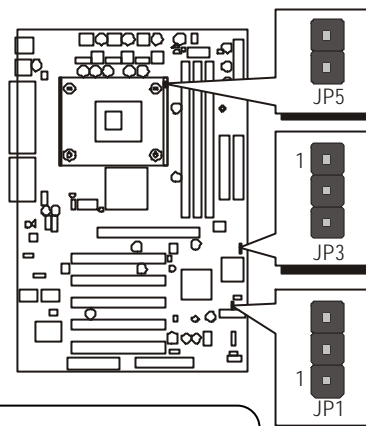
JP1 is used to clear CMOS data. Clearing CMOS will result in the permanently erasing previous system configuration settings and the restoring original (factory-set) system settings.



Pin 1-2 (Default)



Pin 2-3 (Clear CMOS)



- Step 1. Turn off the system power (PC-> Off).
- Step 2. Remove ATX Power cable from ATX Power connector.
- Step 3. Remove jumper cap from JP1 pins 1-2.
- Step 4. Place the jumper cap on JP1 pins 2-3 for a few seconds.
- Step 5. Return the jumper cap to pins 1-2.
- Step 6. Plug ATX Power cable into ATX Power connector.
- Step 7. Turn on the system power (PC-> On).

A2 BIOS Written Protection (JP3)

JP3 is used to protect BIOS from abnormal writing. You may choose to place jumper cap on pins 2-3 for BIOS written protection; however, please place jumper cap on pins 1-2 if you need to reflash BIOS.



Pin 1-2 (Unprotected)



Pin 2-3 (Protected)

A3 CPU FSB Setting (JP5)

AV42 provides jumper JP5 to configure front side bus at 400/533MHz.



Short: Auto-detect (400 or 533MHz)

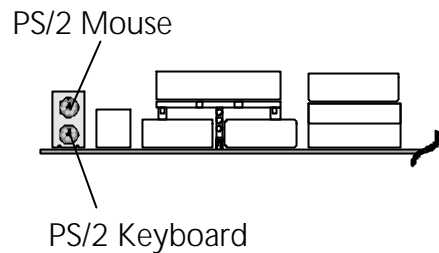


Open: 533MHz

☞ **Back-Panel Connectors**

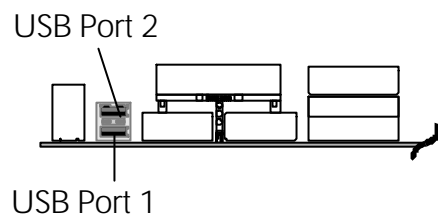
B1 PS/2 Mouse & Keyboard Connectors

Two 6-pin female PS/2 Mouse & Keyboard connectors are located on the rear panel of the mainboard. Depending on the computer housing you use (desktop or tower), the PS/2 Mouse connector is situated at the top of the PS/2 Keyboard connector when the mainboard is laid into a desktop, as opposed to a tower where the PS/2 Mouse connector is located at the right of the PS/2 Keyboard's. Plug the PS/2 Mouse and Keyboard jacks into their corresponding connectors.



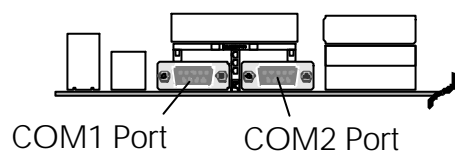
B2 USB1/2 Port Connectors

This mainboard offers 2 USB ports on front-panel. Plug each USB device jack into an available USB1/2 connector.



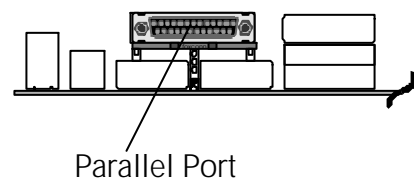
B3 COM1/2 Port Connectors

This mainboard can accommodate two serial devices on COM1/2. Attach a serial device cable to the DB9 serial port COM1/2 on the back-panel of your computer.



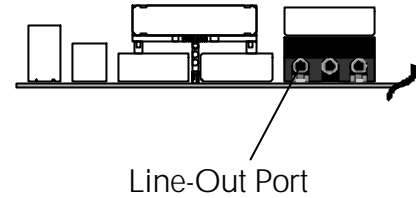
B4 Parallel Port Connector

One DB25 female parallel connector is located on the rear panel of the mainboard. Plug the connection cable from your parallel device (printer, scanner, etc.) into this connector.



B5 Line-Out Port Connector

Line-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers.



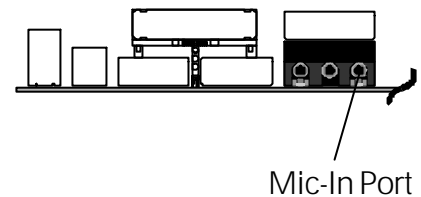
B6 Line-In Port Connector

Line-In is a stereo line-level input port that accepts a 1/8-inch TRS stereo plug. It can be used as a source for digital sound recording, a source to be mixed with the output, or both.



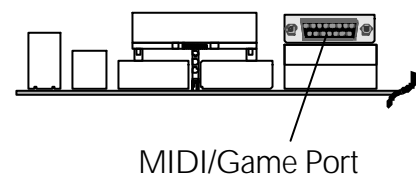
B7 Mic-In Port Connector

Mic-In is a 1/8-inch jack that provides a mono input. It can use a dynamic mono or stereo microphone with a resistance of not more than 600 Ohms.



B8 MIDI/Game Port Connector

The MIDI/Game port is a 15-pin female connector. This port can be connected to any IBM PC compatible game with a 15-pin D-sub connector.



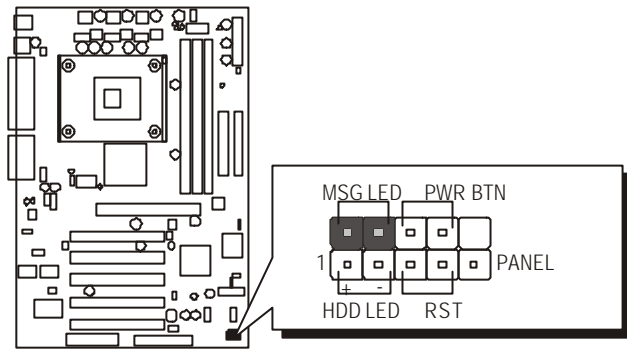
MIDI Instrument Connection

You will need a MIDI adapter to connect a MIDI compatible instrument to the sound card. The MIDI adapter can in turn be connected to the Joy-stick/MIDI port. You will also need the MIDI sequencing software to run MIDI instruments with your computer into this connector.

☞ **Front-Panel Connectors**

① **MSG LED Connector (Green/Power LED)**

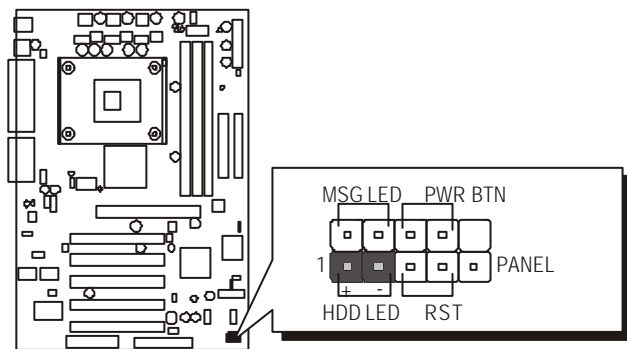
This header is dual-color LED function. Dual-color LED function is defined by either Power LED or Green LED. The Green LED indicates that the system is currently in one of the power saving modes (Doze/Standby/Suspend). When the system resumes to a normal operation mode, the Green LED will go off, and Power LED on. This Power LED will go off during power saving mode. Attach a 2-pin MSG LED cable to (MSG LED) header.



Note : Please notice all the LED connectors are directional. If your chassis LED does not light up during running, please change it to an opposite direction.

