

# P8F161G-e

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## MOTHER BOARD *USER'S MANUAL*

Ver 2.

NOV.26.2003



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# Using This Manual

This manual is designed to help you build a reliable Personal Computer based on the P8F161G-e platform.

## **Chapter 1—Quick Reference**

This chapter is for advanced users who want to quickly assemble a system. The mainboard layout along with jumper and switch settings, and memory configuration are provided.

## **Chapter 2—Introduction**

This chapter includes an introduction, a checklist of the items that ship with this mainboard, and a summary of the principal features and components.

## **Chapter 3—Hardware Installation**

This chapter explains how to prepare your mainboard for use and how to make the various connections to other computer components and peripheral items.

## **Chapter 4—etBIOS Configuration**

This chapter explains how to use the system setup utility that is stored in the mainboard's firmware.

## **Chapter 5—etDVD Guide**

This chapter explains how to use the etDVD.

## **Chapter 6—Driver and Utility**

This chapter briefly describes the drivers and utility programs that are packaged with the mainboard.

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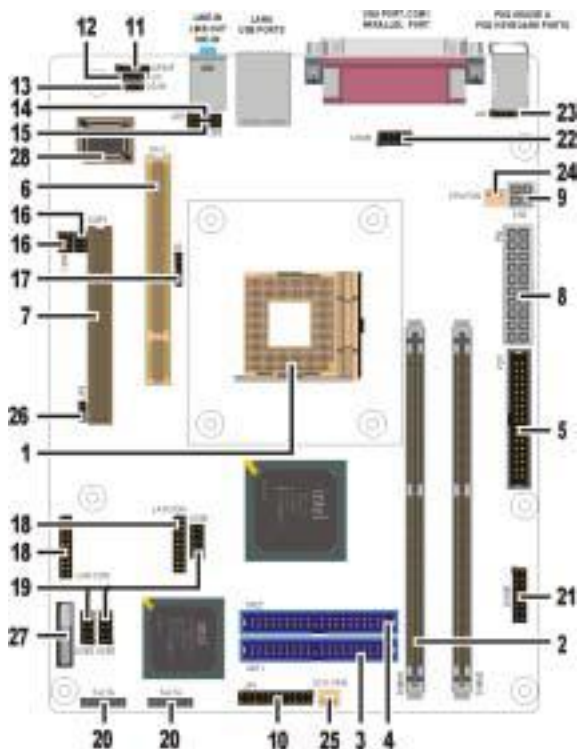
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# 1. P8F161G-e Quick Reference

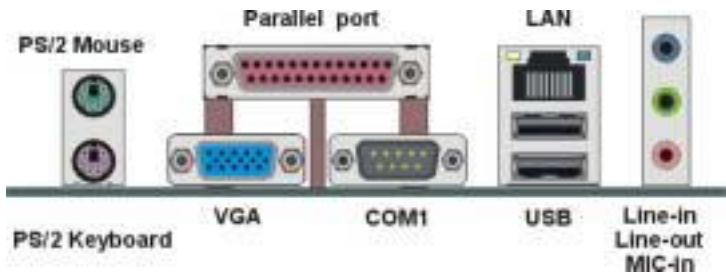
This section is for users to get started using the mainboard straight away.

## 1.1. Mainboard Layout



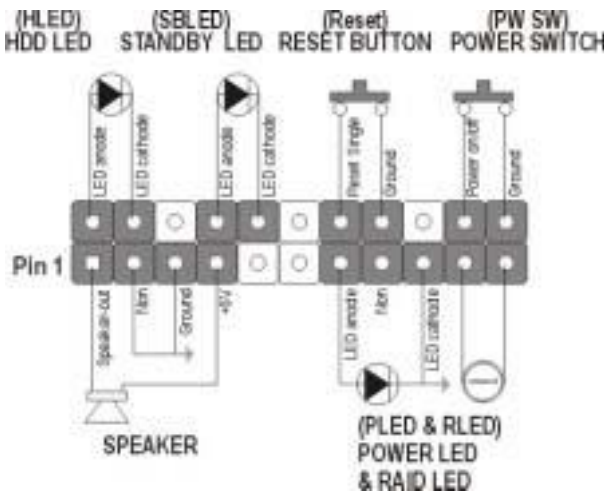
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|--|--|
| 1. mPGA478B CPU socket (PGA478)              | 15. Front Speaker Connector (JP3)        |
| 2. 184-pin DIMM DDR module sockets (DIMM1~2) | 16. 1394 Connector (1394)                |
| 3. IDE connector (IDE1)                      | 17. IR connector (IR)                    |
| 4. IDE connector (IDE2)                      | 18. LAN Connector (LAN CON) (Optional)   |
| 5. Floppy drive connector (FDC)              | 19. USB ports connector (USB1~3)         |
| 6. PCI expansion connector (PCI1)            | 20. Serial ATA Connector (SATA)          |
| 7. Accelerated Graphics Port Slot (AGP1)     | 21. Game Connector (Game) (Optional)     |
| 8. ATX power connector (PW)                  | 22. COM2 Connector (COM2)                |
| 9. ATX 12V power connector (CN2)             | 23. Extend Mouse/Keyboard(J25)(Optional) |
| 10. Front Panel connectors (JP1)             | 24. CPU FAN                              |
| 11. S/P DIF Connector (SPDIF)                | 25. SYS FAN                              |
| 12. AUDIO connector (AUX)                    | 26. CMOS Jumper (JP4)                    |
| 13. AUDIO connector (CD IN)                  | 27. RTC Battery                          |
| 14. Front Mic-IN, Line-IN Connector (JP2)    | 28. Flash BIOS                           |

## 1.2. I/O Ports



## 1.3. Front Panel Connector

The following illustration shows the front panel connector pin assignments:



## 1.4. Jumpers

|                            |     |             |
|----------------------------|-----|-------------|
| <b>JP4</b><br>(CMOS Clear) | 1-2 | Normal Mode |
|                            | 2-3 | Clear CMOS  |

## 1.5. PCI Frequency Setting

The PCI frequency settings are automatically set by the system

## 1.6. Memory Installation

- 
- Note:**
- a) This mainboard supports up to two double-sided or two single-sided DDR.
  - b) Supports only x8, x16 DDR devices.
  - c) Supports up to 6.4 GB/s (DDR400) in dual-channel mode.
- 

184-Pin DIMM DDR SDRAM Memory Configuration.

Each **184-pin** DIMM bank can install from 128MB up to 1GB of DDR166 / DDR333 / DDR400 compliant 2.5V single or double side buffered with or without ECC DDR SDRAM modules.

|                       |                          |
|-----------------------|--------------------------|
| <b>Bank 0 (DIMM1)</b> | 128MB, 256MB, 512MB, 1GB |
| <b>Bank 1 (DIMM2)</b> | 128MB, 256MB, 512MB, 1GB |
| <b>Total</b>          | 2 GB                     |

## 1.7. Connectors

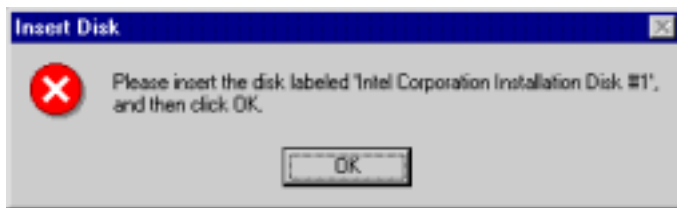
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|---------------------------|---|
| <b>JP2</b>                | Front Mic-IN, Line-IN Connector   |
| <b>JP3</b>                | <b>Front Speaker connector</b><br>1-2, 4-5 : Rear side Lineout<br>Open : Front side Lineout   |
| <b>J25</b><br>(Optional)  | <b>Extend Mouse / Keyboard</b> : This 6-pin header is used for connecting mouse or keyboard.  |
| <b>1394</b>               | <b>1394 connector</b> : Compliant with the latest IEEE standards.   |
| <b>AUX</b>                | <b>Auxiliary-IN connector</b> : This 4-pin header is an auxiliary input connector.  |
| <b>CD IN</b>              | <b>CD-IN connector</b> : This 4-pin header is used for connecting the CD ROM audio input to the sound card.   |
| <b>COM2</b>               | COM2 connector  |
| <b>CPU FAN</b>            | <b>CPU FAN</b> : This 3-pin header is used for connecting a CPU fan.  |
| <b>Game</b><br>(Optional) | <b>Game connector</b> : This connector is used for connecting a game cable.   |
| <b>IR</b>                 | <b>Infrared (IR) connector</b> : This 5-pin header is used to connect an IR port for using IR devices.  |
| <b>LAN CON</b>            | <b>LAN connector</b> : This LAN CON is for supporting extra LAN port.   |
| <b>PW</b>                 | <b>ATX power connector</b> : This 20-pin header is for connecting the power supply plug to ATX power connector to provide Pentium 4 standard power for devices. |
| <b>CN2</b>                | <b>ATX 12V power connector</b> : This 4-pin header is for connecting the power supply 12V plug into ATX power connector to provide 12V power for devices.       |

|                |   |
|----------------|---|
| <b>SYS FAN</b> | <b>SYS FAN</b> : The 3-pin header is for connecting the case fan that keeps the system cool.  |
| <b>SATA</b>    | <b>SATA connector</b> : S-ATA stands for serial ATA . Serial ATA is newest ATA transmission interface. Serial ATA is able to reach 150mb/sec.   |
| <b>SPDIF</b>   | <b>SPDIF connector</b> : SPDIF stands for Sony/Philips digital interface. It's a standard audio transfer file format. It allows the transfer of audio from one file to another without the conversion to and from an analog format. |
| <b>USB1~3</b>  | <b>Front USB connector</b> : This 10-pin header is used connecting front panel USB port 1,2, 3, 4, 5 or 6.  |

## 1.8. Note

### 865G/845G Family Video Driver

865G/845G video drivers in shipping CD have a path problem. When you finished the video driver installed, reboot the system and you would get the message as below:



You can select the path D:\Driver\Intel\845\VGA\win98-me\graphics\win9x or D:\Driver\Intel\865\VGA\win98-me\graphics\win9x to clean the message.

## 1.9. Remote Controller (Optional)

See as attached

## 2. Introduction

### 2.1. Overview

The high quality P8F161G-e family is a high-performance, enhanced function mainboard that supports mPGA478 Intel® Pentium® 4 processors that support a 800 MHz front side bus (FSB). This mainboard is designed around the latest and fastest Intel 865G chipset in a mini FATX form factor.

The mainboard delivers workstation-level performance with bus mastering EIDE (Enhanced IDE) controller, and concurrent PCI bus. The mainboard accommodates DDR SDRAM (Synchronous DRAM) memory and supports ATA 66/100.

In addition to superior hardware capabilities, provided with this platform are these features:

- ⑥ Supports Intel® Pentium® 4 processors in a 478-pin package
- Supports 400 / 533 / 800 MHz FSB
- Supports Dual channel DDR266 / 333 / 400 MHz operation.
- Bus mastering EIDE driver
- Supports two USB 2.0 ports, six USB2.0 ports by cable accommodating Plug and Play devices
- AC97 2.2 interface
- PCI 2.3 interface
- Integrated LAN controller
- AGP 4x / 8x
- 2 Serial ATA host controllers
- LAN wake up
- BIOS upgrade

