

**PT-6IL**  
**MAINBOARD**  
**( VER. 1.x )**

**USER'S MANUAL**

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## **SOMETHING IMPORTANT !**

### ☆ **TRADEMARKS**

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### ☆ **LOAD SETUP DEFAULTS**

“LOAD SETUP DEFAULTS” is the function which will have the BIOS default settings loaded into the CMOS memory, these default settings are the best-case values that should optimize system performance and increase system stability .This function will be necessitated when you receive this mainboard, or when the system CMOS data is corrupted. Please refer to the page 5-12 for executing 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 connected to the ATX form-factor mainboard. Without disconnecting the AC power connector from the PC system, the mainboard may be damaged by any incorrect action . Please refer to the page 4-16 for executing procedures.

### ☆ **WAKE ON LAN**

In order to support the Wake On LAN feature, the system requires a special SPS (switching power supply), Such power supply must be able to provide at least 700 mA of driving capability on the “5V standby” voltage. Please refer to the page 4-12 for pin assignment.

### ☆ **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.

## I. INTRODUCTION

### A. OVERVIEW

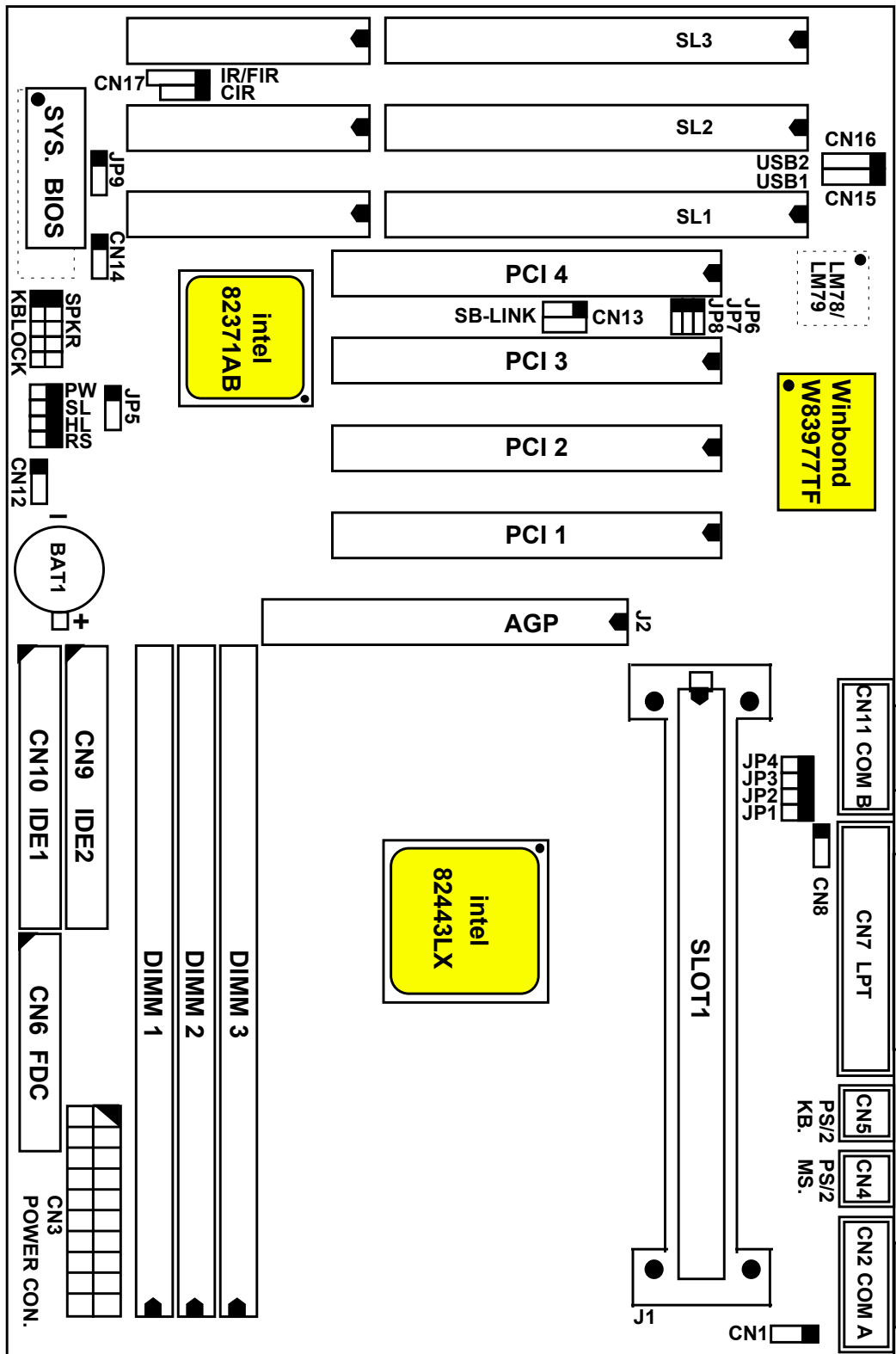
The □PT-6IL□ is a high performance personal computer mainboard designed for the Pentium™ II processor. PT-6IL is an ATX form-factor mainboard with A.G.P. (Accelerated Graphics Port) and PCI Local Bus on board. It is designed based on the Intel® 82440LX AGPset™ system chipset and Winbond® I/O chipset, built-in two channel “PIO” and “Ultra DMA/33 Bus Master” mode PCI IDE ports, one Floppy Disk control port, two high speed Serial ports (UARTs) and one multi-mode Parallel port and supports PS/2™ mouse, IR and USB ports. It is designed to fit a high performance Pentium™ II (S.E.C. Cartridge) processor 233 MHz, 266 MHz, 300 MHz and 333MHz based solution for high-end and true GREEN-PC computer systems.

