

AV49V & AV49VN
Intel Pentium 4/Celeron
478-pin Processor
with 400/533 MHz FSB
Based DDR MAINBOARD

User's Manual

Shuttle® AV49V & AV49VN

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

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Statement of Shuttle Mainboard via the EMI Test

Shuttle mainboards have been via the EMI test in terms of series of regulations: EN55022/ CISPR22/AS/NZS3548 Class B, EN55024 (1998/AS/NZS), EN4252.1 (1994), EN61000, ANSI C63.4 (1992), CFR47 Part 15 Subpart B, and CNS13438 (1997). The items tested are illustrated as follows:

(A) Voltage: AC 110V/60HZ & AC 230V/50HZ

(B) Tested Product Information:

Product Name: PC Mainboard

Status: Sample

Model Name: AV49V/AV49VN

S/N: N/A

CPU:

External Frequency: 100 MHz

Intel Pentium IV 1.6/1.8/2.0/2.2/2.4/2.5/2.6 GHz

External Frequency: 133 MHz

Intel Pentium IV 2.26/2.40/2.53/2.66/2.80/3.06 GHz

Mouse Port: one port with 6 pins

Keyboard Port: one port with 6 pins

Parallel Port: one port with 25 pins

Serial Port: one port with 9 pins

Center/Bass-Out & Line-Out & Line-In Ports: one port for each

Mic-In Ports: two ports

LAN Port: one port with 8 pins (10Mbps/100Mbps)(AV49VN only)

USB Port: two ports with 4 pins respectively

DDR Memory: 256 MB*3

Power Cable: Detachable and Shielded (with a GND pin)

Maximum Resolution: 1280 X 1024 V:60Hz

All CPUs have completely been tested, and values offered by the worst EMI combination of CPU external frequency are listed as follows:

Test Mode	External Frequency	CPU	Open/Close
1	133MHz	P4 3.06 GHz+	Close
2	133MHz	P4 3.06 GHz	Open
3	100MHz	P4 2.4 GHz	Close
4	100MHz	P4 2.4 GHz	Open

(C) Remedy for the Tested Product & Its EMI Interference:

Remedy: N/A

EMI Interference:

Crystal: 14.318 MHz(X1)/24.576 MHz(X4)/25.00 KHz(X5)/32.768 MHz(X2)

Clock Generator: U12

(D) Difference between AV49VN and AV49V:

To discriminate AV49VN from AV49V lies in the extent that chips in AV49VN support LAN, and the combination for testing is based on AV49VN.

(E) Supported Host Peripherals:

Host Peripheral	Product Name	Model Name	S/N	FCC ID
#1	Case	AV49V	N/A	
#2	Power Supply (300W)	ENP-0735 (ATX12V)	100322501	
#3	Maxtor HDD (40GB)	D740X-6L	N/A	3902B975
#4	Panasonic FDD	JU-257A606P		
#5	DVD Player	DVD-116	AAMS027197WL	3892D029
#6	AGP Card	Winfast Geforce 2 MX		3892C520
#7	Power Cable	Detachable and Shielded		

(F) Notices for Assembling Computers:

1. Cases should be made of iron or other metal that has good electric conductivity.
2. Cylinders in a case should be made of metal, and as having a mainboard mounted in a case, make sure screws are all utilized and fastened on a mainboard.
3. An I/O shielding should be contacted with I/O metallic parts of a mainboard.
4. Cables should appropriately be arranged and fixed in a case. Follow instructions:
 - Leave IDE cables not crossed upon CPU and SDRAM;
 - Leave power cables minimum in length, and not crossed upon a mainboard;
 - Leave CPU fan cables minimum in length, and not near CPU;
 - Leave cables on panels and other spare cables tied in a computer case.
5. Make sure an EMI shielding attached to a case has properly been installed.
6. Make sure a 5.25" or 3.5" FDD and screws are fastened to an EMI shielding.
7. Make sure a case is closely in contact with EMI connected points.
8. Make sure there is no cleft in a case which is not deformed.
9. Make sure a PCI or AGP door is bound to a case.
10. Make sure cables of other devices (fans or some others) are fixed in a case.

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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 AV49V/AV49VN mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle AV49V/AV49VN mainboard. You will find that installing your new Shuttle AV49V/AV49VN mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated AV49V/AV49VN 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

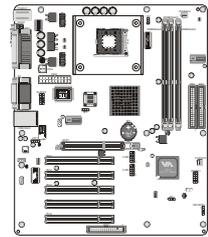
You have wisely chosen Shuttle AV49V/AV49VN to construct your system. Shuttle AV49V/AV49VN incorporates all the state-of-the-art technology of the APOLLO P4X400 VT8754 chipset from VIA. It integrates the most advanced functions you can find to date in a compact ATX board.

This manual is all-purpose for two kinds of mainboards: AV49V and AV49VN. The main difference between them is that AV49VN is equipped with an onboard LAN. In the manual, if there are some standards, characteristics, equipment, or software adopted only by AV49VN, it will be highlighted in brackets.

1.2 Item Checklist:

Check all items with your AV49V/AV49VN mainboard to make sure nothing is missing. The complete package should include:

- ✦ One piece of Shuttle AV49V/AV49VN Mainboard



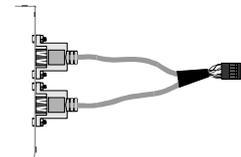
- ✦ One piece of ATA 133/100/66/33 Ribbon Cable



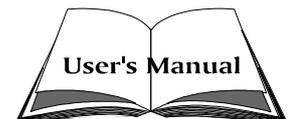
- ✦ One piece of Floppy Ribbon Cable



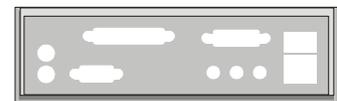
- ✦ One piece of twin ports USB Cable (optional)



- ✦ AV49V/AV49VN User's Manual



- ✦ I/O Shielding



- ✦ One piece of Bundled CD-ROM with containing:
 - AV49V/AV49VN user's manual saved in PDF format
 - VIA 4in1 Driver
 - VIA LAN Driver (AV49VN Only)
 - VIA Audio Driver
 - VIA USB2.0 Driver
 - Award Flashing Utility



2 FEATURES

AV49V/AV49VN 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, 478-pin processors with 400/533 MHz FSB.

* Chipset

Features VIA APOLLO P4X400 VT8754 N.B. and VIA VT8235 S.B..

* Hyper-Threading Technology

The latest Intel application defines a high-speed calculating ability to optimize your system by two CPUs supported (one virtual, one physical) in a multi-task environment.

* CPU FSB Configuration

Soft-configuration FSB (The FSB speed is software configurable from 100MHz to 133MHz.)

* Onboard 10/100Mb/s LAN (AV49VN Only)

The VIA VT6103 incorporated provides the mainboard with integrated 10/100 Mbps Fast Ethernet capabilities.

* AC'97 Link for Audio and Telephony CODEC

AC'97 2.2 compliant.

Spread independent PCI functions for Audio and Modem.

* Versatile Memory Support

Three 184-pin DIMM slots to support max 3GB of PC1600/PC2100/PC2700 compliant with DDR SDRAM module.

* PCI Expansion Slots

Provides five 32-bit PCI slots.

* AGP Expansion Slot

Provides one AGP 3.0 compliant slot which supports 4X/8X AGP devices.

★ 6 USB 2.0 Interface Onboard

2 * USB connectors on back panel and 2 sets of dual USB ports headers on mid-board.

★ I/O Interface

Provides a variety of I/O interfaces:

- 1* PS/2 mouse connector.
- 1* PS/2 keyboard connector.
- 1* DB25 parallel port.
- 1* serial port.
- 1* MIDI/Game port.
- 1* Line-Out port.
- 1* Line-In port.
- 1* Mic-In port.
- 1* LAN port. (AV49VN only)

★ PCI Bus Master IDE Controller Onboard

Two Ultra DMA 133/100/66/33 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 133/100/66/33 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 be connected to the onboard 20-pin ATX power connector, and 4-pin ATX power connector. The unit supports Suspend and Soft-On/Off modes by the dual-function power button.

★ Advanced Configuration and Power Interface

Features three power saving modes: S1 (Snoop), 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 Intel Firmware Hub 2Mb Flash core and supports Green PC, Desktop Management Interface (DMI).

*** ATX Form Factor**

System board conforms to ATX specification.

Board dimension: 305 mm * 244 mm.

*** Advanced Features**

- Low EMI - Built in spread spectrum. Unused PCI/SDRAM slots are shut off by the automatic clock for reducing EMI.
- Dual Function Power Button - The system can be in any of the 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 will enter Soft-Off mode.
- CPU Multiplier Setting - This item allows users to adjust CPU Multiplier in BIOS.
- CPU Clock Setting - This item allows users to adjust CPU Clock in BIOS.

*** Intelligent Features**

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

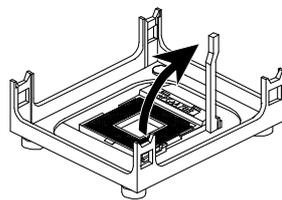
Step 1

CPU Installation:

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

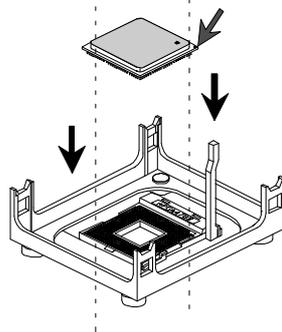
Note the CPU orientation when you plug it into CPU socket.

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



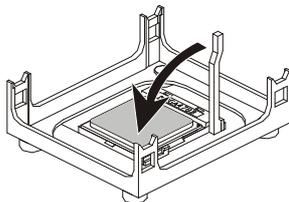
CPU socket lever up to 90-degree angle

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.



