

FN25

Socket 939

AMD™ Athlon 64 Processor

Based DDR Main Board

User's Manual

Shuttle® FN25

Socket 939

AMD Athlon™ 64 Processor Based DDR Mainboard

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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: FN25

S/N: N/A

CPU:

External Frequency: 200 MHz

AMD Athlon™ 64 : 2800+, 3200+, 3400+, 3800+, 4000+

Serial Port: one port with 9 pins

Clear CMOS button: one port

Keyboard Port: one port with 6 pins

Mouse Port: one port with 6 pins

USB 2.0 Port: six ports with 4 pins respectively

1394 Port: two port with 6 pins respectively

LAN Port: one port with 8 pins (10Mbps/100Mbps/1000Mbps)

Mic-In & Line-In & Earphone Ports: one port for each

Center/Bass-Out Port: one port

Surround-Out Port: one port

Surround-Back Port: one port

Front-Out Port: one port

SPDIF-Out (Coaxial) Port: one port

SPDIF-Out (Optical) Port: one port

SPDIF-In (Optical) Port: one port

DIMM Memory (optional): DDR400 256 MB *2

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

Monitor: CRT

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	CPU Open/Close
1	200MHz	AMD Athlon™ 64 4000 +	Close
2	200MHz	AMD Athlon™ 64 4000 +	Open

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

Remedy: N/A

EMI Interference:

Crystal : 32.768 KHz(X8)/ 25 MHz(X7)/ 22.5 MHz(X9)/ 24.576 MHz(X10)/ 24.576 MHz(X6)

(D) Supported Host Peripherals:

Host Peripheral	Product Name	Model Name
# 1	Case	FN25
# 2	Power Supply	PC43I3503
# 3	Serial ATA Seagate	ST3120026AS
# 4	Shuttle Card Reader	A010
# 5	SONY DVD Player	CDK1016

(E) 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.

Important Safety Information

SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. Please keep this User's Manual for later reference.
3. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning.
4. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
5. Please keep this equipment from humidity.
6. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
7. Do not leave this equipment in an environment unconditioned, it may damage the equipment.
8. The openings on the enclosure are for air convection hence Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Make sure the voltage of the power source when connect the equipment to the power outlet.
10. Place the power cord such a way that people can not step on it. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not use for long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.
13. Never pour any liquid into ventilation openings, this could cause fire or electrical shock.
14. **CAUTION:** The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacturer's instructions.

**CAUTION : RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN
INCORRECT TYPE. DISPOSE OF USED BATTERIES
ACCORDING TO THE INSTRUCTIONS**

15. THE COMPUTER IS PROVIDED WITH CD DRIVES COMPLY WITH APPROPRIATE SAFETY STANDARDS INCLUDING IEC 60825.

CLASS 1 LASER PRODUCT

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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 FN25 mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle FN25 mainboard. You will find that installing your new Shuttle FN25 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated FN25 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.

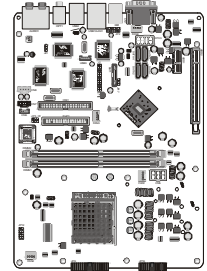
System Integrator

You have wisely chosen Shuttle FN25 to construct your system. Shuttle FN25 incorporates all the state-of-the-art technology of the nVIDIA nForce 4 Chip for AMD™ Athlon64 939 CPU. It integrates the most advanced functions you can find to date in a compact Shuttle Form Factor board.

1.2 Item Checklist

Check all items with you FN25 mainboard to make sure nothing is missing.
The complete package should include:

- ✴ One piece of Shuttle FN25 Mainboard



- ✴ One piece of ATA133/100/66/33 Ribbon Cable



- ✴ One piece of Floppy Ribbon Cable



- ✴ One piece of Serial ATA Cable



- ✴ FN25 User's Manual



- ✴ nVIDIA RAID User's Guide



- ✴ One piece of Bundled CD-ROM with containing:
 - FN25 user's manual saved in PDF format
 - nVIDIA RAID User's Guide saved in PDF format
 - Install DirectX9 Utility
 - Install nVIDIA Chipset Driver
 - Install VIA Audio Driver
 - Install nVIDIA USB 2.0 Driver
 - Award Flashing Utility



2 FEATURES

FN25 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

AMD™ Athlon64 with 200MHz x 5 FSB colock on 939 pins SMT Socket.

★ Chipset

nVIDIA nForce 4 Chip for AMD™ Athlon64 939 CPU.

Gigabit ETHERNET Controller

Marvell 88E1111, support 10/100/1000 Mbps operation rate.

Supports Wake-on-Lan (WOL) function.

Onboard 1394

VIA VT6307, support 400Mb/s, 200Mb/s, or 100Mb/s data transfer rate.

Compliants with 1394 OHCI specification revision V1.0 and V1.1 and provides two fully compliant ports.

Onboard SATA

Support 4 Serial-ATA connectors. SATA interface supports data transfer rates up to 1.5 Gb/s (150 MB/s) per port.

★ Jumperless CPU Configuration

Soft-configuration FSB (The FSB speed is software configurable from 100MHz to 200MHz in the Advanced Chipset Features of BIOS setup program.)

★ H/W Audio Envy24 (7.1 Channel)

Envy24 include 96 KHz SPDIF-IN/OUT function, 8 channel of DCA support 16/20 24-bit PCM format for 7.1 audio solution. Support Hi Sample Rate mode from 7, 8 ch.

★ Versatile Memory Support

2 x 184-bit DDR SDRAM at 166/200 Dual channel DDR SDRAM support up to 2 GB.

★ PCI Express Interface

Support PCI Express X1 Card. Maximum theoretical realized bandwidth of 500 MB/s in each direction simultaneously.

★ PCI Express Graphics (PEG) Interface

The nForce 4 has X16 PCI Express port, provided for the Graphics Attach,

this port can also be use in X1.

*** USB 1.1/2.0 Compliant Interface Onboard**

Support USB 2.0/1.1 compliant. Single USB 2.0 EHCI and single USB 1.1 OHCI controller support up to USB ports.

*** I/O Interface**

Provides a variety of I/O interfaces:

- 1 x COM Port.
- 1 x Clear CMOS Button.
- 1 x PS/2 Keyboard Port.
- 1 x PS/2 Mouse Port.
- 1 x Giga LAN Port.
- 4 x USB 1.1/2.0 Ports.
- 1 x 1394 Port.
- 1 x SPDIF-OUT Coaxial Port.
- 1 x SPDIF-OUT Optical Port.
- 1 x 7.1 Channel Center/Bass Port.
- 1 x 7.1 Channel Surround-Out Port.
- 1 x SPDIF-IN Optical Port.
- 1 x 7.1 Channel Front-Out Port.
- 1 x 7.1 Channel Surround-Back Port.
- 1 x Line-In Port.

*** PCI Bus Master IDE Controller Onboard**

One Ultra DMA 133 Bus Master Dual-channel IDE ports provide support to a maximum of two IDE devices. 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.

*** 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 4Mb Flash core and supports Green PC, Desktop Management Interface (DMI).

★ **Form Factor**

System board conforms to Small form factor ATX specification.

Board dimension : 280mm X 205mm.

★ **Advanced Features**

- Low EMI - Built in spread spectrum 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.
- Modem Ring Power-On - The system can be powered on automatically by the activation of modem ringing.

★ **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.
- CPU Fan AutoGuardian -
This SMART Bios enabled multi-phase Variable Fan Speed and CPU temperature Control feature.

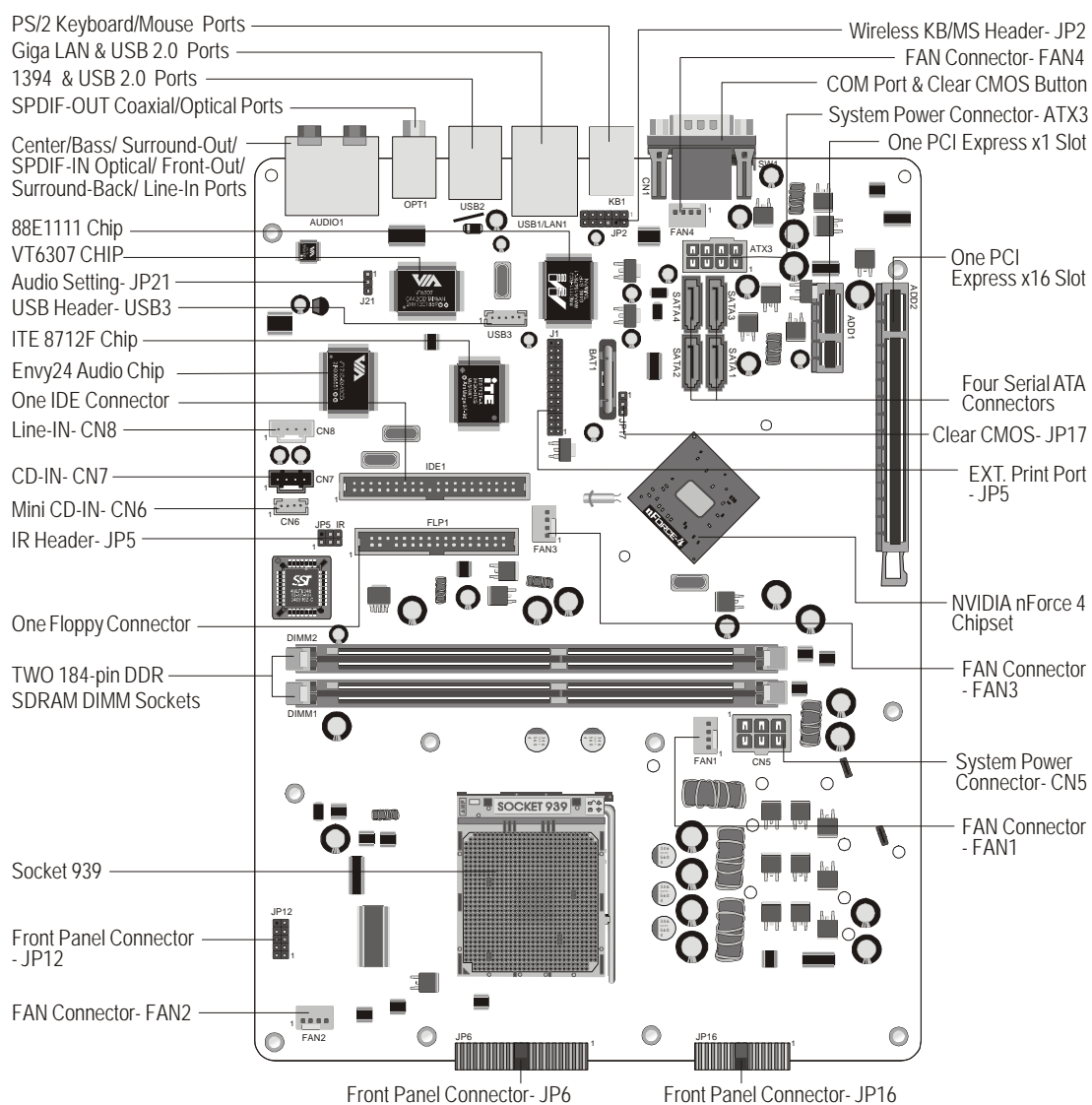
3 HARDWARE INSTALLATION

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

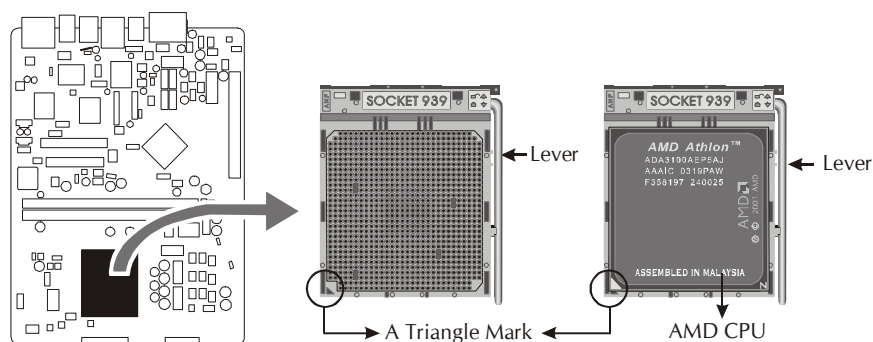
Accessories Of FN25



Step 1

Install the CPU:

1. Locate the CPU ZIF (Zero Insertion Force) socket on the upper-right sector of your mainboard (between the back-panel connectors and the DIMM memory slots).
2. Pull the CPU ZIF socket lever slightly sideways away from the socket to unlock the lever, and then bring it to an upwardly vertical position.
3. Place your AMD Athlon™ 64 processor in the socket 939 CPU. Note that the CPU's edges have been purposely designed non-symmetrically to prevent from inserting the processor in the wrong direction. The following diagram demonstrates the correct placement of the CPU in the ZIF socket. You can see that the Triangle Mark.