The Pentium™ II Processor is a 64-bit processor with RISC technology, which offers several key features such as built-in 256KB/512KB L2 cache, 12-stage superpipeline architecture, out of order execution .... etc. In order to optimize of its capabilities and performances, the 32-bit Operating System (such as Windows® NT and OS/2™) and 32-bit application are recommended.

The Accelerated Graphics Port (A.G.P.) on the PT-6IL mainboard is designed for AGP 3D video display card. Unlike PCI-based display cards, the AGP technology provides lightning data throughput to fully facilitate the 3-Dimensional and multimedia graphics display. The data transfer rate on AGP can be up to 133Mhz and which is much faster than the traditional 33MHz PCI VGA card.

The AGP is a new video display technology and it requires device driver or new Operating System to enable this accelerated graphic feature. Windows® 98 supports AGP directly but Windows® 95 still need the appropriate device drivers to support AGP feature. Please don't worry about the device driver, because you can always find the device driver included in the AGP card. Regarding the definition of AGP interface and its functionality, please refer to the latest *A.G.P. Interface Specification*. which can be found at the Intel web site, the URL is “[developer.intel.com/technology/agp](http://developer.intel.com/technology/agp)”

A. PT-6IL VER. 1.X MAINBOARD LAYOUT



**A. SPECIFICATIONS****⊙ CPU**

Intel® Pentium™ II and Deschutes (S.E.C. Cartridge) processor 233 MHz, 266 MHz, 300 MHz and up to 333MHz.

**⊙ CPU VCC**

Three Voltage Regulator circuits on board, supports +1.80V DC through +3.5V DC CPU Core Voltage and all lower-voltage components.

*Note : The CPU Core Voltage will be Detected and adjusted automatically by the VID-pin on the CPU, so there is no manual-adjustment required to select the CPU voltage. Simply plug in the CPU and start immediately.*

**⊙ WORD SIZE**

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

Address Path : 32-bit

**⊙ PC SYSTEM CHIPSET**

Intel® 82440LX AGPset™ (82443LX, 82371AB)

**⊙ SUPER I/O CHIPSET**

Winbond® W83977TF/W83977ATF (optional)

**⊙ BUS FREQUENCY**

66 MHz fixed

**⊙ MEMORY**

DRAM : Three 168-pin DIMM sockets are designed onboard which support 8, 16, 32,64 or 128MB 3.3V Un-buffered EDO and SDRAM DIMM modules. Maximum memory size can be upto 384 MB with Parity / ECC (Error Checking and Correcting) supported.

CACHE:512KB pipelined burst SRAM built-in Pentium™ II or Deschutes processor.

**⊙ BIOS**

AWARD System BIOS. 128KB x 8 Flash ROM

(Supports Plug & Play, ACPI, DMI and Green functions).

