

# **815TX/815TX5**

## **Pentium !!! ATX MAINBOARD**

**( VER. 3.x )**

### **USER'S MANUAL**

<b>CHAPTER &amp; SECTION</b>	<b>Page</b>
<b>1. INTRODUCTION</b> .....	<b>1-1</b>
<b>1.1 OVERVIEW</b> .....	<b>1-1</b>
<b>1.2 AIR BUS -</b> .....	<b>1-2</b>
<b>1.3 MAINBOARD LAYOUT</b> .....	<b>1-3</b>
<b>1.4 SPECIFICATIONS</b> .....	<b>1-4</b>
<b>2. INSTALLATION</b> .....	<b>2-1</b>
<b>2.1 UNPACKING</b> .....	<b>2-1</b>
<b>2.2 AMAZING WAYS TO POWER ON THE PC SYSTEM</b> .....	<b>2-2</b>
<b>2.3 POWER OFF THE PC SYSTEM</b> .....	<b>2-4</b>
<b>3. HARDWARE SETUP</b> .....	<b>3-1</b>
<b>3.1 INSTALLATION OF CPU</b> .....	<b>3-1</b>
<b>3.2 INSTALLING THE DRAM MODULES</b> .....	<b>3-2</b>
<b>3.3 CONNECTORS</b> .....	<b>3-5</b>
<b>3.3.1 BAT1: BATTERY SOCKET</b> .....	<b>3-5</b>
<b>3.3.2 CN1: PS/2 MOUSE AND KEYBOARD CONNECTOR</b> ....	<b>3-5</b>
<b>3.3.3 CN3 : SERIAL PORT COM 1 CONNECTOR</b> .....	<b>3-6</b>
<b>3.3.4 CN4 : SERIAL PORT COM 2 CONNECTOR</b> .....	<b>3-6</b>
<b>3.3.5 CN5: PARALLEL PORT CONNECTOR</b> .....	<b>3-7</b>
<b>3.3.6 CN6: USB PORT 1</b> .....	<b>3-7</b>
<b>3.3.7 CN7: USB PORT 2</b> .....	<b>3-7</b>
<b>3.3.8 CN8: FLOPPY DISK CONNECTOR</b> .....	<b>3-8</b>
<b>3.3.9 CN9 : IDE 1 CONNECTOR</b> .....	<b>3-8</b>
<b>3.3.10 CN10: IDE 2 CONNECTOR</b> .....	<b>3-8</b>
<b>3.3.11 CN11: SB-LINK CONNECTOR</b> .....	<b>3-9</b>
<b>3.3.12 CN12: IR / FIR CONNECTOR</b> .....	<b>3-9</b>
<b>3.3.13 CN13: COOLING FAN 1 CONNECTOR</b> .....	<b>3-10</b>
<b>3.3.14 CN15: ATX POWER CONNECTOR</b> .....	<b>3-10</b>
<b>3.3.15 CN16: WOL CONNECTOR</b> .....	<b>3-11</b>
<b>3.3.16 CN17: COOLING FAN2 CONNECTOR</b> .....	<b>3-11</b>
<b>3.3.17 CN18: AUDIO/GAME CONNECTOR:</b> .....	<b>3-12</b>
<b>3.3.18 CN19: VGA CONNECTOR:</b> .....	<b>3-12</b>
<b>3.3.19 CN21 / CN22: CD-IN CONNECTOR:</b> .....	<b>3-13</b>
<b>3.3.20 CN23: TV OUT CONNECTOR</b> .....	<b>3-13</b>
<b>3.3.21 CN24: WOM CONNECTOR</b> .....	<b>3-14</b>
<b>3.3.22 CN25: AIR BUS CONNECTOR</b> .....	<b>3-14</b>
<b>3.3.23 CN26: CHASSIS CHECK CONNECTOR</b> .....	<b>3-15</b>
<b>3.3.24 CN27: COOLING FAN3 CONNECTOR</b> .....	<b>3-15</b>
<b>3.3.25 CN30: USB PORT 3</b> .....	<b>3-16</b>
<b>3.3.26 CN31: USB PORT 4</b> .....	<b>3-16</b>

3.3.27	CN32: USB PORT 5 .....	3-16
3.3.28	PUSH BUTONS AND LED CONNECTORS .....	3-17
3.3.29	SPEAKER AND KEY LOCK CONNECTOR: .....	3-19
3.4	JUMPER SETTINGS.....	3-20
3.5	INSTALLATION OF DEVICE DRIVERS .....	3-27
4.	AWARD BIOS SETUP.....	4-1
4.1	GETTING STARTED.....	4-1
4.2	MAIN MENU .....	4-1
4.3	CONTROL KEYS .....	4-2
4.4	STANDARD CMOS FEATURES.....	4-2
4.5	ADVANCED BIOS FEATURES .....	4-3
4.6	ADVANCED CHIPSET FEATURES .....	4-5
4.7	INTEGRATED PERIPHERALS.....	4-8
4.8	POWER MANAGEMENT SETUP.....	4-12
4.9	PNP/PCI CONFIGURATION.....	4-16
4.10	PC HEALTH STATUS.....	4-17
4.11	FREQUENCY/VOLTAGE CONTROL.....	4-18
4.12	LOAD OPTIMIZED DEFAULTS .....	4-19
4.13	SET SUPERVISOR PASSWORD.....	4-20
4.14	SET USER PASSWORD.....	4-21
4.15	SAVE & EXIT SETUP / EXIT WITHOUT SAVING .....	4-22

## SOMETHING IMPORTANT !

### ☆ **TRADEMARKS**

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### ☆ **LOAD OPTIMIZED DEFAULTS**

“LOAD SETUP DEFAULTS” will have the BIOS default settings loaded into the CMOS memory. These default settings will optimize system performance and system stability. Load the setup default is recommended when you receive this mainboard or when the system CMOS data is corrupted. Refer to Section 4.12 for the procedures.

### ☆ **DISCHARGE CMOS DATA**

Whenever you want to discharge the CMOS data or open the system chassis, Make sure to disconnect the AC power first because there is always the 5V standby voltage active in the PC system. Without disconnecting the AC power connector from the PC system, the mainboard can be damaged by improper operation .

### ☆ **WAKE ON LAN**

In order to support the onboard Wake On LAN feature, the system requires a special Switching Power Supply, Such power supply must be able to provide at least 1A of driving capability on the “5V standby” voltage.

### ☆ **WARNING !**

The "Static Electricity" may cause damage to the components on the mainboard, In order to avoid the damage to the mainboard accidentally, please discharge all static electricity from your body before touching this mainboard.

### ☆ **NOTICE**

Information presented in this manual has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this manual is subject to change without notice.

#### ***IMPORTANT NOTICE:***

- 1. The standby voltage is always active. Whenever you are installing any component on the mainboard.  
- BE SURE TO DISCONNECT THE POWER CABLE.***
- 2. This mainboard supports the S3 suspend mode (suspend to RAM). So the quality of the power supply will be very important. Please make sure that that the power supply will have the enough driving capability. Basically, the standby voltage shall be above 5V otherwise, you may be unable to start the PC system.***

## 1. INTRODUCTION

### 1.1 OVERVIEW

This Mainboard is a high performance personal computer mainboard. It is the ATX form-factor with Socket 370 designed on the board for Pentium™ !!! processor. The Intel® i815 chipset is chosen as the core logic of the mainboard to give the most outstanding performance and reliability.

The Intel® i815 chipset is a high integration, high performance, power-efficient and high compatibility device which supports Intel and non-Intel processors to PCI bridge functionality for the complete PC99-compliant PCI system. The Intel® i815 chipset provides two channels of "PIO" and "Ultra DMA33/66 Bus Master" mode PCI IDE ports to support the most updated Ultra DMA 66 HDD. There are one Floppy Disk controller, two high speed Serial ports (UARTs), one multi-mode Parallel port, one PS/2™ mouse port, one IR interface and two USB ports (815TX5 supports up to five USB ports) designed on the board for wide variety of peripheral connection.

According to the requirement from different customers, the 815TX mainboard will have different feature as shown in the following table:

<b>Model Name</b>	<b>USB Port</b>
<b>815TX</b>	Two USB Ports
<b>815TX5</b>	Five USB Ports

There are the 3D PCI audio and AGP VGA interfaces built on the board. These onboard interfaces are the PnP devices (Plug and Play) and they are fully compatible with the Windows environment. So you don't have to purchase another sound card or VGA card because the onboard interface will meet your multimedia requirement. ( Please refer to Section 3-5 for the installation of the device driver for the onboard audio and VGA interfaces.)

Note: Pentium™ !!! processor is the 32-bit processor with RISC technology, which offers several key features such as built-in L2 cache, 12-stage super-pipeline architecture, out of order execution ... etc. In order to optimize of its capabilities and performances, the 32-bit Operating System (such as Windows 95®, Windows 98®, Windows NT® and OS/2™ ...etc.) and 32-bit applications are recommended.

## 1.2 AIR BUS

There is a revolutionary new interface designed on the mainboard - the AIR Bus ( CN25 ). The AIR Bus is designed on the mainboard which will give many amazing features to the PC system. One of the most significant feature from the AIR Bus is the "KeyBIOS™" device. The KeyBIOS™ is one of the devices developed for the AIR Bus interface and it will protect the system BIOS and let you have the immediate security function to your PC system.

### Why AIR Bus?

One of the most significant and immediate feature from AIR bus is it will rescue your system BIOS from virus attack. There was a virus called CIH virus and it made users start to aware that the virus could also make serious damage to the mainboard. Such virus will kill the system BIOS and make PC system failed to work. Unfortunately, there is no perfect anti-virus software which will prevent the system BIOS from virus attack.

In case that the PC system is infected by virus and the system BIOS is destroyed, users have to call for help or send the PC system to the dealer for technical support. However, AIR Bus can be one of the best solution to rescue your PC system from virus attack because it will rescue the system BIOS. When the KeyBIOS™ is connected to the AIR Bus, it will have the system BIOS get recovered within a single minute automatically. The recovery procedure is done intelligently and you do not have to make any hardware or software setting. Simply plug in the KeyBIOS™ and you can use it to recover the system BIOS immediately.

Besides, KeyBIOS™ can be used as a spare copy of the system BIOS. No matter how serious of damage is made to the system BIOS, simply plug the KeyBIOS™ into the AIR Bus and it will get your PC system back to alive immediately.

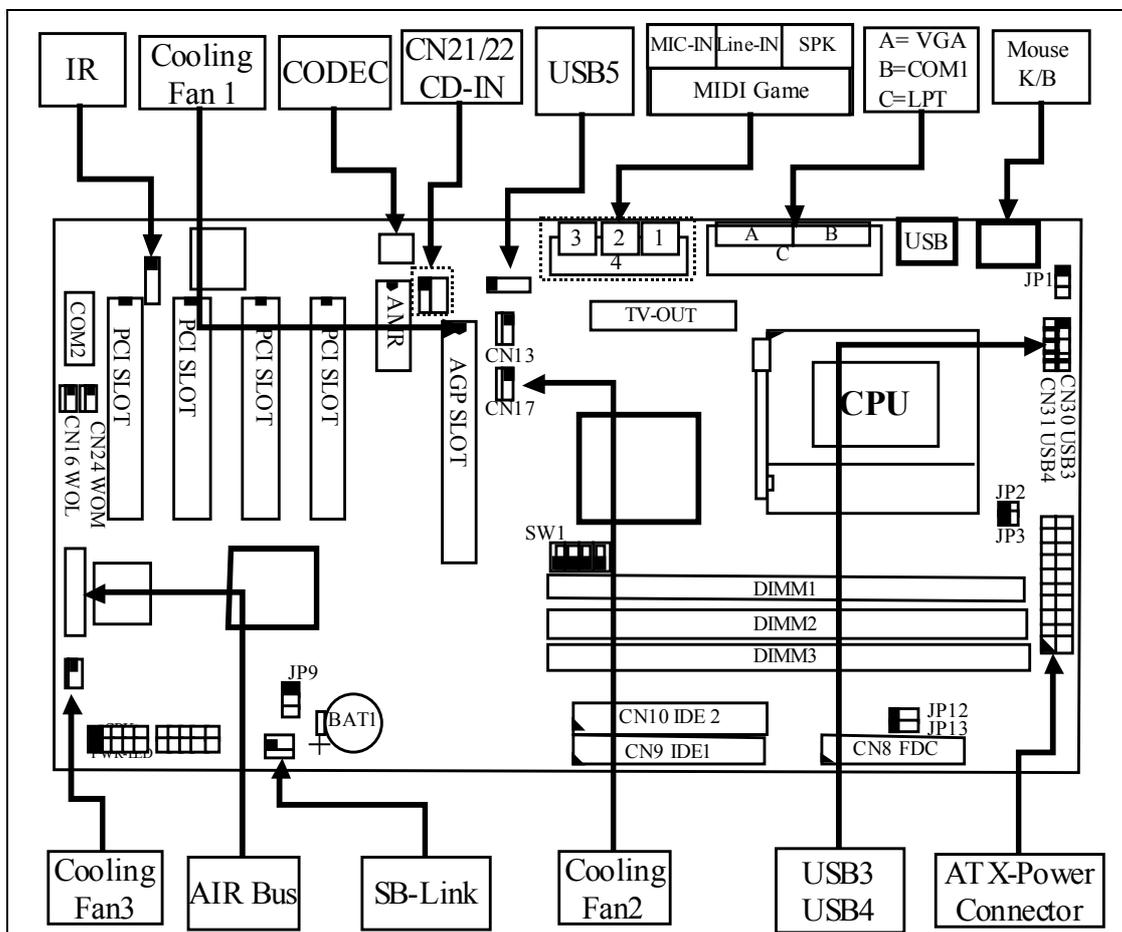
### More than just a mainboard.

The KeyBIOS™ is a programmable device and it will provide many amazing features. When you have the KeyBIOS™ connected to the AIR Bus, you will have the following features in your PC system:

1. Rescue the system BIOS from virus attack or data lost .
2. You will have a spare copy of system BIOS and you can use it to get your PC system alive when the flash ROM is faulty.
3. KeyBIOS™ can be used as a security key to prevent the unauthorized users.

The AIR Bus on the mainboard is the evolutional new technology and you will discover that what you received is more than just a regular mainboard. Please contact your dealer for more detail features on the AIR bus.

### 1.3 MAINBOARD LAYOUT



**IMPORTANT NOTICE:**

*There is the 3D audio interface on the board., Please check the CODEC chip (U13) as shown in the above diagram and then choose the proper directory in the CD to install the device driver properly. (please refer to Section 3-5)  
 (note: CODEC comes from **compression/decompression** and **coder/decoder**. Codec is the technology which is designed to take care of the data conversion for the onboard audio interface. In order to make the audio interface working properly, you have to install the device driver is properly).*



## 1.4 SPECIFICATIONS

### ⊙ CPU

Intel® Socket 370 Pentium™ !!! 300, 333, 366, 400, 433, 466, 500, 533, 550, 600MHz and higher speed processors

### ⊙ CPU VCC

Switching Voltage Regulator circuits onboard, supports +1.30V DC through +2.05V DC CPU Core Voltage, auto-detected by the CPU. ( Note, when there is the JP2 on the board and the setting is “short” than Vcore can be up to 3.5V )

### ⊙ WORD SIZE

Data Path : 8-bit, 16-bit, 32-bit, 64-bit  
Address Path : 32-bit

### ⊙ PC SYSTEM CHIPSET

Intel i815 chipset

### ⊙ SUPER I/O CHIPSET

Winbond W83627HF or W83627F I/O chip.  
(W83627HF supports the hardware monitoring, while W83627F doesn't. )

### ⊙ FRONT SIDE BUS FREQUENCY

66 MHz, 100MHz and 133MHz selectable.

### ⊙ MEMORY

There are three 168-pin DIMM sockets onboard. Support up to 1536MB.

### ⊙ BIOS

AWARD System BIOS. 4Mbit Flash ROM  
(Supports Plug & Play, ACPI, DMI and Green functions).

### ⊙ EXPANSION SLOTS

AMR Slot : One AMR slot for Modem Riser card.  
PCI Slots : Four 32bit PCI slots.  
AGP Slot : One AGP slot for 4X AGP card.

**⊙ ACPI FUNCTIOS (PC99 COMPLIANT)**

Advanced Configuration and Power Interface (ACPI) features are available on this mainboard. It will let you have many additional features and that will make your PC system becomes very friendly and convenient. Followings are the ACPI features designed on the board:

1. Microsoft PC99 compliant, fully supports S0, S1, S3, and S5 system operating status
2. System resumes by Panel-switch, Keyboard, PS/2 Mouse, Modem ring-in, Phone ring-in ,LAN signal .... etc.
3. Two LED onboard for system operating status indicating the S3 and S5 status.