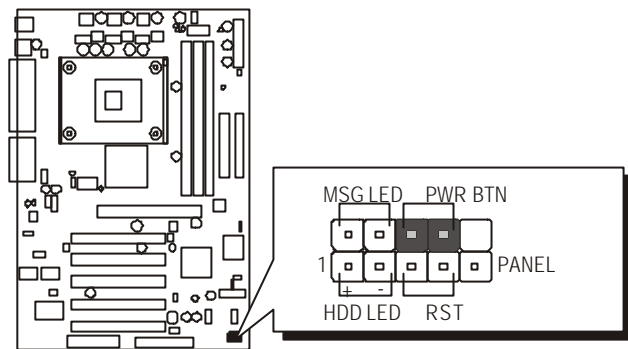
② **HDD LED Connector (HDD LED)**

Attach the connector cable from the IDE device LED to the 2-pin (HDD LED) header. The HDD LED lights up whenever an IDE device is active.



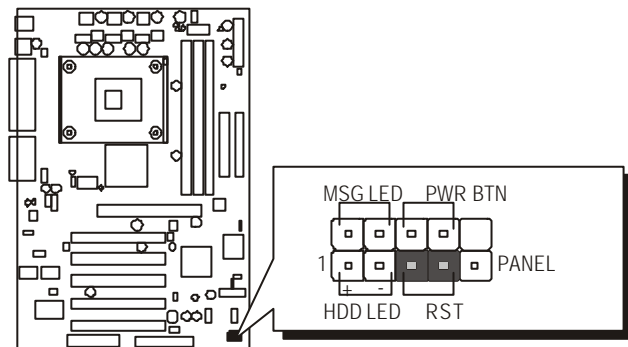
③ ATX Power On/Off Switch Connector (PWR BTN)

The Power On/Off Switch is a momentary type switch used for turning on or off the system ATX power supply. Attach the connector cable from the Power Switch to the 2-pin (PWR BTN) header on the mainboard.



④ Hardware Reset Connector (RST)






Attach the 2-pin hardware reset switch cable to the (RST) header. Pressing the reset switch causes the system to restart.



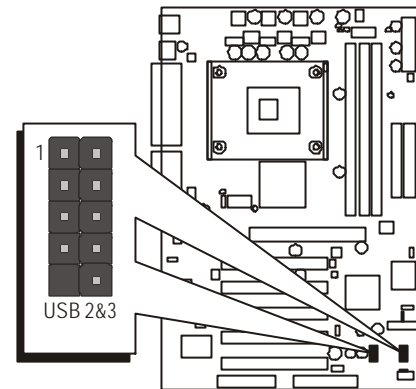
Ⓞ Extended USB Headers (USB2&3)

These headers are used to connect cables to USB connectors mounted on front-panel or back-panel. The USB cable is optional at the time of purchase.

Pin Assignments:

VREG_FP_USBPWR0	1		2	VREG_FP_USBPWR0
USB_FP_P0-	3		4	USB_FP_P1-
USB_FP_P0+	5		6	USB_FP_P1+
GND	7		8	GND
KEY	9		10	USB_FP_OC0






USB 2&3



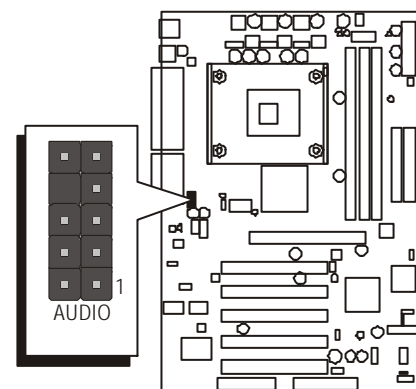
Ⓞ Front-Panel Audio Header (AUDIO)

This header allows users to install an auxiliary Front-Oriented Audio port for easier access. Either the Line-Out port connector on back-panel or Front-Panel Audio header is available at the same time. If you would like to use this header on front-panel, please remove all jumpers from the Audio header and install your special extra audio cable instead. Two mini jumpers must be setted on pins 5-6 and pins 9-10, when this header is not used.

Pin Assignments:

AUD_RET_L	10		9	AUD_FRONT_L
KEY	8		7	N/C
AUD_RET_R	6		5	AUD_FRONT_R
AUD_VCC	4		3	AUD_MIC_BIAS
AUD_GND	2		1	AUD_MIC

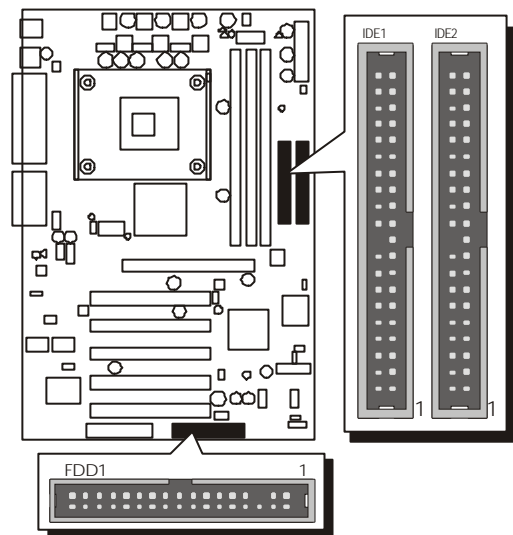
AUDIO



☞ **Internal Peripheral Connectors**

📁 **Enhanced IDE and Floppy Connectors**

AV42 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2), providing support for up to four IDE devices, such as CD-ROM and Hard Disk Drive (HDD). This mainboard also includes one 34-pin floppy disk controller (FDD1) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA **133/100/66** ribbon cable to connect IDE HDD, and one 34-pin ribbon cable for FDD connection.

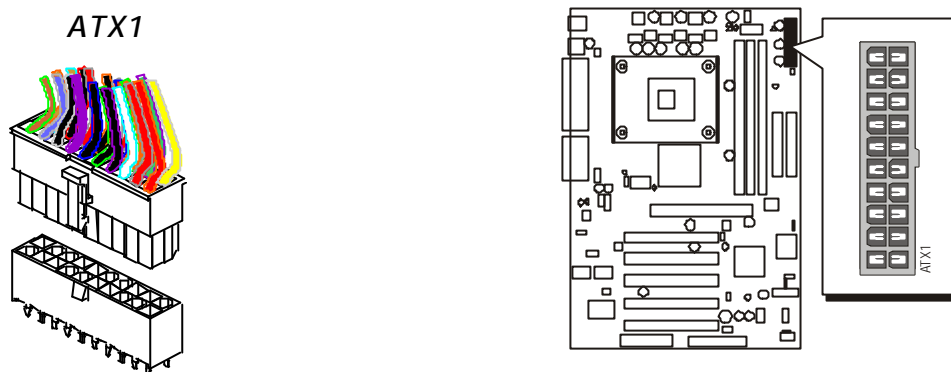


Important: Ribbon cables are directional; therefore, connect the red cable stripe to the same side.

☞ **Other Connectors**

Ⓜ **ATX Power Supply Connector (ATX1)**

This motherboard uses 20-pin standard Pentium 4 ATX power header (ATX1). Please make sure you plug it in the right direction.

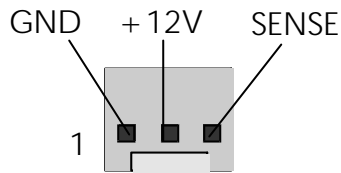


A traditional ATX system remains in the power-off stage when AC power resumes from power failure. However, it is inconvenient for a network server or workstation if there is not an UPS to execute power-on. Thus, this motherboard supports an AC Power Auto Recovery function to solve this problem. You may enable the function, "PWRON After PWR-Fail," in the sub-menu of "Power Management Setup" within the BIOS setup program.

- Note 1:** The ATX power connector is directional and will not go in unless the guides match perfectly, making sure that pin#1 is properly positioned.
- Note 2:** Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.
- Note 3:** Your ATX power supply must be supplied to ACPI +5V standby power and at least 720mA compatible.
- Note 4:** Make sure your power supply have enough power for higher speed processor installed.

