FB75

Intel Pentium 4
478-pin Processor
with 533/800 MHz FSB
Based Dual Channel DDR MAINBOARD

User's Manual

Shuttle® FB75

Intel Pentium 4
478-pin Processor
with 533/800 MHz FSB
Based Dual Channel 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: FB75
S/N: N/A
CPU:
External Frequency: 100 MHz
Intel Pentium4: 1.6/ 1.8/ 2.0/2.2/2.4 GHz
External Frequency: 133 MHz
Intel Pentium4: 2.26/ 2.40/ 2.53/ 2.66/ 2.80/ 3.06 GHz
External Frequency: 200 MHz
Intel Pentium4: 2.8/ 3.0/ 3.2 GHz
Serial Port: two ports with 9 pins
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: one port with 6 pins respectively
LAN Port: one port with 8 pins (10Mbps/100Mbps)
Center/Bass-Out & Line-Out & Line-In Ports: one port for each
Mic-In Ports: two ports
DIMM Memory (optional): DDR 400 256 MB *2
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	CPU Open/Close
1	100MHz	P4 2.40 GHz	Close
2	100MHz	P4 2.40 GHz	Open
3	133MHz	P4 3.06 GHz	Close
4	133MHz	P4 3.06 GHz	Open
5	200MHz	P4 3.20 GHz	Close
6	200MHz	P4 3.20 GHz	Open

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

Remedy: N/A

EMI Interference:

Crystal: 14.318MHz(X2)/ 24.576MHz(X3)/ 25.00MHz(X4)/ 32.768KHz(X1)

Clock Generator: U5

(D) Supported Host Peripherals:

Host Peripheral	Product Name	Model Name	S/N	FCC ID
#1	Case	SB75	N/A	
#2	Power Supply (300W)	AM630BS20S	0005596	D33047
#3	Maxtor HDD (40 GB)	D740X-6L	N/A	3902B975
#4	Panasonic FDD	JU-257A606P		
#5	Pioneer DVD Player	DVD-116	AAMS027197WL	3892D029
#6	AGP Card	Winfast Geforce 2 MX		3892C520
#7	Power Cable	Detachable and Shielded		

(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.

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Quick Reference

About This Manual

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 Chapter 3 Hardware Installation in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we suggest you read the whole manual to gain a complete understanding of your new FB75 mainboard.

Experienced DIY User

Congratulate on your purchase of the FB75 mainboard. You will find installing your new FB75 mainboard is quite easy. Bundled with an array of onboard functions, the highly-integrated FB75 mainboard provides you with a total solution to build the stablest and most reliable system. Referring to section 3.2 Jumper Settings and Chapter 4 Software Utility, you will find how to work out your new mainboard. Chapter 5 BIOS Setup also contains the relevant information on how to tune up your system to achieve higher performance.

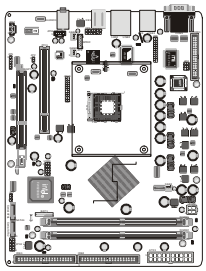
System Integrator

You have wisely chosen FB75 to construct your system. FB75 incorporates all the state-of-the-art technology of the 875P chipset from Intel. It integrates the most advanced functions you've ever found in a compact Shuttle small form factor ATX board.

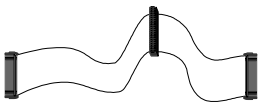
1.2 Item Checklist:

Check all items with your FB75 mainboard to make sure nothing is missing. A complete package should include:

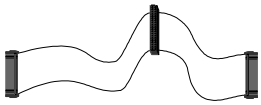
✸ One Shuttle FB75 Mainboard



✸ One ATA 100/66/33 Ribbon Cable



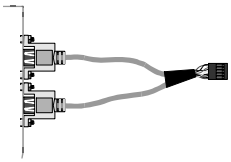
✸ One Floppy Ribbon Cable



✸ One Serial ATA Cable

✸ One Serial ATA Power Cord

✸ One Twin-Port USB Cable (optional)



✸ FB75 User's Manual

✸ One Bundled CD-ROM, including:

- ➢ FB75 user's manual in PDF format
- ➢ Intel Chipset Driver
- ➢ Intel USB 2.0 Driver
- ➢ Realtek Audio Driver
- ➢ Broadcom Giga LAN Driver
- ➢ Award Flashing Utility

2 FEATURES

FB75 mainboard is dedicatedly designed for demanding PC users who desire high performance and maximum intelligent features in a compact package.

2.1 Specifications

✸ CPU Support

Support Socket 478 package CPU.

Intel Pentium 4 Processor with 533/800 MHz FSB.

✸ Chipset

Features Intel 875P N.B. and Intel ICH5R S.B..

ICH5R support RAID Function.

Onboard LAN (Gigabit Ethernet Controller)

BCM5788, support 10/100/1000 Mbps operation.

Onboard 1394a

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

Onboard Audio

Realtek ALC650, 5.1 channel output with 18-bit ADC and DAC resolution.

✸ 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 255MHz.)

✸ Versatile Memory Support

Two 184-pin DIMM slots support up to 2GB of DDR333/DDR400 compliant DDR SDRAM unbuffer with/without ECC module, with single/dual channel mode supported.

✸ Expansion Slots

Provides one 3.0 compliant AGP slot and one 32-bit PCI slot.

✸ 8 USB Interface Onboard

- 4 USB connectors on back panel and two sets of dual USB ports headers on mid-board.

✸ I/O Interface

Provides a variety of I/O interfaces:

- 1 Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, or 2.88MB format or for 5.25-inch FDD with 360K or 1.2MB format.
- 2 x Serial ports
- 1 x 1394a port
- 4 x USB ports
- 1 x Giga LAN port
- 1 x PS/2 Mouse
- 1 x PS/2 Keyboard
- 1 x Center/Bass-Out port
- 1 x Rear-Out port
- 1 x Line-Out port

✸ PCI Bus Master IDE Controller Onboard

Two ultra DMA 100/66/33 bus master dual-channel IDE ports support up to four IDE devices (one Master and one Slave per channel).

The IDE bus implements data transfer speeds to 100/66/33MB/sec and 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 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 the 4Mb Flash EEPROM, and supports Green PC, Desktop Management Interface (DMI).

✸ Form Factor

System board conforms to the Shuttle small form factor ATX specification.

Board dimension: 254mm x 185mm.

✸ 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.
- Modem Ring Power-On - The system can be powered on automatically by the activation of modem ringing.
- CPU Multiplier Setting - This item allows users to adjust CPU Multiplier in BIOS.
- CPU Host/AGP/PCI/Serial ATA Clock Setting - These items allow users to adjust CPU Host/AGP/PCI/Serial ATA Clock in BIOS.
- CPU/DDR/AGP Voltage Setting - These items allow users to adjust CPU/DDR/AGP Voltage in BIOS.

✸ Intelligent Features

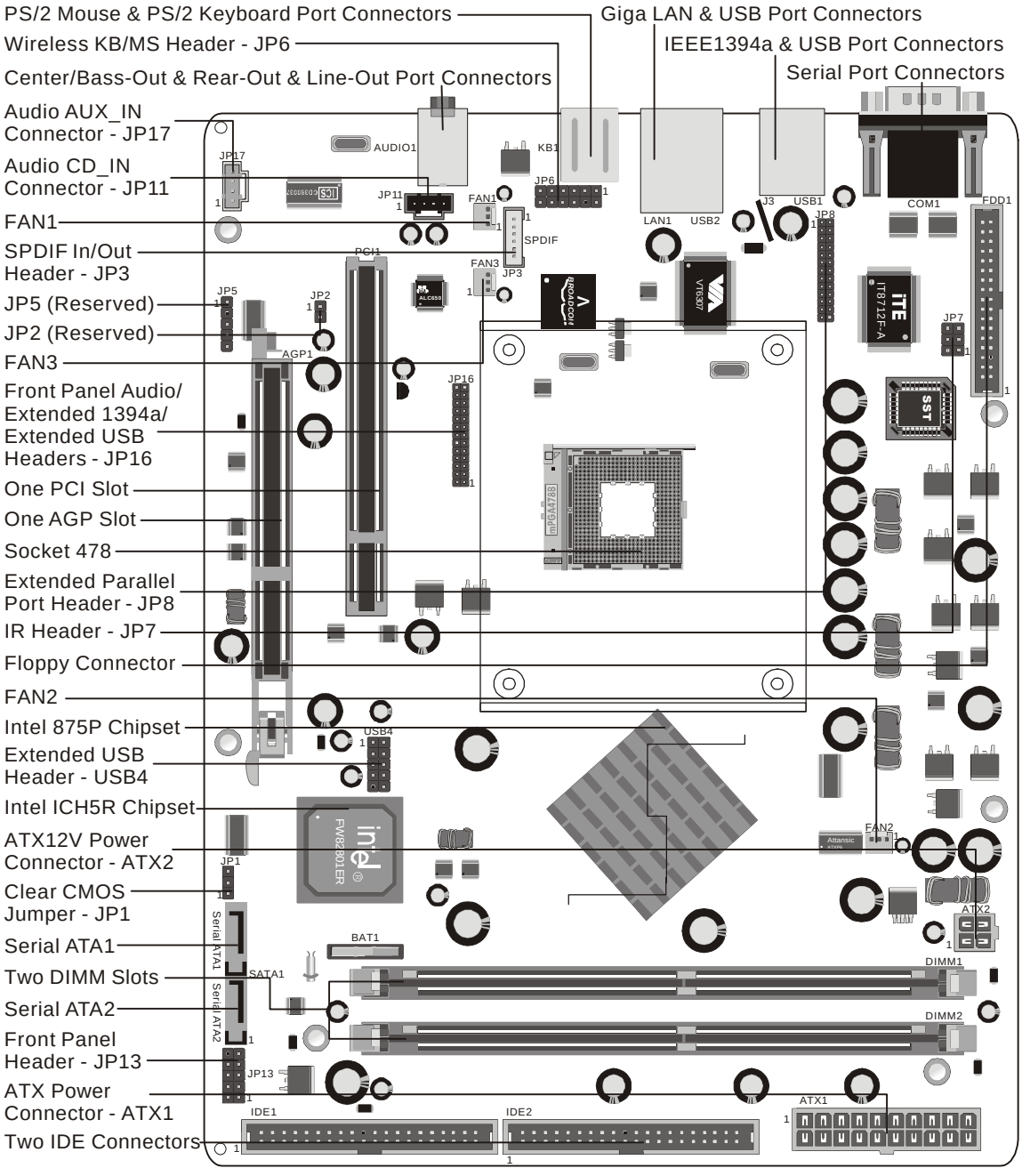
- Voltage Monitoring - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure a stable current passing through mainboard components.
- Fan Status Monitoring - To prevent the CPU from overheating, the CPU fan is monitored by RPM, with which the cooling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

3 HARDWARE INSTALLATION

Before removing/installing any of these devices: CPU, DIMMs, Add-On Cards, and Cables, please unplug the onboard power connector.

This section outlines how to install and configure your mainboard. Referring to the following mainboard layout helps you identify various jumpers, connectors, slots, and ports.

3.1 Step-by-Step Installation (Accessories Of FB75)



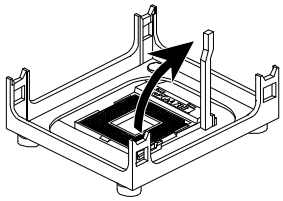
Step 1

CPU Installation:

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

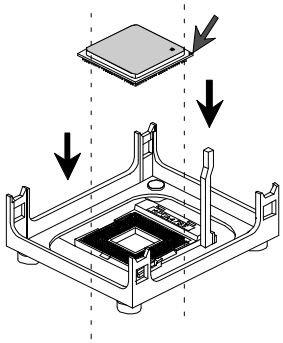
Note the CPU orientation when you plug it into CPU socket.

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



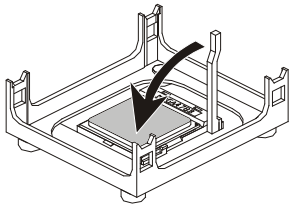
CPU socket lever up to 90-degree angle

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 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 need not to reset the jumpers unless you require special adjustments as the following case:

Clear CMOS Setting

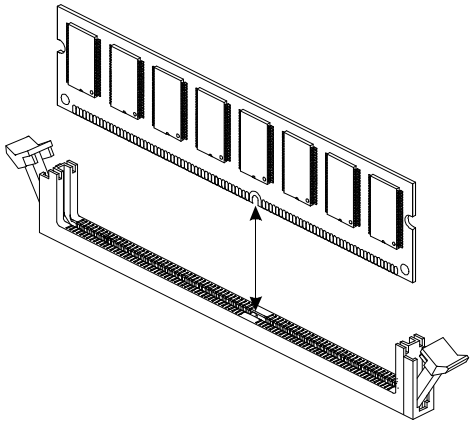
For first-time DIY system builders, we recommend that you not change the default jumper settings if you are not quite familiar with the mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For advanced users who prefer to customize their system, section 3.2 Jumper Settings provides the 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 the DIMM banks. Note that DDR 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 place 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.

To install IDE & FDD drives, follow these procedures:

1. Set the required jumpers on each device according to the instructions provided by the manufacturer. (IDE, 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.)