CPU Pin 1 and cut edge

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 processors require 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

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:

1. Clear CMOS
2. CPU Frequency
3. BIOS Flash Protection

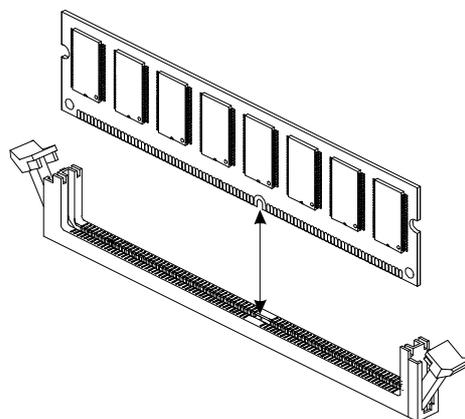
For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with the mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their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

Step 3

Install DDR SDRAM System Memory

To install memory, insert DDR SDRAM memory module(s) in any one or two DIMM banks. Note that SDRAM modules are directional and will not go in the DIMM banks if they are not properly oriented. After the module is fully inserted into the DIMM bank, lift the clips of both sides of the DIMM bank 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.

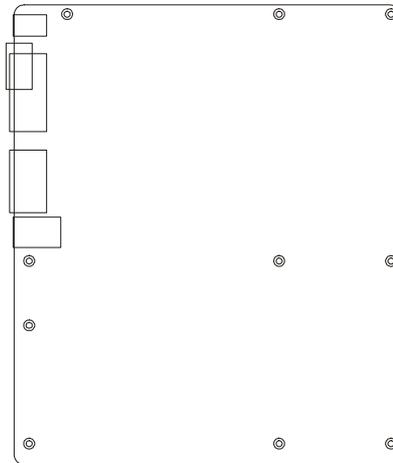
To install IDE & FDD drives, follow this procedure:

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 there are a lot of mounting holes on your computer chassis and mainboard. To match the holes on both properly, the key point is to make the back panel of the mainboard in a close fit with your system case, as shown below.



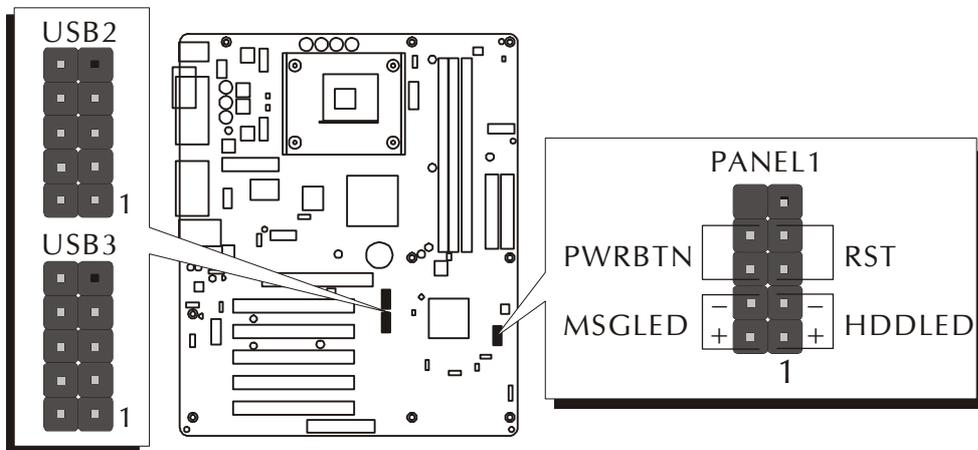
2. Position the studs between the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between them, for avoiding any electrical shorts in-between.
(If your computer case is already equipped with mounting studs, you need to tighten the screws to attach the mainboard.)

Note: In most computer housings, you can find 4 or more holes to place studs for fixing the mainboard. If there aren't enough matching holes, screw at least 4 studs to ensure the proper attachment of the mainboard.

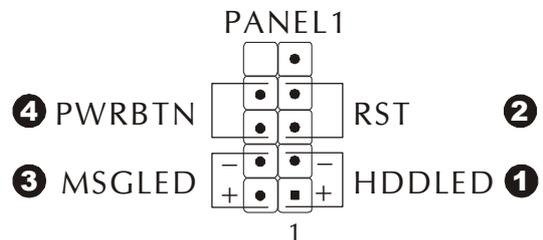
Step 6

Connect Front Panel LEDs/Switches/USBs

You can find there are several different cables already existing in the system case and originating from the computer's front panel devices (HDD LED, MSG LED, Reset Switch, or USB devices etc.). These cables serve to connect the front panel LEDs, switches, and USB connectors to the mainboard's front panel, PANEL1 and USB2/USB3, as shown below.



1. HDD LED (HDDLED)
2. Hardware Reset Switch Button (RST)
3. Green LED (MSGLED)
4. ATX Soft Power On/Off (PWRBTN)
5. Extended USB Headers (USB2/USB3)



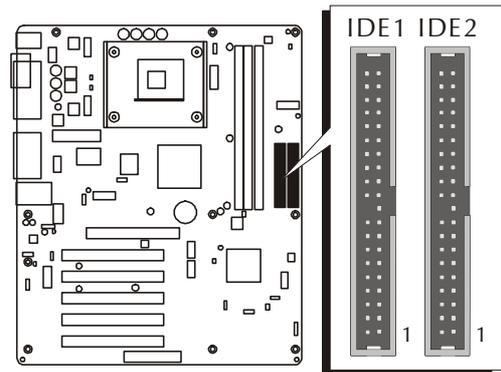
5 USB2/USB3

10	●	□	9	1 = VREG_FP_USBPWRO	2 = VREG_FP_USBPWRO
8	●	●	7	3 = USB_FP_P0-	4 = USB_FP_P1-
6	●	●	5	5 = USB_FP_P0+	6 = USB_FP_P1+
4	●	●	3	7 = GND	8 = GND
2	●	■	1	9 = KEY	10 = USB_FP_OC0

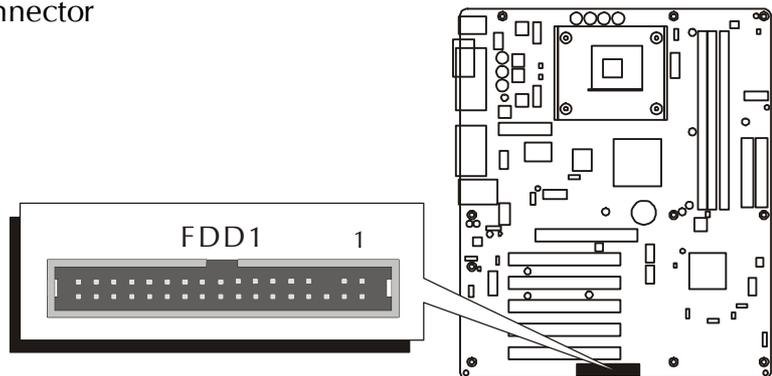
Step 7

Connect IDE and Floppy Disk Drives

1. IDE cable connectors



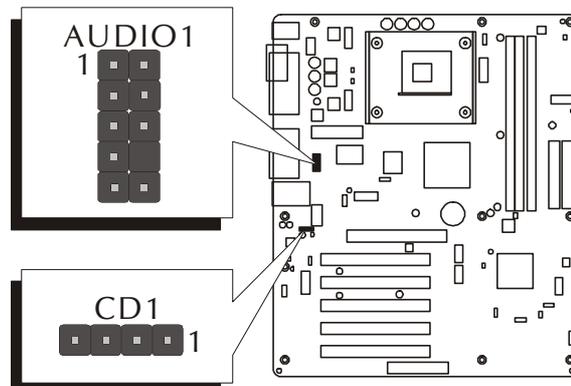
2. Floppy cable connector



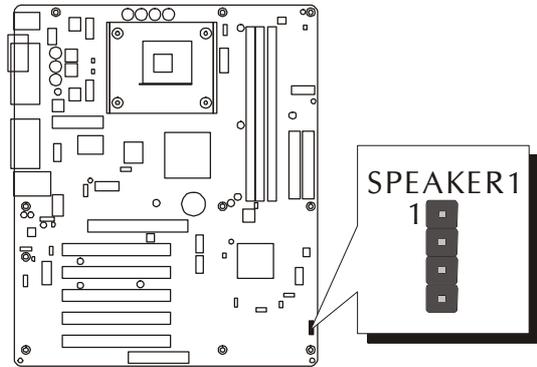
Step 8

Connect Other Internal Peripherals

1. Front panel microphone and line-out header (AUDIO1);
CD_IN connector (CD1)



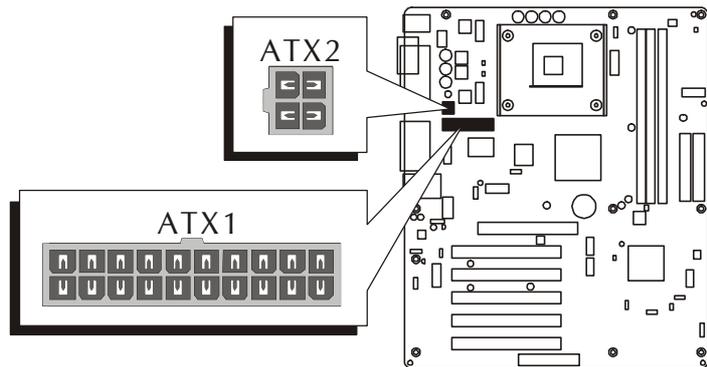
-
2. Internal speaker header (SPEAKER1)



Step 9

Connect the Power Supplies

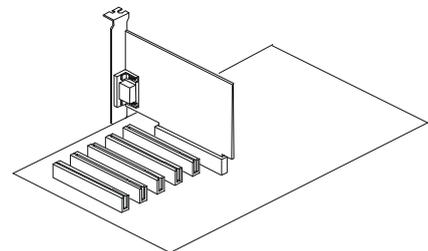
1. System power connectors (ATX1/ATX2)



