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## ITEM CHECKUP

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- Mainboard
- Support CD
- Bundled Bonus Pack CD
- Bundled Bonus Pack Manual
- Thermal Sensor Cable (Optional)
- ATA66/100/133 IDE Cable
- FDD Cable
- User's Manual
- Multi-lingual Quick Installation Guide
- RS232 Cable (optional)
- USB Cable (Optional)

# Chapter 1 Specification

## Introduction

This series of mainboards features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge VIA Apollo P4X400A (P4X400 CE Version) plus South Bridge VT8235, by which the whole system performance can be upgraded to 533 MHz system bus.

The Intel P4 processor is a rapid execution engine providing 4X100/4X133MHz quadpumped system bus to allow 3.2GB data transfer rates possible, while VIA Apollo P4X400A is an enhancement of P4X400 to support the \*DDR 400 DRAM which should have passed Soltek validation. In addition P4X400A plus VT8235 supports P4 CPUs to implement the 4X133 Front Side Bus, AGP 8X/4X bus, the LPC Super I/O and UATA 133/100/66 data transfer rate. This chapter is to introduce to users every advanced function of this high performance integration.

**Topics included in this chapter are:**

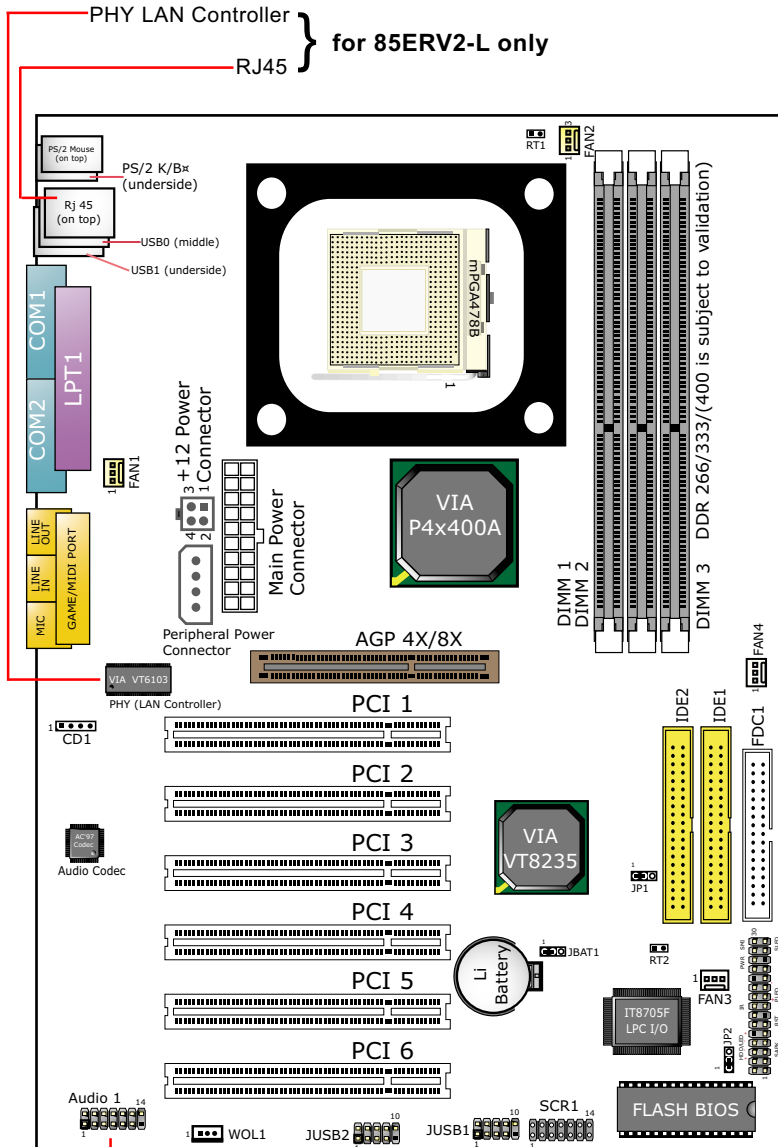
**1-1 Mainboard Components Locations**

**1-2 Mainboard Specifications**

**1-3 Mainboard Specification Table**

**1-4 Chipset Diagram**

# 1-1 85ERV2 / 85ERV2-L Components and Options



Optional 6-channel Audio-Out Connector

## **1-2 Mainboard Specifications**

### **1-2.1 CPU Socket**

CPU Socket 478B on board, supporting Intel® Pentium 4 processors (including Intel Hyper-threading CPUs) in 478-pin package for :

- 533/400MHz System Bus;
- Hyper-pipelined technology;
- Advanced dynamic execution;
- Advanced transfer cache;

### **1-2.2 System Chipsets**

- North Bridge VIA P4X400A (P4X400 CE Version) for supporting 4X133 4X100MHz system Bus, Hub interface, AGP4X/8X interface and DDR 333/266/200 DRAM memory interface, with an enhancement of support of \*DDR 400 DRAMs which should have passed the Soltek DDR 400 Memory Module Validation.
- South Bridge VIA VT8235 working with North Bridge supporting the double speed V-Link, LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, LAN interface, USB V2.0 interface, as well as AC'97 Audio 6-channel interface.

### **1-2.3 Memory**

3 DDR DIMM 184-pin slots on board for DDR \*400/333/266/200 DRAMs:

- Supporting unregistered, non-ECC DDR \*400/333/266/200 DRAM up to 3 GBs
- Supporting installation of mixed volumes yet same type of DDR DRAM modules

\*Soltek Computer Inc. typically runs a DDR 400 Memory Module Validation Program for Chipset VIA P4X400A. Detailed information is available in Soltek Web Site: [WWW.soltek.com.tw](http://WWW.soltek.com.tw)

### **1-2.4 AMI BIOS**

- Supporting Plug & Play V1.0
- Flash Memory for easy upgrade
- Supporting BIOS Writing Protection and Year 2000 compliant
- Supporting BIOS Setup (See Chapter 4 BIOS Setup)

### **1-2.5 Accelerated Graphics Port (AGP) Interface**

AGP Controller embedded on board, supporting:

- 1.5V(4X/8X) power mode only, 1 AGP Slot supported
- 4x AD and SBA signaling, AGP pipelined split-transection longburst transfers up to 2GB/sec.
- AGP 4X/8X only, AGP V3.0 compliant

### **1-2.6 Advanced System Power Management:**

- ACPI 1.0B compliant (Advanced Configuration and Power Interface)
- APM V1.2 compliant (Legacy Power Management)
- ACPI POS (Power On Suspend)
- PS/2 Keyboard & Mouse Power On
- Supporting Ring Power Up Control for Wake-on-Modem (external) and Wake-on-LAN (via Connector WOL1)
- Real Time Clock (RTC) with date alarm, month alarm, and century field

### **1-2.7 Multi-I/O Functions :**

- PCI EIDE Controller, supporting:
  - 2x Ultra ATA133 / 100 / 66 IDE connectors supporting up to 4 IDE devices
- Dedicated IR Functions:
  - Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR
- Multi-mode parallel data transfer:
  - Standard mode, high speed mode ECP and enhanced mode EPP
- Floppy Disk connector:
  - One FDD connector supporting 2 floppy drives with drive swap support
- Universal Serial Bus Transfer Mode:
  - USB V2.0 compliant, 480 Mb/s USB Bus, supporting Win 2000 and later operating system; USB drivers provided in Support CD for installation
  - 2 built-in USB connectors and 2 USB pin-headers which require 2 optional USB cables to provide 4 more optional USB ports
- PS/2 Keyboard and PS/2 Mouse
- UARTs (Universal Asynchronous Receiver / Transmitter):
  - Two complete serial ports (COM1 & COM2) on board

### **1-2.8 Expansion Slots**

- 6 PCI bus Master slots
- 1 AGP 4X/8X slot
- 3 DDR DIMM slots



### **1-2.9 AC'97 Audio Codec on board**

AC'97 Audio Codec 2.2 compliant on board

- Supporting up to 6 channels of PCM audio output
- 6 channel audio consists of Front Left, Front Right, Back Left, Back Right, Center and Woofer for complete surround sound effect
- AC'97 Audio Codec Driver enclosed in Support CD for user's installation.

### **1-2.10 LAN on board (85ERV2-L only)**

Fast Ethernet Controller integrated in VT8235 and PHY VIA VT6103:

- Supporting 10/100Mb Fast Ethernet Base T LAN
- Supporting Wake On LAN through on-board WOL1 connector
- LAN Driver enclosed in Support CD for user's installation.

### **1-2.11 Hardware Monitor on board**

- Hardware Monitor integrated in Super I/O IT8705F, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds.
- Utility Software SmartGuardian for displaying Monitoring status is enclosed in Support CD for user's installation.

### **1-2.12 6-channel Sound Output Support (optional)**

- This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, it will provide 3 additional audio-out ports for the 6-channel sound.

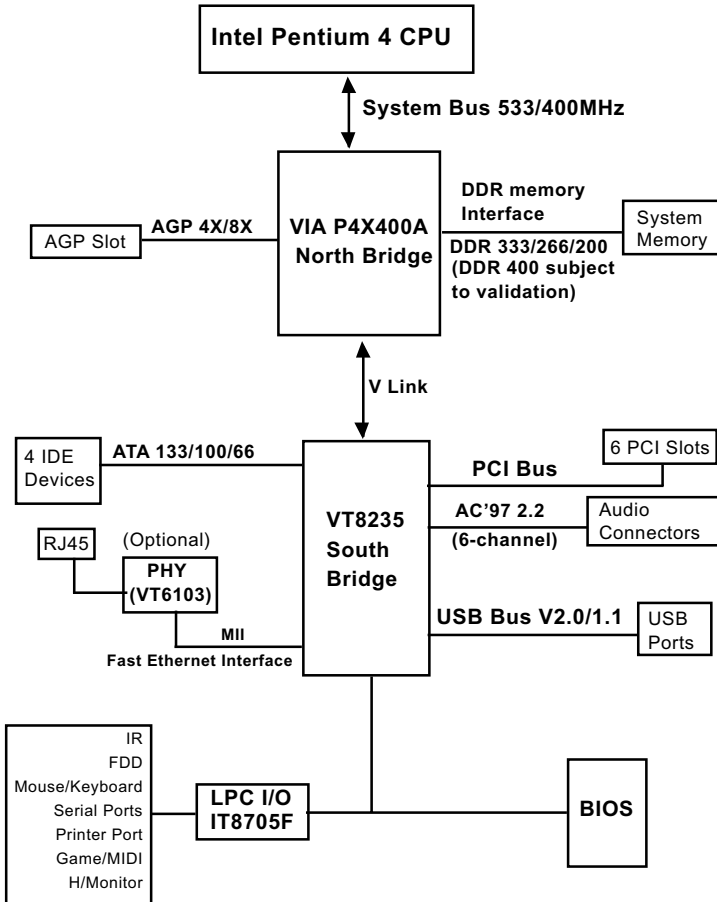
### **1-2.13 Form Factor**

- ATX form factor, ATX power supply, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector and one Peripheral Power Connector
- Mainboard size: 305mm x 220mm