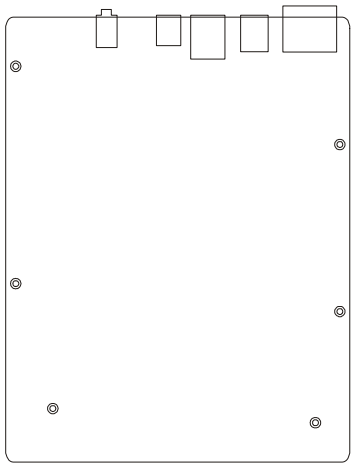
2. Connect the IDE cable and FDD cable on the back panel of the internal peripheral devices to the corresponding headers on board. Note that the cable should be oriented with its colored stripe (usually red or magenta) connected to pin#1 of the IDE or FDD connector on the mainboard and on the device 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.

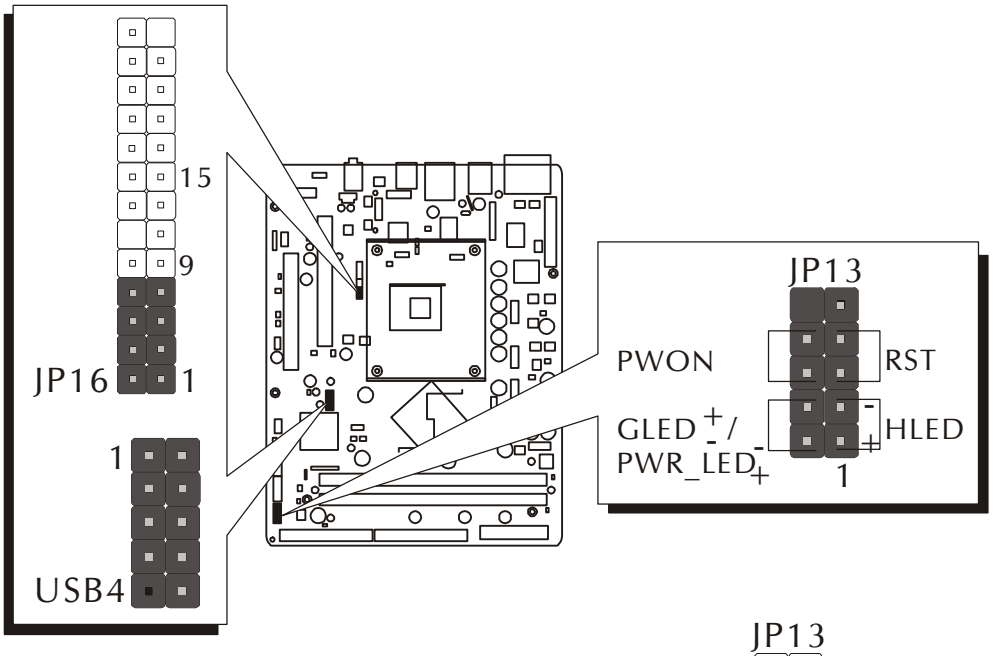
   (If your computer case is already equipped with mounting studs, you need to tighten the screws to attach the mainboard.)

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.

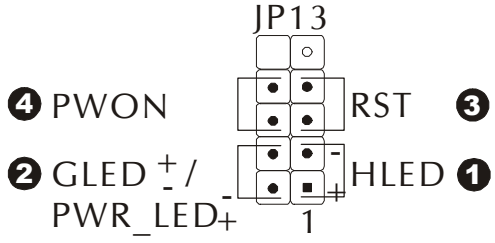
Step 6

Connect Front Panel LEDs/Switches/USBs

You can find there are several cables existing in the system case and originating from the front panel devices (HDD LED, Green LED, Reset switch, and USB devices etc.). These cables serve to connect the front panel LEDs, switches, and USB connectors to JP13 and JP16/USB4, as shown below.



1. HDD LED (HLED)
2. Green LED/Power LED (GLED/PWR_LED)
3. Hardware Reset Switch (RST)
4. ATX Soft Power On/Off (PWON)
5. Extended USB Headers (JP16/USB4)



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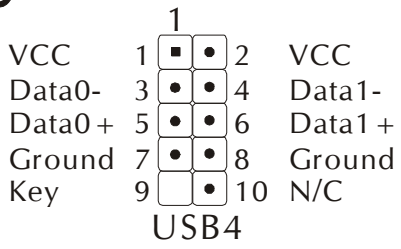
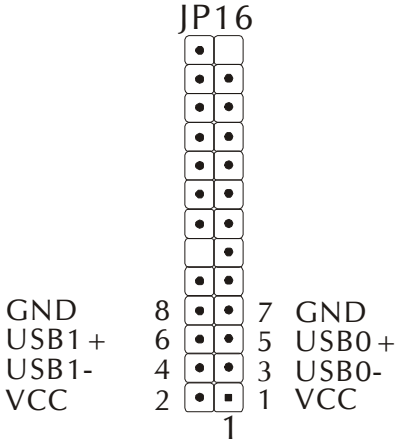
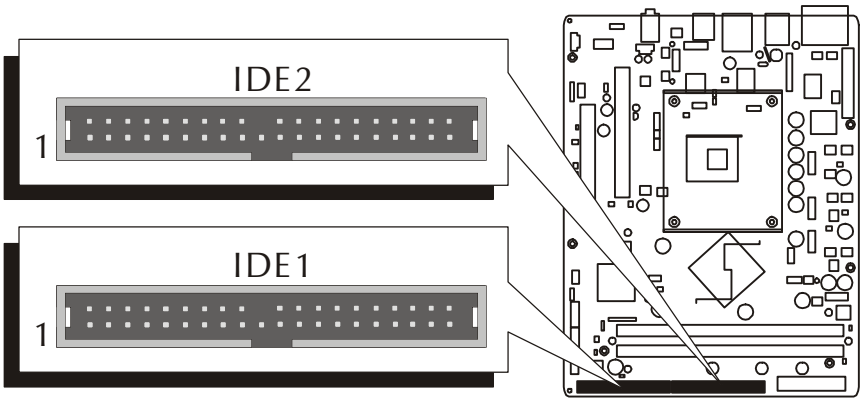




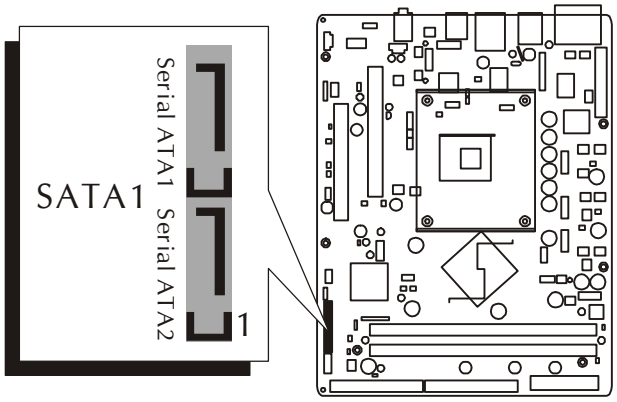
Step 7

Connect IDE, Serial ATA, and Floppy Disk Drives

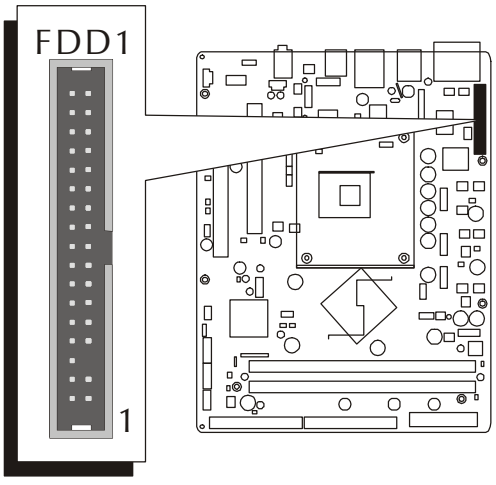
1. IDE cable connectors



2. Serial ATA cable connectors



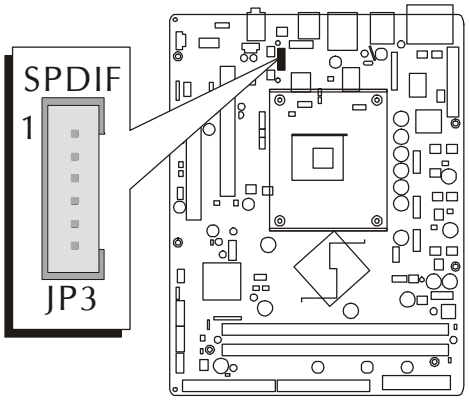
3. Floppy cable connector



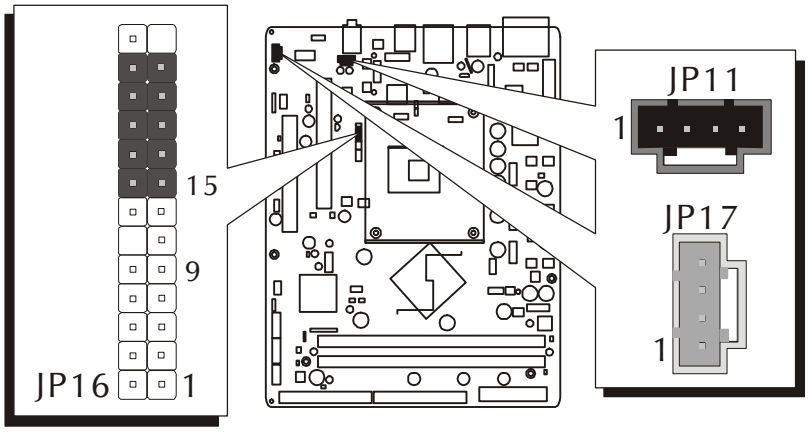
Step 8

Connect Other Internal Peripherals

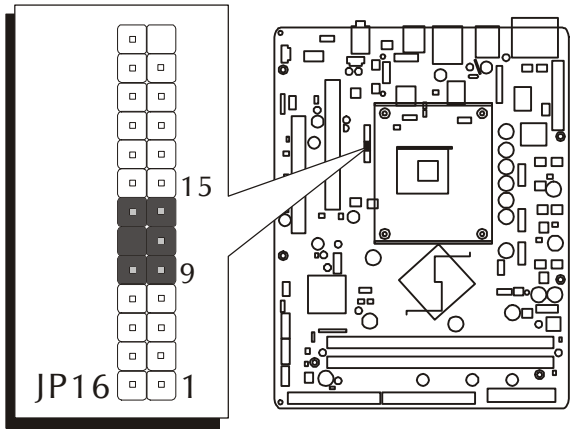
1. SPDIF in/out header (JP3)



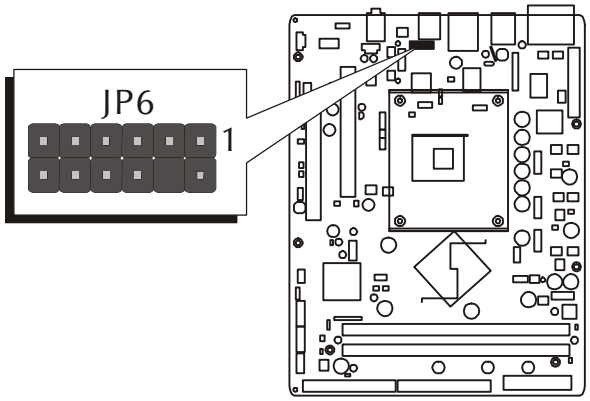
2. Front panel audio header (JP16);
   Audio CD_IN connector (JP11);
   Audio AUX_IN connector (JP17)



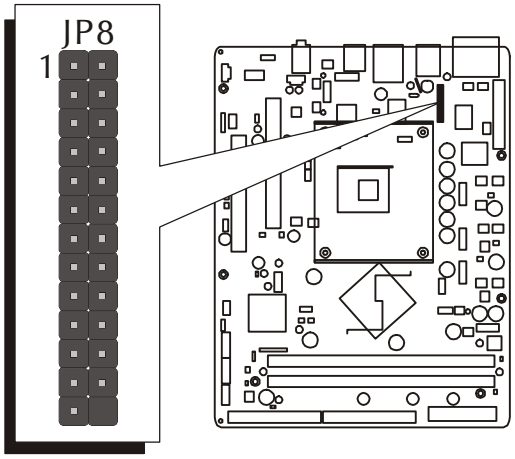
3. Front panel 1394a header (JP16)



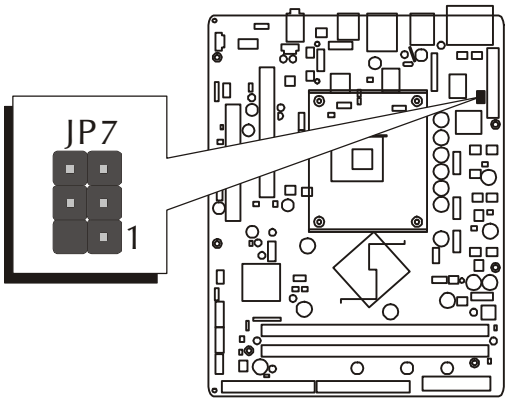
4. Wireless KB/MS header (JP6)



5. Extended parallel port header (JP8)



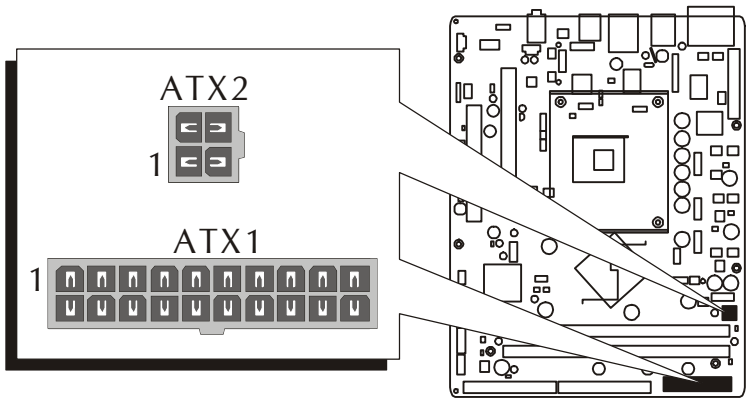
6. IR header (JP7)