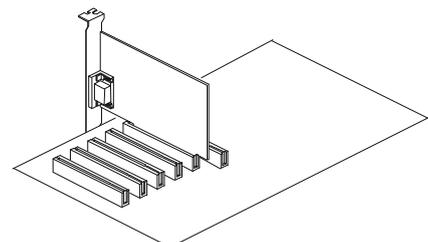
Step 10

Install Add-On Cards in Expansion Slots

1. Accelerated Graphics Port (AGP) Card



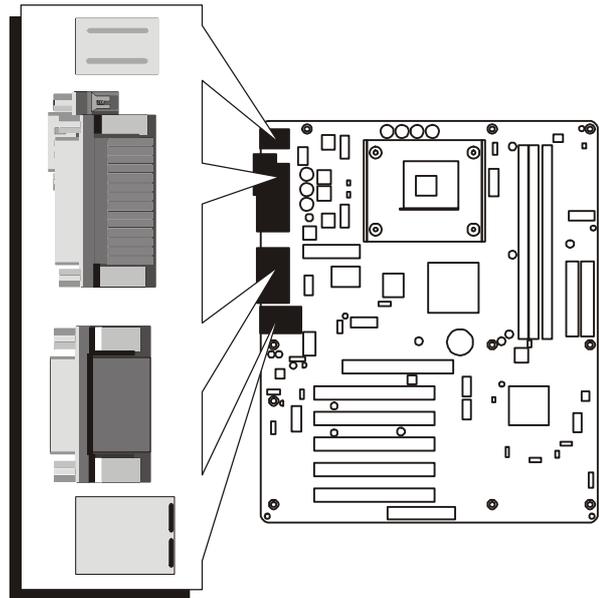
2. PCI Card



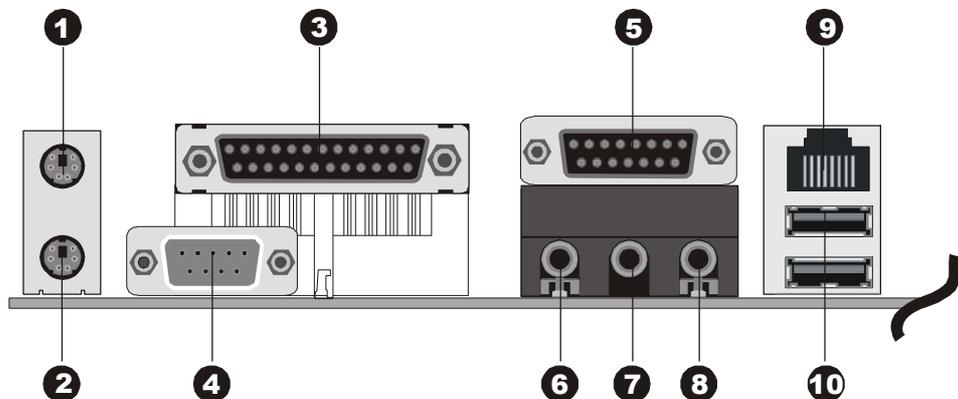
Step 11

Connect External Peripherals to Back Panel

You are now ready to connect the external peripherals to your system's back panel.



1. PS/2 Mouse Port
2. PS/2 Keyboard Port
3. Parallel Port
4. Serial Port
5. MIDI/Game Port
6. Audio Line-Out Port
7. Audio Line-In Port
8. Audio Mic-In Port
9. LAN Port (AV49VN Only)
- 10.USB Ports 1/2



Step 12

Install Drivers & Software Components

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

1. Insert the AV49V/AV49VN bundled CD-ROM into your CD-ROM drive. The auto-run program will display the driver's main installation window on screen.
2. Choose "Install Mainboard AV49V Software," or "Install Mainboard AV49VN Software."
3. Choose "Install VIA 4in1 Driver" and complete it.
4. Choose "Install VIA LAN Driver" and complete it. (AV49VN only)
5. Choose "Install VIA Audio Driver" and complete it.
6. Choose "Install VIA USB2.0 Driver" and complete it.
7. Quit (from the auto-run installation program).

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:



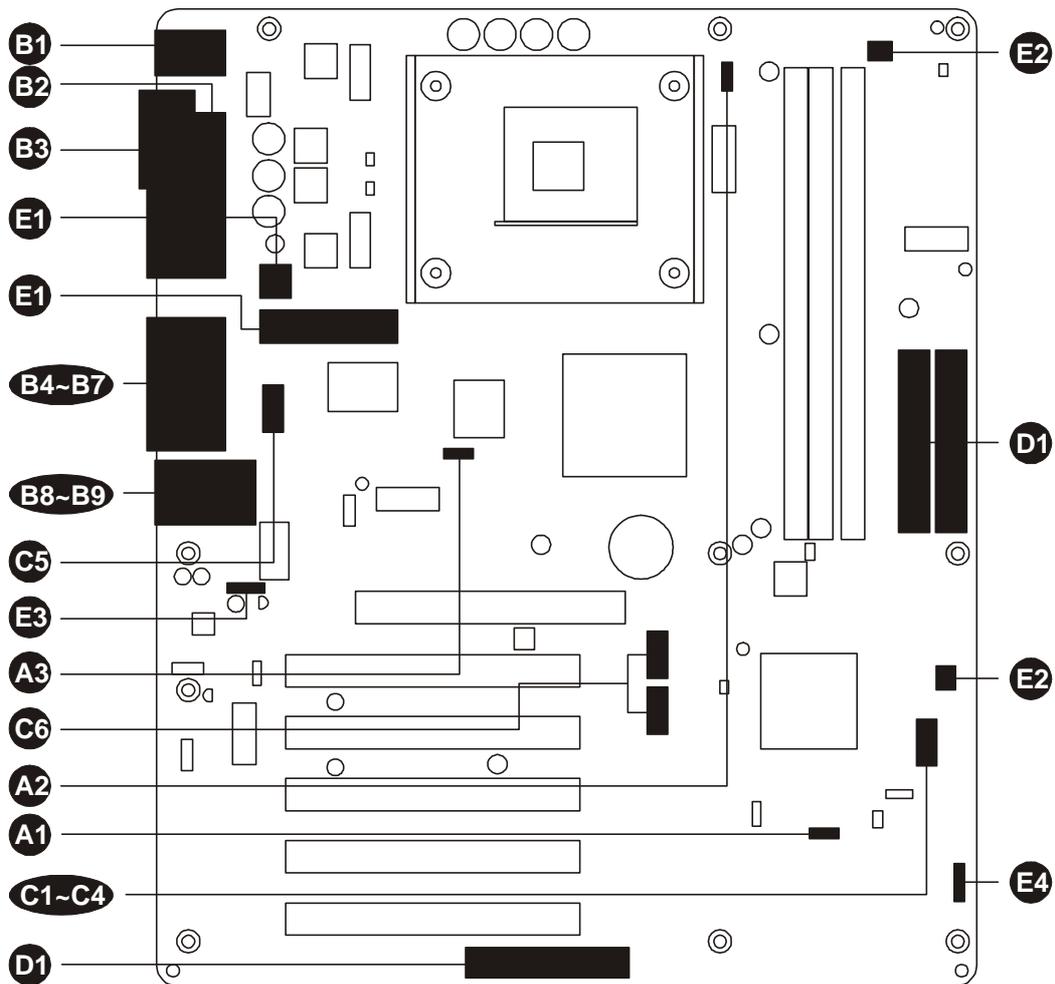
Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To short jumper pins, simply place a plastic mini jumpers over the desired pair of pins.

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 Pentium 4/Celeron, 478-pin processors

DIMM1/2/3 : Three DIMM Slots for 128, 256, 512 MB, and 1GB of 2.5V
DDR SDRAM

(The total installed memory does not exceed 3GB.)

AGP : One 4X/8X AGP (Accelerated Graphics Port) Slot

PCI : Five 32-bit PCI Expansion Slots

Jumpers

- A1** JP1 : Clear CMOS setting
- A2** JP2 : CPU frequency setting
- A3** JP3 : BIOS flash protection setting

Back Panel Connectors

- B1** MS : PS/2 mouse port
- B1** KB : PS/2 keyboard port
- B2** LPT1 : Parallel port (DB25 female)
- B3** COM1 : Serial port (DB9 male)
- B4** MIDI/GAME : MIDI/Game port (DB15 female)
- B5** LINE_OUT : Line-Out port
- B6** LINE_IN : Line-In port
- B7** MIC_IN : Mic-In port
- B8** LAN : 1 LAN port (AV49VN only)
- B9** USB : USB ports 1/2

Front Panel Connectors

- C1** HDDLED : IDE drive active LED
- C2** RST : Hardware reset switch
- C3** MSGLED : Green LED
- C4** PWRBTN : ATX power on/off momentary type switch
- C5** AUDIO1 : Front panel microphone and line-out header
- C6** USB2/USB3 : Extended USB headers

Internal Peripheral Connectors

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

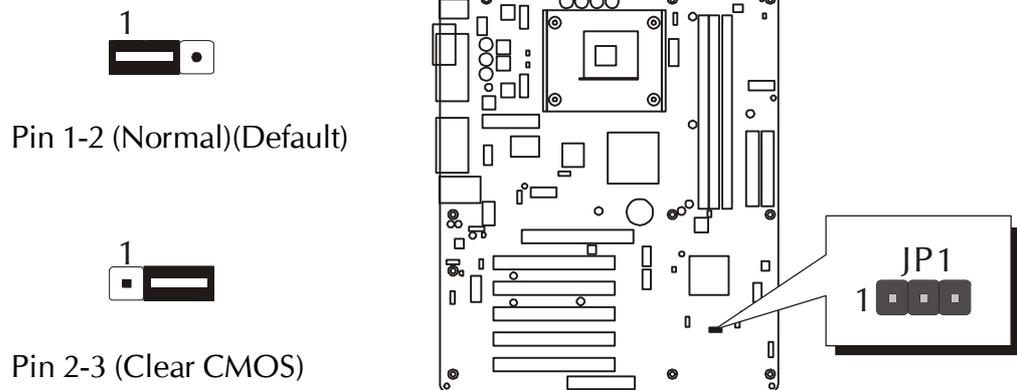
Other Connectors

- E1** ATX1/ATX2 : ATX power connectors
- E2** CPUFAN1 : CPU fan connector
- E2** CASFAN1 : Chassis fan connector
- E3** CD1 : CD_IN connector
- E4** SPEAKER1 : Internal speaker header