**⊙ WOL PORTS**

One WOL connector supports Wake-On-LAN (WOL up-designed)

**⊙ SB-LINK PORTS (Optional)**

One SB-LINK feature connector to support PCI sound cards. (such as Creative™ Labs EMU8008 sound chip)

**⊙ USB PORTS (Universal Serial Bus)**

815TX : Two USB ports,

815TX5: Five USB ports.

**⊙ IDE PORTS**

Two channels of Ultra DMA/33 or Ultra DMA/66 Bus Master IDE ports, which will support up to 4 IDE devices like IDE hard disk, ATAPI CD-ROM and LS-120/ZIP-100 devices. The IDE ports can be programmed to support PIO Mode 4, DMA mode 2 and Ultra DMA/33.

**⊙ SUPER I/O PORTS**

1. One PS/2 Mouse connector and One PS/2 Keyboard connector.
2. Two high speed NS16C550 compatible serial ports (UARTs).
3. One SPP/EPP/ECP mode Bi-directional parallel port.
4. One Floppy Disk Control port.
5. One HP-SIR, SHARP-IR compatible IR port. Consumer Remote Control supports RC-5, RC-6, NEC, RCA and RECS 80.
6. One digital Game and MIDI (compatible with MPU-401 UART mode) port.

**⊙ 3D SOUND**

AC97 audio interface is designed on board for 3D Sound Effect.

**⊙ TV-OUT (Optional)**

One TV-OUT connector and daughter board (optional) for TV display requirement.

**◎ MISCELLANEOUS**

Three cooling Fan Connectors on the board. (some of the cooling fan is optional)  
One Chassis intrusion detection connector. (optional)

**◎ HARDWARE MONITORING *(optional)***

Winbond W83627HF is designed on the board to monitor hardware healthy status like system voltage, system temperature, and cooling fans. (When W83627F is installed on the board, then there will be no hardware monitoring feature on the mainboard. please refer to U18 on page 1-2) The hardware monitoring is a useful feature for the modern PC system. For example, when the CPU temperature is too high, the system BIOS will tell the system board to give a series of beeping alarm and slow down the CPU speed (throttling speed) so that you can take proper action to prevent your system from damage. When you hear the beeping alarm, turn the power off and check on the mainboard components to see whether it is working properly or not. If you don't know how to handle it, send the PC system to your dealer for technical support.

There is the hardware monitoring program in the CD which comes with this mainboard. You can use it to monitor the system healthy status. When you find there is the W83627HF installed on U18, you can install the hardware monitoring program so that it will monitor the system healthy status all the time.

**◎ DIMENSION**

4-layers PCB, 305mm x 190mm  
(ATX Form-Factor, double-decker I/O connector).

**◎ OPERATION SYSTEM**

This mainboard is compatible with the operation system such as MS-DOS, Windows NT, OS/2, NOVELL, Windows 95, Windows 98, ....etc.

## 2. INSTALLATION

### 2.1 UNPACKING

The mainboard contains the following components. Please inspect the following contents and confirm that everything is there in the package. If anything is missing or damaged, call your supplier for instructions before proceeding.

- This mainboard.
- One USER'S MANUAL.
- One Cable set for IDE and Floppy, COM port ... etc devices.  
*(Note: COM2 cable is the optional choice for customer)*
- One CD diskette for device driver and utility program.
- The Virtual Drive included in the CD as a free gift. The Virtual Drive is a very powerful tool which will allow you to make the duplication CD titles.
- The Stop Virus anti-virus software is included in the CD as a free gift

This mainboard contains electrostatic sensitive components and it can be easily damaged by static electricity. So please leave it sealed in the original packing until when installing.

A grounded anti-static mat is recommended when unpacking and installation. Please also attached an anti static wristband to your wrist and have it grounded to the same point as the anti-static mat.

After the opening of the mainboard carton, please observe the mainboard carefully to make sure there is no shipping and handling damage before you can start to install the PC system.

Having finished all the procedures above, you are now ready to install the mainboard to the chassis. Please make sure that the chassis is the ATX type so that the mounting hole will match with this mainboard.



#### **IMPORTANT NOTICE:**

***The standby voltage is always active. Whenever you are installing any component on the mainboard.***

***- BE SURE TO DISCONNECT THE POWER CABLE.***

## 2.2 AMAZING WAYS TO POWER ON THE PC SYSTEM

This mainboard has the ACPI (Advanced Configuration Power Interface) designed on the board. When the mainboard has the ATX type power supply connected, there are several ways to power on the system. Please read the following description for all the details.

### □ **POWER BUTTON**

The power button can be programmed by COMS setup program and it has different features. Please refer to page 3-18 for detail function description.

### □ **KEYBOARD (PASSWORD OR HOT KEY)**

This mainboard allows you to use your personal password or a combination of hot key to power on your PC system. When the jumper setting on JP1 is “Enabled”, the keyboard OnNow function will be activated. Under this circumstance, this mainboard will keep scanning the keyboard status waiting for the correct password or hot key input even when the system power is off (the stand-by 5V is still working and the power LED on the keyboard is still active). When you have selected the keyboard hot key to power on the PC system, you will be able to use keyboard hot key to power on the PC system. ( you can use the power button to power on the PC system all the time.) ( Please refer to Section 4.7.- "**Integrated Peripherals**")

When the “Password” and “Hot KEY” is selected, you will have to reboot the PC system to activate the setting, when you see the POST (Power On Self Test) is completed, the setting is changed and stored in the CMOS memory. Having finished the procedure, you may turn the power off and then you can use the keyboard to power-on the PC system afterward.

In case that you forget the “Password” or “Hot Key”, you may use JP10 (see page 3-23) to clear the password setting. When the password is cleared, the power button will be activated again and you can use the power button to turn on the system. Input your personal password again in the BIOS setup program, and then you may use the new password to power-on the PC system afterward.

### □ PS/2™ MOUSE (LEFT OR RIGHT MOUSE BUTTON)

If you have a PS/2™ mouse connected to the system, you may change the setup in the BIOS and use the mouse click to turn on the PC system power. Please refer to section 4.7 for the BIOS setting

To use the mouse key to turn on the PC system power, the mouse click must be done quickly and continually. Basically, 2-5 quick clicks on the mouse key ( left key or right key ) will turn the power immediately.

In order to activate the mouse key feature, you will have to reboot the PC system after the BIOS setting and wait until the POST (Power On Self Test) is completed. Having finished the procedure, you may use the mouse key to power-on the PC system afterward..

*Note: 1. This feature is not available on the COM port mouse (serial mouse).  
2. To use the PS/2 mouse power-on the PC system, JP1 must be "Enabled"*

### □ RTC ALARM

PC system can be waked up by the RTC setting in the CMOS. You can set the alarming date and time in the RTC memory, When RTC alarms, the PC system will be triggered and wakes up automatically on the date and time which you selected in the BIOS setup program.

Enable the “Resume by Alarm” selection in the BIOS setup utility, and then you will see the input request for the date and time. ( “Resume by Alarm” is located in the “POWER MANAGEMENT SETUP”, please refer to Section 4.8), When you have stored the RTC alarm setting, the PC system will be turned on automatically according to the date and time which is recorded in the CMOS memory.

### □ MODEM RING-IN

Everyone knows that a PC system can be used as a fax machine to send or receive fax messages. But most people still use fax machine to receive their messages because it is not practical to have the system powered on all day long waiting for the incoming messages. Now the problem can be solved because this mainboard can be triggered by a modem ring-in signal.

When you have an *external* modem installed, you can leave the PC system power off. Whenever there is the incoming message, the PC system will be triggered by the ring-in signal and wake up automatically to receive the message for you. From now on, you can tell your PC system to receive the fax message for you.

In order to use the ring-in signal to wake up your PC system, you will have to use the **EXTERNAL MODEM** and have it connected to one of the **SERIAL PORTS** ( COM1 or COM2 ) on the mainboard. When the mainboard detects the ring-in signal from the serial port, the system power will be turned on and start to receive the incoming messages automatically. ( you need to have the software like Award Zero-Volt Data-Suspend Utility so that you can use the fax utility to receive the incoming fax message ). To enable the Modem Ring-In feature, you have to run the BIOS setup utility and enable the “Power On by Ring / LAN” option (please refer to Section 4.8 for the settings).

**Note:** *This function is not available when using the internal MODEM card.*

#### □ WAKE ON LAN ( WOL )

There is a WOL connector CN16 on the mainboard which is designed to connect to the signal from a LAN card which supports the Wake On LAN feature. When such LAN card is installed, you may turn on the PC system from the remote server and monitor the PC status. To enable this feature, you will have to use the BIOS setup utility to enable the “Resume by Ring / LAN” in the BIOS setup program.

**Note:** *This function will be disabled if you turn off the power before the system can verify the DMI pool data.*

## 2.3 POWER OFF THE PC SYSTEM

There are two ways to power off the system. They are “Shut Down by Power Button” and “ Shut Down by OS”. (such as Windows® 95 and Windows® 98, you can choose the **Shut Down** from the file menu and the system will be powered off immediately ).

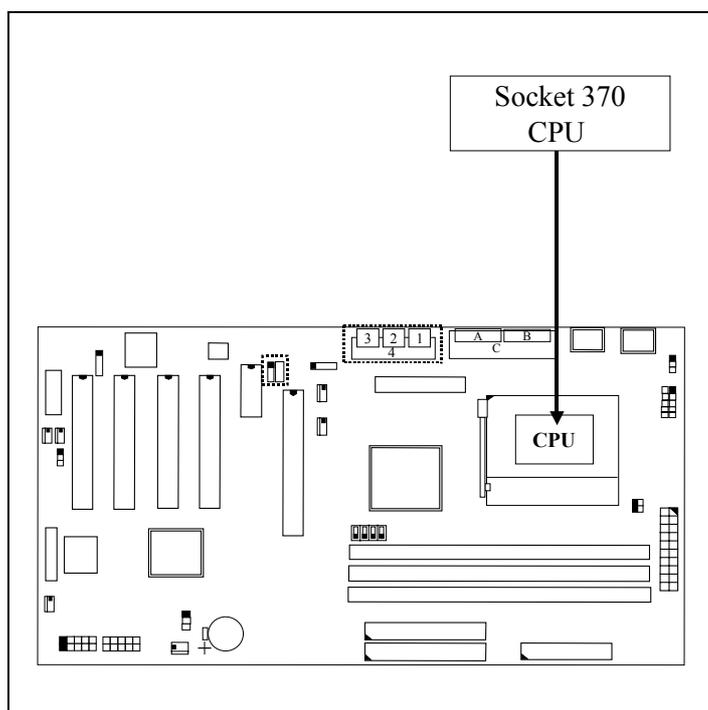
### 3. HARDWARE SETUP

Before you can start to install this mainboard, some hardware settings is required to make sure it will work perfectly with the devices which you are going to install in your PC system. To configure the mainboard is a simple task, only a few jumpers, connectors, cables and sockets needs to be selected and configured. (please refer to page 1-3 to see the mainboard layout)

*The following connectors labeled with “optional” means they are the optional choice for customers and the related components are normally not populated on the mainboard.*

#### 3.1 INSTALLATION OF CPU

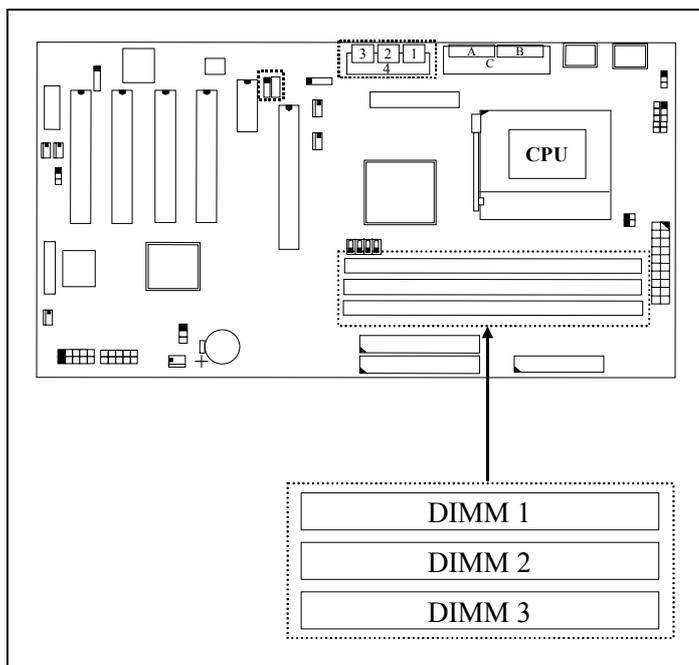
There is the Socket 370 CPU connector on the mainboard which is designed for Pentium™ !!! processor. Refer to the following diagram for the CPU socket:



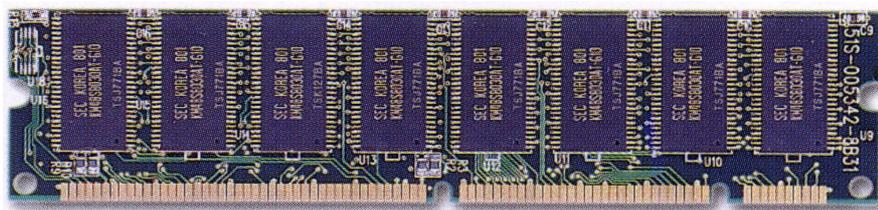
When you have installed the processor onto the mainboard, it will detect the CPU type and decide the CPU voltage automatically. So you don't have to make any jumper setting to select the CPU voltage and CPU FSB clock. All you have to do is use the BIOS setting to select the CPU clock ratio. (Most CPU need not to select the CPU clock ratio because it is "LOCKED", please refer to Section 3.4 for the switch setting or section 4-11 for the BIOS setting.)

### 3.2 INSTALLING THE DRAM MODULES

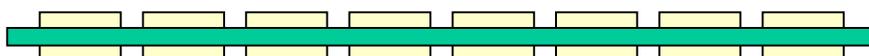
This mainboard has three DIMM sockets designed on the mainboard as shown in the following diagram:



**Outlook of DIMM modules:**



(Single-Side DIMM Module)



( Double-Side DIMM Module )

**Installation of DIMM modules:**

1. Minimum one DIMM module must be installed on the mainboard.
2. Please use 3.3V PC-100 or PC-133 un-buffered DIMM module.
3. You can use single side or double side DIMM module on this mainboard.
4. Please install the DIMM module starting from DIMM1 or DIMM2 first.
5. Maximum memory size: 1536MB

**Configuration of memory sub-system:**

Intel i815 chipset supports PC-100 and PC-133 DIMM modules. Basically, you may choose the memory access time by using the CMOS setup utility. (refer to CMOS setup “system memory frequency” in section 4-6). There are three different choices in the CMOS setup program, please refer to the following for the details:

**AUTO:** The system BIOS will read the memory chip information stored in the SPD chip on the DIMM module and then decide the way of memory frequency automatically.

**100MHz:** No matter what kind of DIMM module is installed on the mainboard, the system BIOS will force the PC system running at 100 MHz.

**133MHz:** When 133MHz CPU is installed on the mainboard, no matter what kind of DIMM module is installed on the mainboard, the system BIOS will force the PC system running at 133 MHz. However, when 100MHz CPU is installed on the mainboard, the memory frequency will be fixed at 100MHz no matter what kind of DIMM module is installed.



*According to the feature of Intel i815 chipset, there is some limitation when installing DIMM modules on the mainboard, Different setup of “System Memory Frequency” setting in the CMOS setup may have different requirement (refer to section 4-6 for details), please refer to the table in the next page for details:*

When the CPU installed on the mainboard is the 66MHz or 100MHz CPU, the memory frequency will be 100 MHz all the time. Even you select the 133MHz setting in the CMOS setup, the memory frequency will be fixed at 100MHz.