### 1-3 Mainboard Specification Table

<b>SL-85ERV2/ 85ERV2-L Specifications and Features</b>	
CPU	Socket 478B for Intel P4 (HTincluded) CPUs
North Bridge	VIA P4X400A, supporting 533/400MHz FSB
South Bridge	VIA VT8235
BIOS	AMI BIOS
Memory	Supporting DDR 333/266/200 DRAM, up to 3GB (DDR 400 Memory Module subject to validation)
I/O Chip	IT8705F
AGP interface	1.5V AGP4X/8X mode only
Audio	AC'97 Audio V2.2 compliant, 6-channel interface
IDE Interface	2 UATA 66/100/133 IDE ports
Networking	VIA LAN Controller, 1xRj45 (85ERV2-L only)
PCI Slots	6 PCI Master slots on board
I/O Connectors	6xUSB ports (V2.0), 1xFDD port, 2xCOM ports, 1xLPT, 1xIrDA, 1xPS/2 K/B, 1xPS/2 Mouse,
VGA Display	VGA not integrated on board
Other Features	BIOS Writing Protection; Hardware Monitoring in IT8705F Keyboard/Mouse Power On; ATX 2.03 Power Supply; ATX form factor

### 1-4 Chipset System Block Diagram



Intel Pentium 4 + VIA P4X400A + VIA VT8235 Diagram

# Chapter 2 Hardware Setup

## To Get things ready for hardware setup !

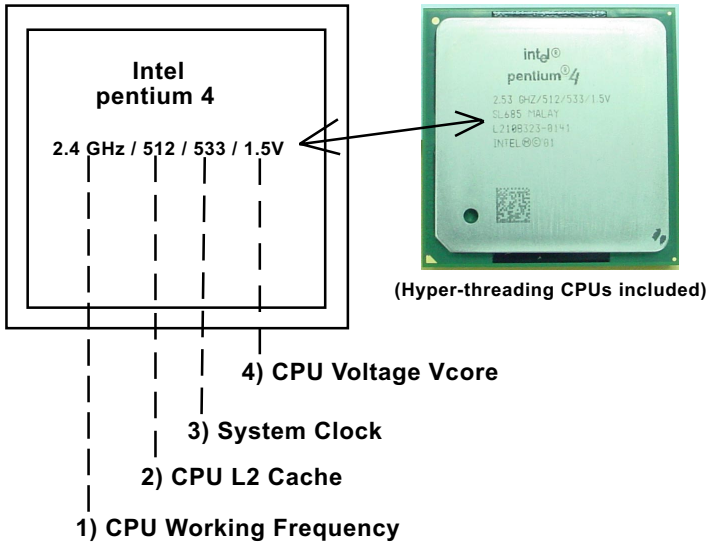
1. We recommend to install your CPU before any other components. For detailed installation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heatsink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heatsink for proper installation. Improper fan and installation will damage your CPU.
3. In case CPU Vcore, CPU clock or Frequency Ratio is adjustable on board, please follow the instructions described in the User Manual for proper setup. Incorrect setting will cause damage to your CPU.

## The following topics are included in this chapter:

- 2-1 Pentium 4 CPU and Installation**
- 2-2 Pentium 4 CPU Fan Installation**
- 2-3 Memory Installation with Warning LED**
- 2-4 AGP4X/8X Slot Installation**
- 2-5 IDE Connector Installation**
- 2-6 Floppy Drive Connector ( FDC ) Installation**
- 2-7 ATX 2.03 Power Supply Installation**
- 2-8 Jumper Settings**
- 2-9 Other Connectors Configuration**
- 2-10 IRQ Description**

## 2-1 Pentium 4 CPU and Installation

### 2-1.1 To Identify a Pentium 4 CPU



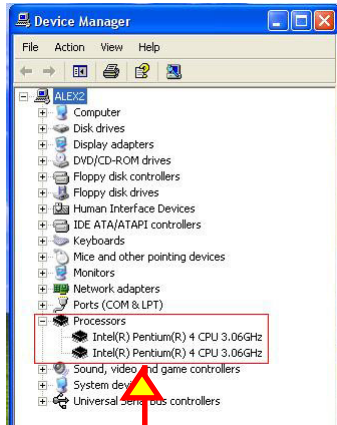
On the heatsink side of a Pentium 4 CPU, there printed is a line of figures to identify its specifications. The line consists of 4 parts:

- 1) CPU Working Frequency: This part depicts the working frequency of the CPU. For example:  
 2.4 GHz depicts that this CPU is locked to 2.4 GHz working frequency (multiplier 18 x 133MHz CPU clock);  
 2A GHz depicts that this CPU is an A version, locked to 2.0 GHz working frequency (multiplier 20 x 100MHz CPU clock);
- 2) CPU L2 Cache: This part depicts the L2 Cache size. For Example:  
 512 stands for 512 MB L2 Cache; 256 stands for 256 MB L2 Cache;
- 3) System Clock: This part depicts the System Clock (Front Side Bus) to be provided by the CPU. For example:  
 533 stands for a 533MHz system bus provided by this 133MHz CPU times 4;  
 400 stands for a 400 system clock provided by a 100 MHz CPU x 4;  
 (Note: P4 CPU is a quadpumped CPU. The system bus is provided by the CPU clock x 4. Therefore, user can figure out the P4 CPU clock from the System Clock divided by 4.)
- 4) CPU Voltage Vcore: This part depicts the CPU Voltage. For example:  
 1.5V stands for a CPU of 1.5Vcore.

### 2-1.2 CPU Installation with Socket 478B

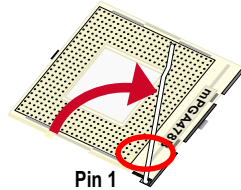
This mainboard is built with CPU Socket 478B ( 478-pin) supporting the Intel Pentium 4 CPU:

- Follow the steps described in this section to install the 478-pin Pentium 4 CPU into the on board Socket 478B.
- After installation of Pentium 4 CPU, you must also install the specific Pentium 4 CPU fan designed in tandem with this CPU. This CPU Fan installation is described in next section.
- This mainboard supports Hyper-threading dual-in-one CPU, the function of which can be enabled by Windows XP. (See illustration on the right.)

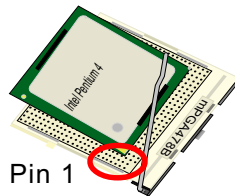


( If Hyper-threading CPU is installed successfully with O/S Win XP, the O/S will enable the dual-in-one CPU function.)

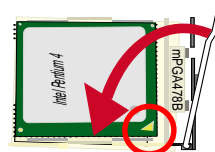
1. First pull sideways the lever of Socket 478, and then turn it up 90° so as to raise the upper layer of the socket from the lower platform.



2. Configure Pin 1 of CPU to Pin 1 of the Socket, just as the way shown in the diagram on the right. Adjust the position of CPU until you can feel all CPU pins get into the socket with ease.

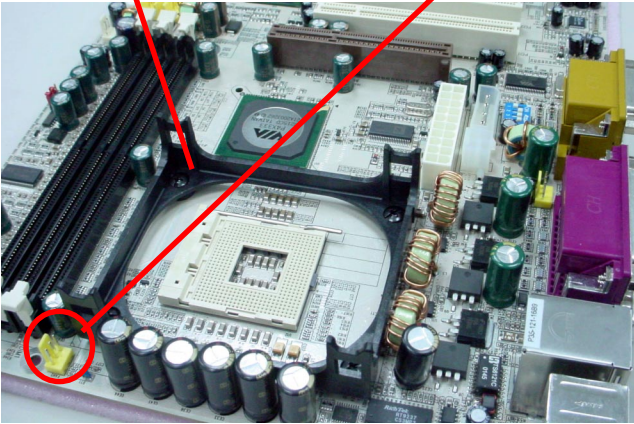


3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.

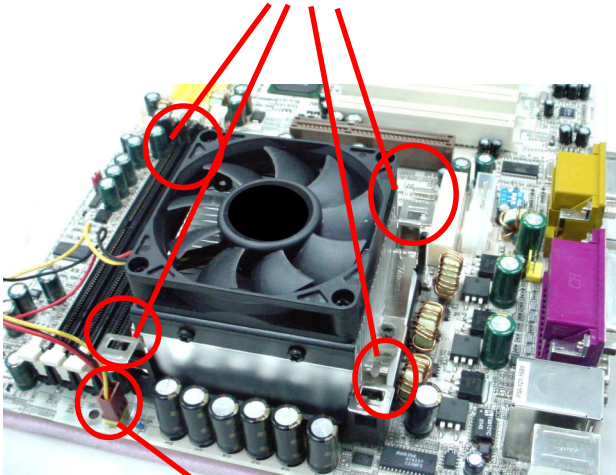


## 2-2 Pentium 4 CPU Fan Installation

Pentium 4 Fanbase CPU Fan Connector



Press down 4 corners to lock fan to fanbase



Connect Fan Connector to CPU FAN connector

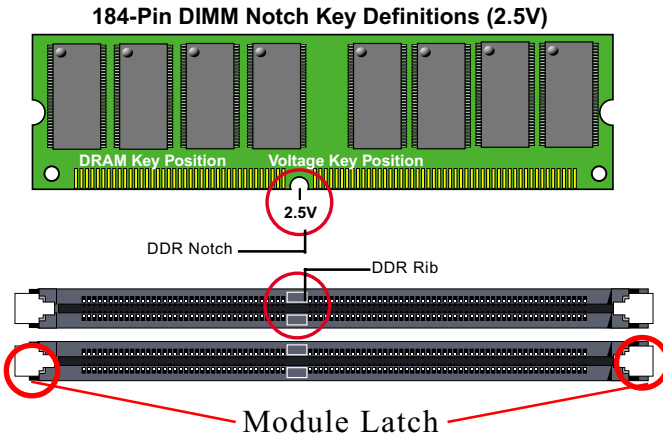
## 2-3 Memory Installation with Warning LED

How to tackle the memory Modules:

- Make sure to unplug your power supply before adding or removing memory module.
- Pay attention to the orientation of the DIMM slots.
- Make sure you have the right type of memory module for your mainboard.