4. Slightly push the AMD Athlon™ 64 processor into the socket without applying excessive force while making sure there is no gap between CPU and socket. Then lower the socket-lever all the way down to its horizontal position and lock it to secure the CPU in place.
5. The AMD Athlon™ 64 processor requires a set of heatsink/fan to ensure proper cooling of the processor. If heatsink/fan have not been already mounted on your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable through the heatsink/fan in the CPU fan power connector located nearby. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hardware monitoring function, a 3-pin fan power connector should allow your system to detect the CPU fan's speed. The CPU fan can also run with a 2-pin fan power connector, however, detection of CPU fan's speed is not supported. Another type of CPU fan may feature a large 4-pin fan power connector, which does not support CPU fan's speed detection and must be directly connected to the system's power supply unit. Please refer to the following diagram.

Step 2

Set Jumper

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:

1. Clear CMOS

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.

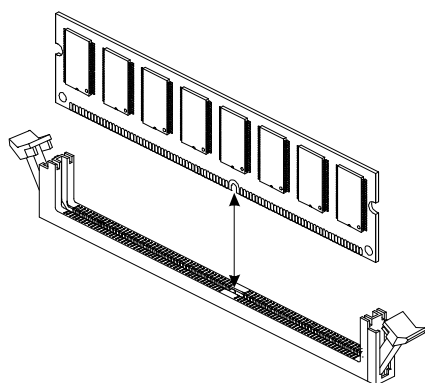
Step 3

Install DDR SDRAM System Memory

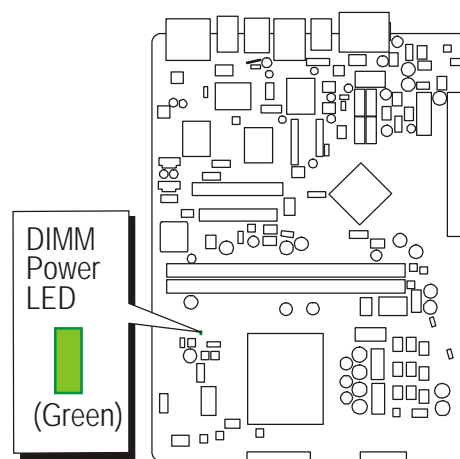
To install memory, insert DDR SDRAM memory module(s) in DIMM slot(s). Note that DDR SDRAM modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM slots, lift the clips of both sides of the DIMM slot to lock the module in place.

Do not remove memory modules while DIMM LED is on. It might cause short or other unexpected damages due to the 2.6V stand by voltage. Remove memory modules only when AC Power cord is disconnected.

DDR SDRAM



DIMM Power LED



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.

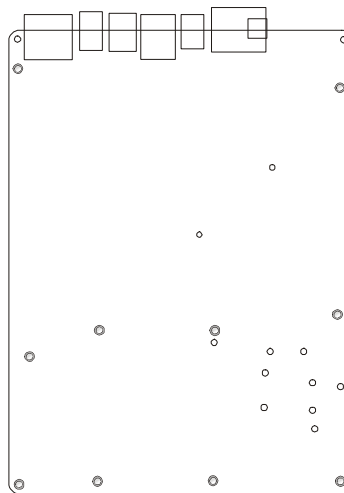
To install IDE & FDD drives, follow this procedure:

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.

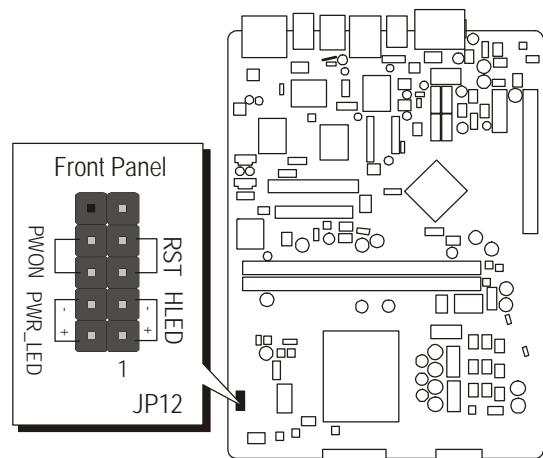
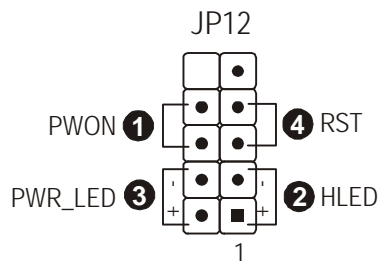
The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical shorts between the board and the metal frame of the chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws 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 aren't 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 Header (JP12)

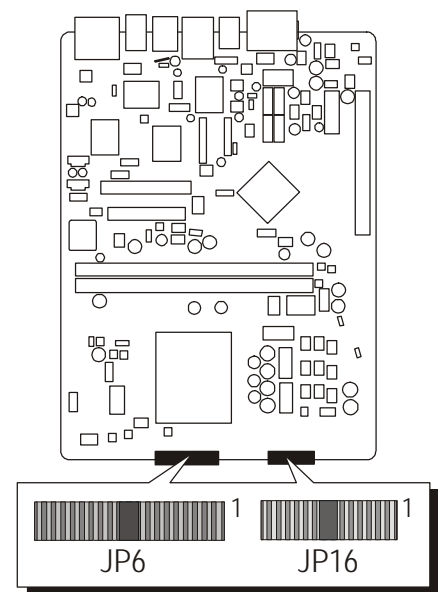
You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (HDD LED, Power LED, or Reset Switch devices etc.) These cables serve to connect the front-panel switches and LEDs connectors to the mainboard's front-panel connectors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



1. ATX Soft Power On/Off (PWON)
2. HDD LED (HLED)
3. Power LED (PWR_LED)
4. Hardware Reset Switch Button (RST)

Connect Front Panel AUDIO/ USB/ 1394 Connector(JP6/JP16)

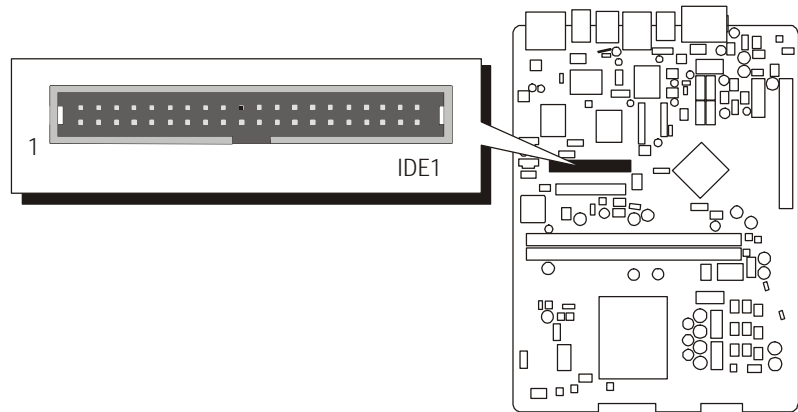
You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (AUDIO, USB, 1394a devices etc.). These cables serve to connect the AUDIO, USB, 1394a, connectors to the mainboard's front panel connectors group, as shown below.



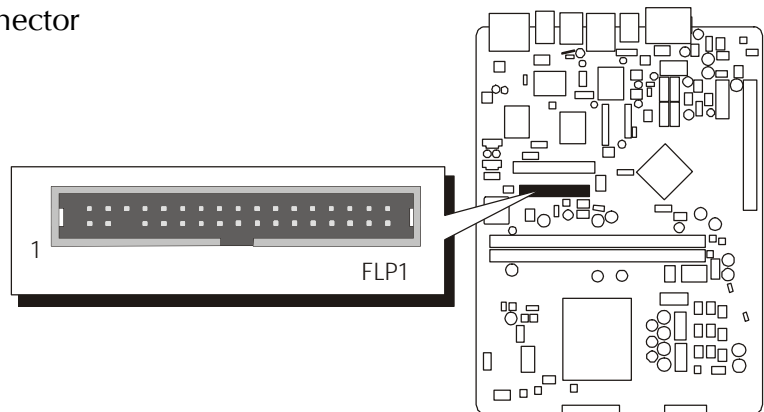
Step 7

Connect IDE, Floppy and Serial ATA Drives

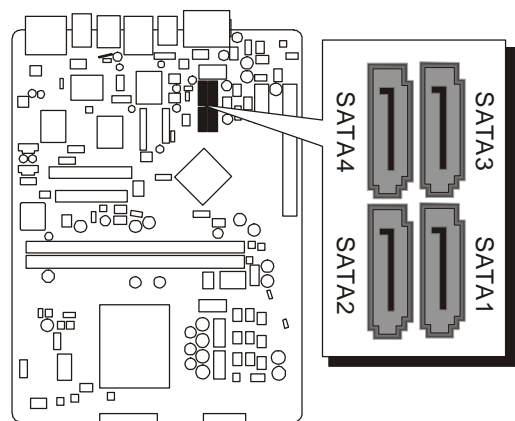
1. IDE cable connector



2. Floppy cable connector



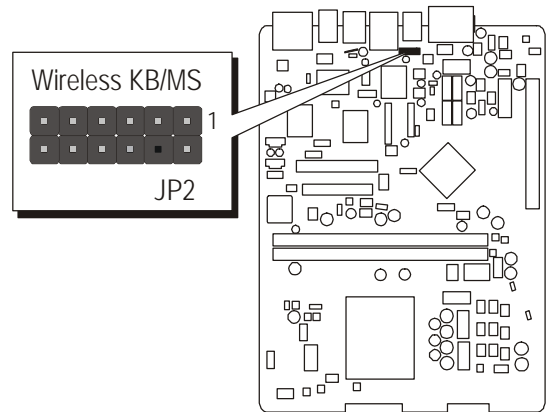
3. Serial ATA connectors



Step 8

Connect Other Internal Peripherals

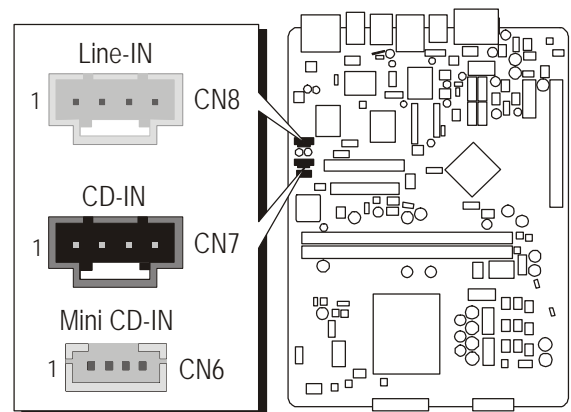
1. Wireless KB/MS Header (JP2)



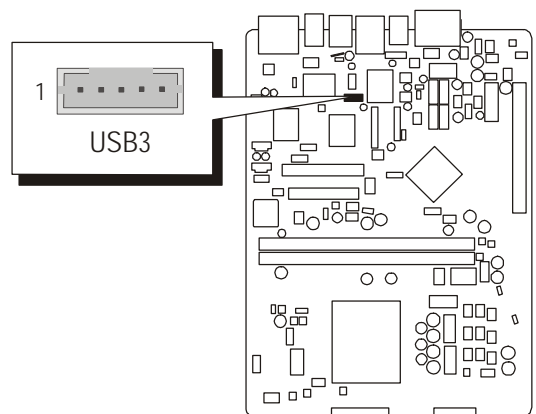
2. Line-IN Header (CN8)

CD-IN Header (CN7)

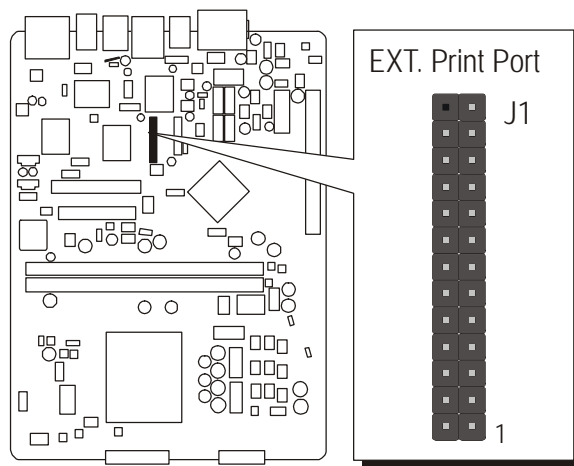
Mini CD-IN Header (CN6)



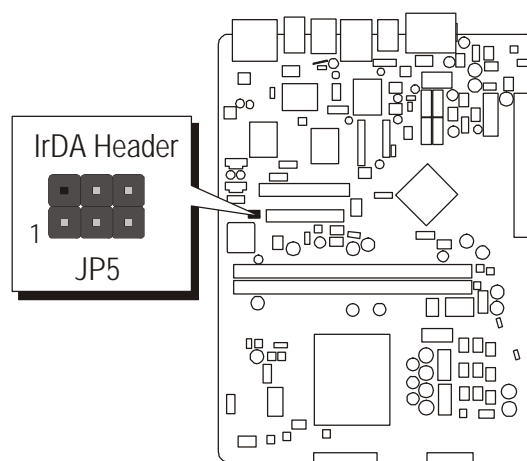
3. USB Header (USB3)