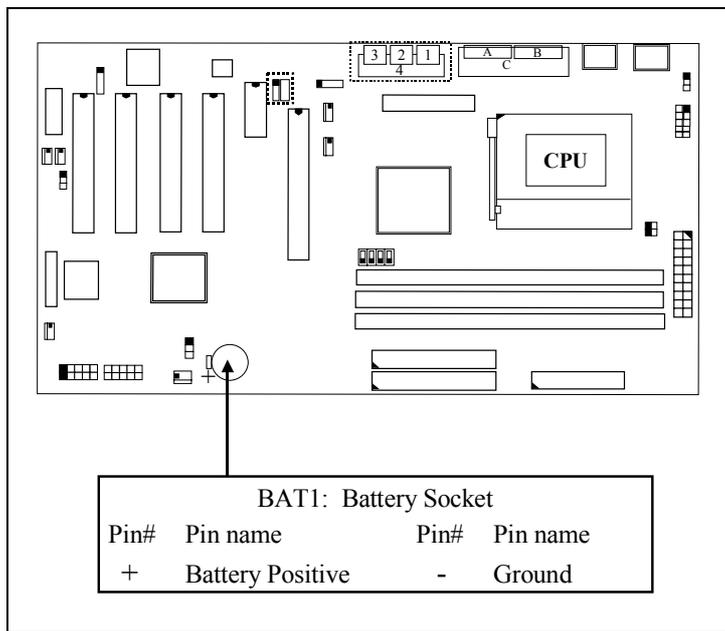
When the CPU installed on the mainboard is 133MHz, please refer to the following table for the memory configuration.

<b>DIMM MODULES</b>	<b>System Memory Frequency Setting in CMOS</b>		
	<b>AUTO</b>	<b>100 MHz</b>	<b>133 MHz</b>
PC-100 Single-side * 1	OK	OK	Not supported
PC-100 Single-side * 2	OK	OK	Not supported
PC-100 Single-side * 3	OK	OK	Not supported
PC-100 Double-side * 1	OK	OK	Not supported
PC-100 Double -side * 2	OK	OK	Not supported
PC-100 Double -side * 3	OK	OK	Not supported
PC-133 Single-side * 1	OK	OK	OK
PC-133 Single-side * 2	OK	OK	OK
PC-133 Single-side * 3	OK	OK	OK
PC-133 Double-side * 1	OK	OK	OK
PC-133 Double-side * 2	OK	OK	OK
PC-133 Double-side * 3	Not supported	OK	Not supported

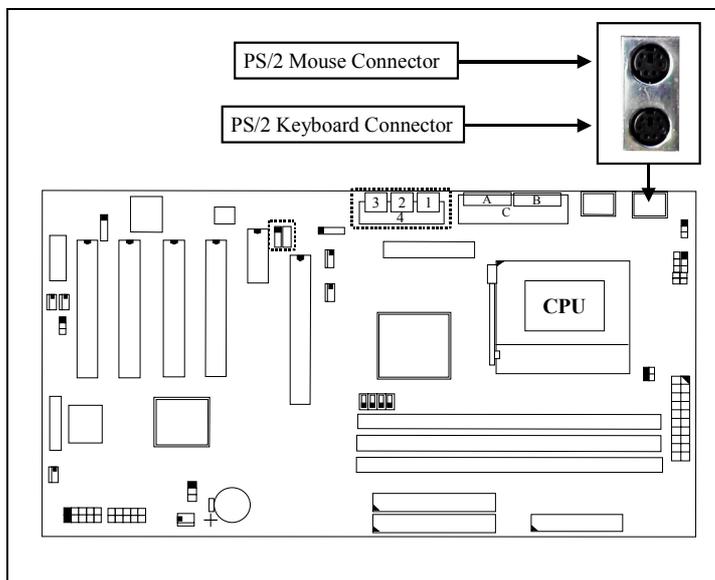
### 3.3 CONNECTORS

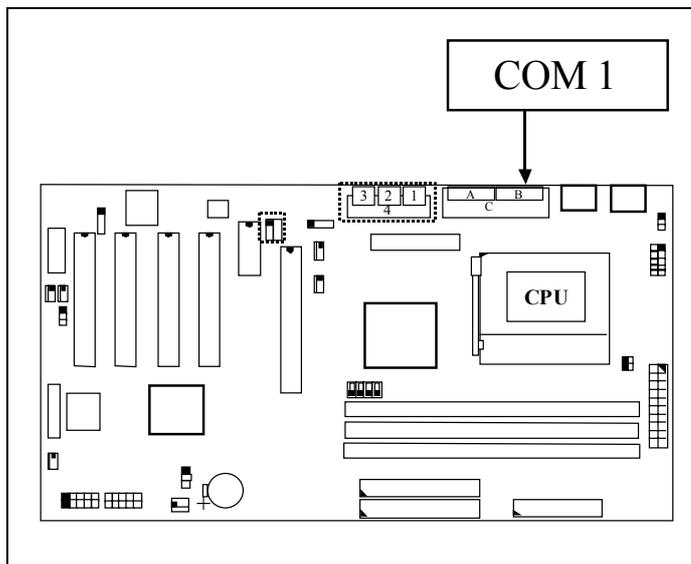
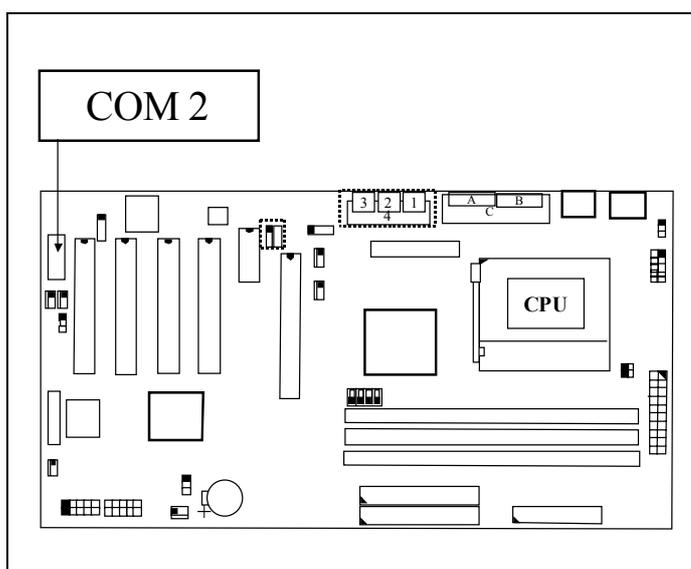
The connectors on the mainboard are either the pin header type or D-type connectors, they are used to connect the accessories or peripheral devices (such as power, mouse, printer,...etc.). Followings are the connectors with its description and the pin assignment which is designed on the mainboard.

#### 3.3.1 BAT1: Battery Socket (Use the 3 Volts Lithium battery : CR2032)



#### 3.3.2 CN1: PS/2 Mouse and Keyboard Connector



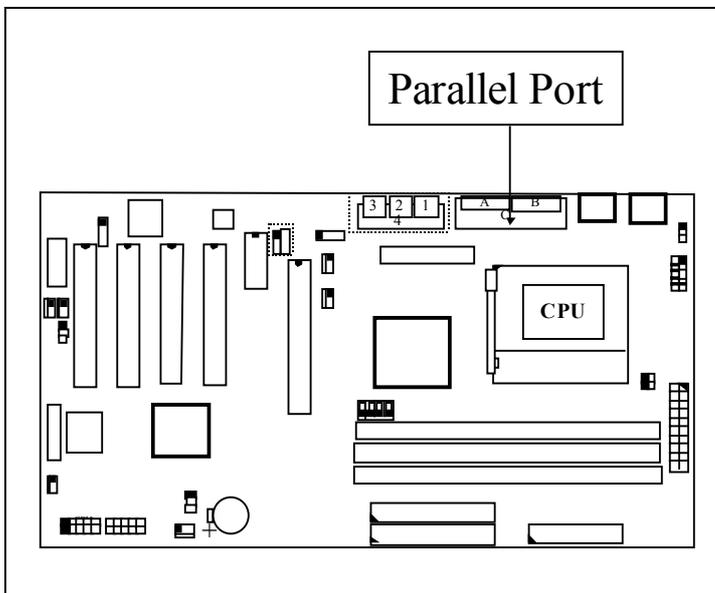
**3.3.3 CN3 : Serial Port COM 1 Connector****3.3.4 CN4 : Serial Port COM 2 Connector****Ping assignment of serial port connector:**

<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>
1	2	1	DCD (Data Carrier Detect)
3	4	3	TD (Transmit Data)
5	6	5	Ground
7	8	7	RTS (Request To Send)
9	10	9	RI (Ring Indicator)
		2	RD (Received Data)
		4	DTR (Data Terminal Ready)
		6	DSR (Data Set Ready)
		8	CTS (Clear To Send)
		10	N.C.

I/O address: 3F8H/2F8H/3E8H/2E8H, IRQ3/IRQ4, selected by CMOS setup.

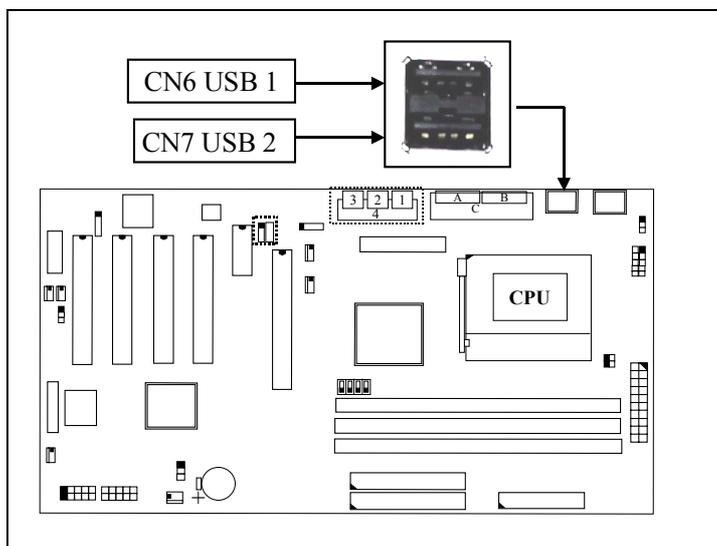
**3.3.5 CN5: Parallel Port Connector**

(Supports SPP/EPP/ECP modes, IRQ7 or IRQ5 is selectable, ECP mode will use either DMA channel 3 or channel 1 which can be selected in the CMOS setup )

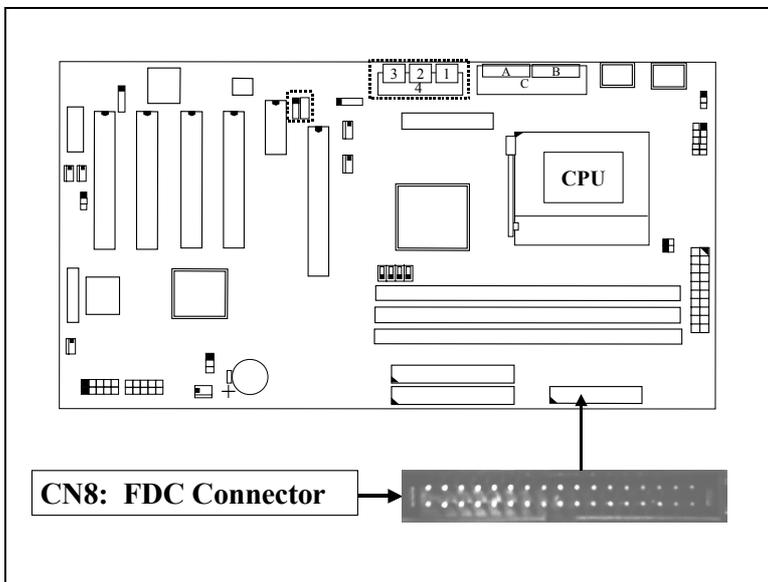


**3.3.6 CN6: USB Port 1 (Universal Serial Bus) Connector**

**3.3.7 CN7: USB Port 2 (Universal Serial Bus) Connector**

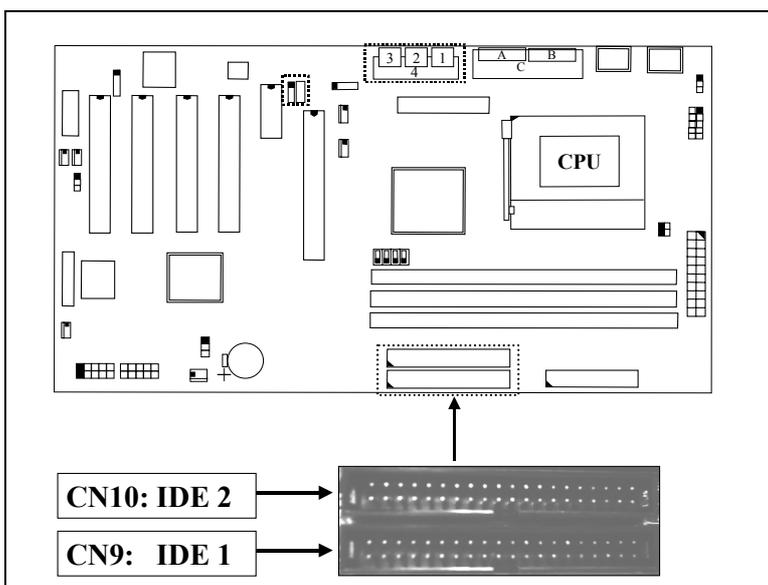


**3.3.8 CN8: Floppy Disk Control Port Connector (Use IRQ6, DMA channel 2)**

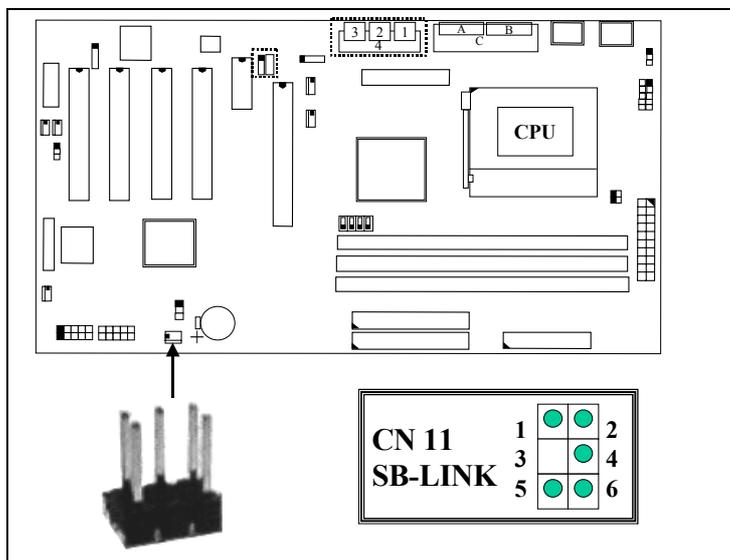


**3.3.9 CN9 : IDE 1 Connectors (Primary IDE Port: 1F0H, IRQ 14)**

**3.3.10 CN10: IDE 2 Connectors (Secondary IDE Port: 170H, IRQ 15)**



**3.3.11 CN11: SB-LINK Connector (Optional)**

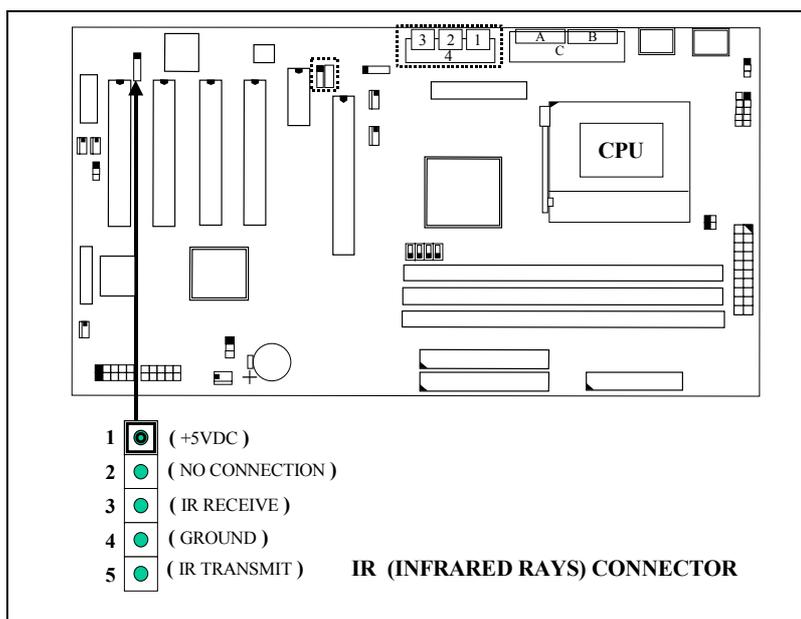


(SB-Link is designed for PCI sound cards such as Creative™ EMU8008 sound chip)

1	2	Pin #	Signal name	Pin #	Signal name
●	●	1	GNT#	2	Ground
	●	3	Key	4	REQ#
●	●	5	Ground	6	SERIRQ
5	6				