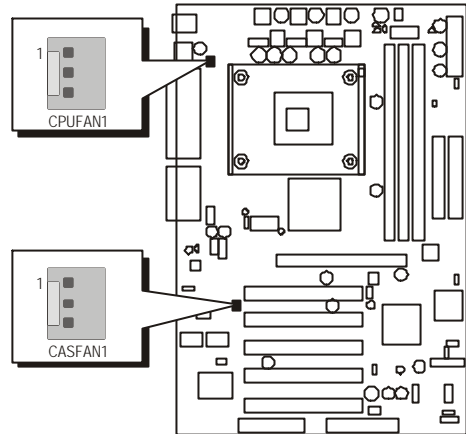
Cooling Fan Connectors - CPUFAN1 & CASFAN1

AV42 mainboard provides two onboard 12V cooling fan power connectors to support CPU (CPUFAN1), and System (CASFAN1) cooling fans.



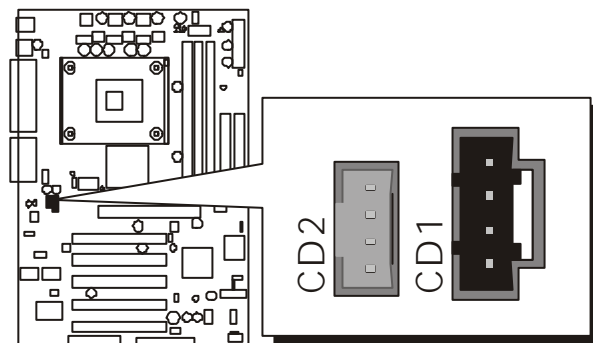
Note:

Both cable wiring and type of plug may vary, which depend on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.



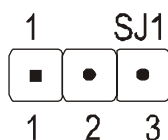
Audio CD_IN Connectors (CD1/2)

Ports CD1/2 are used to attach audio connector cables from the CD-ROM/DVD-ROM drives.



E4 Single-Color MSG LED (SJ1)

This header is reserved for future use. The function of LED varies in different ACPI modes: LED becomes light in mode S0; blinking in modes S1/S3; and dark in modes S4/S5.

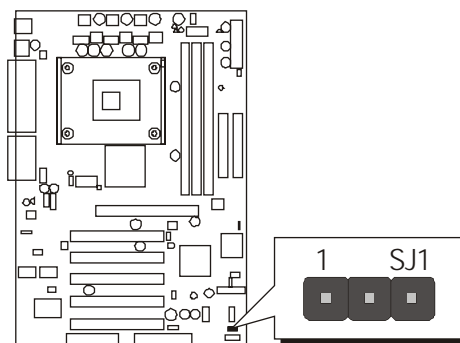


Pin Assignments:

1=ACPI LED

2=ACPI LED

3=5VSB

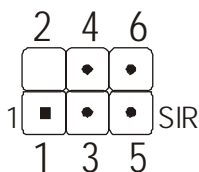


E5 IR Header (SIR)

If you have an Infrared device, this mainboard can implement IR transfer function. To enable this function, follow the step:

Step 1. Attach the 5-pin infrared device cable to the SIR header.
(Refer to the below diagram for the SIR pin assignments.)

This mainboard supports Normal or IrDA transfer modes.



Pin Assignments:

1=N/A

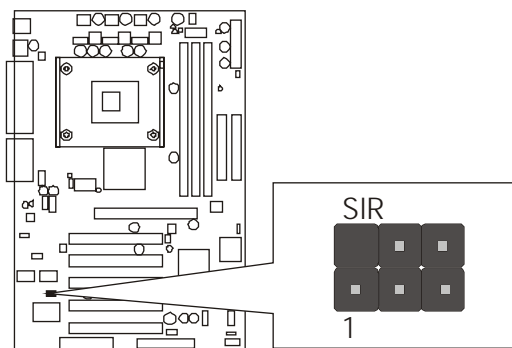
4=GND

2=KEY

5=IRTX

3=+5V

6=IRRX



Note: Before connect your IR device to the SIR header, please note that every pin is properly allocated. If not, your IR device may be damaged.

3.3 System Memory Configuration

AV42 mainboard has three 184-pin DIMM slots that allow you to install from 128MB to 1GB of system memory. Each 184-pin DIMM (Dual In-Line Memory Module) slot can accommodate 128MB, 256MB, 512MB, and 1GB of PC2100 compliant 2.5V single or double side 64-bit wide data path DDR SDRAM modules.

Install Memory:

Install memory in any or all of the slots and in any combination shown as follows.

DIMM Slot	Memory Modules	Module Quantity
DIMM 1	128MB, 256MB, 512M, and 1GB 184-pin 2.5V DDR SDRAM DIMM	x 1
DIMM 2	128MB, 256MB, 512M, and 1GB 184-pin 2.5V DDR SDRAM DIMM	x 1
DIMM 3	128MB, 256MB, 512M, and 1GB 184-pin 2.5V DDR SDRAM DIMM	x 1

Note: The total installed memory does not exceed 3GB.

Note: You need not to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

Upgrade Memory:

You can easily upgrade the system memory by inserting additional DDR SDRAM modules in any available DIMM slots. The total system memory is calculated by simply adding up the memory in all DIMM slots. After upgrading, the new system memory value will automatically be computed and displayed in "Standard CMOS Setup" of BIOS setup program.

4 SOFTWARE UTILITY

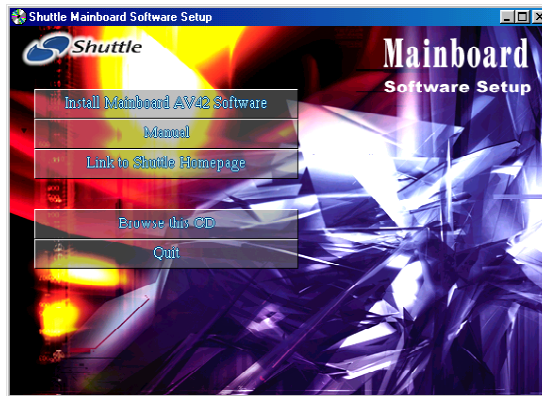
4.1 Mainboard CD Overview

Note: AV42 CD-ROM is subject to change without notice.

To enable your AV42 mainboard, insert it in your CD-ROM drive and the CD AutoRun screen will appear. If the AutoRun screen does not appear, double click or run D:\Autorun.exe (assuming that your CD-ROM drive is drive D:).

Navigation Bar Description:

- ☞ Install Mainboard AV42 Software - Installing the relevant drivers .
- ☞ Manual - AV42 user's manual in PDF format.
- ☞ Link to Shuttle Homepage - Link to Shuttle website homepage.
- ☞ Browse this CD - Allows you to see contents of this CD.
- ☞ Quit - Exit from this CD.



4.2 Install Mainboard AV42 Software

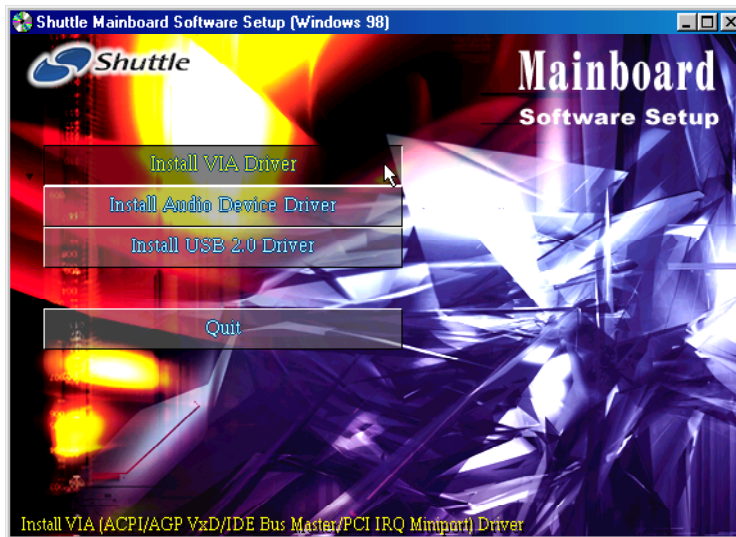
Insert the attached CD-ROM in your CD-ROM drive and the AutoRun screen will appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen. Using your pointing device (e.g. mouse) clicking on the " Install Mainboard AV42 Software" bar to run into the sub-menu. It includes:

- [4.2.A] Install VIA Driver
- [4.2.B] Install Audio Device Driver
- [4.2.C] Install USB 2.0 Driver



4.2.A Install VIA Driver

Click on the "Install VIA Driver" bar to install the chipset driver.