Step 9

Connect the Power Supplies

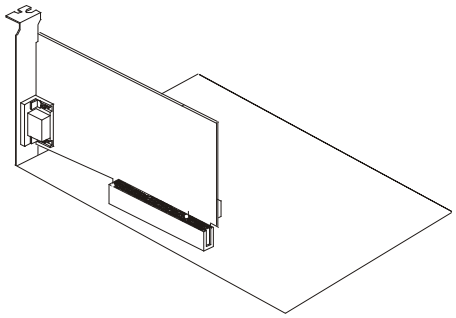
1. System power connectors (ATX1/ATX2)



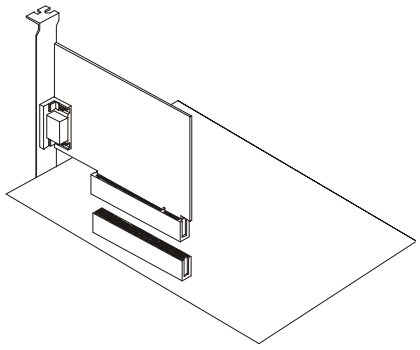
Step 10

Install Add-On Cards in Expansion Slots

1. Accelerated Grapics Port (AGP) Card



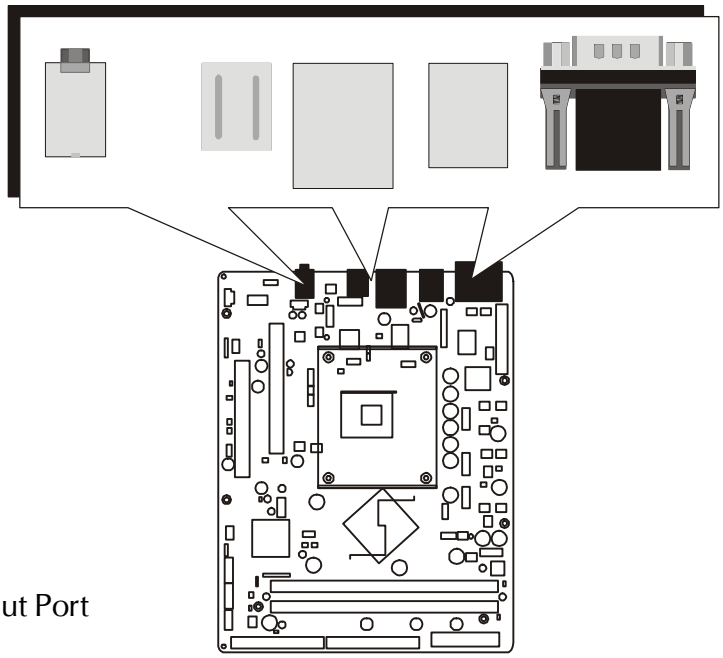
2. PCI Card



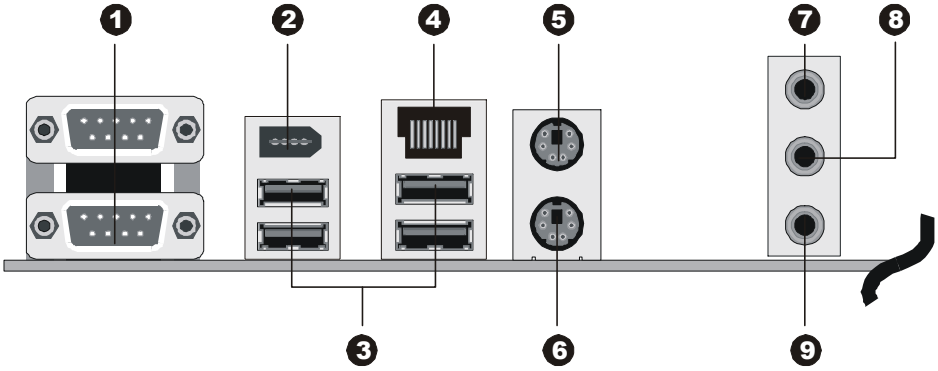
Step 11

Connect External Peripherals to Back Panel

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



1. Serial Ports 1/2
2. IEEE1394a Port
3. USB Ports 0/1/2/3
4. Giga LAN Port
5. PS/2 Mouse Port
6. PS/2 Keyboard Port
7. Audio Center/Bass-Out Port
8. Audio Rear-Out Port
9. Audio Line-Out Port



Step 12

System Boot Up For the First-Time

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

1. Insert a system-bootable floppy disk (DOS 6.2X, Windows 9X/NT, or others), which contains the FDISK and FORMAT utilities.

2. Turn on the system power.

3. First, you need to use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partitions to occupy all the space available to the extended partition. The FDISK utility will assign a drive letter (i.e. C:, D:, E:,.....) to each partition shown in the FDISK program. After the FDISK procedure, reboot your system by using the same disk.

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

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

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

5. Install all the necessary drivers for CD-ROM, Mouse, etc.

6. Setup the complete operating system according to your OS installation guide.

Step 13

Install Drivers & Software Components

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

1. Insert the FB75 bundled CD-ROM into your CD-ROM drive. The auto-run program will display the main installation window on screen.
2. Choose "Install Mainboard Software."
3. Choose "Install Intel Chipset Driver" and complete it.
4. Choose "Install Intel USB 2.0 Driver" and complete it.
5. Choose "Install Realtek Audio Driver" and complete it.
6. Choose "Install Broadcom Giga LAN Driver" and complete it.
7. Choose "Install Utility."
8. Choose "Install WinFlash Utility" and complete it.
9. Quit (from the auto-run installation program).

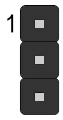
3.2 Jumper Settings

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

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

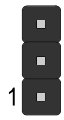
Pin #1 to the left:

Pin #1 on the top:



Pin #1 to the right:

Pin #1 on the bottom:



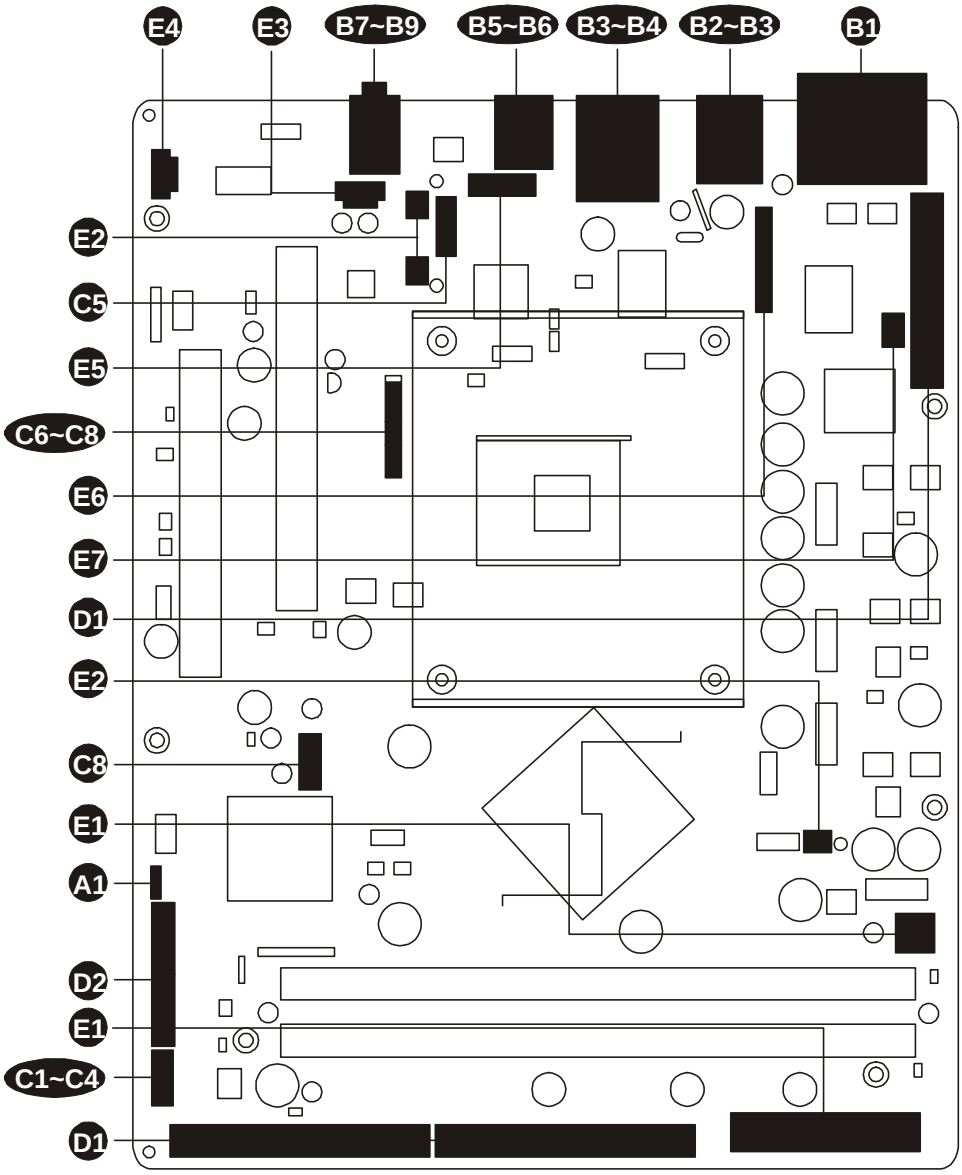
Jumpers with two pins capped are shown as  for Close [On] or  for Open [Off]. To do this, please place a plastic mini cap on the desired pair of pins.

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, with the component side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) as handling this equipment.

Jumpers & Connectors Guide

Refer to the mainboard layout on page 10 and this section to help you identify jumpers, slots, and connectors along with their assigned functions.



CPU/Memory/Expansion Slots

Socket 478	: CPU socket for Intel Pentium 4, 478-pin processors
DIMM1/2	: Two DIMM slots for 64, 128, 256, 512 MB, and 1GB of 2.5V DDR SDRAM
AGP	: One AGP slot supports up to 8X AGP device.
PCI	: One 32-bit PCI expansion slot

Jumpers

A1 JP1 : Clear CMOS setting

Back Panel Connectors

B1 COM1/COM2 : Serial ports 1/2
B2 1394a : IEEE1394a port
B3 USB : USB ports 0/1/2/3
B4 GIGA LAN : Giga LAN port
B5 MS : PS/2 mouse port
B6 KB : PS/2 keyboard port
B7 CENTER/BASS : Center/Bass-Out port
B8 REAR-OUT : Rear-Out port
B9 LINE-OUT : Line-Out port

Front Panel Connectors

C1 HLED : HDD LED
C2 GLED/PWR_LED : Green LED/Power LED
C3 RST : Hardware reset switch
C4 PWON : ATX power on/off switch
C5 JP3 : Front panel SPDIF in/out header
C6 JP16 : Front panel audio header
C7 JP16 : Front panel 1394a header
C8 JP16/USB4 : 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
D2 SATA1 : Serial ATA connectors (Serial ATA1/Serial ATA2)

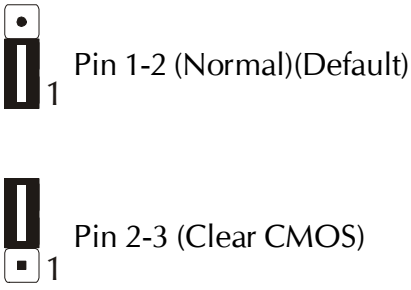
Other Connectors

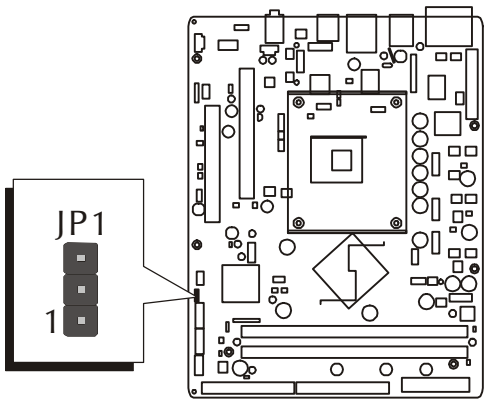
E1 ATX1/ATX2 : ATX power supply connectors
E2 FAN1 : CPU fan connector
E2 FAN2 : System fan connector
E2 FAN3 : Chipset fan connector
E3 JP11 : Audio CD_IN connector
E4 JP17 : Audio AUX_IN connector
E5 JP6 : Wireless keyboard/mouse header
E6 JP8 : Extended parallel port header
E7 JP7 : IR header

☞ *Jumpers*

A1 Clear CMOS Setting (JP1)

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



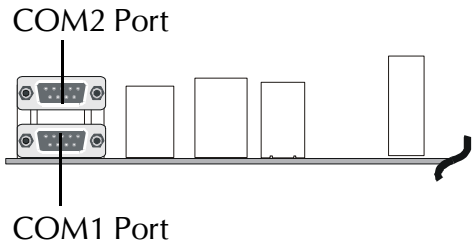


Step 1. Turn off the system power (PC--> Off).
Step 2. Remove the ATX power cable from the ATX power connector.
Step 3. Remove the jumper cap from pins 1-2.
Step 4. Place the jumper cap on pins 2-3 for a few seconds.
Step 5. Restore the jumper cap to pins 1-2.
Step 6. Plug the ATX power cable into the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

☞ *Back Panel Connectors*

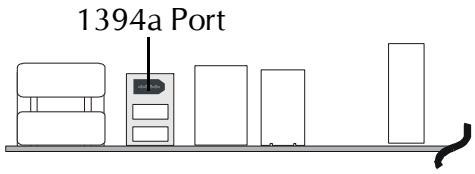
B1 COM1/COM2 Port Connectors

This mainboard can accommodate two serial devices on COM1/COM2. Attach serial device cables to the DB9 serial ports COM1/COM2 at the back panel of your computer.