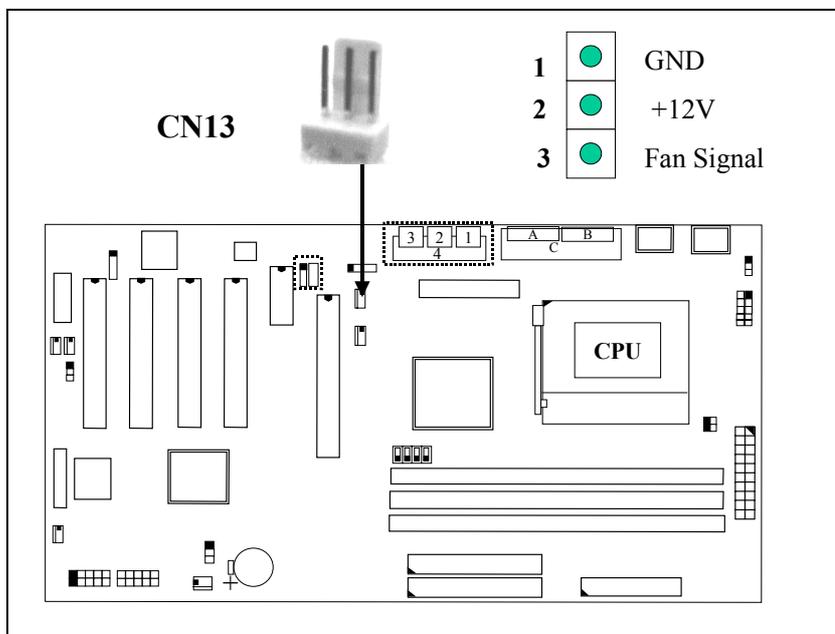
**Pin assignment of SB-LINK Connector:**

**3.3.12 CN12: IR / FIR (Infrared Rays) Connector**

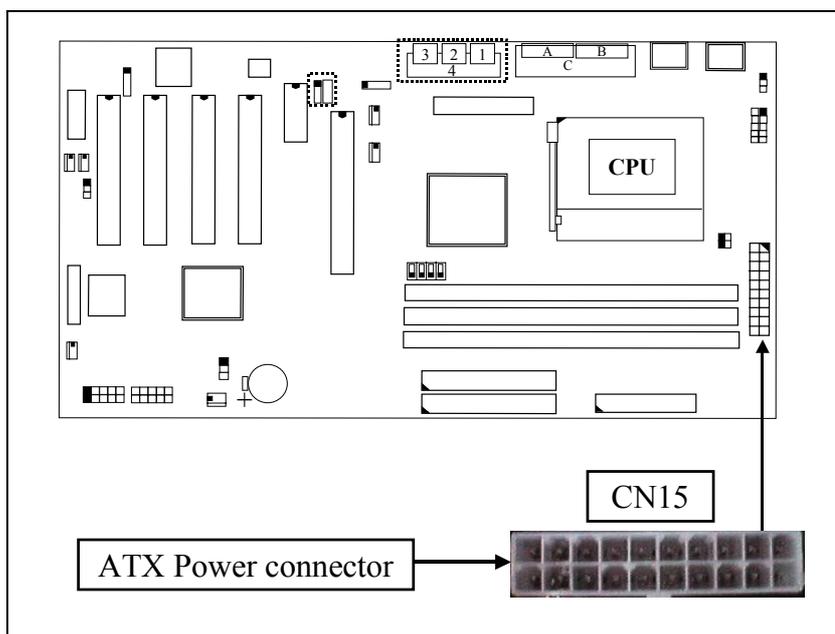


### 3.3.13 CN13: Cooling FAN 1 Power Connector

The Cooling Fan1 power connector can be connected to the CPU cooling fan or chassis cooling fan so that it will cool down the system temperature.

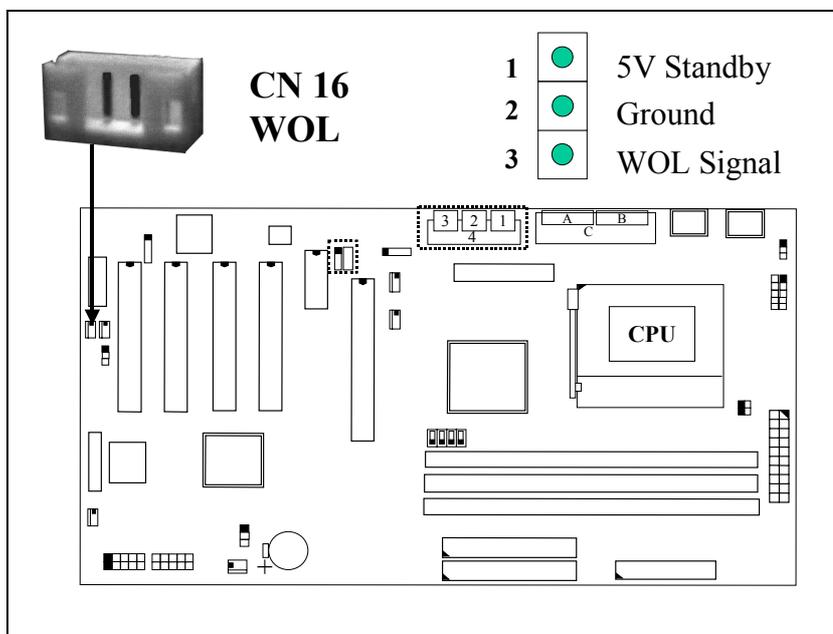


### 3.3.14 CN15: ATX Power Connector



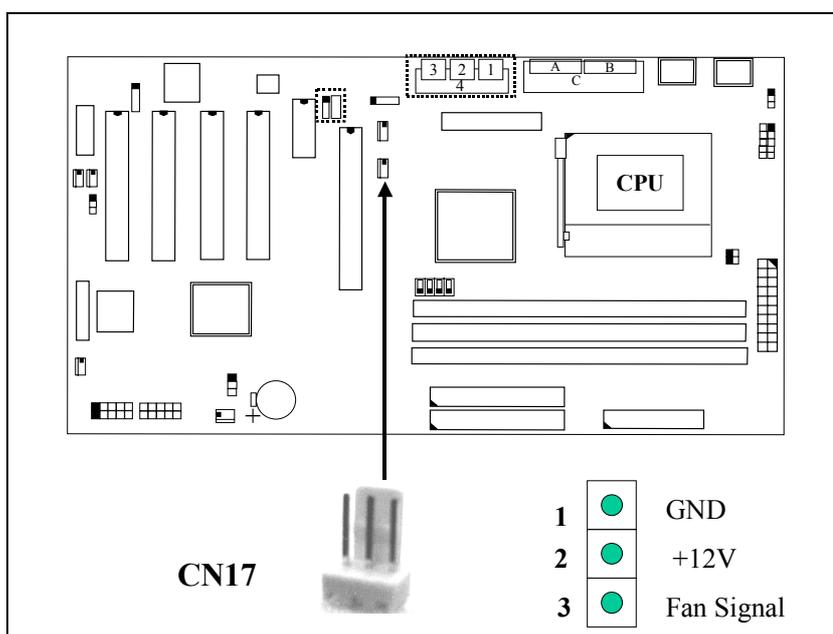
### 3.3.15 CN16: WOL (Wake On LAN) Connector

In order to use the WOL LAN card to trigger the power of the PC system, the switching power supply must be able to provide at least 1A current driving ability on the “+5V standby” voltage.



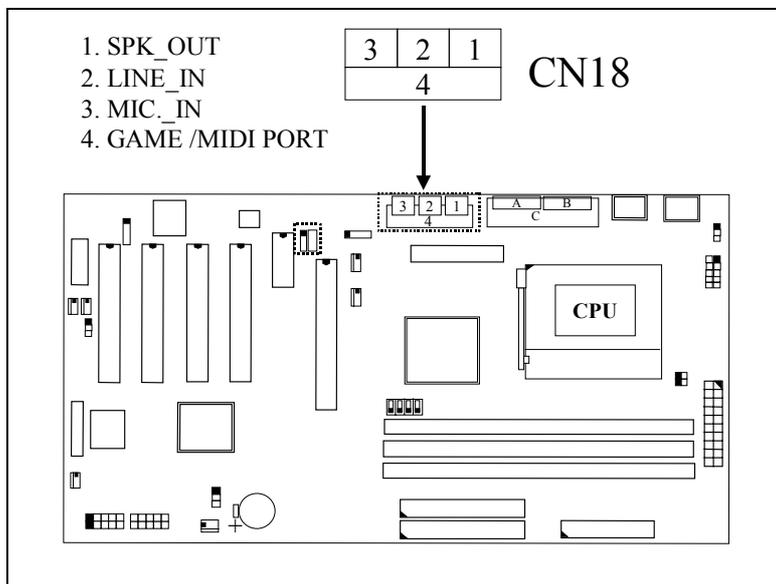
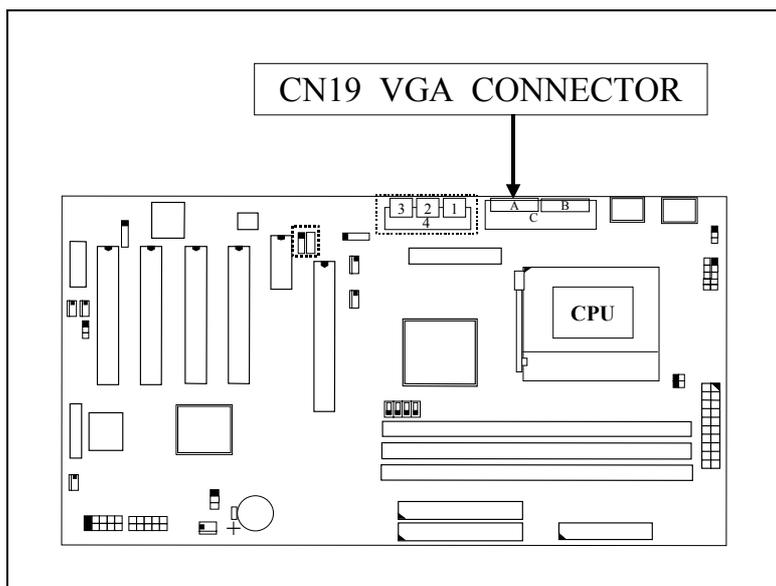
### 3.3.16 CN17: Cooling FAN2 Power Connector

The Cooling Fan2 power connector can be connected to the CPU cooling fan or chassis cooling fan so that it will cool down the system temperature.



**3.3.17 CN18: Audio/Game Connector:**

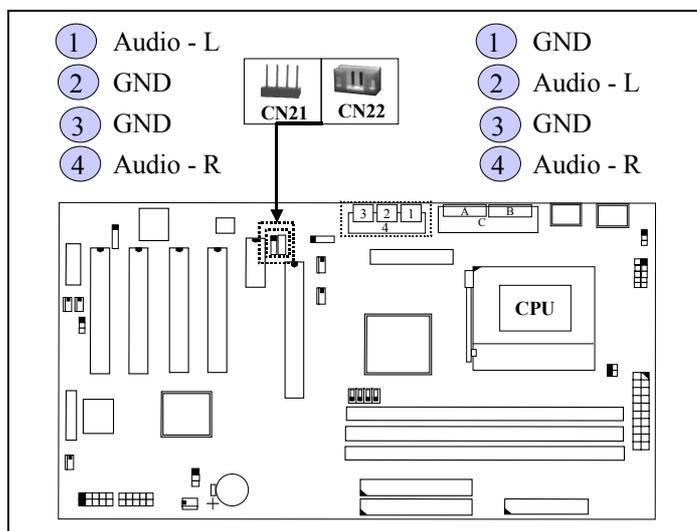
There is the 3D PCI audio interface installed on the mainboard. Please refer to the following picture for the connection:

**3.3.18 CN19: VGA Connector:**

The VGA connector on the board is the AGP VGA interface and you can connect it direct to your VGA monitor.

### 3.3.19 CN21 / CN22: CD-IN Connector:

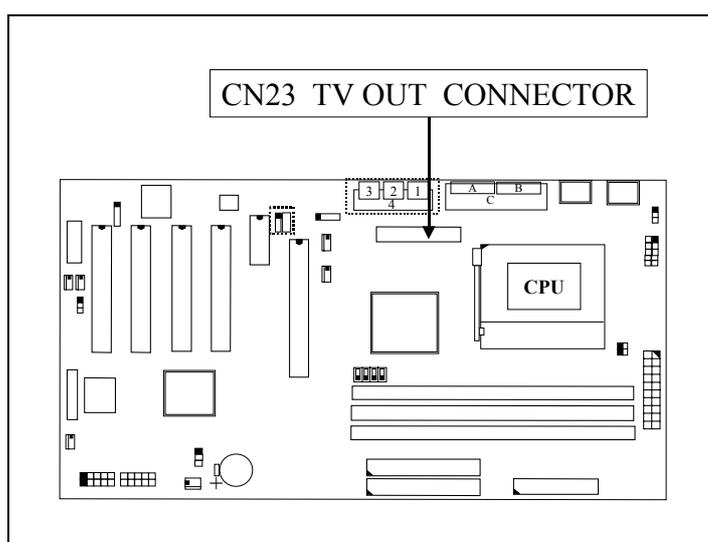
The CD-IN connectors on the board can be used to connect to the CD ROM audio out. There are two different types of connectors for CD ROM audio out connector.



Note: Audio - L = Left channel audio-out  
 Audio - R = Right channel audio-out  
 GND = Audio Ground

### 3.3.20 CN23: TV OUT Connector: (optional)

There is the TV OUT interface designed on the mainboard. A TV convert board can be installed on the interface and you may connect your PC system to a TV.

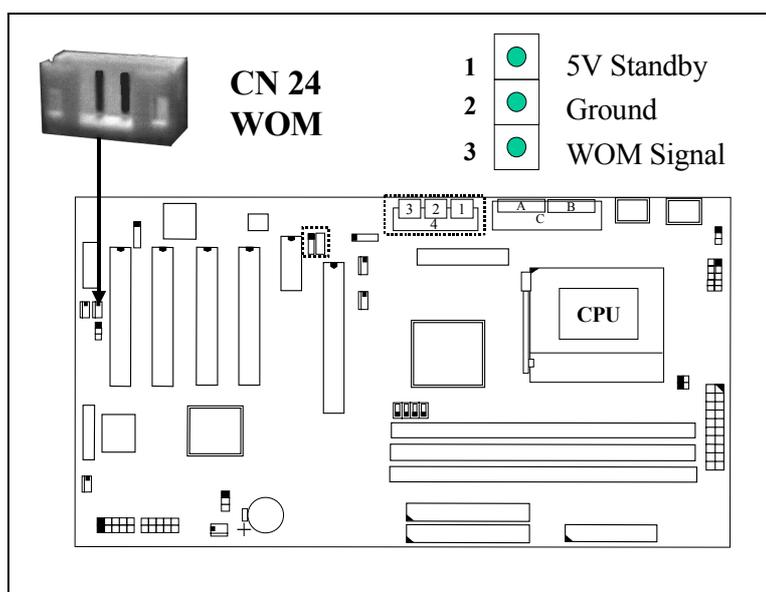


**Note: please contact your dealer for the TV converter so that you will get the proper TV OUT converter.**

**Wrong TV converter may destroy the mainboard.**

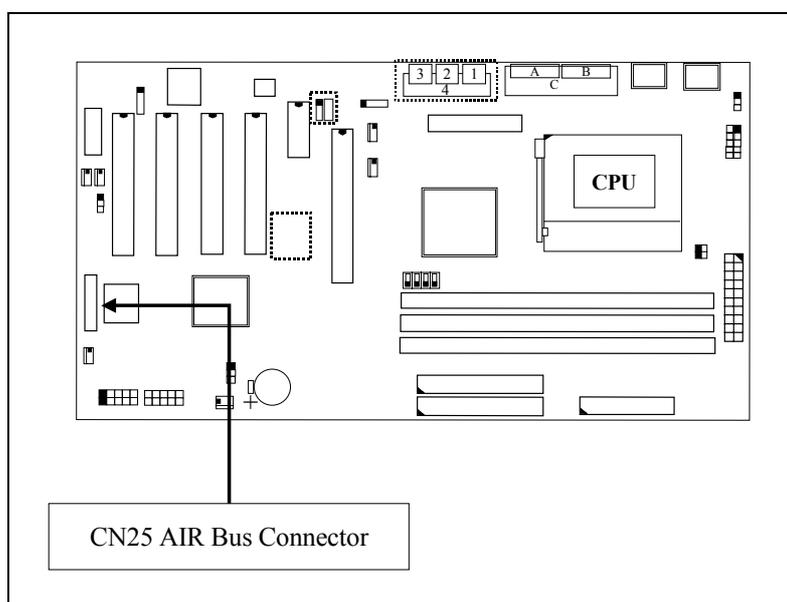
### 3.3.21 CN24: WOM (Wake On Modem) Connector (Optional)

This connector is optional on the mainboard. When it is presented on the board, it can be connected to a internal fax/modem card which support the wake On Phone Line function. When there is the ring-in signal, it will trigger the power of the PC system.



