FB52

Pentium 4/Celeron , 478-pin Processor Based MAIN BOARD

Shuttle® FB52

Pentium 4/Celeron , 478-pin Processor Based Mainboard
Manual Version 1.0

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M699

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Quick Reference

About This Manual

1 INTRODUCTION

1.1 To Different Users

First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience successful, right from the start, we have designed the 3.1 Hardware Installation section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new Shuttle FB52 mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle FB52 mainboard. You will find that installing your new Shuttle FB52 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated FB52 mainboard provides you with a total solution to build the most stable and reliable system. Refer to sections 3.2 Jumper Settings and Chapter 4 Drivers/Software Utilities to find out how to get the best out of your new mainboard. Chapter 5 BIOS Setup also contains the relevant information on how to tune up your system to achieve higher performance.

System Integrator

You have wisely chosen Shuttle FB52 to construct your system. Shuttle FB52 incorporates all the state-of-the-art technology of the Intel845GV chipset from Intel. It integrates the most advanced functions you can find to date in a compact Flex ATX board.

1.2 Item Checklist

Check all items with your FB52 mainboard to make sure nothing is missing. The complete package should include:

✷ One piece of Shuttle FB52 Mainboard
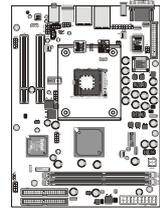
✷ One piece of ATA100/66/33 Ribbon Cable

✷ One piece of Floppy Ribbon Cable

✷ One piece of twin ports USB Cable (optional)
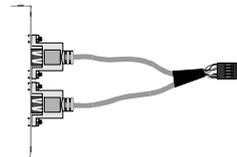
✷ FB52 User's Manual

✷ One piece of Bundled CD-ROM with containing:
  ➢ FB52 user's manual saved in PDF format
  ➢ Intel Chipset driver
  ➢ Intel Ultra ATA driver
  ➢ Intel VGA driver
  ➢ Realtek Audio driver
  ➢ Install USB2.0 driver
  ➢ Intel LAN driver
  ➢ Award Flashing Utility

2 FEATURES

FB52 mainboard is carefully designed for the demanding PC user who wants high perfor-
mance and maximum intelligent features in a compact package.

2.1 Specifications

✸ **CPU Support**

Intel Pentium 4/Celeron, 478-pin processors with 400/533 MHz FSB.

✸ **Chipset**

Features Intel 845GV GMCH N.B. and ICH4 S.B..

Onboard Lan

Intel 82540 EM supports 10Mbps/100Mbps/1000Mbps operation.

Intel 82551QM supports 10Mbps and 100Mbps operation.

✸ **Jumperless CPU Configuration**

Soft-configuration FSB (The FSB speed is software configurable from 100MHz
to 166MHz in the Frequency/Ratio Control of BIOS setup program.)

✸ **On Board 6 Channel AC97 Audio**

Compliant with AC'97 2.2 specifications.

6 channel slot selectable DAC Output for multi-channel applications.

✸ **Versatile Memory Support**

Two 184-pin DIMM slots to support up to 2GB of PC1600 or PC2100
compliant DDR SDRAM module.

✸ **PCI Expansion Slots**

Provides two 32-bit PCI slots.

✸ **6 USB 2.0 Complaint Interface Onboard**

➢ 2 x USB 2.0 connectors on back-panel and two sets of dual USB ports
headers on mid-board.

✸ **I/O Interface**

Provides a variety of I/O interfaces:

➢ 1 x Serial port.

➢ 1 x VGA port.

➢ 1 x SPDIF-out port.

➢ 2 x USB2.0 ports.

- 2 x RJ45 LAN connector.
- 1 x PS/2 mouse connector.
- 1 x PS/2 Keyboard connector.
- 1 x Line-Out (Front-Out) port.
- 1 x Line-In (Rear-Out) port.
- 1 x Bass/Center-Out port.

✸ PCI Bus Master IDE Controller Onboard

Two Ultra DMA 100/66/33 Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements data transfer speeds of up to 100/66/33 MB/sec and also supports Enhanced PIO Modes.

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

✸ ATX Power Supply Connector

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

The Pentium 4 ATX power include another 2X2 4-pin +12V ATX power connector.

✸ Advanced Configuration and Power Interface

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

✸ System BIOS

Provides licensed Award BIOS V6.0 PG on 4Mb Flash core and supports Green PC, Desktop Management Interface (DMI).

✸ Form Factor

System board conforms to Shuttle from factor ATX specification.

Board dimension: 254mm x 185mm.

✸ Advanced Features

- Low EMI - Built in spread spectrum and automatic clock shut-off of unused PCI/SDRAMS slots to reduce EMI.

➢ Dual Function Power Button - The system can be in one of two states, one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode. When the power button is pressed for longer than 4 seconds, the system enters Soft-Off mode.

➢ Modem Ring Power-On - The system can be powered on automatically by the activation of modem ringing.

✶ Intelligent Features

➢ Voltage Monitoring - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure stable current passing through mainboard components.

➢ Fan Status Monitoring - To prevent CPU from overheating, the CPU fan is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required.)

➢ Temperature Monitoring - This item allows users to make sure whether the CPU or system runs in a suitable temperature.

➢ CPU Fan AutoGuardian - This SMART Bios enabled 3 phase Variable Fan Speed and CPU temperature Control feature.

3 HARDWARE INSTALLATION

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

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

3.1 Step-by-Step Installation

Accessories Of FB52
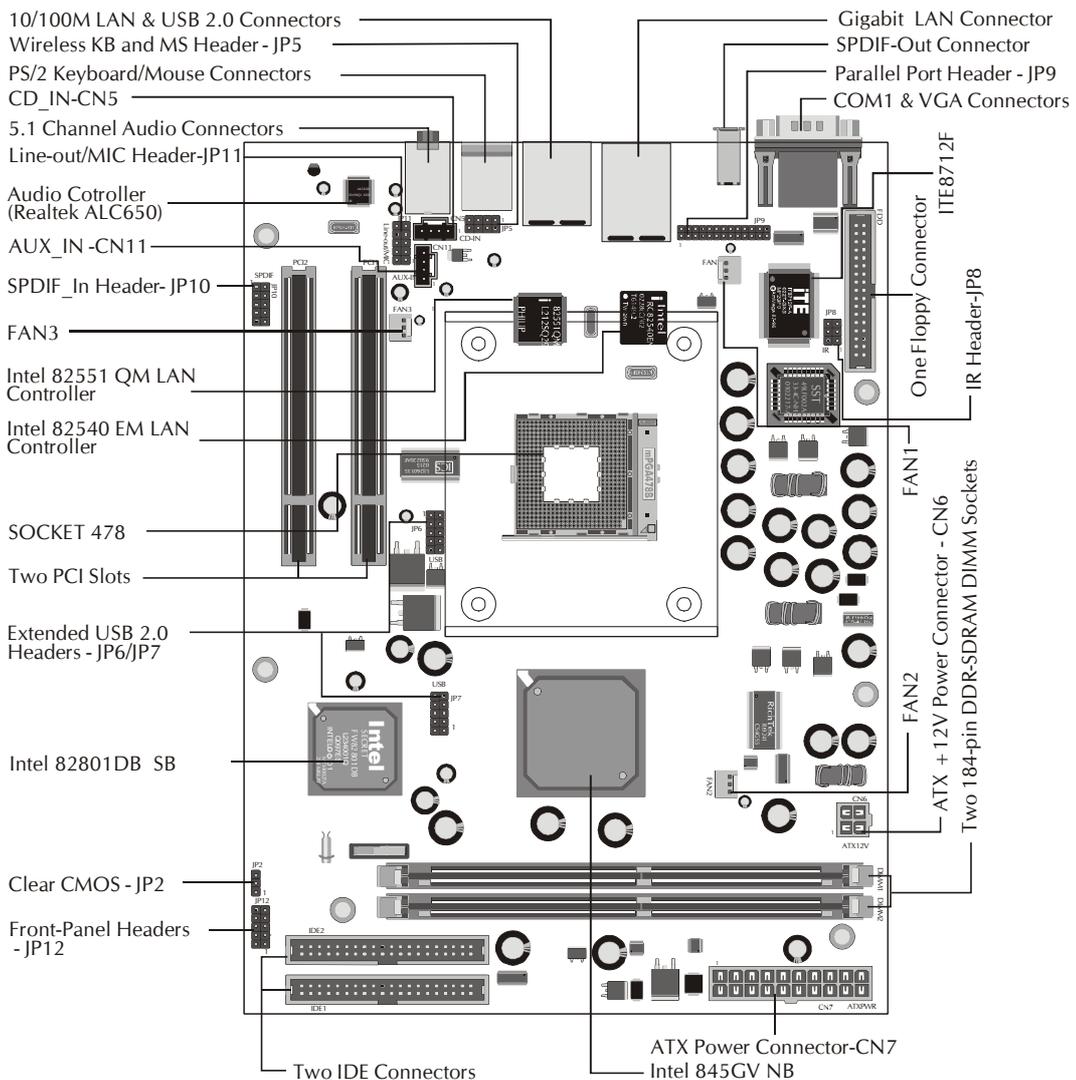
Step 1

CPU Installation:

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

Be careful of CPU orientation when you plug it into CPU socket.

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

CPU socket lever up to 90 degree
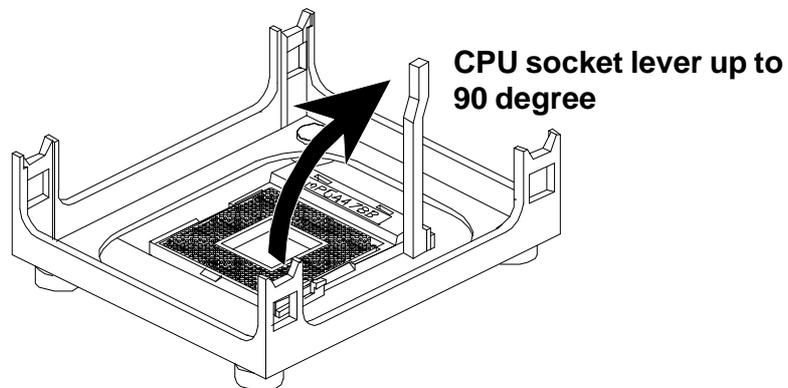
2. Locate Pin 1 in the socket and look for a black dot or cut edge on the CPU upper interface. Match Pin 1 and cut edge, then insert the CPU into the socket.

