

FB77

Intel Pentium 4 and Celeron D

775-pin Processor

Based DDR MAINBOARD

User's Manual

Shuttle® FB77

Intel Pentium 4 and Celeron D 775-pin Processor Based 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: FB77

S/N: N/A

CPU:

200 MHz Pentium 4, LGA 775 Processor 2.8, 3, 3.2, 3.4, 3.6 GHz

133 MHz Pentium 4, LGA 775 Processor 1.86, 2, 2.13, 2.26, 2.40, 2.53, 2.66, 2.80 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: four ports with 4 pins respectively

1394 Port: one port with 6 pins

1394 Port: one port with 4 pins

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

Line-Out Port: four ports

Microphone Port: one port

Line-In Port: one port

SPDIF Out Port (Coaxial): one port

SPDIF Out Port: one port

SPDIF In Port: one port

DIMM Memory (Option): DDR 400 256 MB *2

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

Monitor: CRT+DVI

Maximum Resolution: 1280 X 1024 V:60Hz

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

Test Mode	External Frequency	CPU Open/Close
1	200 MHz	Pentium 4 3.6 GHz, Close
2	200 MHz	Pentium 4 3.6 GHz, Open
3	133 MHz	Pentium 4 2.8 GHz, Close
4	133 MHz	Pentium 4 2.8 GHz, Open

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

Remedy: N/A

EMI Interference:

Crystal: 14.318 KHz(X2)/25 MHz(X4)/32.768 MHz(X1)/24.576 MHz(X3)/

Clock Generator: U5

(D) Supported Host Peripherals:

Host Peripheral	Product Name	Model Name
#1	Case	FB77
#2	SHUTTLE Power Supply	PC40N250EV
#3	Serial ATA Western Digital HDD	WD1200JD-00FYB0
#4	Panasonic FDD	JU-257A606P
#5	CODE DVD	DVD-116
#5	Geforce AGP Card	FX-5600 8X DDR64MB

(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 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 FB77 mainboard.

Experienced DIY User

Congratulate on your purchase of the FB77 mainboard. You will find installing your new FB77 mainboard is quite easy. Bundled with an array of onboard functions, the highly-integrated FB77 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.

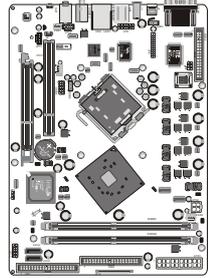
System Integrator

You have wisely chosen FB77 to construct your system. FB77 incorporates all the state-of-the-art technology of the Intel 875P + ICH5R chipset. Each integrates the most advanced functions you've ever found in a compact Shuttle Form Factor board.

1.2 Item Checklist:

Check all items with your FB77 mainboard to make sure nothing is missing.
A complete package should include:

- ★ One Shuttle FB77 Mainboard



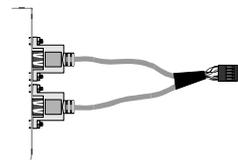
- ★ One ATA 100/66/33 Ribbon Cable



- ★ One Floppy Ribbon Cable



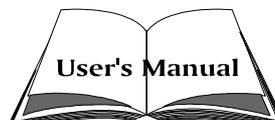
- ★ One Twin-Port USB Cable (optional)



- ★ SATA Cable



- ★ FB77 User's Manual
ICH5R Manual



- ★ One Bundled CD-ROM, including:
 - FB77 user's manual in PDF format
 - Intel Chipset Driver
 - Realtek Audio Driver
 - Broadcom Giga LAN Driver
 - Broadcom BACS
 - Intel Raid Driver
 - Intel USB 2.0 Driver
 - DirectX9 Utility Driver



2 FEATURES

FB77 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

Intel Pentium 4 and Celeron D in the 775 pin package with 533/800 MHz FSB.

* Chipset

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

Integrated 128 bit Twin Bank memory controller, two 64 bit memory controllers, 8X AGP 3.0 interface at 533 MHz, high speed 800 MB/sec.

Features the HyperThreading Technology to support Digital SPDIF Out.

GIGABIT Ethernet controller (Broadcom 5788)

10/100/1000 Mbps operation rate.

Supports Wake-on-LAN (WOL) function.

IEEE 1394 (VT6307)

Compliants with 1394 OHCI specification revision V1.0 and V1.1, supports 400 Mb/s, 200 Mb/s, 100 Mb/s data transfer rate.

* Versatile Memory Support

Supports PC2700/3200 compliant unbuffered with/without ECC DDR-SDRAM. Available bandwidth up to 3.2 GB/s (DDR400) for Single Channel mode and 6.4 GB/s (DDR400) in Dual channel mode. System memory supports 128/256/512 Mb technologies up to 2GB capacity max and 1GB per DIMM.

* AC'97 CODEC (5.1-CHANNEL)

Realtek ALC658 includes SPDIF-IN/OUT function. It compliants with AC'97 2.2 specification. 5.1-Channel output and Line-in/ Mic-in are all independent channel and supports CD-in & AUX-in connectors.

* IDE & SATA (ICH5R)

Supports 2 IDE connectors & 2 Serial ATA connectors. IDE interface supports PIO mode 0,1,2,3,4 and UDMA 33/66/100. SATA Host controller supports Generation 1 up to 1.2 Gb/s (150/MB/s).

Provides RAID 0 (Data Striping), RAID 1 (Data Mirroring) functions, RAID 0+1 (Data Striping + Data Mirroring).

* Expansion Slots

Supports 8X/4X AGP slot with Latch Lock x1 and PCI slot x1.

* 8 USB Interface Onboard

- USB 2.0/1.1 compliant. 4 UHCI HUB 1.1 Host controller and 1 EHCI USB2.0 Host controller support up to 8 USB ports. All 8 USB ports can be assigned to USB 2.0 interface with BIOS option.

* Onboard PWM

ADP3180 with ADP3418 MOSFET drives (Four PHASE), supports over current/voltage protections, compliants with VRM10 specification. It also supports CPU core voltage range from 0.8375V to 1.6V by auto detect.

* 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 DB9 COM connectors
- 1 x SPDIF-In connector
- 1 x 1394a port
- 1 x PS/2 Mouse port
- 1 x PS/2 Keyboard port
- 1 x 10/100/1000 Mbps LAN port
- 2 x USB ports
- 1 x SPDIF Out RCA port
- 1 x Line-In port
- 1 x 5.1-Channel Center/Bas port
- 1 x 5.1-Channel Rear-Out port
- 1 x 5.1-Channel Front-Out port
- 1 x Clear CMOS button

* PCI Bus

Supports 1 PCI slot and BCM5788 Gigabit Ethernet Lan (Gbe)/ VT6307 dual ports IEEE 1394 firewire on board.

* 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 ROM and supports Green PC, Desktop Management Interface (DMI).

* **Form Factor**

System board conforms to Shuttle Form Factor 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/DIMM/AGP Voltage Setting - These items allow users to adjust CPU/DIMM/AGP Voltage in BIOS.

* **Intelligent Features**

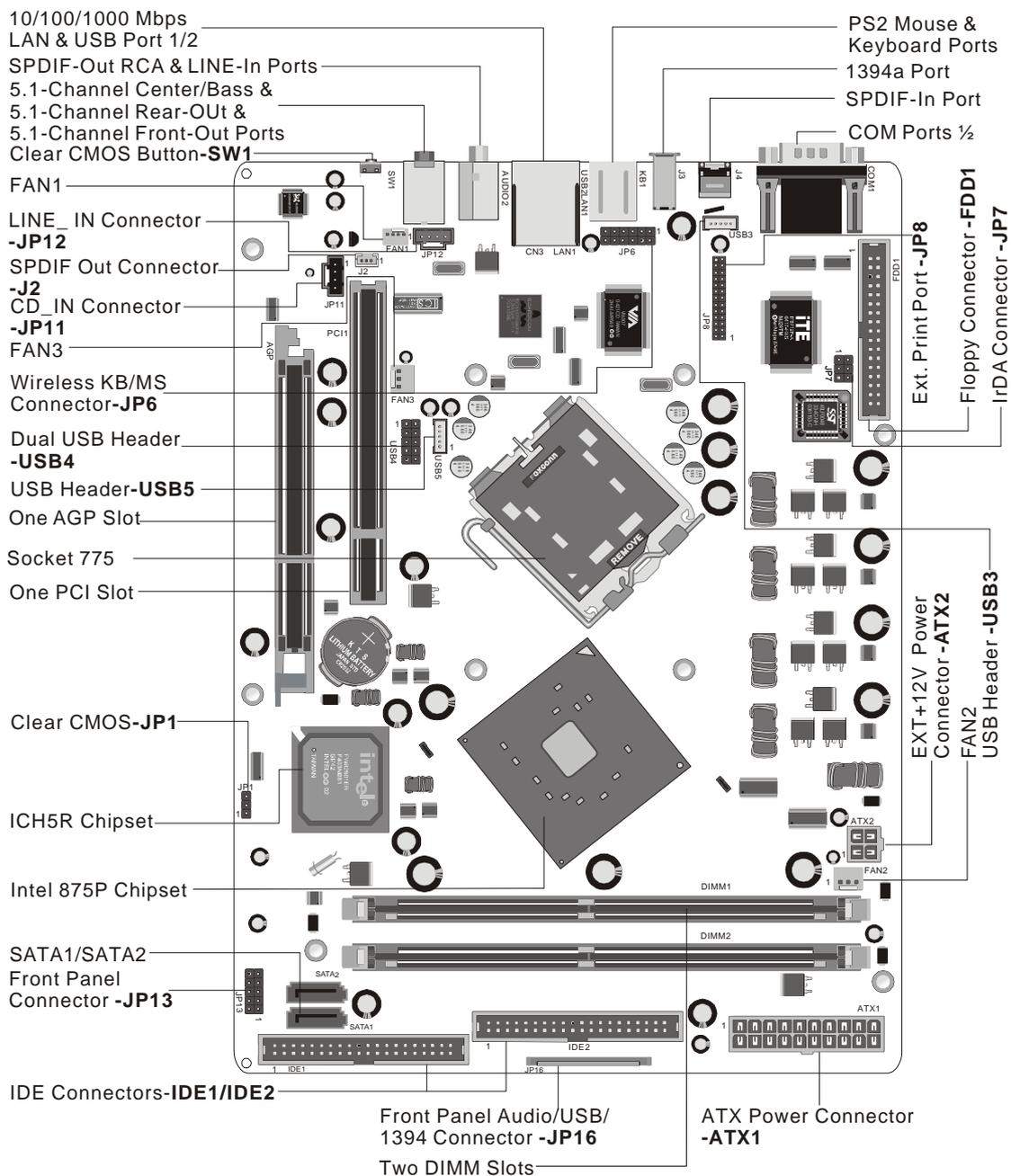
- Voltage Monitoring - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure a stable current passing through mainboard components.
- Fan Status Monitoring - To prevent the CPU from overheating, the CPU fan is monitored by RPM, with which the cooling 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 FB77)



Step 1

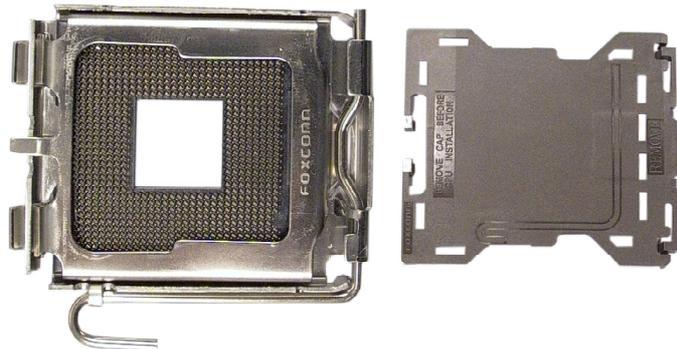
CPU Installation:

This motherboard supports Socket 775 Intel Pentium 4 and Celeron D processors (CPU).

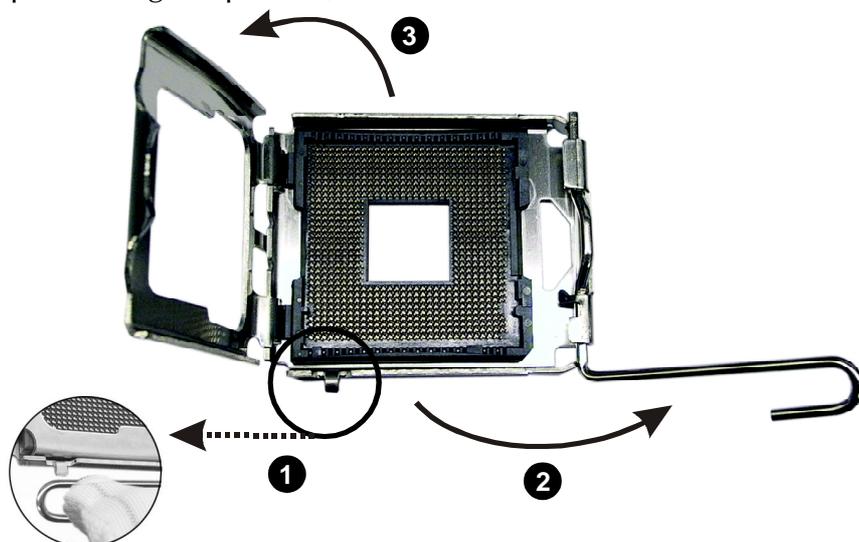
To install, follow the steps outlined below. Note the CPU orientation carefully when you insert it into the socket.