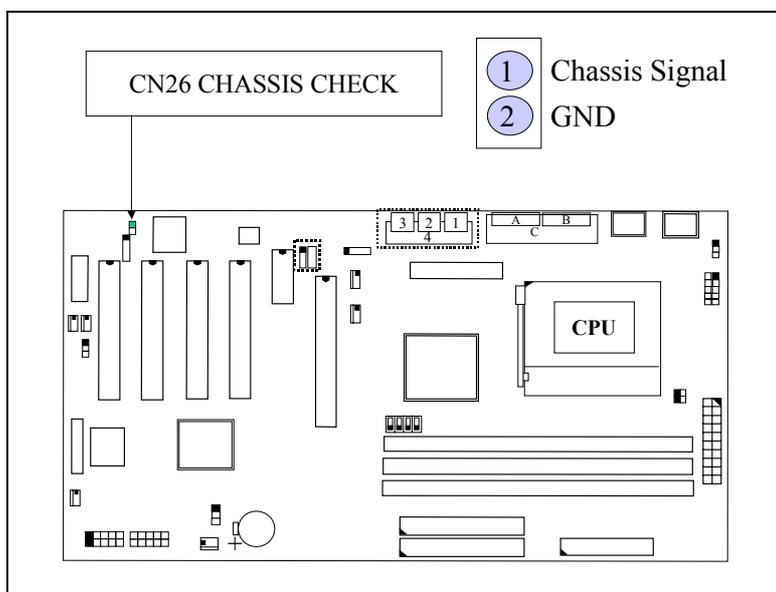
### 3.3.22 CN25: AIR Bus Connector

The AIR Bus is a revolutionary technology and it will provide you lots of stunning features. For example, it will rescue your system BIOS from virus attack. (lease refer to section 1.2 for detail function description).



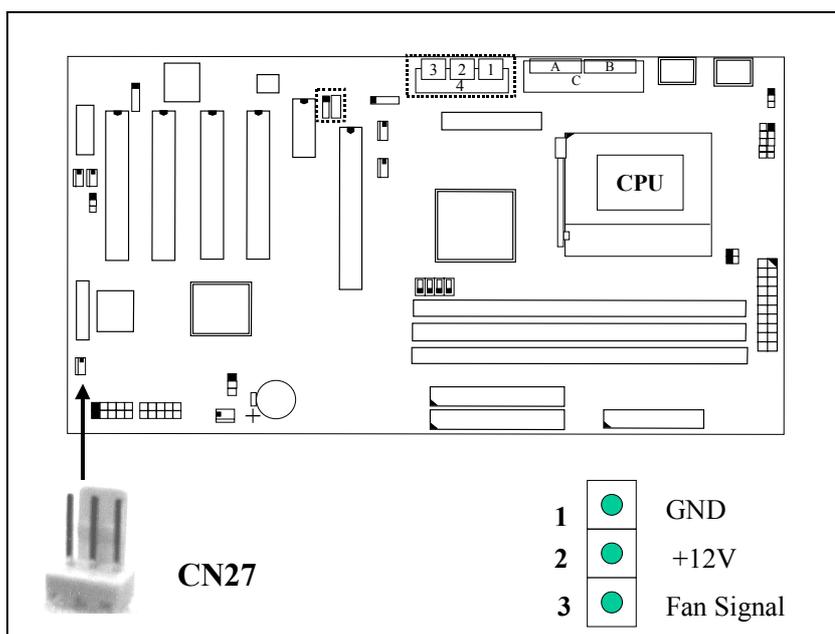
**3.3.23 CN26: CHASSIS CHECK Connector (Optional)**

This connector can be connected to the chassis which has the sensor on it. When this connector is connected to the chassis, it will detect and give you the warning message whenever there is anyone who had opened the chassis.



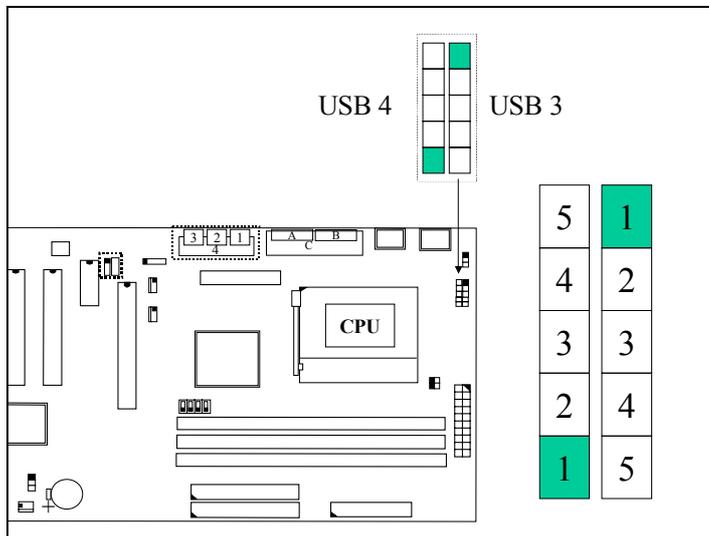
**3.3.24 CN27: Cooling FAN3 Power Connector (Optional)**

The Cooling Fan3 power connector can be connected to the CPU cooling fan or chassis cooling fan so that it will cool down the system temperature.

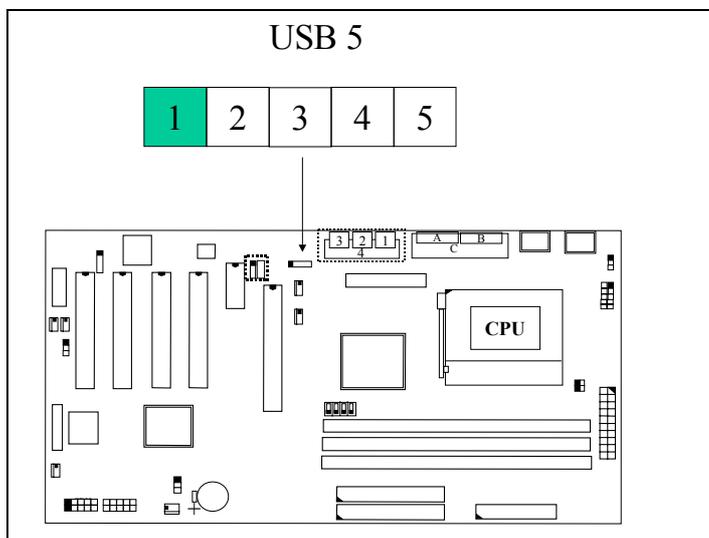


**3.3.25 CN30: USB Port 3 (Universal Serial Bus) Connector**

**3.3.26 CN31: USB Port 4 (Universal Serial Bus) Connector**



**3.3.27 CN32: USB Port 5 (Universal Serial Bus) Connector**

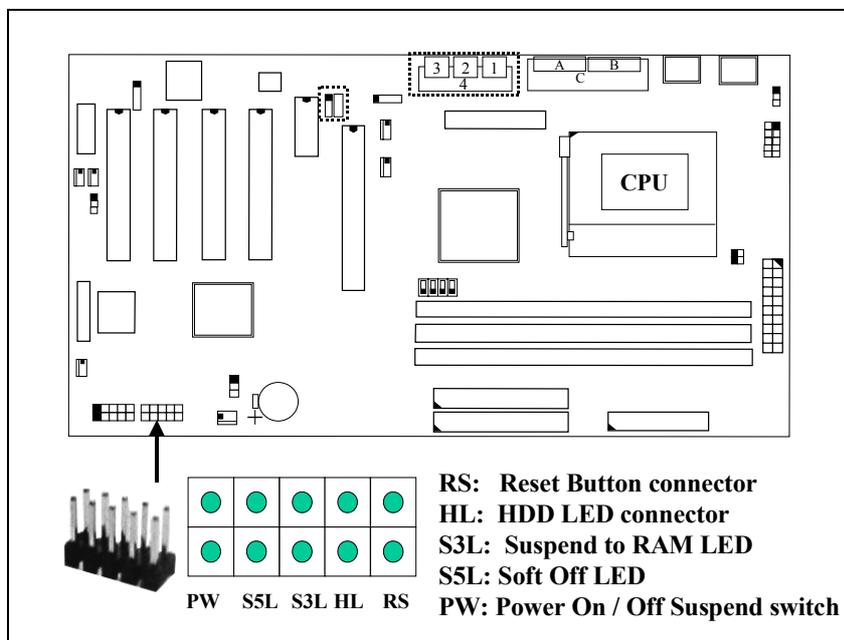


**Pin assignment of USB connector:**

<u>Pin #</u>	<u>Pin Assignment</u>
1	+5V DC ( <b>RED WIRE</b> )
2	DATA- ( <b>WHITE WIRE</b> )
3	DATA+ ( <b>GREEN WIRE</b> )
4	Ground ( <b>BLACK WIRE</b> )
5	Ground ( <b>BLACK WIRE</b> )

### 3.3.28 Push buttons and LED connectors

A series of connectors are designed on the board to connect the push buttons and LED indicators. Followings are the details:



#### 1. RS Reset Button Connector

<u>Pin #</u>	<u>Signal name</u>	<u>Pin1&amp;2</u>	<u>Function</u>
1	Reset Control	Open	No action
2	Ground	Short	System Reset

#### 2. HL IDE HDD LED Connector

<u>Pin #</u>	<u>Signal name</u>
1	+ 5V DC Pull-up
2	HDD Active Signal

#### 3. S3L Suspend to RAM LED

This LED will be used to indicate the status of suspend to RAM state.

<u>Pin #</u>	<u>Signal name</u>
1	Signal Pin
2	Ground

#### 4. S5L Soft-OFF LED Connector ( S5 State )

This LED will be used to indicate the status of Soft-Off ( S5 ) state.

..

<u>Pin #</u>	<u>Signal name</u>
1	Signal Pin
2	Ground



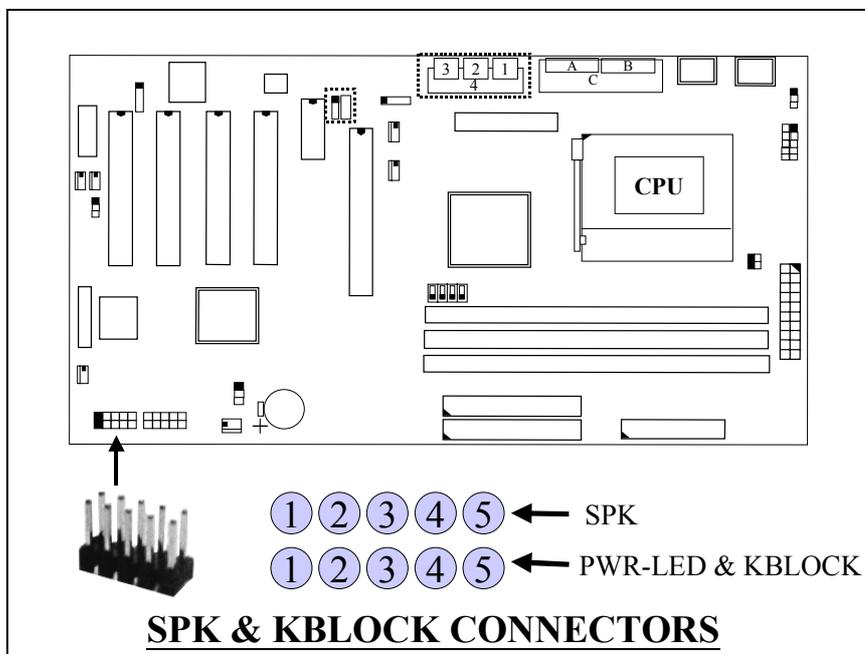
**When the PC is in the Soft-OFF state, please do not install or remove any component from the mainboard because the standby electricity is still active. Please remove the power cable from the electricity outlet before you can proceed with the installation / remove.**

**Otherwise, it will cause -  
SERIOUS DAMAGE TO  
YOUR PC SYSTEM!**

- 5. PW** Power ON/OFF and External Suspend Switch Connector  
According to the setup in CMOS, the PW connector has two functions. It can be the Power Switch or Suspend Switch of your PC system.  
(please refer to Section- 4.7 for BIOS setup)
- ① **If the setup in CMOS is “Delay 4 Sec.”, the function of “PW” will be:**
- A. When system is power off :**  
Press this switch, the system will power on.
- B. When system power is on :**
- a. The system is in Full-ON mode :
- a-1. Click on this switch ( less than 4 seconds ), the system will be turned into Suspend mode. (turn into the GREEN mode)
- a-2. Press and hold this switch for more than 4 seconds, the system will be powered off.
- b. When the system is in Suspend mode :
- b-1. Click on this switch ( less than 4 seconds ), the system will return to Full-ON mode.
- b-2. Press and hold this switch more than 4 seconds, the system will be powered off.
- ② **The setup in CMOS is “Instant-off”:**
- A. When system power is off :**  
Click on this switch, the system will be powered on.
- B. When system power is on :**  
Click on this switch, the system will be powered off instantly.

**3.3.29 Speaker and Key Lock connector:**

The connectors shown in the following picture will be connected to the speaker, Keyboard Lock and Power LED connector on the chassis.

**SPKR: Speaker connector**

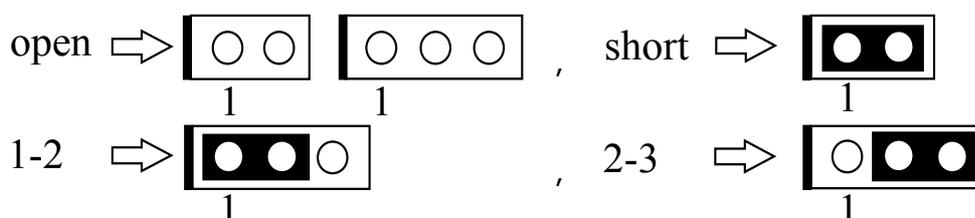
1	Pin #	Signal name
●	1	+ 5V DC
●	2	Speaker Data Signal
●	3	Speaker Data Signal
●	4	Speaker Data Signal
●	5	No Connection

**PWR-LED & KBLOCK: Front Panel Power LED and Key-Lock Connector**

1	Pin #	Signal name
●	1	Pull-up (+ 5V DC for Power LED)
●	2	Ground
●	3	Ground
●	4	Keyboard Lock
●	5	Ground

### 3.4 JUMPER SETTINGS

This section will discuss the jumper setting on the mainboard. In order to let you have better idea of the jumper setting, please see below for the explanation of jumper settings before you start this section.

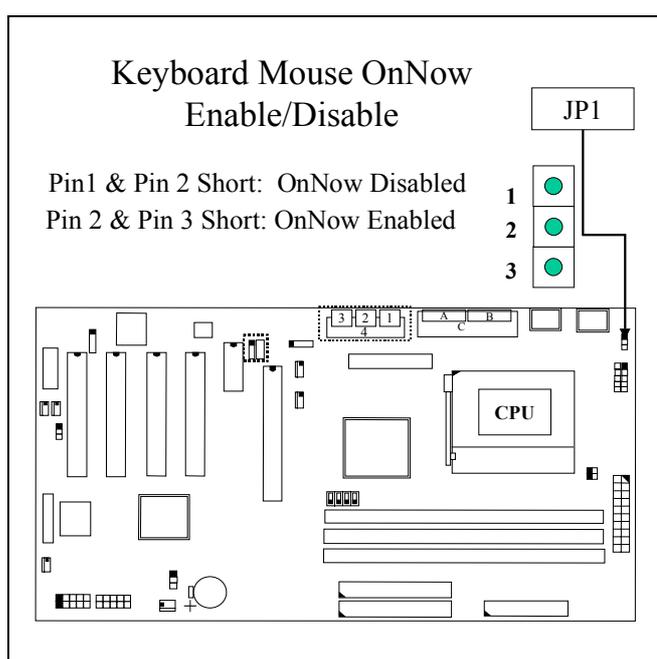


A jumper is a set of two, three or more jumper pins which allows users to make different system configuration by putting the plastic connector plug (mini-jumper) on it. The jumper setting is necessary when installing different components onto the mainboard.

*The following jumpers which labeled with “optional” means they are the optional choice for customers and the related components are normally not populated on the mainboard.*

#### (A) JP1: Keyboard and PS/2 Mouse OnNow function selection

The Keyboard and PS/2 Mouse OnNow function is designed on the mainboard and you can use keyboard and mouse key clicks to power on the PC system. However, there may have some keyboard and mouse are not compatible with the OnNow function. In this case, please use JP1 to disable the OnNow function.