### 2-3.1 To Install DDR DRAM Module

- This series supports up to 3GB unbuffered DDR 333/266/200 DRAM, with 3 DDR DIMM slots on board. Do not insert other type of modules into these slots. DDR 400 Memory Module can be compatible with this series if it has passed Soltek validation. soltek Computer Inc. typically runs a DDR 400 Memory Module Validation Program for Chipset VIA P4X400A. Detailed information is available in Soltek Web Site: [WWW.soltek.com](http://WWW.soltek.com).
- DDR DIMM slot has 184-pins and one notch. Insert a DDR SDRAM vertically into the 184-pin slot with the notch-to-rib matching. Press the Module down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the slot. If any one of the latches has not turned up completely, you should unplug the module and press it down a bit more firmly.



### 2-3.2 To Remove a DIMM

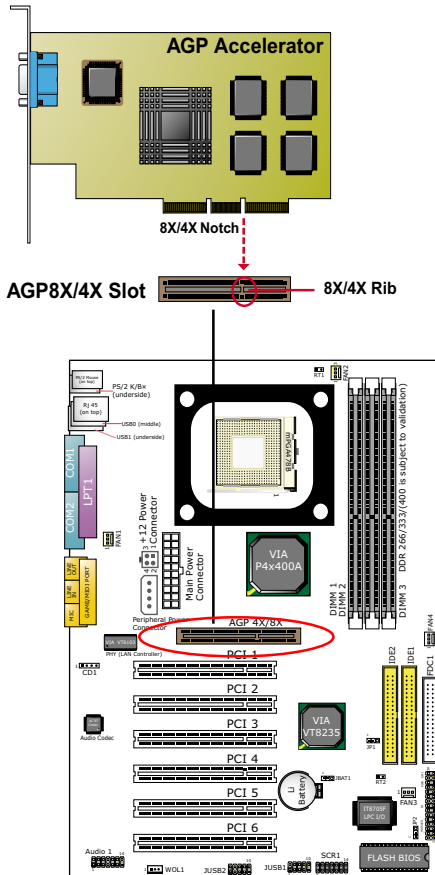
Press down the holding latches on both sides of slot to release the module from the DIMM slot.



## 2-4 AGP 4X/8X Slot Installation

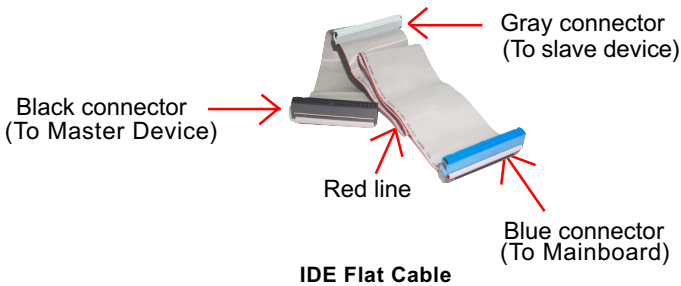
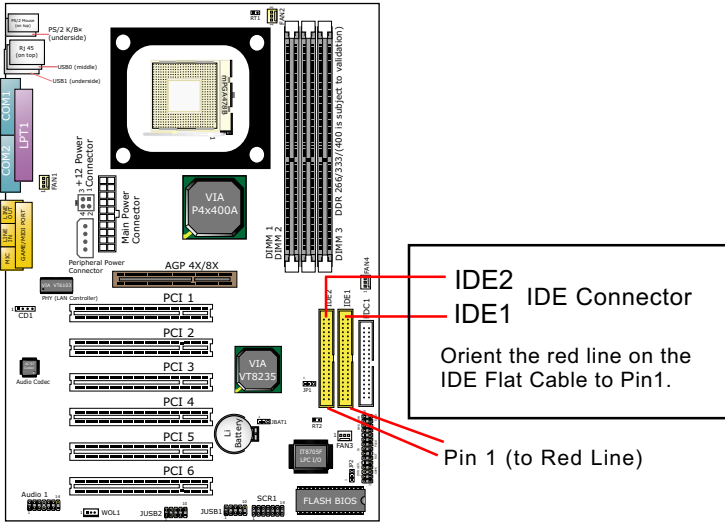
The AGP slot on board supports 1.5V AGP4X/8X card only. A Rib is specifically added to the 4X/8X AGP slot so as to match the AGP 4X/8X card. To insert a 3.3V AGP 2X card into the AGP 4X slot will damage the system chip and burn the 1.5V circuitry.

An AGP 4X card will support a data transfer rate up to 1GB/sec., while an AGP 8X card will do up to 2GB/sec.



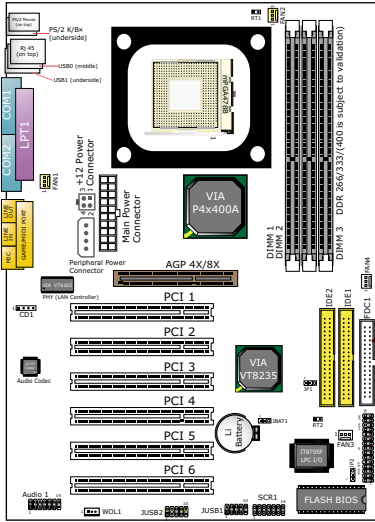
## 2-5 IDE Connector Installation

To install IDE Connector, you may connect the blue connector of IDE cable to the primary (IDE1) or secondary(IDE2) connector on board, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers correctly. Please refer to your hard disk documentation for the jumper settings.

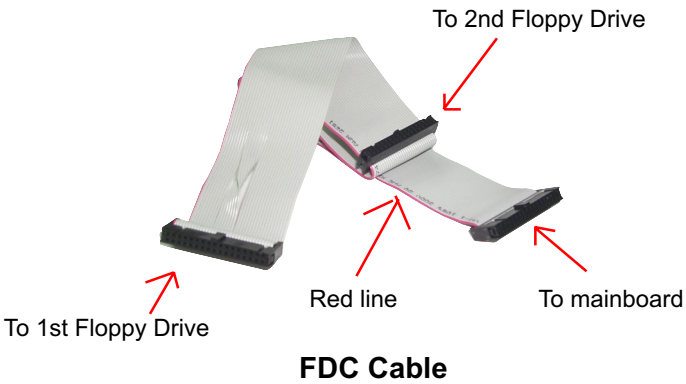


## 2-6 Floppy Drive Connector ( FDC ) Installation

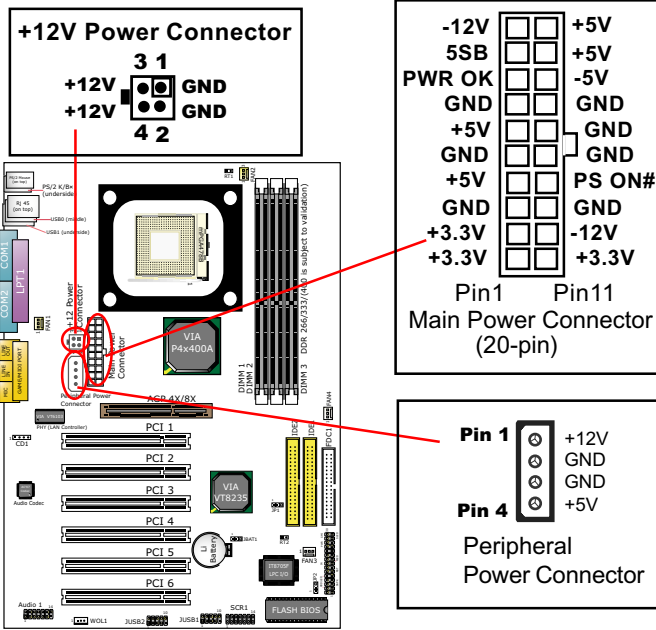
To install FDC (Floppy Drive Connector), you should connect the end of FDC cable with single connector to the board , and connect the other end with two connectors to the floppy drives.



Floppy Drive Connector:  
FDC  
Orient the red line of the  
Floppy Flat Cable to Pin1.  
Pin 1 (to Red Line)



## 2-7 ATX V 2.03 Power Supply Installation



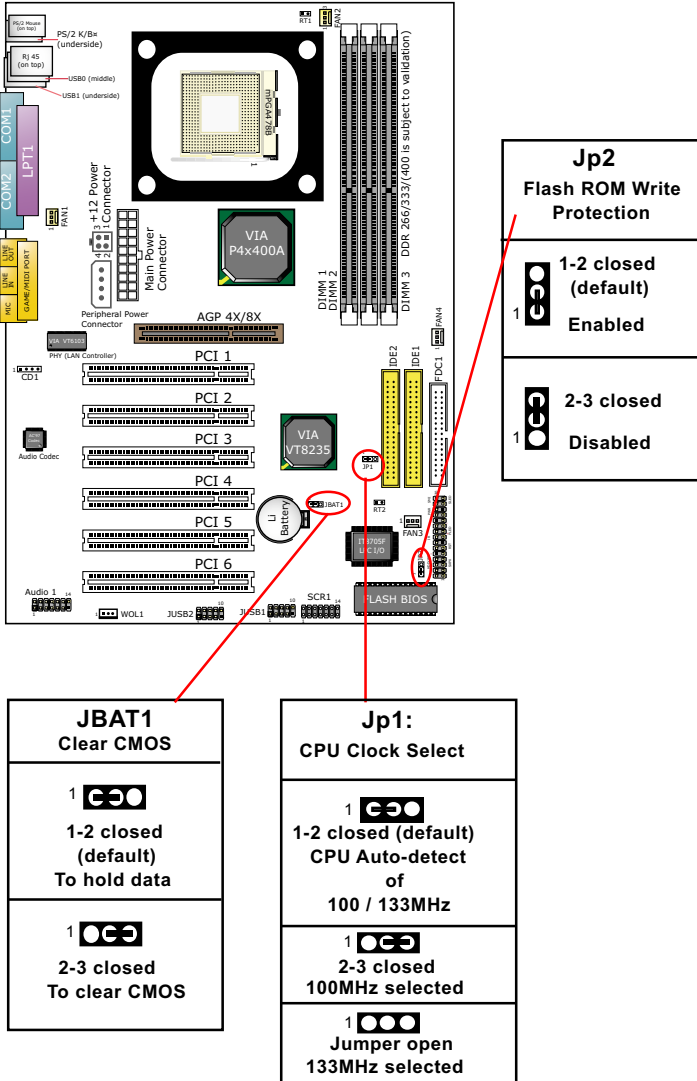
ATX V2.03 power supply is strongly recommended for mainboard running with 2GMHz or higher CPU.