CPU pin 1 and cut edge
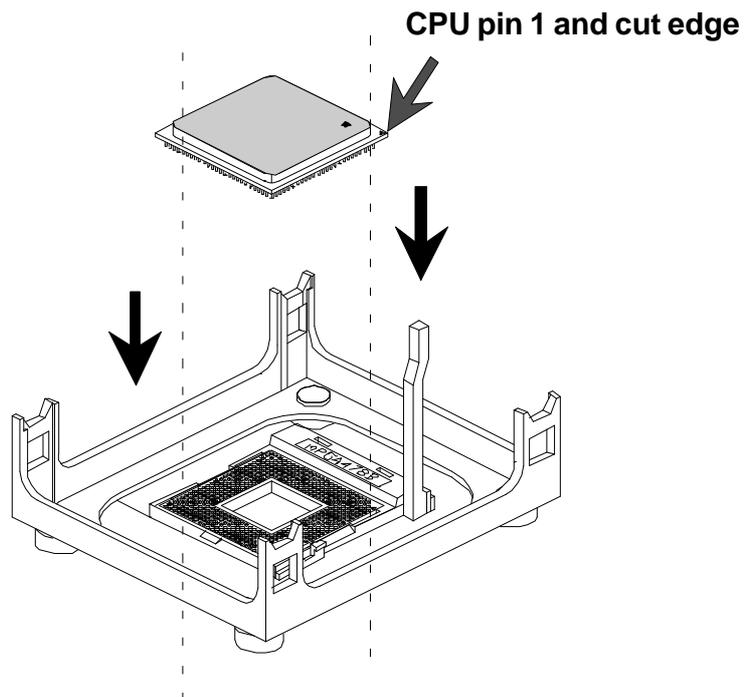
3. Press down the CPU socket lever and finish CPU installation.
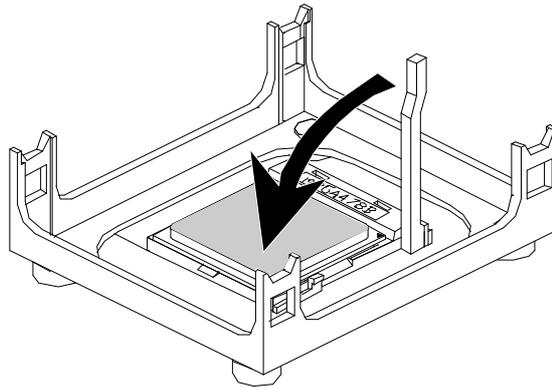
Note: If you do not match the CPU socket Pin 1 and CPU cut edge well, it may damage the CPU.

4. The Intel Pentium 4/Celeron processor requires a set of heatsink/fan to en sure proper cooling of the processor. If heatsink/fan have not been already bundled with your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable through the heatsink/fan in the CPU fan power connector located nearby. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hard ware moni toring function, a 3-pin fan power connector should allow your system to detect the CPU fan's speed. The CPU fan can also run with a 2-pin fan power connector, however, detection of CPU fan's speed is not supported. Another type of CPU fan may feature a large 4-pin fan power connector, which does not support CPU fan's speed detection and must be directly connected to the system's power supply unit.

Step 2.

Set Jumpers

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

   1. Clear CMOS

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

Step 3

Install DDR SDRAM System Memory

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

DDR SDRAM
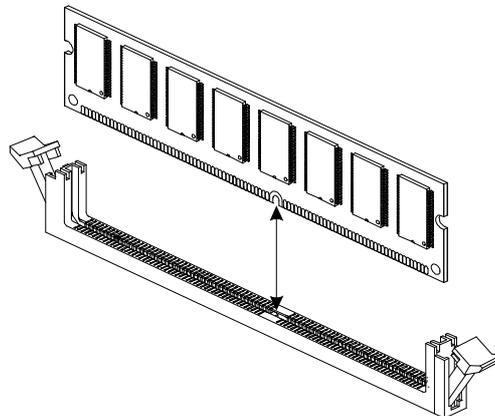
Step 4

Install Internal Peripherals in System Case

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

To install IDE & FDD drives, follow this procedure:

1. Set the required jumpers on each device according to the instructions provided by the manufacturer. (IDE devices, HDD, and CD-ROM, have to set jumpers to Master or Slave mode depending on whether you install more than one device of each kind.)

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

3. Connect an available power cable from your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if not properly positioned.

Step 5

Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose correct mounting holes, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.
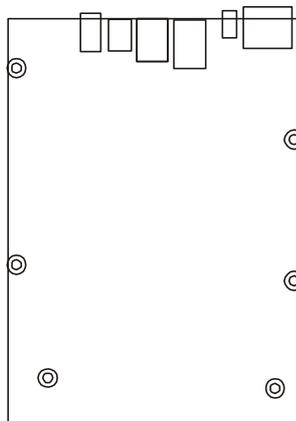
2. After deciding on the proper mounting holes, position the studs between the frame of the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system's chassis and the mainboard, in order to avoid any electrical shorts between the board and the metal frame of the chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

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

Step 6

Connect Front Panel Switches/LEDs/Speaker/USB

You can find there are several different cables already existing in the system case and originatinting from the computer's front-panel devices (HDD LED, Power LED, Reset Switch, or USB devices etc.) These cables serve to connect the front-panel switches, LEDs, and USB connectors to the mainboard's front-panel connectors group (JP6, JP7, JP12), as shown below.

1. ATX Soft Power On/Off (PWON)
2. HDD-LED (HLED)
3. Green-LED and Power-LED (GLED/PLED)
4. Hardware Reset Switch Button (RST)
5. Extended USB Header

6. SPDIF_In header (JP10)

SPDIF_In
1
JP10

7. CD-IN (CN5) and AUX_IN (CN11) Headers

AUX-IN   CD-IN

CN5   1

CN11
1
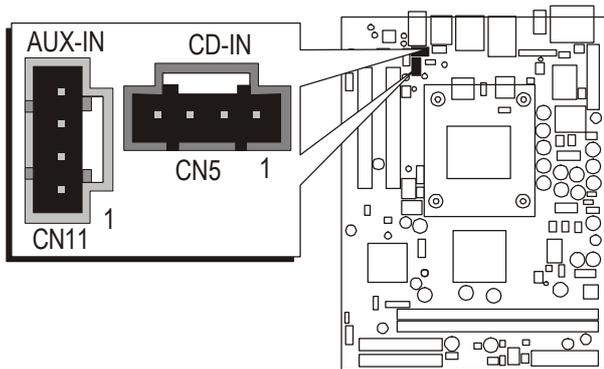
Step 7

Connect IDE and Floppy Disk Drives

1. IDE cable connector

1   IDE2

1   IDE1
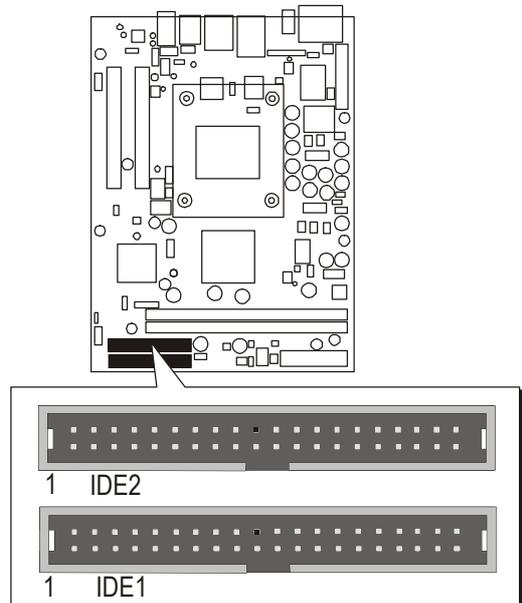
2. Floppy cable connector
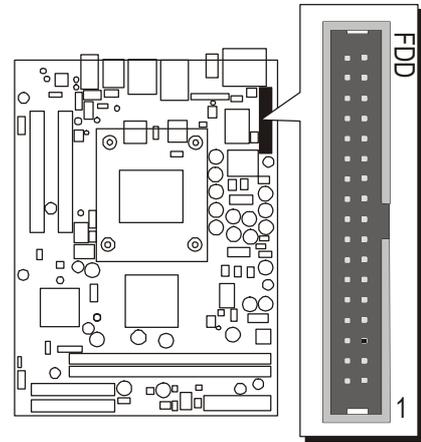
Step 8

Connect Other Internal Peripherals

1. IR Headers (JP8)
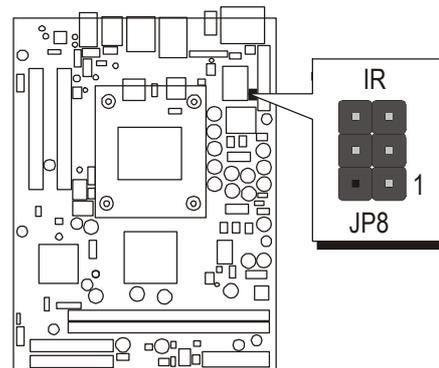
2. Wireless keyboard and mouse headers (JP5)
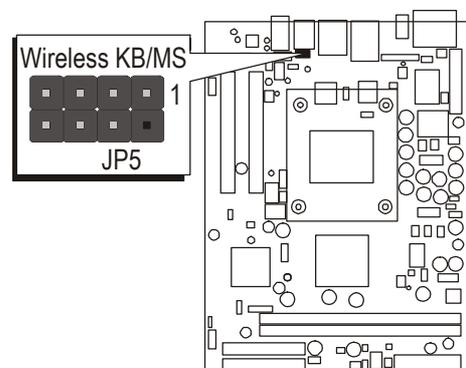
Step 9