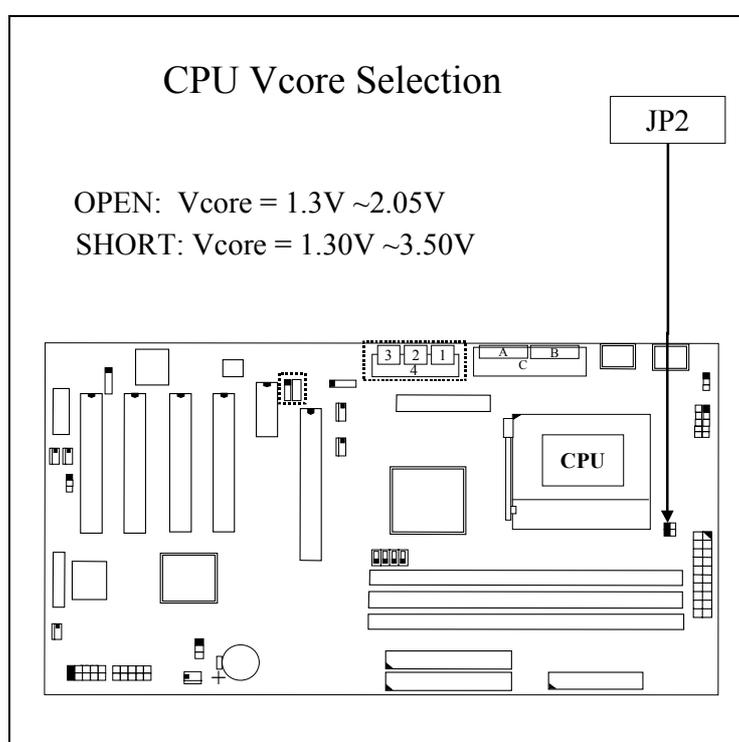


**(B) JP2: CPU Voltage (Vcore) Range Selection (optional)**

The voltage regulator on the mainboard will generate 1.3V ~ 3.5V DC to support different processors. Basically, most mainboards will use the CPU VID signal (VID0~VID4) from the CPU to decide the proper CPU core voltage (Vcore). In case that there is the poor connection between CPU and its socket, or uninstall the CPU from the mainboard while the system power is "ON". Under such circumstance, mainboard may receive wrong VID signal and send wrong Vcore to the CPU. Unfortunately, wrong Vcore may destroy the CPU and the mainboard.

In order to protect the mainboard and the CPU from the unexpected damage, JP2 is introduced on the mainboard to control the Vcore within the safe range so that it won't make any damage to the CPU or mainboard because of wrong VID signal.

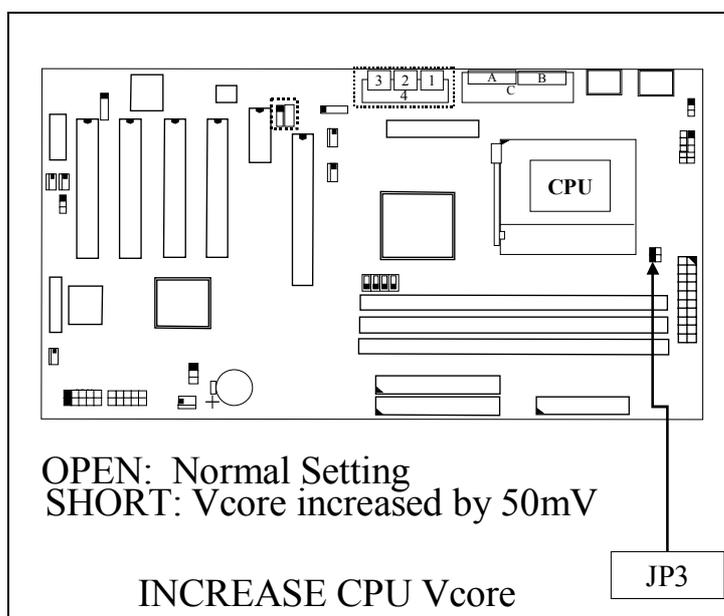
Since most Pentium II/!!! processors require the Vcore below 2.05V except few Pentium II processors. So the default setting of JP2 will control the Vcore between 1.3V and 2.05V so that the CPU and mainboard will have a good protection. Please do not change the setting on JP2 unless your CPU needs the voltage higher than 2.05V.



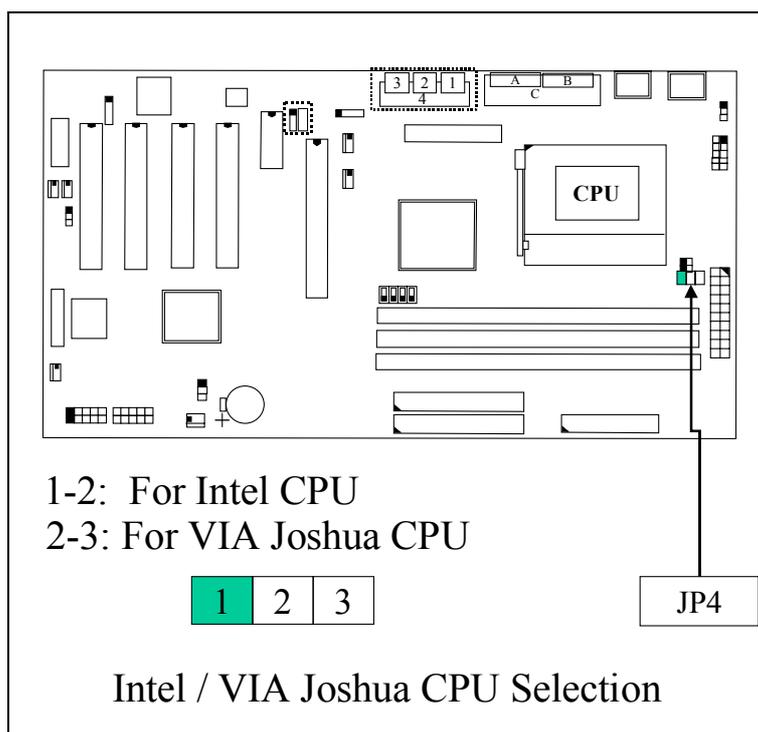
**Note: When JP2 is not installed on the mainboard, then the Vcore will be 1.3V ~ 2.05V.**

**(C) JP3: CPU Voltage Adjustment (optional)**

Sometimes you may feel that the CPU voltage detected by the mainboard can not meet your requirement and you want to make the CPU voltage a little bit higher than regular setting. In this case, you may use the JP3 setting to adjust the CPU voltage. When "SHORT" is selected, the CPU voltage will be 0.05V raised.

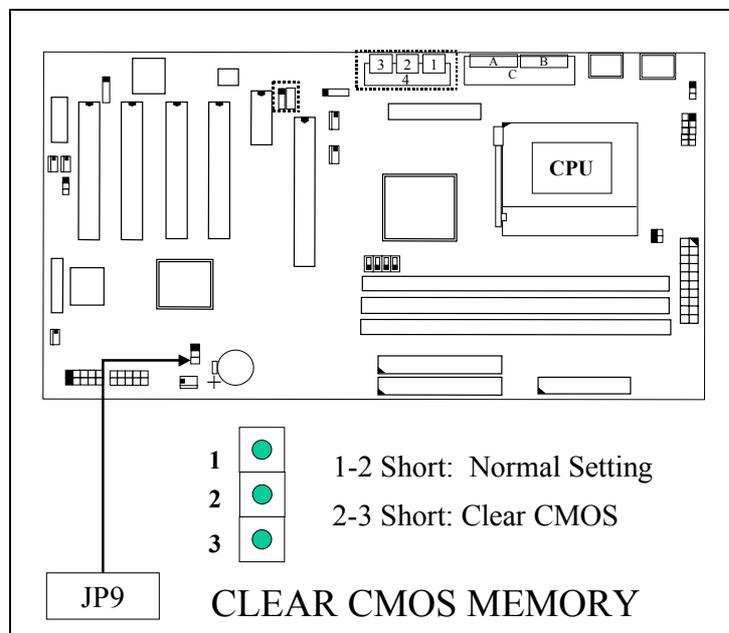
**(D) JP4: Intel / VIA JOSHUA CPU Selection (optional)**

Beside the Intel Pentium !!! CPU, this mainboard also support the Joshua CPU from VIA. Please refer to the following for the CPU selection:



**(E) JP9: Clear CMOS Data Button**

In case that you made improper setting in the CMOS setup program and cause the PC system not working, you may use JP9 to clear all the setting which is recorded in the CMOS memory.

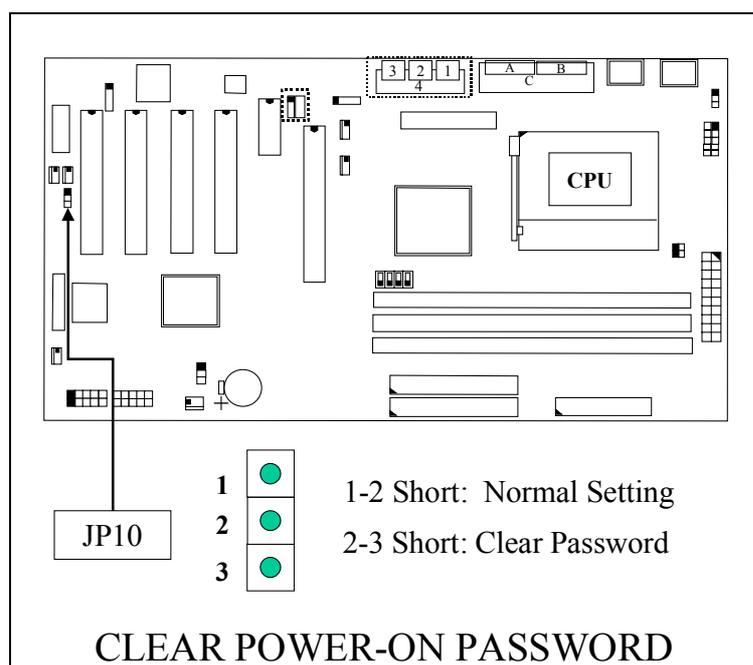


When you want to use JP9 to clear the CMOS setting, refer to the following procedures:

1. Turn the system power "OFF"
2. Put the shorting rod on Pin2 and Pin3 for 3 ~ 5 second.
3. Put the shorting rod the default position Pin 1 and Pin2.
4. Power on the PC system and run the BIOS setup program.

**(F) JP10: Clear Power-On Password Button**

In case that you forget the Keyboard Hot Key and Power-On password and that you can not start the PC system, you can use JP10 to clear the password which is recorded in the W83627HF I/O chip. (refer to [page 2-2](#) and Section 4-7 for more details)



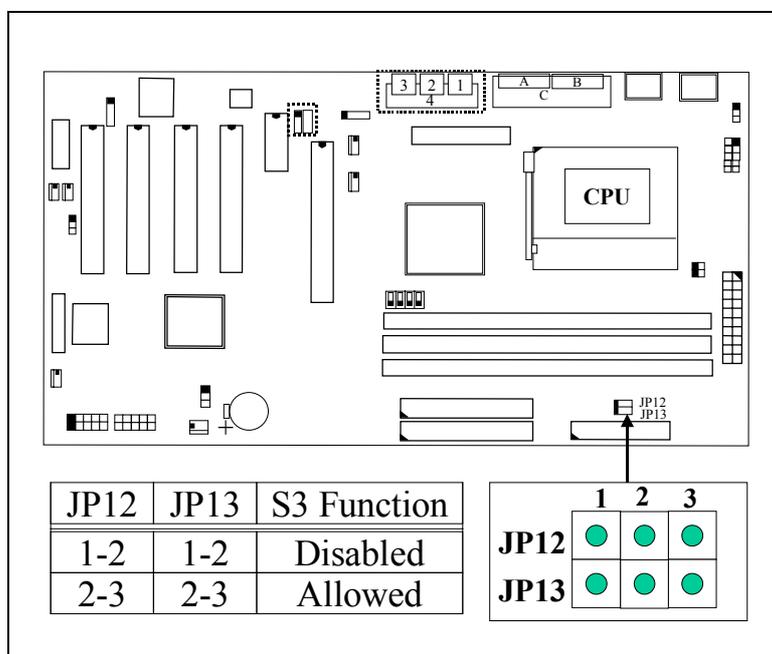
When you want to use JP10 to clear the password, refer to the following procedures:

1. Turn the system power "OFF"
2. Put the shorting rod on Pin2 and Pin3 for 3 ~ 5 second.
3. Put the shorting rod the default position Pin 1 and Pin2.
4. Password is cleared and you can use the power button to power on the PC system.

**(G) JP12 and JP13: Suspend to RAM function (S3) selection**

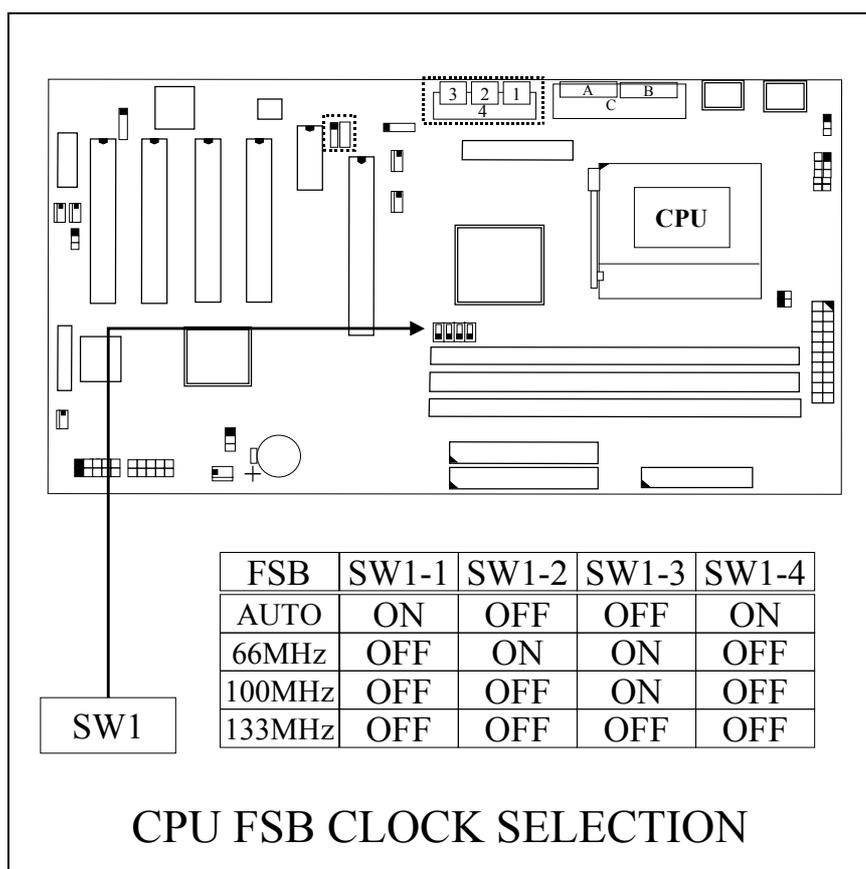
There are many mainboards support the Suspend to RAM (S3) function. But many of them will be failed when improper components such as SDRAM module is installed on the mainboard. When S3 is not working properly, it will cause the PC system become extremely unstable. In order to make sure the S3 function on the mainboard has the better compatibility and reliability, JP12 and JP13 are introduced on this mainboard to control the S3 function. When you want to use the S3 function, please refer to the following for the setting:

5. Refer to Section 4-8. Select “S3” in the “ACPI Suspend Type” selection field.
6. Refer to the following picture and set the mini-jumper to 2-3 on JP12 and JP13.