Caution : This 775 pin socket is fragile and easily damaged.
Always use extreme care when installing a CPU and limit the number of times that you remove or change the CPU.

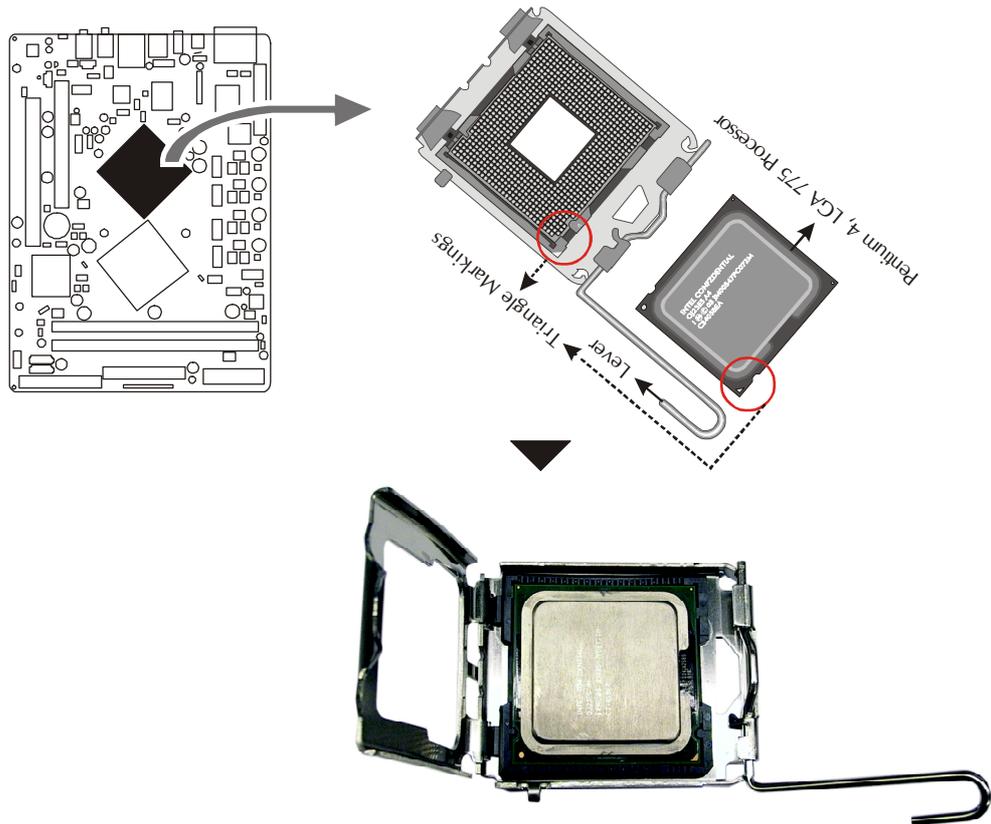
1. Remove the protective cover.



2. Unlock the socket lever and lift it to 90-degrees (be careful not to touch the socket pins during this process).



-
- Orientate the CPU and socket, aligning the yellow triangle on the corner of the CPU with the triangle on the socket. Gently insert. Take care not to place any sideways force on the CPU when inserting, as the socket is fragile and easily damaged.



- Lower the CPU socket lever and lock in place.

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



- The Socket 775 processor requires a heat sink and cooling fan to run efficiently, cool and stable. If you do not receive a bundled heat sink and fan when you purchase you CPU, it is essential that you acquire one.

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.

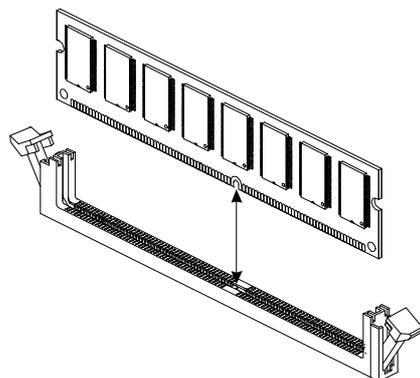
Caution: If you did not place the battery appropriately, which may cause risk of explosion. Please refer to the related rule for the dispose of used batteries.

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.

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.

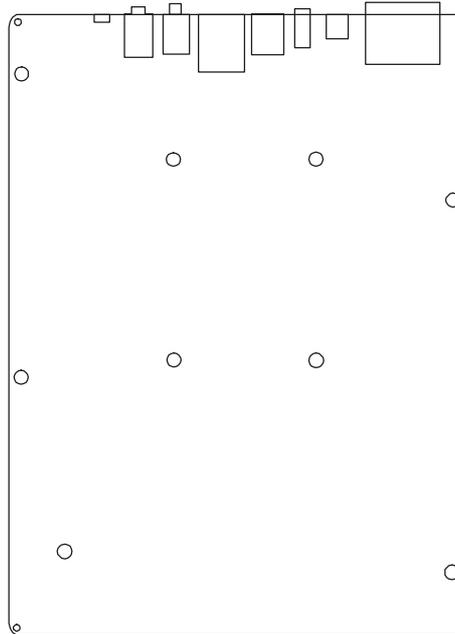
To install IDE & FDD drives, follow these procedures:

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.



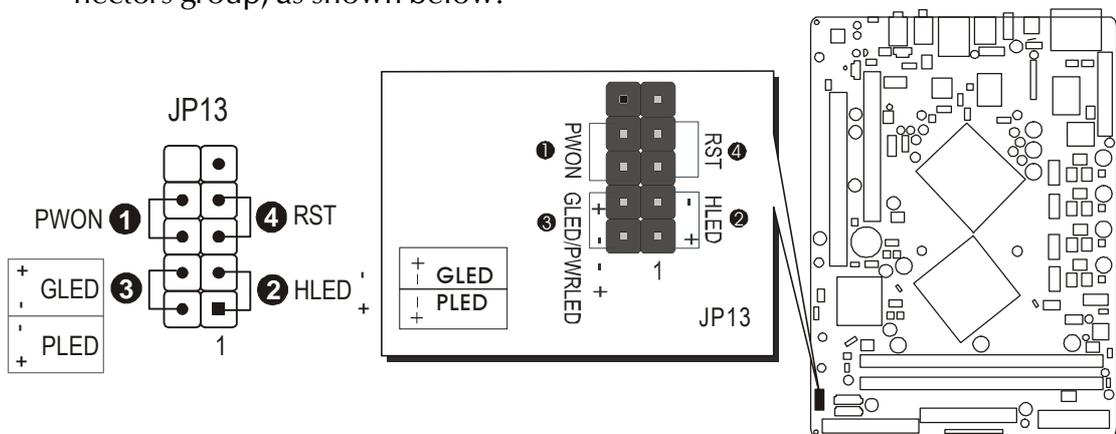
2. Position the studs between the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between them, for avoiding any electrical shorts in-between.
(If your computer case is already equipped with mounting studs, you need to tighten the screws to attach the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

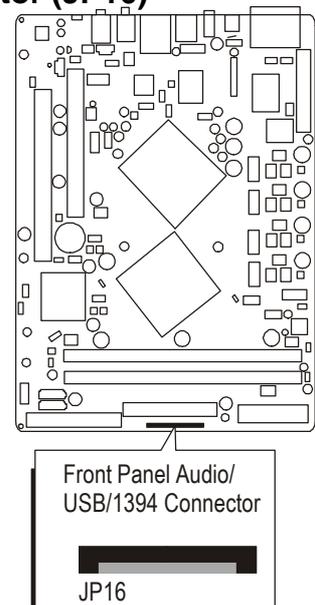
You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (HDD LED, Power LED, or Reset Switch devices etc.) These cables serve to connect the front-panel switches and LEDs connectors to the mainboard's front-panel connectors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



1. ATX Soft Power On/Off (POWER ON)
2. HDD-LED (HDD LED)
3. Green-LED and Power-LED (GREEN LED/POWER LED)
4. Hardware Reset Switch Button (RESET)

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

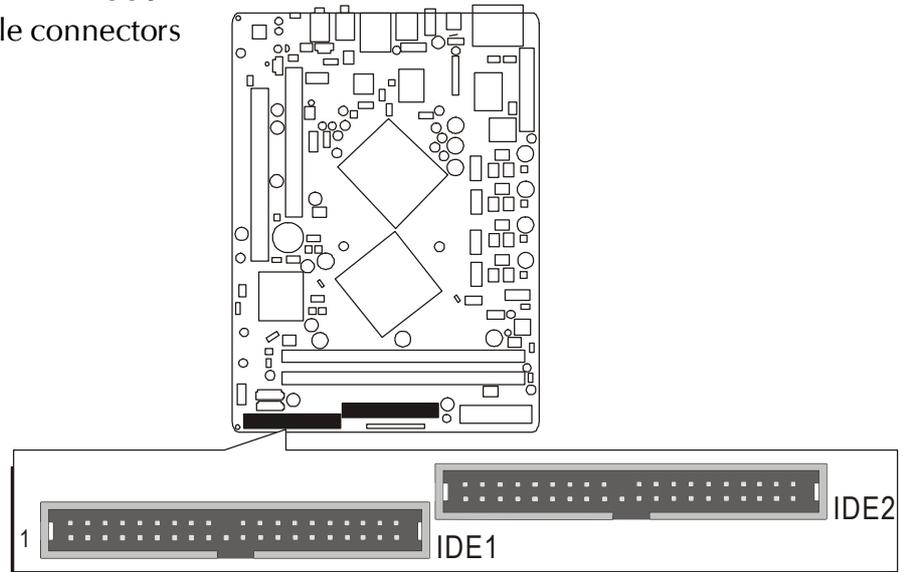
You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (AUDIO, USB, 1394a devices etc.). These cables serve to connect the AUDIO, USB, 1394a, connectors to the mainboard's front panel connectors group, as shown below.



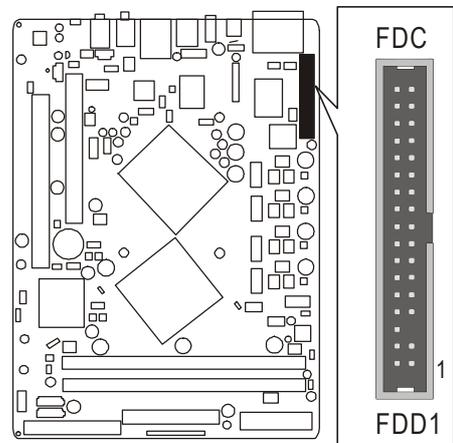
Step 7

Connect IDE, Floppy Disk Drives and Serial ATA connectors

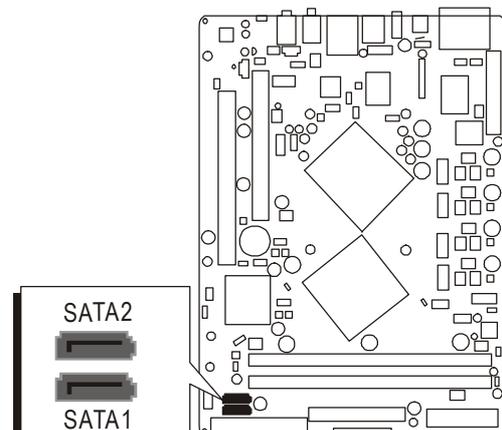
1. IDE cable connectors



2. Floppy cable connector



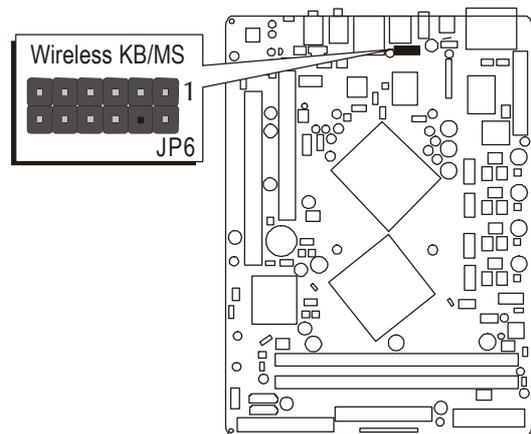
3. Serial ATA connectors



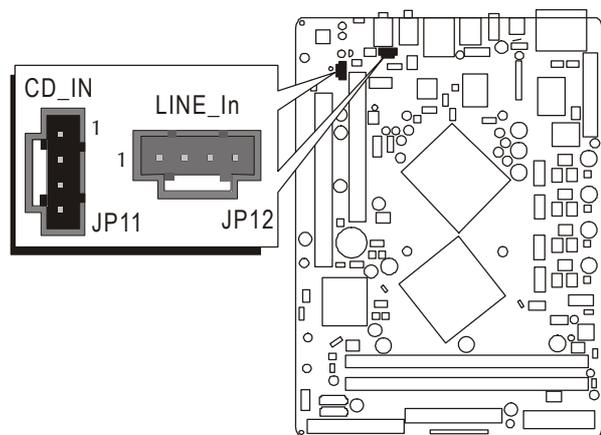
Step 8

Connect Other Internal Peripherals

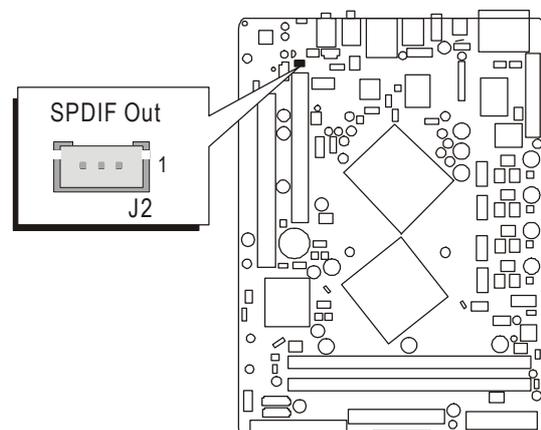
1. Wireless KB/MS header (JP6)