Connect the Power Supply

1. System power connector(CN7/CN6)

ATX12V

1

CN6

1

CN7   ATXPWR
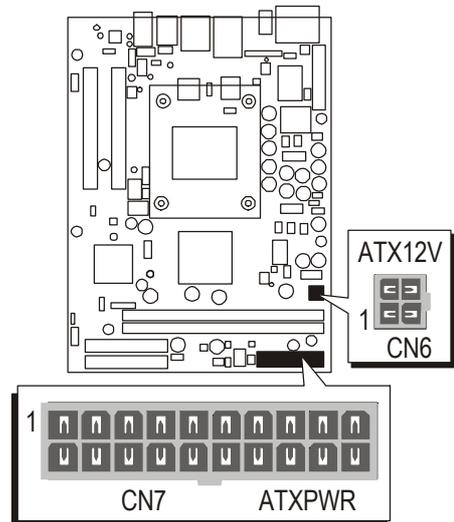
Step 10

Install Add-on Cards in Expansion Slots

1. PCI Card
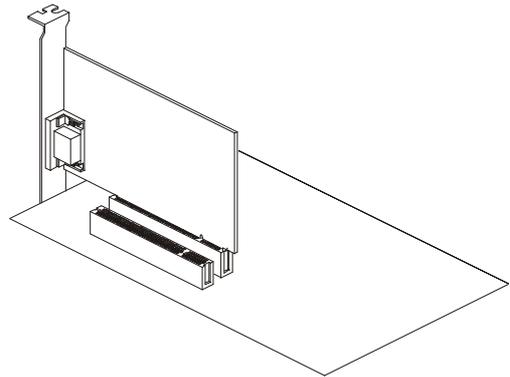
Step 11

Connect External Peripherals to Back-Panel

You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back-panel.
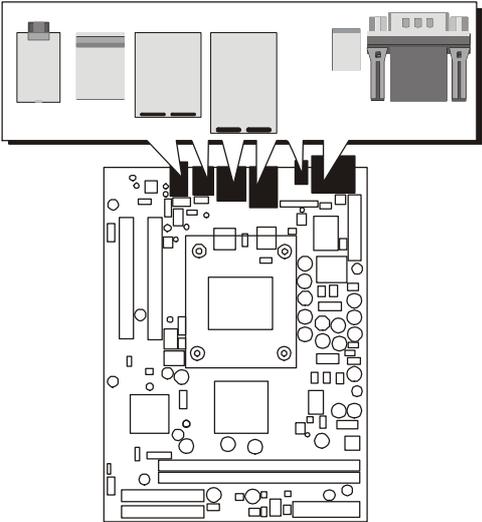
1.   COM1 Port
2.   VGA Port
3.   SPDIF Out Port
4.   GigaLAN Port
5.   10/100M LAN Port
6.   USB0/1 Ports
7.   PS/2 Mouse
8.   PS/2 Keyboard
9.   Audio Bass/Center-Out Port
10.   Audio Line-In (Rear-Out) Port
11.   Audio Line-Out (Front-Out) Port
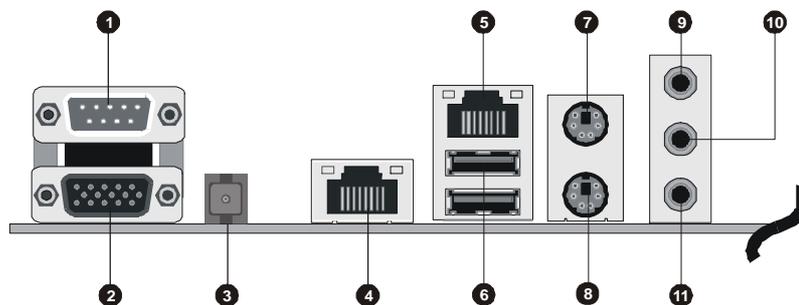
Step 12

First Time System Boot Up

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

1. Insert a bootable system floppy disk (DOS 6.2x, Windows 95/98/NT, or others) which contains FDISK and FORMAT utilities into the FDD.

2. Turn on the system power.

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

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

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

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

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

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

Step 13

Install Drivers & Software Components

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

1. Insert the FB52 bundled CD-ROM into your CD-ROM drive. The autorun program will display the drivers main installation window on screen.
2. Choose "Install Intel Chipset Driver" and complete it.
3. Choose "Install Intel Ultra ATA Driver" and complete it.
4. Choose "Install VGA Device Driver" and complete it.
5. Choose "Install Audio Driver" and complete it.
6. Choose "Install LAN Driver" and complete it.
7. Choose "Install USB2.0 Driver" and complete it.
8. Exit from the autorun drivers installation program.

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

3.2 Jumper Settings

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

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

Pin #1 to the left:

Pin #1 on the top:

Pin #1 to the right:

Pin #1 on the bottom:

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

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

Jumpers & Connectors Guide

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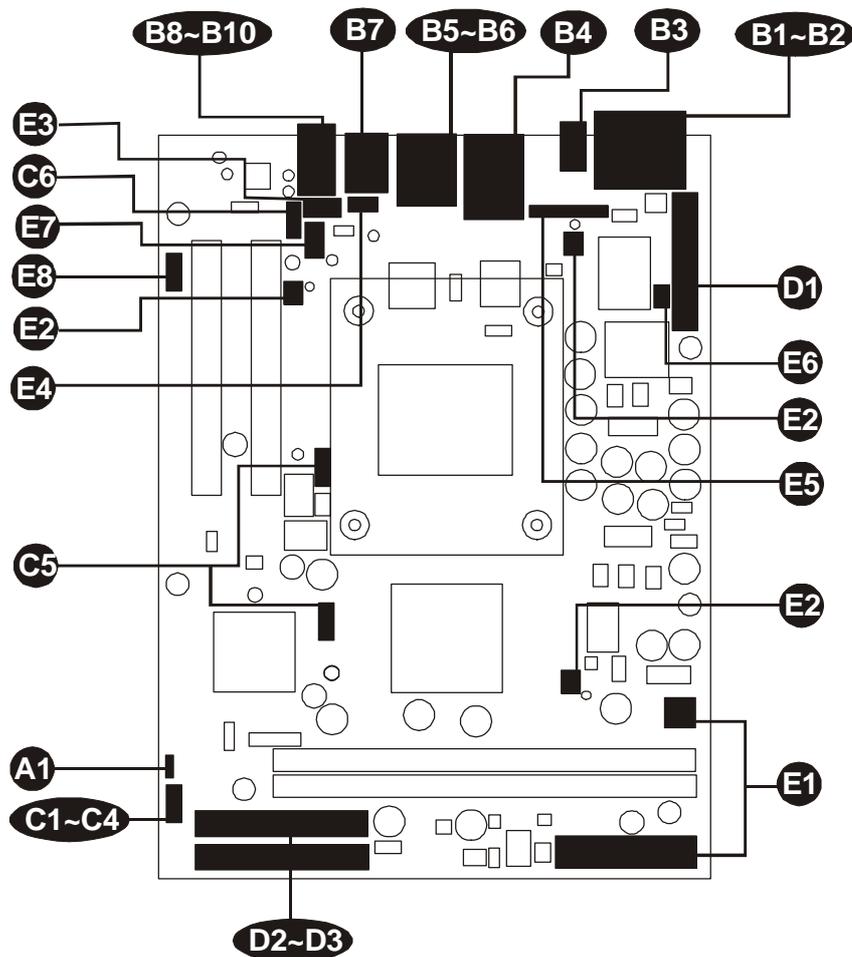
CPU/Memory/Expansion Slots

Socket478	: CPU Socket for Pentium 4/Celeron processors
DIMM1/2	: Two184-pin DIMM Slots for 64, 128, 256, 512 MB, and 1GB of 2.5V DDR SDRAM
	(The total installed memory does not exceed 2GB)
PCI	: Two 32-bit PCI Expansion Slots

Jumpers

(A1) JP2   : Clear CMOS setting

Back Panel Connectors

(B1) COM1   : Serial port 1 (DB9 male)
(B2) VGA   : VGA port (DB15 female)
(B3) SPDIF_Out   : SPDIF Out Port
(B4) LAN2   : GigaLAN Port
(B5) LAN1   : 10/100 base-T LAN Port
(B6) USB1   : 2 USB 2.0 (0/1) (Universal Serial Bus) ports
(B7) MS   : PS/2 mouse port
       KB   : PS/2 keyboard port
(B8) BASS/CENTER   : Audio Bass/Center-Out Port
(B9) LINE-IN   : Line-In Port
(B10) LINE-OUT   : Audio Line-Out Port

Front Panel Connectors

(C1) PWON   : ATX power on/off momentary type switch
(C2) HLED   : IDE drive active LED
(C3) GLED/PLED   : Green LED (ON when system stays in power saving
                                     mode) / System power LED
(C4) R S T   : Hardware reset switch
(C5) JP6/JP7   : Extended USB Headers
(C6) JP11   : Front-Panel Microphone and Line-Out Connector

Internal Peripherals Connectors

(D1) FDD   : Floppy disk drive interface
(D2) IDE1   : IDE primary interface (Dual-channel)
(D3) IDE2   : IDE secondary interface (Dual-channel)

Other Connectors

(E1) CN6/CN7   : ATX power connectors
(E2) FAN1   : System fan connector
(E2) FAN2   : Chipset fan connector

E2	FAN3	: CPU fan connector
E3	CN5	: Audio CD_IN connector
E4	JP5	: Wireless Keyboard and Mouse connector
E5	JP9	: Parallel port header
E6	JP8	: IR Header
E7	CN11	: AUX_IN connector
E8	JP10	: SPDIF_In header

☞ *Jumpers*

Ⓐ **Clear CMOS Setting (JP2)**

JP2 is used to clear CMOS data. Clearing CMOS will result in the permanently erasing previous system configuration settings and the restoring original (factory-set) system settings.

Pin 1-2 (Default)

Pin 2-3 (Clear CMOS)

Clear CMOS

JP2
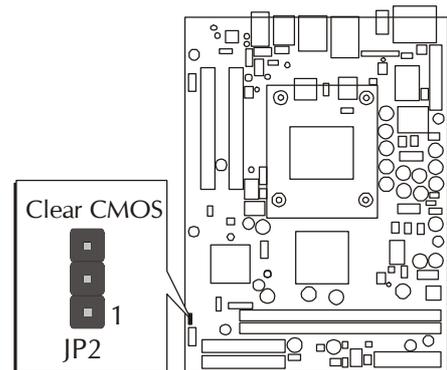
Step 1. Turn off the system power (PC-> Off).

Step 2. Remove ATX Power cable from ATX Power connector.

Step 3. Remove jumper cap from JP2 pins 1-2.

Step 4. Place the jumper cap on JP2 pin 2-3 for a few seconds.

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

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

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

☞ *Back-Panel Connectors*

ⓑ❶ COM1 Port Connector

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

COM1 Port
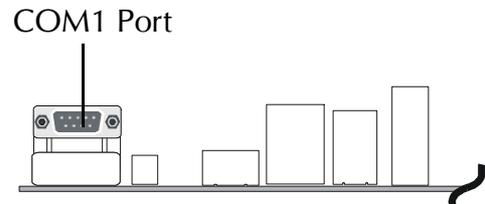
ⓑ❷ VGA Connector

One 15-pin VGA connector is located at the rear panel of the mainboard.

VGA Port
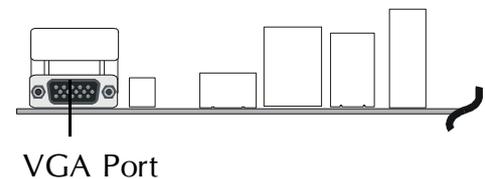
ⓑ❸ SPDIF_Out Port

SPDIF Out connector can transmit digital audio data to Optic fiber.