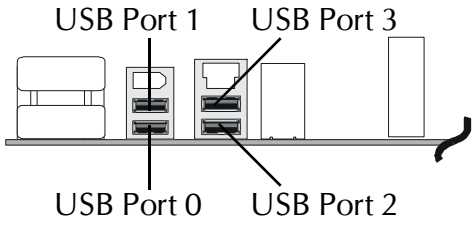
B2 IEEE1394a Port Connector

This mainboard offers one 1394a port on back panel. Plug a device jack into the 1394a connector.



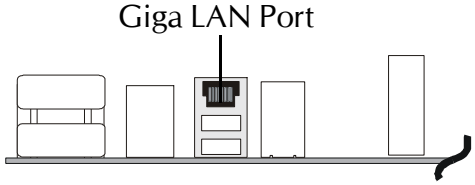
B3 USB Port Connectors

This mainboard offers 4 USB ports on back panel. Plug each USB device jack into an available USB connector.



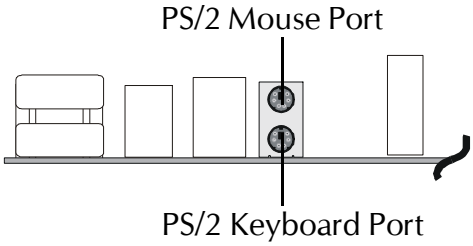
B4 Giga LAN Port Connector

This mainboard can accommodate one device on Giga LAN. Attach a RJ-45 cable to this Giga LAN port connector on back panel.



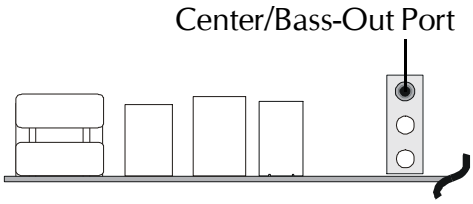
B5 PS/2 Mouse & PS/2 Keyboard Port Connectors

Two 6-pin female PS/2 Mouse & Keyboard connectors are located on the rear panel of the mainboard. In a desktop computer, the PS/2 Mouse connector is situated on the top of the PS/2 Keyboard connector. In a tower computer, the PS/2 Mouse connector is located on the rightside of the PS/2 Keyboard connector.



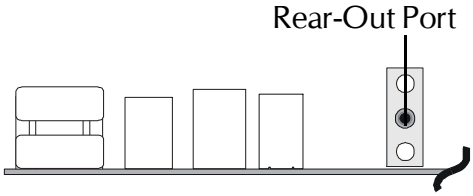
B6 Center/Bass-Out Port Connector

Center/Bass-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 center/bass amplified speakers.



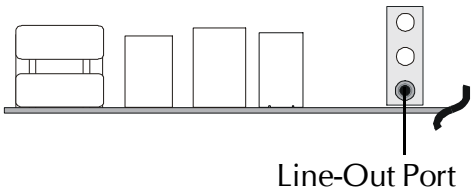
B7 Rear-Out Port Connector

Stereo out of rear (surround) channel.



B8 Line-Out Port Connector

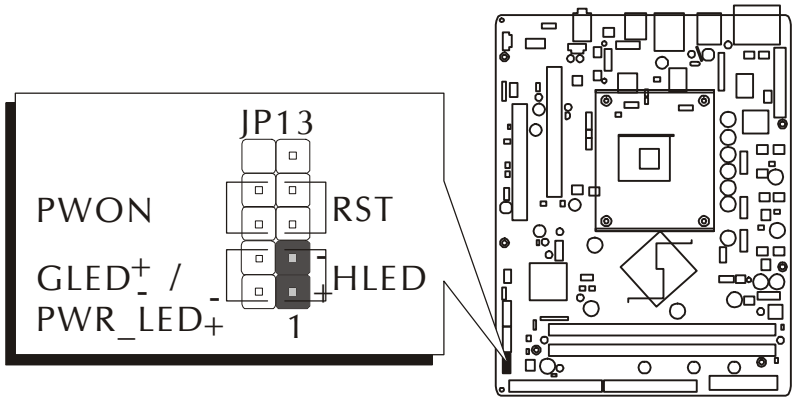
Line-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers.



☞ *Front Panel Connectors*

ⓒ1 HDD LED Connector (HLED)

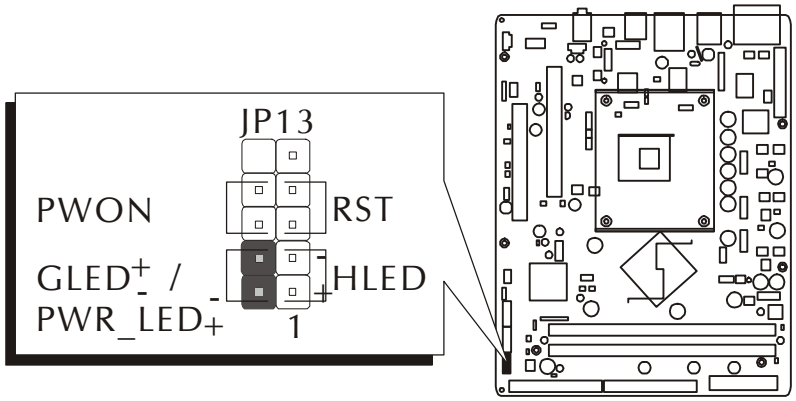
Attach a connector cable from the IDE device LED to the 2-pin (HLED) header. The HDD LED lights up whenever an IDE device is active.



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.

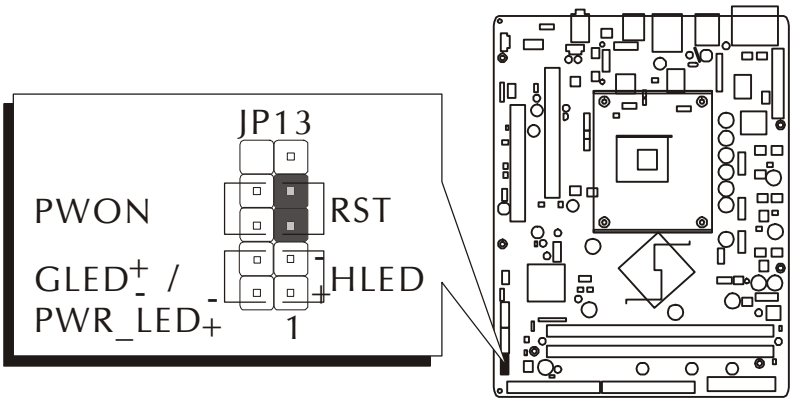
ⓒ2 Green LED/Power LED Connector (GLED/PWR_LED)

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



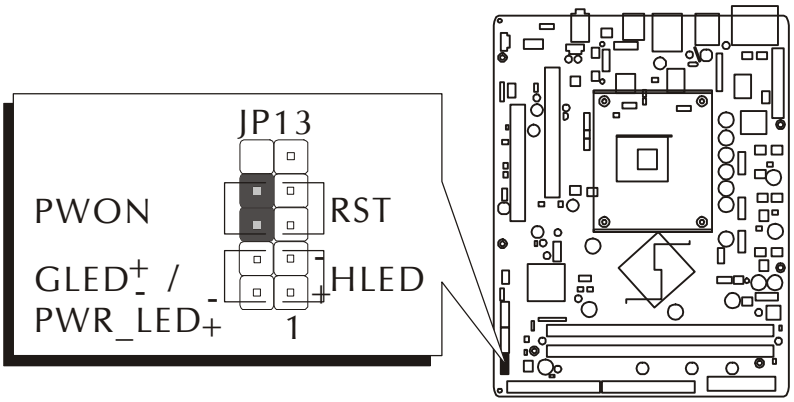
ⓒ3 Hardware Reset Connector (RST)

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



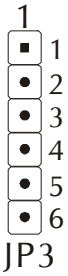
ⓒ4 ATX Power On/Off Switch Connector (PWON)

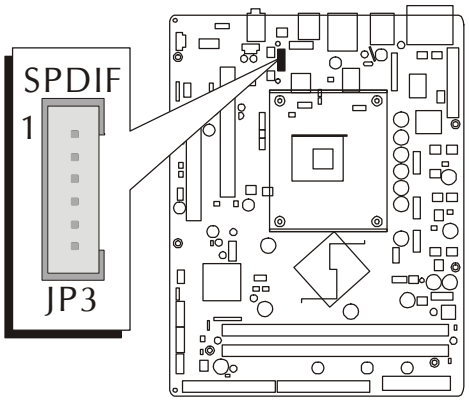
The Power On/Off Switch is a momentary type switch used for turning on or off the ATX power supply. Attach a connector cable to the 2-pin (PWON) header on the mainboard.



05 SPDIF In/Out Header (JP3)

Port JP3 can be used to connect to a device with digital audio inputs/outputs.



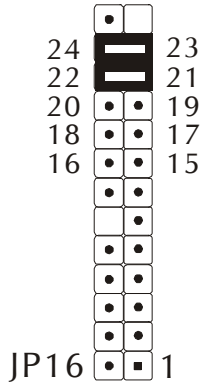


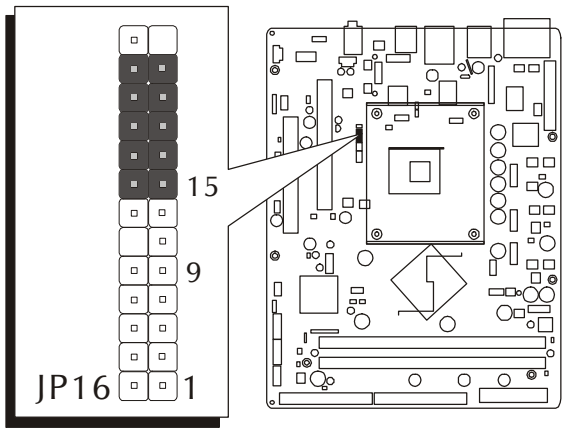
Pin Assignments:

1 = SPDIF-IN 2 = GND
3 = VCC 4 = GND
5 = VCC 6 = SPDIF-OUT

06 Front Panel Audio Header (JP16)

This header allows users to install an auxiliary Front-Oriented Audio port for easier access. Either the Line-Out port connector on back panel or the Audio header is available at the same time. If you would like to use the Audio header on front panel, please remove all jumpers from it and install your special extra audio cable instead. Two mini jumpers must be setted on pins 21-22 and pins 23-24 when this header is not used.



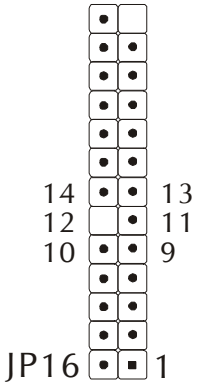


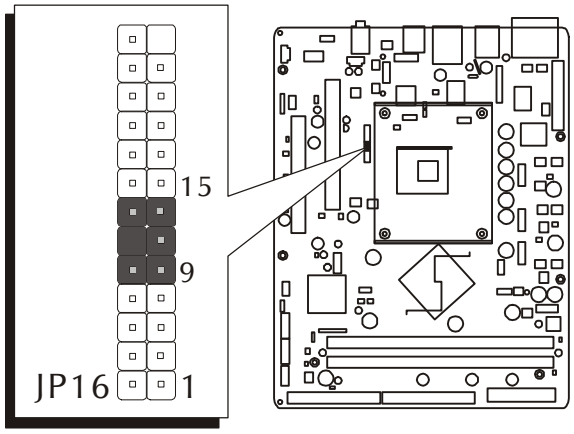
Pin Assignments:

15 = GND 16 = GND
17 = MIC_SIGN 18 = MIC_PWR
19 = LINE_IN_L 20 = LINE_IN_R
21 = FRONTRAMP 22 = FOUTR
23 = FRONTLAMP 24 = FOUTL

⓬ Front Panel 1394a Header (JP16)

The header is used to connect the cable attached to the 1394a connector which is mounted on front panel or back panel. But the 1394a cable is optional at the time of purchase.