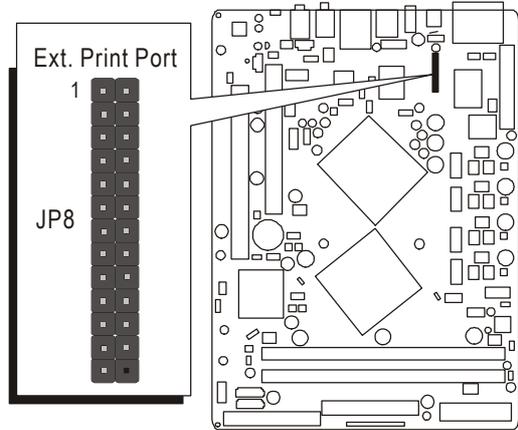
2. CD_IN (JP12) connector;
LINE_IN (JP11) connector



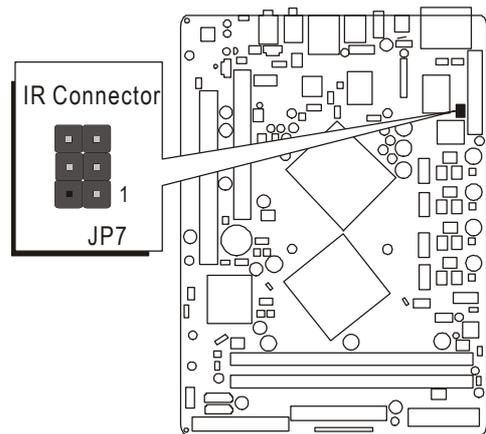
3. SPDIF Out header (J2)



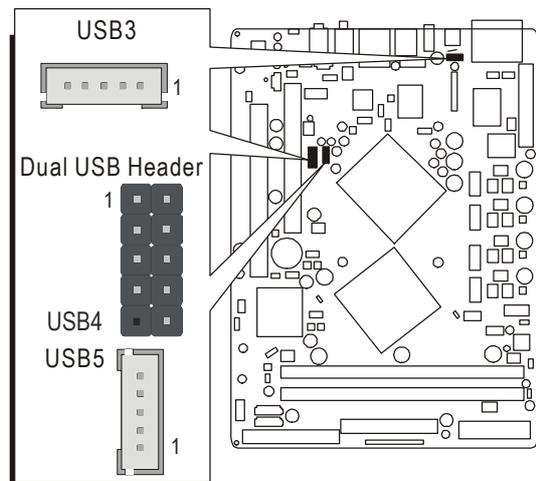
4. Extended parallel port header (JP8)



5. IrDA connector (JP7)



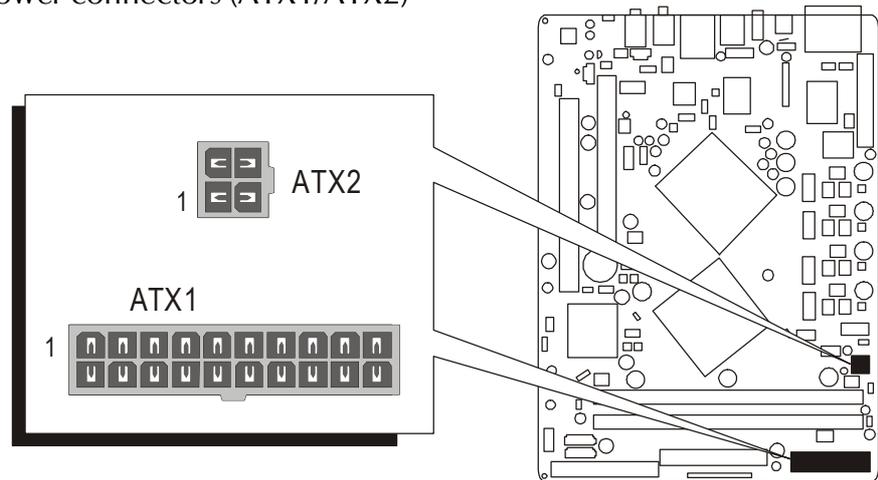
6. USB headers (USB3/USB4/USB5)



Step 9

Connect the Power Supplies

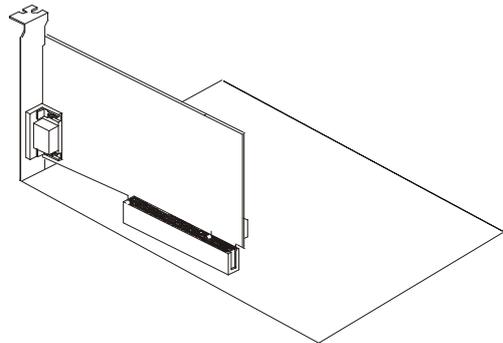
1. System power connectors (ATX1/ATX2)



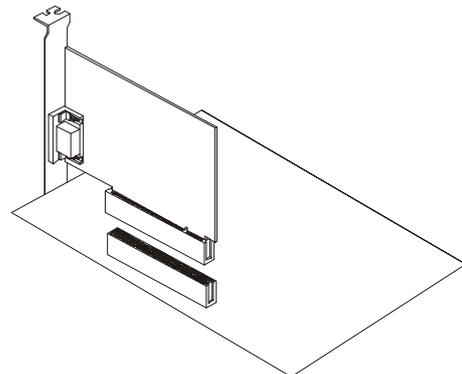
Step 10

Install Add-On Cards in Expansion Slots

1. Accelerated Graphics Port (AGP) Card



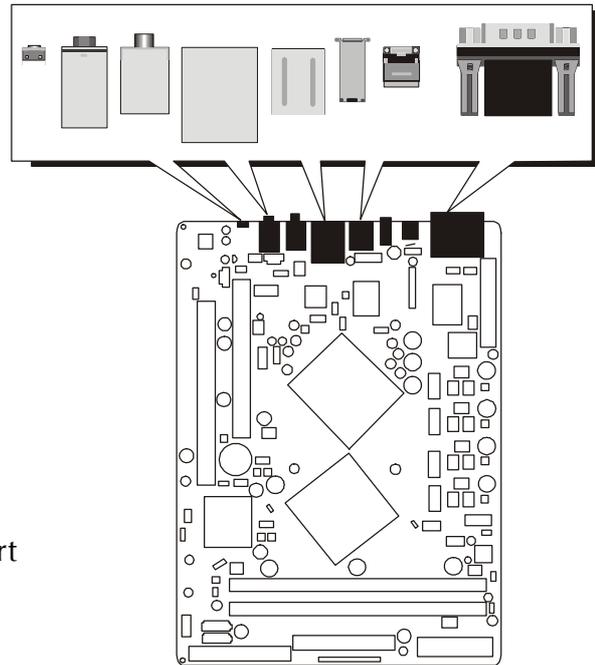
2. PCI Card



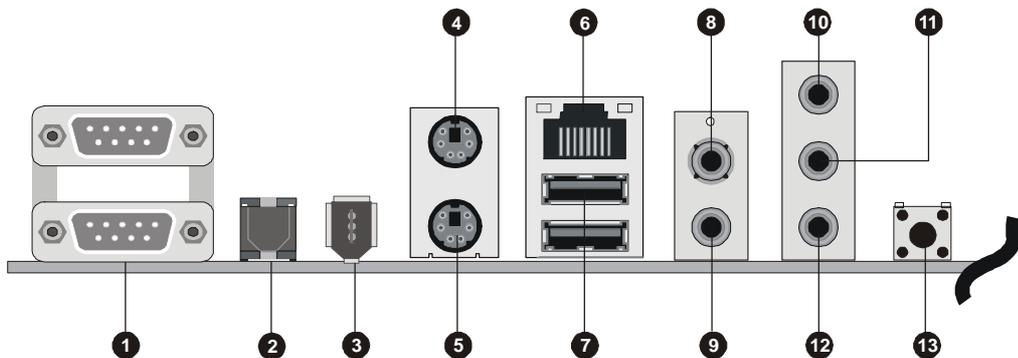
Step 11

Connect External Peripherals to Back-Panel

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



1. COM Ports 1/2
2. SPDIF-In Port
3. 1394a Port
4. PS/2 Mouse Port
5. PS/2 Keyboard Port
6. 10/100/1000 Mbps LAN Port
7. USB Ports 1/2
8. SPDIF Out RCA Port
9. Line-In Port
10. 5.1-Channel Center/Bass Port
11. 5.1-Channel Rear-Out Port
12. 5.1-Channel Front-Out Port
13. Clear CMOS Button



Step 12

System Boot Up For the First-Time

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

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

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

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

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

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

Step 13

Install Drivers & Software Components

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

1. Insert the FB77 bundled CD-ROM into your CD-ROM drive. The autorun program will display the main installation window on screen.
2. Choose "Install Mainboard FB77 Series Driver".
3. Choose "Install Intel Chipset Driver" and complete it.
4. Choose "Install Realtek Audio Driver" and complete it.
5. Choose "Install Broadcom Giga LAN Driver" and complete it.
6. Choose "Install Broadcom BACS" and complete it.
7. Choose "Install Intel Raid Driver" and complete it.
8. Choose "Install Intel USB 2.0 Driver" and complete it.
9. Choose "Install DirectX9 Utility Driver" and complete it.
10. Quit (from the auto-run installation program).

3.2 Jumper Settings

Several hardware settings are made through the use of mini jumpers to connect jumper pins on the mainboard. Pin #1 could be located at any corner of 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:



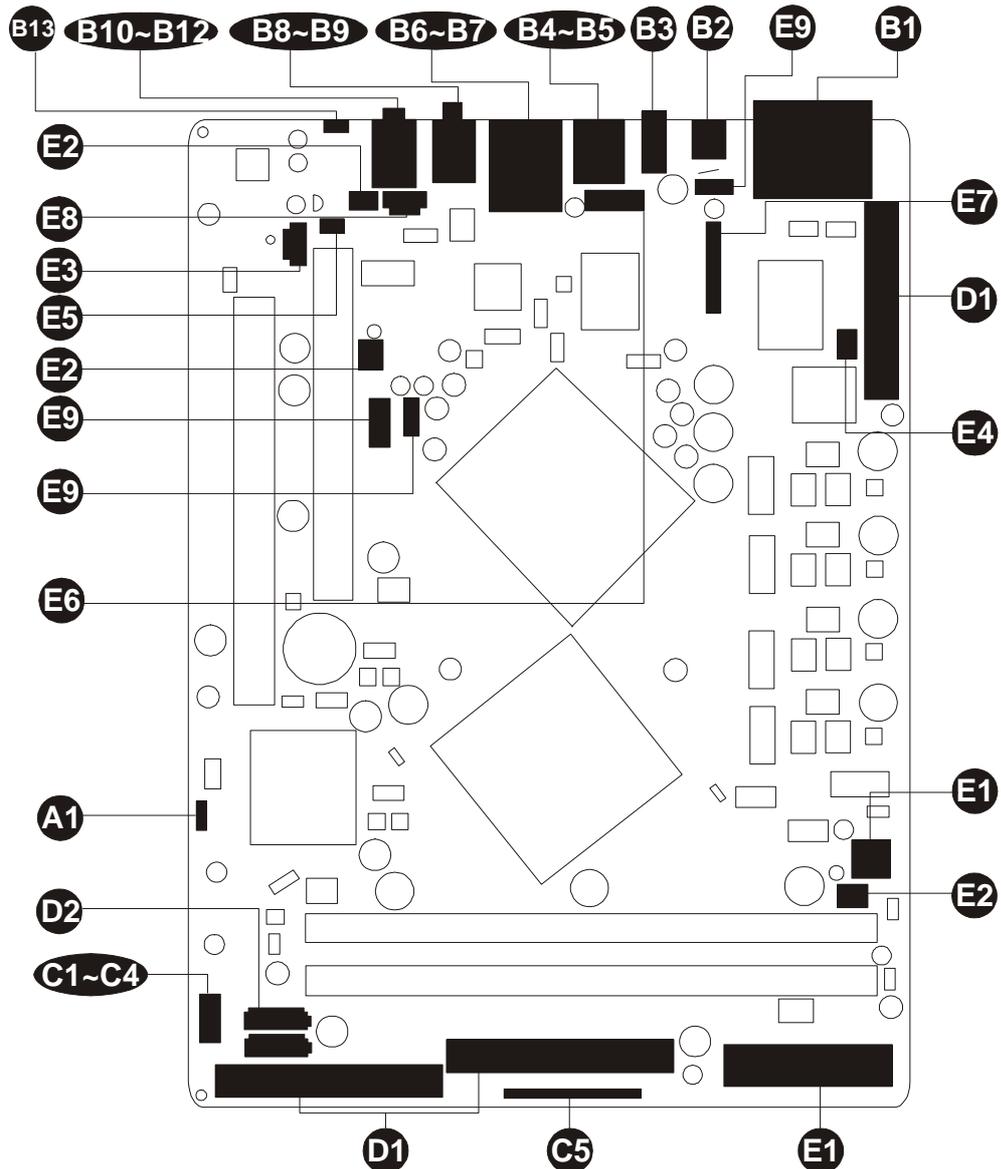
Jumpers with two pins capped are shown as  for Close [On] or  for Open [Off]. To do this, please place a plastic mini cap on the desired pair of pins.