SPDIF Out Port
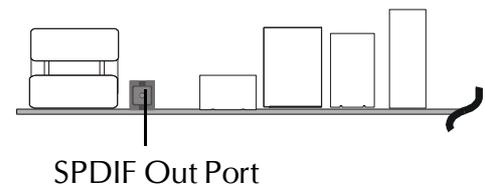
ⓑ❹ GigaLAN Connector

This mainboard can accommodate one device on LAN.
Attach a CAT-5 or CAT-6 cable to the LAN port at the back-panel of your computer.

GigaLAN Connector
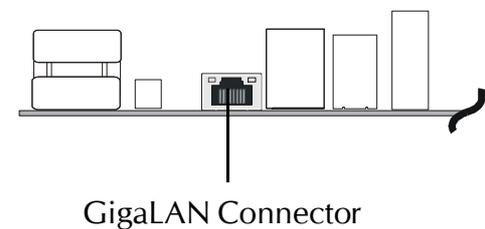
ⓑ❺ 10/100 Mbase-T LAN Port Connector

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

LAN Port
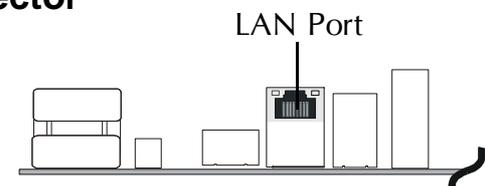
ⓑ❻ USB Port 0/1 Connectors

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

USB Port 1

USB Port 0
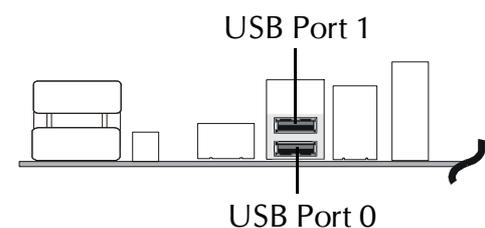
B7 PS/2 Keyboard & PS/2 Mouse Connectors

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

PS/2 Mouse

PS/2 keyboard
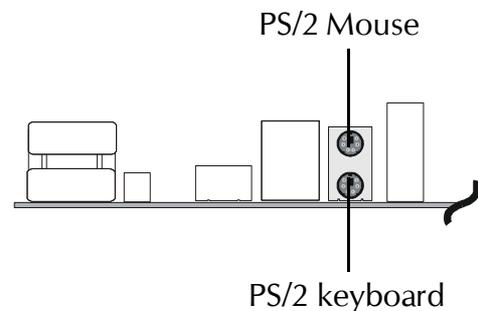
B8 Bass/Center-Out Port Connector

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

Bass/Center-Out Port
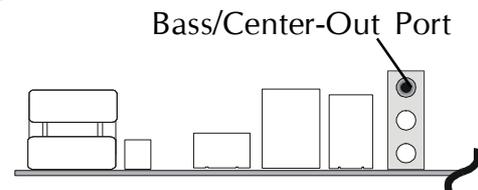
B9 Line-In (Rear-Out) Port Connector

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.

Line-In Port (Rear-Out)
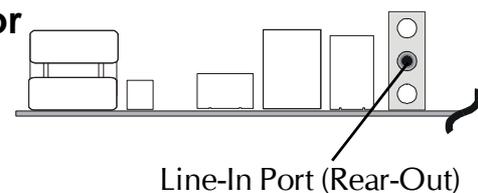
B10 Line-Out (Front-Out) Port Connector

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

Line-Out Port (Front-Out)
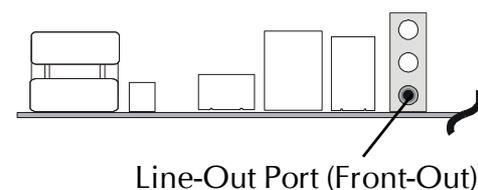
☞ *Front-Panel Connectors*

C1 **ATX Power On/Off Switch Connector (PWON)**

The Power On/Off Switch is a momentary type switch used for turning on or off the system ATX power supply. Attach the connector cable from the Power Switch to the 2-pin (PWON) header on the mainboard.
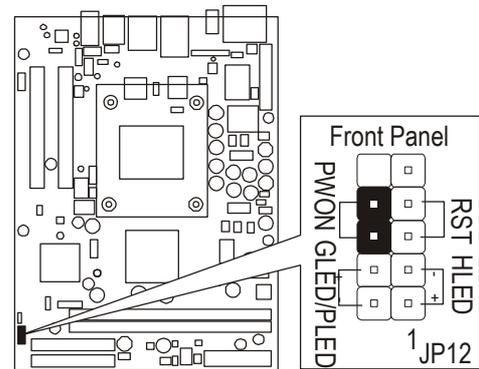
> Note : Please notice all the LED connectors are directional. If your chassis's LED does not light up during running, please simply change to the opposite direction.

C2 **HDD LED Connector (HLED)**

Attach the connector cable from the IDE device LED to the 2-pin (HLED) header. The HDD LED lights up whenever an IDE device is active.
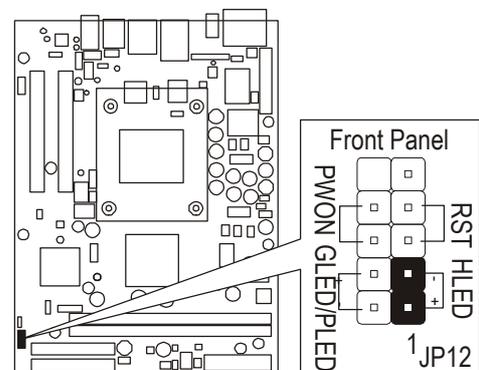
❸ Green LED / Power LED Connector (GLED/PLED)

This header is dual color LED function.

Dual color LED function is defined by either Power LED or Green 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, power LED on.

This Power LED will go off during power saving mode.

Attach a 2-pin Green LED/Power LED cable to (GLED/PLED) header.
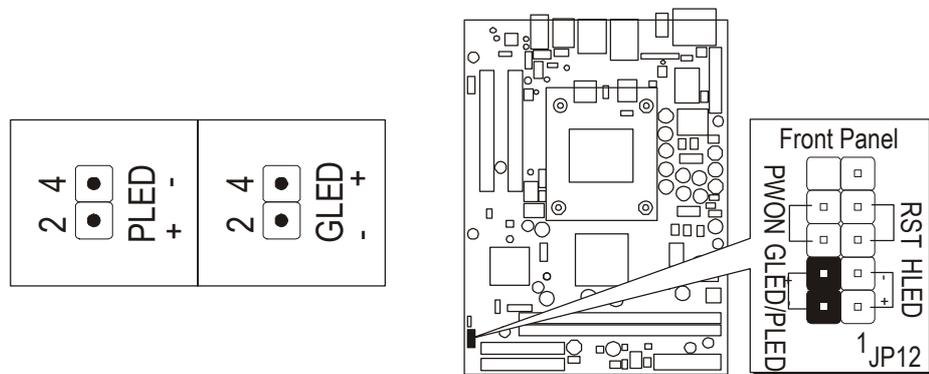
❹ Hardware Reset Connector (RST)

Attach the 2-pin hardware reset switch cable to the (RST) header. Pressing the reset switch causes the system to restart.
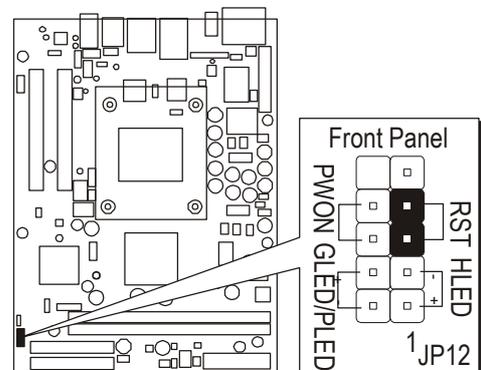
☞ Extended USB Header (JP6/JP7)

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

USB port 2

```
1  ■  ●  2
3  ●  ●  4
5  ●  ●  6
7  ●  ●  8
9     ●  10
```

USB port 3

```
10  ●      9
 8  ●  ●   7
 6  ●  ●   5
 4  ●  ●   3
 2  ●  ■   1
```
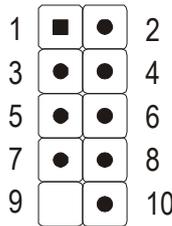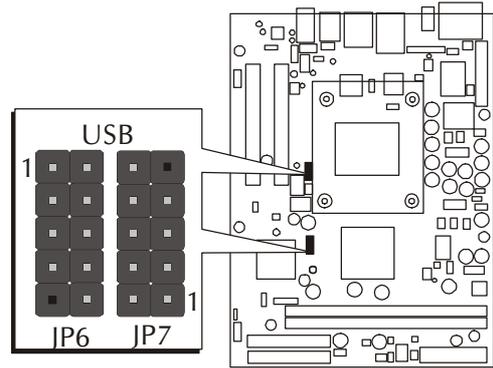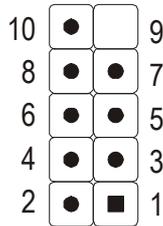
Pins Assignment:

1 = +5V	2 = +5V	3 = USBD0-
4 = USBD1-	5 = USBD0+	6 = USBD1+
7 = GND	8 = GND	9 = KEY
10 = N/A		

☞ Front-Panel Microphone and Line_out Header (JP11)

This header allows users to install auxiliary front-oriented microphone and line-out ports for easier access. Either the Mic and Line_out connector on back-panel or JP11 header are available. If you would like to use this JP11 header on front-panel, please remove all jumpers from JP11 and install your special Extra Mic/Line_out cable instead.

```
10  ▬▬▬  9
 8  ○  ●  7
 6  ▬▬▬  5
 4  ●  ●  3
 2  ●  ■  1
```
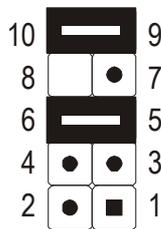
Two mini jumpers must be setted on pin5-6 and pin9-10, when this header is not used.
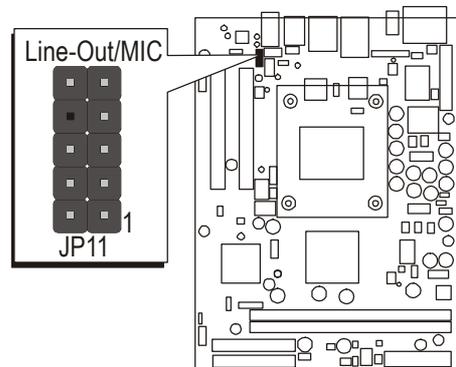
Pins Assignment:

1 = AUD_MIC	2 = AUD_GND
3 = AUD_MIC_VCC	4 = AUD_RESERVE
5 = AUD_FRONT_R	6 = AUD_RET_R
7 = HP_ON	8 = KEY
9 = AUD_FRONT_L	10 = AUD_RET_L

☞ *Internal Peripherals Connectors*

D1 **Enhanced IDE and Floppy Connectors**
D2
D3 The mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2) providing support for up to four IDE devices, such as CD-ROM and Hard Disk Drives (H.D.D.).