## 2.2. Mainboard Specifications and Features

### 2.2.1. Hardware

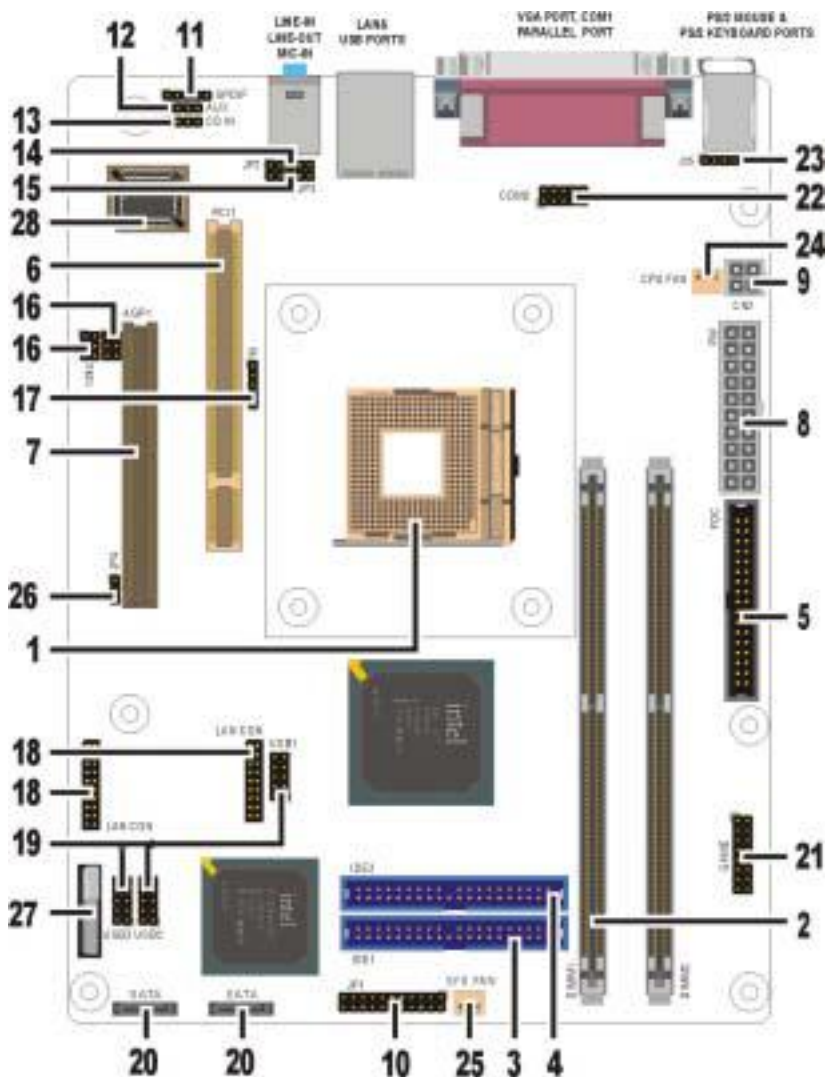
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|--------------------------|--|
| <b>CPU</b>               | <ul style="list-style-type: none"><li>-Intel® Pentium® 4 processors in a 478-pin package, compatible Auto-detection CPU</li><li>-Supports 400/533/800 MHz FSB</li><li>-Compatible "Hyper-Threading" technology CPU</li></ul>   |
| <b>VRM</b>               | <ul style="list-style-type: none"><li>-Onboard Voltage Regulator Module</li><li>-Provides 0.8375V to 1.6V operating voltage (VRM10.0)</li></ul>  |
| <b>Coprocessor Speed</b> | <ul style="list-style-type: none"><li>-CPU has built-in floating point unit</li><li>-System bus clock 100/133/200 MHz</li></ul>  |
| <b>Chipset</b>           | <ul style="list-style-type: none"><li>-Intel 865G(GMCH) and 82801 EB(ICH5) chipset</li><li>-Supports 400/533/800 MHz FSB</li><li>-Supports DDR266/333/400 MHz</li></ul>  |
| <b>DRAM</b>              | <ul style="list-style-type: none"><li>-Two 184-pin DDR sockets, up to 2GB</li><li>-Supports 128MB to 2GB DDR SDRAM memory types</li></ul>  |
| <b>EIDE Controller</b>   | <ul style="list-style-type: none"><li>-Supports four IDE devices in two channels</li><li>-Supports PIO mode 0 through mode 4 drives</li><li>-Supports Bus Mastering DMA mode 2 drives</li><li>-Supports two Bus Mastering Ultra DMA-ATA 33/66/100 drives</li><li>-Supports Iomega ZIP or LS-120 removable drives</li></ul> |
| <b>Sound Chip</b>        | <ul style="list-style-type: none"><li>-Chip integrated direct Sound AC97 2.2 interface.</li><li>-Realtek ALC650</li><li>-S/P DIF out</li></ul>   |

|                          |   |
|--------------------------|---|
| <b>On-Board LAN</b>      | <ul style="list-style-type: none"><li>-Intel 8100 LAN chipset, supports 10/100 Mb/s</li><li>-Fully compliant with IEEE 802.3.</li></ul>   |
| <b>Enhanced I/O</b>      | <ul style="list-style-type: none"><li>-One floppy disk controller</li><li>-One Standard/EPP/ECP parallel port connector</li><li>-Two 16550 compatible serial port connectors</li><li>-Two USB2.0 (Universal Serial Bus) ports</li><li>-One audio port connector, include line-out, line-in, mic-in, and midi/game(optional) ports</li></ul> |
| <b>I/O Options</b>       | <ul style="list-style-type: none"><li>-Three connectors for front panel USB2.0 ports 1/2, 3/4, 5/6</li><li>-One IrDA compatible infrared (IR) connector</li></ul>   |
| <b>Mouse</b>             | <ul style="list-style-type: none"><li>-PS/2 mouse connector</li></ul>   |
| <b>Keyboard</b>          | <ul style="list-style-type: none"><li>-PS/2 keyboard connector</li></ul>  |
| <b>Expansion Slots</b>   | <ul style="list-style-type: none"><li>-One 32-bit PCI slot</li><li>-One AGP Slot</li></ul>  |
| <b>Power Management</b>  | <ul style="list-style-type: none"><li>-Compliant with EPA, APM 1.2 and ACPI</li><li>-ATX soft-off power control</li><li>-Power on by keyboard and mouse</li><li>-Power on by external modem ring</li><li>-Power on by alarm</li><li>-Power on by LAN wake up</li><li>-Fan off in sleep mode</li></ul>                                       |
| <b>System Management</b> | <ul style="list-style-type: none"><li>-CPU and system voltage detection</li><li>-CPU and secondary fan RPM detection</li></ul>  |
| <b>Voltage Regulator</b> | <ul style="list-style-type: none"><li>-Switching regulator</li><li>-CPU voltage auto-detection</li></ul>  |
| <b>Form Factor</b>       | <ul style="list-style-type: none"><li>-Mini Flex ATX</li></ul>  |
| <b>Board Size</b>        | 180 × 245 mm  |

### **2.2.2. Software**

|                           |   |
|---------------------------|---|
| <b>BIOS</b>               | WHIZPRO AGP/PCI BIOS<br>2M-bit Flash BIOS with ESCD (Extended System Configuration Data) block<br>Supports APM, Plug and Play, Multi-Boot, DMI and EIDE devices<br>Supports ACPI<br>Supports high-capacity LS-120 and ZIP removable media drive |
| <b>Driver and Utility</b> | IDE Bus mastering Ultra DMA driver<br>AC97 codec audio driver<br>Flash utility for BIOS upgrade<br>System Environment Monitoring Utility  |
| <b>Operating System</b>   | Operates with MS_DOS, Windows 3.x/9x/ME/XP/2000/NT, OS/2, Novell NetWare/UnixWare, and SCO Unix   |

## 2.3. Mainboard Layout



**Note:** *Because of optional items and design changes, your mainboard may not be identical to the one shown in the illustration.*

***Key to Mainboard Components***

| <b>NO.</b> | <b>Name</b> | <b>Function</b>                        |
|------------|-------------|--|
| 1          | PGA478      | CPU socket                             |
| 2          | DIMM1~2     | DDR SDRAM Memory module slots          |
| 3          | IDE1        | IDE 1 connector                        |
| 4          | IDE2        | IDE 2 connector                        |
| 5          | FDC         | Floppy drive connector                 |
| 6          | PCI1        | 32-bit PCI Slot                        |
| 7          | AGP1        | Accelerated Graphics Slot              |
| 8          | PW          | ATX standard power connector           |
| 9          | CN2         | ATX 12V power connector                |
| 10         | JP1         | Front Panel connector                  |
| 11         | SPDIF       | S/P DIF connector                      |
| 12         | AUX         | Audio AUX-In header                    |
| 13         | CD IN       | Audio CD-In header                     |
| 14         | JP2         | Front Mic-IN, Line-IN Audio connector  |
| 15         | JP3         | Front speaker connector                |
| 16         | 1394        | 1394 connectors                        |
| 17         | IR          | IrDA compliant Infrared (IR) connector |
| 18         | LAN CON     | Extra LAN connector (Optional)         |
| 19         | USB1~3      | Front USB Connectors                   |
| 20         | SATA        | Serial ATA connectors                  |
| 21         | Game        | Game connector (Optional)              |
| 22         | COM2        | COM2 connector                         |
| 23         | JP25        | External Mouse / Keyboard (Optional)   |
| 24         | CPU FAN     | CPU FAN Connector                      |
| 25         | SYS FAN     | System FAN                             |
| 26         | JP4         | Clear CMOS                             |
| 27         | BAT         | RTC battery                            |
| 28         | U20         | Flash BIOS                             |

## 2.4. Microprocessor

The mainboard is designed to operate with the following processor:

| Processor Type  | Speed            | FSB               |
|-----------------|------------------|-------------------|
| Intel Pentium 4 | 1.8GHz~3.06GMHz+ | 400, 533, 800 MHz |

An onboard switching voltage regulator provides the required 0.875 to 1.6 volts for the processor. The processor sends five VID (Voltage identification) signals to the switching voltage regulator. The switching regulator generates the correct voltage for the processor. Motherboard doesn't support Willamete CPU. Supports Hyper-Threading technology CPU.

## 2.5. CPU Packaging

The mainboard's CPU socket is a surface mount, mPGA478B type ZIF (Zero Insertion Force) socket. The socket has 478 pins with 50 mil pin pitch.

---

***Note:** ZIF sockets are sockets designed for easy insertion of pin grid array (PGA) chips. The chip is dropped into the socket, and a lever is used to secure the chip in place.*

---

## 2.6. AC 97 Codec

The ALC650 is an 18-bit, full duplex AC'97 2.2 compatible stereo audio CODEC designed for PC multimedia system. The ALC650 AC'97 CODEC supports multiple CODEC extension with independent variable sampling rates and built-in 3D effects. The ALC650 CODEC provides two pairs of stereo outputs with independent volume controls, a mono output, and multiple stereo and mono inputs, along with flexible mixing, gain and mute functions to provide a complete integrated audio solution for PCs.

## 2.7. Chipset

The P8F161G-e supports the Intel 865G chipset is designed for use in a desktop system based on an Intel® Pentium® 4 processor in a 478-pin package. The Intel 865G chipset supports the Pentium 4 processor with 256-KB L2 cache and the Pentium 4 processor with 512-KB L2 cache on 0.13 micron process. The processor interface supports the Pentium 4 processor subset of the Extended Mode of the Scalable Bus Protocol. In an Intel 865G chipset-based platform, I/O functions are integrated onto the ICH5.

The GMCH provides the processor interface, system memory interface, hub interface, and additional interface in an Intel 865G chipset desktop platform. Each GMCH contains an integrated graphics controller (IGD). The Intel 865G chipset use the 82801EB ICH5 for the I/O Controller Hub.

- Front Side Bus (FSB) frequency
  - 865G supports 400/533/800 MHz.
  - Compatible with Hyper-Threading technology.
- AGP Interface
  - 865G supports AGP. The AGP interface signals are multiplexed with the Intel® DVO interface signals. The AGP interface supports AGP 4x/8x.
- Advanced packaging technology and industry leading electrical design innovations ensure long-term system reliability over wide operating conditions.
- Two UBS controllers provide high-performance peripherals with 480 Mbps of bandwidth, while enabling support for up to eight USB ports.
- Two Serial ATA host controllers

- Integrated LAN controller.
- Dual Ultra ATA/100 controllers support faster IDE transfers to storage devices.

This concludes Chapter 2. Chapter 3. cover hardware installation.

## 3. Hardware Installation

This chapter explains how to use your mainboard to build a powerful computer system. At a minimum, you will need the following components in order to build a fully functioning system.

- Computer case with P4 standard ATX power supply
- MPGA478B Processor
- One DDR SDRAM memory module
- One floppy disk drive
- One UDMA-66/100 IDE hard disk drive
- One CD-ROM drive
- One display monitor
- One mouse
- One PS/2 keyboard
- One LAN / Modem
- One set of loudspeakers

### 3.1. Unpacking

The P8F161G-e family mainboard package contains the following items:

- One mainboard
- One IDE 66/100 40-pin ribbon cable
- One floppy 34-pin ribbon cable
- Driver and utility CD
- User's manual
- Constitute sketch
- I/O Panel

After removing the mainboard from its anti-static bag, place it on a grounded or antistatic surface (component side up). Inspect the mainboard and contact your vendor immediately if it is damaged.

## **3.2. Installation**

The P8F161G-e family is designed to fit into a Mini Flex ATX form factor chassis. The pattern of the mounting holes and the position of the back panel connectors meet the Mini Flex ATX system board specification. The chassis comes with various mounting fasteners, which are made of metal or plastic. It is highly recommended to use as many metal fasteners as possible to mount the mainboard in the chassis for better grounding.

To install the mainboard you need to install the CPU and DDR memory modules, attach the connectors, and set the correct CPU speed in the CMOS setup.

## **3.3. Safety Measures**

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous.

Follow the simple guidelines below to avoid damaging you computer:

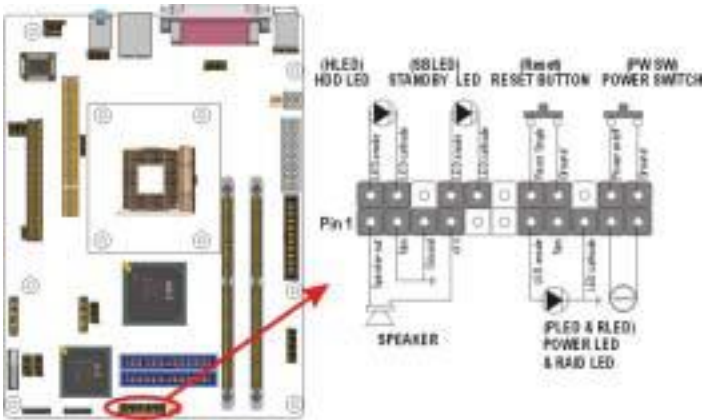
- Always disconnect the mainboard from the ATX power supply, and disconnect the computer from the power outlet whenever you are working inside the computer case.
- If possible, wear a grounded wrist strap when you are installing the mainboard or working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the computer case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress the circuit board.
- Leave each component inside the static-proof packaging that it ships with until you are ready to use the component for the installation.