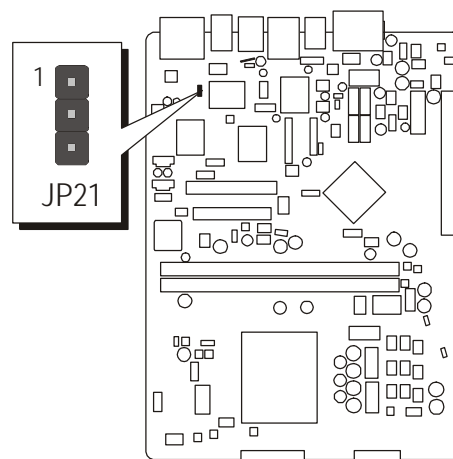
4. Parallel port Header (J1)



5. IrDA Header (JP5)



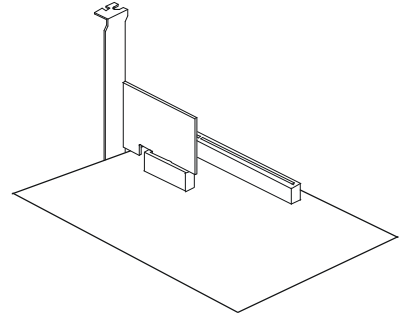
6. Audio Setting (JP21)



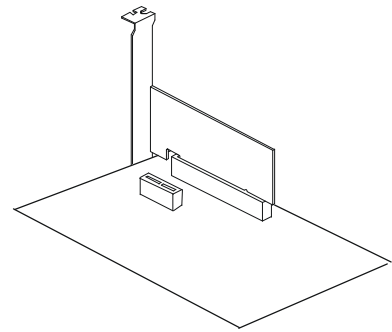
Step 9

Install Add-on Cards in Expansion Slots

1. PCI Express X1 Card



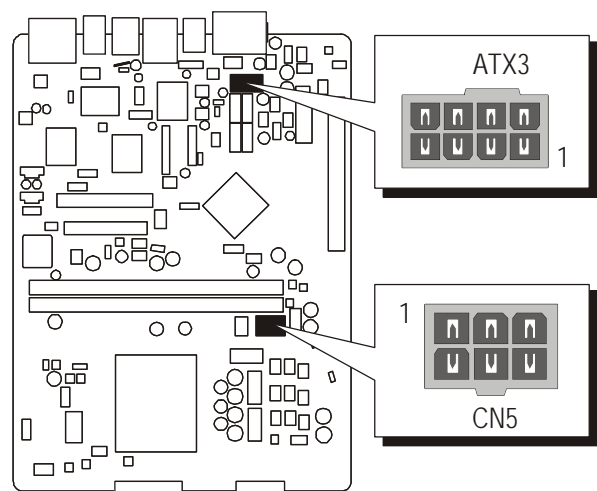
2. PCI Express X16 Graphic (PEG) Card



Step 10

Connect the Power Supply

1. System power connectors (ATX3/CN5)

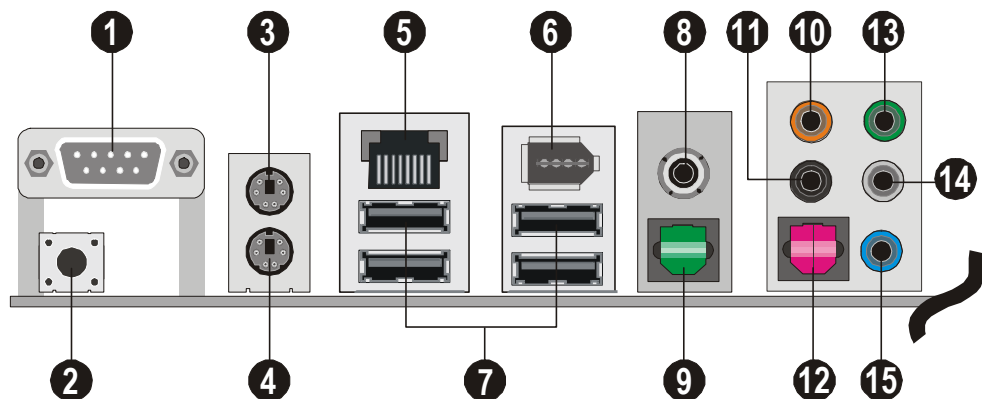
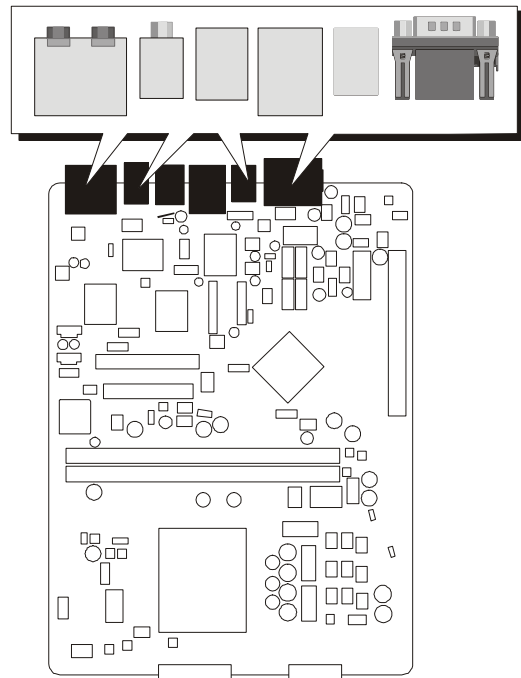


Step 11

Connect External Peripherals to Back-Panel

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

1. DB9 Serial port
2. Clear CMOS button
3. PS/2 Mouse port
4. PS/2 Keyboard port
5. Giga LAN port
6. 1394 port
7. USB 1.1/2.0 ports
8. SPDIF-Out Coaxial port
9. SPDIF-Out Optical port
10. 7.1 Channel Bass/Center port
11. 7.1 Channel Surround-Out port
12. SPDIF-IN Optical port
13. 7.1 Channel Front-Out port
14. 7.1 Channel Surround-Back port
15. Line-In port



Step 12

First Time System Boot Up

To assure the completeness and correctness of your system installation, you may check the above installation steps once again before you boot up your system for the first time.

1. Insert a bootable system floppy disk (DOS 6.2x, Windows NT, or others) which contains FDISK and FORMAT utilities into the FDD.
2. Turn on the system power.
3. First, you must 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 which will be shown in the FDISK program. After FDISK procedure, reboot your system by using the same system floppy disk.

Note : DOS 6.2x 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 partitions no larger than 2.1GB each.

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

Note : FORMAT C: /S can transfer all the necessary system files into the primary partition of your hard disk. Then, 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 2000/2003/XP/NT operating systems only. Make sure your operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the FN25 bundled CD-ROM into your CD-ROM drive.
The autorun program will display the drivers main installation window on screen.
2. Choose "Install DirectX9 Utility" and complete it.
3. Choose "Install nVIDIA Chipset Driver" and complete it.
4. Choose "Install VIA Audio Driver" and complete it.
5. Choose "Install nVIDIA USB 2.0 Driver" and complete it.
6. Exit from the autorun drivers installation program.

✿ Please refer to section Chapter 4 Software Utility to install driver.

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:



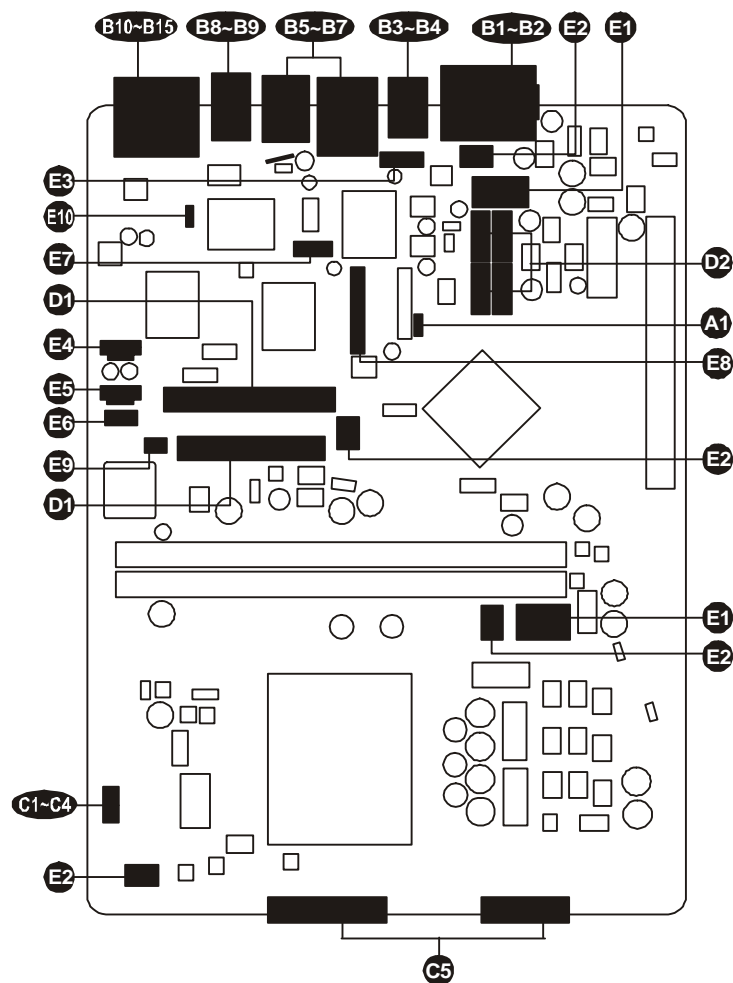
Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To Short jumper pins, simply place a plastic mini jumpers over the desired pair of pins.

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 939 : CPU Socket for AMD Athlon™ 64

DIMM1/2 : Two 184-pin DIMM Slots for 64, 128, 256, 512 MB, and 1GB of 2.6V DDR SDRAM

(The total installed memory does not exceed 2GB)

PCI Express X1: One 1X PCI Express Slot.

PCI Express X16: One 16-Lane PCI Express port for Graphic Attach

Jumper

- Ⓐ1 JP17 : Clear CMOS setting

Back Panel Connectors

- Ⓑ1 COM : Serial Port (DB9 male)
Ⓑ2 Clear CMOS : Clear CMOS button
Ⓑ3 MS : PS/2 mouse Port
Ⓑ4 KB : PS/2 keyboard Port
Ⓑ5 Giga LAN : Giga LAN Port
Ⓑ6 1394 : 1394 Port
Ⓑ7 USB : 2 USB 2.0/1.1 Ports
Ⓑ8 SPDIF-OUT Coaxial : SPDIF-OUT Coaxial Port
Ⓑ9 SPDIF-OUT Optical : SPDIF-OUT Optical Port
Ⓑ10 SPDIF-IN Optical : SPDIF-IN Optical Port
Ⓑ11 Surround-Out : 7.1-Channel Surround-Out Port
Ⓑ12 Bass/Center : 7.1-Channel Bass/Center Port
Ⓑ13 Front-Out : 7.1-Channel Front-Out Port
Ⓑ14 Surround-Back : 7.1-Channel Surround-Back Port
Ⓑ15 Line-In : Line-In Port

Front Panel Connectors

- Ⓒ1 PWON : power on/off momentary type switch
Ⓒ2 HLED : IDE drive active LED
Ⓒ3 PWR_LED : System power LED
Ⓒ4 RST : Hardware reset switch
Ⓒ5 JP6/JP16 : Front Panel Connectors

Internal Peripherals Connectors

- Ⓓ1 FDD : Floppy disk drive interface
Ⓓ1 IDE1 : IDE primary interface (Dual-channel)
Ⓓ2 SATA1/2/3/4 : Serial ATA Connectors

Other Connectors

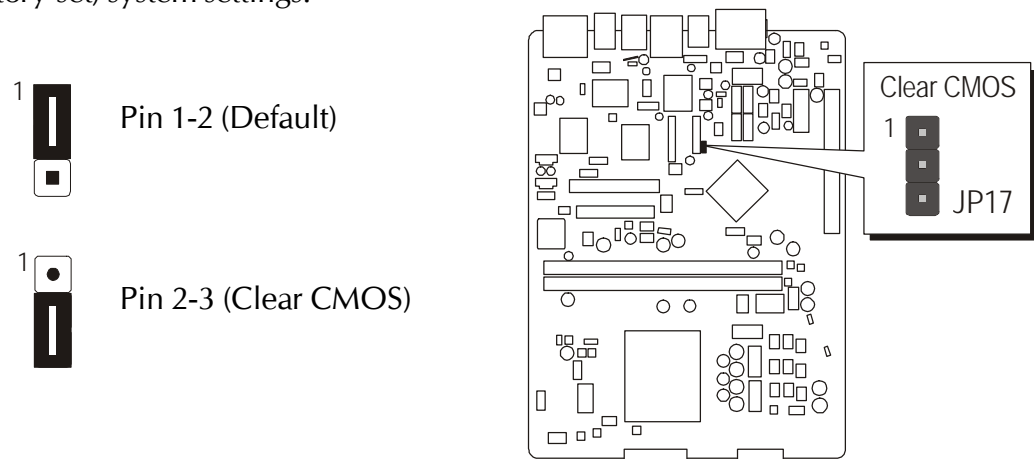
- Ⓔ1 CN5/ATX3 : System power connectors

E2	FAN1, 2, 3, 4	: Fan connectors
E3	JP2	: Wireless Keyboard and Mouse connector
E4	CN8	: LINE-IN connector
E5	CN7	: CD-IN connector
E6	CN6	: Mini CD-IN connector
E7	USB3	: USB Header
E8	J1	: Parallel Port Header
E9	JP5	: IrDA Header
E10	JP21	: Audio Setting

Jumper

A1 Clear CMOS Setting (JP17)

JP17 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 System Power cable from System Power connector.