👉 Jumpers

A1 Clear CMOS Setting (JP1)

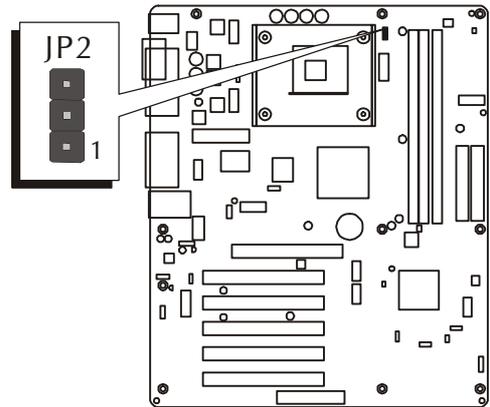
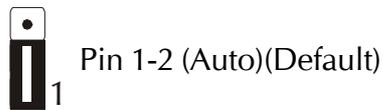
JP1 is used to clear CMOS data. Clearing CMOS will result in the permanently erasing previous system configuration settings and the restoring original (factory-set) system settings.



- 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 pins 1-2.
- Step 4. Place the jumper cap on 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 CPU Frequency Setting (JP2)

JP2 is used to set the CPU frequency. You may choose to place the mini jumper on pins 1-2 for auto detection or on pins 2-3 if you need to run 533MHz.



A3 BIOS Flash Protection Setting (JP3)

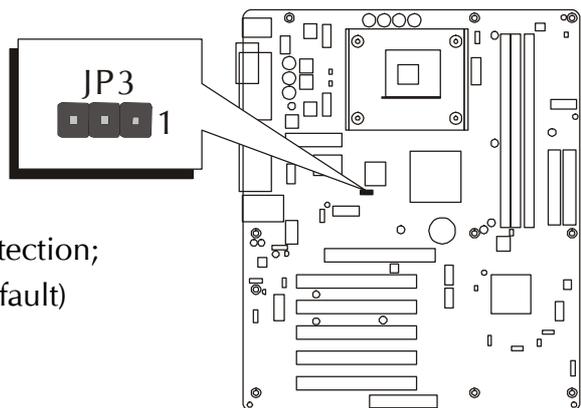
JP3 is used to protect the BIOS from being unintentionally flashed. Enable this jumper for protection and disable this jumper when you want to flash the BIOS.



Pin 1-2 (Disable BIOS Flash Protection;
you may flash BIOS)(Default)



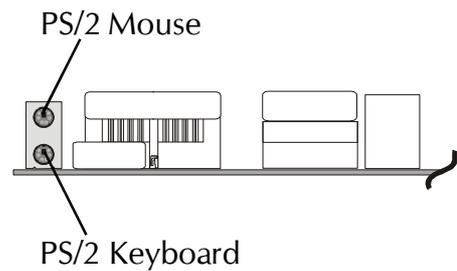
Pin 2-3 (Enable BIOS Flash Protection)



☞ Back Panel Connectors

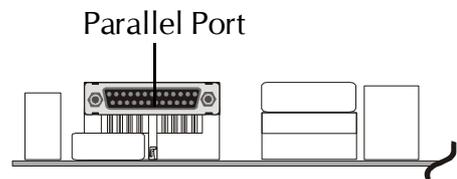
B1 PS/2 Mouse & PS/2 Keyboard Port Connectors

Two 6-pin female PS/2 Mouse & PS/2 Keyboard connectors are located at 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 PS/2 Keyboard jacks into their corresponding connectors.



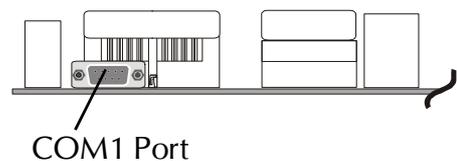
B2 Parallel Port Connector

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



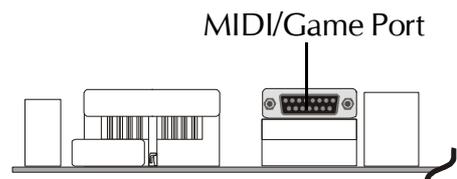
B3 COM1 Port Connector

Attach a serial device cable to the DB9 male serial port COM1 at the back panel of your computer.



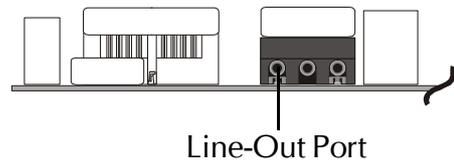
B4 MIDI/Game Port Connector

The MIDI/Game port is a 15-pin female connector. For 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 Joystick/MIDI port. You will also need the MIDI sequencing software to run MIDI instruments with your computer into this connector.



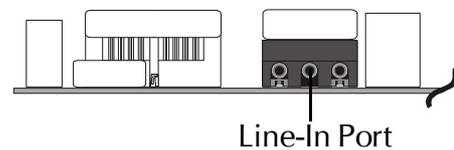
B5 Line-Out Port Connector

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.



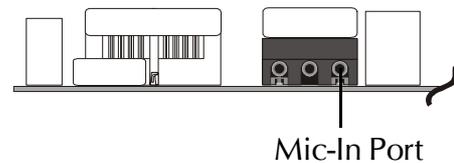
B6 Line-In Port Connector

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.



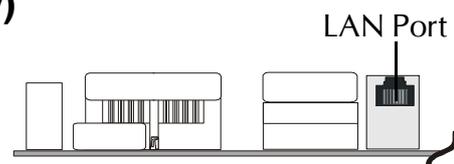
B7 Mic-In Port Connector

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.



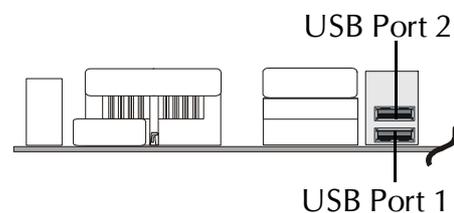
B8 LAN Port Connector (AV49VN Only)

This mainboard can accommodate one device on LAN. Attach RJ-45 cable to this port connector to your PC to the LAN.



B9 USB Port Connectors

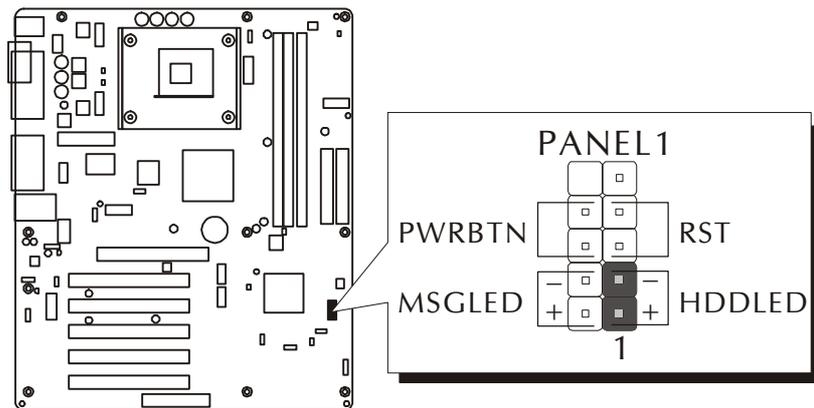
This mainboard offers 2 USB ports on back panel. Plug each USB device jack into an available USB1/USB2 connector.



👉 Front Panel Connectors

④ HDD LED Connector (HDDLED)

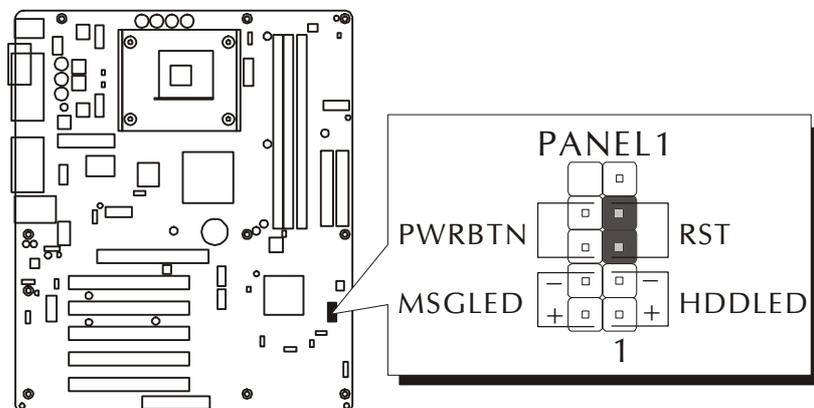
Attach a connector cable from the IDE device LED to the 2-pin (HDDLED) header. The HDD LED lights up whenever an IDE device is active.