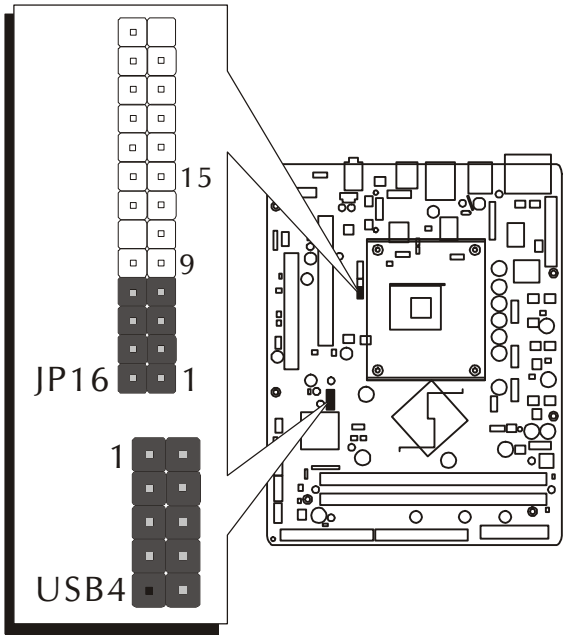


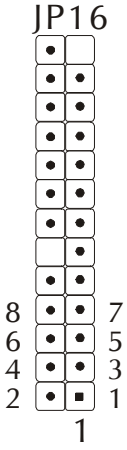
Pin Assignments:

9 = TPA +	10 = TPA-
11 = GND	12 = KEY
13 = TPB +	14 = TPB-

Extended USB Headers (JP16/USB4)

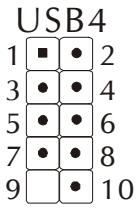
Headers JP16/USB4 are used to connect cables to USB connectors mounted on front panel or back panel. The USB cable is optional at the time of purchase.





Pin Assignments:

1 = VCC	2 = VCC
3 = USB0-	4 = USB1-
5 = USB0 +	6 = USB1 +
7 = GND	8 = GND



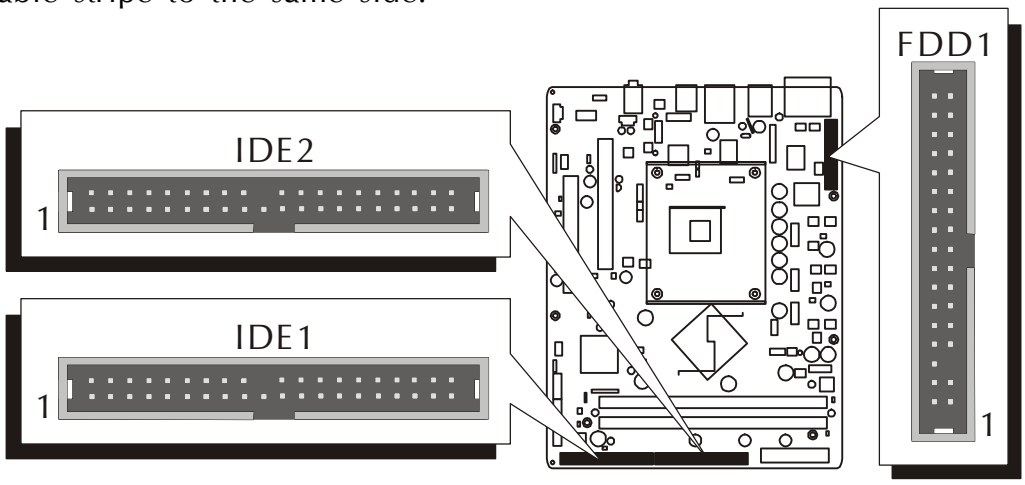
Pin Assignments:

1 = VCC	2 = VCC
3 = Data0-	4 = Data1-
5 = Data0 +	6 = Data1 +
7 = Ground	8 = Ground
9 = Key	10 = N/C

☞ *Internal Peripheral Connectors*

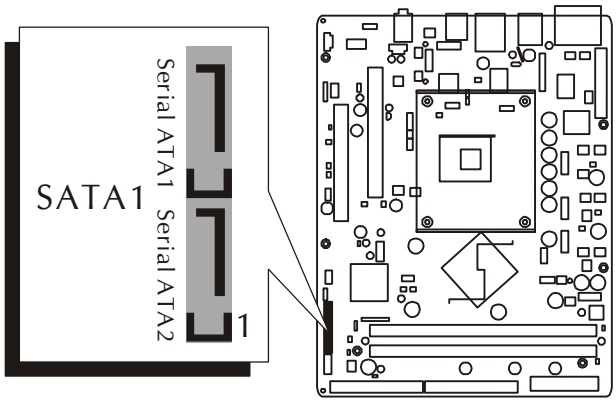
D1 Enhanced IDE and Floppy Connectors (IDE1/IDE2 & FDD1)

FB75 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2), providing support 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 100/66/33 ribbon cable to connect IDE HDD, and one 34-pin ribbon cable for FDD connection.
Note: Ribbon cables are directional; therefore, connect the red cable stripe to the same side.



D2 Serial ATA Connectors (SATA1 - Serial ATA1/Serial ATA2)

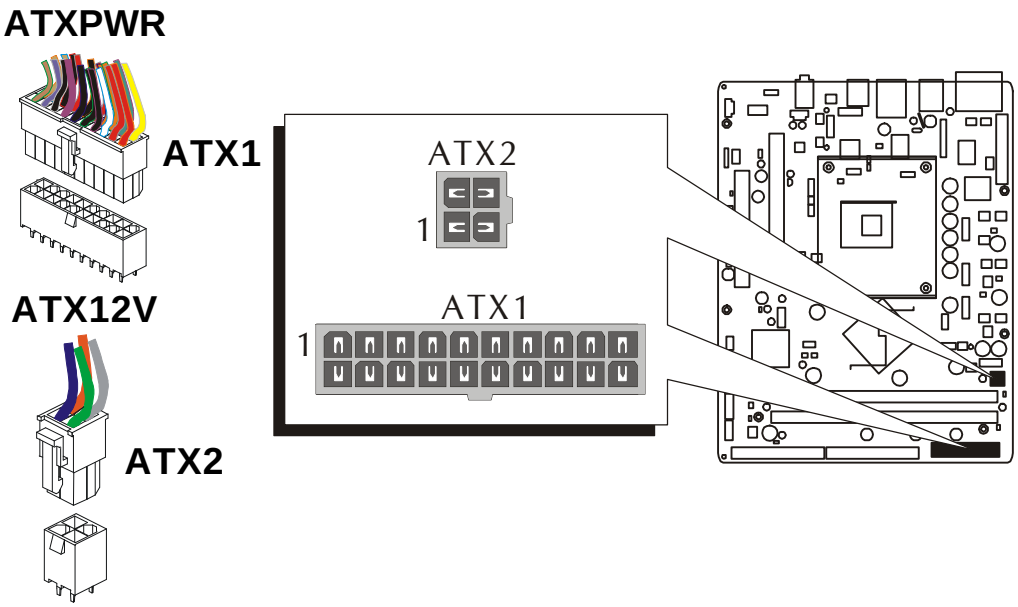
The Serial ATA is an evolutionary replacement for the Parallel ATA physical storage interface. Serial ATA is scalable and will allow future enhancements to the computing platform. The Serial ATA supports all ATA and ATAPI device, including CDs, DVDs, tape devices, high capacity removable devices, zip drivers, and CDRWs. The Serial ATA interface supports data transfer rates up to 150MB/s.



☞ *Other Connectors*

ATX Power Supply Connectors (ATX1/ATX2)

This motherboard uses 20-pin ATX power header (ATXPWR, ATX1), and comes with the other one header (ATX12V, 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.



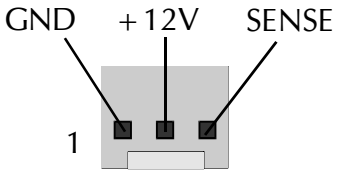
A traditional ATX system remains in the power-off stage when AC power resumes from power failure. However, it is inconvenient for a network server or workstation if there is not an UPS to execute power-on. Thus, this motherboard supports an AC Power Auto Recovery function to solve this problem. You may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

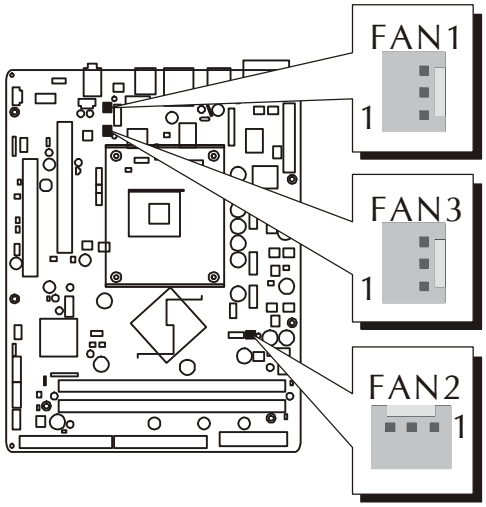
Note 1:	The ATX power connector is directional and will not go in unless the guides match perfectly, making sure that pin#1 is properly positioned.
Note 2:	Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.
Note 3:	Your ATX power supply must be supplied to 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, System, and Chipset Fan Connectors (FAN1/2/3)

The mainboard provides three onboard 12V cooling fan power connectors to support the CPU (FAN1), system (FAN2), and chipset (FAN3).

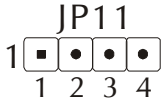
Note: Both cable wiring and type of plug may vary, which depend on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.





E3 Audio CD_IN Connector (JP11)

Port JP11 (Black) can be used to connect the stereo audio input from CD-ROM, TV-tuner or MPEG card.



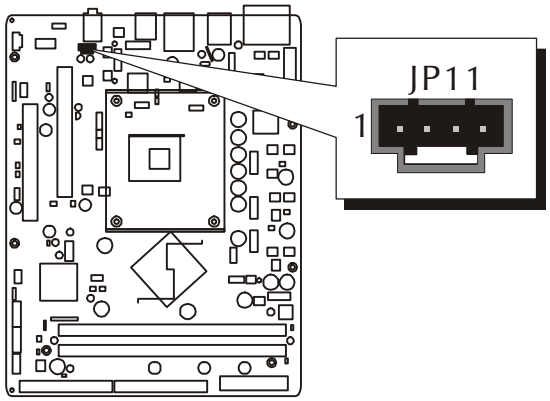
Pin Assignments:

1 = CD-IN (Left)

2 = Ground

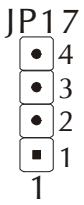
3 = Ground

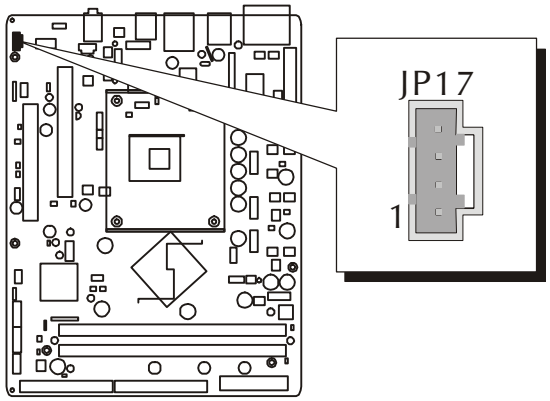
4 = CD-IN (Right)



E4 Audio AUX_IN Connector (JP17)

Port JP17 (White) can be used to connect stereo audio inputs from CD-ROM, TV-tuner or MPEG card.





Pin Assignments:

1 = AUXL

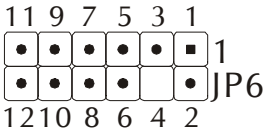
2 = Ground

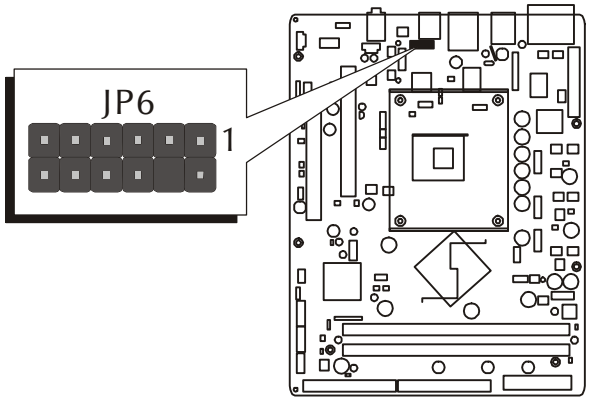
3 = Cround

4 = AUXR

E5 Wireless KB/MS Header (JP6)

Port JP6 can be used to connect wireless keyboard and mouse devices.



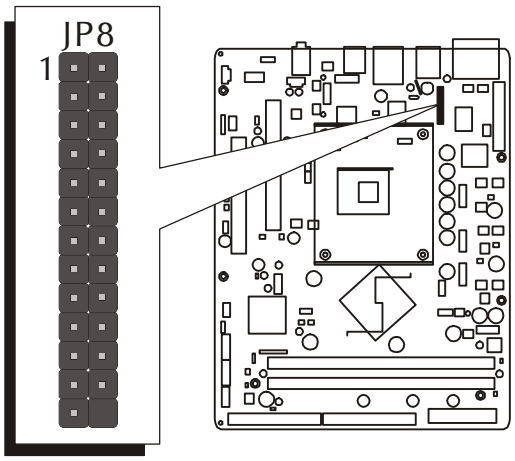


Pin Assignments:

1 = VCC	2 = VCC
3 = GND	4 = KEY
5 = MS_CLK	6 = MS_CLK_IC
7 = MS_DAT	8 = MS_DAT_IC
9 = KB_CLK	10 = KB_CLK_IC
11 = KB_DAT	12 = KB_DAT_IC

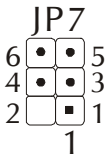
E6 Extended Parallel Port Header (JP8)

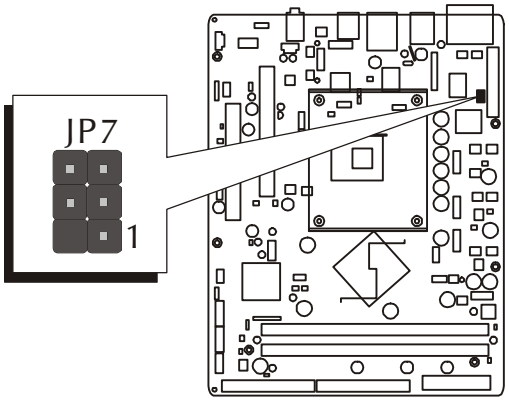
One parallel port header is located at the rear panel of the mainboard. The header is used to connect the cable attached to a parallel connector. But the parallel cable and connector are optional at the time of purchase.