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

- LGA 775 : CPU Socket for Intel Pentium 4 and Celeron D processors
- DIMM1/2 : Two DIMM slots for 128, 256 and 512 MB of 2.5V DDR SDRAM
- AGP : One AGP slot supports up to 4X/8X AGP device
- PCI : One 32-bit PCI expansion slot

Jumpers

A1 JP1 : Clear CMOS setting

Back-Panel Connectors

B1 COM 1/2 : COM port connectors
B2 SPDIF-In : SPDIF-In Port
B3 1394a : IEEE1394a port connector
B4 MS : PS/2 Mouse port connector
B5 KB : PS/2 Keyboard port connector
B6 LAN : 0/100/1000 Mbps LAN Port
B7 USB : USB 1/2 port connectors
B8 SPDIF Out RCA : SPDIF Out RCA Port
B9 Line-In : Line In port connector
B10 Center/Bass : 5.1-Channel Center/Bass Port
B11 Rear-OUT : 5.1-Channel Rear-Out Port
B12 Front-OUT : 5.1-Channel Front-Out Port
B13 SW1 : Clear CMOS button

Front-Panel Connectors

C1 HLED : HDD LED connector
C2 GLED/PWR LED : Green LED/Power LED connector
C3 RST : Hardware reset connector
C4 PWON : ATX power on/off switch connector
C5 JP16 : Front Panel Audio/USB/1394 connector

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/SATA2 : Serial ATA connectors

Other Connectors

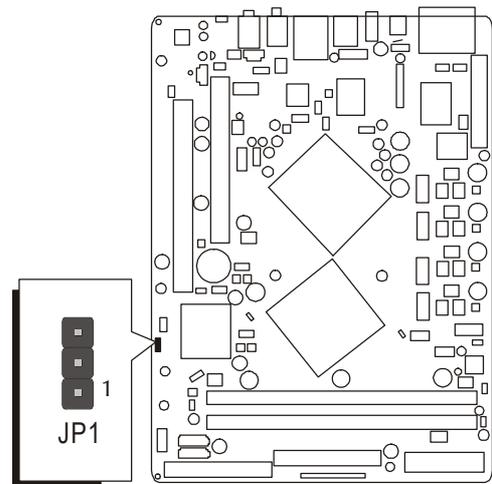
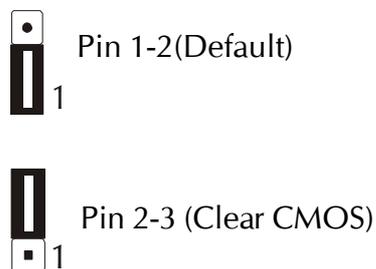
E1 ATX1/ATX2 : ATX1 & Ext+ 12V power supply connectors
E2 FAN1/2/3 : Fan connectors

E3	JP11	: CD_IN connector
E4	JP7	: IrDA header
E5	J2	: SPDIF Out header
E6	JP6	: Wireless KB/MS header
E7	JP8	: Extended parallel port header
E8	JP12	: LINE_IN connector
E9	USB3/4/5	: USB Headers

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.



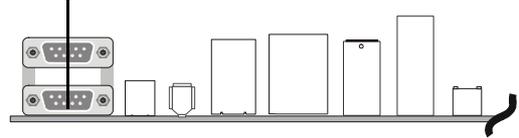
- Step 1. Turn off the system power (PC--> Off).
- Step 2. Remove the ATX power cable from the ATX power connector.
- Step 3. Remove the jumper cap from pins 1-2.
- Step 4. Place the jumper cap on pins 2-3 for a few seconds.
- Step 5. Restore the jumper cap to pins 1-2.
- Step 6. Plug the ATX power cable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

☞ **Back-Panel Connectors**

B1 COM1/2 Port Connectors

This mainboard can accommodate one serial device on COM1/2. Attach a serial device cable to the DB9 serial ports at the back-panel of your computer.

COM1/2 Ports



B2 SPDIF-IN Connector

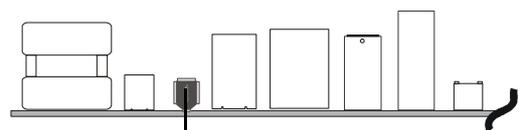
SPDIF IN connector can accept digital audio data from Optic fiber.



SPDIF-IN Port

B3 1394a Port Connector

This mainboard offers one 1394a ports on back-panel. Plug each device jack into an available 1394a connector.

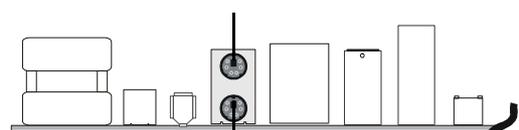


1394a Port

B4 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.

PS/2 Mouse Connector



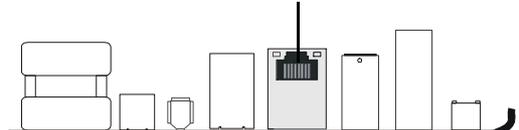
PS/2 Keyboard connector

B6 LAN Port Connector

This mainboard can accommodate one device on LAN.

Attach a RJ45 cable to the LAN port at the back-panel of your computer.

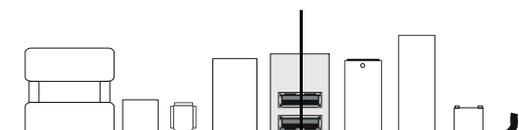
LAN Port



B7 USB Port Connectors

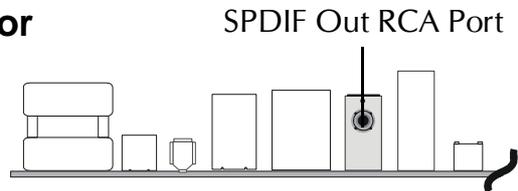
Two female connectors USB1/USB2 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB1/USB2 connector.

USB Ports



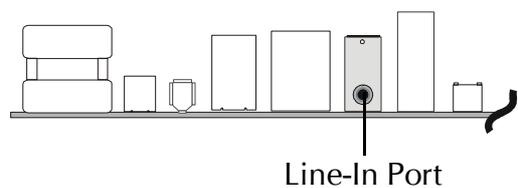
B8 SPDIF Out RCA Port Connector

SPDIF Out RCA connector can output digital audio data from SPDIF Out RCA.



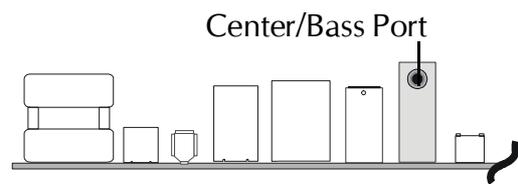
B9 Line-In Port Connector

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



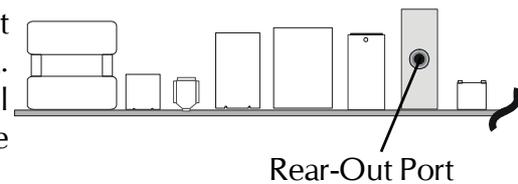
B10 5.1-Channel Center/Bass Port Connector

Center/Bass 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.



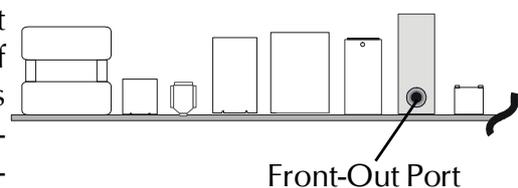
B11 5.1-Channel Rear-Out Port Connector

Rear-Out 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, and a source to be mixed with the output, or both.



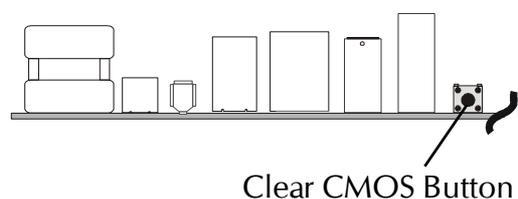
B12 5.1-Channel Front-Out Port Connector

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.



B13 Clear CMOS Button (SW1)

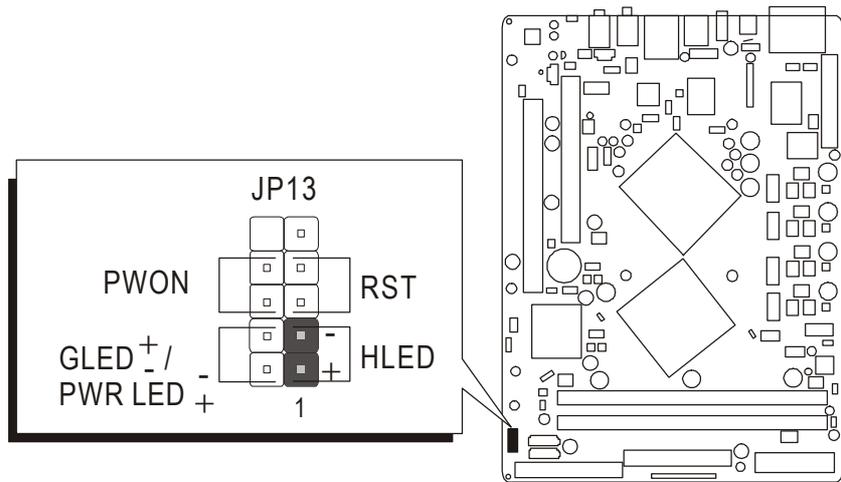
This button is used to Clear CMOS data. You can clear CMOS without opening the chassis. It's very friendly button.



☞ **Front-Panel Connectors**

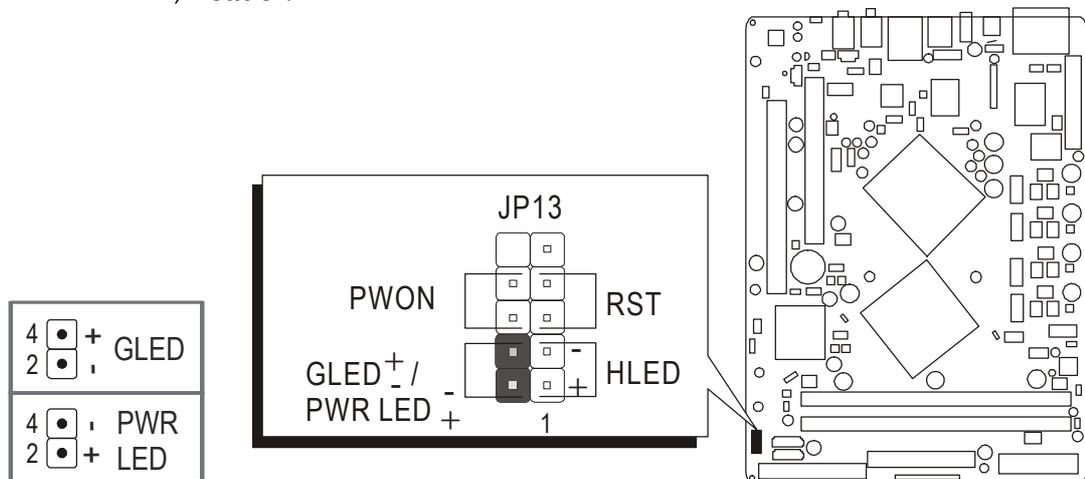
④ **HDD LED Connector (HLED)**

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.



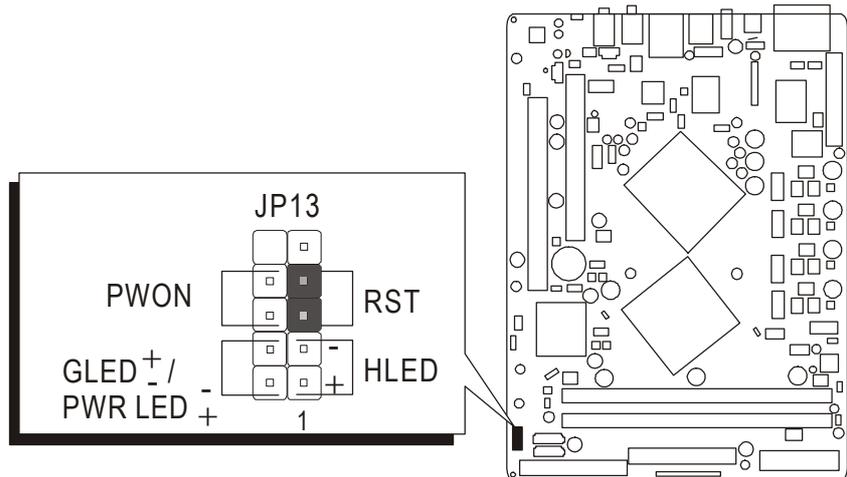
⑤ **Green LED/Power LED Connector (GLED/PWR LED)**

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.