**◎ EXPANSION SLOTS**

AGP Slots : 32-bit x 1 (Supports 1x or 2x AGP graphics cards)

PCI Slots : 32-bit x 4 (All Master/Slave, PCI 2.1 Compliant)

ISA Slots : 16-bit x 3 (One of the slot is PCI/ISA shared)

**◎ WOL PORTS**

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

**◎ SB-LINK PORTS**

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

**◎ USB PORTS**

Two Universal Serial Bus (USB) ports. (5-pin for each port)

**◎ IDE PORTS**

Two channels of Ultra DMA/33 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 . Two high speed NS16C550 compatible serial ports (UARTs).
- 2 . One parallel port, supports SPP/EPP/ECP mode.
- 3 . One Floppy Disk Control port.

**◎ IR PORT**

One HPSIR and ASKIR compatible IR transmission connector (5-pin).

One Consumer IR transmission connector (4-pin, optional).

**◎ MOUSE AND KEYBOARD**

One PS/2™ mouse connector, One PS/2™ keyboard connector.

**◎ HARDWARE MONITORING (optional)**

LM78 or LM79 is designed on the board to monitor hardware healthy status like system voltages, system temperature, and three cooling fan speed. When the CPU is over heated, the system speaker will give beeping alarm so that you can take proper action to prevent damage to your system. When you hear the beeping alarm, be sure to turn the power off and open the chassis immediately, check on the cooling fans (especially the CPU cooling fan) 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.

**◎ ACPI**

Advanced Configuration and Power Interface (ACPI) function is strongly recommended by PC'98: Followings are the ACPI features designed on the board:

- 1 . On Now: power on the system by panel-switch, Keyboard, PS/2™ Mouse, Modem ring-in, RTC alarm or LAN signal.
- 2 . Power off (soft-off) by OS or Panel-switch.
- 3 . CPU cooling fan auto-off during Suspend state.
- 4 . Resuming of PC system. (such as Modem ring-in, RTC alarm, .... etc.)
- 5 . Supports Full-On/Doze/Standby/Suspend operating modes.

**◎ JUMPER FREE**

In order to provide a most convenient way to help users to install the CPU onto the mainboard, PT-6IL has the Jumper-free feature designed on the board, There is no "jumper setting" required to select the CPU speed and CPU Core voltage. (CPU speed is selected by CMOS setup, please refer to page 4-7 for details)

**◎ DIMENSION**

- 1 . Width & Length : 305 mm x 186 mm.
- 2 . Height : 2 1/2 inches with CPU Retention Mechanism.
- 3 . PCB Thickness : 4 layers, 0.05 inches normal.
- 4 . Weight : 18 ounces.

**◎ ENVIRONMENT LIMIT**

- 1 . Operating Temperature : 10□ to 40□. (50□ to 104□)
- 2 . Required Airflow : 50 linear feet per minute across CPU.
- 3 . Storage Temperature: - 40□ to 70□. (- 40□ to 158□)
- 4 . Humidity : 0 to 90% non-condensing.
- 5 . Altitude : 0 to 10,000 feet.



## **I. INSTALLATION**

### **A. UNPACKING**

The mainboard contains the following components in the package. 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.

- One PT-6IL mainboard.
- One USER'S MANUAL.
- One Cable set for IDE and Floppy devices.
- One Pentium™ II Processor Retention Mechanism (RM).
- One CD diskette for IDE Bus Master Drivers and Virtual Drive programs.

The PT-6IL 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 install the mainboard to the 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 the PT-6IL mainboard.

### **A. POWER ON THE PC SYSTEM**

When the PT-6IL mainboard has been assembled in a system successfully , 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 COM setup program and it has different features. Please refer to page 3-28 for detail function description.

*Note: This power button can not be used to power-on the PC system if the "Password" is selected to power on your system. (please refer to page 4-10 for the "INTEGRATED PERIPHERALS" in the CMOS setup.) However, you can always use the power button to turn off the power.*

#### □ KEYBOARD (PASSWORD OR HOT KEY)

It is a nightmare when someone uses your PC system without your permission and destroys all the valuable data stored in the system. Now the problem can be avoided by using the PT-6IL mainboard. PT-6IL allows you to enter your personal password or a combination of hot key to power on your system. When the system power is off, PT-6IL still keeps scanning the keyboard status waiting for the correct password or hot key input to turn on the system power. Without the correct password or hot key, no one else can turn on the PC system ( neither by the power button ). So the PC system is secured for you. There are two ways to power-on the PC system by keyboard, they are "Password" and "Hot KEY". Please refer to page 4-11 for the BIOS setting.

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 use the keyboard to power-on the PC system afterward.