### 3.5. Attaching Connectors

#### 3.5.1. Front Panel Connectors (JP1)

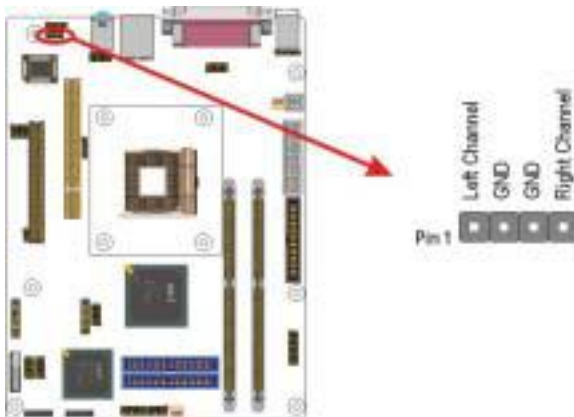
There are seven connectors on the mainboard for speaker, switches, and indicator lights on the system's front panel.



|                          |   |
|--------------------------|---|
| <b>PW SW</b>             | This 2-pin connector connects to the case-mounted Power button.   |
| <b>RESET</b>             | This 2-pin connector connects to the case-mounted reset switch and is used to reboot the system.  |
| <b>SBLED</b>             | This 2-pin connector connects to the case-mounted Standby LED to indicate a standby status. The LED remains Lit even when the system is off to indicate that AC power is available. When the system enters standby mode, the LED starts blinking. |
| <b>HLED</b>              | This 2-pin connector connects to the case-mounted HDD LED to indicate hard disk activity.   |
| <b>PWRLED &amp; RLED</b> | This 5-pin connector connects to the case-mounted and the power LED. The RLED switch is used to indicate Raid activity.   |
| <b>SPEAKER</b>           | This 4-pin connector connects to the case-mounted speaker.  |

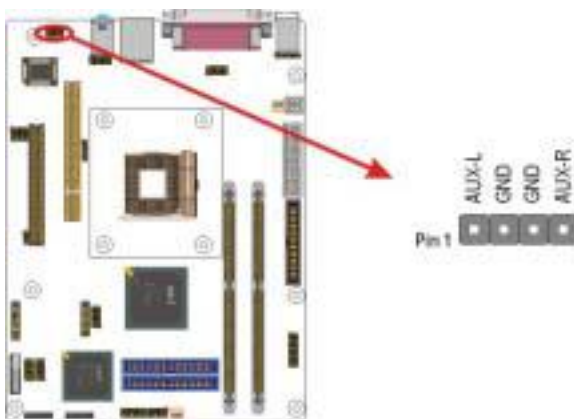
### 3.5.2. Audio CD-In Connector (CD IN)

This connector enables you to connect a CD-ROM to the mainboard and receive stereo audio input.



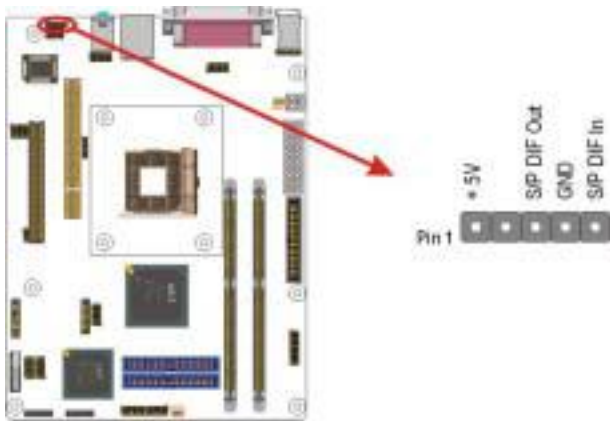
### 3.5.3. Audio AUX-IN Connector (AUX)

This connector enables you to connect a stereo audio input from CD-ROM, TV-tuner, or MPEG card.



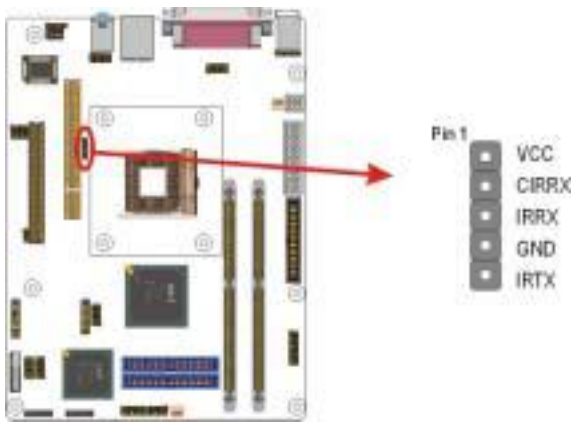
### 3.5.4. S/P DIF connector (SPDIF)

This connector S/P DIF device to the black connector to your computer. S/P DIF (Sony / Philips Digital Interface) is a standard audio transfer file format..



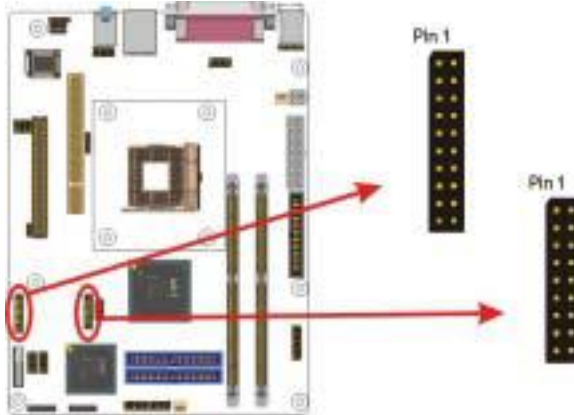
### 3.5.5. Infrared (IR) Connector (IR)

This 5-pinheader connects to an optional wireless transmitting and receiving infrared module via a cable and a bracket. Configure BIOS to enable the IrDA port if you attach an infrared module to this connector. Refer to Integrated Peripherals in Chapter 4 for details.



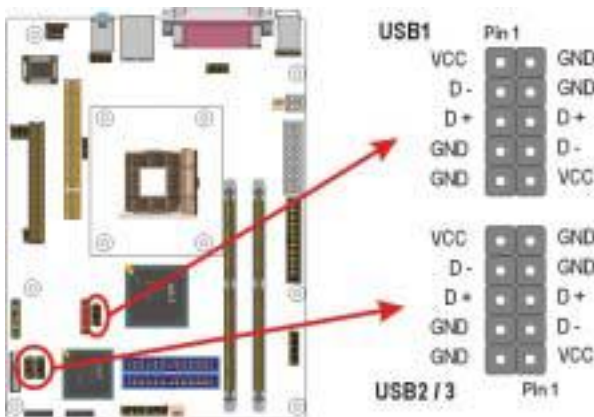
### 3.5.6. LAN connectors (Optional)

This two connectors are used for extra LAN connecting.



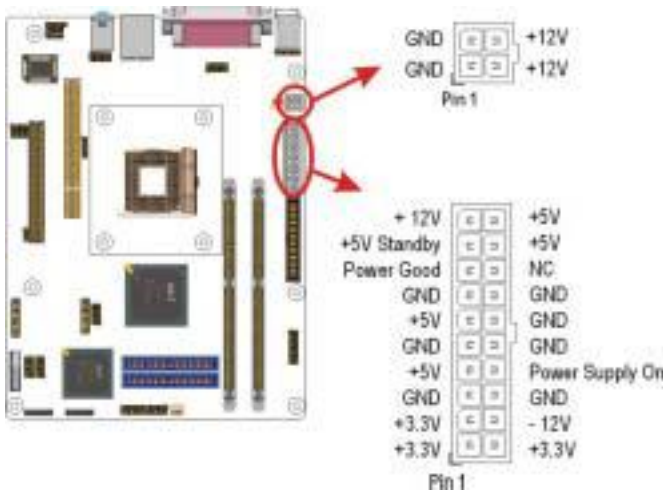
### 3.5.7. Extend USB Header (USB1~3)

The mainboard provides one onboard 10-pin of three USB headers. The headers on the same signal with USB port on the back panel.



### 3.5.8. Power Supply Connector (PW / CON2)

The ATX power supply has a single lead connector with a clip on one side of the plastic housing. There is only one way to plug the lead into to ATX power connector. Press the lead connector down until the clip snaps into place and secures the lead onto the connector.



---

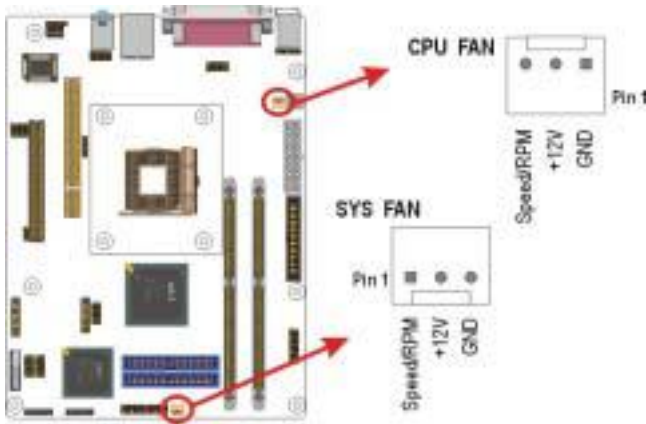
**Warning:** *Incorrect installation of the power supply could result in serious damage to the mainboard and connected peripherals. Make sure the power supply is unplugged from the AC outlet before connecting the leads from the power supply.*

---

### 3.5.9. CPU/System Fan Power Supplies

#### (CPU FAN / SYS FAN)

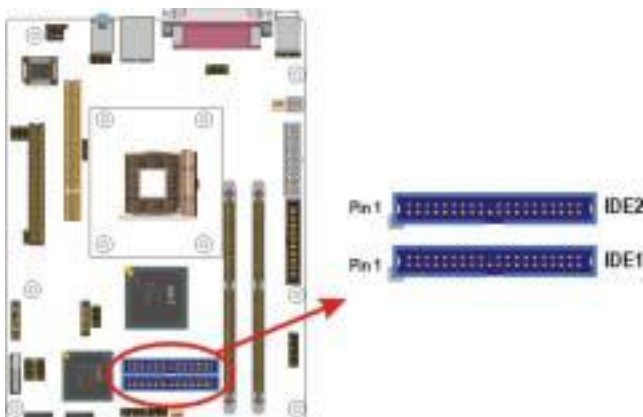
There are three fan connectors on the mainboard for the cooling fans. The connectors support fans of 12VDC/500mAMP (six watt) or less. When the system goes into sleep state, fans should be shut down to eliminate audible noise and reduce power consumption. You can monitor the fan speed by way of the VT82801EB chip (providing the fan comes with a tachometer output).



### 3.5.10. IDE Connectors

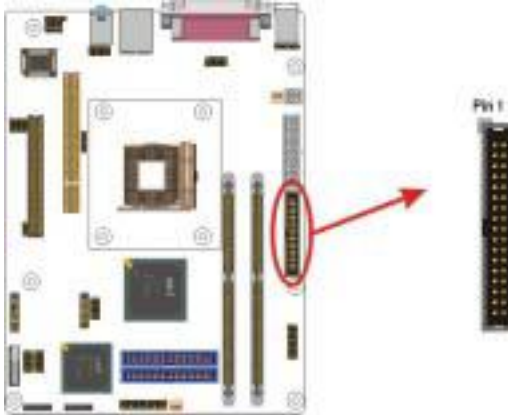
An IDE drive ribbon cable has two connectors to support two IDE drives. If a ribbon cable connects to two IDE drives at the same time, one of them has to be configured as Master and the other has to be configured as Slave by setting the drive select jumpers on the drive.

Consult the documentation that came with your IDE drive for details on jumper locations and settings. You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds to pin 1 of the I/O port connector.



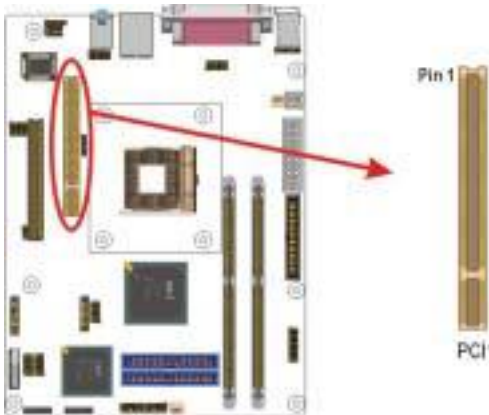
### 3.5.11. Floppy Drive Header (FDC)

A floppy disk drive ribbon cable has two connectors to support two floppy disk drives. The connector with twisted wires always connects to drive A; the connector with untwisted wires connects to drive B. You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds with pin 1 of the I/O port connector.



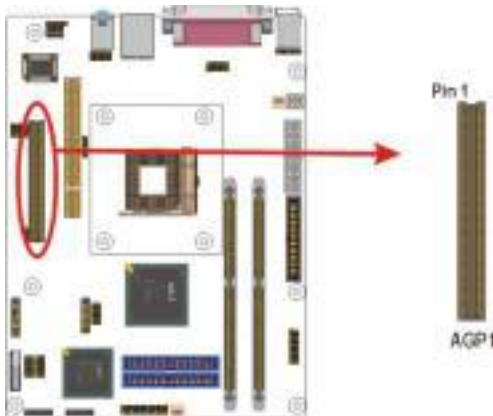
### 3.5.12. PCI Connector (PCI1)

PCI connector is one of equipment interfaces that connect peripheral equipment and motherboard. Its transfer speed is faster than traditional ISA. PCI is the mainstream transfer interface for extra adapter.