To set up Power Supply on this series:

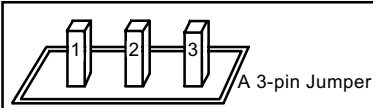
1. Connect the on-board Main Power Connector (20-pin) to the Main Power Connector (20-pin) of an ATX Power Supply which can be either of the latest version 2.03 or of earlier ATX format.
2. If you use an ATX Power Supply Version 2.03 or later, you can now connect the on-board square-shaped +12V Connector to the square-shaped +12V Connector of your ATX Power Supply. In this case, it is not necessary for you to connect the on-board 4-pin Peripheral Power Connector to your Power Supply.
3. If you use an ATX power Supply of an older version than V2.03, you cannot find a square-shaped +12V Connector with your Power Supply; you must then connect the on-board 4-pin Peripheral Power Connector to the 4-pin Peripheral Power Connector of your Power Supply.

## 2-8 Jumper Settings

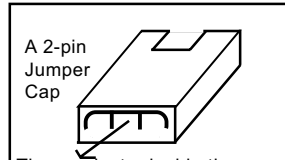
The following diagrams show the locations and settings of jumper blocks on the mainboard.



**How to tackle the Jumpers:**

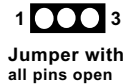


A 3-pin Jumper  
 If a pin-header (of 2 or more pins) is designed in such a way that its pins can be closed or linked together to set up a specific function, this header is called a jumper in this manual.



A 2-pin Jumper Cap  
 The conductor inside the cap links two header-pins together.

- A Jumper is usually but not necessarily given a “JpX legend.
- In the Jumper setting diagram, all jumper pins covered with black marks stand for closed pins by jumper caps.



- Do not remove the jumper cap when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, mainboard could be damaged.

**2-8.1 Jp1: CPU Clock/Overclock Select**

Jp1 designed on board for CPU clock select and 100MHz CPU overclocking. With Jp1, user can choose the way for a 100MHz CPU to run an overclock on board.

1. If Jp1 is set to 1-2 closed, the auto-detect mode will recognize the CPU clock automatically and send the signal to system chips. No overclocking will be implemented in this case. That is, a 100MHz CPU will boot system with 100MHz CPU clock and provide 4X100 MHz system bus. A 133MHz CPU will boot system with 133MHz and provide a 4X133 MHz system bus.
2. If Jp1 is set to 2-3 closed, CPU is set at 100MHz, indicating that 133MHz overclock is not desired. The CPU will boot system with 100MHz even if a 133MHz CPU is used.
3. If Jp1 is set to 1-2-3 all open, CPU is set at 133MHz, indicating that 133MHz overclock is desired. The CPU will try to boot system with 133MHz even if a 100MHz CPU is used.

<b>Jp1:</b> <b>CPU Clock Select</b>
1 <b>1-2 closed (default)</b> <b>CPU Auto-detect</b> of <b>100 / 133MHz</b>
1 <b>2-3 closed</b> <b>100MHz selected</b>
1 <b>Jumper open</b> <b>133MHz selected</b>

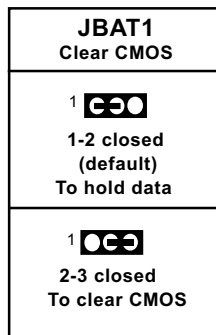
Note on CPU Overclocking:

1. If you have successfully booted system with or without CPU overclock, you still can do another CPU overclock in BIOS Setup. Please enter BIOS Setup, choose "Frequency/Voltage Control" menu, and take the "Use Linear" option of the "Use CPU Linear Frequency". Then configure the "CPU Clock" item to raise your CPU clock.
2. CPU overclocking should take all components on board into account. If you fail in BIOS overclocking, you will not be able to restart system. In such case, Power off system and clear CMOS by JBAT1 as stated below and then restart your system. And remember reconfigure whatever should be reconfigured.
3. If your system is already fixed in a cabinet or case, you may not like to take the trouble to clear CMOS. Then power on your system with the power button on the case and simultaneously press down the "Insert" key of the keyboard until you see the initial bootup screen appear. And remember you should also enter CMOS BIOS Setup and choose "Load Optimized Defaults" to restore default BIOS .

### 2-8.2 JBAT1: Clear CMOS

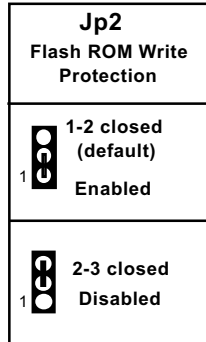
When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:

1. Power off system;
2. Set JBAT1 to Pin 2-3 closed.
3. After 2 or 3 seconds, return the JBAT1 setting to Pin1-2 closed.
4. CMOS data are restored to default. Remember never clear CMOS when system power is on.



### 2-8.3 Jp2: Flash ROM Write Protection

Jp2 is designed to support the “Flash ROM write Protection” function when you boot your system. Setting Jp2 1-2 closed will protect your Flash ROM from virus attack every time you boot your system.

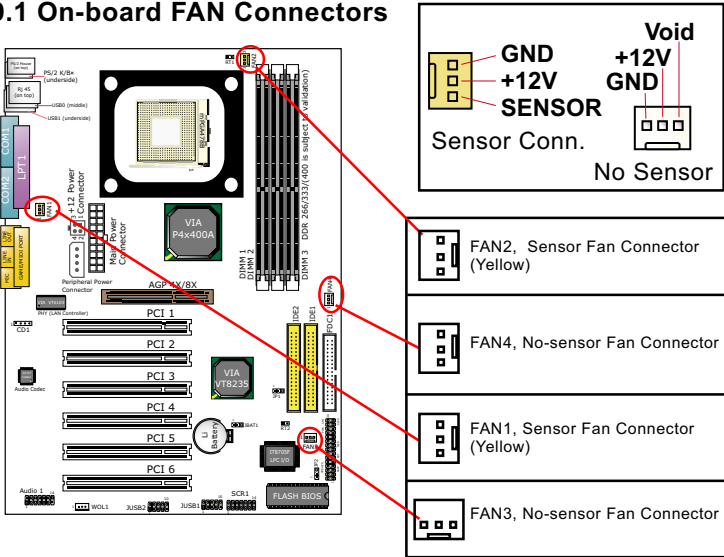




## 2-9 Other Connectors Configuration

This section lists out all connectors configurations for users' reference.

### 2-9.1 On-board FAN Connectors

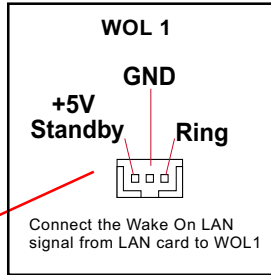
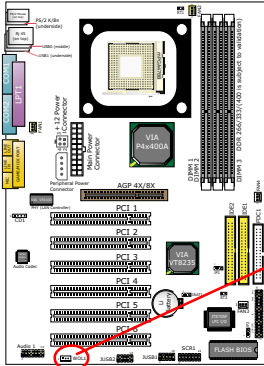


Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. When connecting the wire to any Fan Connector, user should make sure that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. A Hardware Monitor chipset is on board, with which user can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, user can read the fan speed from the "Hardware Monitor Status" in CMOS BIOS.

A running fan will send out 2 electric pulses per rotation of its fan blade. A Sensor Fan Connector will count the electric pulses and send the information to the System Hardware Monitor which in turn will work out the fan rotation speed and display it with the monitoring program.

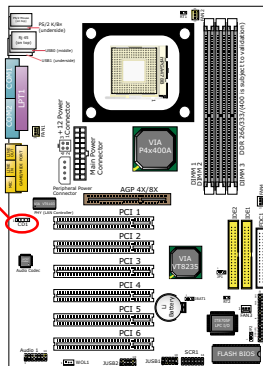
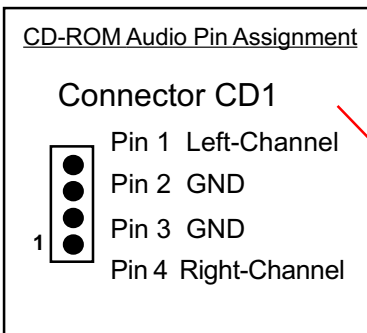
### 2-9.2 Connector WOL1: Wake On LAN

1. This connector connects to a LAN card with a Ring signal output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.
2. This feature requires that Resume On Ring feature is enabled in the BIOS setting "Power Management Setup" and that your system must be on ATX power supply with at least 720mA / +5V standby power.



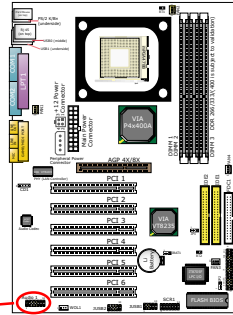
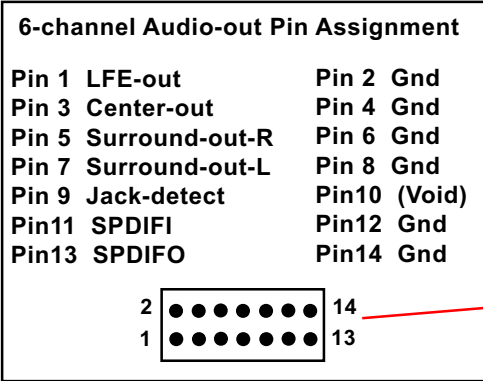
### 2-9.3 CD-ROM Audio Connector (CD1)

CD-In1 is audio connector connecting CD-ROM audio to mainboard.