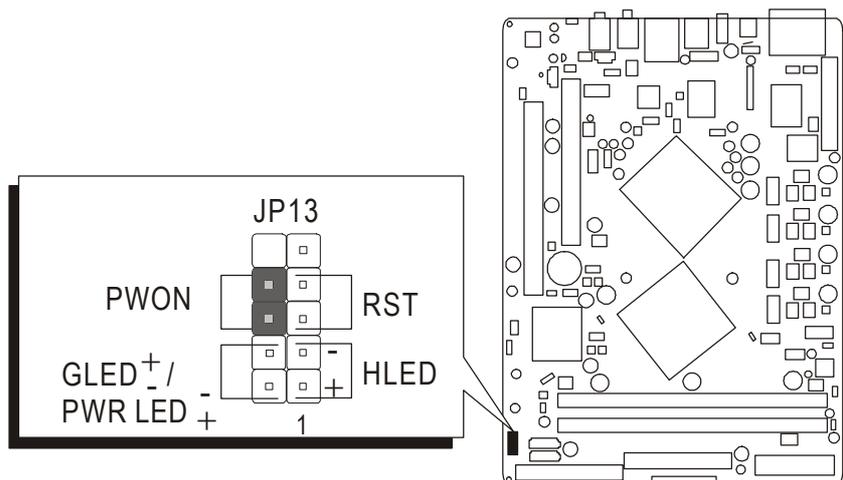
④ Hardware Reset Connector (RST)

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)

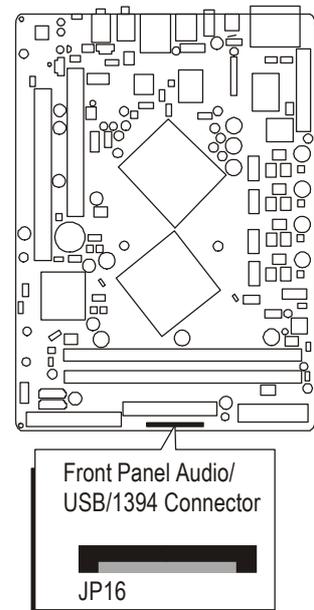
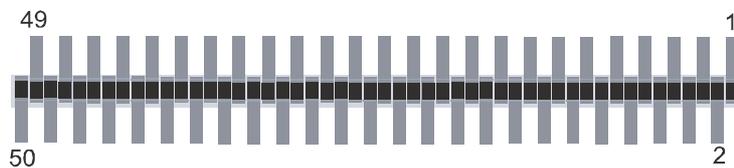
The Power On/Off Switch is a momentary type switch used for turning on or off the ATX power supply. Attach a connector cable to the 2-pin (PWON) header on the mainboard.



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

⑤ Front Panel Audio/USB/1394 Connector (JP16)

Port JP16 can used to connect special device.



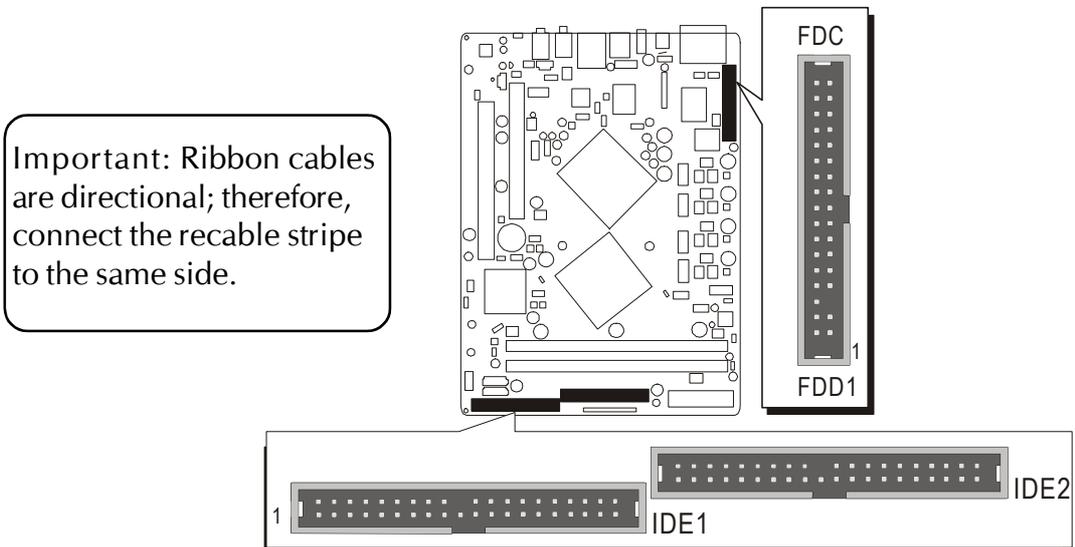
Pin Assignments:

1 = USBVCC	2 = USBVCC	3 = USBVCC
4 = USBVCC	5 = USBVCC	6 = USBVCC
7 = USBVCC	8 = USBVCC	9 = USB5 +
10 = USB5-	11 = GND	12 = GND
13 = USB4 +	14 = USB4-	15 = GND
16 = GND	17 = TPA1 +	18 = TPA1-
19 = GND	20 = GND	21 = TPB1 +
22 = TPB1-	23 = GND	24 = GND_Audio
25 = Front MIC	26 = FMIC_Power	27 = NA
28 = GND_Audio	29 = Aux_In_L	30 = GND_Audio
31 = Aux_In_R	32 = NA	33 = GND_Audio
34 = GND_Audio	35 = LineOut_R	36 = FrontOut_R
37 = GND_Audio	38 = GND_Audio	39 = LineOut_L
40 = FrontOut_L	41 = GND_Audio	42 = GND_Audio
43 = HDLED_PU	44 = GLEDA	45 = HDLED
46 = GLEDB	47 = Reset_Sw	48 = Power_Sw
49 = VCC	50 = VCC	

☞ Internal Peripheral Connectors

Ⓛ1 Enhanced IDE and Floppy Connectors (IDE1/IDE2 & FDD1)

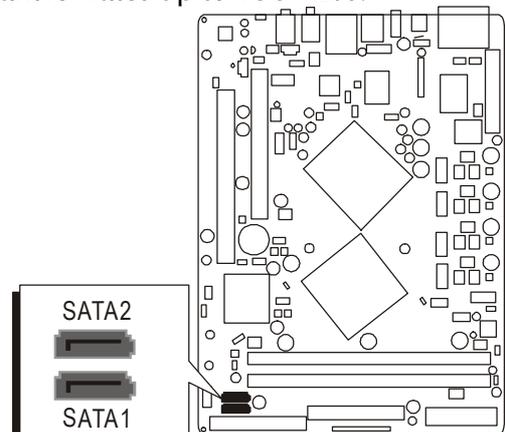
FB77 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2), providing support for up to four IDE devices, such as CD-ROM and Hard Disk Drive (HDD). This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA 100/66/33 ribbon cable to connect IDE HDD, and one 34-pin ribbon cable for FDD connection.



Ⓛ2 Serial ATA Connectors (SATA1/SATA2)

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.

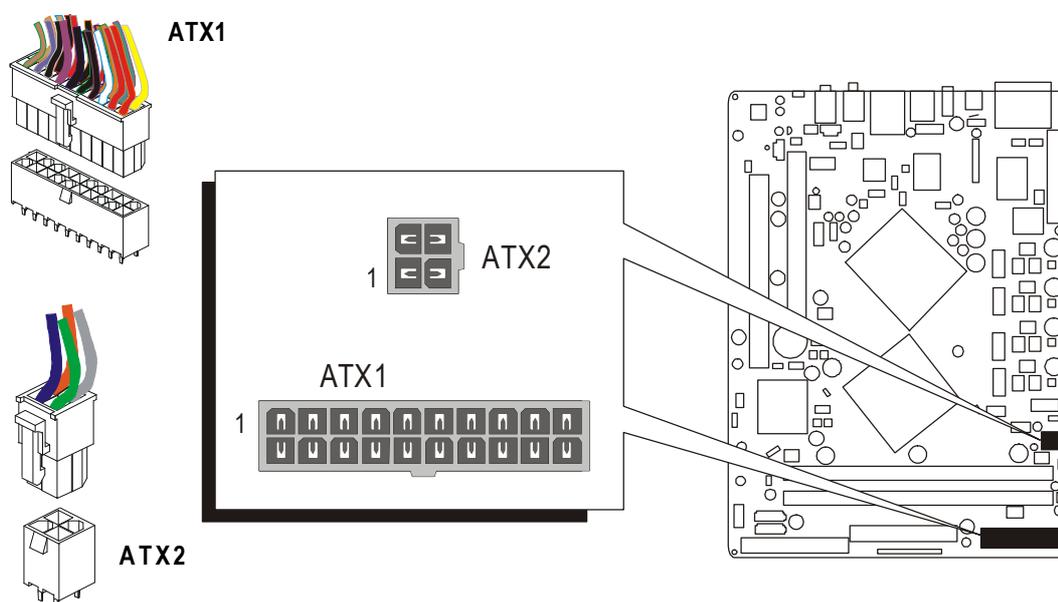
The Serial ATA support all ATA and ATAPI device, including CDs, DVDs, tapes devices, high capacity removeable devices, zip drivers and CDRW's. The Serial ATA interface supports data transfer rates up to 150MB/s.



Other Connectors

Ⓜ ATX Power Supply Connectors (ATX1/ATX2)

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

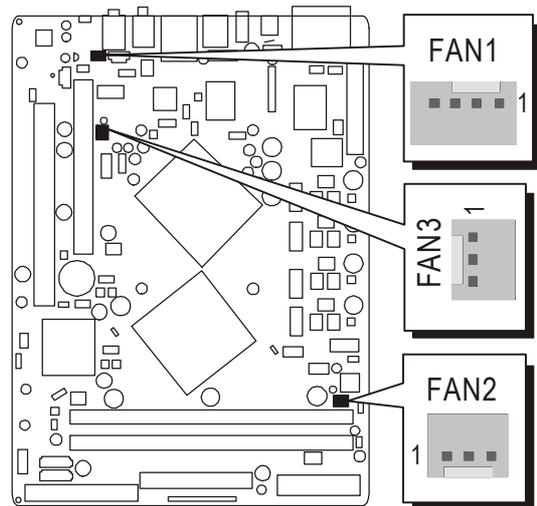
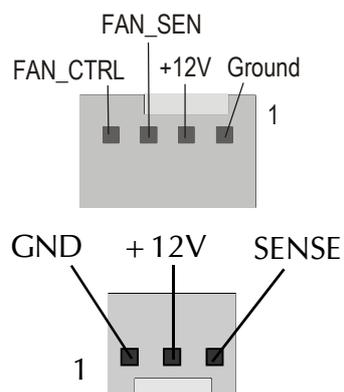


A traditional ATX system remains in the power-off stage when AC power resumes from power failure. However, it is inconvenient for a network server or workstation if there is not an UPS to execute power-on. Thus, this motherboard supports an AC Power Auto Recovery function to solve this problem. You may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

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

② Fan Connectors (FAN1/2/3)

The mainboard provides three onboard 12V cooling fan power connectors.

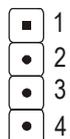


Note: Both cable wiring and type of plug may vary, which depend on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.

③ CD_IN Connector (JP11)

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

JP11



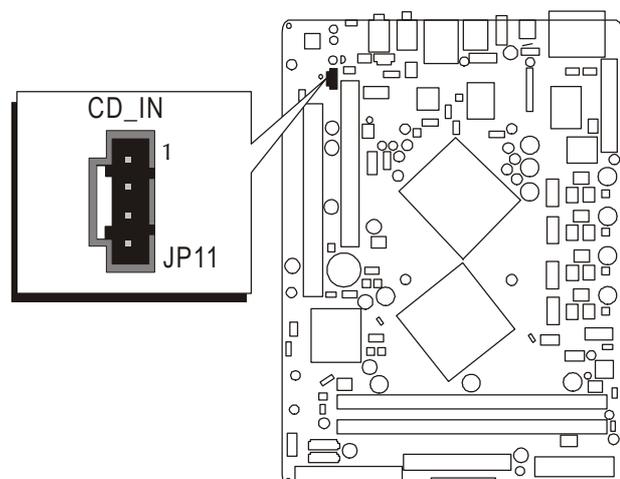
Pin Assignments:

1 = CD-IN (Left)

2 = Ground

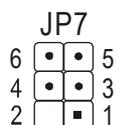
3 = Ground

4 = CD-IN (Right)



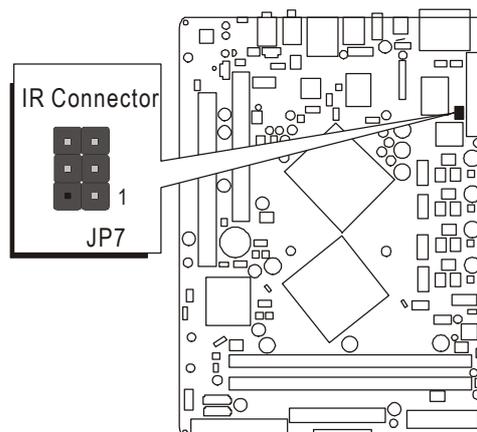
E4 IR Header (JP7)

If you have an Infrared device, this mainboard can implement IR transfer function. This mainboard supports 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.