Once you made your selection, the installation will run automatically. When the installation is done, reboot your computer to take the installation effect.

4.2.B Install Audio Device Driver

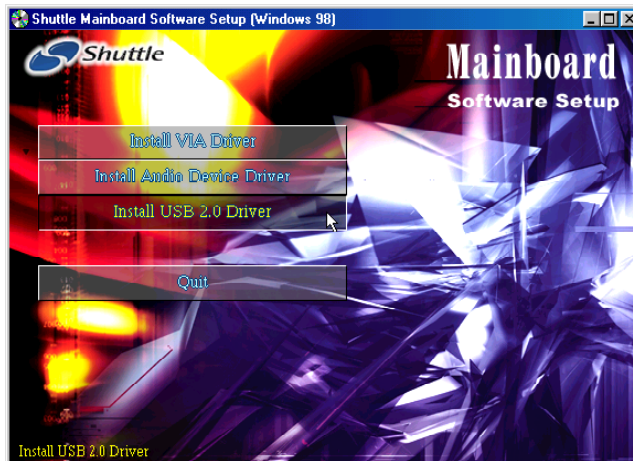
Click on the "Install Audio Device Driver" bar to install the audio driver.



Once you made your selection, the installation will run automatically. When the installation is done, reboot your computer to take the installation effect.

4.2.C Install USB 2.0 Driver

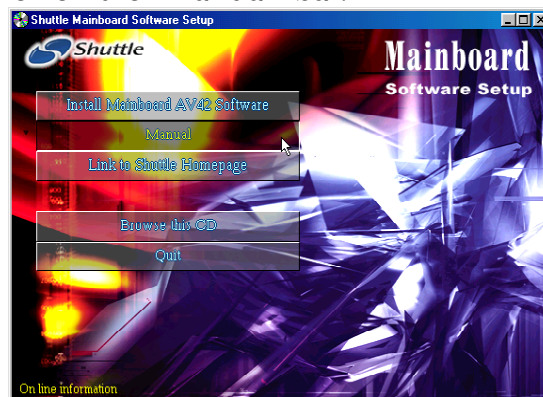
Click on the "Install USB 2.0 Driver" bar to install the USB 2.0 driver.



Once you made your selection, the installation will run automatically. When done, reboot your computer to take the installation effect.

4.3 View the User's Manual

Click on the "Manual" bar.



Click on the "AV42 Manual" bar to view AV42 user's manual. Click on the "Install Acrobat Reader" if you need to install it.



5 BIOS SETUP

AV42 mainboard's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. The information is stored in battery-backed RAM so that it is retained even if the system power turns off.

The system BIOS manages and executes a variety of related hardware functions in the system, including:

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

5.1 Enter the BIOS

To enter the BIOS (Basic Input/Output System) utility, please follow these two steps:

- Step 1.** Turn on the computer, and the system will perform its POST (Power-On Self Test) routine checks.
- Step 2.** Press < Del > key immediately in the following message, "Press DEL to enter SETUP," or simultaneously press the < Ctrl > , < Alt > , < Esc > keys.

Note 1. If you miss to enter BIOS and want to enter BIOS setup again, restart the system by pressing the < RESET > switch on computer's front-panel, or simultaneously pressing the < Ctrl > , < Alt > , < Del > keys.

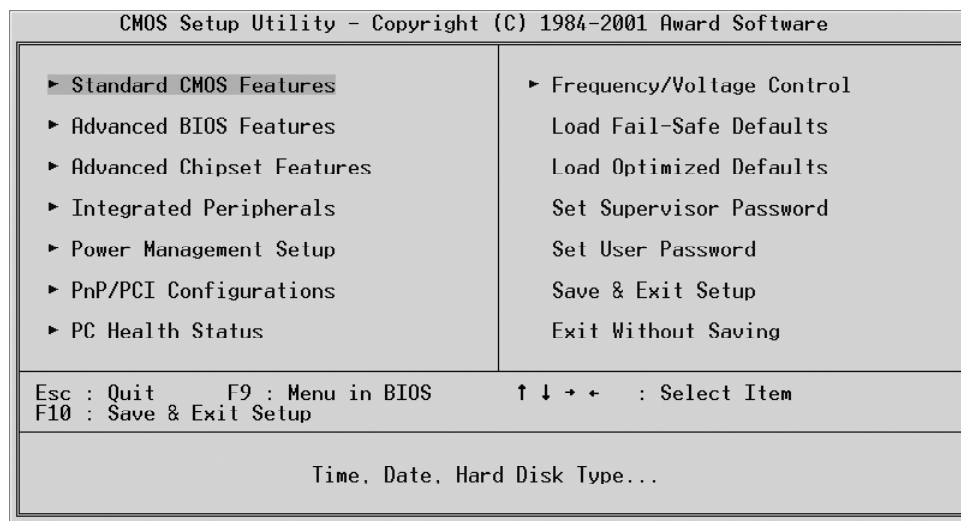
Note 2. If you do not press the keys in time to boot the system, the screen will prompt a message as follows:

"Press F1 to Continue, DEL to Enter Setup"

- Step 3.** As you enter the BIOS program, the CMOS Setup Utility will show you the Main Menu, as shown in the next section.

5.2 The Main Menu

Once you enter the AwardBIOS(tm) CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to enter the sub-menu.



Note that there is a brief description of each highlighted selection appears on the bottom of the screen.

Setup Items

The main menu includes the following setup categories. Note that some systems may not include all entries.

Standard CMOS Features

for the basic system configuration.

Advanced BIOS Features

for the advanced system configuration.

Advanced Chipset Features

to change values in the chipset registers to optimize your system performance.

Integrated Peripherals

for setting the integrated peripherals.

Power Management Setup

for setting the power management.

PnP / PCI Configurations

appear if your system supports PnP / PCI.

PC Health Status

show the current system temperature, voltage, and FAN speed.

Frequency/Voltage Control

for setting frequency/voltage control.

Load Fail-Safe Defaults

to load the BIOS default values for the minimal/stable performance of your system.

Load Optimized Defaults

to load the factory-set BIOS default values for the optimal performance of your system. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet users' needs.

Set Supervisor/User Password

to change, set, or disable a password. It allows you to limit access to the system and setup or only to setup.

Save & Exit Setup

Save CMOS value changes in CMOS and exit from setup.

Exit Without Saving

Abandon all CMOS value changes and exit from setup.

Standard CMOS Features

The category displays under the "Standard CMOS Features." Use the arrow keys to select among the items and use the <PgUp> or <PgDn> keys to choose the value you want in each item.

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software		Item Help
Standard CMOS Features		
Date (mm:dd:yy)	Wed, Oct 9 2002	Menu Level ▶ Change the day, month, year and century
Time (hh:mm:ss)	18 : 22 : 14	
▶ IDE Primary Master	[None]	
▶ IDE Primary Slave		
▶ IDE Secondary Master		
▶ IDE Secondary Slave	[None]	
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	64512K	
Total Memory	65536K	

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

Date

(mm : dd : yy)

The item sets the date of your computer. It is automatically updated.

Time

(hh : mm : ss)

The time is based on the 24-hour military-time clock. For example, 5 p.m. is 17:00:00.

IDE Primary Master/Slave, IDE Secondary Master/Slave

Press <Enter> to enter into the detailed options.

IDE HDD Auto-Detection

Press <Enter> to auto-detect HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

IDE Primary Master

Selecting 'manual' lets you set the remaining fields and select the types of the fixed disk.

Note: PRECOMP = 65535 means NONE !

➤ The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for the hard disk.

➤ The choice: CHS, LBA, Large, or Auto.

Capacity

Shows the disk drive capacity (approximated). Note that the size is usually slightly greater than that of a formatted disk.

- Auto-Display your disk drive size.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual.'

Cylinder

Set the number of cylinders for the hard disk.

- Min = 0, Max = 65535

Head

Set the number of read/write heads.

- Min = 0, Max = 255

Precomp

Warning: Setting a value of 65535 means no hard disk.