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

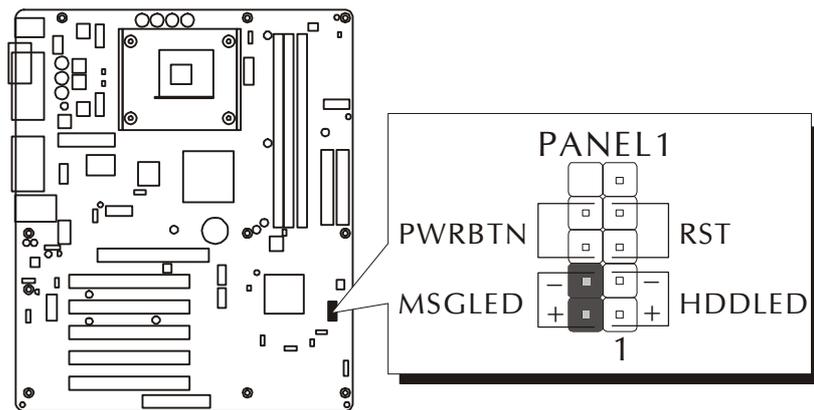
⑤ Hardware Reset Connector (RST)

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



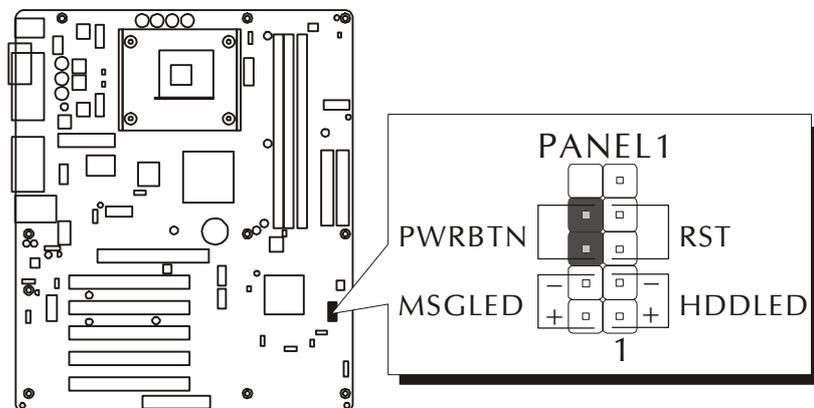
③ Green LED Connector (MSGLED)

Connecting pins 2 and 4 to a single- or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.



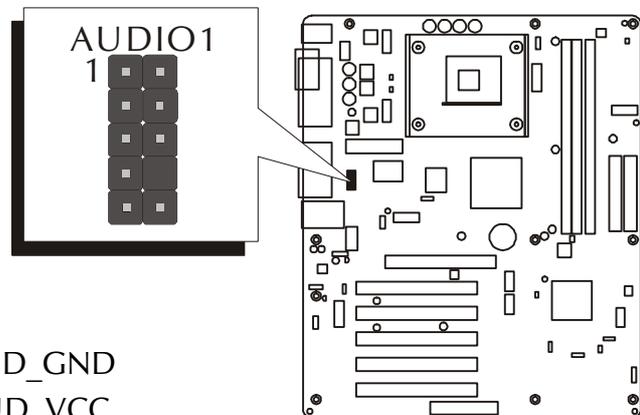
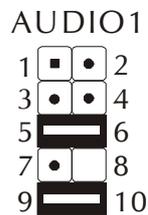
④ ATX Power On/Off Switch Connector (PWRBTN)

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



65 Front Panel Microphone and Line-Out Header (AUDIO1)

This header allows users to install an auxiliary Front-Oriented Microphone and Line-Out port for easier access. Either the Line-Out port connector on back panel or AUDIO1 header is available at the same time. If you would like to use this header on front panel, please remove all jumpers from this header and install your special extra microphone and line-out cable instead. Two mini jumpers must be setted on pins 5-6 and pins 9-10, when this header is not used.

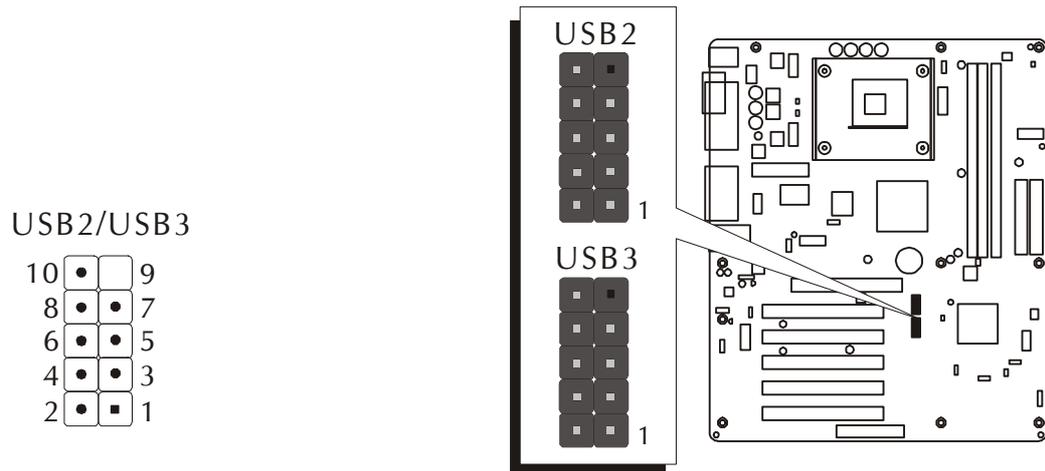


Pin Assignments:

1 = AUD_MIC	2 = AUD_GND
3 = AUD_MIC_BIAS	4 = AUD_VCC
5 = AUD_FPOUT_R	6 = AUD_RET_R
7 = HP_ON	8 = KEY
9 = AUD_FPOUT_L	10 = AUD_RET_L

66 Extended USB Headers (USB2 & USB3)

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



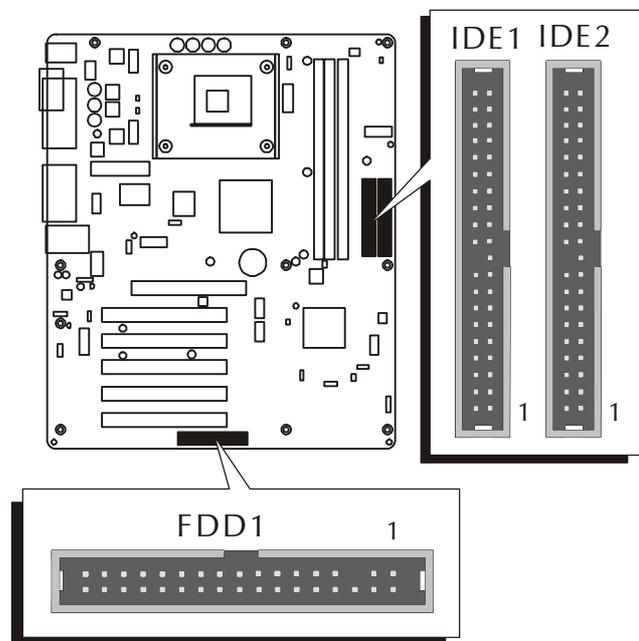
Pin Assignments:

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

☞ **Internal Peripheral Connectors**

DI Enhanced IDE and Floppy Connectors (IDE1/IDE2 & FDD1)

The 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 (FDC) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA 133/100/66/33 ribbon cable to connect IDE HDD, and one 34-pin ribbon cable for FDD connection.

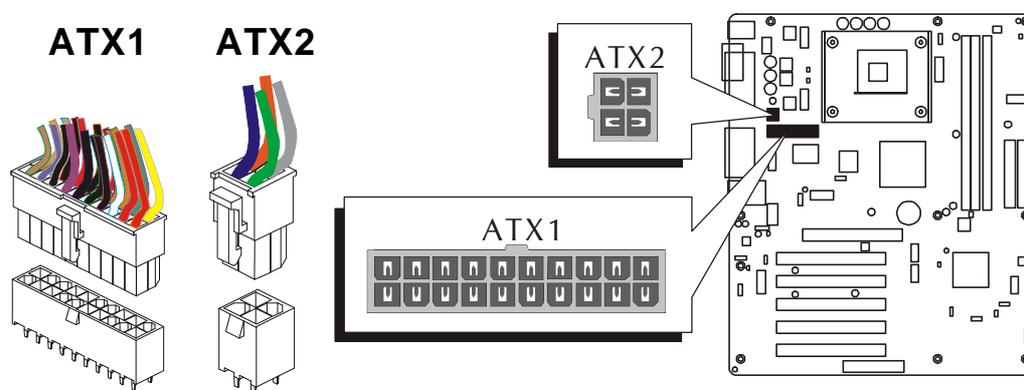


Important: Ribbon cables are directional; therefore, connect the red cable stripe to the same side.

👉 Other Connectors

🔌 ATX Power Supply Connectors (ATX1/ATX2)

This motherboard uses 20-pin ATX power header (ATX1), and comes with the other one header (ATX2). Please make sure you plug each in the right direction. It is essential to have these two power supply connectors plugged or your system won't boot up.

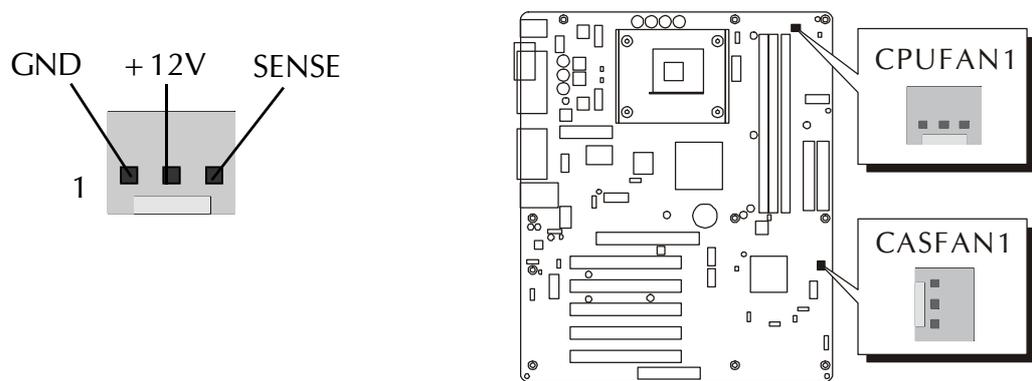


A traditional ATX system remains in the power-off stage when AC power resumes from power failure. However, it is inconvenient for a network server or workstation if there is not an UPS to execute power-on. Thus, this motherboard supports an AC Power Auto Recovery function to solve this problem. You may 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 stand-by power and at least 720mA compatible. |
| Note 4: | Make sure your power supply have enough power for higher speed processor installed. |

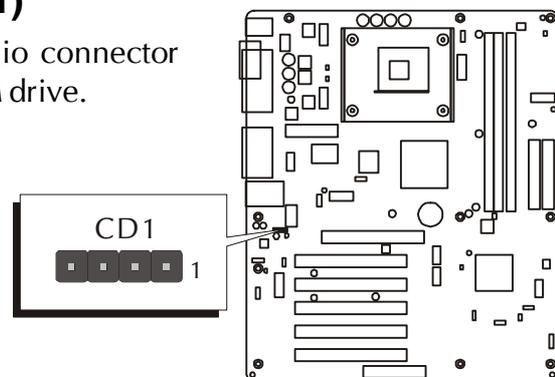
E2 CPU and Chassis Fan Connectors (CPUFAN1/CASFAN1)

The mainboard provides two onboard 12V cooling fan power connectors to support CPU (CPUFAN1) and Chassis (CASFAN1) cooling fans. Note that 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.