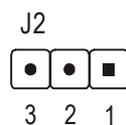
Pin Assignments:

1 = NC	2 = KEY
3 = VCC	4 = Ground
5 = IrTx	6 = IrRX



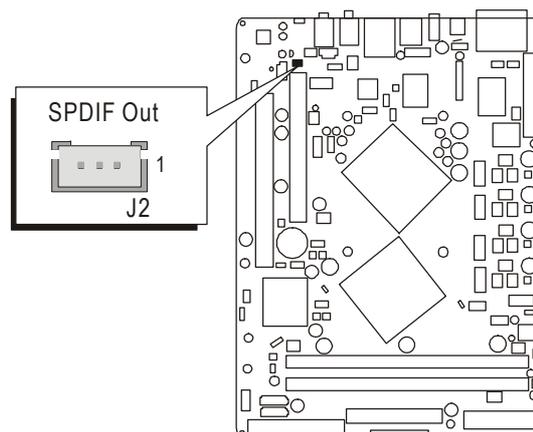
E5 SPDIF Out Header (J2)

Port J2 can be used to connect special device.



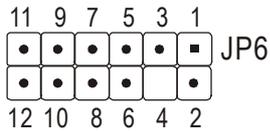
Pin Assignments:

1 = SPDIF-Out
2 = VCC
3 = GND



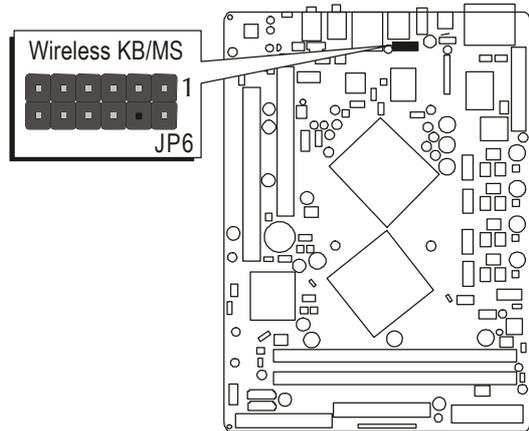
Ⓔ Wireless KB/MS Header (JP6)

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



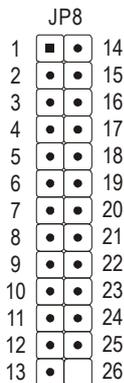
Pin Assignments:

1 = VCC	7 = MS_DT
2 = VCC	8 = MDAT
3 = Ground	9 = KB_CK
4 = Key	10 = KCLK
5 = MS_CK	11 = KB_DT
6 = MCLK	12 = KDAT



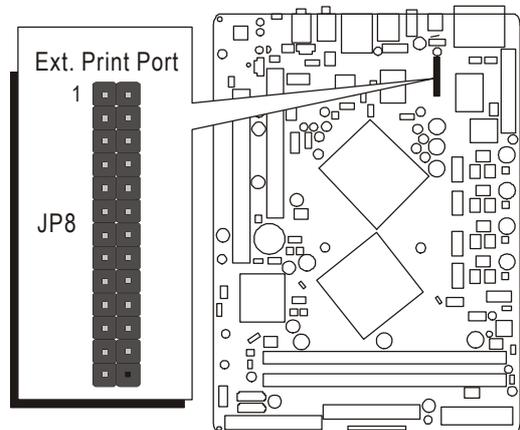
Ⓕ Extended Parallel Port Header (JP8)

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.



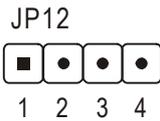
Pin Assignments:

1 = PSTB	8 = PPPD6	15 = P_-ERR	23 = GND
2 = PPPD0	9 = PPPD7	16 = PINIT	24 = GND
3 = PPPD1	10 = P_-ACK	17 = PSLCTIN	25 = GND
4 = PPPD2	11 = P_-BUSY	18 = GND	26 = KEY
5 = PPPD3	12 = P_PE	19 = GND	
6 = PPPD4	13 = P_SLCT	20 = GND	
7 = PPPD5	14 = PAUTOFD	22 = GND	



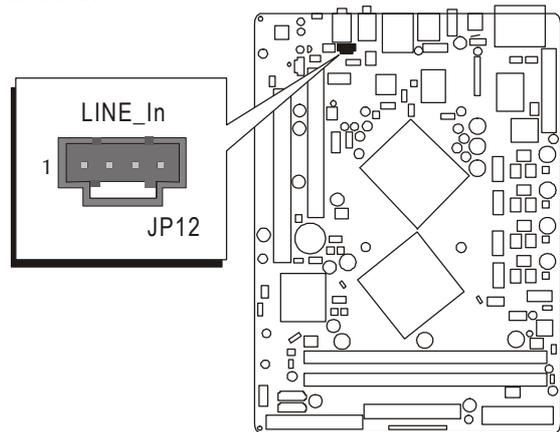
E8 LINE_IN Connector (JP12)

Port JP12 (Blue) can be used as a source for digital sound recording, a source to be mixed with the output, or both.



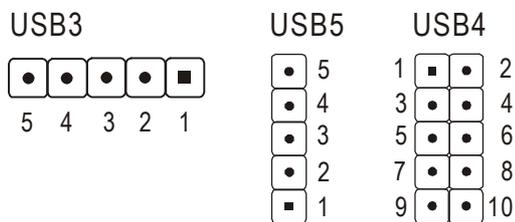
Pin Assignments:

- 1 = Line-In (Left)
- 2 = Ground
- 3 = Ground
- 4 = Line-In (Right)



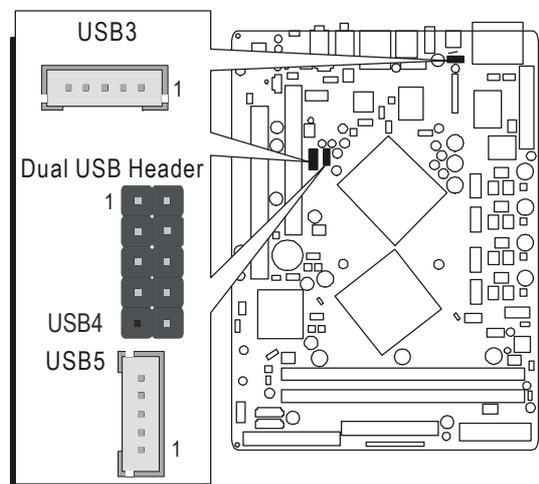
E9 USB Headers (USB3/USB4/USB5)

Headers USB3 & USB4 & USB5 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.



USB3/USB5:

- 1 = GND 2 = GND
- 3 = Data + 4 = Data-
- 5 = VCC



Dual USB Header (USB4):

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

3.3 System Memory Configuration

The FB77 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/PC3200 compliant 2.5V single or double side 64-bit wide data path DDR SDRAM modules. 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.

1. Install Memory:

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

Total 2 DIMM up to 2GB max and 1GB per DIMM								
Density	64M bit		128M bit		256M bit		512M bit	
Device Width	x8	x16	x8	x16	x8	x16	x8	x16
Single Side	/		128 MB	128 MB	256 MB	256 MB	512 MB	512 MB
Double Side			256 MB	256 MB	512 MB	512 MB	1024 MB	N/A

Note: The total installed memory does not exceed 2GB.

Note: Installing a DIMM in any slot leads to a 64-bit data transfer rate. To activate a dual-channel feature of a 128-bit data transfer rate, install DIMMs in both slots.

2. Upgrade Memory:

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

4 SOFTWARE UTILITY

4.1 Mainboard CD Overview

Note: The CD contents attached in FB77 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 FB77 Driver - Installing Intel Chipset, Realtek Audio, Broadcom Giga LAN, Broadcom BACS, Intel Raid, Intel USB 2.0 and DirectX9 Utility Drivers.
- ☛ Manual - FB77 user's manual and ICH5R RAID User's Guide in PDF format.



4.2 Install Mainboard Software

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



- FB77 Software include:
- [4.2.A] Install Intel Chipset
 - [4.2.B] Install Realtek Audio
 - [4.2.C] Install Broadcom Giga LAN
 - [4.2.D] Install Broadcom BACS
 - [4.2.E] Install Intel Raid
 - [4.2.F] Install Intel USB 2.0
 - [4.2.G] Install DirectX9 Utility

4.2.A Install Intel Chipset Driver

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



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 Realtek Audio Driver

Select using your pointing device (e.g. mouse) on the "Realtek Audio Driver" bar to install Realtek 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.C Install Broadcom Giga LAN Driver

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



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

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

4.2.D Install Broadcom BACS

Select using your pointing device (e.g. mouse) on the "Broadcom BACS" bar to install Broadcom BACS.



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.E Install Intel Raid Driver

Select using your pointing device (e.g. mouse) on the "Intel Raid Driver" bar to install Raid 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.F Install Intel USB 2.0 Driver

Select using your pointing device (e.g. mouse) on the "Intel USB 2.0 Driver" bar to install Intel USB 2.0 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.

4.2.G Install DirectX9 Utility Driver

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



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

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

4.3 View the User's Manual

Select using your pointing device (e.g. mouse) on the "Manual" bar. Then Online Information windows will appear on your screen. Click on the "Install Acrobat Reader" bar if you need to install acrobat reader or click on the "FB77 Manual" bar to view the manual.



4.3A View the ICH5R Manual

Select using your pointing device (e.g. mouse) on the "Manual" bar. Click on the "ICH5R Manual" bar to view the manual.



5 BIOS SETUP

FB77 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

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

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

5.1 Enter BIOS

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

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

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

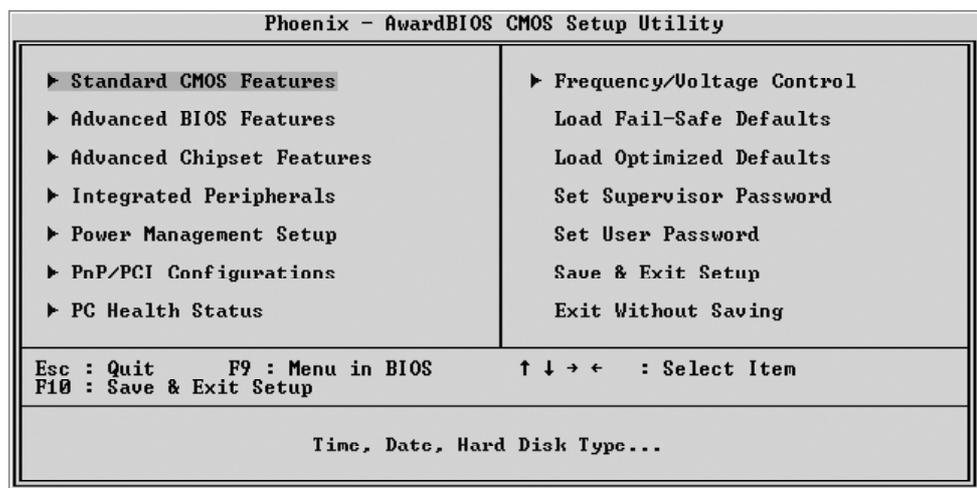
Note2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

"Press F1 to Continue, DEL to Enter Setup"

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

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 the 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.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
Standard CMOS Features		
Date (mm:dd:yy)	Fri, Aug 20 2004	Menu Level ▶ Change the day, month, year and century
Time (hh:mm:ss)	23 : 24 : 9	
▶ IDE Channel 0 Master	[None]	
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 1 Master		
▶ IDE Channel 1 Slave		
Drive A	[1.44M, 3.5 in.]	
Video	[EGA/VGA]	
Halt On	[All Errors]	
Base Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	

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

Date (mm : dd : yy)

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

Time (hh : mm : ss)

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

DE Channel 0 Master/Slave

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

IDE Channel 1 Master/Slave

Options are none.

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

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 Primary Master

Selecting 'Manual' lets you set the remaining fields on this screen and select the type of fixed disk.

- The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

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

Capacity

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 Primary Master' item is set to 'Manual', and the 'Access Mode' item is set to 'CHS'.

Cylinder

Set the number of cylinders for this hard disk.

- Min = 0, Max = 65535

Head

Set the number of read/write heads.

- Min = 0, Max = 255

Precomp

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

- Min = 0, Max = 65535

Landing Zone

Set the Landing Zone size.

- Min = 0, Max = 65535

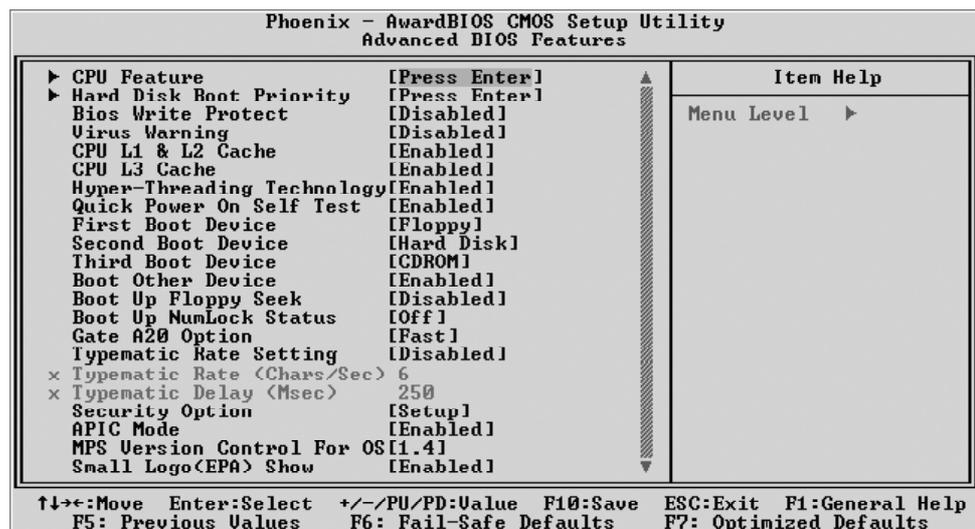
Sector

Number of sector per track.