### 3.5.13. AGP Connector (AGP1)

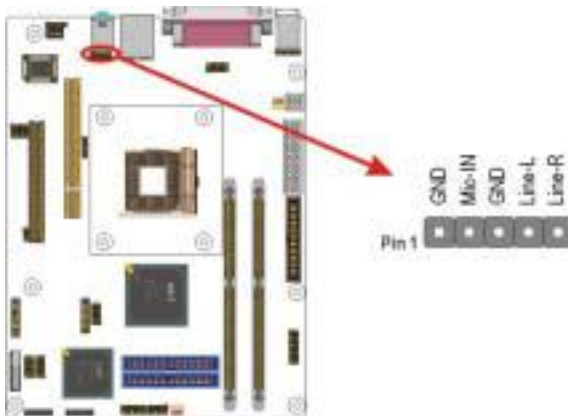
The mainboard provides AGP slot.



### 3.5.14. Front Mic-IN, Line-IN Connector (JP2)

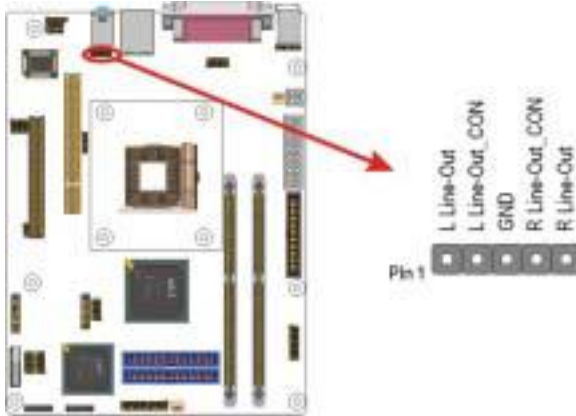
Connect a tape player or another audio source to the light blue Line-in connector to record audio on your computer or to play audio through your computer's sound chip and speaker.

Connect a microphone to the pink microphone connector to record audio to your computer.



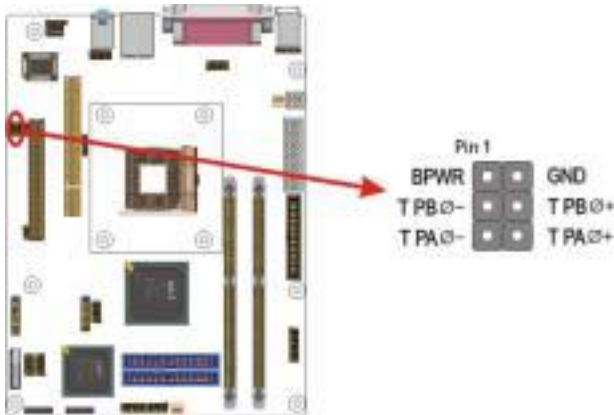
### 3.5.15. Front Speaker Connector (JP3)

Connect the cable attached to line-out connector on front panel. This header shared same signal with line-out back panel.



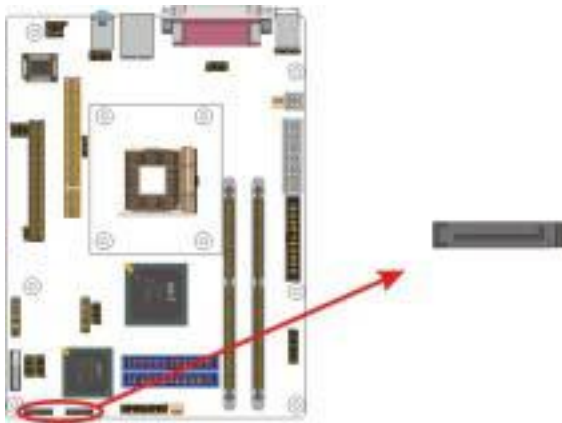
### 3.5.16. 1394 Connector (1394)

Connect the cable attached to 1394 connector on motherboard. This header signal as below :



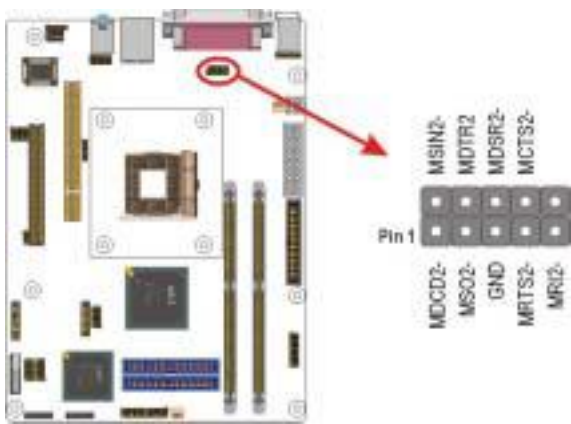
**3.5.17. Serial ATA Connector (SATA)**

Connect the cable attached to S\_ATA connector on motherboard.



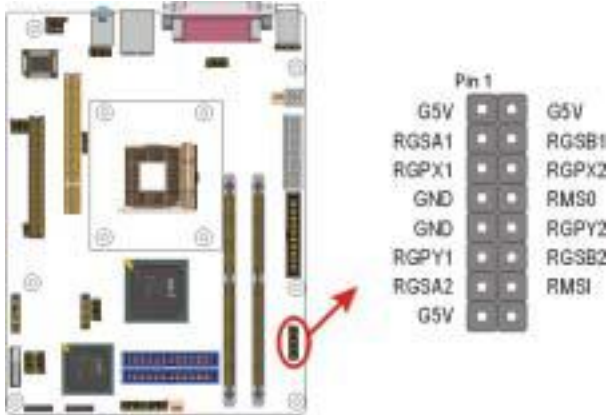
**3.5.18. COM2 Connector (COM2)**

Connect the cable attached to com2 connector for extension.



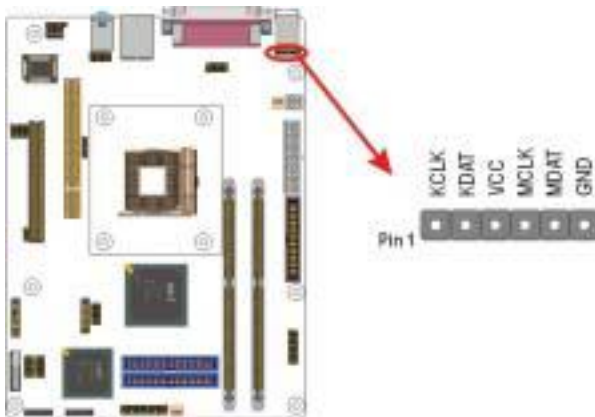
### 3.5.19. Game Connector (Game) (Optional)

Connector the cable attached to game connector on motherboard.



### 3.5.20. External Mouse / Keyboard (J25) (Optional)

The mainboard provides one onboard 6-pin for external mouse or keyboard. The headers have the same signal with ps/2 mouse or ps/2 keyboard.

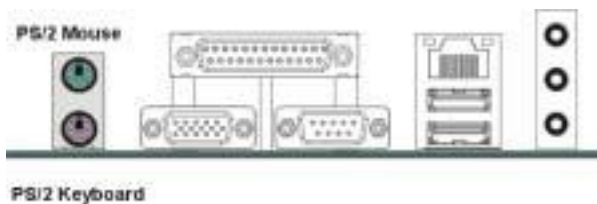


### 3.5.21. Back Panel Connectors

The back panel provides external access to PS/2 style keyboard and mouse connectors, two serial ports, one parallel port, dual USB ports, and audio Line-out, Line-in, Mic-in, game/midi ports which are integrated on the mainboard. The figures below show the location of the back panel I/O connectors.

#### PS/2 Mouse and PS/2 Key board Ports

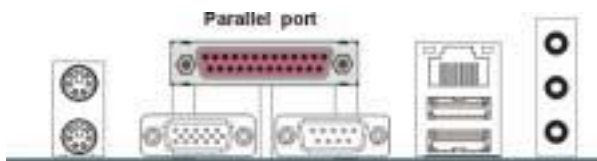
Connect a PS/2 mouse to the green 6-pin mini DIN connector. The system will automatically assign IRQ 12 to the PS/2 mouse if one is connected.



Connect a PS/2 keyboard to the purple 6-pin mini DIN connector. If you want to connect a standard AT size (large DIN) connector, you must use an adapter.

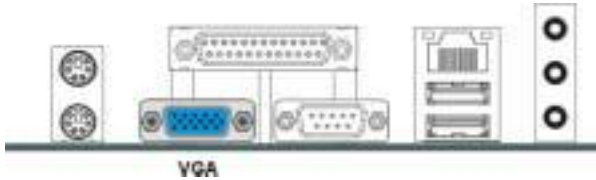
#### Parallel Port

Connect a printer or other parallel device to the burgundy-colored 25-pin parallel port. You can set the parallel port IRQ and parallel port mode in BIOS. Refer to Integrated Peripherals in Chapter 4 for details.



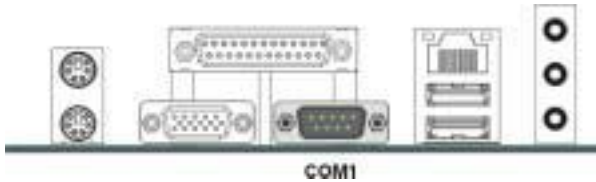
### VGA Port

Connect an external monitor to the blue 15-pin VGA port.



### Serial Port

Connect a serial device such as a mouse or modem to the 9-pin serial port. You can set the serial port IRQs in BIOS. Refer to integrated Peripherals in Chapter 4 for details.



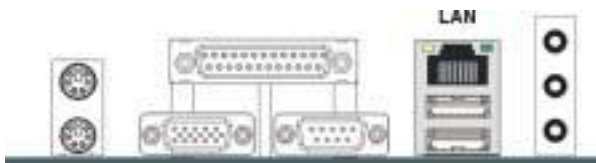
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**Note:** Serial printers must be connected to the serial port.

---

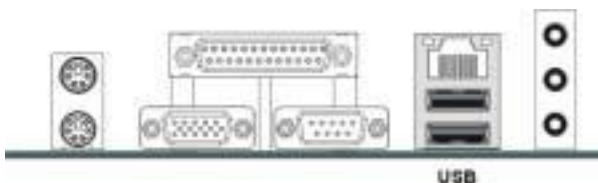
### LAN Port

Connect a device to the LAN port on the back panel.



## **Universal Serial Bus Ports**

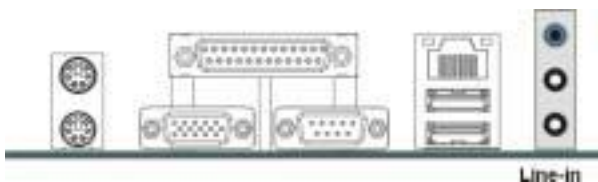
You can connect two USB devices or USB hubs to the USB ports.



The USB ports provide a hardware interface for low-speed peripherals such as the keyboard, mouse, joystick, scanner, printer and telephony devices, and also support MPEG-1 and MPEG-2 digital video. The USB ports have a maximum bandwidth of 480 Mbits/sec (equivalent to 60 Mbytes/sec), and up to 127 devices can be attached. Fast devices can use the full bandwidth, while lower-speed ones can transfer data using a 60 Mbytes/sec sub-channel.

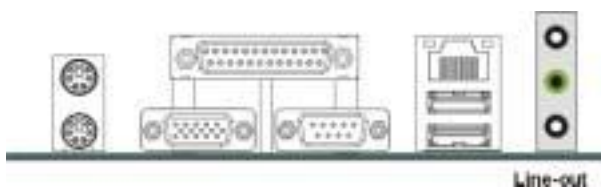
## **Audio Line-In Port**

You can connect a tape player or another audio source to the light blue Line-in connector to record audio on your computer or to play audio through your computer's sound chip and speakers.



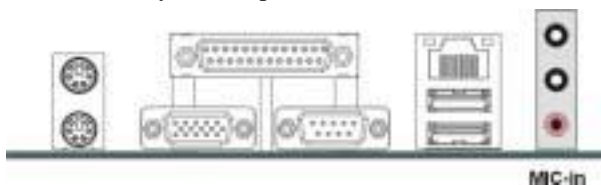
### **Audio Line-Out Port**

You can connect various audio devices to this audio jacks. Connect headphones or powered speakers to the lime-colored lineout connector.



### **Audio Mic-In Port**

You can connect a microphone to the pink microphone connector to record audio to your computer.