Step 3. Remove jumper cap from JP11 pins 1-2.

Step 4. Place the jumper cap on JP11 pin 2-3 for a few seconds.

Step 5. Return the jumper cap to pin 1-2.

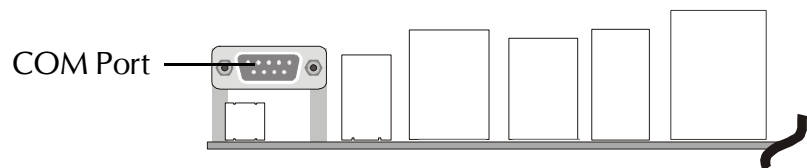
Step 6. Plug System Power cable into System Power connector.

Step 7. Turn on the system power (PC-> On).

Back-Panel Connectors

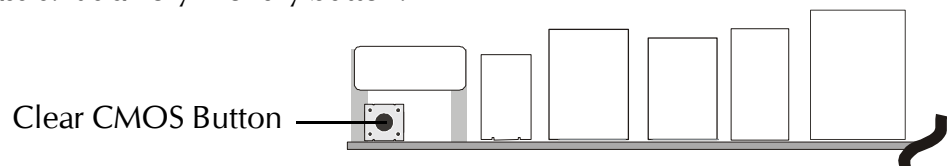
B1 COM Port

This mainboard can accommodate one serial device on CN1. Attach a serial device cable to the DB9 serial port CN1 at the back-panel of your computer.



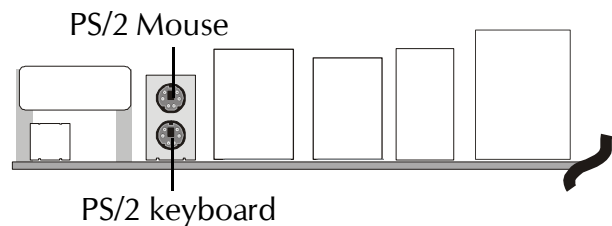
B2 Clear CMOS Button

This button is used to clear CMOS data. You can clear CMOS without opening the chassis. It's a very friendly button.



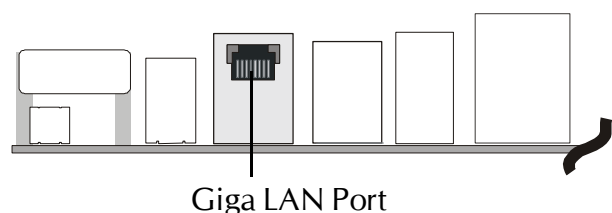
B3 PS/2 Keyboard & PS/2 Mouse Ports

B4 Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of the mainboard. Depending on the computer housing you use (desktop or tower), the PS/2 Mouse port is situated at the top of the PS/2 Keyboard port when the main-board is laid into a desktop, as opposed to a tower where the PS/2 Mouse port is located at the right of the PS/2 Keyboard's. Plug the PS/2 keyboard and mouse jacks into their corresponding ports.



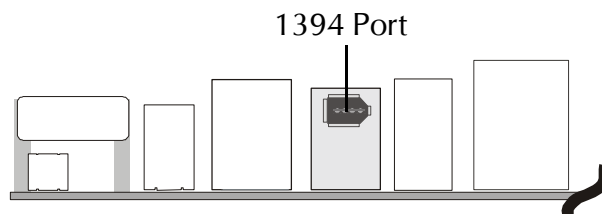
B5 Giga LAN Port

This mainboard can accommodate one device on Giga LAN. Attach a CAT-5 cable to the Giga LAN port at the back-panel of your computer.



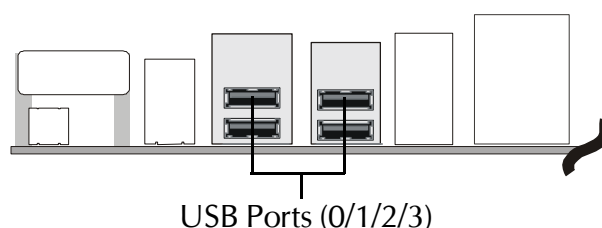
B6 1394 Port

This mainboard offers one 1394 port on back-panel. Plug device jack into an available 1394 port.



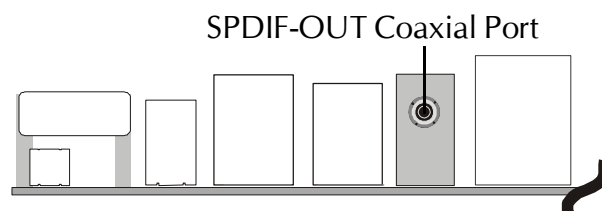
B7 USB Ports

Two female ports USB0/1 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB0/USB1 port.



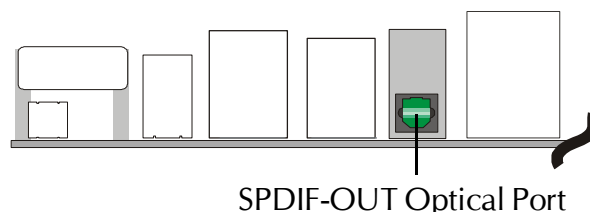
B8 SPDIF-OUT Coaxial Port

This mainboard can accommodate one device on SPDIF-OUT Coaxial. Attach a SPDIF cable to the SPDIF-OUT Coaxial Port at the back-panel of your computer.



B9 SPDIF-OUT Optical Port

This mainboard can accommodate one device on SPDIF-OUT Optical. Attach a SPDIF cable to the SPDIF-OUT Optical Port at the back-panel of your computer.



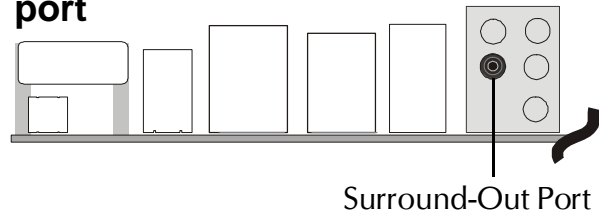
B10 SPDIF-IN Optical Port

This mainboard can accommodate one device on SPDIF-IN Optical. Attach a SPDIF cable to the SPDIF-IN Optical Port at the back-panel of your computer.



B11 7.1 Channel Surround-Out port

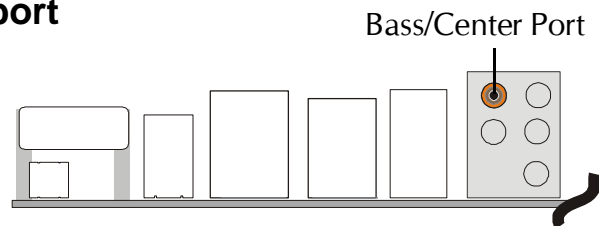
Surround-Out is a stereo line-level input port that accepts a 1/8-inch TRS stereo plug.



B12 7.1 Channel Bass/Center port

Bass/Center-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output.

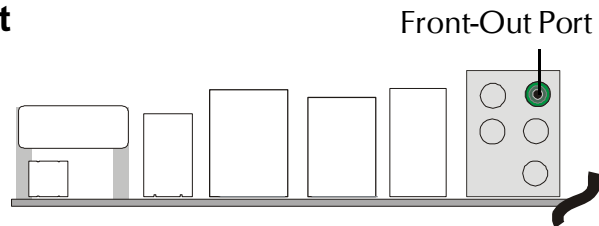
It can be connected to 1/8-inch TRS stereo headphones or to bass/center amplified speakers.



B13 7.1 Channel Front-Out port

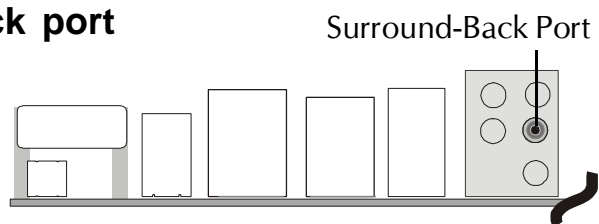
Front-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output.

It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers.



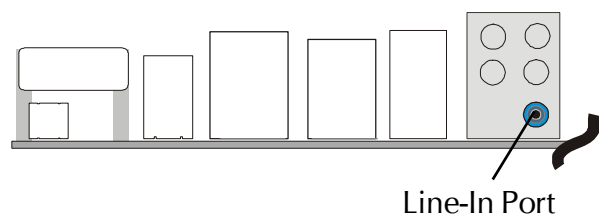
B14 7.1 Channel Surround-Back port

Surround-Back is a stereo line-level output port that accepts a 1/8-inch TRS stereo plug.



B15 Line-In port

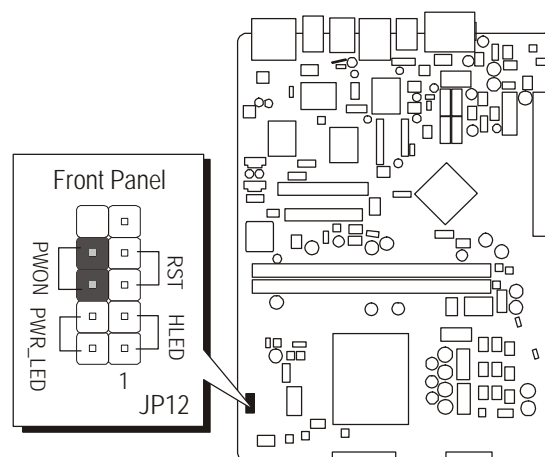
Line-In is a stereo line-level input port that accepts a 1/8-inch TRS stereo plug. It can be used as a source for digital sound recording, a source to be mixed with the output, or both.



Front-Panel Connectors

Power On/Off Switch Connector (PWON)

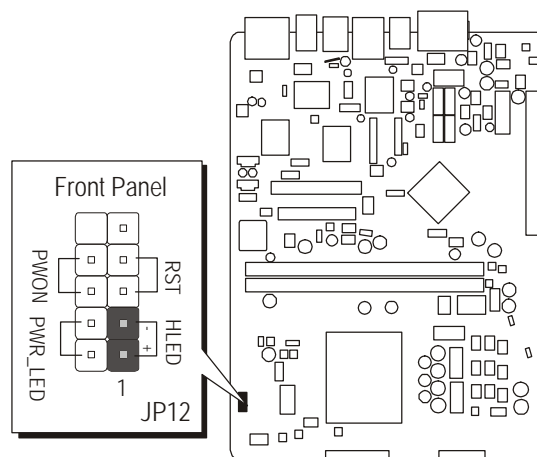
The Power On/Off Switch is a momentary type switch used for turning on or off the system power supply. Attach the connector cable from the Power Switch to the 2-pin (PWON) header on the mainboard.



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

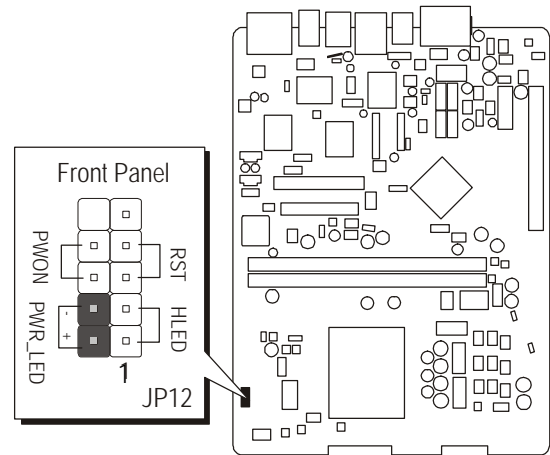
HDD LED Connector (HLED)

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.



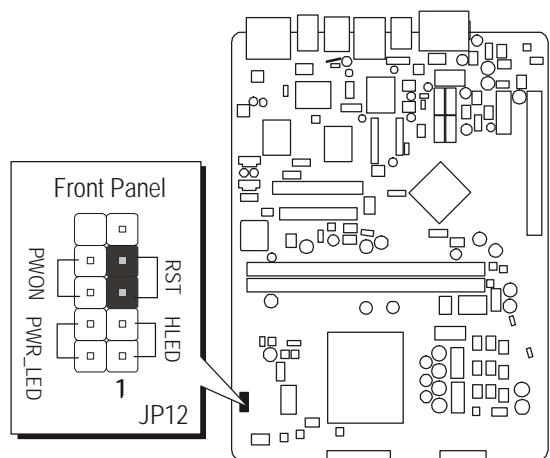
③ Power LED connector (PWR_LED)

This Power LED will go off during power saving mode. Attach a 2-pin Power LED cable to (PWR_LED) header.