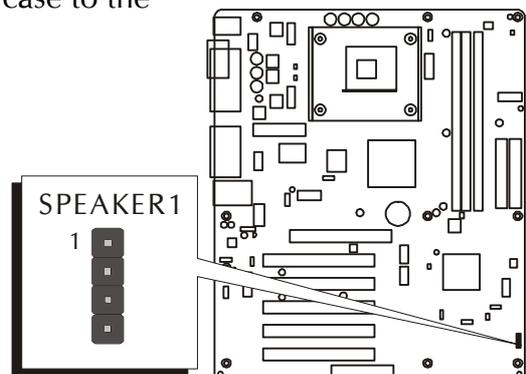
E3 Audio CD_IN Connector (CD1)

Port CD1 is used to attach the audio connector cable from the CD-ROM/DVD-ROM drive.



E4 Internal Speaker Header (SPEAKER1)

Attach the PC speaker cable from the case to the 4-pin speaker connector (SPEAKER1).



3.3 System Memory Configuration

The AV49V/AV49VN mainboard has three 184-pin DIMM banks that allow you to install from 128MB up to 3GB of system memory. Each 184-pin DIMM (Dual In-line Memory Module) bank can accommodate 128MB, 256MB, 512MB, and 1GB of PC1600/PC2100/PC2700 compliant 2.5V single or double side 64-bit wide data path DDR SDRAM modules.

1. Install Memory:

Install memory in any or all of the banks. The combination shown as follows.

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

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

Note: You do not need 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.

2. Upgrade Memory:

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

4 SOFTWARE UTILITY

4.1 Mainboard CD Overview

Note: The CD contents attached in AV49V/AV49VN mainboard are subject to change without notice.

To start your mainboard CD disc, just insert it into your CD-ROM drive and the CD AutoRun screen should 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 AV49V Software - Installing VIA 4in1, VIA Audio, and VIA USB2.0 drivers.
- ☞ Install Mainboard AV49VN Software - Installing VIA 4in1, VIA LAN, VIA Audio, and VIA USB2.0 drivers.
- ☞ Manual - AV49V/AV49VN 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 - Close this CD.



4.2 Install Mainboard Software

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen. Use your pointing device (e.g. mouse) on the "Install Mainboard AV49V Software" bar to run into sub-menu. The software includes:

- [4.2.A] Install VIA 4in1 Driver
- [4.2.B] Install VIA Audio Driver
- [4.2.C] Install VIA USB2.0 Driver



Or use your pointing device (e.g. mouse) on the "Install Mainboard AV49VN Software" bar to run into sub-menu. The software includes:

- [4.2.A] Install VIA 4in1 Driver
- [4.2.B] Install VIA Audio Driver
- [4.2.C] Install VIA USB2.0 Driver
- [4.2.D] Install VIA LAN Driver



4.2.A Install VIA 4in1 Driver

Select using your pointing device (e.g. mouse) on the "Install VIA 4in1 Driver" bar to install the chipset driver.



AV49V



AV49VN

Once you made your selection, a Setup window run the installation automatically. When the copying files is done, make sure you reboot the system to take the installation effect.

4.2.B Install VIA Audio Driver

Select using your pointing device (e.g. mouse) on the "Install VIA Audio Driver" bar to install the audio driver.



AV49V



AV49VN

Once you made your selection, a Setup window run the installation automatically. When the copying files is done, make sure you reboot the system to take the installation effect.

4.2.C Install VIA USB2.0 Driver

Select using your pointing device (e.g. mouse) on the "Install VIA USB2.0 Driver" bar to install the USB2.0 driver.



AV49V



AV49VN

Once you made your selection, a Setup window run the installation automatically. When the copying files is done, make sure you reboot the system to take the installation effect.

4.2.D Install VIA LAN Driver (AV49VN Only)

Select using your pointing device (e.g. mouse) on the "Install VIA LAN Driver" bar to install the LAN driver.



Once you made your selection, a Setup window run the installation automatically. When the copying files is done, make sure you reboot the system to take the installation effect.

4.3 View the User's Manual

Select using your pointing device (e.g. mouse) on the "Manual" bar. Click on the "Install Acrobat Reader" bar if you need to install it, or click on "Manual" bar to view AV49V/AV49VN user's manual.



5 BIOS SETUP

AV49V/AV49VN BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:

- System date and time
- Hardware execution sequence
- Power management functions
- Allocation of system resources

5.1 Enter BIOS

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

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

Note1. If you miss trains of words mentioned in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the <RESET> switch located at the computer Front panel. You may also reboot by simultaneously pressing the <Ctrl>, <Alt>, keys.

Note2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

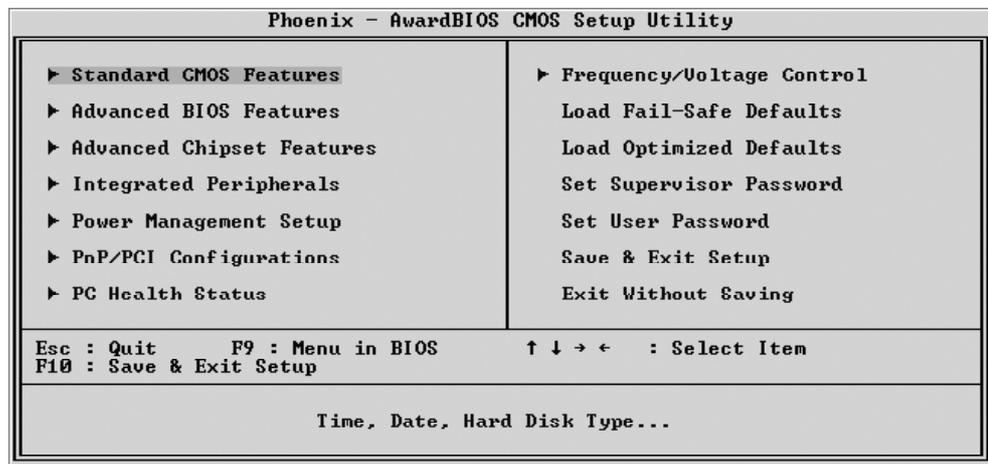
"Press F1 to Continue, DEL to Enter Setup"

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

Note: The content of this manual is subject to any change without notice in advance.

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 from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.



Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

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

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This entry shows the current system temperature, Voltage, and FAN speed.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance of your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory-set for optimal performance system operation. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet users' needs.

Supervisor/User Password

Use this menu to change, set, or disable supervisor/user 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 items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
Standard CMOS Features		Menu Level ▶
Date (mm:dd:yy)	Thu, May 15 2003	Change the day, month, year and century
Time (hh:mm:ss)	5 : 11 : 1	
▶ IDE Primary Master	[None]	
▶ IDE Primary Slave	[None]	
▶ IDE Secondary Master	[None]	
▶ 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)

Set the system date. Note that if you are running a Windows OS, this items are automatically updated whenever you make changes to the Windows Date.

Time (hh : mm : ss)

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

IDE Primary/Secondary Master/Slave

Press <Enter> to enter the sub-menu of detailed options.

Drive A/DriveB

Select the type of floppy disk drive and installed 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

This item define the video mode of the system. This mainboard has a built-in VGA graphics system; leave this item at the default value.

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

Halt On

This item defines the operation of the system POST (Power-On Self Test) routine. You can use this item to select which situation 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 Memory/Extended Memory/Total Memory

These items are automatically detected by the system at start up time. These are display-only fields. You can't make change to these fields.

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub-menu to configure each hard disk drive.

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 on this screen and select the type of fixed disk.

- The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

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

Capacity

Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual', and the 'Access Mode' item is set to 'CHS'.

Cylinder

Set the number of cylinders for this 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

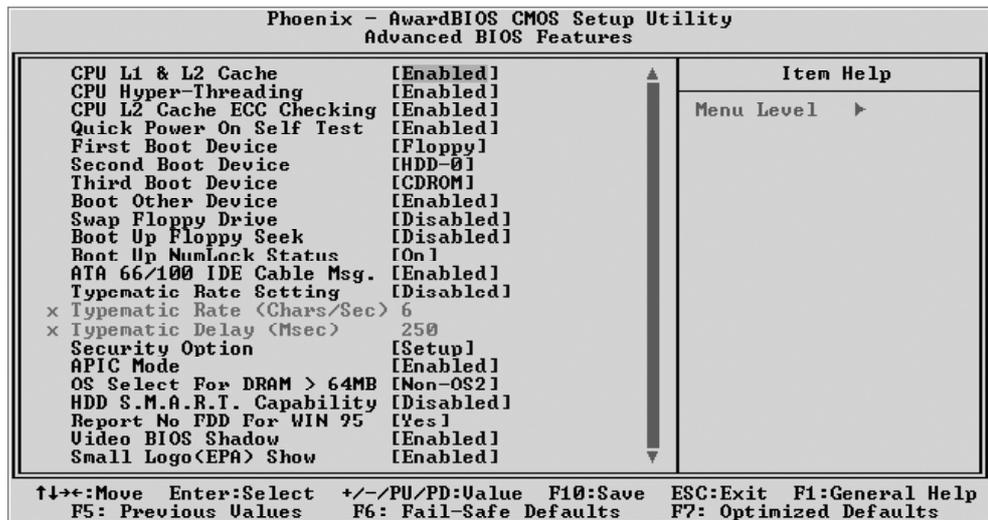
Sector

Number of sector per track.