This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA 100/66 ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.
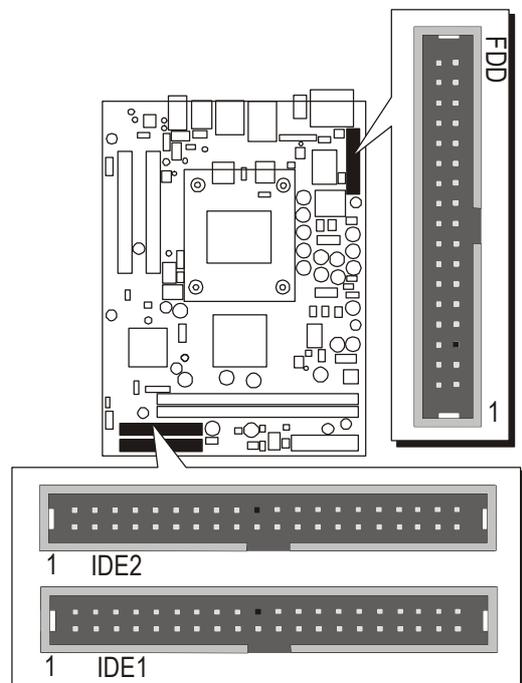
Important: Ribbon cables are directional, therefore, make sure to always connect with the red cable stripe on the same side as pin #1 of the IDE1/IDE2 or FDC connector on the mainboard.

☞ *Other Connectors*

❸ ATX Power Supply Connectors (CN6 and CN7)

This motherboard uses 20-pin (CN7) Pentium 4 standard ATX power header, and CN6 with 2X2-pin +12V PC ATX power supply headers.

Please make sure you plug in the right direction.

P4 ATX Power supply headers

CN7   **CN6**
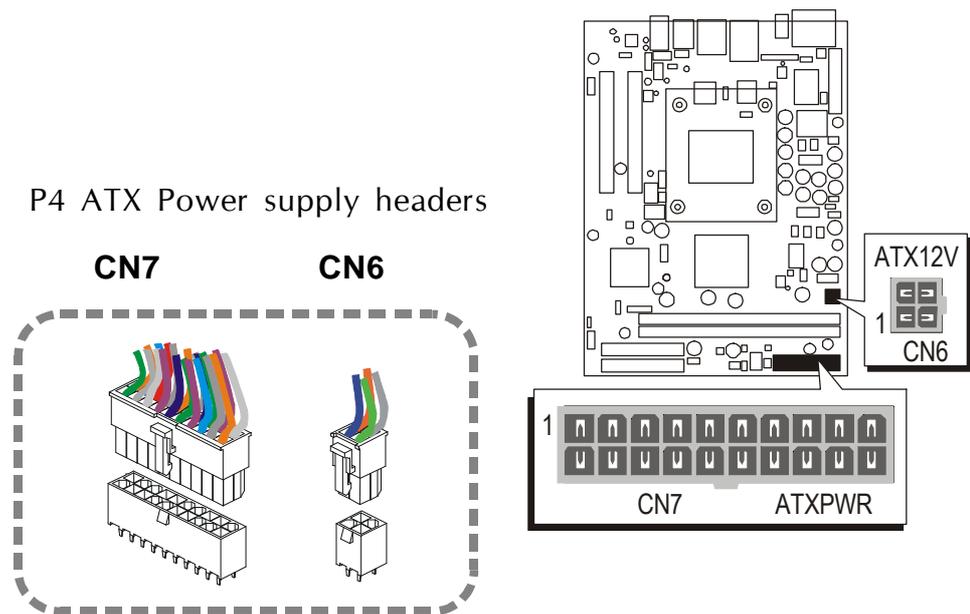
Note 1:   The ATX power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.

Note 2:   Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.

Note 3:   Your ATX power supply must be supplied to ACPI +5V standby power and at least 720mA compatible.

Note 4:   Make sure your power supply have enough power for higher speed processor installed.

CPU and System Fan Connectors - FAN1/2/3

The mainboard provides three onboard 12V cooling fan power connectors to support System (FAN1), Chipset (FAN2), or CPU (FAN3) cooling fans.

GND   +12V   SENSE
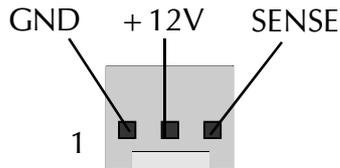
Note:

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

FAN1

FAN3

FAN2
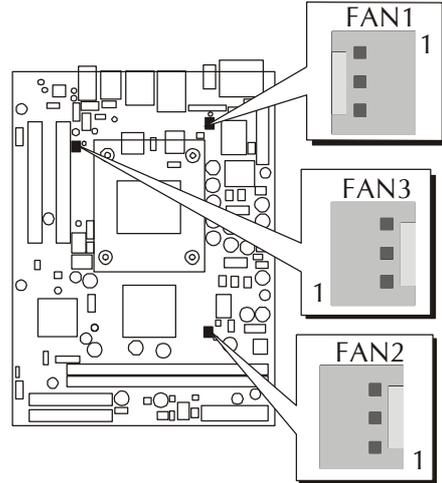
Audio CD_IN Connector (CN5) (Black)

Port CN5 is used to attach an audio connector cable from the CD-ROM drive.

4 3 2 1

CD_IN Right CD_IN Left
GND

CD-IN

CN5   1
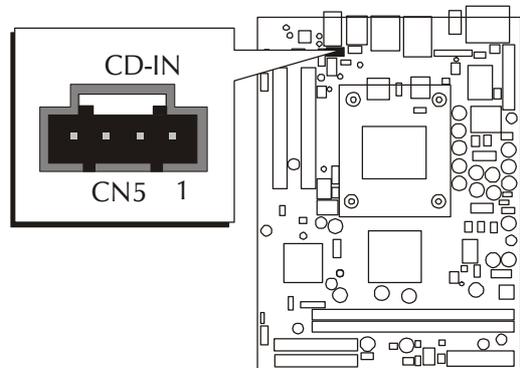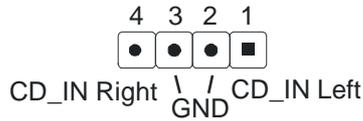
Wireless Keyboard and Mouse Connector (JP5)

Port JP5 can be used to connect wireless keyboard and mouse device.

7 5 3 1

8 6 4 2

Wireless KB/MS

JP5

Pin Assignments:

1 = +5V   2 = KEY
3 = MS-DT   4 = KB-DT
5 = MS-CK   6 = KB-CK
7 = GND   8 = GND
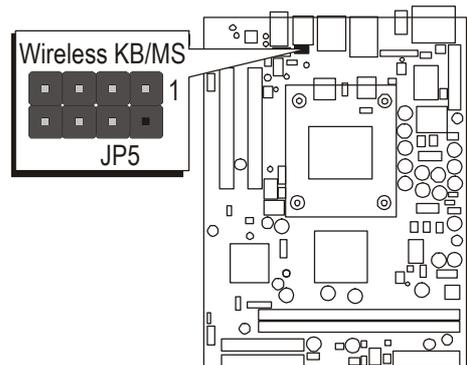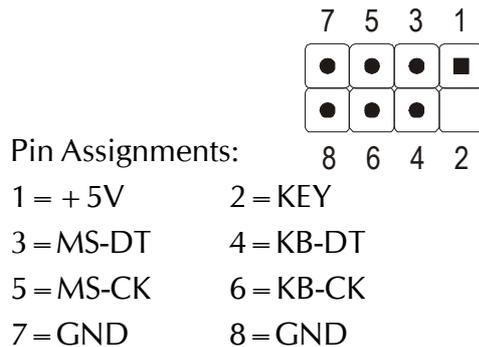
🔢 Parallel Port Header (JP9)

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

Paralle Port   JP9
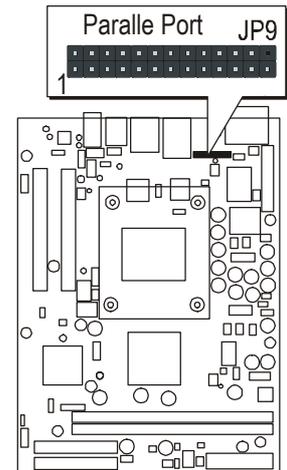
🔢 IR Header (JP8)

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

```
6 ● ● 5
4 ● ● 3
2 □ ■ 1
```
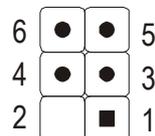
Pin Assignment:
1 = NC   2 = KEY
3 = +5V   4 = GND
5 = IRTX   6 = IRRX

IR

JP8
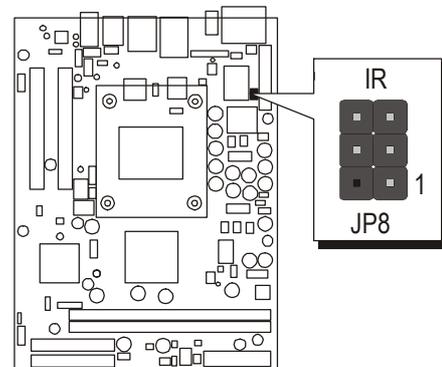
Note: Before connect your IR device, please be sure each IR on board pin
       allocation is matchable with the pin of the IR device. Other wise,
       incorrect IR connection may do damage to your IR device.

Step1: Attach the 6-pin infrared device cable to JP8.
        (Refer to the above diagram for IR pin assignment.)
Step2: This mainboard support IrDA, or Normal transfer modes.