④ Hardware Reset connector (RST)

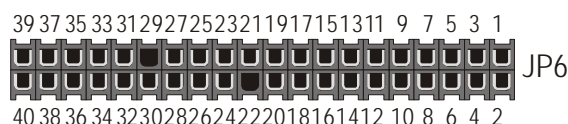
Attach the 2-pin hardware reset switch cable to the (RST) header.
Pressing the reset switch causes the system to restart.



⑤ Front Panel AUDIO/ USB/ 1394 Connector (JP6/JP16)

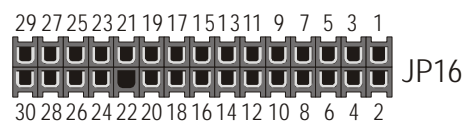
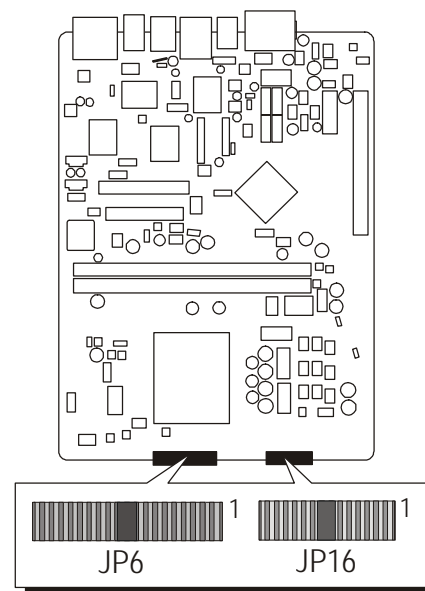
Headers JP6 and JP16 are used to connect cables to front panel connectors mounted on front-panel or back-panel.

The front panel is where the hard drive activity lights, reset button, on/off button, computer power on light, USB connectors, 1394 connectors, and audio headers, are located.



Pin Assignments (JP6):

1=NC	21=NC
2=NC	22=KEY
3=NC	23=NC
4=NC	24=NC
5=NC	25=NC
6=NC	26=NC
7=NC	27=NC
8=NC	28=NC
9=NC	29=KEY
10=GND	30=AUDIO GND
11=NC	31=AUDIO GND
12=RST_SW	32=FRONT_R
13=FPGD	33=FRONT_OUT_R
14=HDLED	34=FRONT_L
15=PW_SW	35=FRONT_OUT_L
16=HDPU	36=AUDIO GND
17=GLEDB	37=NC
18=VCC3	38=AUDIO GND
19=GLEDA	39=NC
20=+12VSB	40=MIC



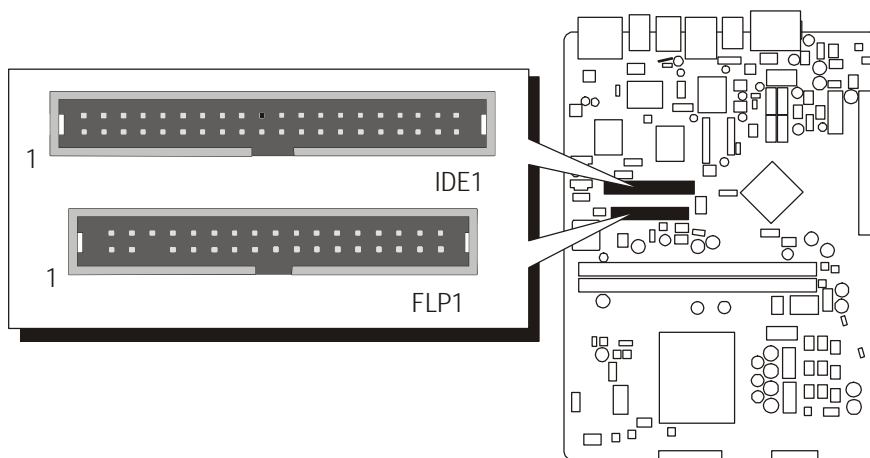
Pin Assignments (JP16):

1=USBPWR	16=USB4+
2=USBPWR	17=USBGD
3=USBPWR	18=USBGD
4=USBPWR	19=USB5-
5=USBGD	20=USBGD
6=USBGD	21=USB5+
7=USB1-	22=KEY
8=USB2-	23=1394GD
9=USB1+	24=1394GD
10=USB2+	25=TPA+
11=USBGD	26=TPB+
12=USBGD	27=TPA-
13=USB3-	28=TPB-
14=USB4-	29=1394PWR
15=USB3+	30=1394GD

☞ **Internal Peripherals Connectors**

D1 Enhanced IDE, Floppy Connectors

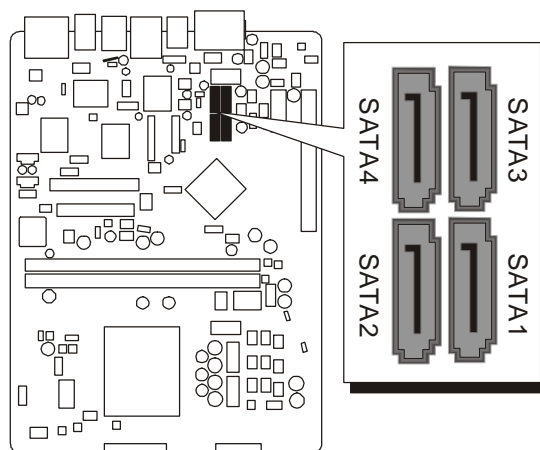
The mainboard features one 40-pin dual-channel IDE device connectors (IDE1) providing support for up to two IDE devices, such as CD-ROM and Hard Disk Drives (H.D.D.). This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA 133/100/66/33 ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.



Important: Ribbon cables are directional, therefore, make sure to always connect with the red cable stripe on the same side as pin #1 of the IDE1 or FDC connector on the mainboard.

D2 Serial ATA Connectors

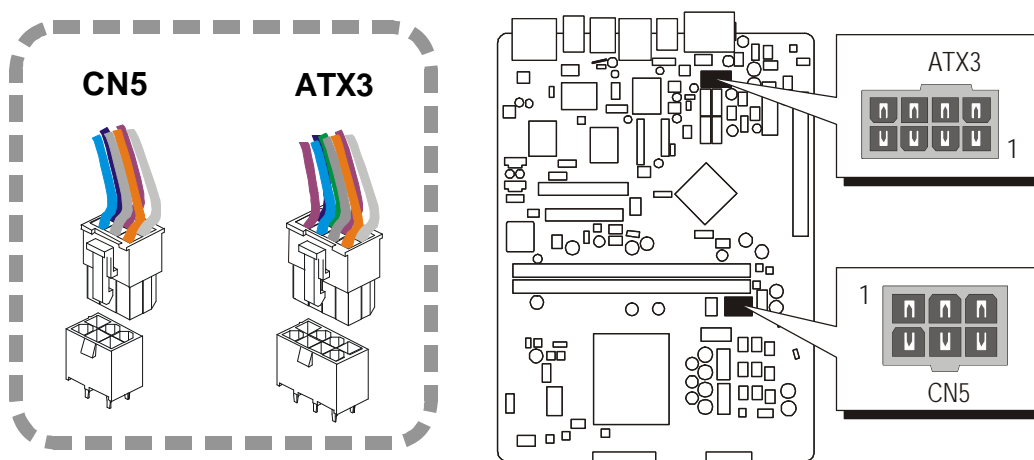
The Serial ATA is an evolutionary replacement for the Parallel ATA physical storage interface. Serial ATA is scalable and will allow future enhancements to the computing platform. The Serial ATA interface supports data transfer rates up to 150MB/s.



☞ Other Connectors

Ⓔ Power Connectors (8-pin ATX3, 6-pin CN5)

These connectors connect to an adapted 12V power supply. The plugs from the power supply are designed to fit these connectors in only one orientation. Please make sure you plug in the right direction.



Pin Assignments (CN5):

1 = GND	4 = 12VSB
2 = GND	5 = 12VSB
3 = GND	6 = 12VSB

Pin Assignments (ATX3):

1 = GND	5 = 12VSB
2 = GND	6 = 12VSB
3 = GND	7 = 12VSB
4 = NC	8 = PS_ON-

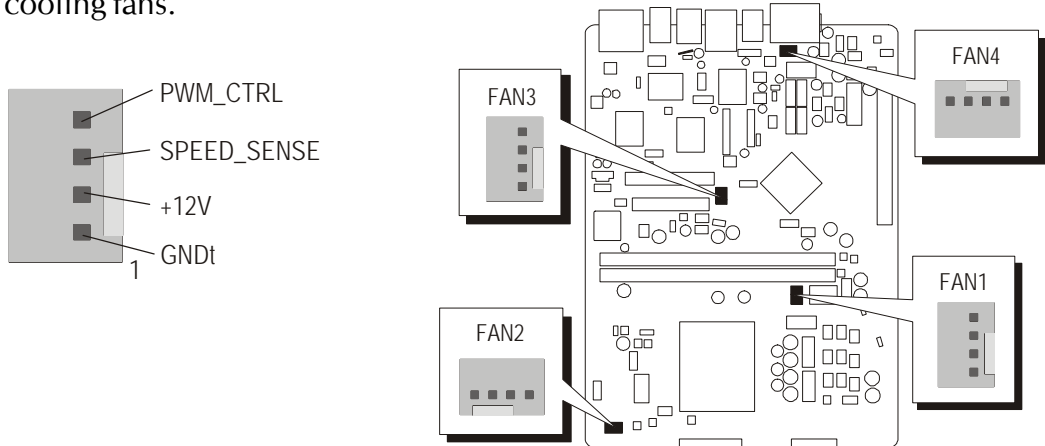
Note1: The power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.

Note2: Make sure the latch of the power connector clicks into place to ensure a solid attachment.

Note3: Make sure your power supply have enough power for higher speed processor installed.

E2 Fan Connectors - FAN1/2/3/4

The mainboard provides four onboard 12V cooling fan power connectors to support CPU_In (FAN1), CPU_Out (FAN2), System (FAN3), Reserved (FAN4) cooling fans.



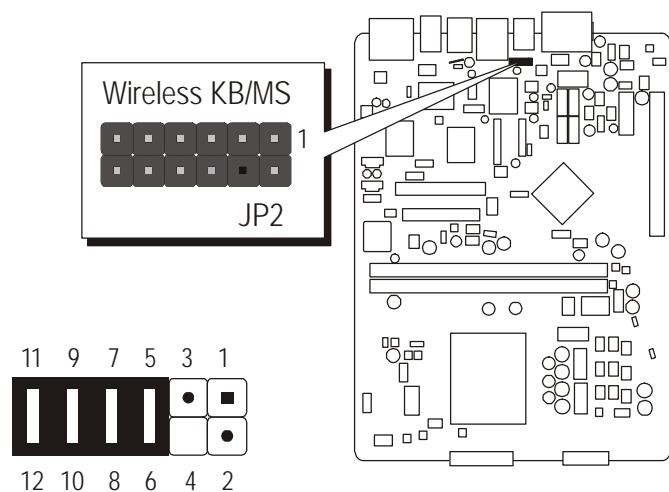
Note : Both cable wiring and type of plug may vary , which depends on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.

E3 Wireless Keyboard and Mouse Connector (JP2)

Port JP2 can be used to connect wireless keyboard and mouse device. 4 mini Jumper must be setted on pin 5-6, 7-8, 9-10 and 11-12 when this header is not used.

Pin Assignments:

- 1 = VCC
- 2 = VCC
- 3 = GND
- 4 = KEY
- 5 = MS_CLK
- 6 = MS_CK
- 7 = MSDATA
- 8 = MS_DK
- 9 = KBCLK
- 10 = KB_CK
- 11 = KBDATA
- 12 = KB_DT



E4 LINE-IN Connector (CN8) (Blue)

Port CN8 (Blue) can be used to connect stereo audio inputs from CD-ROM, TV-tuner or MPEG card.

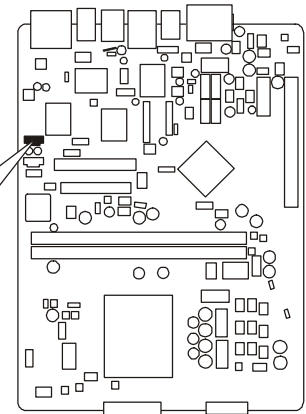
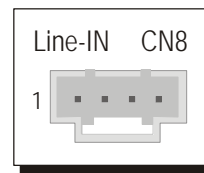
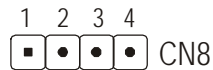
Pin Assignments:

1 = Line-IN-Left

2 = Ground

3 = Ground

4 = Line-IN-Right



E5 CD-IN Connector (CN7) (Black)

Port CN7 is used to attach an audio connector cable from the CD-ROM drive.