E7 IR Header (JP7)

If you have an Infrared device, this mainboard can implement IR transfer function. This mainboard supports Normal, IrDA, ASKIR, or SCR transfer mode. To enable this function, attach a 6-pin infrared device cable to the IR (JP7) header. Please note that every pin is properly allocated. If not, your IR device may be damaged.





Pin Assignments:

1 = N/C	2 = KEY
3 = VCC	4 = GND
5 = IRTX	6 = IRRX

3.3 System Memory Configuration

The FB75 mainboard has two 184-pin DIMM slots that allow you to install from 64MB up to 2GB of system memory. Each 184-pin DIMM (Dual In-line Memory Module) slot can accommodate 64MB, 128MB, 256MB, 512MB, and 1GB of PC2700 or PC3200 compliant 2.5V single (1 Bank) or double (2 Bank) side 64-bit wide data path DDR SDRAM modules. You need not to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

Install Memory:

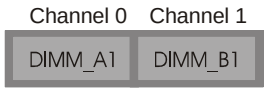
Install memory in any or all of the slots. The combination is shown as follows.

Density	128Mbit		256Mbit		512Mbit	
Device Width	x8	x16	x8	x16	x8	x16
Single/ Double	SS/DS	SS/DS	SS/DS	SS/DS	SS/DS	SS/DS
184pin DDR DIMMs	128/256MB	64MB/NA	256/512MB	128MB/NA	512/1024MB	256MB/NA

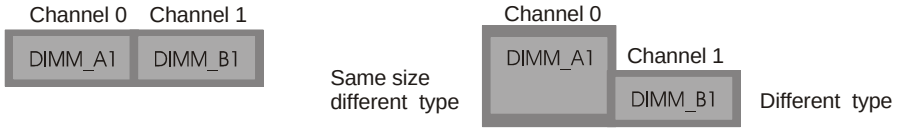
Note: Maximum installed memory is 2GB.
Don't support double-sided X16 DDR DIMMs.

DIMMs population:

1. 128 Bit Mode: Exactly the same size and type DIMMs on Channels 0/1.



2. 2*64 Bit Mode: DIMMs installed on different Channels.



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

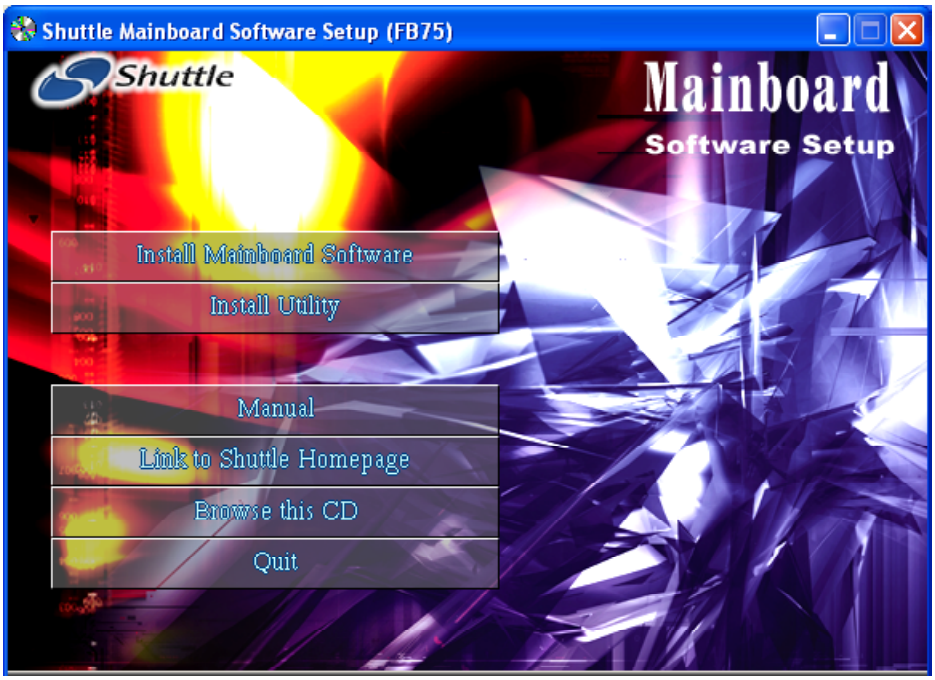
4.1 Mainboard CD Overview

Note: The CD contents attached in FB75 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:).

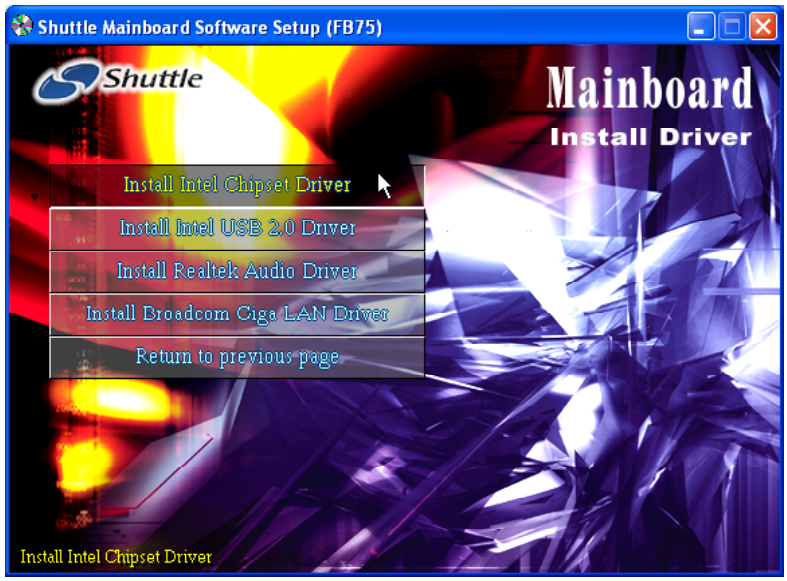
Navigation Bar Description:

- Install Mainboard Software - Installing Intel Chipset, Intel USB 2.0, Realtek Audio, and Broadcom Giga LAN drivers.
- Install Utility - Installing the WinFlash utility driver.
- Manual - FB75 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.A Install Intel Chipset Driver

Click on the "Install Mainboard Software"; then click on the "Install Intel Chipset Driver" bar to install the chipset driver. Once you made your selection, a Setup window will run the installation automatically. Reboot the system after the installation.



4.2.B Install Intel USB 2.0 Driver

Click on the "Install Mainboard Software"; then click on the "Install Intel USB 2.0 Driver" bar to install the USB 2.0 driver. Once you made your selection, a Setup window will run the installation automatically. Reboot the system after the installation.

4.2.C Install Realtek Audio Driver

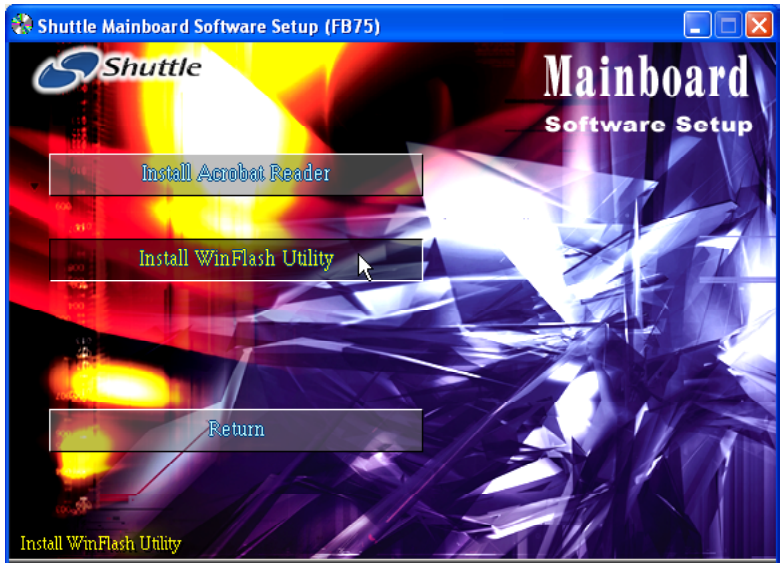
Click on the "Install Mainboard Software"; then click on the "Install Realtek Audio Driver" bar to install the audio driver. Once you made your selection, a Setup window will run the installation automatically. Reboot the system after the installation.

4.2.D Install Broadcom Giga LAN Driver

Click on the "Install Mainboard Software"; then click on the "Install Broadcom Giga LAN Driver" bar to install the giga LAN driver. Once you made your selection, a Setup window will run the installation automatically. Reboot the system after the installation.

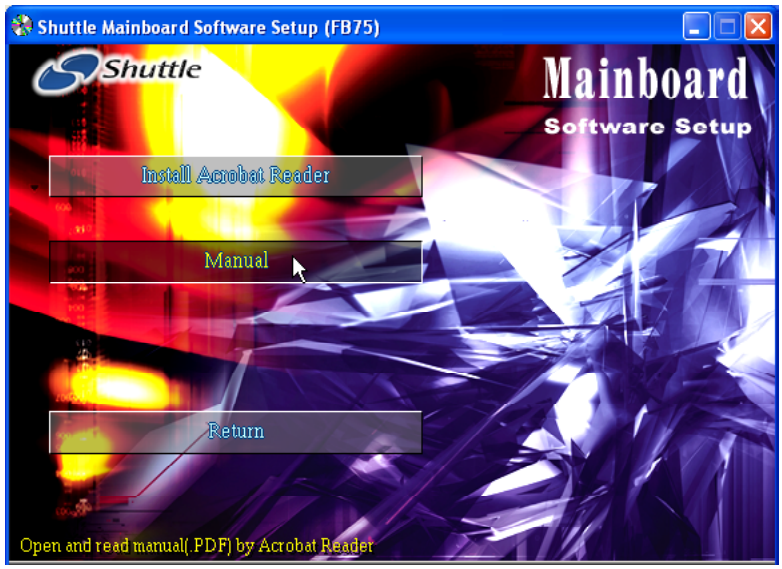
4.3 Install WinFlash Utility

Click on the "Install Utility" bar; then click on the "Install WinFlash Utility" bar to install the BIOS flashing utility. Once you made your selection, a Setup window will run the installation automatically. Reboot the system after the installation.



4.4 View the User's Manual

Click on the "Manual" bar, and on the sub-menu click on the "Install Acrobat Reader" bar if you need to install it, or click on the "Manual" bar to view the FB75 user's manual.



5 BIOS SETUP

FB75 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 <Del> 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>, <Del> keys.

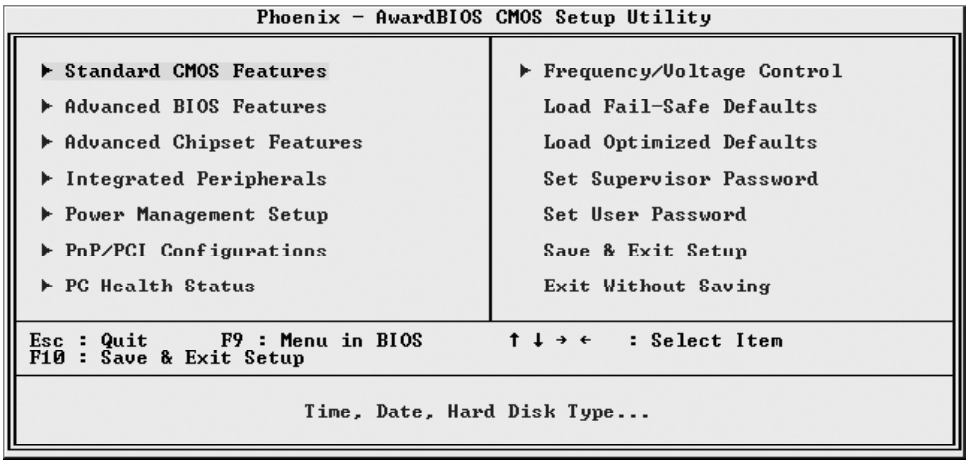
Note2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

"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.

5.2 The Main Menu

Once you enter the Award BIOS(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

This menu displays the basic information about your system.

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 option configures how PnP (Plug and Play) and PCI expansion cards operate in your system.

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 install fail-safe defaults for all appropriate items in the setup utility.

Load Optimized Defaults

Use this menu to install optimized defaults for all appropriate items in the setup utility.