Ⓔ7 Audio AUX_IN Connector (CN11)

Port CN11 can be used to connect a stereo audio input from CD-ROM, TV-tuner or MPEG card.
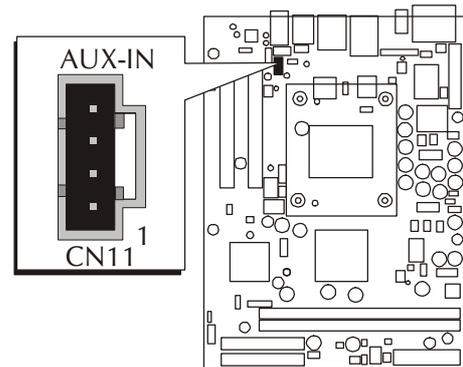
Ⓔ8 SPDIF_In Headers (JP10)

Port JP10 can be used to connect special device.
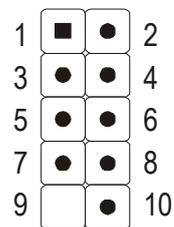
Pin Assignments:

1 = +12V	2 = VCC
3 = N/A	4 = N/A
5 = SPDIF_IN	6 = GND
7 = N/A	8 = N/A
9 = KEY	10 = GND
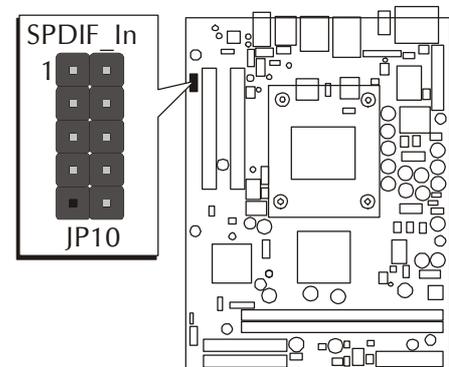
3.3 System Memory Configuration

The FB52 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 PC1600 or PC2100 compliant 2.5V single (1 Bank) or double (2 Bank) side 64-bit wide data path DDR SDRAM modules.

Install Memory:

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

DIMM Socket	Memory Modules	Module Quantity
DIMM 1	64MB, 128MB, 256MB, 512M ,and 1GB 184-pin 2.5V DDR SDRAM DIMM	x 1
DIMM 2	64MB, 128MB, 256MB, 512M ,and 1GB 184-pin 2.5V DDR SDRAM DIMM	x 1

Note: Maximum installed memory is 2GB.

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

Don't support double-sided X16 DDR DIMMs.

Upgrade Memory:

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

4 SOFTWARE UTILITY

4.1 Mainboard CD Overview

Note: The CD contents attached in FB52 mainboard are subject to
      change without notice.

To start your mainboard CD disc, just insert it into your CD-ROM drive and
the CD AutoRun screen should appear. If the AutoRun screen does not
appear, double click or run D:\Autorun.exe (assuming that your CD-ROM
drive is drive D:)

Navigation Bar Description:

☞ Install Mainboard Software - Installing Intel Chipset, Intel Ultra ATA,
    VGA Device, Audio, LAN, USB2.0 drivers.
☞ Manual - FB52 Series mainboard user's manual in PDF format.
☞ Link to Shuttle Homepage - Link to shuttle website homepage.
☞ Browse this CD - Allows you to see contents of this CD.
☞ Quit - Close this CD.

4.2 Install Mainboard Software

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

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

The Mainboard FB52 Software include:

[4.2.A]   Intel Chipset driver

[4.2.B]   Intel Ultra ATA driver

[4.2.C]   Intel VGA driver

[4.2.D]   Intel Audio driver

[4.2.E]   Intel LAN driver

[4.2.F]   Intel USB2.0 driver
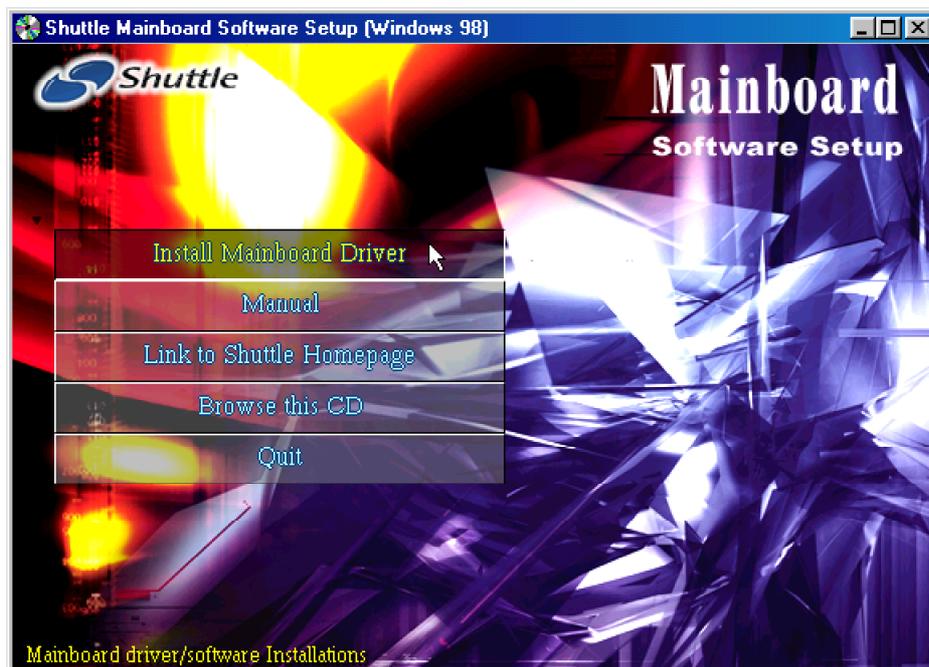
4.2.A Install Intel Chipset Driver

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

Select using your pointing device (e.g. mouse) on the "Install Intel Chipset Driver" bar to install Intel chipset driver.
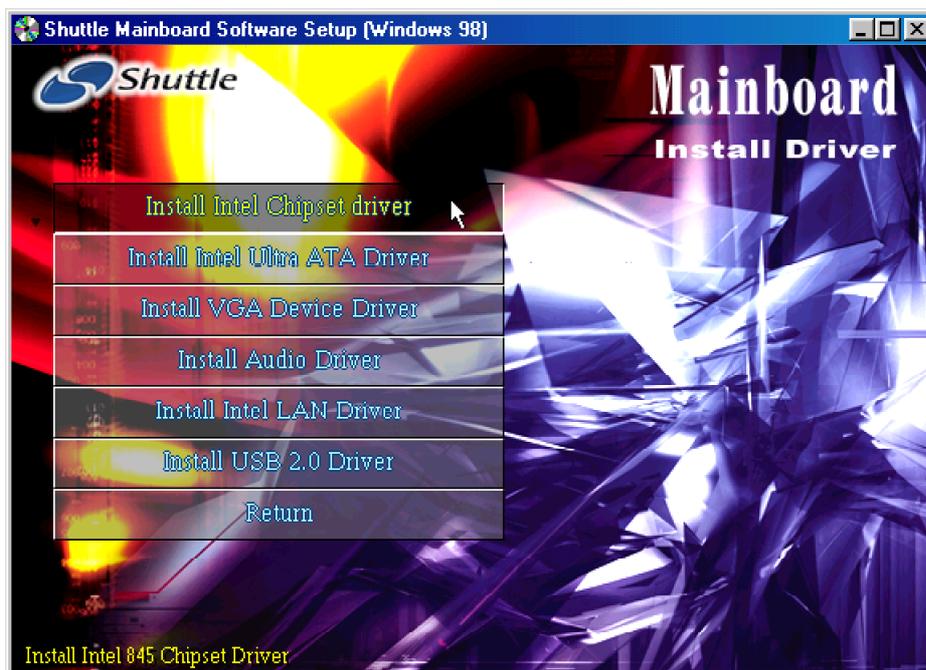
Once you made your selection, a Setup window run the installation automatically.
When the copying files is done, make sure you reboot the system to take the installation effect.

4.2.B Install IDE Driver

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

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

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

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

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

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

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

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

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

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

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

Note: Driver installation note !!
1. Start the "Add New Hardware" wizard in Control Panel. (Click Start/ Settings/Control Panel).
2. Select "Specify the location of the driver" and click "Next".
3. Select "Specify Location".
4. Click on the "Browse" button and select the directory where you saved the driver.
5. Click "Next" to install the driver.
6. Click "Finish" after the driver installation is complete.

4.3 View the User's Manual

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on AutoRun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

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

Then Online Information windows will appear on your screen. Click on the " Install Acrobat Reader " bar if you need to install acrobat reader.

Then click on "FB52 Manual" bar to view user's manual.

5 BIOS SETUP

FB52 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:
System date and time
Hardware execution sequence
Power management functions
Allocation of system resources

5.1 Enter the BIOS

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

Step 1.   Power on the computer, and the system will perform its POST (Power-On Self Test) routine checks.

Step 2.   Press <Del> key immediately, or at the following message: Press DEL to enter SETUP ,or simultaneously press <Ctrl>, <Alt>, <Esc> keys

Note 1. If you miss trains of words meationed in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the <RESET> switch located at the computer's front-panel. You may also reboot by simultaneously pressing the <Ctrl>, <Alt>, <Del> keys.
Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

" Press F1 to Continue, DEL to Enter Setup "

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

5.2 The Main Menu

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

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility

   ▶ Standard CMOS Features           ▶ Frequency/Ratio Control

   ▶ Advanced BIOS Features             Load Fail-Safe Defaults

   ▶ Advanced Chipset Features          Load Optimized Defaults

   ▶ Integrated Peripherals             Set Supervisor Password

   ▶ Power Management Setup             Set User Password

   ▶ PnP/PCI Configurations             Save & Exit Setup

   ▶ PC Health Status                   Exit Without Saving

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

               Time, Date, Hard Disk Type...
```

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

Setup Items

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

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

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

Advanced Chipset Features

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

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP / PCI Configurations

This entry appears if your system supports PnP / PCI.

PC Health Status

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

Frequency/Ratio Control

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

Load Fail-Safe Defaults

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

Load Optimized Defaults

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

Set Password

Use this menu to change, set, or disable password. It allows you to limit access to the system and Setup, or only to Setup.

Save & Exit Setup

Save CMOS value changes in CMOS and exit from setup.

Exit Without Saving

Abandon all CMOS value changes and exit from setup.

✍ *Standard CMOS Features*

The items in Standard CMOS Setup Menu are divided into several categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                       Standard CMOS Features
┌─────────────────────────────────────────────┬──────────────────────┐
│  Date (mm:dd:yy)          Thu, Nov  7 2002   │      Item Help       │
│  Time (hh:mm:ss)            15 : 40 : 20     ├──────────────────────┤
│                                              │  Menu Level     ▶    │
│ ▶ IDE Primary Master                         │                      │
│ ▶ IDE Primary Slave                          │  Change the day, month,│
│ ▶ IDE Secondary Master                       │  year and century    │
│ ▶ IDE Secondary Slave                        │                      │
│                                              │                      │
│   Drive A                 [1.44M, 3.5 in.]   │                      │
│   Drive B                 [None]             │                      │
│                                              │                      │
│   Video                   [EGA/VGA]          │                      │
│   Halt On                 [All , But Keyboard]│                     │
│                                              │                      │
│   Base Memory                   640K         │                      │
│   Extended Memory             65535K         │                      │
│   Total Memory                 1024K         │                      │
│                                              │                      │
├──────────────────────────────────────────────┴──────────────────────┤
│ ↑↓←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│    F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults│
└──────────────────────────────────────────────────────────────────────┘
```

Date

  <Month>   <DD>   <YYYY>

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

Time

  <HH:MM:SS>

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

IDE Primary Master

Options are in its sub-menu.