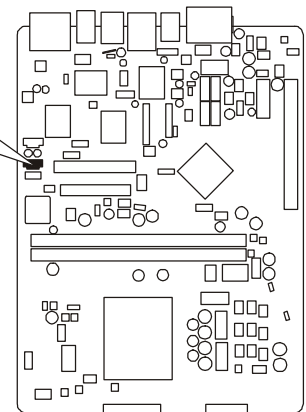
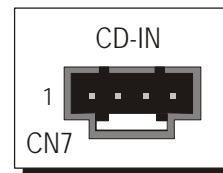
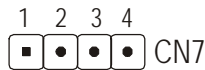
Pin Assignments:

1 = CD-IN-Left

2 = Ground

3 = Ground

4 = CD-IN-Right



E6 Mini CD-IN Connector (CN6) (White)

Port CN6 is used to attach an audio connector cable from the CD-ROM drive.

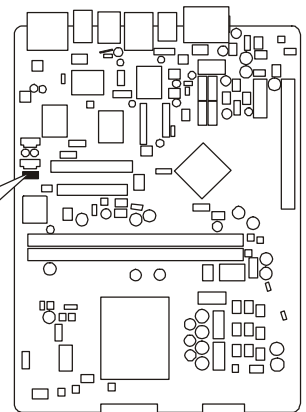
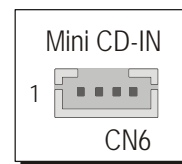
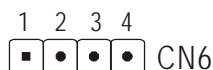
Pin Assignments:

1 = Ground

2 = CD-IN-Right

3 = Ground

4 = CD-IN-Left

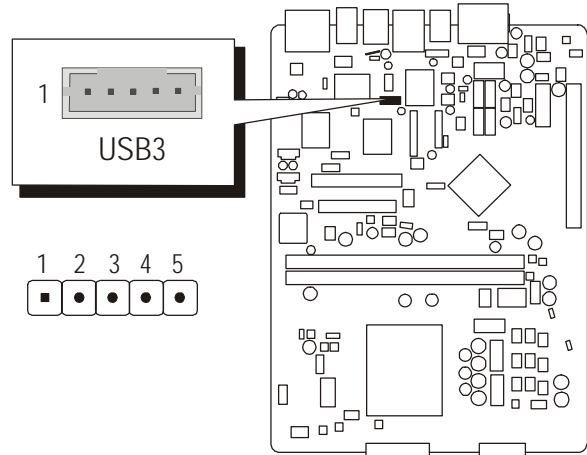


E7 USB Header (USB3)

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

Pins Assignment:

- 1=GND
- 2=GND
- 3=USB+
- 4=USB-
- 5=5VSB



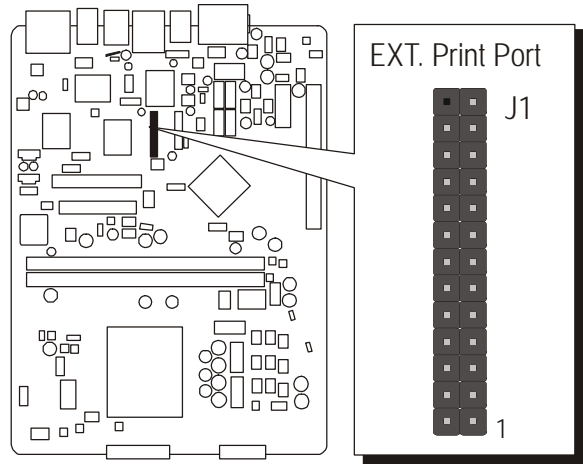
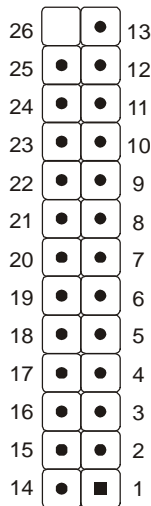
E8 Parallel Port Header-EXT. Print Port (J1)

One DB25 male parallel port header is located at the rear panel of the motherboard. The header is used to connect the cable attached to parallel connector. But the parallel cable is optional at the time of purchase.

Pin Assignments (J1):

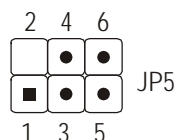
- 1=PSTB
- 2=PD0
- 3=PD1
- 4=PD2
- 5=PD3
- 6=PD4
- 7=PD5
- 8=PD6
- 9=PD7
- 10=P_-ACK
- 11=P_-BUSY
- 12=P_-PE

- | | | | | |
|-----------|------------|-----------|----------|------------|
| 13=P_SLCT | 14=PAUTOFD | 15=P_-ERR | 16=PINIT | 17=PSLCTIN |
| 18=GND | 19=GND | 20=GND | 21=GND | 22=GND |
| 23=GND | 24=GND | 25=GND | 26=KEY | |



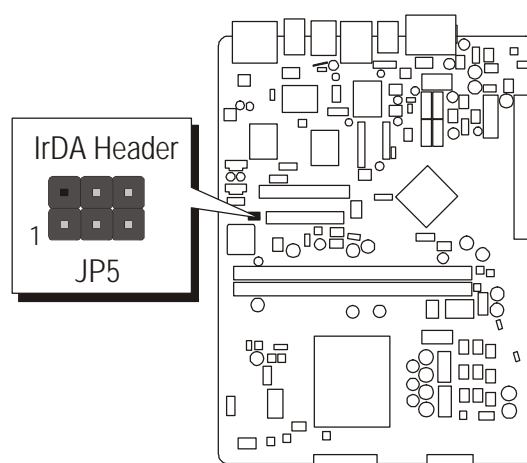
E9 IrDA Header (JP5)

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



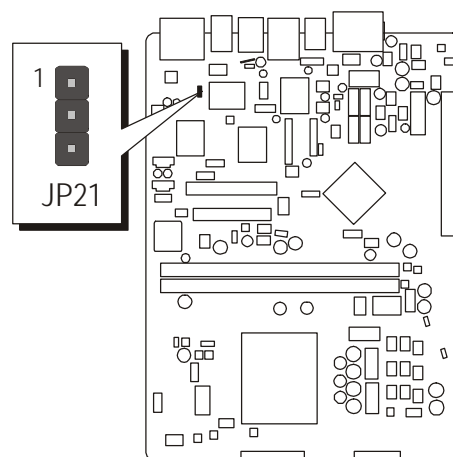
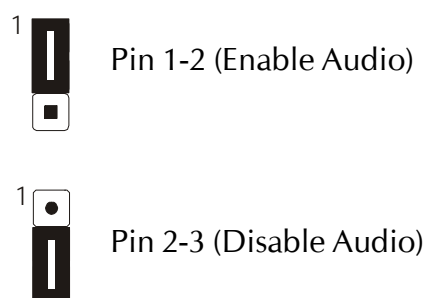
Pin Assignments:

1 = N/C	2 = KEY
3 = VCC	4 = GND
5 = IrTx	6 = IrRx



E10 Audio Setting (JP21)

JP21 is used to Enable/Disable Audio.



3.3 System Memory Configuration

The FN25 mainboard has two 184-pin DIMM slots that allow you to install from 128MB up to 2GB of system memory. Each 184-pin DIMM (Dual In-line Memory Module) Slot can accommodate 128MB, 256MB, 512MB, 1GB and 2GB of PC2700/PC3200 compliant 2.6V single (1 Bank) or double (2 Bank) side 64-bit wide data path DDR SDRAM modules.

Install Memory:

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

TOTAL 2 DIMM in Single or Dual Channel Mode up to 4GB and 2GB per DIMM								
Density	128 Mbit		256 Mbit		512 Mbit		1024 Mbit	
Device Width	X8	X16	X8	X16	X8	X16	X8	X16
Single Side	128MB	128MB	256MB	256MB	512MB	512MB	1024MB	1024MB
Double Side	256MB	256MB	512MB	512MB	1024MB	N/A	2048MB	N/A

- Note: 1. Maximum installed memory is 2GB.
2. Double-side X16 DDR-SDRAM chips are not supported.
3. Registered DIMM are not supported.
4. Only unbuffered without ECC DIMM are supported.

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.

Upgrade Memory:

You can easily upgrade the system memory by inserting additional DDR SDRAM modules in available DIMM slots. The total system memory is calculated by simply adding up the memory in all DIMM slots. 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 FN25 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 Software - Installing DirectX9 Utility, nVIDIA Chipset, VIA Audio, nVIDIA USB 2.0 Driver.
- ☞ Install Utility - Installing Acrobat Reader, WinFlash Utility.
- ☞ Manual - FN25 Manual and nVIDIA RAID User's Guide 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.



Note : If you want to install driver automatically, please make sure you have install WindowsXP(SP1) and Windows2000(SP4).

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.

Select using your pointing device (e.g. mouse) on the "Install Mainboard Software" bar to run into sub-menu.

The Mainboard Software include:

- [4.2.A] Install DirectX9 Utility
- [4.2.B] Install nVIDIA Chipset Driver
- [4.2.C] Install VIA Audio Driver
- [4.2.D] Install nVIDIA USB 2.0 Driver



4.2.A Install DirectX9 Utility

Select using your pointing device (e.g. mouse) on the "Install DirectX9 Utility" bar to install DirectX9.

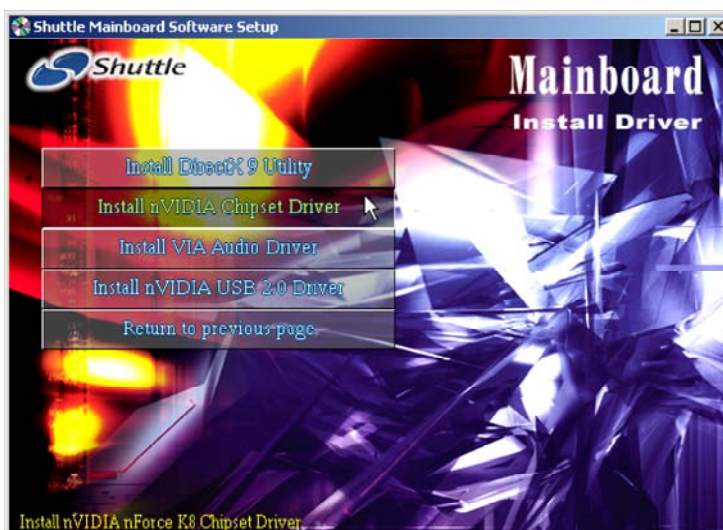


Once you made your selection, a Setup window run the installation automatically.

When the copying files is done, make sure you reboot the system to take the installation effect.

4.2.B Install nVIDIA Chipset Driver

Select using your pointing device (e.g. mouse) on the "Install nVIDIA Chipset Driver" bar to install chipset system 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.

4.2.C Install VIA Audio Driver

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

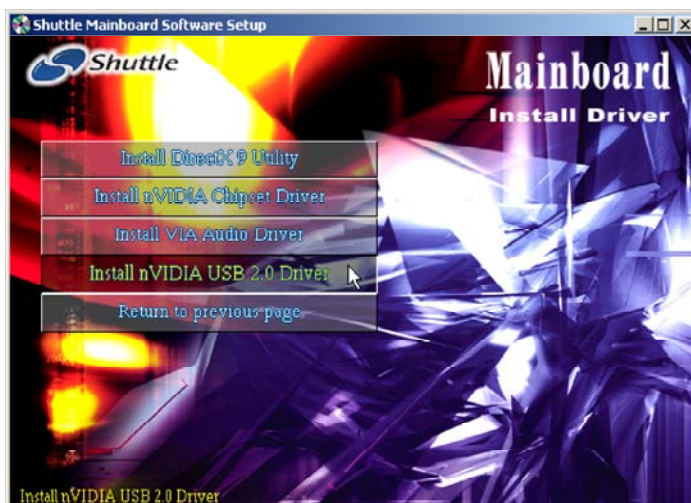


Once you made your selection, a Setup window run the installation automatically.

When the copying files is done, make sure you reboot the system to take the installation effect.

4.2.D Install nVIDIA USB2.0 Driver

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

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. Select using your pointing device (e.g. mouse) on the "Manual" bar.

Then Online Information windows will appear on your screen.

1. Click on the "Install Acrobat Reader" bar if you need to install acrobe reader.
2. Click on "FN25 Manual" bar to view FN25 Series Mainboard User's Manual in PDF format.



3. Click on "nVIDIA RAID User's Guide" bar to view nVIDIA RAID User's Guide in PDF format.



5 BIOS SETUP

FN25 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 the 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

Note 1. If you miss trains of words meationed 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's front-panel. You may also reboot by simultaneously pressing the <Ctrl>, <Alt>, keys.