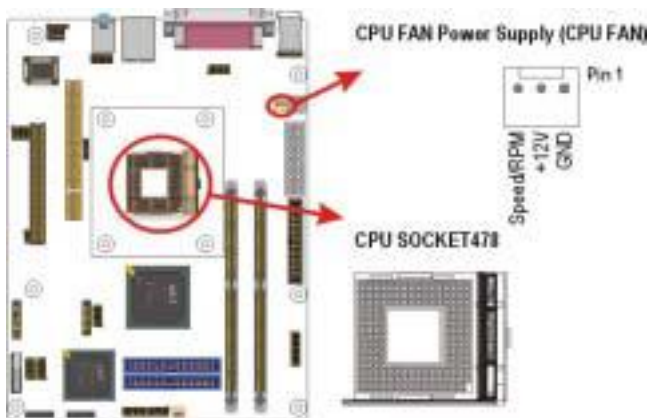
## 3.6. Installing the CPU

### 3.6.1. Before You Begin

1. Be sure that your processor kit includes the following items:
  - One processor with the fan or heat sink attached
  - One power cable (for CPU with cooling fan attached)
2. Place the mainboard on a workbench (not in a chassis). Be sure that the mainboard is empty (that is, no DIMMs, cables, or cards are installed) and that the holes for the fan or heat sink support pegs are empty.

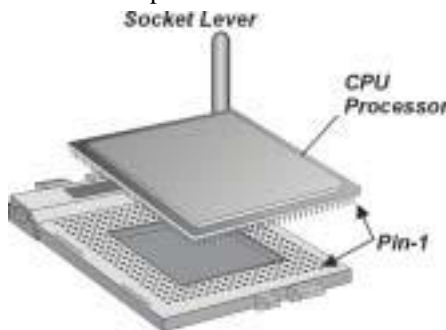
### 3.6.2. Installation Procedure

1. On the motherboard, identify the CPU Socket 478 and the cooling fan power supply connector CPU FAN.



2. Push the CPU socket level slightly to the side and then raise it as far as it can go.

3. Identify the pin-1 corner of the mPGA478. The pin-1 corner is on the same side as the locking lever, as shown in the illustration below.
4. Identify the pin-1 corner of the processor (the pin-1 corner on the processor has a beveled edge).
5. Align the pin-1 corners and drop the processor into the mPGA478. The processor should drop into place without any force. If it doesn't seat properly, check that you have the pin-1 corner in the correct position.



6. Swing the locking lever down to lock the processor in place and latch the lever under the catch on the side of the socket.
7. Plug the cable from the heat sink/cooling fan assembly into the processor cooling fan power supply CPU FAN.
8. Configuration of the processor is carried out using the system setup utility as described in Chapter 4. Configure the processor the first time you turn on the assembled computer.

### **3.6.3. Removing the Processor**

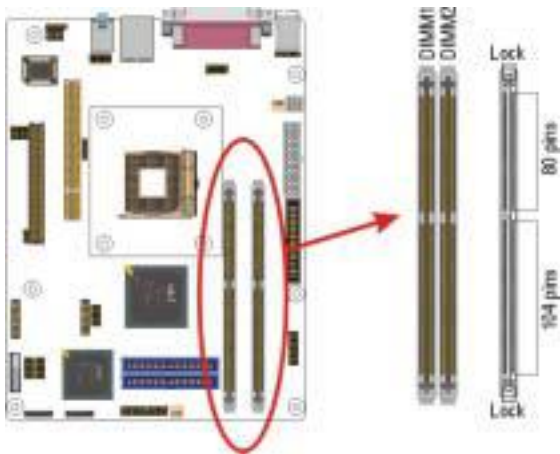
First, remove the mainboard from the chassis. To remove the processor from the mainboard, follow these steps:

1. Disconnect the fan power cable from the mainboard.
2. Push the CPU socket lever slightly to the side and then raise it as far as it can go. You will feel a resistance as the processor is freed from the socket.
3. Remove the processor.

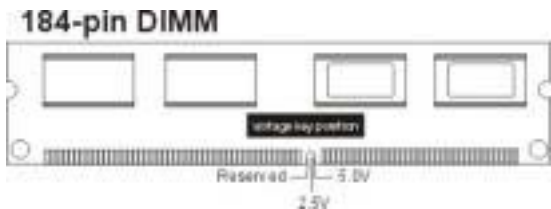
### 3.7. Installing System Memory

Maximum system memory supported by the mainboard is 2 GB.

The mainboard has two DIMM Sockets. Memory can be installed using 184-pin DDR SDRAM DIMM memory modules. These are no jumper settings required for the memory size or type, which is automatically detected by the BIOS.



You must use 2.5V DIMMs in the mainboard. To determine the DIMM type, check the notches on the DIMMs.

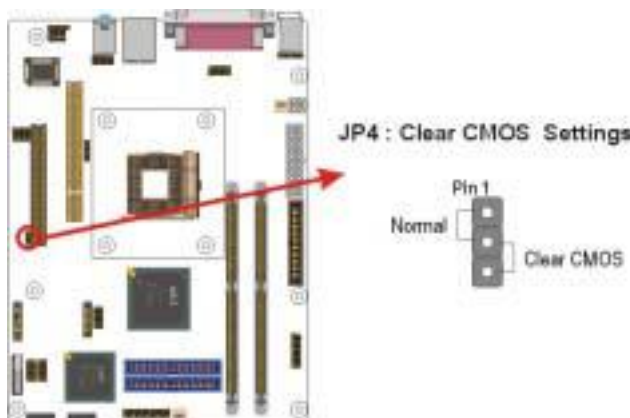


Install the 184-pin DDR SDRAM modules in any combination as follows:

|                            |                       |
|----------------------------|-----------------------|
| <b>Bank 0 (DIMM1)</b>      | 128MB/256MB/512MB/1GB |
| <b>Bank 1 (DIMM2)</b>      | 128MB/256MB/512MB/1GB |
| <b>Total System Memory</b> | 128MB ~ 2GB           |

## 3.8. Setting Jumpers

Refer to the following illustration and instructions to set the jumpers on your mainboard.



### 3.8.1. Clear CMOS Jumper (JP4)

You may need to clear the CMOS if your system cannot boot up because you forgot your password, the CPU clock setup is incorrect, or the CMOS setting need to reset to default values after the system BIOS has been updated.

Refer to the following solutions to reset your CMOS setting:

#### *Solution A*

1. Power off the system and disconnect the power cable.
2. Place a shunt to short pin 2 and pin 3 of JP4 for five seconds.
3. Place the shunt back to pin 1 and pin 2 of JP4.
4. Power on the system.

***Solution B***

If the CPU clock setup is incorrect, you may not be able to boot up .  
In this case, follow these instructions:

1. Turn the system off, then on again. The CPU will automatically boot up using standard parameters.
2. As the system boots, enter BIOS and set up the CPU clock.

---

***Note:***    *If you are unable to enter BIOS setup, turn the system on and off a few times.*

---

## **3.9. Auto Power On**

After losing AC power, the system will not turn on automatically when the power comes back unless you set the options in BIOS.

This concludes Chapter 4 covers the BIOS setup program.

## 4. etBIOS Configuration

After the hardware configuration of the mainboard is finished, and the system hardware has been assembled, the system may be powered up. At this point, CMOS setup should be run to ensure that system information is correct.

The mainboard employs the latest Whizpro BIOS CMOS chip with e-BIOS. This CMOS chip contains the ROM Setup instructions for configuring the mainboard's BIOS. The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

Using easy-to-use pull down menus, you can configure such items as:

- ▶ Hard drives, diskette drives, and peripherals
- ▶ Video display type and display options
- ▶ Password protection from unauthorized use
- ▶ Power management features

The settings made in the Setup program intimately affect how the computer performs. It is important, therefore, first to try to understand all the Setup's options, and second, to make settings appropriate for the way you use the computer. This chapter provides clear explanations for all Setup options.

This program should be executed under the following conditions:

- ▶ When changing the system configuration
- ▶ When a configuration error is detected by the system and you are prompted to make changes to the Setup program
- ▶ When resetting the system clock
- ▶ When setting the CPU clock speed so that it automatically runs either fast or slow
- ▶ When redefining the communication ports to prevent any conflicts
- ▶ When making changes to the Power Management configuration
- ▶ When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

## **4.1. Entering Setup**

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

1. If the error occurs before the display device is initialized, a series of beeps will be transmitted.
2. If the error occurs after the display device is initialized, the screen will display the error message.

After the POST routines are completed, the following message appears:

“Press DEL to enter SETUP”

To access the Whizpro BIOS SETUP program, press the <DEL> key to display the “CMOS SETUP UTILITY” screen:  
These screens provide access to the utility’s various functions.  
Listed below are explanations of the keys displayed at the bottom of the screen:



| Key   | Function  |
|-------|---|
| ↑ ↓   | Selects the next or previous menu or item in the selected screen. |
| → ←   | Selects the next or previous options in the selected item.        |
| Enter | Select the menu or the option                                     |
| Esc   | Exits the current menu  |
| F9    | Load default CMOS settings  |
| F10   | Saves the current configuration and exits setup                   |

## 4.2. Setup Main Menu



|                                 |  |
|---------------------------------|--|
| <b>System Information</b>       | Use this menu to display the basic system information.   |
| <b>General Configuration</b>    | Use this menu to enable and change the basic system configurations.  |
| <b>Advanced Configuration</b>   | Use this menu to enable and make changes to the advance features.  |
| <b>etBIOS Configuration</b>     | Use this menu to enable/disable the first boot from etBIOS, and set the etBIOS functions..                     |
| <b>System Specific Setup</b>    | Use this menu to setup chipset specific (CPU clock multiplier, AGP aperture size, display & TV type) settings. |
| <b>Primary IDE Drives</b>       | Use this menu to set up Primary master and slave IDE drives.   |
| <b>Secondary IDE Drives</b>     | Use this menu to set up Secondary master and slave IDE drives.   |
| <b>Peripherals</b>              | Use this menu to enable/disable peripheral and change their settings.  |
| <b>Power Management</b>         | Use this menu to configure Power Management features.  |
| <b>PCI &amp; PnP</b>            | Use this menu to enable/disable PnP BIOS and reserve IRQs and memory space for ISA devices.                    |
| <b>Hardware Monitor</b>         | Show the information of system's voltages, fan speed, and temperature.   |
| <b>Restore Default Settings</b> | Use this menu to restore BIOS setting from the manufacturers or fail-safe settings.                            |
| <b>Exit</b>                     | Use this menu to exit the current menu or exit the SETUP program.  |

## 4.3. System Information

Selecting “**System Information**”.

Whizpro BIOS provide two system information screens. The first screen contains general system information and the second screen contains PCI device information. The information includes:



1. BIOS ID, BIOS revision, BIOS release date.
2. Processor (CPU) information: CPU type and speed.
3. Parallel and serial port I/O address.
4. IDE drive information: drive type, size, vendor, PIO and UDMA information.
5. Cache memory size
6. Total memory size
7. Memory size in each memory slot.
8. PCI devices information on the second screen.

You may use the information to verify if these components are installed and configured correctly.

## 4.4. General Configuration

Selecting “**General Configuration**” on the main program screen displays this menu:



**Date** : Month, Day, Year

**Time** : Hour, Minute, and Second. Use 24 Hour clock format (for PM numbers, add 12 to the hour, you would enter 4:30 p.m. As 16:30).

**1st / 2nd / 3rd / 4th Boot Device** : Use these four items to select the priority and order of the devices that your system searches for an operating system at start-up time. The default settings are:

- |          |                 |
|----------|-----------------|
| ● Floppy | ● SCSI / Add-on |
| ● HDD-0  | ● ZIP100        |
| ● CD-ROM | ● LS-120        |
| ● HDD-1  | ● LAN           |
| ● HDD-2  | ● USB Floppy    |
| ● HDD-3  | ● USB Disk      |

**Power Up NumLock :** The NumLock is on or off at power up. The default setting is “On”

**Power Up Floppy Seek :** If this item is enabled, it checks the geometry of the floppy disk drives at start-up time. You don’t need to enable this item unless you have an old diskette drive with 360K capacity. The default setting is “Enabled”.

**Select Primary VGA :** If there are more than two VGA devices in one system, this option allow you to select which VGA device to be the primary display. The default setting is “GFX/AGP”

**Boot Sector Protection :** Enable boot sector protection will disallow software (including operation system) to write to the boot sector and the partition table of the hard drive. The default setting is “Disabled”

**Password Required On: :** The default setting is “Disabled”. The settings are:

- Disable : Disable BIOS password function.
- Boot & Setup : Password required for both boot and CMOS set up.
- Setup only : Password only required in CMOS set up.

If set to “Boot & Setup” or “Setup only”, you ought to set the **User Password** and **Supervisor Password**. The default setting is “Disabled”.

- ▶ **User Password :** Password can be up to 8 characters. Valid password characters are: A – Z, a – z and 0 –9.
- ▶ **Supervisor Password:** If a supervisor password is entered, supervisor password is then required to enter BIOS SETUP. Otherwise, a valid user password is allowed to boot system boot and to enter BIOS SETUP.

Press <ESC> to go back to the main screen.

## 4.5. Advanced Configuration

Selecting “**Advanced Configuration**” on the main program screen displays this menu:



**IDE Devices Delay :** Enable/Disable IDE drive delay. The options for the IDE Drive Delay time are: 2 sec, 5 sec, 10 sec, 15 sec, 20 sec, 25 sec and 30 sec. For certain old IDE drives, delay time may be needed in order for BIOS to correctly detect the drive model. The default setting is “Disabled”.