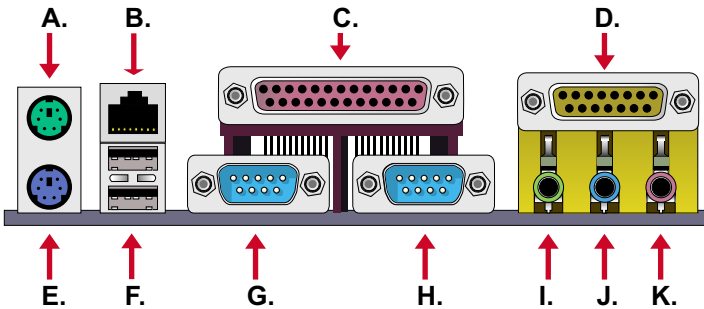


### 2-9.4 Audio 1: 6-channel Sound Output Connector (optional)

This series is designed with an optional 6-channel Audio-out connector “Audio1”. If this option is chosen, a 6-channel Audio-out card will be enclosed in the Mainboard Package to provide 3 additional audio-out ports for the 6-channel sound.



### 2-9.5 Chassis Panel Connectors



- A : PS/2 MOUSE PORT
- B : Rj45 (85ERV2-L only)
- C : LPT1 PORT
- D : GAME/MIDI PORT
- E : PS/2 KEYBOARD PORT
- F : USB 1 PORT (Bottom)
- F : USB 0 (Middle)
- G : COM1 PORT

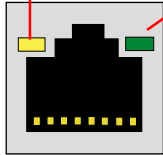
- H : COM2 PORT
- I : LINE Out / Front SPEAKER OUT
- J : LINE IN / Rear Speaker In
- K : MICROPHONE INPUT / Center Subwoofer Out

### 2-9.6 RJ45: LAN Connector ( 85ERV2-L only)

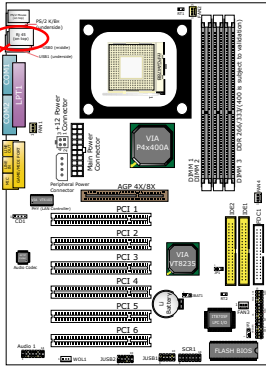
One RJ45 connector is on board for network connection.

Yellow LED "On" to indicate Network hub is in connection with the system.

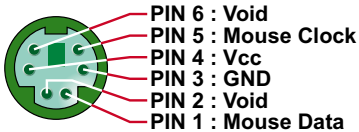
Green LED blinks to indicate that data transmission is undergoing in 10/100 Base T mode.



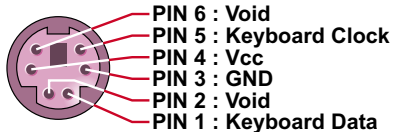
RJ45 Connector



### 2-9.7 PS/2 Mouse And PS/2 Keyboard

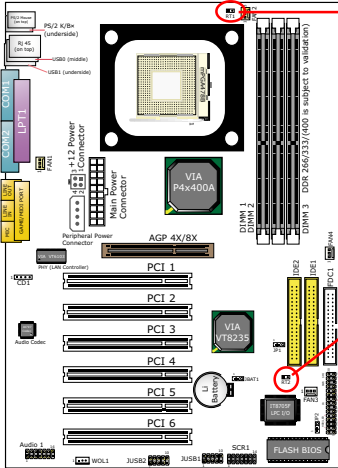



PS/2 MOUSE




PS/2 KEYBOARD

### 2-9.8 Thermal Sensor Connectors RT1 and RT2




 RT1

RT1 is mounted with Thermal Resistor by default.

 RT2

To RT2      To Devices



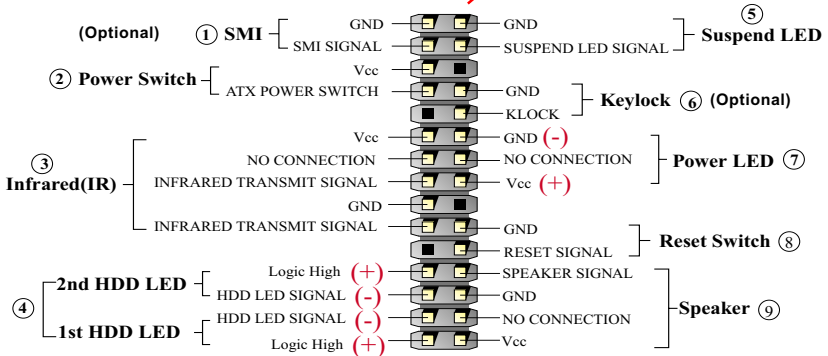
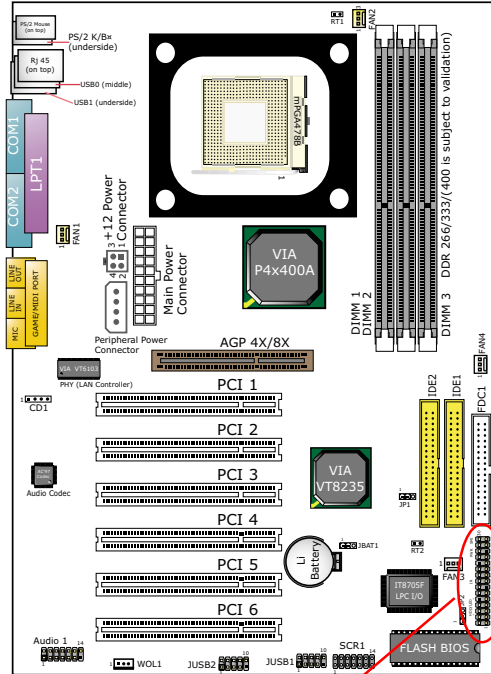
**a.**      **b.**

Thermal Cable (Optional)

1. Connector RT1: A thermal resistor is mounted by default to connector RT1 so as to detect the temperature of the CPU. What RT1 does is to transmit the thermal signal to BIOS or Hardware Monitor.
2. Connector RT2: A thermal cable is needed to connect RT2 to on-board devices such as HDD, Graphics card etc., so as to detect the temperature generated therein. Please connect the end (a) of the thermal cable to RT2, and tape another end (b) of thermal cable on to the device which you want to monitor. After you have finished the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware Monitor utility.**

### 2-9.9 Complex Pin-header

This complex Pin-header consists of the following connectors for various supports:



**(1) SMI Connector (Optional):**

Connection: Connected to the case-mounted Suspend Switch.

Function: Manually selecting DOS system into the Suspend Mode or “Green Mode” by System management interrupt.

**(2) Power Switch Connector:**

Connection: Connected to a momentary button or switch.

Function: Manually switching the system between “On” and “Soft Off”. Pressing the momentary button for more than 4 seconds will also turn the system off.

**(3) IR Connector (Infrared Connector):**

Connection: Connected to external IR device (transceiver).

Function: Supporting wireless transmitting and receiving module on board.

**(4) 1st HDD LED Connector/2nd HDD LED Connector:**

Connection: Connected to HDD LED.

Function: To supply power to HDD LED.

**(5) Suspend LED Connector:**

Connection: Connected to Suspend Indicator.

Function: To supply power to “Suspend Indicator”.

**(6) keylock Connector (Optional):**

Connection: Connected to keyboard.

Function: To lock keyboard and disable keyboard function.

**(7) Power LED Connector:**

Connection: Connected to System Power LED.

Function: To supply power to “System Power LED”.

**(8) Reset Switch Connector:**

Connection: Connected to case-mounted “Reset Switch”.

Function: To supply power to “Reset Switch” and support system reboot function.

**(9) Speaker Connector:**

Connection: Connected to the case-mounted Speaker.

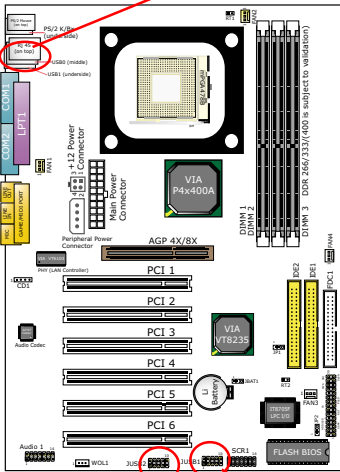
Function: To supply power to the case-mounted Speaker.

### 2-9.10 USB Ports and USB Pin Headers

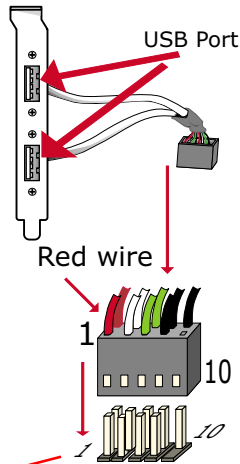
This series provides two USB ports USB0 and USB1 on board supporting various USB devices. In addition, pin headers JUSB1 and JUSB2 are added on board to provide expansion of 4 more optional USB ports by using two additional USB Cables. User can order the optional USB cables from your mainboard dealer or vender.

When plugging the USB cable to USB Header , user should make sure the red wire is connected to Pin 1.

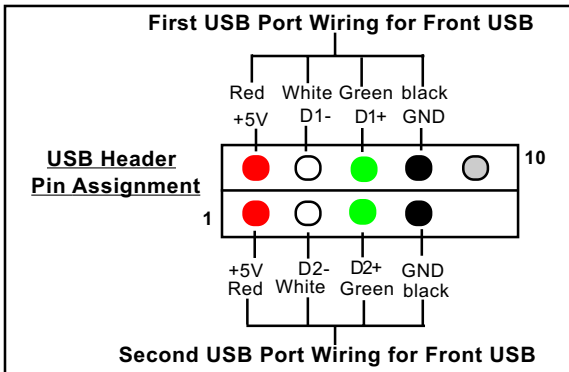
USB Ports USB 0 & 1(underside)



USB Cable (Optional)



Pin Header JUSB2 / JUSB1





## 2-10 IRQ Description

IRQ	Function Description	Priority
IRQ 0	System Timer	1
IRQ 1	Keyboard Controller	2
IRQ 2	Programmable Interrupt	N/A
IRQ 3	Serial Port (COM 2)	11
IRQ 4	Serial Port (COM 1)	12
IRQ 5	Free	13
IRQ 6	Floppy Disk Controller	14
IRQ 7	Parallel Port (LPT1)	15
IRQ 8	Real Time Clock (RTC)	3
IRQ 9	Free	4
IRQ 10	Free	5
IRQ 11	Free	6
IRQ 12	PS/2 Mouse Port	7
IRQ 13	Coprocessor	8
IRQ 14	Primary IDE Channel	9
IRQ 15	Secondary IDE Channel	10

- Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.
- The original ISA expansion card design, now referred to as “Legacy” ISA card, requires you to configure the card’s jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the **Control Panel** in *My Computer*, contains a **System** icon, which gives you a **Device Manager** tab. Double-Clicking on a specific hardware device gives you a **Resources** tab which shows the Interrupt number and address. Double-Clicking **Computers** to see all the interrupts and addresses for your system. Make sure that each ISA device should be assigned to one IRQ respectively. If ISA device share IRQ with any other device, your computer will easily get into trouble.