- Min = 0, Max = 255

Advanced BIOS Features

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



CPU Feature

Options are in its sub-menu.

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

Delay Prior to Thermal

This item is select Delay Prior to Thermal.

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

Thermal Management

This item is select Thermal Management . Thermal Monitor 1 (On die throttling). Thermal Monitor 2 Ratio & VID transition).

➤ The Choice: Thermal Monitor 1 or Thermal Monitor 2.

TM2 Bus Ratio

Represents the frequency (bus ratio of the throttled performance statethat will be initiated when the on-diesensor gose from not hot to hot.

➤ The Choice: Min=0 Max=255.

Note: CPU support TM2, item appear.

TM2 Bus VID

Represents the voltage of the throttled performance state that will be initiated when the on die sensor goes from not hot to hot.

- The Choice: 0.8375V ~ 1.6000V.

Note: CPU support TM2, item appear.

Limit CPUID MaxVal

Set Limit CPUID MaxVal to 3, Should Be "Disabled" for WinXp.

- The Choice: Disabled or Enabled.

Note: Some older O.S.'s (Win98, WinMe..) cannot handle a CPUID MaxVal greater than 3. Please choose "Enabled" if you use one of those O.S. If your O.S. is WinXP or Win2000, we suggest you "Disabled" the item.

NX BIOS Control

When disabled, forces the NX feature flag to always return 0.

- The Choice: Enabled or Disabled.

Hard Disk Boot Priority

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

Bios Write Protect

This item allows you to enable or disable the Bios Write Protect. If you want to flash BIOS, you must set it [Disabled].

- 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 enabled 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 L1&L2&L3 Cache

All processors that can be installed in this mainboard use internal level1(L1) , external 2(L2) and (L3) cache memory to improve performance.

Leave this item at the default value for better performance.

- The choice: Enabled or Disabled.

Note: CPU support, L3 item appear.

Hyper-Threading Technology

The latest Intel application defines a high-speed calculating ability to optimize your system by two CUPs supported(one virtual, one physical) in a multi-task environment. "Enabled" for Windows XP and Linux 2.4.x(OS optimized for Hyper Threading Technology and "Disable" for other OS(OS not optimized for Hyper Threading Technology)

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

Boot Other Device

If BIOS can't load O.S. from First/Second/Third boot device you select above, BIOS will search other devices and attempt to load O.S..

- 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

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 repeat 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. Don't 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

Via the routing, I/O APIC support a total of 24 interrupts. We recommend to choose [Enabled] for Windows XP and Windows 2000.

- 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.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
Advanced Chipset Features		Menu Level ▶
DRAM Timing Selectable	[By SPD]	
CAS Latency Time	[2]	
Active to Precharge Delay	[8]	
DRAM RAS# to CAS# Delay	[4]	
DRAM RAS# Precharge	[4]	
Memory Frequency For	[Auto]	
System BIOS Cacheable	[Enabled]	
Video BIOS Cacheable	[Disabled]	
Memory Hole At 15M-16M	[Disabled]	
AGP Aperture Size (MB)	[64]	
Init Display First	[PCI Slot]	
DRAM Data Integrity Mode	[ECC]	
Fast Chip Select	[Auto]	
CPC Addr/Control	[Auto]	
Selective CPC	[Auto]	

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

DRAM Timing Selectable

The value in this field depends on performance parameters of the installed memory chips (DRAM). Don't change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

- The Choice: Manual or By SPD.

CAS Latency Time

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.

Active to Precharge Delay

This item allows you to set active to precharge delay.

- The Choice: 2, 2.5 or 3.

DRAM RAS # to CAS # Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, 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. This field is applied only when synchronous DRAM is installed in the system.

- The Choice: 4, 3 or 2.

DRAM RAS # Precharge

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be-incompleted, and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field is applied only when synchronous DRAM is installed in the system.

- The Choice: 4, 3 or 2.

Memory Frequency For

This item is select SDRAM Frequency.

- The Choice: Auto, 266MHz, 333MHz, 320MHz or 400MHz .

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.

AGP Aperture Size (MB)

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated to graphics memory address space.

- The choice: 32M, 64M, 128M, 256M, or 512M.

Init Display First

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

- The choice: PCI Slot or AGP.

DRAM Data Integrity Mode

This item allows you to set DRAM Data Integrity Mode.

- The Choice: Non-ECC or ECC.

Fast Chip Select

This item allows you to set Fast Chip.

- The Choice: Auto or Disabled.

CPC Addr/Control

This item allows you to set CPC Addr/Control.

- The Choice: Auto or Disabled.

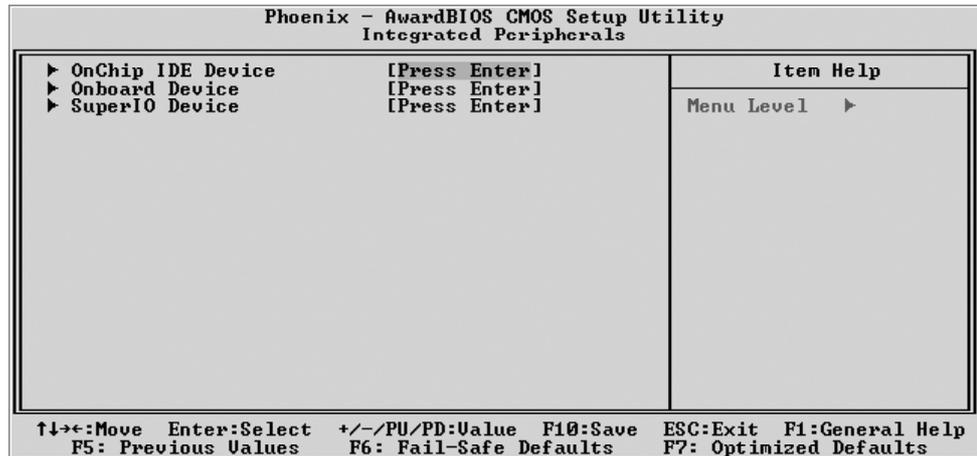
Selective CPC

This item allows you to set Selective CPC.

- The Choice: Auto or Disabled.



Integrated Peripherals



On-Chip IDE Device

Options are in its sub-menu.

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

IDE HDD Block Mode

If your IDE hard disk drive supports block mode (most new drives do), select Enabled to automatically detect the optimal number of block reads and writes per sector that the drive can support and improve the speed of access to IDE devices.

- The choice: Enabled or Disabled.

IDE DMA transfer access

Improve IDE HD/CDROM transfer performance.

- The choice: Enabled or Disabled.

On-Chip Primary PCI IDE

Use these items to enable or disable the PCI IDE channels that are integrated on the mainboard.

- The choice: Enabled or Disabled.

IDE Primary Master/Slave PIO

Each IDE channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose Auto to let the system automatically detect which PIO mode is best or select a PIO mode from 0-4.

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

IDE Primary Master/Slave UDMA

Each IDE channel supports a master device and a slave device. This mainboard supports UltraDMA technology, which provides faster access to IDE devices.

If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver supplied with this mainboard in order to use an UltraDMA device.

- The Choice: Auto or Disabled.

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

SATA Mode

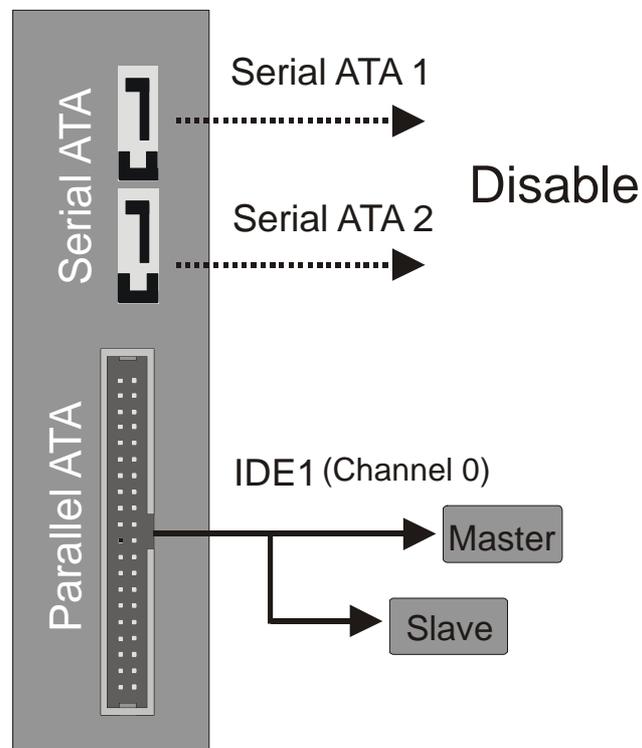
This item allows you to set the SATA Mode.

- The choice: IDE or RAID.

On-Chip Serial ATA

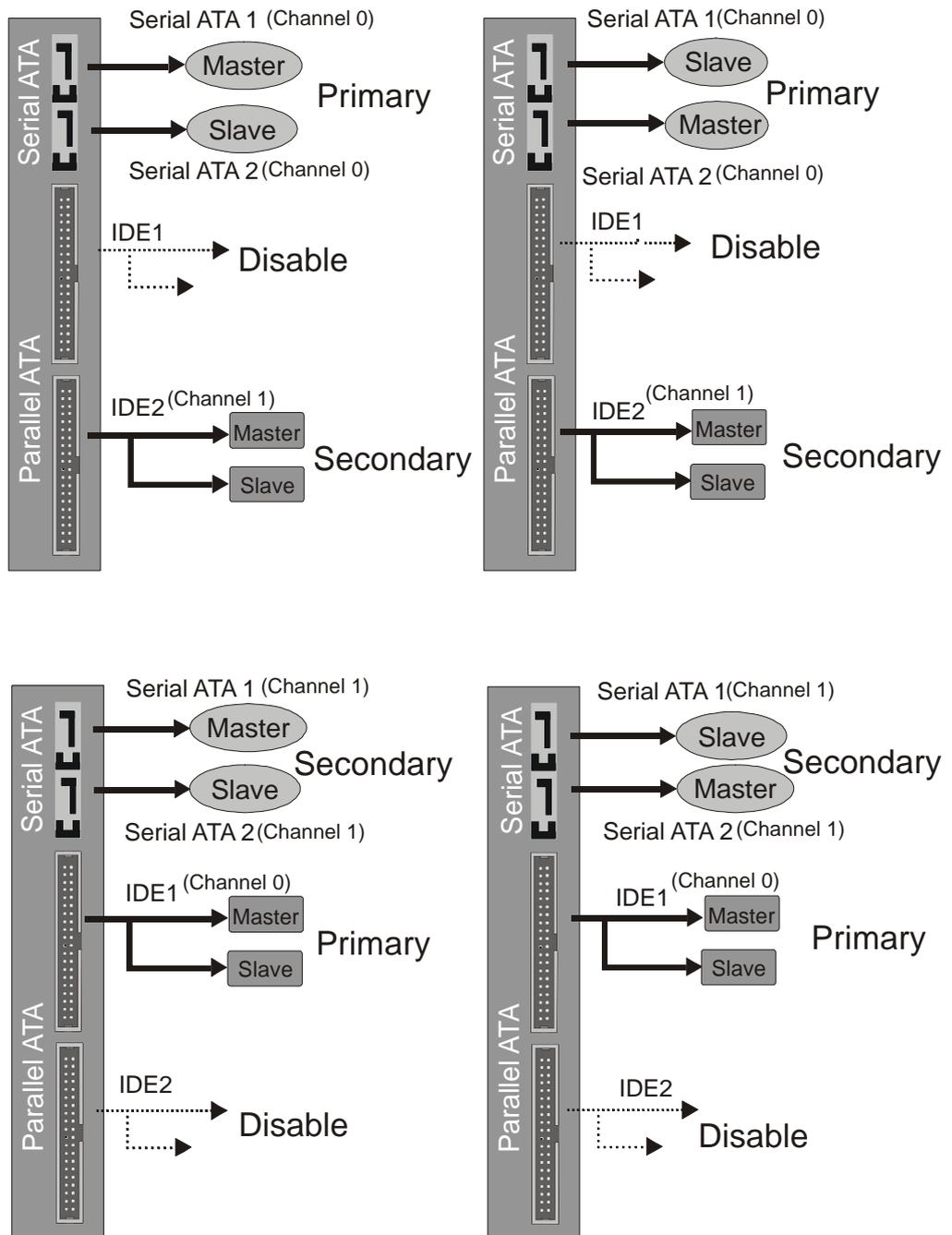
- The Choice: Disabled, Auto, Enhanced Mode, Combined Mode or SATA Only.

Disabled : Disabled SATA Controller.

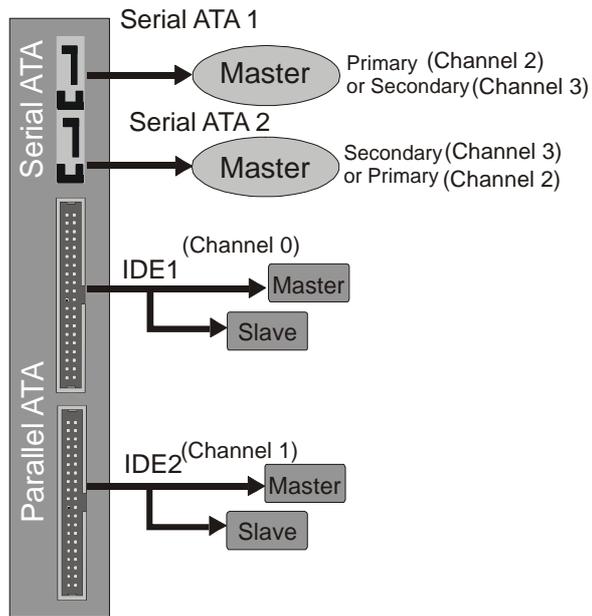


Auto: Auto arrange by BIOS.