Set 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

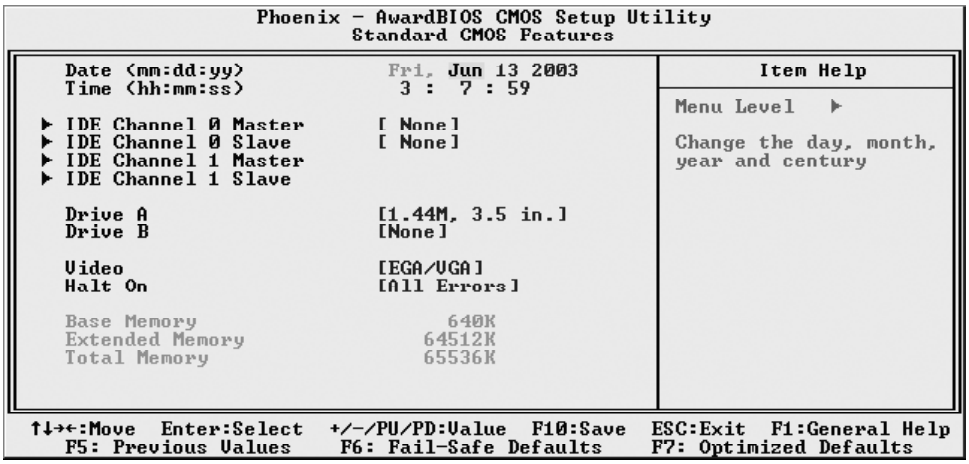
Save the changes that you have made in the Setup Utility and exit the Setup Utility.

Exit Without Saving

Abandon all changes that you have made in the Setup Utility and exit the Setup Utility.

Standard CMOS Features

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.



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 Channel 0/Channel 1 Master/Slave

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

Drive A/DriveB

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

This item defines the video mode of the 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 Channel 0/Channel 1 Master/Slave

The item defines 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

Note that the disk drive capacity (approx.) 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 Channel 0/ Channel 1 Master/Slave' 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

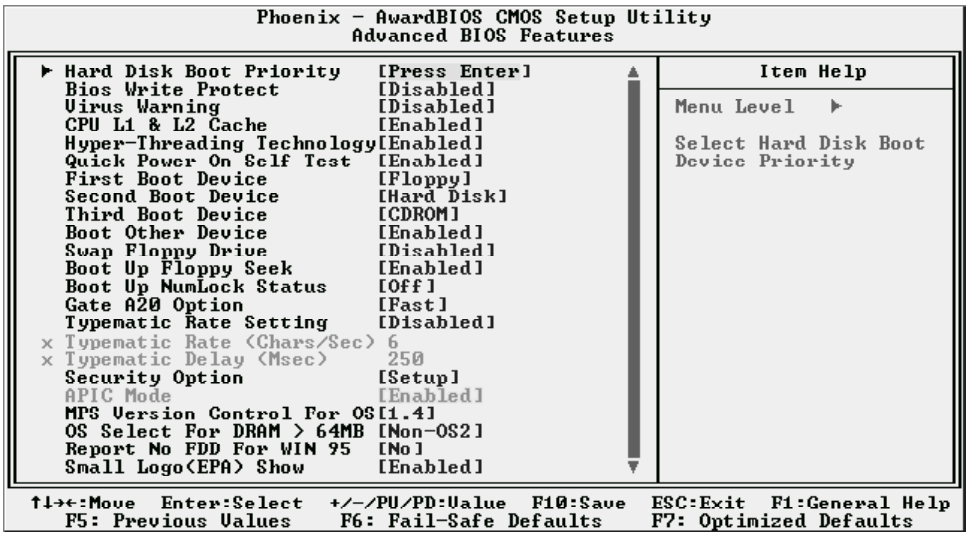
Number of sector per track.

- Min = 0, Max = 255

****

Advanced BIOS Features

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



Hard Disk Boot Priority

This item lets you select hard disk boot device priority.

BIOS Write Protect

This item let you enable or 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. Enable this item to prevent someone from writing data into this area.

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 L1 & L2 Cache

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

- The choice: Enabled or Disabled.

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.

- 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, Hard Disk, CDROM, 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 and 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.

Gate A20 Option

This item defines how the system handles legacy software that was written for an earlier generation of processors. Leave this item at the deafult value.

- The choice: Normal or Fast.

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 shows APIC (Advanced Programmable Interrupt Controller) functionality only. The APIC is an Intel chip that provides symmetric multiprocessing (SMP) for its Pentium system.

MPS Version Control For OS

Selects the operating system multiprocessor support version.

- The choice: 1.1 or 1.4

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.

Report No FDD For WIN 95

Whether report no FDD runs for Win 95 or not.

- The choice: Yes or No.

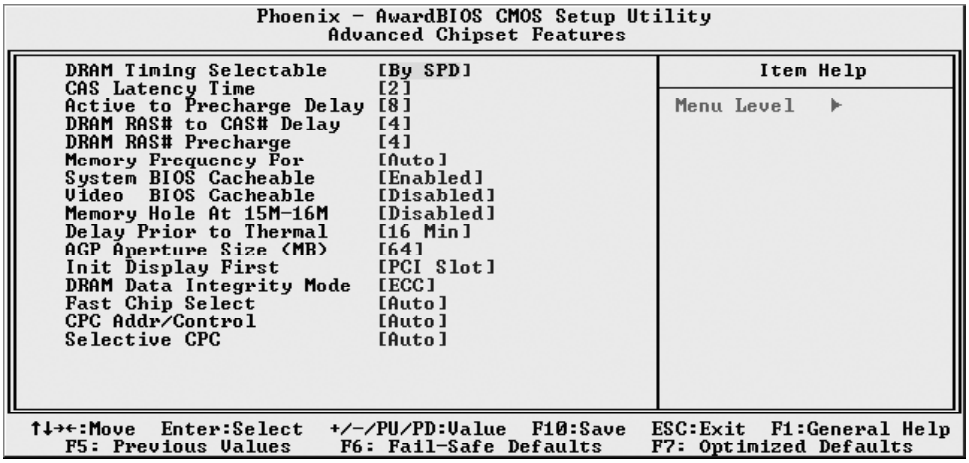
Small Logo(EPA) Show

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. Changing values incorrectly may lead to fatal errors or recurring instability into your system.



DRAM Timing Selectable

The value in this field depends on performance parameters of the installed memory chips (DRAM).

- The Choice: Manual or By SPD.

CAS Latency Time

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

- The Choice: 2, 2.5, or 3.

Active to Precharge Delay

This item defines the numbers of cycles for RAS to be allowed to precharge.

- The Choice: 8, 7, 6, or 5.

DRAM RAS# to CAS# Delay

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: 4, 3, or 2.

DRAM RAS# Precharge

This item defines the timing delay for DRAM precharge.

- The Choice: 4, 3, or 2.

Memory Frequency For

This item is select SDRAM Frequency.

- The Choice: DDR266, DDR333, DDR320, DDR400, or Auto.

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h ~ FFFFFh, 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.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS, 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.

Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it can't be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

- The Choice: Enabled or Disabled.

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.

AGP Aperture Size (MB)

This item defines the size of the aperture if you use an AGP graphics adapter. The AGP aperture refers to section of the PCI memory address range used for graphics memory.

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

Init Display First

This item determines the initial device when the system powers on.

- The choice: PCI Slot or AGP.

DRAM Data Integrity Mode

This item defines the DRAM data integrity mode.

- The Choice: Non-ECC or ECC.

Fast Chip Select

This item defines the fast chip selection mode.

- The Choice: Auto or Enabled.

CPC Addr/Control

This item defines the CPC address control mode.

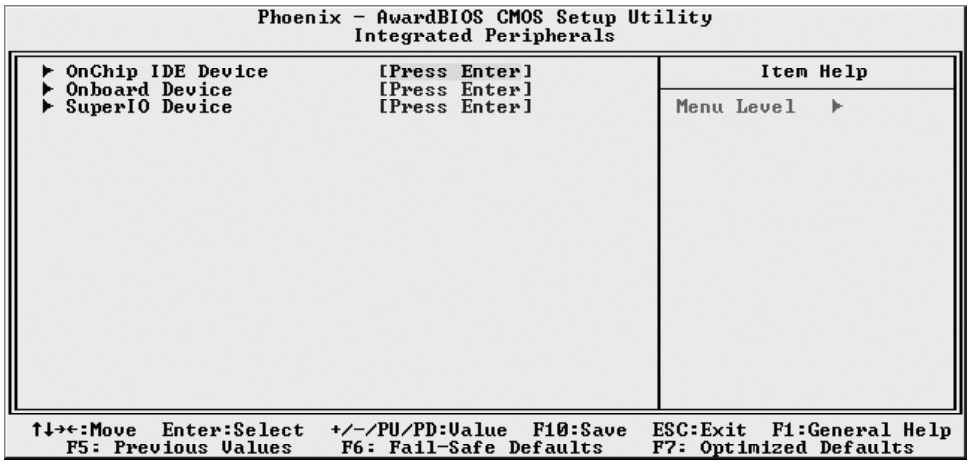
- The Choice: Auto or Enabled.

Selective CPC

This item defines the selective CPC mode.

- The Choice: Auto or Enabled.

Integrated Peripherals



OnChip IDE Device

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

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 drivers 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.

On-Chip Primary/Secondary PCI IDE

Select Enabled to activate the primary/secondary IDE interface. Select Disabled to deactivate the primary/secondary interface.

➢ The Choice: Enabled or Disabled.

IDE Primary/Secondary Master/Slave PIO

Each IDE interface supports two channels, one Master and one Slave. These four items let you set a PIO (Programmed Input/Output) mode (0-4) for the four IDE devices the onboard two IDE interfaces support. Modes 0 through 4 provide successively increased performance, and the Auto mode enables the system to automatically determine the best status for each device.

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

IDE 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.

*** On-Chip Serial ATA Setting ***

SATA Mode

This item defines the serial ATA mode.

- The Choice: IDE or RAID.

On-Chip Serial ATA

This item defines the onboard serial ATA.

- The Choice: Disabled, Auto, Combined Mode, Enhanced Mode, or SATA Only.

Serial ATA Port0 Mode

This item defines the serial ATA1 mode.

- The Choice: Primary Master, Primary Slave, Secondary Master, Secondary Slave, SATA0 master, or SATA1 master.

Serial ATA Port1 Mode

This item defines the serial ATA2 mode.

- The Choice: Primary Master, Primary Slave, Secondary Master, Secondary Slave, SATA0 master, or SATA1 master.

Onboard Device

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

USB Controller

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

- The Choice: Enabled or Disabled.

USB 2.0 Controller

Do not disable this item if your system has a USB 2.0 controller installed on the system board and you have USB peripherals.

- The Choice: Enabled or Disabled.

USB Keyboard Support

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

- The Choice: Enabled or Disabled.

AC97 Audio

This item allows you to control the OnChip Audio.

- The Choice: Auto or Disabled.

Onboard Lan Boot ROM

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

- The choice: Enabled or Disabled.

SuperIO Device

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

Onboard FDC Controller

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

- The choice: Enabled or Disabled.

Onboard Serial Port 1

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port 1 (COM1).

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

Onboard Serial Port 2

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port 2 (COM2).

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

UART Mode Select

This item allows you to select an operating mode for the IrDA infrared.

- The choice: Normal, 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

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

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

Parallel Port Mode

Select an operating mode for the onboard parallel port. Select SPP unless you are certain your system supports other modes.

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

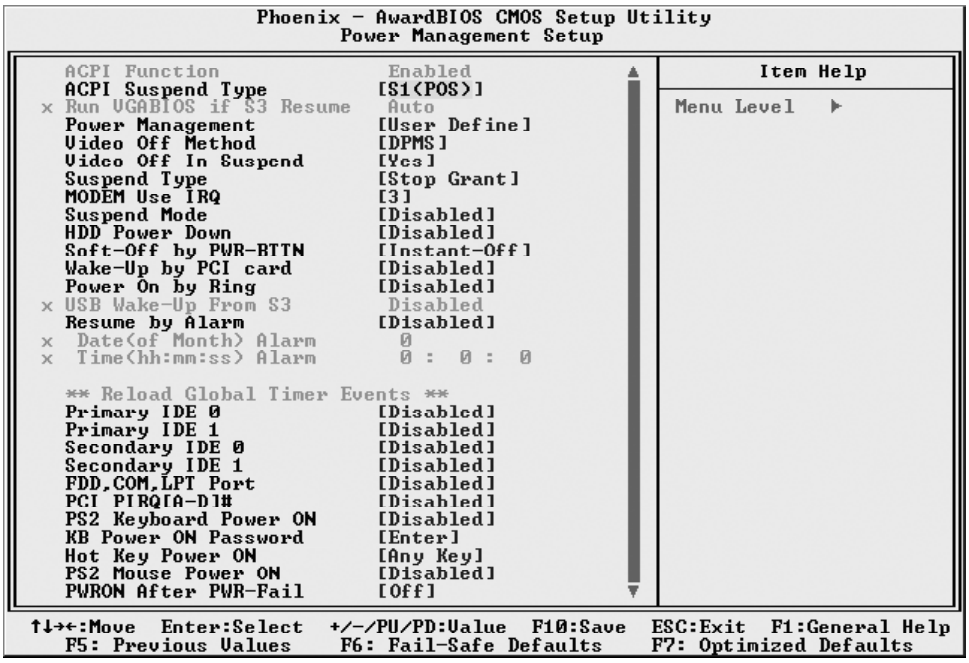
ECP Mode Use DMA

When the parallel port mode is set to ECP, this item becomes seletable.

- The choice: 1 or 3.

Power Management Setup

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 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; S3(STR), to the system that shuts down with the exception of a refresh current to the system memory.