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

IDE Primary Slave

Options are in its sub-menu.

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

IDE Secondary Master

Options are in its sub-menu.

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

IDE Secondary Slave

Options are in its sub-menu.

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

Drive A/Drive B

Select the type of floppy disk drive installed in your system.

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

Video

Select the default video device.

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

Halt On

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

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

Base Memory

Displays the amount of conventional memory detected during boot up.

➢ The choice: N/A.

Extended Memory

Displays the amount of extended memory detected during boot up.

➢ The choice: N/A.

Total Memory

Displays the total memory available in the system.

➢ The choice: N/A.

****

IDE Adapters

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

IDE HDD Auto-Detection

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

➢ Press Enter

IDE Primary Master

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

➢ The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

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

Capacity

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

➢ Auto-Display your disk drive size.

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

```
                 Phoenix - Award WorkstationBIOS CMOS Setup Utility
                            Advanced BIOS Features
   ┌──────────────────────────────────────────────┬──────────────────────────┐
   │  Bios Write Protect         [Disabled]     ▲  │      Item Help           │
   │  Virus Warning              [Disabled]        │                          │
   │  CPU L1 & L2 Cache          [Enabled]         │  Menu Level    ▶         │
   │  CPU Hyper-Threading        [Enabled]         │                          │
   │  Quick Power On Self Test   [Enabled]         │                          │
   │  First Boot Device          [Floppy]          │                          │
   │  Second Boot Device         [HDD-0]           │                          │
   │  Third Boot Device          [CDROM]           │                          │
   │  Boot Other Device          [Enabled]         │                          │
   │  Swap Floppy Drive          [Disabled]        │                          │
   │  Boot Up Floppy Seek        [Enabled]         │                          │
   │  Boot Up NumLock Status     [Off]             │                          │
   │  Gate A20 Option            [Fast]            │                          │
   │  Typematic Rate Setting     [Disabled]        │                          │
   │ x Typematic Rate (Chars/Sec) 6                │                          │
   │ x Typematic Delay (Msec)     250              │                          │
   │  Security Option            [Setup]           │                          │
   │  APIC Mode                  [Enabled]         │                          │
   │  MPS Version Control For OS[1.4]              │                          │
   │  OS Select For DRAM > 64MB [Non-OS2]          │                          │
   │  Report No FDD For WIN 95  [No]               │                          │
   │  Small Logo(EPA) Show       [Enabled]      ▼  │                          │
   ├──────────────────────────────────────────────┴──────────────────────────┤
   │ ↑↓←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
   │      F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults│
   └──────────────────────────────────────────────────────────────────────────┘
```

BIOS Write Protect

This item lets you to enable or disable the BIOS Write Protect.

➢ The choice: Enabled or Disabled.

Virus Warning

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

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

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

➢ The choice: Enabled or Disabled.

CPU L1 & L2 Cache

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

➢ The choice: Enabled or Disabled.

CPU Hyper-Threading

If your CPU supports the hyper-threading function, please leave this item enabled.

➢ The choice: Enabled, or Disabled.

Quick Power On Self Test

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

➢ The choice: Enabled, or Disabled.

First/Second/Third Boot Device

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

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

Boot Other Device

This item allows you to select Your Boot Device Priority.

➢ The choice: Enabled or Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignment.

➢ The choice: Enabled or Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot-Up. Disabling speed boots up.

➢ 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 repented 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

Selects enable/disable IO APIC function.

➢ The choice: Enabled or Disabled.

MPS Version Control For OS

Selects the operating system multiprocessor support version.

➢ The choice: 1.1 or 1.4

OS Select For DRAM > 64MB

Selects the operating system that is running with greater than 64MB of RAM in the system.

➢ The choice: Non-OS2 or OS2.

Report No FDD For Win 95

Whether report no FDD runs for Win 95 or not.

➢ The choice: Yes or No.

Small Logo(EPA) Show

This item allows you to enable/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 - Award WorkstationBIOS CMOS Setup Utility
                         Advanced Chipset Features

    DRAM Timing Selectable    [By SPD]              Item Help
    CAS Latency Time          [1.5]
    Active to Precharge Delay [7]          Menu Level    ▶
    DRAM RAS# to CAS# Delay    [3]
    DRAM RAS# Precharge        [3]
    Turbo Mode                [Disabled]
    Memory Frequency For       [Auto]
    System BIOS Cacheable     [Enabled]
    Video  BIOS Cacheable     [Disabled]
    Memory Hole At 15M-16M    [Disabled]
    Delayed Transaction       [Enabled]
    Delay Prior to Thermal    [16 Min]

    ** On-Chip VGA Setting **
    On-Chip VGA               [Enabled]
    On-Chip Frame Buffer Size [8MB]


 ↑↓←: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 BySPD

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: 1.5, 2, 2.5, or 3.

Active to Precharge Delay

    The precharge time is the number of cycles it takes for DRAM to accumulate its charge before refresh.

    ➢ The Choice: 7, 6, or 5.

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: 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: 3 or 2.

Turbo Mode

This item allows you to enable or disable the Turbo Mode.

➢ The Choice: Enabled or Disabled.

Memory Frequency For

This item is select SDRAM Frequency.

➢ The Choice: DDR200, DDR266, or Auto.

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h ~ FFFFFh, resulting in better system performance. However, if any program is written to this memory area, a system error may result.

➢ The Choice: Enabled or Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program is written to this memory area, a system error may result.

➢ The Choice: Enabled or Disabled.

Memory Hole At 15M-16M

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

➢ The Choice: Enabled or Disabled.

Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delayed transactions cycles. Enabled this item to support compliance with PCI specification version 2.1.

➢ The Choice: Enabled or Disabled.

Delay Prior to Thermal

Enable this item to set the delay time before the CPU enters auto thermal mode.

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

********** On -Chip VGA Setting **********

On-Chip VGA

This item allows you to enable or disable the On-Chip VGA.

➢ The Choice: 1MB or 8MB.

On-Chip Frame Buffer Size

This item allows you to set the VGA frame buffer size.

➢ The Choice: 1MB or 8MB.

✎ *Integrated Peripherals*

```
             Phoenix - Award WorkstationBIOS CMOS Setup Utility
                          Integrated Peripherals
 ┌──────────────────────────────────────────────────┬──────────────────────┐
 │ On-Chip Primary   PCI IDE [Enabled]            ▲  │     Item Help        │
 │ IDE Primary Master PIO    [Auto]                  ├──────────────────────┤
 │ IDE Primary Slave  PIO    [Auto]                  │ Menu Level    ▶      │
 │ IDE Primary Master UDMA   [Auto]                  │                      │
 │ IDE Primary Slave  UDMA   [Auto]                  │                      │
 │ On-Chip Secondary PCI IDE [Enabled]               │                      │
 │ IDE Secondary Master PIO  [Auto]                  │                      │
 │ IDE Secondary Slave  PIO  [Auto]                  │                      │
 │ IDE Secondary Master UDMA [Auto]                  │                      │
 │ IDE Secondary Slave  UDMA [Auto]                  │                      │
 │ USB Controller            [Enabled]               │                      │
 │ USB 2.0 Controller        [Enabled]               │                      │
 │ USB Keyboard Support      [Disabled]              │                      │
 │ AC97 Audio                [Auto]                  │                      │
 │ Init Display First        [PCI Slot]              │                      │
 │ IDE HDD Block Mode        [Enabled]               │                      │
 │ Intel 10/100M Boot ROM    [Disabled]              │                      │
 │ Intel Giga Lan Boot ROM   [Disabled]              │                      │
 │ POWER ON Function         [Hot KEY]               │                      │
 │ KB Power ON Password      [Enter]                 │                      │
 │ Hot Key Power ON          [Ctrl-F1]               │                      │
 │ Onboard FDC Controller    [Enabled]               │                      │
 │ Onboard Serial Port 1     [3F8/IRQ4]              │                      │
 │ Onboard Infrared Port     [Disabled]              │                      │
 │ UART Mode Select          [IrDA]                  │                      │
 │ UR2 Duplex Mode           [Half]                  │                      │
 │ Onboard Parallel Port     [378/IRQ7]              │                      │
 │ Parallel Port Mode        [SPP]                   │                      │
 │ ECP Mode Use DMA          [3]                  ▼  │                      │
 ├──────────────────────────────────────────────────┴──────────────────────┤
 │ ↑↓←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │    F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults │
 └──────────────────────────────────────────────────────────────────────────┘
```

On-Chip Primary /Secondary 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/Primary Slave/Secondary Master/Secondary 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 auto 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/Primary Slave/Secondary Master/Secondary 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.

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

Select Enabled if you plan to use a keyboard connected through the USB port in a legacy operating system (such as DOS) that doesn't support Plug and Play.

➢ The choice: Enabled or Disabled.

AC97 Audio

This item allows you to select AC 97 audio chip to support Audio. Disable this item If you are going to install a PCI audio add-on card.

➢ The Choice: Auto or Disabled.

Init Display First

Use this item to specify whether your graphics adapter is installed in one of the PCI slots or is integrated on the mainboard.

➢ The choice: PCI Slot or Onboard .

IDE HDD Block Mode

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

➢ The choice: Enabled, or Disabled.

Intel 10/100M Boot ROM

This item allows you to enable or disable the Intel 10/100M Boot ROM function.

➢ The choice: Enabled, or Disabled.

Intel Giga Lan Boot ROM

This item allows you to enable or disable the Intel Giga Lan Boot ROM function.

➢ The choice: Enabled, or Disabled.

POWER ON Function

Enable you to set power on paramenters. The default setting enables you to use a hot key to turn on the system.

➢ The choice: Password, Hot KEY, Mouse Move, Mouse Click, Any KEY, Button Only, Keyboard 98.

KB Power On Password

You can select this item and press " Enter " to input password if power on function select password.

Hot Key Power ON

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

➢ The choice: ＜Ctrl-F1＞ ~ ＜Ctrl-F12＞.

Onboard FDC Controller

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

➢ The choice: Enabled Disabled.

Onboard Serial Port1

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

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

Onboard Infrared Port

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

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

UART Mode Select

This field is available if the Onboard Serial Port 2 field is set to any option but disabled. UART Mode Select enables you to select the infrared communication protocol-Normal (default), IrDA, or ASKIR. IrDA is an infrared communication protocol with a maximum baud rate up to 115.2K bps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6K bps.