# Chapter 4 AMI BIOS Setup

## THE BIOS

BIOS stands for Basic Input and Output System. It was once called ROM BIOS when it was stored in a Read-Only Memory (ROM) chip. Now manufacturers would like to store BIOS in EEPROM which means Electrically Erasable Programmable Memory. BIOS used in this series of mainboard is stored in EEPROM, and is the first program to run when you turn on your computer.

BIOS performs the following functions:

1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
2. Loading and running your operating system.
3. Helping your operating system and application programs manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

**This Chapter includes the following topics :**

**4-1 About BIOS Setup**

**4-2 To Run BIOS Setup**

**4-3 About CMOS**

**4-4 The POST (Power On Self Test)**

**4-5 To Update BIOS**

**4-6 BIOS Setup**

## 4-1 About BIOS Setup

BIOS setup is an interactive BIOS program that you need to run when:

1. Changing the hardware of your system. (For example: installing a new Hard Disk etc.)
2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or cache)

## 4-2 To Run BIOS Setup

First access BIOS setup menu by pressing < DEL > key after "POST" is complete ( before OS is loaded ). BIOS will then display the following message:

```
DEL: SETUP
```

## 4-3 About CMOS

CMOS is the memory maintained by a battery. CMOS is used to store the BIOS settings you have selected in BIOS Setup. CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks into CMOS for the settings you have selected and configures your computer accordingly. If the battery runs out of power, the CMOS data will be lost and POST will issue a "CMOS invalid" or "CMOS checksum invalid" message. If this happens, you have to replace the battery and check and configure the BIOS Setup for the new start.

## 4-4 The POST ( Power On Self Test )

POST is an acronym for Power On Self Test. This program will test all things the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, a unique number which is sent to I/O port 080h before the routine is executed.

## 4-5 To Update BIOS

- System BIOS is incorporated into a Flash memory component. Flash BIOS allows user to upgrade BIOS without the need to replace an EPROM component.
- The Upgrade Utility can be loaded on a floppy diskette for upgrading saving, and verifying the system BIOS. The Update Utility can also be run from a hard disk drive or a network drive.
- It is highly recommended that you save a copy of the original mainboard BIOS along with a Flash EPROM Programming utility (AMIXXX.EXE) to a bootable floppy disk so that you can reinstall the BIOS when in need.
- Normally, to update BIOS is unnecessary if the system is working fine. Users should only update BIOS when incompatible problems are encountered or new features have to be added to system.
- “AMIFLASH.EXE” is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the mainboard. This program only works in ***DOS environment, the utility can not be executed in win95/98, ME, NT WINDOWS 2000 or Windows XP environment.***

### • Please follow the steps below for updating the system BIOS:

Step 1. Please visit the board maker’s website, download latest BIOS file and AMI update utility. The file name of AMI update utility will be “AMIXXX.EXE” of which “XXX” stands for the version number of the file. The BIOS file format will be \*.ROM, of which “\*” stands for the specific BIOS file name.

Step 2. Create a bootable diskette. Then copy the BIOS file and AMI flash utility “AMIXXX.EXE” into the diskette.

Step 3. Insert the diskette into drive A, boot your system from the diskette.

Step 4. Under “ A “ prompt, type “ **AMIXXX.EXE \*.ROM** “ and then press <Enter> to run BIOS update program. Please note that there should be a space between AMIXXX.EXE and \*.ROM. (\*.ROM depends on your mainboard model and version code. Instead of typing “\*”, you should type the specific file name for your specific mainboard). For example, you may type “amiflash(space)85ERV211.rom”.

Step 5. When the message “Flash ROM Update Completed - Pass.” appears, please restart your system.

Step 6. You will see a message “CMOS Memory Size Wrong” during booting the system. Press <Del> or <F1> to run CMOS setup utility, then reload “LOAD SETUP DEFAULTS” or “**Load Optimal Defaults**” and save this change.

## 4-6 BIOS SETUP --- CMOS Setup Utility

### 4-6.1 CMOS Setup Utility

This mainboard comes with the AMI BIOS from American Megatrends Inc. Enter the CMOS Setup Utility Main Menu by:

1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

**PRESS <Del> TO RUN SETUP**

2. Press the <Del> key and the main program screen will appear as follows.

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a			
<ul style="list-style-type: none"> <li>▶ Standard CMOS Features</li> <li>▶ Advanced BIOS Features</li> <li>▶ Advanced Chipset Features</li> <li>▶ Power Management Features</li> <li>▶ PNP/PCI Configurations</li> <li>▶ Integrated Peripherals</li> <li>▶ Hardware Monitor Status</li> <li>▶ Frequency/Voltage Control</li> </ul>	<ul style="list-style-type: none"> <li>Set Supervisor Password</li> <li>Load Optimal Defaults</li> <li>Save &amp; Exit Setup</li> <li>Exit Without Saving</li> </ul>		
F1: Help	↑↓: Select Item	+/- : Change Values	F9: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶Sub-Menu	F10: Save and Exit
Set Time, Date, Hard Disk Type ...			

3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC>.
5. In the Main Menu, "Save & Exit Setup" saves your changes and reboots the system, and "Exit Without Saving" ignores your changes and exits the program.

### 4-6.2 Standard CMOS Setup

Standard CMOS Setup records some basic system hardware configuration and sets the system clock and error handling. Modify the configuration values of this option if you want to change your system hardware configuration or after you clear CMOS data.

Run the Standard CMOS Setup as follows:

1. Choose "Standard CMOS Setup" from the Main Menu and a screen with a list of options will appear:

Standard CMOS Features	Setup Help
System Time                    00 19 29 System Date                    Dec 05 2001 Wed ▶ Floppy options. ▶ IDE Devices Config	

F1: Help            ↑↓: Select Item            +/- : Change Values            F9: Setup Defaults  
 Esc: Previous Menu            Enter: Select ▶Sub-Menu            F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.  
 <F9>: Setup BIOS default values.  
 <F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

**System Time** The BIOS shows the time of the day in the format: hh:mm:ss. Choose the field with the Arrow keys and change the time with the Page Up/Page Down +/- keys.

**System Date** The BIOS shows the date of the day in the format: mm:dd:yy :day of the Week. Choose the field with the Arrow keys and change the value with the Page Up/Page Down +/- keys.

**Floppy options** Press Enter on “Floppy options” will let you select this field to the type(s) of floppy disk drive(s) installed in your system. The choices are:  
 1.2MB, 5.25 in.  
 720KB, 3.5 in.  
 1.44MB, 3.5 in.  
 2.88MB, 3.5 in.  
 Not Installed

**IDE Device Config** Press Enter on IDE Device Config will let you configure the IDE devices on board and the following menu will reveal the following submenu for your configuration of the hard Disk you have installed:

Primary IDE Master :Maxtor 82560 A4		Setup Help
Type	Auto	
Cylinders	4962	
Heads	16	
Write Precompensation		
Sectors	63	
Maxium Capacity	2561 Mb	
LBA Mode	On	
Black Mode	On	
Fast Programmed I/O Modes	4	
32 Bit Transfer Mode	On	

F1: Help      ↑↓: Select Item  
 Esc: Previous Menu

+/- : Change Values  
 Enter: Select ► Sub-Menu

F9: Setup Defaults  
 F10: Save and Exit



**Type** This option shows the types of configuration for the IDE devices:

1-50: Predefined types

USER: set Parameters by User

Auto: Set parameters automatically

CD-ROM: Use for ATAPI CD-ROM drives

Double click [Auto] to set all HDD parameters automatically, including “Cylinders, Heads, Write Precompensation, Sectors, Maximum Capacity and 32 Bit Transfer Mode.

### 4-6.3 Advanced BIOS Features

Advanced BIOS Features improves your system performance or sets up system features according to your preference.

Run the Advanced BIOS Features as follows:

1. Choose “Advanced BIOS Features” from the Main Menu and a screen with a list of options will appear:

**AMIBIOS NEW SETUP UTILITY - VERSION 3.31a**

Advanced BIOS Features	Setup Help
Quick Boot Delay for Hard Drive (Sec.) Boot Device Priority 1st Floppy: 1.44 MB 3.5 2nd CD-ROM 3rd IDE-0 :Maxtor 20560 A4 - Try Other Boot Devices Initial Display Mode Display Mode at Add-On ROM Init S.M.A.R.T for Hard Disks Bootup Num-lock Floppy Drive Swap Floppy Drive Seek PS/2 Mouse Support Primary Display Password Check	Enabled 2     Yes Silent Force BIOS Disabled On Disabled Disabled Enabled VGA/EGA Setup
Boot To OS/2 CPU Microcode Update L1 Cache L2 Cache System BIOS Cacheable C000,32K Shadow C800,16K Shadow CC00,16K Shadow D000,16K Shadow D400,16K Shadow D800,16K Shadow DC00,16K Shadow	No Enabled Enabled Enabled Enabled Cached Disabled Disabled Disabled Disabled Disabled Disabled

F1: Help      ↑↓: Select Item  
 Esc: Previous Menu

+/- : Change Values  
 Enter: Select ► Sub-Menu

F9: Setup Defaults  
 F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide.
- 

- Quick Boot** Allows you to enable / disable quick boot of your system.
- Delay for Hard Drive (Sec.)** Allows you to adjust the time of detecting hard disk on board at booting system.  
Choices: Disabled; 1~10 sec. in 1 sec. stepping.
- 1st/2nd/3rd Boot Device** Allows you to set floppy or IDE devices already installed on board to be the 1st/2nd/3rd boot device.  
Choices: Disabled; Device(s) installed
- Try Other Boot Devices** Allows you to enable/disable system to try to boot with other boot devices.  
Choices: Yes; No
- Initial Display Mode** If option is "Silent", the initial display mode will be set to one with Soltek logo. If option is "BIOS", the normal BIOS display mode will be shown.  
Choices: silent (default); BIOS
- Display Mode at Add-On ROM Init** If the item "Initial Display Mode" is set to "Silent", two sub-modes are provided for the initial display mode. If "Force BIOS" is chosen, the vendor's logo screen will be followed by the "Add-on ROM" initial screen (the screen showing the add-on card BIOS message). If "Keep Current" is chosen, no "Add-On ROM" screen is followed.
- S.M.A.R.T. for Hard Disks** Allows you to enable / disable the Self Monitoring Analysis and Reporting Technology for the hard disk.  
Choices: Enabled; Disabled