In case that you forget the "Password" or "Hot Key", disconnect the AC power for 30-60 seconds then re-connect the AC power to the PC system, the power button will be activated again and you can use the power button to turn on the system. Input your personal password in the BIOS setup again, and then you may use the new password to power-on the PC system afterward.

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

When you are tired of pressing on the power button or keying in the password to turn on the PC system, there is another extremely convenient way for you.

When 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. It is so simple, convenient and welcomed by children. Please refer to page 4-101 and page 4-11 for the BIOS settings

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 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: This feature is not available on the COM (serial) port mouse.*

#### **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.

Enable the “Resume by Alarm” selection in the BIOS setup utility, and then input the accurate date and time in following fields. (the “Resume by Alarm” is located in the “POWER MANAGEMENT SETUP”, please refer to page 4-8 and page 4-9 for detail procedures), Having 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.

Same as the above, you have to reboot the PC system and wait for the POST (Power On Self Test) is completed to enable the RTC alarm.

#### **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 by using the PT-6IL mainboard. PT-6IL can be triggered by a modem ring-in signal. When you have a 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** ( COMA or COM B ). When the system power is off, PT-6IL will continue to detect the serial port status. When it detects the ring-in signal, the system power will be turned on and start to receive the incoming messages automatically. ( you may 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 will have to use the BIOS setup utility and enable the “Resume by Ring or LAN” option (it is located in the “POWER MANAGEMENT SETUP”, please refer to page 4-8 and page 4-9 for the settings). Having completed the BIOS setup, you have to reboot the PC system so that BIOS can verify the setting. ( the “DMI pool data” will be verified by the BIOS when loading the operating system). Simply speaking, shut down the PC system and reboot the system. The modem ring-in feature will be enabled when the operation system has been loaded.

*Note: This function is unavailable when using the internal MODEM card.*

#### □ WAKE ON LAN ( WOL )

There is a WOL connector (CN14, please refer to page 3-24 for the pin assignment of WOL connector) on the mainboard which is designed onboard to connect to the signal from a LAN card that supports a Wake On LAN feature. When such LAN card is installed, you may turn on the PC system from your 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 or LAN” (it is located at “POWER MANAGEMENT SETUP”, please refer to page 4-8 and page 4-9 for the settings). Having completed the BIOS setup, you have to reboot the PC system so that BIOS can verify the setting. ( the “DMI pool data” will be verified by the BIOS when loading the operating system). Simply speaking, reboot the PC system, the Wake On LAN feature will be enabled when the operation system has been loaded

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

## **A. POWER OFF THE PC SYSTEM**

There are two ways to power off the system. They are “Shut Down by Power Button” (please refer to page 3-28 for details) 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 ).

## I. HARDWARE SETUP

Before you can start to install this mainboard, some hardware settings is required to make sure it will work perfectly in your PC system. To configure the PT-6IL mainboard is a simple task, only a few jumpers, connectors, cables and sockets needs to be selected and configured. (For the detailed locations of each component please refer to page 1-2 “mainboard layout” )

### A. INSTALLATION OF CPU

PT-6IL provides a jumper-free design on the board. When you have installed the Pentium™ II processor onto the mainboard, PT-6IL will detect the CPU type and decide the proper CPU voltage automatically. So you don't have to make any jumper setting to select the CPU voltage. All you have to do is use the BIOS setup program to select the speed of CPU clock.

The socket where we are going to plug in the CPU is the slot type connector ( J1 ). This slot is designed for Pentium™ II processor and we call it – the ***SLOT 1***.

Basically, Slot 1 is a new technology and it is totally different to the traditional Pentium CPU socket – Socket 7. Because Slot 1 is a revolutionary new architecture and the installation of Pentium™ II processor need some additional skill. The following sections will show you how to install the CPU support kit and install the Pentium™ II processor onto the mainboard.

There are two types of Pentium™ II CPU - the boxed Pentium™ II processor and OEM Pentium™ II processor. These two different packages are different and they have different accessories. So when installing different type of CPU, the installation procedure will be different.

The boxed Pentium™ II processor is for retail purpose and it can be purchased from the retail store. As for the OEM Pentium™ II processor, it is for OEM customers like system integrators when they are assembling the PC system. Sometimes, users will see the OEM Pentium™ II processor sold in the retail store. So this manual will have the installation procedures for both of the two processors included.