- Min = 0, Max = 65535

Landing zone

Set the landing zone size.

- Min = 0, Max = 65535

Sector

Set the number of the sector per track.

- Min = 0, Max = 255

Drive A/Drive B

Select the types of the floppy disk drive in your system.

- The choice: None, 360K, 5.25 in, 1.2M, 5.25 in, 720K, 3.5 in, 1.44M, 3.5 in, or 2.88M, 3.5 in.

Floppy 3 Mode Support

The item refers to a 3.5-inch disk with a capacity of 1.2MB, sometimes used in Japan.

- The choice: Disabled, Drive A, Drive B, or Both.

Video

Select the default video device.

- The choice: EGA/VGA, CGA 40, CGA 80, or MONO.

Halt On

Select the situation in which you want the BIOS to stop the POST process and notify you.

- The choice: All Errors, No Errors, All, But Keyboard, All, But Diskette, or All, But Disk/Key.

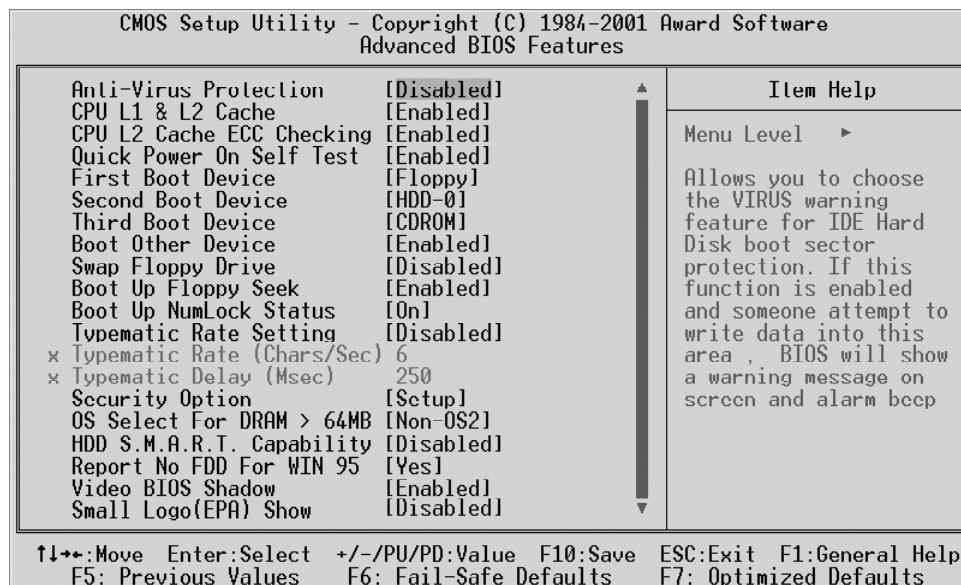
Base/Extended/Total Memory

These items are automatically detected at system start-up. These are for display only and cannot be changed.



Advanced BIOS Features

The category aims at configuring the basic operation for your system.



Anti-Virus Protection

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. Enabling this function prevents someone from writing data into this area, and BIOS will show a warning message on screen with an alarm beep.

Enabled Activates automatically when the system boots up. A warning message appears when attempting to access the boot sector or hard disk partition table.

Disabled No warning message appears when attempting to access the boot sector or hard disk partition table.

➤ The choice: Enabled or Disabled.

CPU L1 & L2 Cache

This item enables CPU L1 internal and L2 secondary cache to speed up the memory access.

➤ The choice: Enabled or Disabled.

CPU L2 Cache ECC Checking

This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory.

➤ The choice: Enabled or Disabled.

Quick Power On Self Test

This item enables Power-On Self Test (POST) after you start up the computer. If it is enabled, BIOS will shorten or skip some check items during POST.

- The choice: Disabled or Enabled.

First/Second/Third Boot Device

The BIOS is loaded in the operating system from the devices selected in sequence.

- The Choice: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, or Disabled.

Boot Other Device

Select your boot device priority.

- The choice: Disabled or Enabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the assigned drive letters.

- The choice: Disabled or Enabled.

Boot Up Floppy Seek

Seeks disk drives during booting-Up as enabled.

- The choice: Disabled or Enabled.

Boot Up NumLock Status

The NumLock key is active when set as on.

- The choice: Off or On.

Typematic Rate Setting

Keystrokes repeat at a rate by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

- The choice: Disabled or Enabled.

Typematic Rate (Chars/Sec)

The item defines how many characters per second are generated when a key is held down.

- The choice: 6, 8, 10, 12, 15, 20, 24, or 30.

Typematic Delay (Msec)

The item defines how many milliseconds must elapse before a held-down key begins generating repeat characters.

- The choice: 250, 500, 750, or 1000.

Security Option

Select whether the password is required at system start-up or at entering the Setup Utility.

- The choice: Setup or System.

OS Select For DRAM > 64MB

The item is required as more than 64MB memory is installed in OS/2.

- The choice: Non-OS2 or OS2.

HDD S.M.A.R.T Capability

The item enables or disables the HDD system management function.

- The choice: Disabled or Enabled.

Report No FDD for WIN95

The item defines if reporting no FDD runs for WIN95.

- The choice: No or Yes.

Video BIOS Shadow

When enabled, the VGA BIOS is copied to the system DRAM for enhancing performance.

- The choice: Disabled or Enabled.

Small Logo (EPA) Show

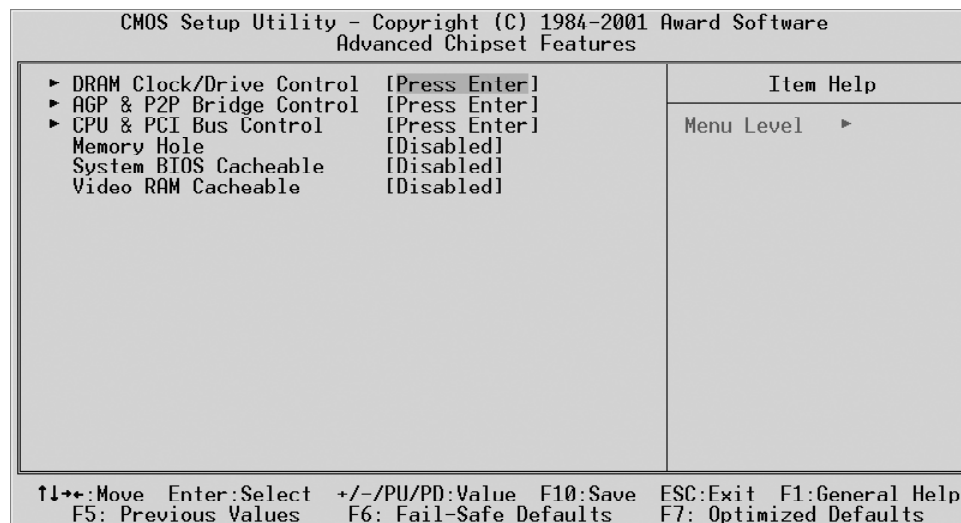
This item allows you to enable/disable the EPA logo.

- The choice: Disabled or Enabled.



Advanced Chipset Features

The category describes critical timing parameters of the mainboard. The default values are recommended unless you are quite familiar with the technical specifications of your system hardware. If not, change any value could result in fatal errors or instability in your system.



DRAM Clock/Drive Control

Press <Enter> to enter into the detailed options.

Current FSB Frequency

This item shows the current CPU FSB speed.

Current DRAM Frequency

This item shows the current DRAM speed.

DRAM Clock

This item allows you to control the DRAM speed.

➤ The Choice: 100MHz, 133MHz, or By SPD.

When the CPU speed is set at 100MHz, the DRAM speed can be set at 100MHz (by Host Clock), or 133MHz. (CPU:DRAM = 3:4)

When the CPU speed is set at 133MHz, the DRAM speed is only set at 133MHz (by Host Clock).

DRAM Timing

This item allows you to select the value in this field, depending on which kind of DDR DRAM is installed.

➤ The Choice: Manual or By SPD.

The following five items will become selectable if you choose the "Manual" item.

SDRAM CAS Latency

➤ The Choice: 3, 2.5, or 2.