- Bootup Num-lock** Allows you to toggle between On or Off to control the state of the NumLock keys when the system boots. If On, the numeric keypad is in numeric mode. If off, the numeric keypad is in cursor control mode.
- Floppy Drive Swap** Disabled (default), Floppy Drive A will not be changed to B, nor B to A. Enabled, Floppy Drive A and B will change position.
- Floppy Drive Seek** Disabled (default), Floppy Drives will not be checked and diagnosed at system bootup; Enabled, Floppy Drives will be checked and diagnosed at system bootup.
- PS/2 Mouse Support** Enabled (default), PS/2 mouse is supported. Disabled, PS/2 Mouse is not supported
- Primary Display** Allows you to choose the primary display for the system. Choices: VGA/EGA (default); CGA40x25; CGA80x25; Mono; Absent
- Password Check** Allows you to set BIOS to check up password with a password prompt at BIOS Setup or whenever re-starting system. Choices: Setup; Always
- Ask HDD Password on Every Boot** Allows you to set whether the password is needed during booting up the system. Choices: Yes; No
- Boot to OS/2** Allows you to set your system to OS/2 operating system. Choices: Yes; No (default)
- CPU Microcode Update** Allows you to enable/disable the CPU Microcode Update function. Choices: Disabled; Enabled (default)
- L1 /L2 Cache** Allows you to set the Internal/External Cache Mode. Choices: WriteBack (default); WriteThru; Disabled
- System BIOS Cacheable** Allows you to enable / disable the System BIOS Cacheable function.
- C000, 32K Shadow** Allows you to set these addresses cached, Enabled or Disabled. Default: Cached
- C800,CC00,D000,D400, D800,DC00 16K Shadow** Allows you to set these addresses cached, Enabled or Disabled. Default: Disabled

### 4-6.4 Advanced Chipset Features

Advanced Chipset Features is used to modify the values of chipset buffers. These buffers control the system options.

Run the Advanced Chipset Features as follows:

1. Choose “Advanced Chipset Features” from the Main Menu and a list of option will appear:

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

Advanced Chipset Features	Setup Help
<p style="text-align: center;">DRAM Timing</p> Configure SDRAM timing by SPD      Enabled SDRAM Frequency                            Auto SDRAM CAS# Latency                        2.5 SDRAM Bank Interleave                    Disabled  SDRAM Burst Length                        4QW SDRAM Command Rate                      2T Memory Hole                                Disabled AGP Mode                                    4X AGP Read Synchronization                Disabled AGP Fast Write                              Disabled AGP Comp. Driving                          Auto <b>Manual AGP Comp. Driving                CB</b> AGP Aperture Size                          64MB AGP Master 1 W/S Write                    Disabled AGP Master 1 W/S Read                    Disabled Hyper Threading Function                Enabled USB Controller                              6 USB Ports USB 1.1 Device Legacy Support            Disabled USB 1.1 Port 64/60 Emulation            Disabled	

F1: Help      ↑↓: Select Item      +/- : Change Values      F9: Setup Defaults  
 Esc: Previous Menu      Enter: Select ▶ Sub-Menu      F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

- Configure SDRAM Timing by SPD** SPD (Serial presence detect) is a device in memory module for storing the module information such as DRAM timing and chip parameters. If this option is enabled, BIOS will access SPD automatically to configure module timing. If disabled, DRAM timing can be configured manually.
- SDRAM Frequency** Allows you to set the SDRAM frequency.  
Choices: Auto; 200MHz; 266MHz; 333MHz; 400MHz
- SDRAM CAS# Latency** With SDRAM Timing by SPD disabled, you can select the SDRAM CAS# (Column Address Strode) latency manually.  
Choices: 1.5 Clocks; 2 Clocks; 2.5 Clocks; 3 Clocks
- SDRAM Bank Interleave** This item allows you to enable / disable SDRAM Bank Interleave function.  
Choices: Disabled (default); Enabled
- SDRAM Burst Length** With SDRAM Timing by SPD disabled, you can select the SDRAM Burst length manually.  
Choices: 8QW; 4QW
- SDRAM Command Rate** Allows you to set the SDRAM Command Rate.  
Choices: 1T; 2T
- Memory Hole** Allows you to enabled / disabled (default) the support of Memory Hole which is reserved for ISA card.
- AGP Mode** Allows you to see the AGP Mode on board. The default setting is Auto. This item support 4X/8X AGP Mode
- AGP Read Synchronization** Allows you to enabled / disabled (default) the AGP Read Synchronization function.
- AGP Fast Write** Allows you to enable / disable the AGP Fast Write function
- AGP Comp. Driving** Allows you to Auto or manually set the AGP Comp. Driving.

- Manual AGP Comp. Driving** If AGP Comp. Driving is set to Manual, this item allows you to set the AGP Comp. Driving.  
Choices: 00h ~ FFh
- AGP Aperture Size** Allows you to set the AGP Aperture Size.  
Choices: 4MB; 8MB; 16MB; 32MB; 64MB; 128MB; 256MB;
- AGP Master 1 W/S Write** Allows you to enable / disable (default) the support of AGP Master 1 Waite State Write.
- AGP Master 1 W/S Read** Allows you to enable / disable (default) the support of AGP Master 1 Waite State Read.
- Hyper Threading Function** If Hyper Threading CPU is running on board, this item appears to show the enabled status.  
Choices: Enabled; Disabled
- USB Controller** Allows you to set the USB Controller on the USB port(s).  
Choices: 6 USB Ports; 4 USB Ports; 2 USB Ports; disabled
- USB 1.1 Device Legacy Support** Allows you to select the USB Device Legacy support.  
Choices: No Mice; all Devices; Disabled
- USB 1.1 Port 64/60 Emulation** Allows you to enable / disable (default) the Port 64/60 Emulation.

### 4-6.5 Power Management Features

Power Management Features allows you to set the system's power saving functions.

Run the Power Management Features as follows:

1. Choose "Power Management Features" from the Main Menu and a list of options will appear:

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

Power Management Features		Setup Help
ACPI Standby State	S1/POS	
Power Management/APM	Enabled	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Stand By	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Power Button Function	On/Off	
Restore on AC/Power Loss	Power Off	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On PME#	Disabled	
Resume On KBC	Disabled	
Wake-Up Key	Any Key	
Resume On PS/2 Mouse	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	

F1: Help      ↑↓: Select Item      +/- : Change Values      F9: Setup Defaults  
 Esc: Previous Menu      Enter: Select ► Sub-Menu      F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.



- ACPI Standby State** This item allows you to select the ACPI Suspend type. You can select S3(STR) for Suspending To Ram if your system supports this mode. Or you can select S1(POS) for Power On Suspend under ACPI mode.
- Power Management/ APM** Allows you to enable / disable the Power management / Advanced Power Management function.
- Video Power Down Mode** Allows you to select the Video Power Down Mode. Choices: Disabled; Standby; Suspend
- Hard Disk Power Down Mode** Allows you to select the Hard Disk Power Down Mode. Choices; Disabled; Stand By; Suspend
- Standby Time Out (Minute)** To set the duration of Standby Time Out. Choices: 1; 2; 4; 8; 10; 20; 30; 40; 50; 60
- Suspend Time Out (Minute)** To set the duration of Suspend Time Out. Choices: 1; 2; 4; 8; 10; 20; 30; 40; 50; 60
- Power Button Function** allows you to set power Button function. Choices: On/Off; Suspend
- Restore on AC/Power Loss** Allows you to set the restore state from AC/Power Loss. Choices: Last State; Power Off; Power On
- Resume on Ring/WOL** Allows you to enable / disable the Resume on Ring and Wake on Lan Signal function. An input signal on the serial Ring Indicator (RI) Line (in other words, an incoming call on the modem or an incoming signal from the Ethernet Card) Awakens the system from a soft off state.

**Resume on PME#** Allows you to enable / disable the Resume on PME function.

**Resume on KBC** Allows you to select S4/S5 mode or disable the Resume on Keyboard clock function.

**Wake Up Key** If Resume On KBC is set at S4/S5 mode, this item allows you to select any key to wake up system.

**Resume on PS/2 Mouse** Allows you to S4/S5 mode or disable the Resume on PS/2 Mouse function.

**Resume On RTC Alarm** Allows you to enable / disable the Resume On RTC Alarm function.

**RTC Alarm Date / Hour / Minute / Second** If resume On RTC Alarm is enabled, this field allows you to set the Alarm date Hour, Minute and second.

Date Choices: Every Day; 01 ~ 31

Hour Choices: 00 ~ 23

Minute Choices: 00 ~ 59

Second Choices: 00 ~ 59

### 4-6.6 PNP / PCI Configurations

PNP/PCI Configuration allows you to modify the system’s power saving functions.

Run the PNP/PCI Configurations as follows:

1. Choose “PNP/PCI Configurations” from the Main Menu and a screen with a list of options will appear:

**AMIBIOS NEW SETUP UTILITY - VERSION 3.31a**

PNP/PCI Configurations	Setup Help
Plug and Play Aware O/S                      No Clear NVRAM                                      No PCI Latency Timer (PCI Clocks)              32 Primary Graphics Adapter                      PCI PCI IDE BusMaster                                Disabled PCI Slot1 IRQ Priority                            Auto PCI Slot2 IRQ Priority                            Auto PCI Slot3 IRQ Priority                            Auto PCI Slot4 IRQ Priority                            Auto PCI Slot5 IRQ Priority                            Auto PCI Slot6 IRQ Priority                            Auto	

F1: Help            **↑↓**: Select Item            +/- : Change Values            F9: Setup Defaults  
 Esc: Previous Menu            Enter: Select **▶** Sub-Menu            F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

**Plug and Play Aware O/S** Allows BIOS to recognize the Plug and Play Aware Operating System.  
Choices: No (default); Yes

**Clear NVRAM** Allows BIOS to clear the NVRAM data.  
Choices: No (default); Yes

**PCI Latency Timer (PCI Clocks)** Allows you to set the PCI Latency Time.  
Choices: 32; 64; 96; 192; 128; 160; 192; 224; 248;

**Primary Graphics Adapter** Allows you to select the primary Graphics Adapter.  
Choices: PCI; AGP

**PCI IDE BusMaster** Allows you to enable / disable the PCI IDE Bus Master function.

**PCI Slot 1/2/3/4/5/6 IRQ Priority** Allows you to specify the IRQ for the PCI slots.  
Choices: Auto; 3; 4; 5; 7; 9; 10; 11

### 4-6.7 Integrated Peripherals

Integrated Peripherals option allows you to get some information inside your system when it is working.