Basically, the core logic of boxed Pentium™ II processor and OEM Pentium™ II processor are identical, The major difference between these two processors is the boxed CPU has head sink, cooling fan and heat sink supporter, while the OEM Pentium™ II CPU doesn't. Please look at following pictures for the difference:

### **1.    Boxed Pentium II CPU**



Boxed Pentium CPU  
Side view one

Boxed Pentium CPU  
Side view two

Figure 3-1 Boxed Pentium™ II CPU





**1. OEM****Pentium II CPU****A. RETENTION MECHANISM AND HEAT SINK SUPPORT**

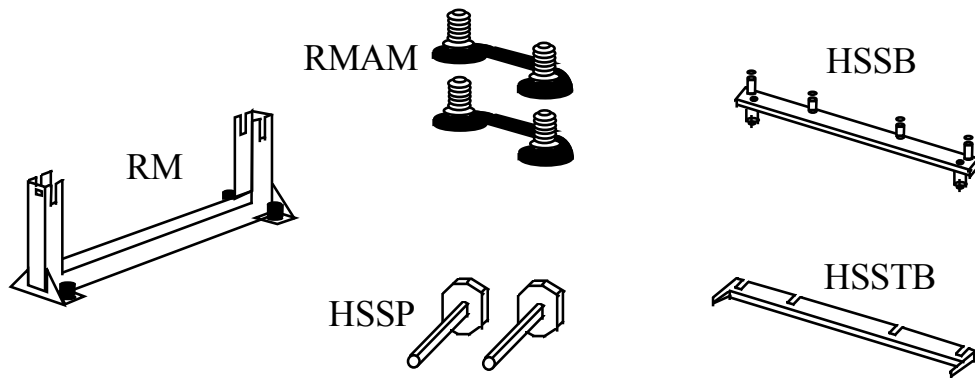
When Installing the Pentium™ II Processor ( both boxed and OEM ), you will need a Retention Mechanism (RM) kit and a Heat Sink Support kit so that Pentium™ II processor and heat sink can be fixed and seated firmly on mainboard. The RM kit includes 2 parts (RM and RMAM) you will find them provided in the PT-6IL package.

**The Boxed Pentium™ II Processor:**

You will need a RM kit and a active heat sink support kit (the heat sink support kit is provided in the CPU package from Intel®. Please refer to figure 3-1 and you will see the active heat sink support kit which comes with the Pentium™ II Processor)

**The OEM Pentium™ II Processor:**

You will need a RM kit and a passive heat sink support kit. The passive heat sink support kit includes three parts (HSSB, HSSP and HSSTB) they are provided by the OEM heat sink venders. Followings are the details of these parts:



- ( 1 ) Retention Mechanism (RM) : Plastic guide with captive nuts that hold the Pentium™ II Processor in the Slot1 connector.
- ( 2 ) RM Attach Mount (RMAM)\* : Bolt/Bridge assemblies inserted up through the bottom of the mainboard. RM secures to RMAM. (2 RMAM required per RM.)  
(\* Usually, they are installed by the manufacturer)
- ( 3 ) Heat Sink Support Base (HSSB) : Plastic support bar mounted to the mainboard under the OEM heat sink. (Doesn't need for Boxed Pentium™ II Processor)
- ( 4 ) Heat Sink Support Pin (HSSP) : Plastic pins inserted through the HSSB to secure it to the mainboard (2 required per assembly, (Doesn't need for Boxed Pentium™ II Processor).
- ( 5 ) HSS Top Bar (HSSTB) : Plastic bar that clips onto the HSSB through the pins on the OEM heat sink. (Boxed Pentium™ II Processor does not need HSS)

## A. INSTALLING RETENTION MECHANISM KIT

Before you can install the Pentium™ II Processor onto the PT-6IL mainboard, the Retention Mechanism (RM) kit must be installed on the mainboard first, please refer to the following steps to install the RM kit.

1. Fetch the PT-6IL mainboard and the Retention Mechanism (RM) from the packing box and place them on a workbench (not in a chassis).