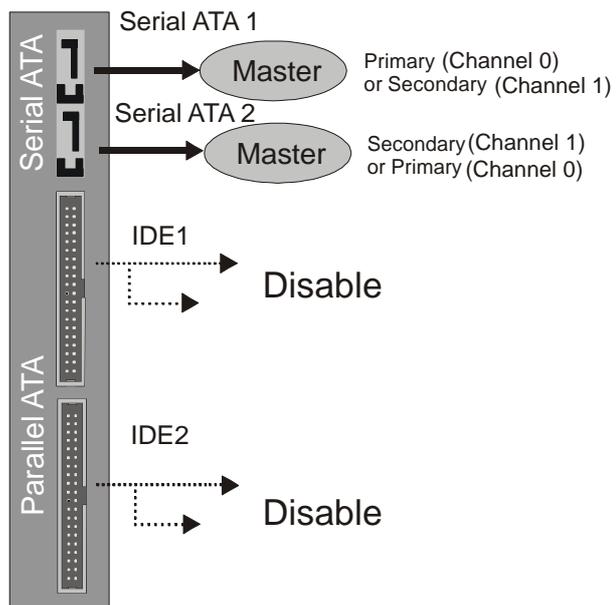
Combined Mode:PATA and SATA are combined. Max. of 4 ATA drives in each channel.
 (DOS, Win98/ME) should set SATA and PATA to Compatible Mode.



Enhanced Mode: Enable both SATA and PATA. Max. of 6 ATA drives are supported.
 New OS that support switch to Enhanced mode (Win2K, WinXP, Windows.NET Server) can set SATA and PATA to Enhanced Mode.



SATA-Only: SATA is operating in legacy mode.



Onboard Device

Options are in its sub-menu.

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

USB Controller

Select Enabled if your system contains a Universal Serial Bus (USB) port on this mainboard.

➤ The choice: Enabled or Disabled.

USB 2.0 Controller

Select Enabled if your system contains a Universal Serial Bus (USB) 2.0 controller and you have USB peripherals.

➤ The choice: Enabled or Disabled.

USB Keyboard Support

This item allows you to enable or disable the USB keyboard.

➤ The choice: Enabled or Disabled.

AC97 Audio

This item allows you to select AC97 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

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: Enabled or Disabled.

Onboard Serial Port 1/2

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port 1/2 (COM1/2).

➤ 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: 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: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, or Disabled.

Parallel Port Mode

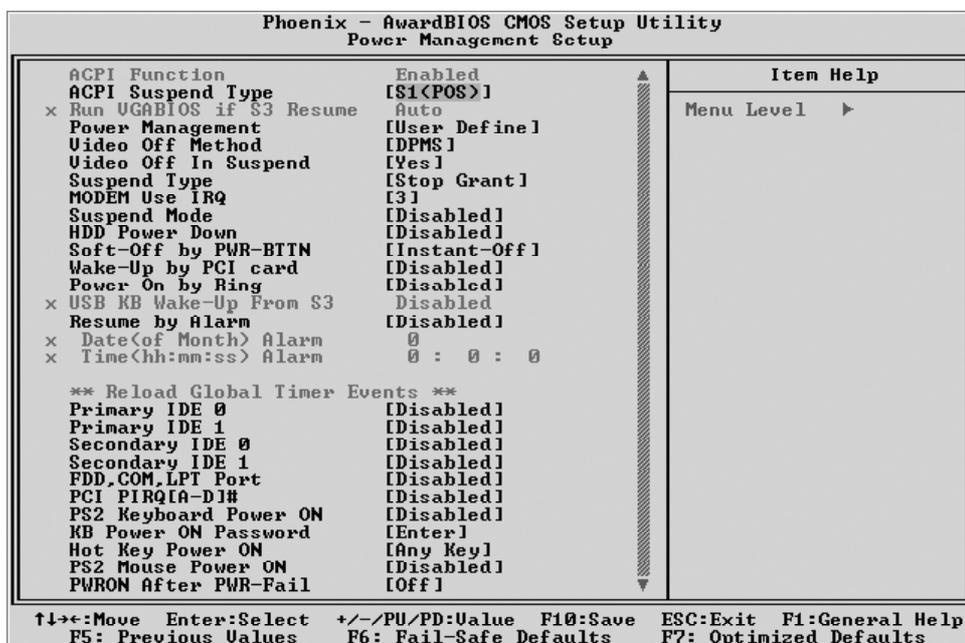
Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes.

- 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**

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), S3(STR) or S1 & S3.

Run VGABIOS if S3 Resume(Auto)

This item allows the system to initialize the VGA BIOS from S3(Suspend to RAM) sleep state.

- The choice: Auto, Yes or No.

Power Management

This item allows you to decide the timing to enter suspend mode.

- 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 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 enabled and after the set up time of system inactivity, all devices except the CPU will be shut off.

- The choice: Disabled, 1Min, 2Min, 4Min, 8Min, 12Min, 20Min, 30Min, 40Min, or 1Hour.

HDD Power Down

When this item enabled and after the set up time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

- 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 Delay4 Sec. then you have to hold the power button down for 4 seconds to

Sec. then you have to hold the power button down for 4 seconds to cause a software power down.

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

Wake-Up by PCI card

This item Enabled/Disabled PCI Power Management Event to wake up system.

- The choice: Enabled or Disabled.

Power On by Ring

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

- The choice: Enabled or Disabled.

USB KB/MS Wake-up From S3

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

- The choice: Enabled or Disabled.

Resume by Alarm

When this item enabled, your can set the date (day of the month) and time to turn on your system.

- The choice: Disabled or Enabled.

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 0/1

When these items are enabled, the system will restart the power-saving time out 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, 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

This item allows you to set the PS2 Keyboard Power On function

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

KB Power ON Password

This item allows you to set the KB Power On Password.

- Press "Enter" to set Password.

Hot Key Power ON

This item allows you to set the Hot Key Power On.

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

PS2 Mouse Power ON

This item allows you to enable or disable the PS2 Mouse Power On.

- The choice: Disabled or Enabled.

PWRON After PWR-Fail

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

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



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/UGA Palette Snoop	[Disabled]
INT Pin 1 Assignment	[Auto]
INT Pin 2 Assignment	[Auto]
INT Pin 3 Assignment	[Auto]
INT Pin 4 Assignment	[Auto]
INT Pin 5 Assignment	[Auto]
INT Pin 6 Assignment	[Auto]
INT Pin 7 Assignment	[Auto]
INT Pin 8 Assignment	[Auto]
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.

IRQ3/4/5/7/10/11/12/14/15 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.

INT Pin1 ~ 8 Assignment

Names the interrupt request(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

Phoenix - AwardBIOS CMOS Setup Utility		PC Health Status	
CPU Fan Speed Control	[Smart Fan]	Item Help	
CPU Temp Tag	[60 °C]	Menu Level ▶	
CPU Voltage		Choice	Cpu Temp
AGP Voltage			Fan Speed
+3.3V		<Ultra>	↑75 °C
+5V		Low	↓75 °C
+12V			Full
-12V			<U>L
DDR Voltage		Mid	↑75 °C
+5USB			↓75 °C
Voltage Battery			Full
System Temperature			Mid
CPU Temperature		Full	always Full
Fan 1 Speed		Smart Fan : base on Cpu Temp to adjust Fan Speed.	
Fan 2 Speed			
Fan 3 Speed			
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults			

CPU Fan Speed Control

Set the CPU Fan Speed.

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

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

Choice	Cpu Temp	Fan Speed
<Ultra> Low	↑75 °C ↓75 °C	Full <U>L
Mid	↑75 °C ↓75 °C	Full Mid
Full	always	Full

Ultra-Low	CPU Temperature below 80 °C , cpu fan speed 900 rpm.
	CPU Temperature over 80 °C , cpu fan speed 3800 rpm.
Low	CPU Temperature below 80 °C , cpu fan speed 1500 rpm.
	CPU Temperature over 80 °C , cpu fan speed 3800 rpm.
Mid	CPU Temperature below 80 °C , cpu fan speed 2100 rpm.
	CPU Temperature over 80 °C , cpu fan speed 3800 rpm.
Full	CPU fan always 3800 rpm.

CPU Temp Tag

The item only for 'smart fan' and you can choose 'smart fan' on 'CPU Fan Speed Control'. This feature ranges from 25 °C to 75 °C, in an increment of 1 °C. When CPU current temperature over CPU Temp Tag, CPU fan will speed up. You can refer to table below.

➤ Key in a DEC number: Min:25, Max:75.

Current CPU Temp Over CPU Temp Tag	Fan Speed (rpm)
OVER	950
0 °C	1050
1 °C	1150
2 °C	1250
3 °C	1450
4 °C	1550
5 °C	1650
6 °C	1800
7 °C	1950
8 °C	2100
9 °C	2100

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

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.



Frequency/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility		
Frequency/Voltage Control		
CPU Clock Ratio	[8 X]	Item Help
Auto Detect PCI Clk	[Enabled]	
Spread Spectrum	[Enabled]	Menu Level ▶
***** Clock *****		
CPU & AGP/PCI Clock Set	[Auto Detect]	
x CPU Clock	100MHz	
x Async AGP/PCI/S-ATA CLK	Sync by CPU clock	
***** Voltage *****		
CPU Voltage set	[Auto]	
DDR Voltage set	[Auto]	
AGP Voltage set	[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 Clock Ratio

This item allows the user to adjust CPU Clock Ratio. If CPU is unlocked, item appear.

- The Choice: 8X ~ 50X.

Auto Detect PCI Clk

This item allows you to enable/disable auto disable empty PCI Slot Clock.

- The choice: Enabled or Disabled.

Spread Spectrum

This item allows you to enable or disable the spread spectrum modulation.

- The choice: Disabled or Enabled.

***** Clock *****

CPU & AGP/PCI Clock Set

This item allows you to set the CPU & AGP/PCI Clock Set.

- The choice: Auto Detect or Manual.

CPU Clock

This item allows the user to adjust CPU Host Clock.

Min: 100 Max: 355

- Key in a DEC number: (Between Min and Max.)

Async AGP/PCI/S-ATA CLK

If You install S-ATA device, please do not select "Sync by CPU clock". That will let S-ATA device fail. We strongly recommend You to select "fixed 66/33/100 MHz".

- 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 set the CPU & AGP/PCI Clock Set.

The choice: Auto, 0.8250V ~ 1.5875 V.

DDR Voltage Select

This item allows you to adjust RAM Voltage.

- The choice: Auto, 2.70 V, 2.80 V or 2.9V.

AGP Voltage Select

This item allows you to adjust AGP Voltage.

- The choice: Auto, 1.6 V, 1.7V or 1.8 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.



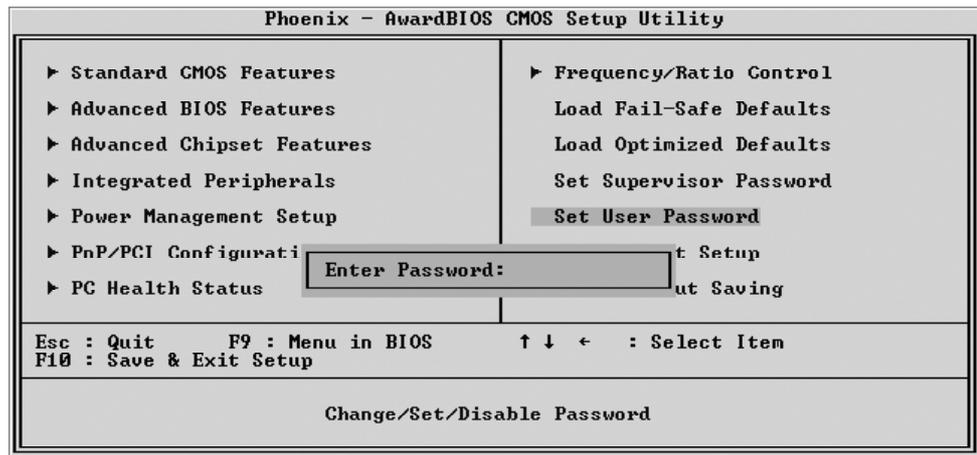
Load Optimized Defaults

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 Password



This item is to set supervisor password. Please follow below steps.

New Password Setting :

1. While pressing <Enter> key to start setting password function, a dialog box appears to ask you "Enter password: ".
2. Key in a new password now. However, the password can not be over eight characters or numbers.
3. Then system will request you to confirm new password by asking you to key in new password again.
4. Once the confirmation is completed, new code takes effect.

No Password Setting :

5. If you want to delete password, just press <Enter> key instead of new password while password input is requested. And the other procedures are the same as above password setting.

If You Forget Password :

6. While being asked of password, you just forget it and you must access the system. The only way is to turn off system and clear CMOS memory. Please take reference in page 27 for 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)? Y

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.