Run the Integrated Peripherals as follows:

1. Choose “Integrated Peripherals” from the Main Menu and a list of options will appear:

**AMIBIOS NEW SETUP UTILITY - VERSION 3.31a**

Integrated Peripherals	Setup Help
Onboard FDC	Auto
Onboard Serial Port 1	Auto
Onboard Serial Port 2	Auto
Serial Port 2 Mode	Normal
Onboard Parallel Port	Auto
Parallel Port Mode	ECP
Parallel Port IRQ	Auto
Parallel Port DMA Channel	Auto
Onboard MIDI Port	Disabled
MIDI Port IRQ	5
Onboard Game Port	200
Onboard IDE	Both
Onboard LAN (Optional)	Disabled
Onboard AC'97 Audio	Enabled

F1: Help    ↑↓: Select Item    +/- : Change Values    F9: Setup Defaults  
 Esc: Previous Menu    Enter: Select ▶ Sub-Menu    F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.  
 <F9>: Setup BIOS default values.  
 <F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

- OnBoard FDC** Allows you to enable / disable the Onboard FDC.  
Choices: Auto; Enabled; disabled
- Onboard Serial Port 1** Allows you to set the Onboard Serial Port A.  
Choices; auto; Disabled; 3F8/COM1; 2F8/COM2;  
3E8/COM3; 2E8/COM4;
- Onboard Serial Port 2** Allows you to set the Onboard Serial Port B.  
Choices; auto; Disabled; 3F8/COM1; 2F8/COM2;  
3E8/COM3; 2E8/COM4;
- Serial Port 2 Mode** Allows you to set the Serial Port B Mode.  
Choices: Normal; 1.6 uS; 3/16 Baud; ASKIR;
- OnBoard Parallel Port** Allows you to configure onboard Parallel port .  
Choices: auto; Disabled; 378; 278; 3BC;
- Parallel Port Mode** If Parallel Port is not disabled, this item allows you  
to configure parallel port mode.  
Choices: ECP; EPP + ECP; Normal; EPP
- Parallel Port IRQ** If Parallel Port Mode is set at EPP, this item allows  
you to set the Parallel Port IRQ.  
Choices: 5; 7
- Parallel Port DMA Channel** If Parallel Port Mode is set at ECP, this item allows  
you to set the DMA Channel.  
Choices: 0; 1; 3
- OnBoard MIDI Port** Allows you to configure onboard MIDI port address.  
The choices: Disabled; 300h; 330h
- MIDI Port IRQ** If the onboard MIDI port is set at 300h or 330h, this  
item shows up to allow you to configure the MIDI  
Port IRQ to IRQ 5.
- OnBoard Game Port** Allows you to configure Onboard Game port  
address.  
The choices: Disabled; 200h; 208h

**Onboard IDE** Allows you to choose the Onboard IDE Mode.  
Choices: Disabled; Primary; Secondary; Both

**(Optional) Onboard LAN** If your mainboard is LAN on board, this item allows you to enable / disable onboard LAN.  
Choices: Enabled; Disabled

**Onboard AC'97 Audio** Allows you to disable AC' 97 Audio.  
Choices: Auto; Disabled

### 4-6.8 Hardware Monitor Status

This menu helps you to read only and get more information on the working CPU temperature, FAN speed and voltage.

1. Choose “Hardware Monitor Status” from the Main Menu and a screen with a list of current status of your working system will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 3.31a

Hardware Monitor Status		Setup Help
CPU Vcore	+1.680 V	
+2.5V	+2.504 V	
+3.3V	+3.408 V	
+5.0V	+5.126 V	
+12.0V	+11.187V	
-12.0V	-11.972V	
5V SB	+5.164V	
Battery	+3.296V	
Fan 1 Speed	0 RPM	
Fan 2 Speed	4905 RPM	
Temperature 1	31 °C/87 °F	
Temperature 2	0 °C/32 °F	
Temperature 3	38 °C/100 °F	

F1: Help      ↑↓: Select Item      +/-: Change Values      F9: Setup Defaults  
 Esc: Previous Menu      Enter: Select ▶ Sub-Menu      F10: Save and Exit

2. Press <ESC> to return to the Main Menu. In case any irregular reading appears about your system, it indicates that a problem exists therein. To solve the problem, a hardware engineer or your dealer is recommended.



**CPU Vcore** Shows CPU core actual voltage value.

**+2.5V** Shows current voltage against the +2.5V power supply.

**+3.3V** Shows current voltage against the +3.3V power supply.

**+5.0V** Shows current voltage against the +5.0V power supply.

**+12V** Shows current voltage against the +12V power supply.

**-12V** Shows current voltage against the -12V power supply.

**-5.0V** Shows current voltage against the -5.0V power supply.

**+5V SB** Shows current voltage against the +5V SB power supply.

**Battery** Shows current voltage against battery power supply.

**Fan 1 / 2** Displays the current speed of CPU Fan, and other onboard device which user has connected to the onboard Fan Connectors.

**Temperature 1** Shows current CPU external temperature (by RT1).

**Temperature 2** Shows current system temperature (by RT2).

**Temperature 3** Shows current CPU internal temperature.

## 4-6.9 Frequency/Voltage Control

Run the “Frequency/Voltage Control” as following:

1. Choose “Frequency/Voltage Control” from the Main Menu and a screen with a list of options will appear:

### AMIBIOS EASY SETUP UTILITY - VERSION 3.31a

Frequency/Voltage Control		Setup Help
RedStorm Overclocking (optional)	Press “Enter”	
CPU Linear Freq	Disabled	
CPU Clock	100 MHz	
Spread Spectrum Selection	Disabled	
Auto Detect PCI Slot	Disabled	
CPU Voltage Control	Auto	
AGP Voltage Control	1.5V	
DIMM Voltage Control	2.5V	
CPU Ratio Selection	Locked	
F1: Help    ↑↓: Select Item    +/- : Change Values    F9: Setup Defaults		F10: Save and Exit
Esc: Previous Menu    Enter: Select ► Sub-Menu		

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

**(Optional) Redstorm Overclocking Tech** If this item is chosen on board, please press <Enter> to start *RED STORM OVERCLOCKING TECH*. This option gives user an easy way to do overclocking. It will increase CPU external clock automatically. When CPU external clock gets to unacceptable value, BIOS will restart your system and then runs at acceptable CPU external clock.

**CPU Linear Frequency** This item allows you to enable / disable this setting function.

**CPU Clock** If CPU Linear Frequency is set at Enabled, this item allows you to set CPU Clock.  
Choices: 100MHz ~200MHz in 1MHz stepping.

**Spread Spectrum Selection** Allows you to enable / disable this Spread Spectrum Selection function. If enabled, this function will reduce the EMI (Electromagnetic Interference) in your system. If you do not have an EMI problem, leave this item disabled.

**Auto Detect PCI Slot** Allows you to enable / disable to detect PCI Slot automatically.

**CPU Voltage Control** allows you to configure the CPU Voltage. Usually, to raise CPU voltage will raise the chance of CPU overclocking and yet risk damage of CPU.  
Choices: Auto; 1.100V ~1.850V in 0.025 stepping

**AGP Voltage Control** allows you to configure the AGP Voltage.  
Choices: 1.5V; 1.6V; 1.7V; 1.8V

**DIMM Voltage Control** allows you to configure the DIMM Voltage.  
Choices: 2.5V; 2.6V; 2.7V; 2.8V

**CPU Ratio Selection** If CPU onboard is one with an adjustable or unlocked CPU ratio, this item allows you user to adjust the CPU Ratio. If your CPU is one with the CPU Ratio locked, this item will be invalid.

## 4-6.10 Set Supervisor Password

This option allows you to set a Supervisor password for the system:

1. Choose “Set Supervisor Password” in the Main Menu and press <Enter>. Then the following message appears:

[ Enter new supervisor password ]

2. The first time you run this option, enter your password up to 8 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears prompting you to confirm the password:

[ Retype new supervisor Password ]

4. Enter the same password “exactly” the same as you have just typed to confirm the password and press <Enter>.
5. The following message appears to confirm the new password setup.

[ New supervisor password installed ]

Any Key to Continue

6. Then press any key to continue your CMOS Setup. To save the password setup, you should press “Save & Exit Setup” and choose “yes” to exit and save setup.
7. After the Supervisor password is set, you have to choose whether the password is for entering the system or only for entering BIOS Setup program. To make the choice, please enter BIOS Setup and choose “Advanced BIOS Features” in the main menu. (At entering BIOS Setup, you have to enter the password now.) In “Advanced BIOS Features”, choose “Password Check” and change the option. The “Setup” option is to set the password only for entering BIOS Setup. The “Always” option is to set the password for entering the system.

8. To change or remove a current supervisor password, choose “Set Supervisor Password” and press <Enter>. An instruction box appears on the screen, prompting you to enter the current password first:

[ Enter current supervisor password ]

9. Type the current password with keyboard and then press <Enter>. An instruction box appears, prompting you to enter new supervisor password:

[ Enter new supervisor password ]

10. If you enter a new password into the box, you will be using this new password after you have finished and saved this new setup. Instead, if you press <Enter> before you enter any new password into the instruction box, another message box appears, telling you that you have disabled the Supervisor password. That means, no password is set for either entering BIOS Setup or system:

[ Supervisor password disabled ]

Any Key to Continue

**NOTE:** If you forget or lose a supervisor password, the only way to access the system is to clear the CMOS. All setup informations will then be cleared including the password and you need to run the BIOS setup program again so as to reconfigure BIOS.

### 4-6.11 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 ]  
Press [Enter] to continue  
or [ESC] to abort

Press <Enter> now to load Optimal values for all the Setup options.

### 4-6.12 Save & Exit Setup

Save & Exit Setup allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and press <Enter>. The following message appears:

[ Saving current settings and exit ]  
Press [Enter] to continue  
or [ESC] to abort

Press <Enter> key to save the configuration changes and exit CMOS Setup to restart your system.

### 4-6.13 Exit Without Saving

Exit Without Saving option allows you to exit the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and the following message appears:

[ Quit Without Saving Changes ]  
Press [Enter] to continue  
or [ESC] to abort

Follow the message and press <Enter> key to exit CMOS Setup and restart system.