2. Look for the key bump on the Slot 1 as shown in Figure 3-3, align the notch key hole on the Retention Mechanism with the key bump on Slot 1 and put Retention Mechanism onto the Slot1 with a right and vertical direction. (the Retention Mechanism can not be put onto the Slot1 completely if the direction is incorrect. )

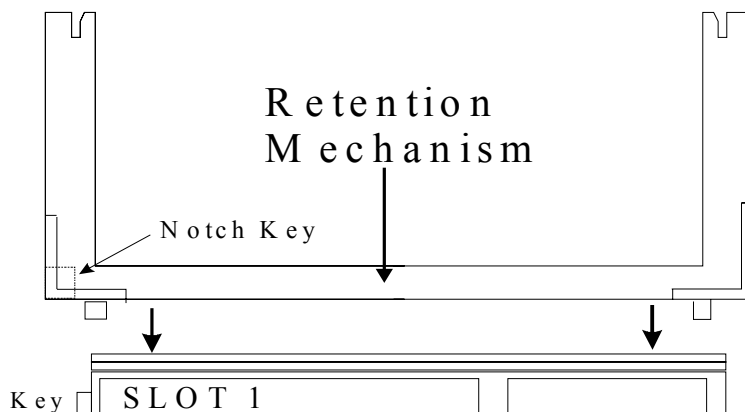
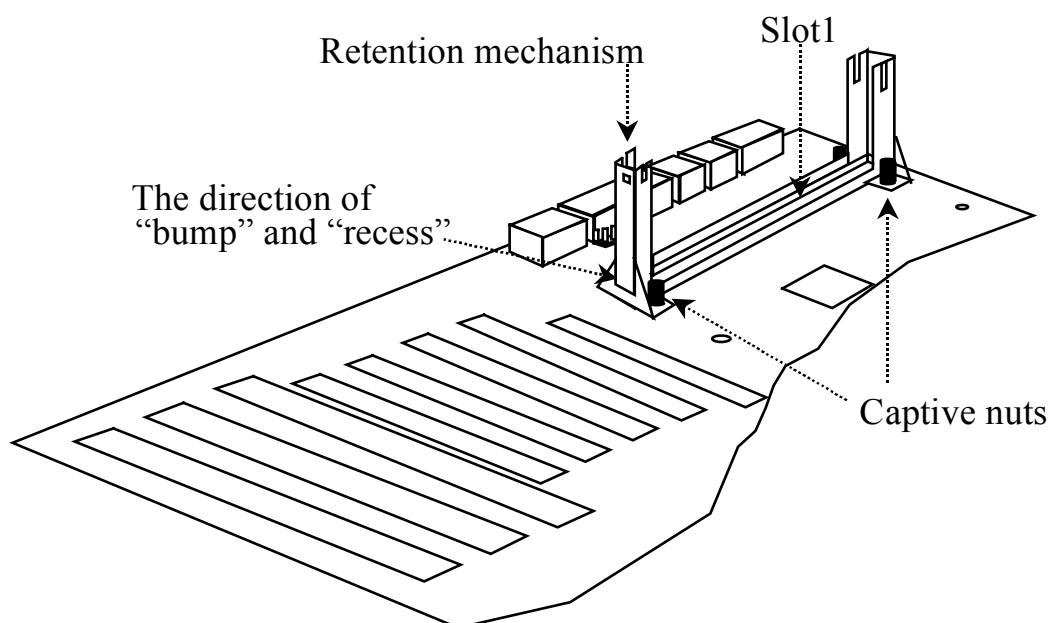


Figure 3-3

3. Lock the captive nuts of Retention Mechanism onto the RM Attach Mount (RMAM)



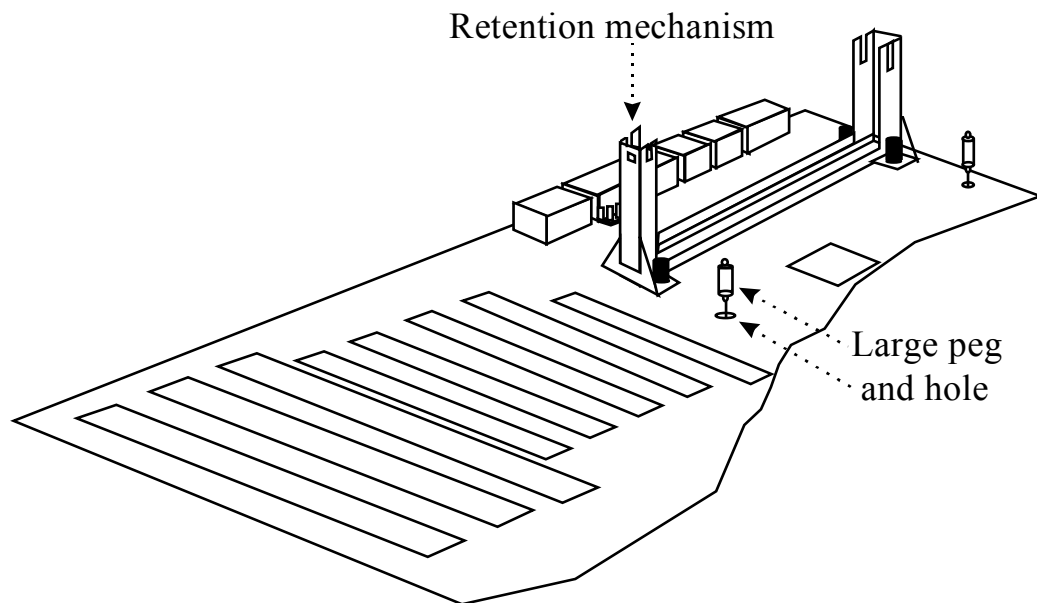
*Note: Some of the RM kits can be folded and fixed onboard from the factory, If you found there is the RM kit installed on the board, you may unfold the RM kit and start to install the processor.*