**Multi-sector transfer :** The “Auto” option automatically sets the number of sectors per block transfer to the drive supported number. You can disable this feature by selecting “Disable” option. The default setting is “Auto”

**Hyper-Threading Technology :** Enable this item when O.S. is optimized for Hyper-Threading Technology(eg. WinXP).

**Memory Test :** When enabled, BIOS performs short version of memory test thus reduces the BIOS boot up time. The default setting is “Quick”.

**Halt on POST Error :** This setting determines which type of errors will cause the system to halt during boot up. The default setting is “Any Error”

**Video BIOS Cacheable :** When enabled, BIOS will setup the chipset to cache video RAM area (A000 and B000 segment). The default setting is “Disabled”.

**Typematic Rate Setting :** If set to “Enabled,” enables you to set the Typematic Rate and Typematic Delay. The default setting is “Disabled”.

- ▶ **Typematic Rate (Chars/Sec) :** This setting controls the speed at which the system registers repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is “30” Chars/Sec.
- ▶ **Typematic Delay (Msec) :** This setting controls the time between the display of the first and second characters. There are four delay choices: 250ms, 500ms, 750ms and 1000ms. The default setting is “250” ms.

**Quiet Boot :** The system displays error message during boot when you enable this item. The default setting is “Disabled”.

Press <ESC> to go back to the main screen.

## 4.6. etBIOS Configuration

Selecting “**etBIOS Configuration**” on the main program screen displays this menu:



**Boot From etBIOS :** Enable / Disable the first boot format BIOS. If you choose “Enabled”, please go checking chapter 5.

**Count Down to Boot OS :** System exit count down timer in seconds.

## 4.7. System Specific Setup

Selecting “System Specific Setup” on the main program screen displays this menu:



**Frame Buffer for IGD :** Allocate a frame buffer for the internal graphics device on core chipset. The default setting is “16MB”.

Press <ESC> to go back to the main screen.

## 4.8. Primary / Secondary IDE Drivers

Selecting “**Primary / Secondary IDE Drivers**” on the main program screen displays this menu:



User can manually or automatically set up different IDE hard drives in two separate IDE channels – primary and secondary IDE channels.

**Drive Type :** Before attempting to configure a hard disk drive, make sure you have the configuration information supplied by the manufacturer of the installed hard disk. Select [Auto] to let BIOS detect and configure the drives automatically. The settings are:

- **None :** No IDE drive is installed.
- **Manual :** User needs to know the hard drive CHS (Cylinder, Head, Sector) parameters for manually setup.
- **Auto :** BIOS detects whether the hard drive is installed or find all CHS parameters automatically. Select [Auto] to automatically detect an IDE hard disk drive. If automatic detection is successful, the correct values will be filled in for the remaining fields on this manual. If automatic detection fails, your hard disk drive may be too old or too new. You can try updating your BIOS or enter the IDE hard disk drive parameters manually.

► **Drive Mode :**

**CHS :** If the hard drive is the CHS mode. (Cylinder, Head, Sector)

**Auto :** BIOS checks if the hard drive supports the LBA mode (Logical Block Addressing). If it is yes, LBA mode is enabled. Otherwise, CHS mode will be chosen. When Logical Block Addressing is enabled, 28-bit addressing of the hard drive is used. LBA mode is necessary for drives with greater than 504MB in storage capacity.

- **UDMA Mode (ULTRA DMA MODE) :** Ultra DMA capability allows improved transfer rate and data integrity for compatible IDE devices. Configuration options: “0”, “1”, “2”, “3”, “4”, “5”, “Disabled”, “Auto”.

***NOTE:** To make changes to following three fields (Cylinders, Head, Sectors), the Drive Type field must be set to [Manual] and the Drive Mode field must be set to [CHS].*

- **Cylinders :** This field configures the number of cylinders. Refer to your drive documentation to determine the correct value to enter into this field.
- **Head :** This field configures the number of read/write heads. Refer to your drive documentation to determine the correct value to enter into this field.
- **Sector :** This field configures the number of sectors per track. Refer to your drive documentation to determine the correct value to enter into this field.
- **Size (MB) :** This field shows the drive’s maximum CHS capacity calculated automatically by the BIOS from the drive information you entered. This is a display only field.

Press <ESC> to go back to the main screen.

## 4.9. Peripherals

Selecting “**Peripherals**” on the main program screen displays this menu:



**Floppy Controller :** These options enable or disable the on board floppy controller. The default setting is “Enabled.”

**Primary / Secondary IDE :** These options enable or disable the on board Primary / Secondary IDE. The default setting is “Enabled.”

**Serial Port 1 :** This field allows you to set “Disabled” serial port1 or set serial port1 configuration as COM1, COM2, COM3 or COM4.

**Parallel Port :** This field allows you to set “Disable” parallel port or set parallel port configuration in different I/O address and IRQ number.

|       | I/O 378 | I/O 278 | I/O 3BC |
|-------|---------|---------|---------|
| IRQ 7 | Option1 | Option2 | Option3 |
| IRQ 5 | Option4 | Option5 | Option6 |

**Mode :** Provide the mode options of “Printer”, “Standard+SPP”, “SPP+EPP1.9”, “SPP+EPP 1.7”, “ECP”, “ECP+EPP 1.9” or ECP+EPP1.7”. This field allows you to set the operation mode of the parallel port. If you set “ECP” allows the parallel port to operate in bi-directional DMA mode.

**ECP DMA :** This field allows you to configure the parallel port DMA channel for the selected ECP mode. This selection is available only if you select “ECP” in Parallel Port Mode above. Configuration options “1”, “3”.

**Onboard USB Controller :** Provide options “Disable”, “USB 1.1”, USB 1.1 & 2.0”.

**USB Legacy Support :** Enable / Disable USB legacy keyboard emulation support.

**USB Disk Emulation :** Enable / Disable USB Disk Emulation support.

**AC97 Audio :** Set these items to “Auto” when you are using the on-board AC’97 audio chip. If you are using an audio add-in card, you should disable this item.

**Intel SATA RAID :** Enable or disable Intel Serial ATA Raid technology.

**SATA/PATA Configuration :** The item configure SATA/PATA IDE mode.

- **Auto** : <Legacy Mode>  
PATA is configured first, then SATA is configured to empty Legacy IDE channel.
- **Enhanced** : PATA in legacy mode and SATA in native mode.
- **SATA only** : BIOS will disable P-ATA controller. (Devices installed on P-ATA channels will not be accessible.) S-ATA port 0 is configured to logical primary master. S-ATA port 1 is configured to logical secondary master.
- **PATA Primary** : BIOS will disable physical P-ATA secondary channel. (Devices installed on P-ATA secondary channel will not be accessible.) S-ATA port 0 is configured to logical secondary master. S-ATA port 1 is configuration to logical secondary slave.
- **SATA Primary** : Bios will disable physical P-ATA primary channel. (Devices installed on P-ATA primary channel will not be accessible.) S-ATA port 0 is configured to logical primary master. S-ATA port 1 is configured to logical primary slave.

Press <ESC> to go back to the main screen.

## 4.10. Power Management

Selecting “**Power Management**” on the main program screen displays this menu:



**Power Management** : If this menu item is set to “Disabled”, power management features will not function regardless of other field settings in this menu.

*Note : Operating system driver may be needed to perform power management functions. Refer to your operating system manual on how to install power management drivers.*

- **APM** : Set the power management interface to use the Advanced Power Management (APM) mode.
- **APM+ACPI** : Enable both APM and ACPI interfaces in the BIOS. The actual mode used is determined by the operating system. Refer to your operating system manual on selecting a power management mode.

*Note : The following selections are valid only in when APM mode is active.*

**Suspend Type** : Enables you to select the Suspend type. Options are “S1 (POS)” (default) and “S3(STR)”.

**S3 Video Init** : Perform VGA BIOS initialization during S3(STR) resume.

**Stand-by Timer** : Enable / Disable standby mode or set the idle time for system to switch into standby mode. This field allows you to set “off”, “1 min”, “2 min”, “4 min”, “8 min”, “16 min”.

**Suspend Timer** : Enable / Disable suspend mode or set the idle time for system to switch into suspend mode. This field allows you to set “off”, “1 min”, “2 min”, “4 min”, “8 min”, “16 min”.

**Hard Disk Power Down** : Enable / Disable the hard disk power down feature during the suspend mode. When enabled, BIOS shuts down all IDE hard drives when system enters suspend mode. This feature does not affect SCSI hard drives. This field allows you to set “Disabled”, “Enabled”.

**Video Off** : This field determines when to activate the video off feature for monitor power management. “Disabled” will not turn off the video. “Stand-by” will turn off the video in standby mode. “Suspend” will turn off the video only in suspend mode.

**Power Button** : When set to “Instant off”, the power button functions as a normal system power-off button when pressed for less than 4 seconds. This field allows you to set “Delay 4 Sec.”, “Instant off”.

**MODEM uses IRQ** : If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the mainboard Wake On Modem connector for this feature to work.

**Wake on PME :** When enabled, BIOS will enable PCI peripheral drive PME signal to awaken the system.

**Wake on RTC Alarm :** When set to “Enabled,” you may set the date (day of the month), hour, minute and second to turn on your system. When set to set “0” (zero) for the day of the month, the alarm will power on your system every day at the specified time. The default setting is “Disabled.”

► **Alarm Date<of Month> :**

► **Alarm Time <hh:mm:ss> :**

**PWROn After PWRFail :** After losing AC power, the system will not automatically when the power comes back unless you set the option in BIOS.

**Power-up controlled by :** This item by predefined keyboard strokes. The options are “Any Key”, “Password”, “Power Button”. When you select “Password”, you can enter up to 5 characters of password. Valid characters : a-z.

Press <ESC> to go back to the main screen.

## 4.11. PCI & PnP

Selecting “**PCI & PnP**” on the main program screen displays this menu:



**PnP OS Installed:** This field allows you to use a Plug-and-Play (PnP) operating system to configure the PCI bus slots instead of using the BIOS. Select “Yes” if the system operating system is Plug-and-Play aware (e.g., Windows 98).

**PCI VGA Palette Snoop:** This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

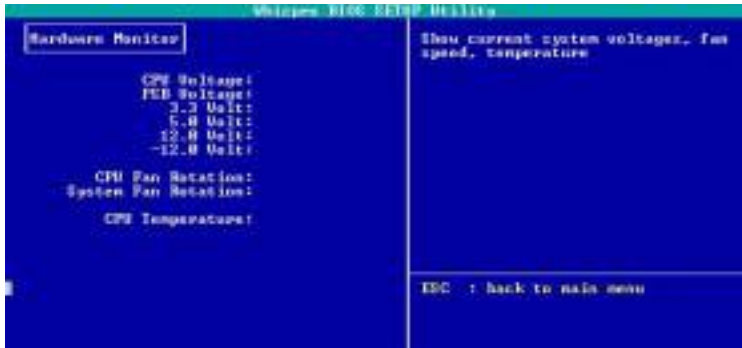
**Reserved ISA Memory Space :** Reserve memory space for non-PnP ISA cards.

**IRQ Reserved to ISA Device :** Reserve specific IRQ for non-PnP ISA cards.

Press <ESC> to go back to the main screen

## 4.12. Hardware Monitor

Selecting “**Hardware Monitor**” on the main program screen displays this menu:



Show the information of system's VCore, Voltages, VDD, Internal Core, CPU Fan Rotation, System Fan Rotation, and CPU Temperature.

Press <ESC> to go back to the main screen

## 4.13. Restore Manufacturer Settings

Selecting “**Restore Manufacturer Settings**” on the main program screen displays this menu:



**Restore Manufacture Settings:** This option allows you to load the default values for each of the parameters in the SETUP menus. When this option is selected, a confirmation is requested. Select [Yes] to load the manufacturer’s default values. You need to select [Exit] and [Save setting to CMOS] to make all the changed parameters saved to the non-volatile RAM.

**This option selects the manufacturer’s settings for the optimum-performance system operation.**

**Restore Fail-Safe Settings :** Load fail-safe setting when you can no longer boot the system to operating system after you change/add/remove hardware parts or peripherals. This option allows you to load the most reliable settings for each of the parameters in the SETUP menus. When this option is selected, a confirmation is requested. Select [Yes] to load fail-safe values. You need to select [Exit] and [Save setting to CMOS] to make all the changed parameters saved to the non-volatile RAM.

Press <ESC> to go back to the main screen.

## 4.14. Exit

Once you have made all your selections from the SETUP program, you should save your changes and exit SETUP. Select “**Exit**” from the main menu and the following dialog window appears: “ Save CMOS and “Exit”, “Discard Changes and Exit”, “Back to SETUP”.

- ▶ **Save CMOS and Exit** : Once you finish making your selections, select [Save CMOS and Exit] from dialog to ensure the values you selected has been saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the PC is turned off. Press [Save COMS and Exit] button to save change and exit SETUP program. All changed BIOS parameters will be saved to the non-volatile RAM then BIOS restart the system automatically.
- ▶ **Discard Changes and Exit** : This option should only be used if you do not want to save the changes you have made in the SETUP program. All changed BIOS parameters will not be saved to the non-volatile RAM and BIOS continual to boot.
- ▶ **Back to SETUP** : Backward to the SETUP menu for user to modify BIOS SETUP.