**(H) SW1: FSB Clock Selection**

SW1 is designed on the board to choose the CPU FSB clock (Front Side Bus Clock). Basically, you don't have to worry about the FSB clock setting most of the time, because it will be detected by the mainboard BIOS automatically. However, sometimes you may feel like to select different FSB clock for some special purpose. In this case, you may use the BIOS setting to select different FSB clock or use the switch setting on SW1 to force your CPU to use the selected FSB clock. *(Please do not attempt to change this setting unless you are the technician)..*

**Note:**

1. *SW1 will have no function unless "Default" is selected in the "CPU Host/PCI Clock / PC133" selection field in the BIOS setup program (refer to Section. 4-11). Please do not to make jumper setting on SW1 unless you are the professional technician.*
2. *When "Default" is selected, you may use SW1 to select different speed of CPU clock and force your CPU to use that clock speed instead of letting the system BIOS to select the CPU clock automatically.*

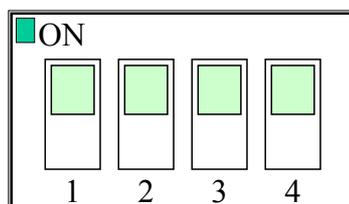


**IMPORTANT NOTICE:**

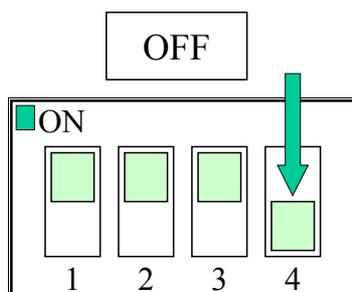
*When you are changing the setting on SW1, please make sure to remove the power core from the PC system. According to the i815 chipset feature, the PC system may hang up if you change the setting without removing the power core.*

**SWITCH SETTINGS**

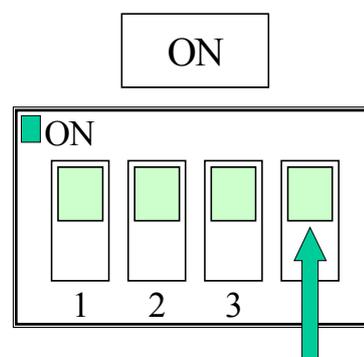
The "toggle switch" (SW1) on the mainboard can be used to select the CPU FSB clock. In order to let you have some better idea of the toggle switch setting, please refer to the following illustration. The following pictures will show you how to make the setting on the "toggle switch":



( Picture of "toggle switch" )

**Toggle Switch "OFF" Setting**

Push the switch downward to select "OFF"

**Toggle Switch "ON" Setting**

Push the switch upward to select "ON"

### 3.5 INSTALLATION OF DEVICE DRIVERS

There is a CD which comes with the mainboard. The CD contains the device drivers which is necessary when installing the mainboard. Please refer to the following procedures to install the device drivers.

1. When you have install the operation system, you will have to install some device driver of the mainboard so that it will work normally.
2. Insert the CD diskette into the CD ROM Drive ( suppose it is "D:") which comes with the mainboard
3. Change the directory to D:\Driver\mainboard\Intel\815\inf"
4. Double click on the program –“InfInst-autol.exe” and the program will install the related device drivers for the mainboard automatically.

Note: You have to run “InfInst-autol.exe” to install the related device driver when you are using the Windows 95/98 operation system. If you are using the operation system like Windows NT and Windows 2000, you need not to install the device driver because it is supported by these operation systems already.

5. Change the directory to "\Driver\mainboard\Intel\815\VGA" and then choose the operation system to install the device driver of the onboard VGA interface.
6. Install the device driver for the on board audio interface. The codec (please refer to page 1-3 for U13) installed on the board can be different and they will need the different device driver. Please refer to the following to install the correct device driver:

Onboard Codec on U13 is “ad1881A”:

Change the directory to "\Driver\mainboard\Intel\815\ad1881A" and then choose the operation system to install the onboard audio device driver.

Onboard Codec on U13 is “Cirrus 4299”:

Change the directory to "\Driver\mainboard\Intel\815\4299" and then choose the operation system to install the onboard audio device driver.



**Note:**

**The sequence of the device driver is very important, please follow the procedure above to install the related device driver.**

## 4. AWARD BIOS SETUP

### 4.1 GETTING STARTED

When the system powered on or reset by user, the system BIOS will enter the POST routines (Power On Self Test routines, it will execute a series of diagnostics and system initialization, and you will see the copyright message displayed on the screen.) In case that there is any error or malfunction detected, the BIOS will give a series of beeping sound or display the error message on screen.

During the power on self testing (POST), the following message appears at the lower left corner of the screen:

" Press **DEL** to enter SETUP "

To execute the Award® BIOS CMOS Setup program, please press the **DEL** key. The STANDARD CMOS SETUP screen as shown in the following will be triggered:

### 4.2 MAIN MENU

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software

<b>Standard CMOS Features</b>	Frequency / Voltage Control
Advanced BIOS Features	Load Optimized Defaults
Advanced Chipset Features	Set Supervisor Password
Integrated Peripherals	Set User Password
Power Management Setup	Save & Exit Setup
PNP/PCI Configuration	Exit Without Saving
PC Health Status	
ESC : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type ...	

### 4.3 CONTROL KEYS

When you have started the CMOS setup program, you will see a list of control key show at the bottom of the screen, please refer to the following for the definition of the control keys:

- Arrow Keys** : Use the arrow keys to move the cursor to the desired item.  
**Enter** : Select the desired item.  
**F1** : Display the help screen for the selected feature.  
**ESC** : Exit to the previous screen.  
**PgUp(-)/PgDn(+)** : To modify or change the content of the highlighted item.  
**F5** : Retrieves the previous value from CMOS data, ( only the current page setup will be retrieved ).  
**F7** : Loads the SETUP default values from BIOS default table, (only the current page setup will be loaded ).  
**F10** : Save all changes to CMOS RAM from the MAIN MENU

### 4.4 STANDARD CMOS FEATURES

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software  
 Standard CMOS Features

		Item Help
Date (mm : dd : yy) : Tue, Jun 20 2000		
Time (hh : mm : ss) : 16 : 03 : 33		
➤ IDE Primary Master	Maxtor 91024D4	Menu Level ➤
➤ IDE Primary Slave	None	
➤ IDE Secondary Master	None	Change the day, month, Year and century
➤ IDE Secondary Slave	None	
Drive A	1.44M 3.5 in.	
Drive B	None	
Floppy 3 Mode Support Disabled		
Video	EGA/VGA	
Halt On	All errors	
Base Memory	640K	
Extended Memory	63488K	
Total Memory	64512K	

#### IDE Primary / Secondary Master / Slave:

These two selection fields allow you to select the HDD type which is installed on the primary/secondary IDE port. Move the selection bar to the appropriate field and then click on the "ENTER" key and the system BIOS will detect the HDD type automatically.

**Drive A/B:**

These two selection fields allow you to select the type of the floppy drive. Check the floppy drive installed in the system and then use this field to select the correct type.

**Floppy 3 Mode Support:** (Default setting: disabled )

This mode is for the Japanese 3.5 inch high capacity floppy disk drive. If you have such drive installed in your PC system, please select enable, otherwise, use the default setting.

**Video:**

This selection field allows you to select the display mode. Check the video display card installed in the PC system and then use this selection field to choose the proper display mode.

**Halt On:**

This selection field allows you to decide whether the PC system will halt when the system board detects any error during Power On Self Test.

**4.5 ADVANCED BIOS FEATURES**

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software  
Advanced BIOS Features

		Item Help
Virus Warning	<b>Disabled</b>	
CPU Internal Cache	: Enabled	
External Cache	: Enabled	Menu Level      ➤
CPU L2 Cache ECC Checking	: Enabled	
Processor Number Feature	: Disabled	
Quick Power On Self Test	: Enabled	Allows you to choose
First Boot Device	: Floppy	The Virus warning
Second Boot Device	: HDD-0	Feature for IDE Hard
Third Boot Device	: LS120	Disk boot sector
Fourth Boot Device	: Disabled	Protection. If this
Boot Other Device	: Enabled	Function is enabled
Swap Floppy Drive	: Disabled	And some attempt to
Boot Up Floppy Seek	: Enabled	Write data into this
Boot Up NumLock Status	: On	Area, BIOS will show a
Gate A20 Option	: Fast	Warning message on
Typematic Rate Setting	: Disabled	Screen and alarm beep.
Typematic Rate (Chars/Sec)	: 6	
Typematic Delay (Msec)	: 250	
Security Option	: Setup	
OS Select For DRAM > 64MB	: Non-OS2	
HDD S.M.A.R.T Capability	: Disabled	
Report No FDD For Win95	: NO	

**Virus Warning :**

In order to avoid virus infection happens on your PC system, This mainboard provides the virus warning features in the BIOS. When you find any warning message displayed your screen, please run the anti-virus program to see whether your system is infected by a virus or not.

**Enabled** : A warning message will be displayed on the screen when something attempts to access the boot sector or hard disk partition table.

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

**CPU Internal Cache / External Cache :** ( default setting: Enabled )

These fields allow you to turn on or turn off the Level 1 and Level 2 cache that built-in Pentium™ !!! processors.

**CPU L2 Cache ECC Checking:** ( default setting: Enabled )

This option will enable or disable the ECC checking on the CPU L2 cache. The ECC checking will ensure the accuracy of the data stored on the L2 cache.

**Processor Number Feature:** ( default setting: Disabled )

You can not see this selection option unless you have the Pentium !!! processor installed on the mainboard. There is the serial code inside every Pentium !!! processor and it will be accessed by application to show your personal ID. If you don't feel like to give your serial code to other people, select the "Disabled" setting.

**Quick Power on Self Test:** ( default setting: Enabled )

The Quick Power On Self Test will skip some test and speed up the boot process. If you find the system is working normally, you can always enable this feature so that you don't have to wait too long on the POST.

**First / Second / Third /Boot Device :**

These fields allow you to decide the sequence of the boot devices.

**Swap Floppy Drive :** ( default setting: Disabled )

When enable this option, the device name of the floppy drives will be swapped, For example, drive A will be treated as drive B, and drive B as Drive A.

**Boot Up Floppy Seek :** ( default setting: Disabled )

When enabled, the floppy drive will be initialized during POST.

**Boot Up NumLock Status :** ( default setting: Off )

When enabled, the NumLock LED will be lightened after the POST.

**Security Option :** ( default setting: Setup )

This selection field allows you to select how to secure the PC system for you. There are two choice selectable - "Setup" and "System". Before you can apply the security option to your PC system, you have to select your own ""Supervisor Password" or "User Password" in the BIOS setup program.

When "Setup" is selected, you will have to input your "Passwords" before you can start the BIOS setup program. When you select "System", you will be unable to load the operation system if you don't key-in your personal "password"

**OS Select For DRAM > 64MB :** ( default setting: Non-OS/2 )

When you are using the "OS/2™" operating system and the system memory is more than 64MB, you will have to select the setting to "OS2", otherwise, leave this on the default setting "Non-OS2" for all other operating systems.

**HDD S.M.A.R.T Capability :** ( default setting: Disabled )

There is the HDD which support the S.M.A.R.T. technology (Self Monitoring Analysis Reporting Technology). If your HDD support the SMART feature, you may enable this item and it will monitor and report the HDD healthy status to you.

**Report NO FDD for WIN 95 :** ( default setting: NO )

If there is no FDD installed in the PC system, you may select "YES" in this field so that WIN 95 will "KNOW" there is no FDD connected to the mainboard.

**4.6 ADVANCED CHIPSET FEATURES**

The CMOS setup screen will be different according to the VGA interface which you choose for your PC system. Please refer to the following for the setup screen:

**Use the Onboard VGA interface:**

SDRAM CAS Latency Time	<b>3</b>	Item Help
SDRAM Cycle Time Tras / Trc	: 6/8	Menu Level 
SDRAM RAS-to-CAS Delay	: 3	
SDRAM PAS Precharge Time	: 3	
System BIOS Cacheable	: Disabled	
Video BIOS Cacheable	: Disabled	
Memory Hole at 15M-16M	: Disabled	
CPU Latency Timer	: Disabled	
Delayed Transaction	: Enabled	
On-Chip Video Windows Size	: 64MB	
AGP Graphics Aperture Size	: 64MB	
System Memory Frequency	: 100MHz	

Use the add-on AGP VGA card:

SDRAM CAS Latency Time	3	Item Help
SDRAM Cycle Time Tras / Trc	: 6/8	Menu Level      ➤
SDRAM RAS-to-CAS Delay	: 3	
SDRAM PAS Precharge Time	: 3	
System BIOS Cacheable	: Disabled	
Video BIOS Cacheable	: Disabled	
Memory Hole at 15M-16M	: Disabled	
CPU Latency Timer	: Disabled	
Delayed Transaction	: Enabled	
On-Chip Video Windows Size	: 64MB	
AGP Graphics Aperture Size	: 64MB	
Display Cache Frequency	: 100MHz	
System Memory Frequency	: 100MHz	
* Onboard Display Cache Setting *		
CAS# Latency	: 3	
Paging Mode Control	: Open	
RAS-to-CAS Override	: By CAS# LT	
RAS# Timing	: Fast	
RAS# Precharge Timing	: Fast	

**SDRAM Speed Selection :**

The first four fields on the screen are used to adjust the SDRAM timing. Use these fields to configure the DRAM parameter properly will give you the best performance. However, improper setting on these fields will cause your PC system become extremely unstable. Basically, please do not attempt to make the change on these fields unless you are the professional technician.

**System BIOS Cacheable:** ( default setting : “Disabled” )

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFh, resulting in better system performance.

Enabled	BIOS access cached
Disabled	BIOS access not cached

**Video BIOS Cacheable:** ( default setting : “Disabled” )

Selecting *Enabled* allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance.

<b>Enabled</b>	Video BIOS /RAM access cached
<b>Disabled</b>	Video BIOS /RAM access not cached

**Memory Hole At 15M-16M:** ( default setting : “Disabled” )

In order to improve performance, certain space in memory can be reserved for ISA cards. Such memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported.
Disabled	Memory hole not supported.

**Delayed Transaction** ( default setting : “Enabled” )

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.. The Choice: Enabled, Disabled.

**On-Chip Video Window Size :** ( default setting: 64MB )

This mainboard provides the most DVMT technology (Dynamic Video Memory Technology) and it will increase the video display performance. There is the AGP VGA interface on this mainboard and the AGP display card will use some of the system memory to store 3D texture mapping data to increase the video display performance. You may use this field to define the memory size which you prefer to use for the AGP card. The memory size selectable in this field can be "Disable" or 32MB or 64MB DVMT. When you select 64MB DVMT, it does not mean that the PC system will use that much memory. Then memory size defined in this field will be the maximum memory which Windows 95/98 can use to store the 3D texture.

When you select the 64MB DVMT, you will see 1024K memory is allocated as the share memory when you power on the PC system. When you start the Windows operation system, Windows will allocate the required display share memory dynamically.

**AGP Aperture Size**

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

**System Memory Frequency:**

This selection field allows you to select the frequency of the system memory, please refer to Section 3-2 for the function description.

**Onboard Display Cache Setting \***

The selection field and below allows you to select the parameters for the display cache of the AGP card.

**4.7 INTEGRATED PERIPHERALS**

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software  
Integrated Peripherals

		Item Help
On-Chip Primary PCI IDE	<b>Enabled</b>	
On-Chip Secondary PCI IDE	: Enabled	
IDE Primary Master PIO	: Auto	Menu Level      ➤
IDE Primary Slave PIO	: Auto	
IDE Secondary Master PIO	: Auto	
IDE Secondary Slave PIO	: Auto	
IDE Primary Master UDMA	: Auto	
IDE Primary Slave UDMA	: Auto	
IDE Secondary Master UDMA	: Auto	
IDE Secondary Slave UDMA	: Auto	
USB Controller	: Enabled	
USB Keyboard Support	: Disabled	
Init Display first	: PCI Slot	
AC97 Audio	: Auto	
IDE HDD Block Mode	: Enabled	
POWER ON Function	: BUTTON ONLY	
x KB Power ON Password	: Enter	
x Hot Key Power ON Password	: Ctrl-F1	
Onboard FDC Controller	: Enabled	
Onboard Serial Port 1	: 3F8/IRQ4	
Onboard Serial Port 2	: 2F8/IRQ3	
UART Mode Select	: Standard	
x Rx/D , Tx/D Active	: Hi , Lo	
x IR Transmission Delay	: Enabled	
x UR2 Duplex Mode	: Half	
x Use IR Pins	: IR-Rx2Tx2	
Onboard Parallel Port	: 378/IRQ7	
Parallel Port Mode	: SPP	
EPP Mode Select	: EPP 1.7	
ECP Mode Use DMA	: 3	
PWRON After PWR-Fail	: Off	
Game Port Address	: 201	
Midi Port Address	: 330	
Midi Port IRQ	: 10	

**On-Chip Primary / Secondary PCI IDE:** (Default setting: "Enabled" )

These options allow you to enable / disable the onboard IDE interface..

**IDE Primary/Secondary Master/Slave PIO:** ( Default setting : "Auto" )

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

**IDE Primary/Secondary Master/Slave UDMA:** ( Default setting : "Auto" )

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

The Choice: Auto, Disabled

**USB Controller:** (Default setting: "Enabled" )

This field allows you to enable or disable the onboard USB controller.