➢ The choice: SCR, IrDA, ASKIR or Normal.

UR2 Duplex Mode

This item is available when UART 2 mode is set to either ASKIR or IrDA. This item enables you to determin the infrared function of the onboard infrared chip. The options are Full and Half (default).

Full-duplex means that you can transmit and send information simultaneously. Half-duplex is the transmission of data in both directions, but only one direction at a time.

➢ 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*


```
              Phoenix - Award WorkstationBIOS CMOS Setup Utility
                           Power Management Setup

   ACPI Function                Enabled          ▲        Item Help
   ACPI Suspend Type           [S1(POS)]
 x Run VGABIOS if S3 Resume     Auto                 Menu Level   ▶
   Power Management            [Min Saving]
   Video Off Method            [DPMS]
   Video Off In Suspend        [Yes]
   Suspend Type                [Stop Grant]
   MODEM Use IRQ               [3]
   Suspend Mode                 Disabled
   HDD Power Down               Disabled
   Soft-Off by PWR-BTTN        [Instant-Off]
   Wake-Up by PCI card         [Disabled]
   Power On by Ring            [Disabled]
 x USB Wake-Up From S3          Disabled
   Resume by Alarm             [Disabled]
 x  Date(of Month) Alarm        0
 x  Time(hh:mm:ss) Alarm        0 :  0 :  0

   ** Reload Global Timer Events **
   Primary IDE 0               [Disabled]
   Primary IDE 1               [Disabled]
   Secondary IDE 0             [Disabled]
   Secondary IDE 1             [Disabled]
   FDD,COM,LPT Port            [Disabled]
   PCI PIRQ[A-D]#              [Disabled]
   PWRON After PWR Fail        [Off]           ▼

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

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

ACPI Function

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

ACPI Suspend Type

This item allows you to select sleep state when suspend.
➢ The choice: S1(POS), S3(STR), or S1 & S3.

Run VGABIOS if S3 Resume

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 Suspend Mode

This item allows you to decide the timing to enter suspend mode.
➢ The choice: User Define, Min Saving, 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 Supported.

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 cause a software power down.

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

Wake-Up by PCI card

This item Enabled/Disabled PCI card wake up for PCI Spec 2.2.

➢ 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 Wake-up from S3

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

*** 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.

PWRON After PWR-Fail

This item select power on function when power fail.

➤ The choice: Off, On, or Former-Sts.

✍ *PnP/PCI Configurations*

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                      PnP/PCI Configurations
┌──────────────────────────────────────┬───────────────────────┐
│  Reset Configuration Data  [Disabled] │       Item Help       │
│                                       │                       │
│  Resources Controlled By   [Auto(ESCD)]│ Menu Level     ▶      │
│ x IRQ Resources              Press Enter│                      │
│                                       │ Default is Disabled.  │
│  PCI/VGA Palette Snoop     [Disabled] │ Select Enabled to     │
│  INT Pin 1 Assignment      [Auto]     │ reset Extended System │
│  INT Pin 2 Assignment      [Auto]     │ Configuration Data    │
│  INT Pin 3 Assignment      [Auto]     │ ESCD) when you exit   │
│  INT Pin 4 Assignment      [Auto]     │ Setup if you have     │
│  INT Pin 5 Assignment      [Auto]     │ installed a new add-on│
│  INT Pin 6 Assignment      [Auto]     │ and the system        │
│  INT Pin 7 Assignment      [Auto]     │ reconfiguration has   │
│  INT Pin 8 Assignment      [Auto]     │ 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.

<u>IRQ   Resources</u>
When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

   IRQ3/4/5/7/9/10/11/12/14/15 assigned
This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices is compliant with the original PC AT bus specification; PCI/ISA PnP for devices is compliant with the Plug-and-Play standard whether designed for PCI or ISA bus architecture.
➢ The choice: PCI Device or Reserved.

<u>PCI/VGA Palette Snoop</u>
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.

<u>INT Pin1 ~ 8 Assignment</u>
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, 15.

PC Health Status
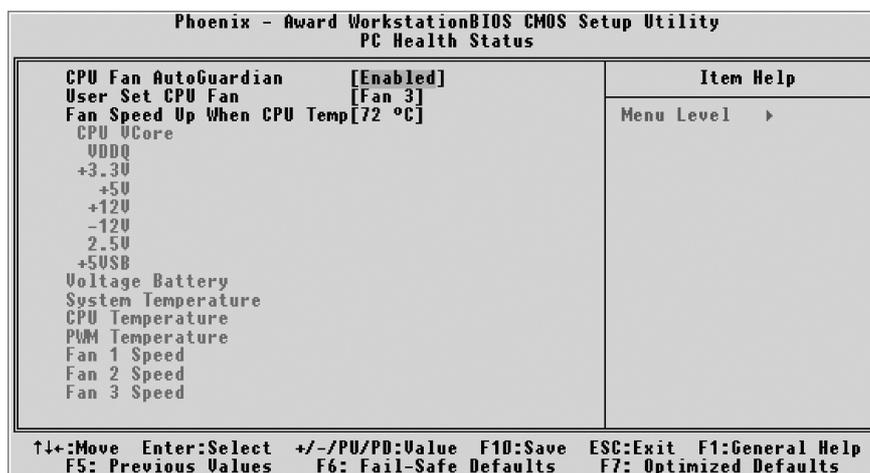
```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                          PC Health Status

  CPU Fan AutoGuardian     [Enabled]          |    Item Help
  User Set CPU Fan         [Fan 3]            |
  Fan Speed Up When CPU Temp[72 °C]           | Menu Level   ▶
   CPU VCore                                  |
    VDDQ                                       |
   +3.3V                                       |
     +5V                                       |
    +12V                                       |
    -12V                                       |
    2.5V                                       |
  +5VSB                                        |
  Voltage Battery                              |
  System Temperature                           |
  CPU Temperature                              |
  PWM Temperature                              |
  Fan 1 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 AutoGuardian

This SMART Bios enabled 3 phase Variable Fan Speed and CPU temperature Control feature.

➢ The choice: Enabled or Disabled.

This feature is controlled via Bios, in which the CPU fan rotational speed sensing /control is governed by CPU temperature setting preselected in Bios.

By default, "CPU Fan AutoGuardian" feature under PC Health Status is enabled.

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

Our default for fan cooler is set to Fan 3.
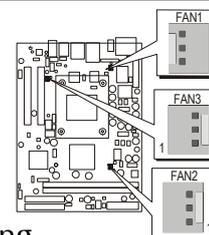
User Set CPU Fan

Enabled you to choose one specific fan for further setting.

➢ The choice: Fan1, Fan2, Fan3, or Fan1 & Fan3 .

Fan Speed Up When CPU Temp

Enabled 3 phase smart control to the Selected fan. This feature ranges from 48 ^{0}C to 80 ^{0}C, in an increment of 4 ^{0}C. The default temperature is at 72 ^{0}C.

➢ The choice: 48 ^{0}C, 52 ^{0}C, 56 ^{0}C, 60 ^{0}C, 64 ^{0}C, 68 ^{0}C, 72 ^{0}C, 76 ^{0}C, 80 ^{0}C.

Take our default Setting for example, 1st and 2nd phase Variable Fan Speed and CPU temperature Control is as defined by "Fan Speed Up When CPU Temp". If actual CPU temp (reported by BIOS) stays below 72 ^{0}C then CPU fan speed will run at a quiet mode (1st phase) of approximately 2000 RPM.

But when the actual CPU temp goes above the pre-selected 72 ^{0}C temperature threshold, then CPU fan speed will automatically engage into normal mode (2nd phase) of about 3000 RPM. Automatically by the Smart Bios feature, this increase of fan rotation speed will effectively cool down the CPU temperature. And when the CPU temperature drops back below the 72 ^{0}C temperature threshold, CPU fan speed will again automatically shift back to the quiet mode (1st phase) of about 2000 RPM in order to reduce fan noise level.

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

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

CPU VCore   (Show current CPU VCore)
VDDQ
+3.3V
+5V
+12V
-12V
2.5V
+5VSB
Voltage Battery
System Temperature   (Show current system temperature)
CPU Temperature   (Show current CPU temperature)
PWM Temperature   (Show current PWM temperature)
Fan1 Speed   (Show current Fan1 Speed)
Fan2 Speed   (Show current Fan2 Speed)
Fan3 Speed   (Show current Fan3 Speed)

❀ *Frequency/Ratio Control*

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                    Frequency/Ratio Control
┌─────────────────────────────────────────────┬───────────────────────┐
│ CPU Clock Ratio          [ 8 X]              │       Item Help       │
│ Auto Detect PCI Clk      [Enabled]           ├───────────────────────┤
│ Spread Spectrum          [Enabled]           │ Menu Level    ▶       │
│ CPU Clock                [100MHz]            │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
├──────────────────────────────────────────────┴──────────────────────┤
│ ↑↓←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│    F5: Previous Values      F6: Fail-Safe Defaults   F7: Optimized Defaults │
└────────────────────────────────────────────────────────────────────┘
```

CPU Clock Ratio

This item allows you to adjust CPU Ratio.

Min: 8

Max: 50

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

Auto Detect PCI Clk

This item allows you to enable/disable auto detection DIMM/PCI Clock.

➢ The choice: Enabled, or Disabled.

Spread Spectrum

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

➢ The choice: Enabled, or Disabled.

CPU Clock

This item allows the user to adjust CPU Host Clock.

CPU FSB400 select range 100 ～ 132.

CPU FSB533 select range 133 ～ 165.

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

✍ *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*

```
           Phoenix - Award WorkstationBIOS CMOS Setup Utility
  ┌───────────────────────────────────────────────────────────────────┐
  │   ▶ Standard CMOS Features          ▶ Frequency/Ratio Control      │
  │   ▶ Advanced BIOS Features            Load Fail-Safe Defaults      │
  │   ▶ Advanced Chipset Features         Load Optimized Defaults      │
  │   ▶ Integrated Peripherals           Set Supervisor Password       │
  │   ▶ Power Management Setup            Set User Password             │
  │   ▶ PnP/PCI Configurati┌──────────────────────────┐t Setup         │
  │   ▶ PC Health Status   │  Enter Password:         │ut Saving       │
  │                        └──────────────────────────┘                │
  ├───────────────────────────────────────────────────────────────────┤
  │  Esc : Quit      F9 : Menu in BIOS      ↑ ↓ ←  : Select Item       │
  │  F10 : Save & Exit Setup                                           │
  ├───────────────────────────────────────────────────────────────────┤
  │                 Change/Set/Disable 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 28 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.