## 5. etDVD Guide

### 5.1. Starting etDVD

During boot-up, hit the **DEL** key to enter the BIOS setup menu. Once in the setup menu, select the etBIOS Configuration sub-menu. Set **[Boot from etBIOS]** to **[Enabled]**. Now, etDVD will be launched every time the user turns on or reboots the PC. To bypass etDVD under this configuration, just hold down the **Scroll Lock** key during boot-up to load the next available boot device instead.

## 5.2. Main Screen

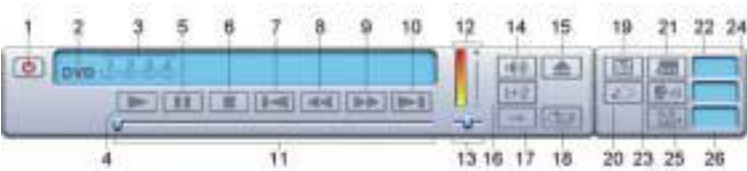
After etDVD is launched, the main screen will appear on the screen. On the right-hand side of the screen, there are five options available: CD/MP3, VCD, DVD, TV Tuner and Power. The functionality of each option is explained on the diagram below. Depending on the BIOS, the main screen may also contain a Continue to boot option that allows etDVD to exit and boot-up to the next boot device.



## 5.3. Using the etDVD Player

### 5.3.1. The etDVD Interface

A Once a player is selected, the player GUI will load. With the exception of the TV Tuner, each of the players shares the interface shown below. etDVD can also be controlled through a set of hotkeys. See chapter 6 for the hotkey reference tables.



|    |                        |    |                             |
|----|------------------------|----|-----------------------------|
| 1  | Exit                   | 14 | Mute Audio                  |
| 2  | Player Mode            | 15 | Eject                       |
| 3  | Drive ID               | 16 | Audio Output Channel        |
| 4  | Play                   | 17 | Repeat Mode                 |
| 5  | Pause                  | 18 | Shuffle                     |
| 6  | Stop                   | 19 | Menu                        |
| 7  | Previous Track/Chapter | 20 | Resume                      |
| 8  | Backwards              | 21 | Change Subtitle Language    |
| 9  | Forwards               | 22 | Subtitle Language Indicator |
| 10 | Next Track/Chapter     | 23 | Change Audio Language       |
| 11 | Progress Indicator     | 24 | Audio Language Indicator    |
| 12 | Volume                 | 25 | Change Angle                |
| 13 | Audio Balance          | 26 | Angle Indicator             |

## 5.3.2. General Control

### 5.3.2.1. Play Mode

Click on the Player Mode Selector to cycle through the CD, VCD, and DVD player modes.



### 5.3.2.2. Drive Select

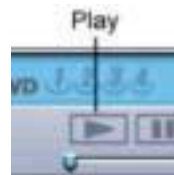
The optical IDE drives in your system are mapped starting from 1 and their sequence is the same as the IDE sequence. All optical IDE drives are counted consecutively. Hard disk drives are ignored and skipped over. Therefore, if etDVD detects two optical IDE drives, it will assign Drive ID 1 and 2 no matter how the cables are hooked up inside the system.



When etDVD detects any optical IDE drives, it will display a Drive ID icon to represent it. You can select the drive you want to use by clicking on the corresponding Drive ID icon.

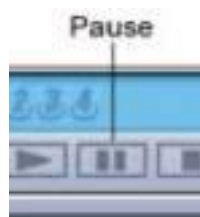
### 5.3.2.3. Play

Click on the Play button to start playing your media.



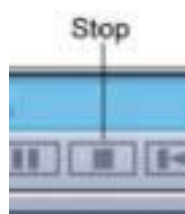
### **5.3.2.4. Pause**

Click on the Pause button to temporarily stop playing the media. Click on it again to resume playing the media. Or click on the Play button to resume.



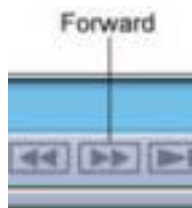
### **5.3.2.5. Stop**

Click on the Stop button to stop playing the media.



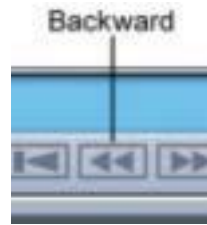
### **5.3.2.6. Forward**

When a CD is in the optical drive, clicking on the Forward button will make the player skip forward 5% of the total playtime. When a VCD or DVD is in the optical drive, clicking on the Forward button will make the player increase the scan speed. If the player is already scanning backward, then the clicking on the Forward button will make the player decrease the scan speed until it reaches the normal playing speed.



### 5.3.2.7. Backward

When a CD is in the optical drive, clicking on the Backward button will make the player skip backward 5% of the total playtime. When a VCD or DVD is in the optical drive, clicking on the Backward button will make the player increase the scan speed. If the player is already scanning forward, then the clicking on the Backward button will make the player decrease the scan speed until it reaches the normal playing speed



*Note: VCDs can scan at the following speeds: 2x, 4x, 8x, 16x, and 32x.*

*DVDs can scan at the following speeds: 2x, 4x, and 8x. To quickly resume normal speed, click on the Play button.*

### 5.3.2.8. Next Track/Chapter

Click on the Next Track/Chapter button to skip to the next track.




### 5.3.2.9. Previous Track/Chapter

Click on the Previous Track/Chapter button to skip back to the previous track.



### 5.3.2.10. Progress Indicator

The Progress Indicator shows the playback progress. During playback, simply drag the position marker  on the progress

indicator to play content at different progress points in the current media file.



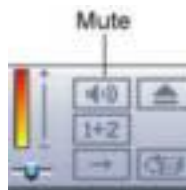
### 5.3.2.11. Volume

To adjust the volume, click directly on the color bar and slide it up and down.



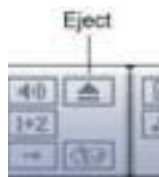
### 5.3.2.12. Mute

Click on the Mute button to turn off the sound. Clicking Mute a second time will turn on the sound again.



### 5.3.2.13. Eject

Click on the Eject button to open the tray. Clicking on the Eject button again will close the tray.



### 5.3.2.14. Exit

Click on the Exit button to return to the main screen.



### 5.3.2.15. Step Frame

etDVD also has a Step Frame ability. Step Frame is only available in VCD and DVD player modes. It allows you to view video content frame by frame.

1. During playback, click on the Pause button to pause playback.
2. Now click on the Forward button to go to the next frame.

***Note: Currently, Step Frame is only available in the forward direction.***

### 5.3.3. Exclusive CD/MP3 Controls

#### 5.3.3.1. Shuffle

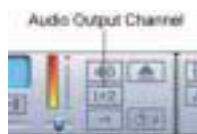
Click on the Shuffle button to make the CD/MP3 player randomly select tracks while playing.



### 5.3.4. Exclusive VCD Controls



#### 5.3.4.1. Audio Channel Select

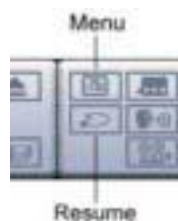
Click on the Audio Output Channel button to select channel 1, channel 2, or both channels.




### 5.3.5. Exclusive DVD Controls

#### 5.3.5.1. Using the Menu

By clicking on the MENU  button, you will jump back to movie menu screen. You can go back to where you left off by clicking on the RESUME  button. Please note that the above functions might be disabled on different DVD discs due to its contents.




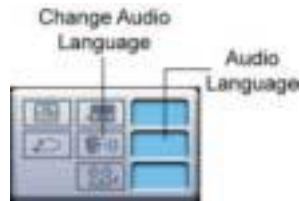
### 5.3.5.2. Displaying Subtitles

Subtitles are supplied for practically all DVD titles. The language of the subtitles depends on the DVD region of your title. The subtitles function available only during playback. To disable or select the next available subtitles, click the SUBTITLES  button accordingly.




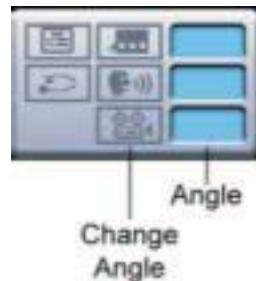
### 5.3.5.3. Switching Language (Audio Streams)

This feature is available only during playback. To select the next available stream, click the LANGUAGE  button accordingly.



### 5.3.5.4. Switching Language (Audio Streams)

This feature has not gained prominence as of yet among DVD authors, but it is sometimes used for music concert DVDs. To select the next available viewing angle, click the ANGLE  button during playback.



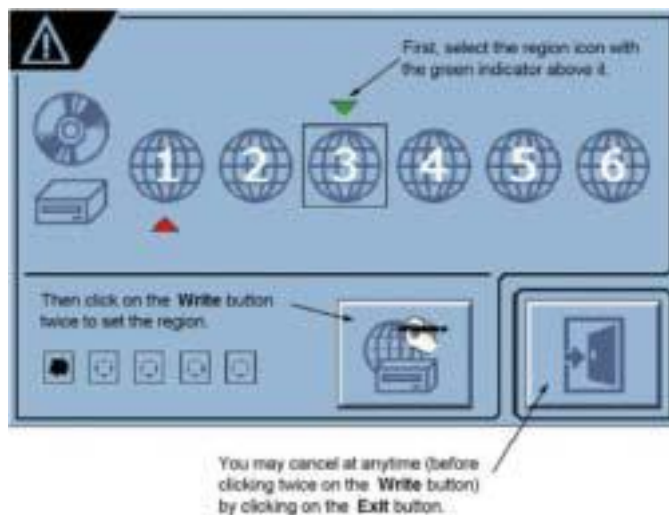
### 5.3.5.5. Region Setup

Most DVD discs and DVD drives contain a region code. A DVD disc can only be played when its region code matches the DVD drive's region code. If the etDVD player detects a mismatched region code between the disc and drive, the "Region Setup" pop-up window is presented. Using the "Region Setup" pop-up window the drive's region code can be changed to match the disc; below is a screenshot of the "Region Setup" window. Beware that the region code of a DVD drive can only be changed five times; the fifth change is permanent.

---

**Info:** Most DVD discs and drives contain a region code ranging from 1 to 6, which the motion picture studios use to control the theatrical and home release times and dates of movies in different countries. Also, studios sell distribution rights to different foreign distributors and would like to guarantee an exclusive market. Therefore, studios require that the DVD standard include region codes that can be used to prevent playback of certain discs in certain geographical regions.

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## 5.4. TV Tuner (Optional)

etDVD also has TV Tuner functions. However, this set of functions is optional and may not have been included in your mainboard's BIOS. In order to use the TV Tuner functions, you will need a compatible TV Tuner Card (see section 5.4.1.4). You may also need to flash your BIOS with a version containing the functions.

When using the etDVD TV Tuner application a user may select the source of the audio input to the sound card by pressing the **OSD** key on the Remote Control (or **F2** on the keyboard) to advance to the AUDIO IN sub-menu. The user may toggle the audio input option of the TV Tuner Card from LINEIN to CD-IN to TV and back to LINE-IN. These options are discussed below.

The standard audio connection connects the Audio Out from the TV Tuner Card to the LINE-IN of the sound card. The LINE-IN on the EPIA-M's sound card is used for the Left/Right Surround Sound audio outputs for 5.1 surround sound, so it cannot also be used for the TV Tuner Card's audio input. The audio input source selection option provides the user a means of having 5.1 audio support on the EPIA-M while a TV Tuner Card is connected. (Option 2 should be selected for etDVD.)

Additionally, the keys used to change and adjust channels from the etDVD TV Tuner application are described in chapter 5.6.

## 5.4.1. Audio Input Options

### 5.4.1.1. Line-In

As described in the TV Tuner section, the standard audio connection connects the Audio Out from the TV Tuner Card to the LINE-IN of the sound card. After starting the TV Tuner Card application, press the **OSD** key on the Remote Control (or **F2** on the keyboard) to advance to the AUDIO IN sub-menu. Then adjust the setting to LINE-IN.

- |     |   |
|-----|---|
| Pro | Since this is the standard connection, all applications should support it.  |
| Con | Unable to support 5.1 audio on the EPIA-M because the LINE-IN on the sound card is also used for the Left/Right Surround Sound audio outputs. |

### 5.4.1.2. CD-In

The Audio Out from the TV Tuner Card is connected to the CD-IN connector on the EPIA-M motherboard, using the supplied cable. After starting the TV Tuner Card application, press the **OSD** key on the Remote Control (or **F2** on the keyboard) to advance to the AUDIO IN sub-menu. Then adjust the setting to CD-IN.