➤Min = 0, Max = 255

Advanced BIOS Features

This section allows you to configure your system for basic operation.



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 Hyper-Threading

The latest Intel application defines a high-speed calculating ability to optimize your system by two CPUs supported (one virtual, one physical) in a multi-task environment.

- 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

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to this item after you are confident that your system hardware is operating smoothly.

- The choice: Enabled or Disabled.

First/Second/Third Boot Device

Use these three items to select the priority and order of the devices that your system searches for an operating system at start-up time.

- 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

If you enable this item, the system searches 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.

- The choice: Enabled or Disabled.

Swap Floppy Drive

If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

- The choice: Enabled or Disabled.

Boot Up Floppy Seek

If this item is enabled, it checks the size of the floppy disk drives at start-up time. You don't need to enable this item unless you have a legacy diskette drive with 360k capacity.

- The choice: Enabled or Disabled.

Boot Up NumLock Status

This item defines if the keyboard Num Lock key is active when your system is started.

- The choice: Off or On.

ATA 66/100 IDE Cable Msg.

This item enables or disables the display of the ATA 66/100 Cable MSG.

- The choice: Enabled or Disabled.

Typematic Rate Setting

If this item is enabled, you can use the following two items to see the typematic rate and the typematic delay settings for your keyboard.

- The choice: Enabled or Disabled.

Typematic Rate (Chars/Sec)

This item sets how many times the keystroke will be repeated in a second when you hold a key down.

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

Typematic Delay (Msec)

Sets the delay time after a key is held down.

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

Security Option

If you have installed password protection, this item defines if the password is required at system start up, or if it is only required with a user tries to enter the Setup Utility.

- The choice: Setup or System.

APIC Mode

This option is used to enable or disable APIC (Advanced Programmable Interrupt Controller) functionality.

- The choice: Enabled or Disabled.

OS Select For DRAM > 64MB

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.

- 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 WIN 95

This item defines if the system reports no FDD runs for Win 95 or not.

- The choice: Yes or No.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

- The choice: Disabled or Enabled.

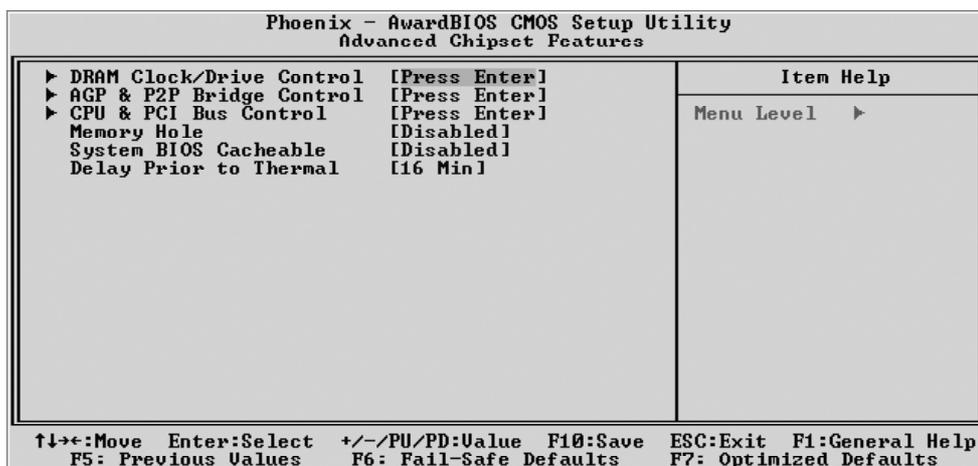
Small Logo(EPA) Show

This item allows you to enable or disable the EPA Logo.

- The choice: Enabled or Disabled.

Advanced Chipset Features

These items define critical timing parameters of the mainboard. You should leave the items 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.



DRAM Clock/Drive Control

Press <Enter> to enter the sub-menu of detailed options.

Current FSB Frequency

This item shows the current CPU Front Side Bus speed.

Current DRAM Frequency

This item shows the current DRAM speed.

DRAM Clock

This item allows you to control the DRAM speed.

- The Choice: 100 MHz, 133 MHz, 166 MHz, 200 MHz, or By SPD.

DRAM Timing

This item allows you to select the value in this field, depending on whether the board using which kind of DDR DRAM. The following six items become available if you choose the "Manual" option.

- The Choice: Manual or By SPD.

SDRAM CAS Latency

This item defines the timing delay in clock cycles before SDRAM starts a read command after receiving it.

- The choice: 1.5, 2, 2.5, or 3.

Bank Interleave

Not disable this item to increase SDRAM memory speed since separate memory banks are set for odd and even addresses and the next byte of memory can be accessed while the current byte is being refreshed.

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

Precharge to Active(Trp)

This item defines the numbers of cycles for RAS (row address strobe) to be allowed to precharge.

- The Choice: 2T or 3T.

Active to Precharge(Tras)

This item defines the timing delay for DRAM precharge.

- The choice: 6T or 7T.

Active to CMD(Trcd)

This item defines the timing of the transition from RAS (row address strobe) to CAS (column address strobe) as both rows and columns are separately addressed shortly after DRAM is refreshed.

- The Choice: 2T or 3T.

DRAM Command Rate

This item allows you to select the DRAM executed rate.

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

DRAM Burst Len

This item allows you to select the DRAM burst length.

- The Choice: 4 or 8.

Write Recovery Time

This item controls the timing between write and precharge command.

- The choice: 2T or 3T.

AGP & P2P Bridge Control

Press <Enter> to enter the sub-menu of detailed options.

AGP Aperture Size

Select the size of AGP aperture. The aperture is a portion of the PCI memory address range dedicated to graphics memory address space.

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

AGP Mode

This item allows you to select the AGP Mode.

- The Choice: 8X, 4X, 2X, or 1X.

AGP Driving Control

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

- The Choice: Auto or Manual.

AGP Driving Value

This item defines 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.

DBI Output for AGP Trans.

This item is used to improve the signal quality for the AGP 3.0.

- The Choice: Disabled or Enabled.

CPU & PCI Bus Control

Press <Enter> to enter into the detailed options.

CPU to PCI Write Buffer

When Enabled, writing from the CPU to PCI bus is buffered, to compensate for the speed differences between them. When Disabled, the writing is not buffered and the CPU must wait until the writing is complete before starting another writing cycle.

- The Choice: Enabled or Disabled.

PCI Master 0 WS Write

When Enabled, writing to the PCI 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: Enabled or Disabled.

VLink 8X Support

This item defines if the VLink 8X Support is enabled or not.

- The Choice: Enabled or Disabled.

Memory Hole

This item is used to reserve the memory space for ISA expansion cards that require it.

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

System BIOS Cacheable

The items allow the system to be cached in memory for faster execution. Leave the items at the default value for better performance.

- The choice: Disabled or Enabled.

Delay Prior to Thermal

This item defines the delay time before the CPU enters auto thermal mode.

- The Choice: 4 Min, 8 Min, 16 Min, or 32 Min.

Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility		
Integrated Peripherals		
		Item Help
▶ VIA OnChip IDE Device	[Press Enter]	
▶ VIA OnChip PCI Device	[Press Enter]	
▶ SuperIO Device	[Press Enter]	
Init Display First	[PCI Slot]	Menu Level ▶
OnChip USB Controller	[All Enabled]	
USB 2.0 Support	[Enabled]	
USB Keyboard Support	[Disabled]	
IDE HDD Block Mode	[Enabled]	

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

VIA OnChip IDE Device

Press <Enter> to enter the sub-menu of detailed options.

OnChip IDE Channel0/Channel1

The chipset contains a PCI IDE interface with support to two IDE channels. Select Enabled/Disabled to activate/deactivate the primary/secondary IDE interface.

- The Choice: Enabled or Disabled.

IDE Prefetch Mode

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

- The Choice: Enabled or Disabled.

Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields define a PIO mode for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. Select Auto to make the system automatically determine 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

Ultra DMA implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If both of your hard drive and your system software support Ultra DMA, select Auto to enable BIOS support.

- The choice: Auto or Disabled.

VIA OnChip PCI Device

Press <Enter> to enter into the detailed options.

VIA-3058 AC97 Audio

This item allows you to control the onboard AC97 audio.

- The Choice: Auto or Disabled.

Onboard Lan Device (AV49VN Only)

This item allows you to enable or disable the onboard LAN.

- The choice: Enabled or Disabled.

Onboard Lan Boot ROM (AV49VN Only)

Decide whether to invoke the boot ROM of the onboard LAN.

- The choice: Enabled or Disabled.

SuperIO 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 Port 1

Select an address and corresponding interruption for the first serial port.

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

Onboard Parallel Port

Allows you to determine an I/O address and interrupt request (IRQ) for the onboard parallel port.

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

Parallel Port Mode

Select a mode for the onboard parallel (printer) port.

- 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 defines an I/O address for the game port.

- The choice: Disabled, 201, or 209.

Midi Port Address

This item defines an I/O address for the MIDI port.

- The choice: Disabled, 330, or 300.

Midi Port IRQ

This item defines an interrupt request for the MIDI port.

- The choice: 5 or 10.

Init Display First

This item is used to determine initial device when system power on.

- The choice: PCI Slot or AGP.

OnChip USB Controller

Do not disable this item if your system has a USB installed on the system board and you want to use it.