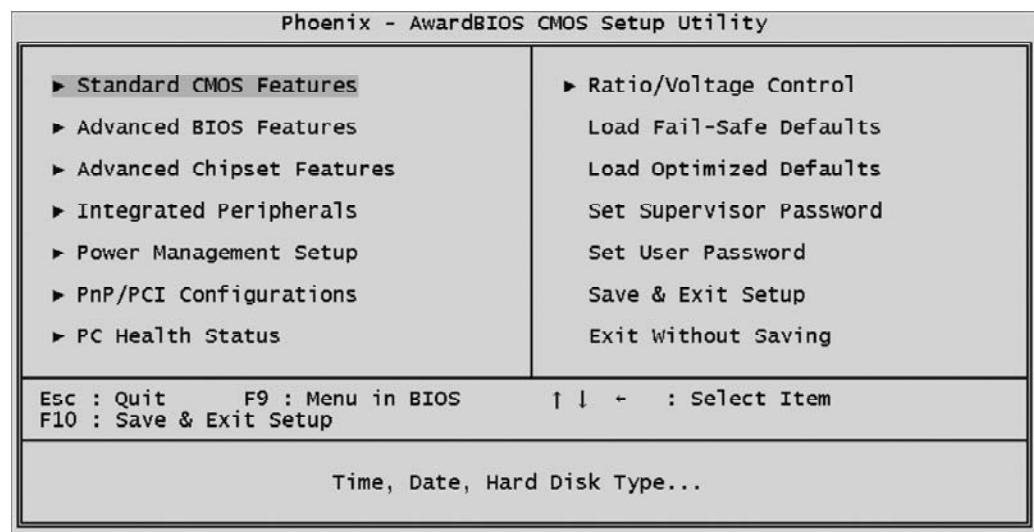
Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

“Press F1 to Continue, DEL to Enter Setup”

- Step 3. As you enter the BIOS program, the CMOS Setup Utility will prompt 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 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.

Ratio/Voltage Control

Use this menu to specify your settings for ratio 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.

Set Supervisor / User Password

Use this menu to change, set, or disable 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	
Standard CMOS Features	
Date (mm:dd:yy)	Wed, Dec 15 2004
Time (hh:mm:ss)	11 : 46 : 16
► IDE Channel 0 Master	
► IDE Channel 0 Slave	
Drive A	[1.44M, 3.5 in.]
Video	[EGA/VGA]
Halt On	[All , But Keyboard]
Base Memory	640K
Extended Memory	65472K
Total Memory	1024K
Item Help	
Menu Level ►	
Change the day, month, year and century	

[Left Arrow]: Move Enter: Select +/-/PU/PD: value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Date

<Month> <DD> <YYYY>

Set the system date. Note that the 'Day' automatically changes when you set the date.

Time

<HH : MM : SS>

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

IDE Channel 0 Master/Slave

Options are in its sub-menu.

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

Drive A

Select the type of floppy disk drive 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.

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 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.

- Press Enter

IDE Channel 0 Master

Selecting 'manual' lets you set the remaining fields on this screen and select the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc., Note: PRECOMP = 65535 means NONE!

- 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.

- 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 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

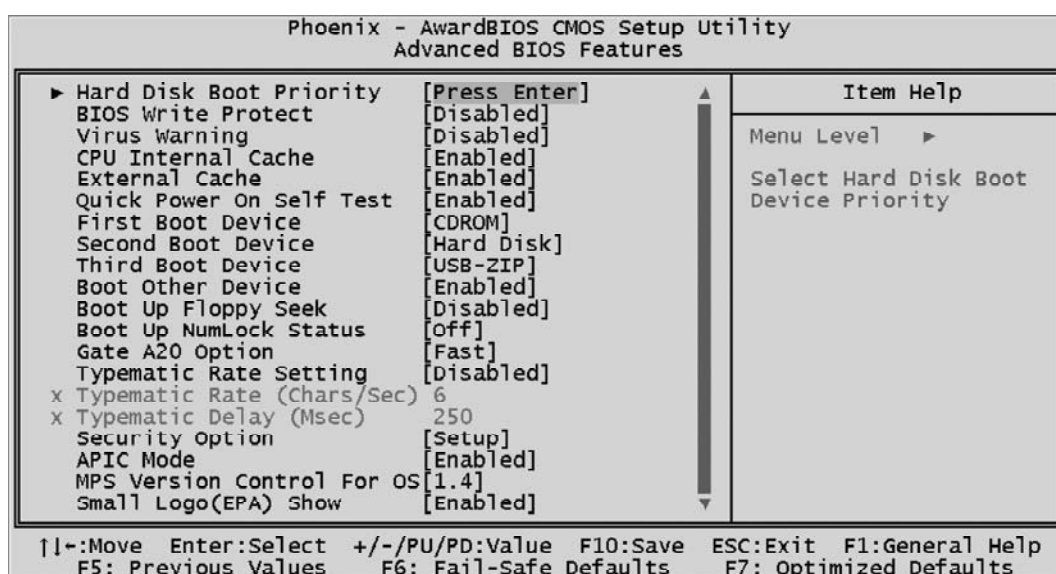
Sector

Number of sector per track.

➤ Min = 0, Max = 255

Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing, and security.



Hard Disk Boot Priority

This item allows you to select Hard Disk Book Device Priority.

BIOS Write Protect

The item allows you to enable/disable the Bios Write Protect.

➤ The choice: Enabled or Disabled.

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enables and someone attempts to write data into this area, BIOS will show a warning message on screen, and an alarm beep.

Enabled Activates automatically when the system boots up, causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

➤ The choice: Enabled or Disabled.

CPU Internal Cache

All processors that can be installed in this mainboard use internal level 1 (L1) cache memory to improve performance. Leave this item at the default value for better performance.

- The choice: Enabled or Disabled.

External Cache

Most processors that can be installed in this system use external level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

- The choice: Enabled or Disabled.

Quick Power On Self Test

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

- The choice: Enabled or Disabled.

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

- The Choice: Floppy, LS120, Hard Disk, CDROM, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, Legacy LAN, or Disabled.

Boot Other Device

Select Your Boot Device Priority.

- The choice: Enabled or Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot-Up. Disabling speed boots up. Enabled tests floppy drives to determine whether they have 40 or 80 tracks.

- The choice: Enabled or Disabled.

Boot Up NumLock Status

Selects power on state for NumLock.

- The choice: Off or On.

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used for above 1MByte of address memory. Initially, the gate A20 was handled via a pin on the keyboard. Today, while a keyboard still provides this support, it is more common and much faster in setting to Fast for the system chipset to provide support for gate A20.

- The choice: Normal or Fast.

Typematic Rate Setting

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

- 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 the key down.

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

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

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

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

- | | |
|--------|--|
| System | The system will not boot and access to Setup will be denied if the correct password is not entered promptly. |
| Setup | The system will boot, but access to Setup will be denied if the correct password is not entered promptly. |

- The choice: System or Setup.

Note: To disabled security, select PASSWORD SETTING at Main Menu, and then you will be asked to enter password. Do not type anything and just press <Enter>; it will disable security. Once the security is disabled, the system will boot, and you can enter Setup freely.

APIC Mode

Selects enable/disable IO APIC function

- The choice: Enabled or Disabled.

MPS Version Control For OS

Selects the operating system multiprocessor support version.

- The choice: 1.1 or 1.4

Small Logo(EPA) Show

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

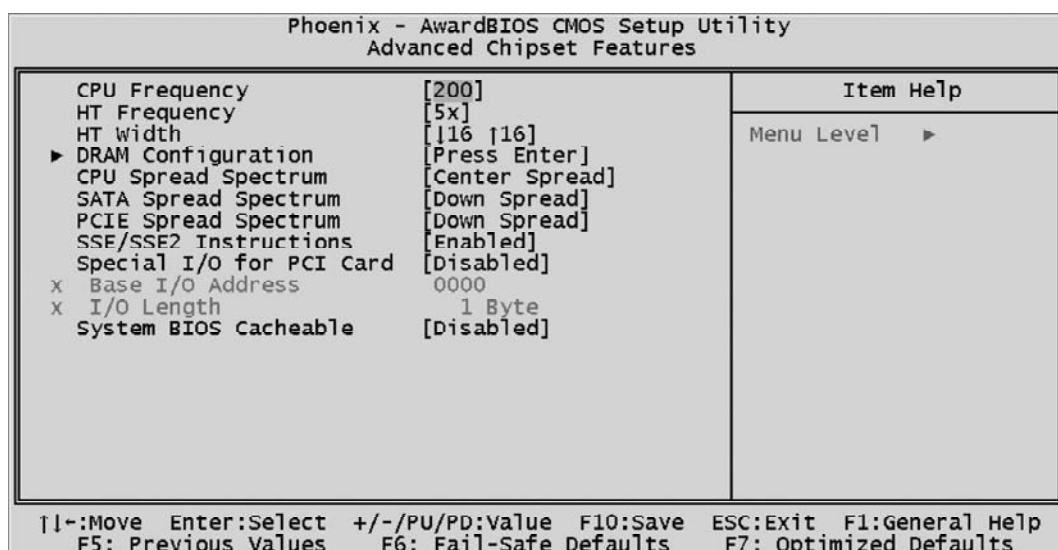
- The choice: Enabled or Disabled.



Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It states that these items should never need to be altered.

The default settings have been chosen because they provide the best operating conditions for your system. If you discovered that data was being lost while using your system, you might consider making any changes.



CPU Frequency

This item allows you to set the CPU Frequency.

- The choice: 200.0 ~ 280.0.

HT Frequency

This item allows you to set the HT Frequency.

- The choice: 1x ~ 5x.

HT Width

This item allows you to set the HT Width.

- The choice: ↓16↑16, ↓8↑8, ↓16↑8, ↓8↑16.

DRAM Configuration

Options are in its sub-menu.

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

Timing Mode

- The Choice: Manual or Auto.

Memclock index value (Mhz)

Places an artificial memory clock limit on the system.

Memory is prevented from running faster than this frequency.

- The Choice: 100Mhz, 133Mhz, 166Mhz, 200Mhz, 216Mhz, 233Mhz or 250Mhz.

CAS# latency (Tcl)

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Don't change this field from the default value specified by the system designer.

- The Choice: 2, 2.5 or 3.

Min RAS# active time (Tras)

Places an artificial memory clock limit on the system.

Memory is prevented from running faster than this frequency.

- The Choice: Auto or 5T ~ 15T.

RAS# to CAS# delay (Trcd)

This field lets you insert a timing delay between the CAS and RAS strobesignals, and you can use it when DRAM is written to , read from, or refreshed. Faster performance is gained in high speed, more stable performance, in low speed..

- The Choice: Auto or 2T ~ 7T.

Row precharge Time (Trp)

This field specifies the Row precharge Time. Precharge to Active or Auto-Refresh of the same bank. Typically 20-24 nsec.

- The Choice: Auto or 2T ~ 7T.

MTRR mapping mode

This item allows you to set the MTRR mapping mode.

- The Choice: Continuous or Discretes.

CPU Spread Specturm

This item allows you to set the CPU Spread Specturm.

- The choice: Center Spread or Disabled.

SATA Spread Specturm

This item allows you to set the SATA Spread Specturm.

- The choice: Down Spread or Disabled.

PCIE Spread Specturm

This item allows you to set the SATA Spread Specturm.

- The choice: Down Spread or Disabled.

SSE/SSE2 Instructions

This item allows you to enable/disable the SSE/SSE2 Instructions.

- The choice: Enabled or Disabled.

Special I/O for PCI Card

This item enable/disable the Special I/O for PCI Card.

- The choice: Disabled or Enable.

Base I/O Address

This item allows you to set the Base I/O Address.

- The Choice: 0000 ~ FFFF.

I/O Length

This item allows you to set the I/O Length.

- The choice: 1 Byte, 4 Byte, 8 Byte, 16 Byte, 32 Byte, 64 Byte, 128 Byte or 256 Byte.

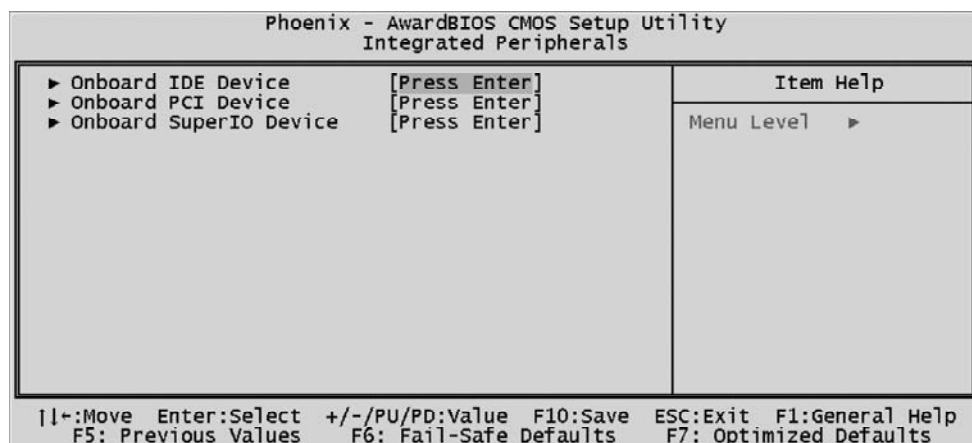
System BIOS Cacheable

Select Enable allows caching of the system BIOS ROM at F000h-FFFFh, resulting in better system performance. However, if any program is written to this memory area, a system error may result.