- |     |   |
|-----|---|
| Pro | Allows EPIA-M 5.1 audio output. (This is the best choice for etDVD.)  |
| Con | Con Since this is not the standard connection, some applications may not support it. Please check your applications to make sure they work correctly with this setting. |

### 5.4.1.3. TV

The Audio Out from the TV Tuner Card is passed through the PCI bus to the sound card. After starting the TV Tuner Card application, press the **OSD** key on the Remote Control (or **F2** on the keyboard) to advance to the AUDIO IN sub-menu. Then adjust the setting to TV.

|     |  |
|-----|--|
| Pro | No audio cable is required.  |
| Con | Due to Analog-to-Digital conversion limitations: Noise is added to the audio. The audio is mono. The full spectrum of voice is not supported and the audio sounds "cut off". |

### 5.4.1.4. Validated TV Tuner Cards

- AVerTV (Mono)
- AVerTV Stereo
- KWorld KW-TV878R(NTSC) TV Tuner Card w/MTS/FM/WHQL
- KWorld KW-TV878R(DK+I) TV Tuner Card w/NICAM/WHQL
- KWorld KW-TV878R(BG+DK) TV Tuner Card w/NICAM/WHQL
- World KW-TV878R(SECAM L/L) TV Tuner Card w/NICAM/WHQL

# 5.5. Function Reference

## 5.5.1. System Keys








The user can press any of the system keys at anytime while in etDVD to activate its functionality. The following table explains the keys and functionalities.











| SYSTEM KEYS               | DESCRIPTION             |
|---------------------------|-------------------------|
| Wake Up                   | Power on/off the system |
| Sleep, Power, Pause/Break | Power off the system    |

## 5.5.2. General



Once in the etDVD. main screen, users can select “Audio CD/MP3 Player” to play audio CD/MP3 discs, “Video CD Player” to play VCD discs, or “DVD Player” to play DVD discs. All three players contain a set of general functionalities that will be explained in the following table.







| BUTTON  |         | HOT KETS    | DESCRIPTION                        |
|---|---------|-------------|------------------------------------|
|  | Power   | Esc or Q    | Exit player                        |
|  | Drive 1 | 1           | Select drive 1 as the active drive |
|  | Drive 2 | 2           | Select drive 2 as the active drive |
|  | Drive 3 | 3           | Select drive 3 as the active drive |
|  | Drive 4 | 4           | Select drive 4 as the active drive |
|  | Play    | F2 or p     | Start playing disc                 |
|  | Pause   | F3 or Space | Pause playback                     |

| BUTTON  |          | HOT KETS         | DESCRIPTION   |
|---|----------|------------------|---|
|    | Stop     | F4 or s          | Stop playback   |
|    | Previous | F5 or v          | Jump to the previous track/chapter if available   |
|    | Backward | F6 or b          | Play backward if possible   |
|    | Forward  | F7 or f          | Play forward if possible  |
|    | Next     | F8 or n          | Jump to the next track/chapter if available   |
|    | Play bar |                  | Indicates the current playing position within the total play length. Slide the button to continue playback from a specified position. |
|    | Tray     | F12 or Backspace | Eject or load drive tray from active drive  |
|    | Mute     | F9 or m          | Mute audio volume   |
|   | Volume   | + or –<br>= or _ | Increase or decrease audio volume   |
|  | Balance  | < or ><br>, or . | Change audio balance to the left or right   |
|   | Panel    | \                | Show or hide panel  |






### 5.5.3. Audio CD/MP3

| BUTTON  |               | HOT KETS | DESCRIPTION   |
|---|---------------|----------|---|
|  | Shuffle       | F10 or u | Toggles shuffle on or off   |
|  | Repeat        | F11 or r | Set repeat mode to: No repeat, repeat current track, or repeat whole disc |
|   | Screen Saver  | z or Z   | Turn on the screen saver by turning off the monitor                       |
|   | Visualization | i        | Toggles visualization on or off   |







### 5.5.4. VCD

| BUTTON  |               | HOT KETS | DESCRIPTION   |
|---|---------------|----------|---|
|    | Fast Backward | B        | Press and hold down the button (or use the hot key) to skip the movie backwards |
|    | Fast Forward  | F        | Press and hold down the button (or use the hot key) to skip the movie forwards  |
|   | Channel       | F10 or l | Set audio output channel to 1, 2 or 1 and 2                                     |
|  | Repeat        | F11 or r | Set repeat mode to: No repeat, repeat current track, or repeat whole disc       |
|   | Zoom          | z or Z   | Cycle through available resolutions   |











### 5.5.5. DVD

| BUTTON  |          | HOT KETS | DESCRIPTION  |
|---|----------|----------|--|
|  | Menu     | F10 or [ | Jump to the menu screen if available   |
|  | Resume   | F11 or ] | Resume movie playback from a previous point in the movie, before “Menu” was selected |
|  | Subtitle | u        | Change to the next available screen subtitle   |
|  | Language | l        | Change to the next available audio language whole disc                               |
|  | Angle    | a        | Change to the next available viewing angle   |
|   | Zoom     | z or Z   | Cycle through available resolutions  |

### 5.5.6. Region Setup

| BUTTON  |              | HOT KETS | DESCRIPTION   |
|---|--------------|----------|---|
|    | Disc Region  | 1 to 6   | Green led indicates current disc regions that can be selected                       |
|  | Drive Region | F11 or ] | Red led indicates current drive's region ID   |
|  |              |          | Indicates number of times drive can still set to a new region ID                    |
|  |              |          | Indicates number of times drive has already set its region ID                       |
|  | Write        | F2 or p  | Presses to activate write mode, press again to actually set new region in the drive |
|  | Quit         | Esc or Q | Abort and close region setup window Abort and close region setup window             |

### 5.5.7. TV Tuner

| REMOTE  |                     | HOT KETS    | DESCRIPTION  |
|---|---------------------|-------------|--|
|    | Channel+            | Tab         | Next Channel   |
|    | Channel-            | Shift + Tab | Previous Channel   |
|    | OSD                 | F10         | Select Menu Item for Adjustment :<br>Brightness / Contrast / Color Hue /<br>Color U / Color V / MTS /<br>AUDIO-IN / Channels |
|    | Search              | F3 or Space | Auto-search for channels   |
|    | Del CH              | F5 or v     | Tune reception frequency in tiny<br>decrements or Deletes current<br>channel from favorite channels list<br>*                |
|    | Adjust-             | F6 or b     | Adjusts menu items in the reverse<br>direction   |
|    | Adjust+             | F7 or f     | Adjusts menu items in the forward<br>direction   |
|    | Add CH              | F8 or n     | Tune reception frequency in tiny<br>increments or Adds current<br>channel to favorite channels list *                        |
|   | Subtitle            | U           | Toggles closed-caption   |
|   | Language            | L           | MTS : Stereo/SAP/Main  |
|   | Recall              | (period)    | Switch between two most recently<br>viewed channels  |
|  | F12 or<br>Backspace | 1 to 6      | Select frequency group<br>(TV/Cable, NTSC/PAL,<br>US/Japan, etc.)  |
|  | Sleep               | F4 or s     | Set the sleep timer  |

| BUTTON |              | HOT KETS | DESCRIPTION  |
|--------|--------------|----------|--|
|        | Enter        | Enter    | Enter Select Channel Number entered from the Numeric Keypad. Otherwise Advance to Next Channel       |
|        | Display      | /        | Display channel ID   |
|        | Esc          | Esc      | Exit TV tuner  |
|        | Num keys 0-9 | Num keys | Used to enter channel number. The user can either wait 1 second or press Enter to select the channel |
|        | +            | +        | Increase audio volume  |
|        | -            | -        | Decrease audio volume  |
|        | Mute         | F9 or m  | Mute audio volume  |
|        | Menu         | F10 or [ | Displays the menus in the forward direction  |
|        | Resume       | F11 or ] | Displays the menus in the reverse direction  |
|        | Zoom         | Z        | Change display resolutions   |

\* “Edit Channels by Remote” must be enabled in the OSD (On Screen Display)

## **5.6. Specification**

### **5.6.1. Video**

- Supports DVD (MPEG-2)
- Supports VCD version 1.0 format (MPEG-1)

### **5.6.2. Audio**

- Supports A/52 audio decoding
- Supports MPEG-2 audio and LPCM (Linear Pulse Code Modulation) decoding

### **5.6.3. Navigational Support**

- Play bar slider control allows instantaneous access to any scene
- Fast forward speeds of 2X, 4X, 8X (16X and 32X for VCD)
- Fast backward speeds of 2X, 4X, 8X (16X and 32X for VCD)
- Frame by frame stepping in forward (and backward VCD) direction(s)

### **5.6.4. DVD Support**

- Supports up to 32 different subtitles
- Supports up to 8 different languages (audio tracks)
- Supports up to 9 viewing angles
- Supports both seamless and non-seamless camera angles
- Supports “Menu” and “Resume”

# 6. Driver and Utility

## 6.1 Flash Utility

The BIOS of the P8F161G-e mainboard can be upgraded by using a Flash utility. A new version of the BIOS can be downloaded from the factory's Website. The system BIOS is stored in a 2 M-bit Flash EEPROM that can be erased and reprogrammed by the Flash utility.

The Flash utility will not work with any memory manager software running in the system. In order to make sure no memory manager software is running, boot your system from a bootable floppy diskette which does not contain CONFIG.SYS and AUTOEXEC.BAT files. If you are using MS-DOS 6.x, you can press the <F5> function key when the "Starting MS-DOS." Message appears on the screen to by pass the CONFIG.SYS and AUTOEXEC.BAT.

## 6.2. CD Driver Overview

The mainboard has drivers and utilities designed for the Intel 865 family chipset. You can install AGP, IRQ, ACPI and IDE drivers together from the manufacturer support CD. The support CD has an easy to use menu that enables you to automatically install the drivers and software that you want.

The P8F161G-e CD include

1. Install Mainboard Software (Intel 865 family)
2. Install Mainboard Software (Intel 865G family Video)
3. Install Audio Device Software (ALC)
4. Install LAN Driver (RTL8100)
5. Read Manual (F161 Family)
6. Introduction Products Feature



Click the links to install the listed software, read the online manual, read a list of the mainboard's features, or browse to the Fretech homepage.

You can also browse the CD and install the software manually from Windows Explorer. We recommend that you install all of the supplied software and drivers item for maximum performance.

### **6.2.1. Intel chipset 865 family INF driver**

This folder has chipset 865 family INF drivers for Windows 98 / ME / NT / 2000 / XP.

The Installation Steps:

1. Insert the manufacturer CD-ROM into your CD-ROM drive.
2. Click Driver Install.
3. Select the folder Driver\Intel\Inf driver for Windows 98 / ME / NT / 2000 / XP to start the installation:
4. Follow the instructions on the screen to complete the installation. After setup is completed, you need to restart the computer.

### **6.2.2. Intel chipset 865 family Busmater IDE driver**

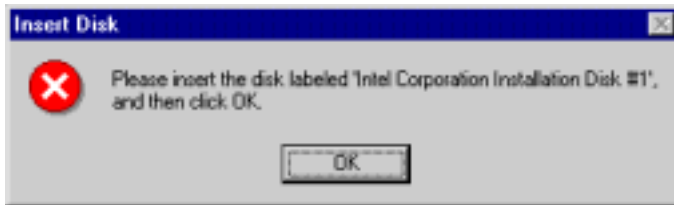
This folder has chipset Intel 865 family Busmater IDE drivers for Windows 98 / ME / NT / 2000 / XP.

The Installation Steps:

1. Insert the manufacturer CD-ROM into your PC CD-ROM drive.
2. Click Driver Install.
3. Select the folder Driver\Intel\IAA\Disk1 driver for Windows 98 / ME / NT / 2000 / XP to start the installation:
4. Follow the instructions on the screen to complete the installation. After setup is completed, you need to restart the computer.

### **6.2.3. 865G Family Video Driver**

Software and drivers are provided for the Intel 865G/845G controller that is integrated on the mainboard. The 865G/845G controller allows the system to get better display. When you finished the video driver installed, reboot the system and you would get the message as below :



You can select the path

D:\Driver\Intel\845\VGA\win98-me\graphics\win9x or

D:\Driver\Intel\865\VGA\win98-me\graphics\win9x to clean the message.

### **6.2.4. ALC650 Audio Driver**

Software and drivers are provided for the AC97 codec sound system that is integrated on this mainboard. The AC97 codec allows the system to generate optimal sound effects. Drivers are provided for Windows 98 / ME / NT / 2000 / XP.

The manual Installation Steps:

1. Insert the manufacturer CD-ROM into your PC CD-ROM drive.
2. Click Driver Install.
3. Select the folder Driver\Sound\ALC driver for Windows 98 / ME / NT / 2000 / XP to start the installation:
4. Follow the instructions on the screen to complete the installation. After setup is completed, you need to restart the computer.

### **6.2.5. LAN Driver**

Software and drivers are provided for the Realtek RTL8100 controller that is integrated on this mainboard. The Realtek RTL8100 controller allows the system to transmit effects. Drivers are provided for Windows Windows 98 / ME / NT / 2000 / XP.

The installation Steps:

1. Insert the manufacturer CD-ROM into your PC CD-ROM drive.
2. Click Driver Install.
3. Select the folder Driver\LAN\8100 driver for Windows 98 / ME / NT / 2000 / XP to start the installation:

## **6.3. Online Services**

Flexus Computer Technology, under the Freetech brand name, has consistently won recognition for excellence in the design and manufacturing of high quality mainboards!

Our products are globally recognized among the leading cost-performance mainboards in the industry today and we are a certified ISO-9002 manufacturer!

Our customers are our partners! Flexus practices partnership service “not customer service”! Our attention to partnership service is aggressive and proactive, by using our global partnership service system. We create value for our partners in the high-end market and we are always ready to see to our partners' requirements, because at Flexus, we believe our partners' success is our success!

If you need technical support, information on products, or updated versions of the BIOS, drivers and utilities access the Internet and point your browser to:

***[www.freetech.com](http://www.freetech.com)***