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

Run VGABIOS if S3 Resume

This item becomes available when the previous item is set to S3(STR) or S1&S3. The item allows the system to initialize a VGA BIOS from S3 (Suspend to RAM) sleep state.

- The choice: Auto, Yes, or No.

Power Management

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.

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	The item only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

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

Video Off In Suspend

This item determines the manner in which the monitor is blanked.

- The choice: Yes or No.

Suspend Type

This item allows you to select the Suspend Type.

- The choice: Stop Grant or PwrOn Suspend.

MODEM Use IRQ

This determines the IRQ which the MODEM can use.

- The choice: 3, 4, 5, 7, 9, 10, 11, or NA.

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, 8 Min, 12 Min, 20 Min, 30 Min, 40 Min, or 1 Hour.

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.

Soft-Off by PWR-BTTN

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.

Wake-Up by PCI card

This item leaves PCI cards wake up the system from the suspend mode.

- The choice: Enabled or Disabled.

Power On by Ring

This item defines the system will resume by activating of modem ring.

- The choice: Enabled or Disabled.

USB Wake-Up From S3

If you are using USB devices, and the ACPI Suspend Type is set to S3 or S1&S3, enable this item to have USB devices wake up the system from power saving mode.

- The choice: Enabled or Disabled.

Resume by Alarm

When set to Enabled, the following two items become available and you can set the date, hour, minute and second to turn on your system.

- The choice: Enabled or Disabled.

Date(of Month) Alarm

This item selects the alarm Date (day of the month).

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

** Reload Global Timer Events **

Global Timer (power management) Events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such as a mode. In effect, the system remains alert for anything that occurs to a device that is configured as Enabled, even when the system is in a power-down mode.

Primary/Secondary IDE 0/IDE 1

When these four items are enabled, the system will restart the power-saving timeout counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels.

- The choice: Disabled or Enabled.

FDD,COM,LPT Port

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the floppy disk drive, the serial ports, or the parallel port.

- The choice: Disabled or Enabled.

PCI PIRQ[A-D]#

When this item is disabled, any PCI device set as the Master will not power on the system.

- The choice: Disabled or Enabled.

PS2 Keyboard Power ON

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

- The choice: Disabled, Password, or Hot KEY.

KB Power ON Password

Press <Enter> to set a password to awaken the system from a keyboard.

Hot Key Power ON

Set a key to awaken the system from a keyboard.

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

PS2 Mouse Power ON

Enable or disable the function of awakening the system from a mouse.

- The choice: Enabled or Disabled.

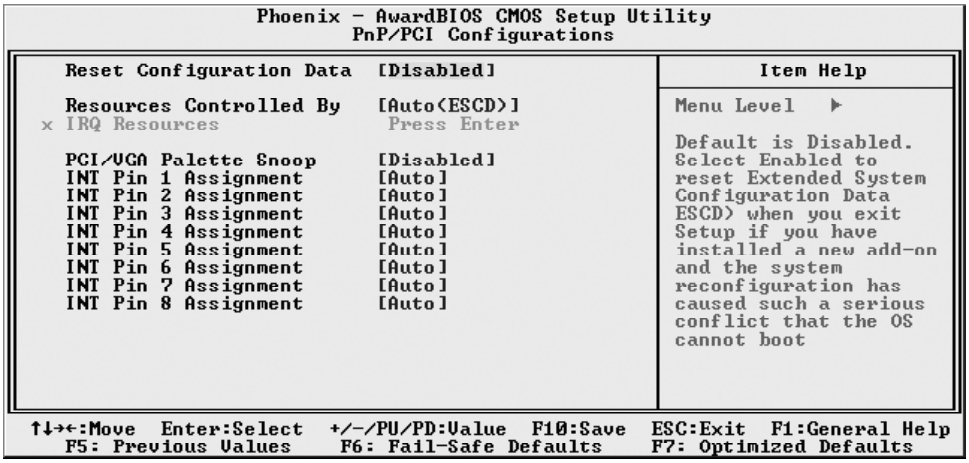
PWRON After PWR-Fail

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

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

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.



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

As stays Auto(ESCD), the system will dynamically allocate resources to PnP devices as they are required. As set to Manual, the following item becomes available.

- The choice: Auto(ESCD) or Manual.

IRQ Resources

This item allows you respectively assign an interruptive type for IRQ-3, 4, 5, 7, 9, 10, 11, 12, 14, and 15.

- The choice: PCI Device or Reserved.

PCI/VGA Palette Snoop

It determines whether MPEG ISA/VESA VGA cards can work with PCI/VGA or not. If you have MPEG ISA/VESA VGA cards and PCI/VGA works, select Enabled. Otherwise, disable it.

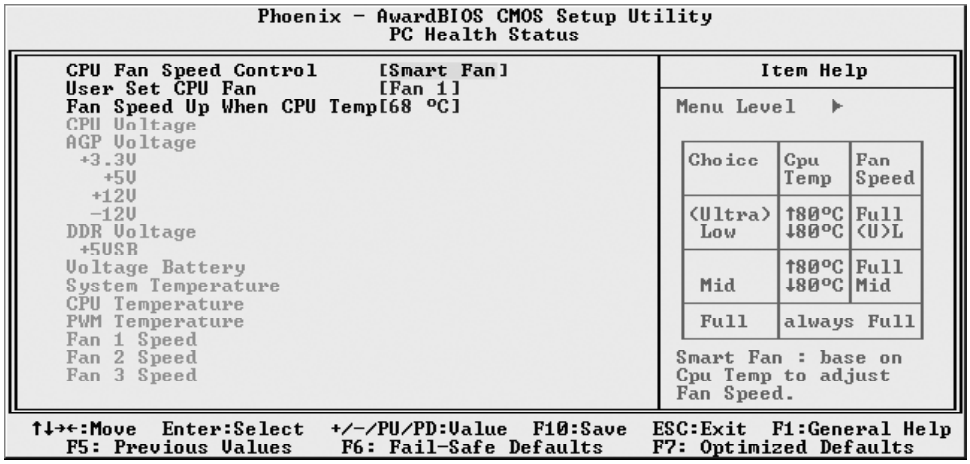
- The choice: Enabled or Disabled.

INT Pin 1/2/3/4/5/6/7/8 Assignment

This item 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

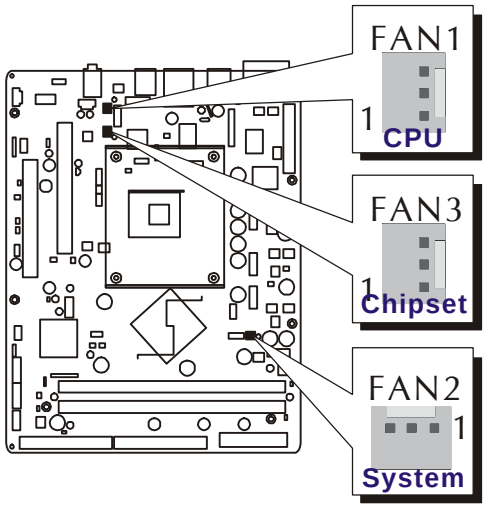


CPU Fan Speed Control

The item defines the fan speed control features.

- The choice: Smart Fan, Ultra-Low, Low, Mid, or Full.

This feature is controlled via BIOS, in which the CPU fan rotational speed sensing/control is governed by CPU temperature setting pre-selected in BIOS. Before manually modifying the CPU fan setting, please make sure both fan connectors are plug into the correct fan connector designations on the mainboard.



User Set CPU Fan

Enables you to choose one specific fan for further setting.

- The choice: Fan 1 or Fan 2.

Fan Speed Up When CPU Temp

Enables 3 phase smart controls to the Selected fan. This feature ranges from 40 ^{0}C to 80 ^{0}C, in an increment of 4 ^{0}C.

- The choice: 40 ^{0}C, 44 ^{0}C, 48 ^{0}C, 52 ^{0}C, 56 ^{0}C, 60 ^{0}C, 64 ^{0}C, 68 ^{0}C, 72 ^{0}C, 76 ^{0}C, or 80 ^{0}C.

If actual CPU temp (reported by BIOS) stays below 68 ^{0}C then CPU fan speed will run at a quiet mode (1st phase) of approximately 2000 RPM.

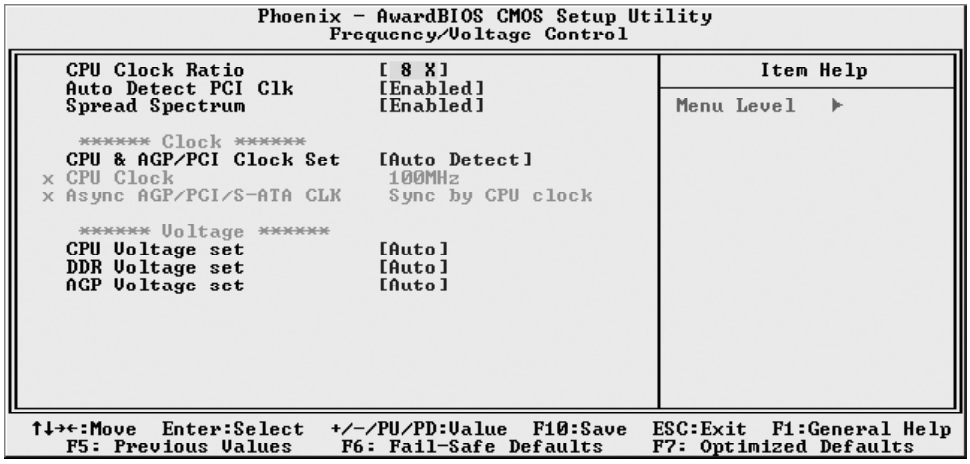
But when the actual CPU temp goes above the preselected 68 ^{0}C temperature threshold, then CPU fan speed will automatically engage into normal mode (2nd phase) of about 3000 RPM and cool down the CPU temperature. When the CPU temperature drops back below the 68 ^{0}C temperature threshold, CPU fan speed will again automatically shift back to the quiet mode (1st phase) to reduce fan noise level.

Fail-safe mode (3rd phase) Variable Fan Speed and CPU temperature Control is as predefined at 80 ^{0}C. Where in the event of system and CPU operating under extreme working conditions, and if CPU temperature is raised above 80 ^{0}C then the SMART BIOS will engage the CPU fan in Fail-safe mode to rotate at about 3500 RPM. Please note that the higher fan speed, the fan cooler will be become slightly noiseier to compensate for the increase in CPU temperature.

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

CPU Voltage
AGP Voltage
+3.3V
+5V
+12V
-12V
DDR Voltage
+5VSB
Voltage Battery
System Temperature
CPU Temperature
PWM Temperature
Fan 1 Speed
Fan 2 Speed
Fan 3 Speed

Frequency/Voltage Control



CPU Clock Ratio

This item allows you to adjust CPU ratio if your CPU clock ratio is unlocked.

Auto Detect PCI Clk

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

- The choice: Enabled or Disabled.

Spread Spectrum

This item defines the spread spectrum modulation.

- The choice: Enabled or Disabled.

****** Clock ******

CPU & AGP/PCI Clock Set

This item allows you to adjust CPU host/AGP/PCI clock. To select Manual makes the two items below available.

- The choice: Auto Detect or Manual.

CPU Clock

This item allows you to adjust CPU host clock from 100～255MHz by 1MHz step.

Async AGP/PCI/S-ATA CLK

This item allows you to adjust AGP/PCI/serial ATA clock.

- The choice: Sync by CPU clock, fixed 66/33/100 MHz, fixed 73/36/100 MHz, or fixed 80/40/100 MHz.

****** Voltage ******

CPU Voltage set

This item allows you to adjust CPU voltage.

- The choice: Auto, 0.8250 V ~ 1.5875 V.

DDR Voltage set

This item allows you to adjust DDR voltage.

- The choice: Auto, 2.65 V, 2.70 V, or 2.75 V.

AGP Voltage set

This item allows you to adjust AGP voltage.

- The choice: Auto, 1.55 V, 1.60 V, or 1.65 V.

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.

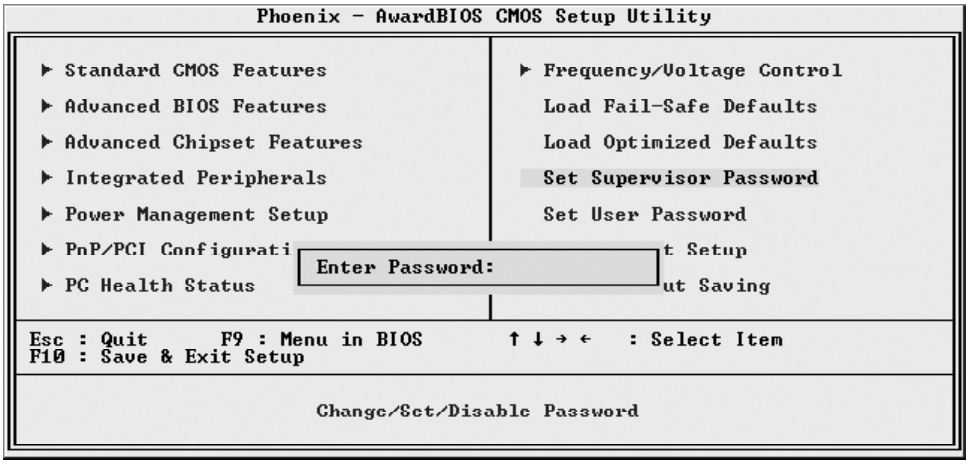
Load Optimized Defaults

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 26 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.