Bank Interleave

➤ The Choice: Disabled, 2 Bank, or 4 Bank.

Precharge to Active(Trp)

➤ The Choice: 2T or 3T.

Active to Precharge(Tras)

➤ The Choice: 5T or 6T.

Active to CMD(Trcd)

➤ The Choice: 2T or 3T.

DRAM Burst Len

This item allows you to select the DRAM burst length.

➤ The Choice: 4 or 8.

DRAM Command Rate

This item allows you to select the DRAM executed rate.

➤ The Choice: 2T Command or 1T Command.

APG & P2P Bridge Control

Press <Enter> to enter into the detailed options.

AGP Aperture Size

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range, dedicated to the graphics memory address space. The host cycles that hit the aperture range are forwarded to the AGP without any translation.

➤ The Choice: 256M, 128M, 64M, 32M, 16M, 8M, or 4M.

AGP Mode

This item allows you to select the AGP Mode.

➤ The Choice: 4X, 2X, or 1X.

AGP Driving Control

This item enables the system to automatically select its output buffer drive strength, or make it manually selectable by an end-user.

➤ The Choice: Auto or Manual.

AGP Driving Value

This item enables an end-user to manually select the AGP output buffer drive strength.

➤ Key in a HEX number: Min = 0000, Max = 00FF.

AGP Fast Write

This item enables or disables the fast written function for the AGP card.

- The Choice: Disabled or Enabled.

AGP Master 1 WS Write

When enabled, writing to the AGP is implemented with a single delay.

- The Choice: Disabled or Enabled.

AGP Master 1 WS Read

When enabled, reading to the AGP is implemented with a single delay.

- The Choice: Disabled or Enabled.

CPU & PCI Bus Control

Press <Enter> to enter into the detailed options.

CPU to PCI Write Buffer

When enabled, the writing from the CPU to PCI bus is buffered so as to compensate for the speed differences between the CPU and PCI bus.

When disabled, the writing is not buffered and the CPU must wait until the writing is completed before starting another written cycle.

- The Choice: Disabled or Enabled.

PCI Master 0 WS Write

When enabled, writing to the AGP bus is implemented with no delay.

- The Choice: Enabled or Disabled.

PCI Delay Transaction

The chipset has an embedded 32-bit post written buffer to support delay transactions cycles. Select enabled to support compliance with PCI specification version 2.1.

- The Choice: Disabled or Enabled.

Memory Hole

In order to improve performance, some space in memory can be reserved for ISA cards.

- The Choice: Disabled or 15M-16M.

System BIOS Cacheable

Selecting enabled allows caching the system BIOS ROM at F0000h-FFFFFh, for better performance. However, if any program is written to this memory area, a system error may be generated.

- The choice: Disabled or Enabled.

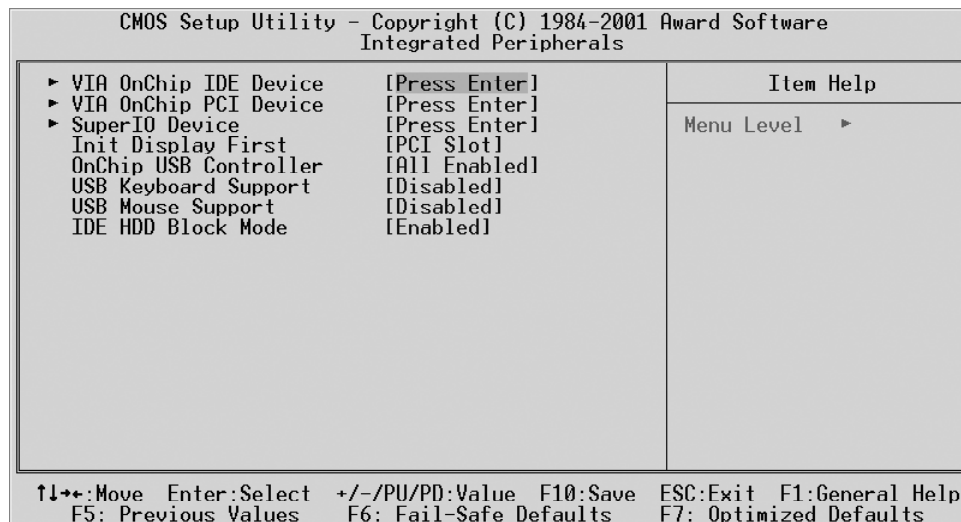
Video RAM Cacheable

Selecting enabled allows caching the video RAM, for better performance. However, if any program is written to this memory area, a system error may be generated.

- The Choice: Disabled or Enabled.



Integrated Peripherals



VIA OnChip IDE Device

Press <Enter> to enter into the detailed options.

OnChip IDE Channel0

The chipset contains a PCI IDE interface with support to two IDE channels. Select enabled to activate the primary IDE interface; select disabled to de-activate this interface.

➤ The choice: Disabled or Enabled.

OnChip IDE Channel1

The chipset contains a PCI IDE interface with support to two IDE channels. Select enabled to activate the secondary IDE interface; select disabled to de-activate this interface.

➤ The choice: Disabled or Enabled.

IDE Prefetch Mode

The onboard IDE drive interfaces support IDE prefetching for faster drive access. If you install a primary and/or secondary add-on IDE interface, set this item to disabled as the interface does not support prefetching.

➤ The choice: Disabled or Enabled.

Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) items let you set a PIO mode (0-4) for each of the four IDE devices. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

➤ The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, or Mode 4.

Primary/Secondary Master/Slave UDMA

If you install a device that supports UltraDMA that provides faster access to IDE devices, change the item to Auto.

- The choice: Disabled or Auto.

VIA OnChip PCI Device

Press <Enter> to enter into the detailed options.

VIA-3058 AC97 Audio

This item allows you to control the onboard AC 97 audio.

- The Choice: Auto or Disabled.

VIA-3068 MC97 Modem

This item allows you to control the onboard modem.

- The Choice: Auto or Disabled.

Super I/O Device

Press <Enter> to enter into the detailed options.

Onboard FDC Controller

Select enabled if your system has a floppy disk controller (FDC). If you install add-on FDC or the system has no floppy drive, select disabled.

- The choice: Disabled or Enabled.

Onboard Serial Port1/2

Select an address and corresponding interruption for the first and second serial ports.

- The choice: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Auto.

UART Mode Select

This item allows you to select the mode for the onboard serial port2.

- The choice: Normal or IrDA.

UR2 Duplex Mode

This item allows you to select the IR half/full duplex function.

- The choice: Full or Half.

Onboard Parallel Port

This item allows you to define the onboard parallel port controller I/O address setting.

- The choice: Disabled, 378/IRQ7, 278/IRQ5, or 3BC/IRQ7.

Parallel Port Mode

Select a mode for the onboard parallel(printer) port. Select SPP unless you are quite familiar with your hardware/software.

- The choice: SPP, EPP, ECP, or ECP + EPP.

ECP Mode Use DMA

Select a DMA channel for the parallel port as using the ECP mode.

- The choice: 1 or 3.

Game Port Address

This item selects the game port address.

- The choice: Disabled, 201, or 209.

Midi Port Address

This item selects the MIDI port address.

- The choice: Disabled, 330, or 300.

Midi Port IRQ

This item selects MIDI port IRQ.

- The choice: 5 or 10.

Init Display First

This item allows you to activate the PCI slots or the onchip VGA.

- The choice: PCI Slot or AGP.

OnChip USB Controller

Set enabled if your system has a USB installed. If you add a higher performance controller, you need to disable this item.

- The Choice: All Disabled, All Enabled, 1&2 USB Port, 1&3 USB Port, 2&3 USB Port, 1 USB Port, 2 USB Port, or 3 USB Port.

USB Keyboard Support

Select enabled if your system contains a USB controller and you have a USB keyboard.

- The Choice: Disabled or Enabled.

USB Mouse Support

Enable this item if you need to use a keyboard connected through the USB port in a legacy operating system (such as DOS) that does not support Plug and Play.