**USB Keyboard Support:** (Default setting: "Disabled" )

If you're installing a USB keyboard, please select "Enable" in this field. Otherwise, use the default setting.

**Init AGP Display First:** ( Default setting : PCI slot )

When you have both the onboard-AGP and PCI VGA card installed in the system, you can use this field to decide the display priority.

**Onboard -AGP:** The display will be active on the onboard-AGP.

**PCI slot:** The display will be active on the PCI VGA adapter

**AC97 Audio:** ( Default setting : "Auto" )

There is the Audio interface built in the system chipset. You can use this field to configure the onboard Audio interface or disable the audio interface.

**IDE HDD Block Mode:** ( Default setting : "Enabled" )

This selection allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

<b>Enabled</b>	IDE controller uses block mode.
<b>Disabled</b>	IDE controller uses standard mode.

**POWER ON Function:** ( Default setting : "BUTTON ONLY")

The Power ON function allows you to select different way to power on your PC system.

**KB Power ON Password:**

When you select KB Password to power ON the PC system in the previous selection field, you may enter your personal password in this field. When finished, you may use the password to power on your PC system. ( In case that you forget the password, you can refer to [page 3-23](#) and use JP10 to clear the password)

**Hot Key Power ON:**

When you select KB Password to power ON the PC system in the previous selection field, you may select a set of "Hot Key" in this field. When finished, you may use the combination of hot key to power on your PC system. (you can refer to [page 3-23](#) and use JP10 to clear the Hot Key setting)

**Onboard FDD Controller:** ( Default setting : "Enabled" )

This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

The Choice: Enabled, Disabled

**Onboard Serial Port 1/Port 2:** ( Default setting : "3F8/IRQ4, 2F8/IRQ3" )

This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address.

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

**UART Mode Select:** ( Default setting : "Normal" )

This field allows you to determine the mode of the UART port.

**RxD, TxD Active:** ( Default setting : "Hi , Lo" )

This item allows you to determine the active of RxD, TxD

**IR Transmission delay:** ( Default setting : "Enabled" )

This item allows you to enable/disable IR transmission delay.

**UR2 Duplex Mode:** ( Default setting : "Half" )

This item allows you to select the IR half/full duplex function.

**Use IR Pins:** ( Default setting : "IR-RxTx2" )

This item allows you to select IR transmission routes, one is RxD2m, TxD2 (COM Port) and the other is IR-Rx2Tx2.

**Onboard Parallel Port:** ( Default setting : “378/IRQ7” )

Select a logical LPT port name and matching address for the physical parallel (printer) port.

The choice: 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled

**ECP Mode Use DMA:** ( Default setting : “3” )

The Parallel port on the mainboard support ECP/EPP, ECP, EPP/SPP and SPP modes. When you select ECP mode, you may specify the DMA# for the parallel port so that it will support ECP mode properly.

**Game Port Address:** ( Default setting : “201” )

This field allows you to select the I/O address for the onboard Game port.

**Midi Port Address:** ( Default setting : “330” )

This field allows you to select the I/O address for the onboard Midi port.

**Midi Port IRQ:** ( Default setting : “10” )

This field allows you to select the IRQ# for the onboard Midi port.

## 4.8 POWER MANAGEMENT SETUP

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Power Management Setup

ACPI Function	Enabled	Item Help
ACPI Suspend Type	: S1 (POS)	
Power Management	: User Define	Menu Level 
Video Off Method	: Blank Screen	
Video Off In Suspend	: Yes	
Suspend Type	: Stop Grant	
Modem Use IRQ	: 3	
Suspend Mode	: Disabled	
HDD Power Down	: Disabled	
Soft-Off by PWR-BTTN	: Instant – off.	
Power on by Ring / LAN	: Disabled	
CPU Thermal-throttling	: 50.0%	
Resume by Alarm	: Disabled	
x Date ( of Month) Alarm	: 0	
x TIME (HH:MM:SS) ALARM	: 0 0 0	
*** Reload Global Timer Events **		
Primary IDE 0	: Disabled	
Primary IDE 1	: Disabled	
Secondary IDE 0	: Disabled	
Secondary IDE 1	: Disabled	
FDD, COM, LPT Port	: Disabled	
PCI PIRQ (A-D)#	: Disabled	

### ACPI function : (Default setting: “Enabled”)

When Enabled, the PC system will have the ACPI function. However, if you want to use the ACPI function, you have to use the most updated operation system like Windows 98 at the same time. When installing Windows 98, you will have to give some specific parameter so that the ACPI function will be installed into your PC system.. ( please refer to the manual of Windows 98 for the parameters )

When the ACPI function is installed in your PC system successfully, you will find the ACPI function in the power management icon. The PW switch (mentioned in Section 3) defined by the ACPI is different to the BIOS setup and it always has the higher priority than what was defined in the system BIOS.

According to what was defined by the ACPI in Windows 98, the PW switch can be either the "Standby switch" or "shutdown switch". When "Standby switch" is selected, the first click on the PW switch will have the PC system turn into standby mode. If you want to "wake up" the PC system, you will have to use the devices (such as keyboard, mouse .. etc) which is specified in the Windows 98 ACPI function to trigger the PC system so that it will be back to full-on mode. For more detail of ACPI function, please refer to Windows 98 user's manual for more detail information.

**ACPI Suspend Type :** (Default setting: "S1 (POS)")

This field allows you to select the mode of suspend state.

The choice: S1(POS), S3 (STR)

S1: The CPU perform a Stop-Grant cycle and halt its instruction stream during the S1 suspend state. In other word, the CPU is in the sleep status.

**Power Management :** (Default setting: "User Define")

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Doze Mode
2. Standby Mode
3. Suspend Mode
4. HDD Power Down

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- <b>ONLY AVAILABLE FOR SL CPU</b> . Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

**Video Off Method:** (Default setting: Blank screen )

When you are using the Green Monitor with your PC system, there are three modes selectable in this field to save the power energy

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

**Video Off In Suspend:** (Default setting: "Yes" )

When you select Yes, the screen display will be disabled ( no display on the screen) when the PC system is in the suspend mode.

**Suspend Type:** (Default setting: "Stop Grant" )

**This field allows to select the suspend type, you can choose the CPU Stop Grand Suspend or the PwrOn Suspend.**

**Modem Use IRQ:** (Default setting: 3 )

This mainboard has the ACPI feature designed on the board and it will “wakeup” automatically when it detects the incoming modem Ring-in signal. Before you can use the Ring-in signal to wakeup your PC system, you have to install the “External” modem to your PC system and tell the PC system which serial port connects to the modem by selecting the IRQ in this field. ( officially, COM 1 uses IRQ4, and COM 2 uses IRQ3 )

**Suspend Mode:** (Default setting: "Disabled" )

This field allows you to choose the time interval which PC system will turn into suspend mode.

The choice: Disabled, 1, 2, 4, 8, 12, 20, 30,40 Min and 1Hr.

**HDD Power Down:** ( Default setting: "Disabled" )

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

**Soft-Off by PWR-BTTN :** (Default setting: “Instant-off.”)

This field allows user to define the feature of the “PW” connector (it is used to connect the power button ). The setting can be either “Delay 4 Sec.” or “Instant-Off”. Please refer to page 3-17 for details of function description.

**Power On by Ring / LAN:** (Default setting: "Disabled.")

When "Enabled", you can use the Modem Ring signal or the LAN wake up signal to power on the PC system.

**CPU Thermal-Throttling :** (Default setting: "Disabled.")

This field allows you to select the CPU throttle rate. When CPU temperature is too high, the onboard hardware monitoring will tell the CPU to reduce to the throttling speed to protect the CPU. The choice available for the CPU throttling rate are: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%, 87.5%.

**Resume by Alarm :** ( Default setting : "Disabled" )

When "Enabled", you can use the following two selection fields - "Date (of Month) Alarm" and "Time (hh:mm:ss) Alarm" to select the alarm date and time. You can use these two fields to set the date and time which you want to resume the system from Sleep or Suspend mode. The "Time" must be set in a 24-hour format.

**\*\*\*\* Reload Global Timer Events \*\*\*\***

When "Enabled", an event occurring on each device listed below restarts the global time for Standby mode.

Primary IDE 0  
Primary IDE 1  
Secondary IDE 0  
Secondary IDE 1  
FDD, COM, LPT Port  
PCI PIRQ [A-D]

## 4.9 PNP/PCI CONFIGURATION

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software  
PnP/PCI Configuration

Reset Configuration Data	: Disabled	Item Help
Resources Controlled By	: Auto (ESCD)	Menu Level ➤
x IRQ Resources	: Press Enter	Default is Disabled.
PCI/VGA Palette Snoop	: Disabled	Select Enabled to Reset Extended System Configuration Data (ESCD) when you exit Setup if you have Installed a new add-on And the system. Reconfiguration has Caused such a serious Conflict that the OS Cannot boot

### Reset Configuration Data : (Default setting: Disabled)

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

### Resources Controlled by : (Default setting: Auto (ESCD))

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to “manual” choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “➤”).  
The choice: Auto(ESCD), Manual.

### IRQ Resources: (Default setting: " Press Enter ")

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt

### PCI/VGA Palette Snoop: (Default setting: "Disabled")

Some display cards are non-standard VGA card (such as graphics accelerator or MPEG Card) which may not display color properly on your screen. “Enable” the setting in this field may correct this problem. Please leave it “Disabled” as the default setting shown above if you are using the normal display card.

## 4.10 PC HEALTH STATUS

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software  
PC Health Status

CPU Warning Temperature	Disabled	Item Help
Current CPU Temperature	25□ / 77 □	
Current FAN1 Speed	4500 RPM	Menu Level ▶
Current FAN2 Speed	4891 RPM	
Current FAN3 Speed	4591 RPM	
VCC Core	1.56 V	
2.5 (V)	2.48 V	
3.3 (V)	3.32 V	
+ 5 V	4.83 V	
+12 V	11.91 V	
- 12 V	-11.86 V	
- 5 V	-5.35 V	
VBAT (V)	3.08 V	
5VSB (V)	4.87 V	
Shutdown Temperature	Disabled	

The table above allows you to monitor the PC system healthy status. You can check on the related field and monitor the status like voltage, Temperature.

When the on board I/O controller on the mainboard is Winbond W83627F, the status display on the screen above will be disappeared because it does not support the hardware monitoring.

When the on board I/O controller on the mainboard is Winbond W83627HF, you will see the status display on the screen and you will be able to monitor the mainboard healthy status.

### CPU Warning Temperature

This item will prevent CPU from overheating

### Current CPU Temperature

This field shows you the current system temperature

### Current FAN1/FAN2/FAN3 Speed

Show you the current CPUFAN operating speed

### Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature. This item only effective under Windows 98 ACPI mode.

## 4.11 FREQUENCY/VOLTAGE CONTROL

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software  
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	: Disabled	Item Help
Spread Spectrum	: Disabled	
CPU Host / PCI Clock / PC133	: Default	Menu Level      ➤
CPU Clock Ratio	: X 3	

### **Auto Detect DIMM/PCI Clk:** ( default setting : “Disabled” )

When “Enabled” is selected, the mainboard will detect the presence of devices on DIMM and PCI slots. When there is no device presented on some of the PCI or DIMM connector, the clock on the related DIMM and PCI slot will be disabled to reduce the Electro-Magnetic Interference (EMI).

### **CPU Host / PCI Clock / PC133:** ( default setting : “Default” )

This field allows you to select the CPU FSB clock and the system EMI radiation. When you select default, the mainboard will detect the CPU type and choose the proper FSB clock and decide whether to enable the Spread Spectrum or not. When Spread Spectrum is enabled, the special feature designed in the system chipset will be triggered and reduce the EMI as mentioned in the previous field.

### **CPU Clock Ratio:** ( default setting : “X 3.5” )

This field allows to select the CPU clock ratio. Basically, most CPU clock ratio is fixed inside the CPU and user can not change it. In this case, the setting in this field will make no change to the default CPU clock ratio because it is decided by the CPU automatically.

## 4.12 LOAD OPTIMIZED DEFAULTS

CMOS Setup Utility - Copyright (C) 1984 - 1999 Award Software

Standard CMOS Features  Advanced BIOS Features  Advanced Chipset Features  Integrated Peripherals  Power Management Setup  PNP/PCI Configuration  PC Health Status	Frequency / Voltage Control  <b>Load Optimized Defaults</b>  Set Supervisor Password  Set User Password  Save & Exit Setup  Exit Without Saving
ESC : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Time, Date, Hard Disk Type ...	

If you lost the CMOS data or you don't know how to complete the setup procedure, you may use this option to load the Optimized default values from the BIOS default table. The optimized default value is the suggested setting which will give the best reliability and also the good performance.

Incase that the CMOS data is corrupted, or if you made some CMOS setting and found that the PC system becomes very stable, then you may try to load the optimized default value and the CMOS will be changed to its default setting.

### 4.13 SET SUPERVISOR PASSWORD

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Standard CMOS Features	Frequency / Voltage Control
Advanced BIOS Features	Load Optimized Defaults
Advanced Chipset Features	<b>Set Supervisor Password</b>
Integrated Peripherals	Set User Password
Power Management Setup	Save & Exit Setup
PNP/PCI Configuration	Exit Without Saving
PC Health Status	
ESC : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type ...	

The password entry in this field is different to the "Power On Function" mentioned in Section 2-2 and Section 4-7. Those password settings are used to power on your PC system, However, the "SUPERVISOR PASSWORD" will be used to check the authority when power-on the PC system. The Supervisor Password will have different function according to the "Security Option" setup in Section 4.5:

#### When "Setup" is selected in Security Option:

If you want to change the BIOS setting, you will have to key-in the Supervisor Password so that you can start the BIOS setup program and change the system setting..

#### When "System" is selected in Security Option:

When turn on the PC system, it will request you to enter the Password. Without the correct password, the PC system will stop and the operation system will not be loaded.

## 4.14 SET USER PASSWORD

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Standard CMOS Features	Frequency / Voltage Control
Advanced BIOS Features	Load Optimized Defaults
Advanced Chipset Features	Set Supervisor Password
Integrated Peripherals	<b>Set User Password</b>
Power Management Setup	Save & Exit Setup
PNP/PCI Configuration	Exit Without Saving
PC Health Status	
ESC : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type ...	

The User Password can be used to check the user's authority. However, this password entry is somewhat different to the "SUPERVISOR PASSWORD" mentioned in previous page. The User Password will have different function according to the "Supervisor Password" and the "Security Option" setup in Section 4.5:

### A. When there is the password stored in the "SUPERVISOR PASSWORD"

#### 1. When "Setup" is selected in Security Option:

When you use the "User Password" to log into the BIOS setup program, you can only select "User Password", "SAVE & EXIT SETUP" and "EXIT WITHOUT SAVING" from the main menu. (Use Supervisor Password to log into the PC system, you will have the complete right to on all BIOS settings.)

#### 2. When "System" is selected in Security Option:

When turn on the PC system, it will request you to enter the Password. Without correct password, PC system will stop and the operation system won't be loaded.

### B. When there is no password stored in the "SUPERVISOR PASSWORD"

#### 1. When "Setup" is selected in Security Option:

Users can use the "User Password" to log into the BIOS setup program, and they can make all the change in the BIOS setup program.

#### 2. When "System" is selected in Security Option:

When turn on the PC system, it will request you to enter the Password. Without the correct password, the PC system will stop and the operation system will not be loaded.

## 4.15 SAVE & EXIT SETUP / EXIT WITHOUT SAVING

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Standard CMOS Features	Frequency / Voltage Control
Advanced BIOS Features	Load Optimized Defaults
Advanced Chipset Features	Set Supervisor Password
Integrated Peripherals	Set User Password
Power Management Setup	<b>Save &amp; Exit Setup</b>
PNP/PCI Configuration	<b>Exit Without Saving</b>
PC Health Status	
ESC : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type ...	

### Save & Exit Setup:

This option will save all setup values to CMOS RAM & EXIT SETUP routine. Move the selection bar to “SAVE & EXIT SETUP” and pressing “Enter” key, then types “Y” and “Enter” key, the values will be saved and all the information will be stored in the CMOS memory, and then the setup program will be terminated and the system will start to reboot.

### Exit Without Saving

This item exit the setup routine without saving any changed values to CMOS RAM, When you do not want to save your change to the CMOS memory, you may choose to run this option and the setting what you made in the BIOS setup routine will be given away.

Move the selection bar to “EXIT WITHOUT SAVING” and click on the “Enter” key, then you will be asked to confirm the action to exit, press the “Y” and “Enter” key, the setup program will be terminated and the system will start to reboot.