- The Choice: Enabled or Disabled.



Integrated Peripherals



Onboard IDE Device

Options are in its sub-menu.

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

RAID Function Setup

Press <Enter> to enter the RAID Function.

OnChip IDE Channel 0

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

➤ The Choice: Enabled or Disabled.

Primary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. 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 Master/Slave UDMA

Ultra DMA/100 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/100, select Auto to enable BIOS support.

➤ The choice: Auto or Disabled.

Serial-ATA 1/2

This item allows you to enable/disable the Serial-ATA 1/2.

- The choice: Enabled or Disabled.

SATA DMA transfer

This item allows you to enable/disable the SATA transfer access.

- 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.

IDE DMA transfer access

This item allows you to enable/disable the IDE DMA transfer access.

- The choice: Enabled or Disabled.

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: Enable or Disabled.

Onboard PCI Device

Options are in its sub-menu.

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

OnChip USB

This should be enabled if your system has a USB installed on the system board and you want to use it.

- The choice: Desable, V1.1 + V2.0 or V1.1.

OnChip Lan

This item allows you to control the onboard Lan.

- The Choice: AUTO or Disabled.

Onboard SuperIO Device

Options are in its sub-menu.

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

Onboard FDC Controller

This item specifies onboard floppy disk drive controller. This setting allows you to connect your floppy disk drives to the onboard floppy connector.

- The Choice: Enable or Disabled.

Onboard Serial Port1

This option is used to assign the I/O address and interrupt request(IRQ) for the onboard serial port1(COM1).

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

Onboard Infrared Port

This option is used to assign the I/O address and interrupt request(IRQ) for the onboard infrared port.

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

UART Mode Select

This item allows you to select IrDA infrared through COM2 port.

- The Choice: IrDA, ASKIR or SCR.

UR2 Duplex Mode

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

- The Choice: Full or Half.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address and interrupt request(IRQ).

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

Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available mode.

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

ECP Mode Use DMA

When the onboard parallel is set to ECP mode, the parallel port can use DMA3 or DMA1.

- The Choice: 1 or 3.



Power Management Setup

Phoenix - AwardBIOS CMOS Setup Utility		
Power Management Setup		
ACPI function	Enabled	Item Help
ACPI Suspend Type	[S1(POS)]	
Power Management	[User Define]	
Video Off Method	[DPMS Support]	
HDD Power Down	[Disabled]	
HDD Down In Suspend	[Disabled]	
Soft-Off by PBTN	[Instant-Off]	
PowerOn After Pwr-Fail	[Off]	
WOL(PME#) From Soft-Off	[Disabled]	
WOR(RI#) From Soft-Off	[Disabled]	
USB Resume from S3	[Disabled]	
Power-On by Alarm	[Disabled]	
x Day of Month Alarm	4	
x Time (hh:mm:ss) Alarm	0 : 0 : 26	
PS2 Keyboard Power ON	[Disabled]	
KB Power ON Password	[Enter]	
Hot Key Power ON	[Any Key]	
PS2 Mouse Power ON	[Disabled]	

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

The Power Management Setup allows you to configure your system to most effectively saving energy while operating in a manner consistent with your own style of computer use.

ACPI Function

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

- Always "Enabled".

ACPI Suspend Type

This item allows you to select sleep state when suspend.

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

Power Management

This category allows you to select the type (or degree) of power saving mode settings.

Min Saving Minimum power management.
Suspend Mode = 15 min.

Max Saving Maximum power management.
Suspend Mode = 1 min.

User Define Allows you to set each mode individually.
Suspend Mode = Disabled or 1 min ~ 15min.

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

Video Off Method

This determines the manner in which the monitor is blanked.

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.

Blank Screen This option only writes blanks to the video buffer.

DPMS Supported Initial display power management signaling.

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

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 Disable.

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

HDD Down In Suspend

The item allows you to enable or disabled the HDD Down In Suspend.

- The choice: Enabled or Disabled.

Soft-Off By PBTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung".

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

PWRON After PWR-Fail

This item allows you to select power on function when power fail.

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

WOL(PME#) From Soft-Off

If this item sets to Enable, the system power will be turned on when the LAN port receives an incoming signal. You have to connect the fax/modem to the mainboard Wake On LAN connector for this feature to work.

- The choice: Enabled or Disabled.

WOR(RI#) From Soft-Off

If this item is enable, it allows the system to resume from a software power down or power-saving mode whenever there is an incoming call to an installed fax/modem. You have to connector the fax/modem to the mainboard.

- The choice: Enabled or Disabled.

USB Resume From S3

If you are using a USB keyboard, and the ACPI suspend type is set to S3, you can enable this item to allow a keystroke to wake up the system from power saving mod.

- The choice: Enabled or Disabled.

Power-On by Alarm

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

- The choice: Enabled or Disabled.

Day of Month Alarm

This item selects the alarm Day of Month.

- The choice: 0 ~ 31.

Time (hh : mm : ss) Alarm

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.

PS2 Keyboard Power ON

When the POWER ON Function is set to PS2 Keyboard, use this item to set the PS2 keyboard combination that turns on the system.

- The choice: Disabled, Password or Hot KEY.

KB Power ON Password

When the POWER ON Function is set to Password, use this item to set the password.

- The choice: Enter.

Hot Key Power ON

When the POWER ON Function is set to Hot Key, use this item to set the hot key combination that turns on the system.

- The choice: Ctrl-F1 ~ F12 or Any key.

PS2 Mouse Power ON

When the POWER ON Function is set to PS2 Mouse, use this item to set the PS2 mouse combination that turns on the system.

- The choice: Disabled or Enabled.



PnP/PCI Configurations

Phoenix - AwardBIOS CMOS Setup Utility	
PnP/PCI Configurations	
Reset Configuration Data	[Disabled]
Resources Controlled By	[Auto(ESCD)]
x IRQ Resources	Press Enter
PCI/VGA Palette Snoop	[Disabled]
** PCI Express relative items **	
Maximum Payload Size	[4096]
Item Help	
Menu Level ▶	
Default is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot	

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

This section describes the configuration of PCI bus system. PCI or Personal Computer Interconnection is a system which allows I/O devices to operate at the speed CPU itself keeps when CPU communicating with its own special components.

This section covers some very technical items, and it is strongly recommended that only experienced users should make any changes to the default settings.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit from Setup if you have installed a new device or software and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

- The choice: Enabled or Disabled .

Resource controlled By

The Award Plug-and-Play BIOS has the capacity to automatically configure all of the boot and Plug-and-Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug-and-Play operating system such as Windows 95.

If you set this field to "manual" , choose specific resources by going into each of the sub-menu that follows this field (a sub-menu is proceeded by a ">").

- The choice: Auto(ESCD) or Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

IRQ3/4/5/7/9/10/11/12/14/15 assigned

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices is compliant with the original PC AT bus specification; PCI/ISA PnP for devices is compliant with the Plug-and-Play standard whether designed for PCI or ISA bus architecture.

➤ The choice: PCI Device or Reserved.

PCI/VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. If you have MPEG ISA/VESA VGA Cards and PCI/VGA Card worked, Enable this field. Otherwise, please Disable it.

➤ The choice: Enabled or Disabled.

** PCI Express relative items **

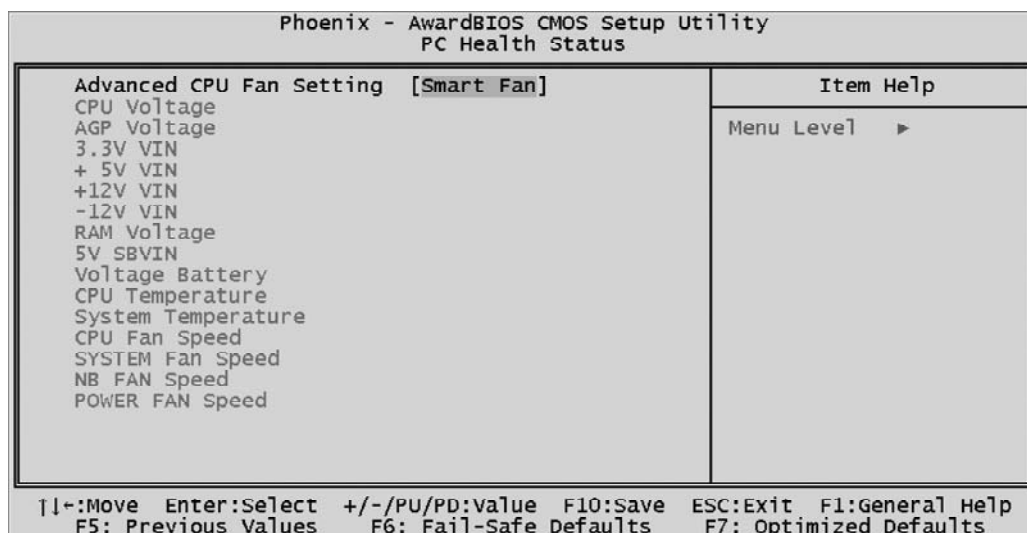
Maximum Payload Size

Set maximum TLP payload size for the PCI Express devices.
The unit is byte.

➤ The choice: 128, 256, 512, 1024, 2048 or 4096.



PC Health Status



Advanced CPU Fan Setting

Set the CPU Fan Speed.

- The choice : Smart Fan, Noise Control - U Low, Noise Control - Low, Noise Control - Mid, Noise Control - Full, Temp Control - 50°C, Temp Control - 55°C, Temp Control - 60°C or Temp Control - 65°C.

Smart Fan : The CPU fan speed will be increased when the temperature of CPU is raising up. Upon the temperature raising up to 80°C, the CPU fan will be full speed.

Noise Control-U Low : When the CPU fan being set up as ULTRA LOW and the temperature of CPU is raising up to 80°C, the CPU fan being full speed.

Noise Control-Low : When the CPU fan being set up as LOW and the temperature of CPU is raising up to 80°C, the CPU fan being full speed.

Noise Control-Mid : When the CPU fan being set up as Mid and the temperature of CPU is raising up to 80°C, the CPU fan being full speed.

Noise Control-Full : CPU fan full speed.

Temp Control-50°C : When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 50°C.

Temp Control-55°C : When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 55°C.

Temp Control-60°C : When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 60°C.

Temp Control-65°C : When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 65°C.

Note :Before manually modifying the CPU fan setting, please make sure fan connectors are plug into the correct fan connector designations on the mainboard.

CPU Voltage

AGP Voltage

+3.3V VIN

+5V VIN

+12V VIN

-12V VIN

RAM Voltage

5V SBVIN

Voltage Battery

CPU Temperature

System Temperature

CPU Fan Speed

SYSTEM Fan Speed

NB Fan Speed

POWER FAN Speed

Warning : It is Strongly recommended to disable CPU Fan Auto Guardian feature, if you wish to use other fan cooler, allowing the fan to run at its default speed.



Ratio/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility		
Ratio/Voltage Control		
CPU Ratio	[Auto]	Item Help Menu Level ▶
CPU Voltage Select	[Auto]	
RAM Voltage Select	[Auto]	
Chipset Voltage Select	[Auto]	

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

CPU Ratio

This item allows you to set the CPU Ratio.

- The choice: x4 800Mhz, x5 1000Mhz, x6 1200Mhz, x7 1400Mhz, x8 1600Mhz, x9 1800Mhz, x10 2000Mhz, x11 2200Mhz, x12 2400Mhz, x13 2600Mhz, x14 2800Mhz, x15 3000Mhz, x16 3200Mhz, x17 3400Mhz, x18 3600Mhz, x19 3800Mhz, x20 4000Mhz, x21 4200Mhz, x22 4400Mhz, x23 4600Mhz, x24 4800Mhz, x25 5000Mhz or Auto.

CPU Voltage Select

This item allows you to set the CPU Voltage.

- The choice: 0.800V, 0.825V, 0.850V, 0.875V, 0.900V, 0.925V, 0.950V, 0.975V, 1.000V, 1.025V, 1.050V, 1.075V, 1.100V, 1.125V, 1.150V, 1.175V, 1.200V, 1.225V, 1.250V, 1.275V, 1.300V, 1.325V, 1.350V, 1.375V, 1.400V, 1.425V, 1.450V, 1.475V, 1.500V, 1.525V, 1.550V, 1.600V, 1.650V, 1.700V or Auto.

RAM Voltage Select

This item allows you to set the RAM Voltage.

- The choice: 2.70V, 2.80V, 2.90V or Auto.

Chipset Voltage Select

This item allows you to set the Chipset Voltage.

- The choice: 1.70V, 1.80V, 1.90V or Auto.



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

Phoenix - AwardBIOS CMOS Setup Utility

▶ Standard CMOS Features	▶ Ratio/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configuration	t Setup
▶ PC Health Status	ut Saving

Enter Password: _____

Esc : Quit F9 : Menu in BIOS ↑ ↓ ← : Select Item
F10 : Save & Exit Setup

Change/Set/Disable 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 27 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.