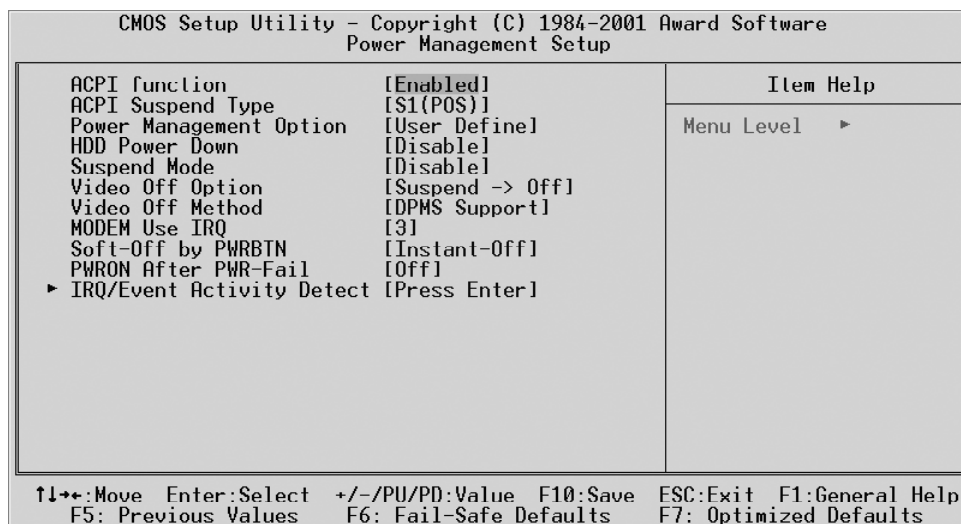
- The Choice: Disabled or Enabled.

IDE HDD Block Mode

The chipset contains a PCI IDE interface with support for two IDE channels. Select enabled to activate the primary and/or secondary IDE interface. Select disabled to de-activate this interface, in case that you install a primary and/or secondary add-in IDE interface.

- The choice: Disabled or Enabled.

Power Management Setup



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

ACPI Function

This item allows you to enable the Advanced Configuration and Power Management (ACPI).

- The choice: Enabled or Disabled.

ACPI Suspend Type

This item allows you to select kind of sleeping states when system suspending.

- The choice: S1(POS), S3(STR), or S1 & S3.

Power Management Option

This item allows you to select the type/degree of power- saving modes.

- User Define allows you to change each mode.
Suspend Mode = Disabled or 1 min ~ 1 hr.
- Min Saving minimum power management
Suspend Mode = 1 hr.
- Max Saving maximum power management
Suspend Mode = 1 min.

- The choice: User Define, Min Saving, or Max Saving.

HDD Power Down

When enabled, the hard disk drive will be powered down, with all other devices remaining active.

- The choice: Disabled or 1 Min ~ 15 Min.

Suspend Mode

When enabled, all devices except the CPU will be shut off.

- The choice: Disabled, 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, or 1 Hour.

Video Off Option

When enabled, this feature allows the VGA adapter to operate in a power-saving mode.

- Always On Monitor will remain on during the power-saving mode.
- Suspend --> Off Monitor is blanked when the system enters into the suspend mode.
- MODEM Use IRQ The item allocates certain IRQ to the modem.
- The choice: Always On, Suspend -> Off, or MODEM Use IRQ.

Video Off Method

This item defines the state in which the monitor is blanked.

- Blank Screen writes blanks to the video buffer.
- V/H SYNC + Blank makes the system turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
- DPMS Support initially displays the power management signaling.
- The choice: Blank Screen, V/H SYNC + Blank, or DPMS Support.

MODEM Use IRQ

This item defines which IRQ the modem can use.

- The choice: N/A, 3, 4, 5, 7, 9, 10, or 11.

Soft-Off by PWRBTN

When set as delay for 4 seconds, pressing down the power button for more than 4 seconds forces the system to enter the soft-off state.

- The choice: Delay 4 Sec or Instant-Off.

PWRON After PWE-Fail

This item defines if the system will be rebooted after the power fails.

- The choice: Off, On, or Former-Sts.

IRQ/Event Activity Detect

Press <Enter> to enter into the detailed options.

USB Resume from S3

When enabled, any activity from the USB device will awaken the system from S3 mode.

- The choice: Disabled or Enabled.

VGA

When on, you can set the VGA to awaken the system.

- The choice: OFF or ON.

LPT & COM

When each or both stay on, any activity from one of the peripheral devices or IRQs will wake up the system.

- The choice: NONE, LPT, COM, or LPT/COM.

HDD & FDD

When on, any activity from one of the peripheral devices will wake up the system.

- The choice: OFF or ON.

PCI Master

When on, any activity from one of the peripheral devices will wake up the system.

- The choice: OFF or ON.

PowerOn by PCI Card

This item enables/disables the power-on function of the PCI card.

- The choice: Disabled or Enabled.

WOL/WOM/Ring Resume

When enabled, any activity from LAN or the modem will awaken the system from a power-saving mode.

- The choice: Disabled or Enabled.

RTC Alarm Resume

When enabled, set the date and time of the RTC (Real-Time Clock) alarm will awaken the system from a suspend mode.

- The choice: Disabled or Enabled.

Date (of Month)

This item selects the alarm date.

- Key in a DEC number: Min = 0, Max = 31.

Resume Time (hh:mm:ss)

This item selects the alarm time.

[hh]

➤ Key in a DEC number: Min = 0, Max = 23.

[mm/ss]

➤ Key in a DEC number: Min = 0, Max = 59.

IRQs Activity Monitoring

Primary INTR

Staying on will enable a specific IRQ.

➤ The choice: OFF or ON.

A cluster of IRQs is listed as follows. As one certain IRQ is enabled, any activity at it will awaken the system from a power-saving mode.

IRQ3 (COM2)

IRQ4 (COM1)

IRQ5 (LPT2)

IRQ6 (Floppy Disk)

IRQ7 (LPT1)

IRQ8 (RTC Alarm)

IRQ9 (IRQ2 Redir)

IRQ10 (Reserved)

IRQ11 (Reserved)

IRQ12 (PS/2 Mouse)

IRQ13 (Coprocessor)

IRQ14 (Hard Disk)

IRQ15 (Reserved)

➤ The choice: Disabled or Enabled.

PnP/PCI Configurations

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software PnP/PCI Configurations		Item Help
PNP OS Installed	[No]	Menu Level ▶ Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure non-boot devices.
Reset Configuration Data	[Disabled]	
Resources Controlled By × IRQ Resources	[Auto(ESCD)] Press Enter	
PCI/VGA Palette Snoop	[Disabled]	
Assign IRQ For VGA	[Enabled]	
Assign IRQ For USB	[Enabled]	

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

This category configures how PnP and PCI operate in your system. Correctly setting up the IRQ and DMA (both PnP and PCI use) assignments will make your system work stably. It is strongly recommended that only technical users make changes to the default settings.

PnP OS Installed

This item allows you to define if PnP OS is installed.

- The choice: No or Yes.

Reset Configuration Data

When enabled, any PnP configuration data stored in the BIOS will be cleared from memory, with new data created.

- The choice: Disabled or Enabled.

Resource controlled By

When stays auto(ESCD), the system will dynamically allocate resources to PnP devices as they are required. As set to manual, the following line "IRQ Resources" will become available to you.

- The choice: Auto(ESCD) or Manual.

IRQ Resources

When the previous item is set to manual, this item allows you to respectively assign an interruptive type for IRQ-3 to IRQ-15.

IRQ-3/4/5/7/9/10/11/12/14/15 assigned to

- The choice: PCI Device or Reserved.

PCI/VGA Palette Snoop

The item is designed to solve problems caused by some non-standard VGA cards. A built-in VGA system this mainboard contains does not need this function, so please leave this item disabled.

- The choice: Disabled or Enabled.

Assign IRQ For VGA

The item aims at assigning the IRQ line to the VGA on your system. When enabled, activity from the VGA will awaken the system.

- The choice: Disabled or Enabled.