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

USB 2.0 Support

Select Enabled if your system contains a USB 2.0 controller.

- The Choice: Disabled or Enabled.

USB Keyboard Support

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

- The Choice: Disabled or Enabled.

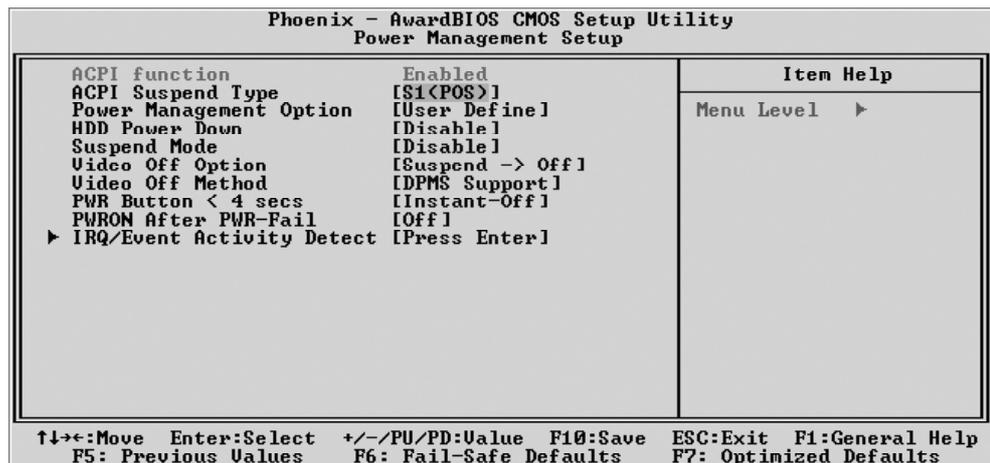
IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

- The Choice: Enabled or Disabled.

Power Management Setup

The Power Management Setup allows you to configure your system to most effectively saving energy.



ACPI Function

This item defines the ACPI (Advanced Configuration and Power Management) feature that makes hardware status information available to the operating system, enables a PC to turn its peripherals on or off for improving the power management, and allows a PC turned on or off by external devices, so that a mouse or keyboard can wake up it.

ACPI Suspend Type

This item allows you to select sleep state when suspend. In the default, S1(POS), the suspend mode is equivalent to a software power down.

➤ The choice: S1(POS).

Power Management Option

This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If it is set to Min Saving, power-saving modes occur after a longer timeout. If it is set to User Define, you can insert your own timeouts for the power-saving modes.

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

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.

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

Suspend Mode

When this item is not disabled and after the setup time of system inactivity, 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

This item specifies on/off for the monitor when it enters the power-saving mode.

- The choice: Always On or Suspend -> Off.

Video Off Method

This determines the manner in which the monitor is blanked.

Blank Screen The item only writes blanks to the video buffer.

V/H SYNC + Blank This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

DPMS Support Initial display power management signaling.

- The choice: Blank Screen, V/H SYNC + Blank, or DPMS Support.

PWR Button < 4 secs

Under ACPI 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 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 4 seconds to cause a software power down.

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

PWRON After PWR-Fail

This item allows your computer to shut off, automatically restart, or return to its last operating status after power fails.

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

IRQ/Event Activity Detect

Press <Enter> to enter into the detailed options.

PS2KB Wakeup Select

Set a password or a key to awaken the system from a keyboard.

Power Button Lock

When Enabled, you can set the password to lock the system.

- The choice: Disabled or Enabled.

VGA

When select 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 select ON, any activity from HDD or FDD will wake up the system.

- The choice: OFF or ON.

PCI Master

When select ON, any activity from the primary PCI will wake up the system.

- The choice: OFF or ON.

Resume By PCI PME

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.

Resume By Alarm

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

- [ss] ➤ Key in a DEC number: Min = 0, Max = 59.

IRQs Activity Monitoring

Press <Enter> to enter the sub-menu of detailed options.

Primary INTR

Select ON/OFF to enable/disable a specified 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 (COM 2)

IRQ4 (COM 1)

IRQ5 (LPT 2)

IRQ6 (Floppy Disk)

IRQ7 (LPT 1)

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

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.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
PnP/PCI Configurations		
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 x IRQ Resources	[Auto(ESCD)] Press Enter	
PCI/UGA Palette Snoop	[Disabled]	
Assign IRQ For UGA	[Enabled]	
Assign IRQ For USB	[Enabled]	
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3 Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	

↑↓←→: 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

This item allows you to determine PnP OS is installed or not.

- The choice: Yes or No.

Reset Configuration Data

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

- The choice: Enabled or Disabled.

Resources Controlled By

Set to Auto(ESCD) makes the system dynamically allocate resources to PnP devices as required; to Manual, the following item available.

- The choice: Auto(ESCD) or Manual.

IRQ Resources

This item allows you respectively assign an interruptive type for IRQs.

- 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: Enabled or Disabled.

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.

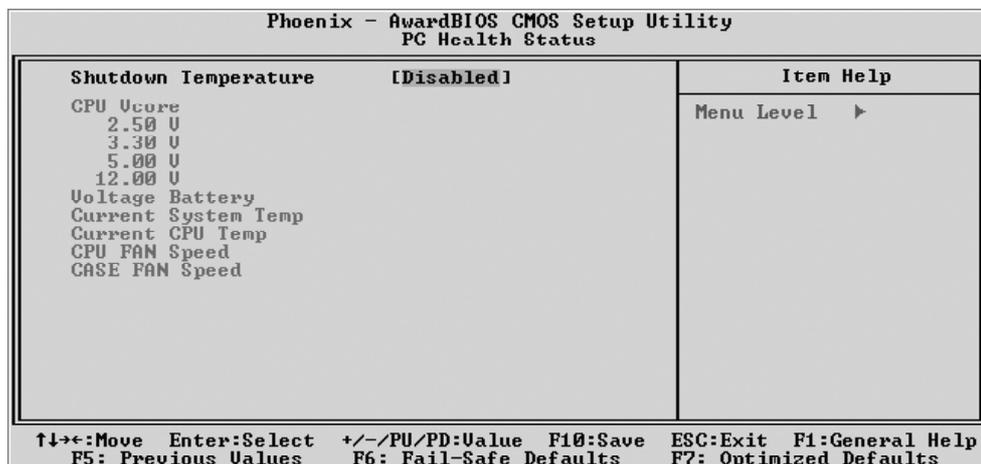
- The choice: Disabled or Enabled.

INT Pin 1 ~ 4 Assignment

Names the IRQ line assigned to a device connected to the PCI interface on your system.

- The Choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, or 15.

 **PC Health Status**



Shutdown Temperature

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

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

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

CPU Vcore

2.50 V

3.30 V

5.00 V

12.00 V

Voltage Battery

Current System Temp

Current CPU Temp

CPU FAN Speed

CASE FAN Speed

Frequency/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
Frequency/Voltage Control		Menu Level ▶
CPU Clock Ratio	[8 X]	
CPU Voltage Regulator	[Default]	
DDR Voltage Regulator	[Default]	
Auto Detect PCI/DIMM Clk	[Enabled]	
Spread Spectrum	[Enabled]	
CPU Clock	[100MHz]	

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

CPU Clock Ratio

This item allows you to adjust CPU Ratio. The item becomes unavailable if your CPU clock ratio is locked.

CPU Voltage Regulator

This item defines the CPU core voltage.

- The choice: Default, +2%, +4%, or +6%.

DDR Voltage Regulator

This item defines the DDR voltage.

- The choice: Default, +2%, +4%, or +6%.

Auto Detect DIMM/PCI Clk

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

- The choice: Enabled or Disabled.

Spread Spectrum

This item defines the spread spectrum modulation.

- The choice: Enabled or Disabled.

CPU Clock

This item allows the user to adjust CPU Host Clock (usually 133 MHz, 100 MHz, or 66 MHz).



Load Fail-Safe Defaults

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

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

Pressing 'Y' loads the BIOS default values for the most stable, minimal performance system operations.



Load Optimized Defaults

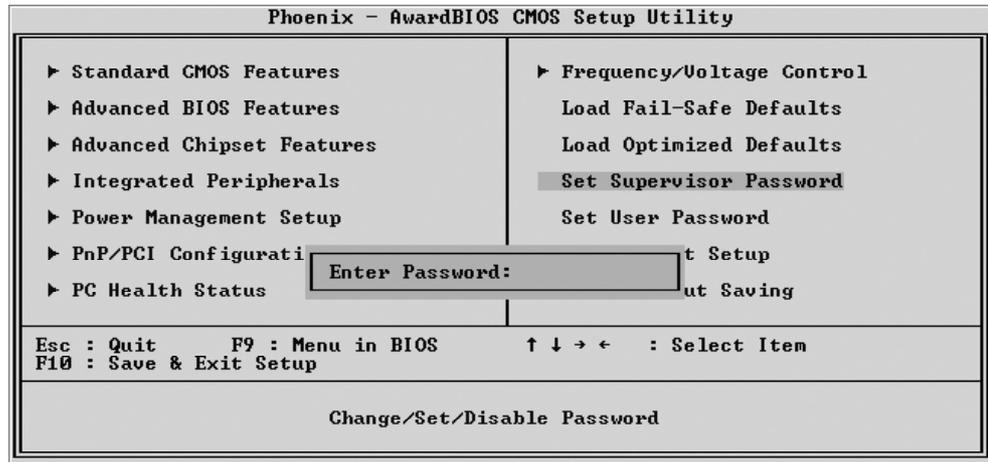
When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory-set for optimal performance system operation.



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 24 on clear CMOS setting.

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

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

Pressing "Y" stores the selections made in the menus of CMOS - a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit Without Saving (Y/N) ? N

This allows you to exit from Setup without storing in CMOS any change. The previous selections remain in effect. This exits from the Setup utility and restarts your computer.