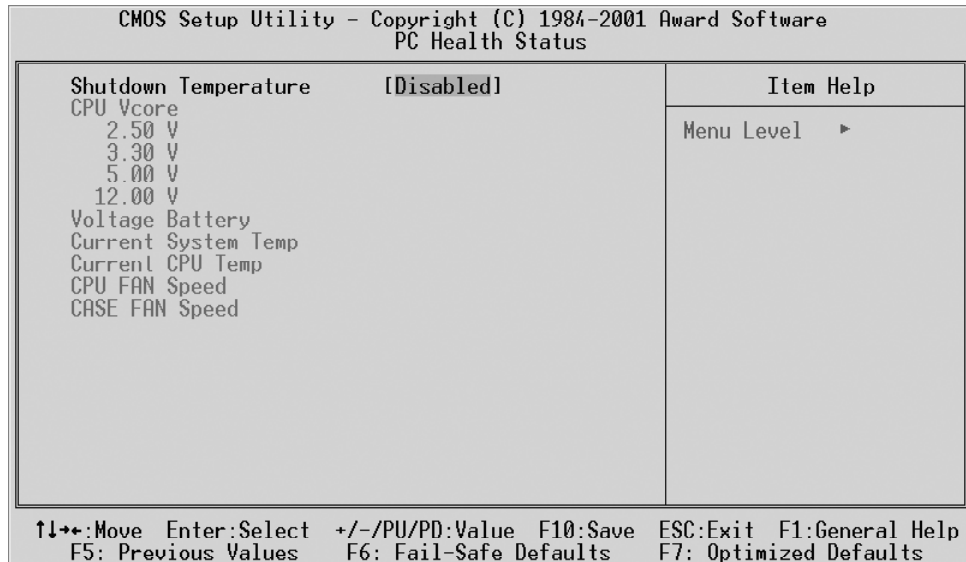
Assign IRQ For USB

The item aims at assigning the IRQ line to the USB on your system. When enabled, activity from the USB will awaken the system.

- The choice: Disabled or Enabled.



PC Health Status



Shutdown Temperature

Enables you to set the maximum temperature the system can reach before powering down.

➤ The choice: 60°C/140°F, 65°C/149°F, 70°C/158°F, Disabled.

The following items provide you with information about the current operating status on your system. You cannot make any changes to one of them, including:

CPU Vcore

2.50V

3.30V

5.00V

12.00V

Voltage Battery

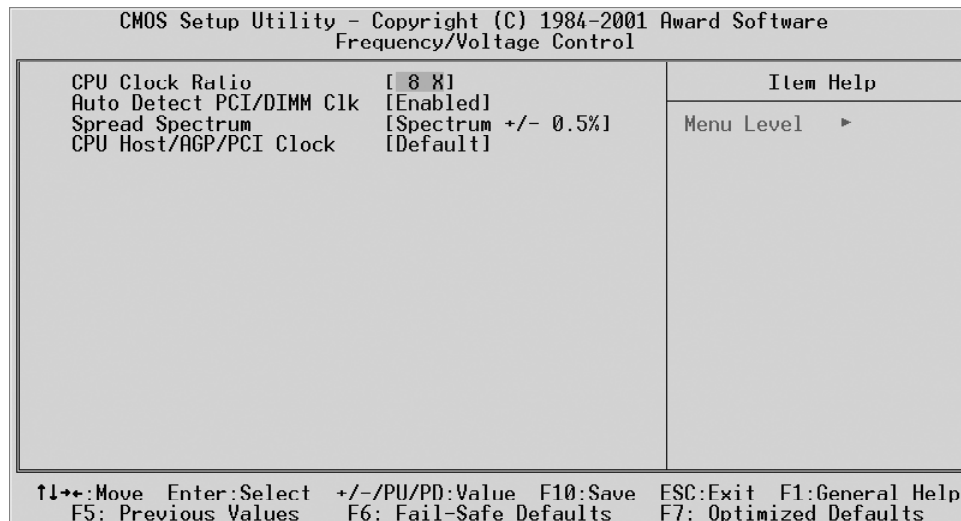
Current System Temp

Current CPU Temp

CPU FAN Speed

CASE FAN Speed

Frequency/Voltage Control



CPU Clock Ratio

The item defines a multiplier for the system FSB frequency. The formula is presented as follows:

$$\text{Multiplier} \times \text{FSB Frequency} = \text{CPU Clock Speed}$$

For example, a processor at 450MHz and FSB frequency at 100MHz ought to set the multiplier at 4.5 for: 4.5 (Multiplier) X 100MHz (FSB Frequency) = 450MHz (CPU Clock Speed).

- Key in a DEC number: Min = 8, Max = 50.

Auto Detect PCI/DIMM Clk

When enabled, the BIOS will disable the clock signal of the free DIMM and PCI slots.

- The choice: Enabled or Disabled.

Spread Spectrum

This item can reduce the EMI (Electro-Magnetic Interference) generated by the system.

- The choice: Disabled, Spectrum +/-0.5%, Spectrum +/-0.3%.

CPU Host/AGP/PCI Clock

This item offers several values of the FSB frequency for the processor.

- The choice: Default, 100/66/33MHz, 103/69/34MHz, 107/71/36MHz, 110/73/37MHz, 133/66/33MHz, 137/69/34MHz, 140/70/35MHz, 143/71/36MHz, 145/73/36MHz, 147/73/37MHz, 153/77/38MHz, 160/80/40MHz.

 **Load Fail-Safe Defaults**

When you press <Enter> on this item, you will see a dialog box with a message similar to:

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

Press <Y> and <Enter> to install the defaults, and v.v.

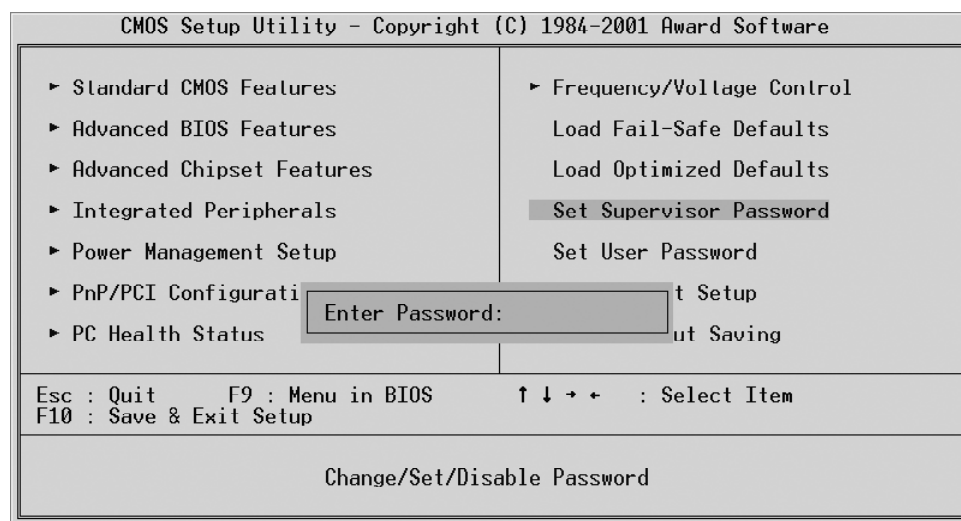
 **Load Optimized Defaults**

When you press <Enter> on this item, you will see a dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

Press <Y> and <Enter> to install the defaults, and v.v.

 **Set Supervisor/User Password**



Steps to set supervisor/user password are described as follows:

New Password Setting:

1. While pressing <Enter> to set a password, a dialog box appears to ask you enter a password.
2. Key in a new password. The password can not exceed eight characters.
3. System will request you to confirm the new password again.
4. When completed, new code takes effect.

No Password Setting:

If you want to disable the password, just press < Enter > as a password input is requested.

If You Forget Password:

If you forget the password, the only way to access the system is to clear the CMOS memory. Please refer to page 26 on clear CMOS setting.



Save & Exit Setup

When you press < Enter > on this item, you will see a dialog box with a message similar to:

Save to CMOS and EXIT (Y/N)? Y

Press < Y > to save the changes you have made in the Setup Utility and exit, or press < N > to return to the main menu.



Exit Without Saving

When you press < Enter > on this item, you will see a dialog box with a message similar to:

Quit Without Saving (Y/N)? N

Press < Y > to discard the changes you have made in the Setup Utility and exit, or press < N > to return to the main menu.