## A. INSTALL THE BOXED PENTIUM™ II PROCESSOR

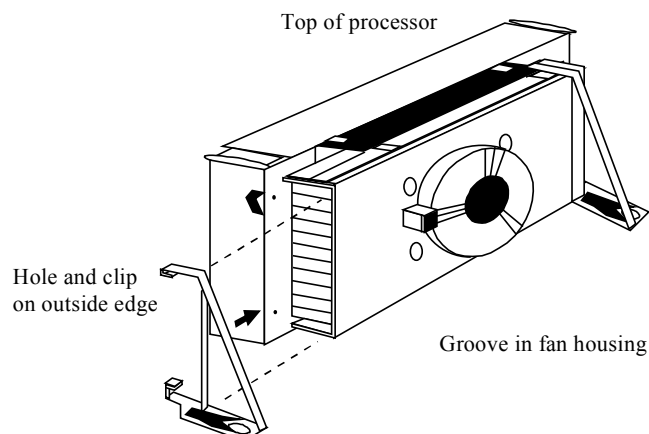
Before you can installation of the Pentium™ processor onto the mainboard, you may need to refer to the integration issues “ Integration Notes for the Boxed Pentium™ II Processor” document #1608, it provides all detail information and will assist you in understanding all the issues. The document is available from FaxBack\* ( see “Intel Customer Support FaxBack\* service” on page 6 ) and the World Wide Web ( support.intel.com ).

The following section describes the BOXED PENTIUM™ II PROCESSOR installation procedures. (This section is excerpted from the “Boxed Pentium™ II Processor Installation Notes”, which comes with Pentium™ II Processor in the packing box,. Some languages are also included in the document, please refer to the installation notes and find the language which you prefer to read. )

1. The Intel boxed Pentium™ II processor includes the following items:
  - The processor with fan heat sink attached.
  - One heat sink support set containing two black plastic pets and two black plastic supports. ( see page 3-2)
  - One power cable for CPU fan heat sink
2. Mount the two black plastic pegs onto the mainboard. These pegs will be used to attach the fan heat sink supports. Notice that one hole and the base of one peg are larger than the other hole and pet base. Push each peg into its matching hole firmly until you hear it “click” into place.

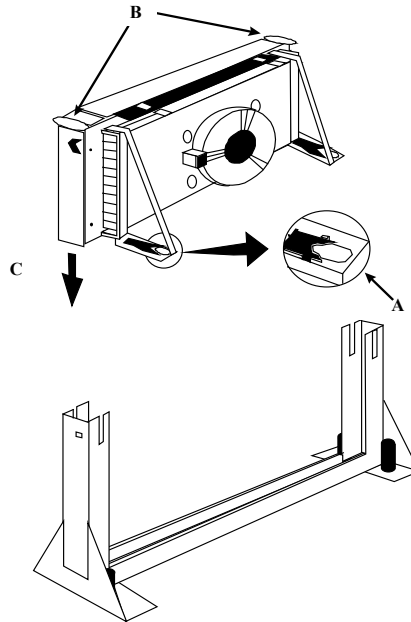


- Slide a black plastic support ( active heat sink support ) to each end of fan heat sink. Make sure that the hole and clip are on the outside edge of the support. (If the supports are reversed, the holes will not line up with the pegs on the mainboard.) Slide each support toward the center of the processor until the support is seated in the outside groove in the fan housing.

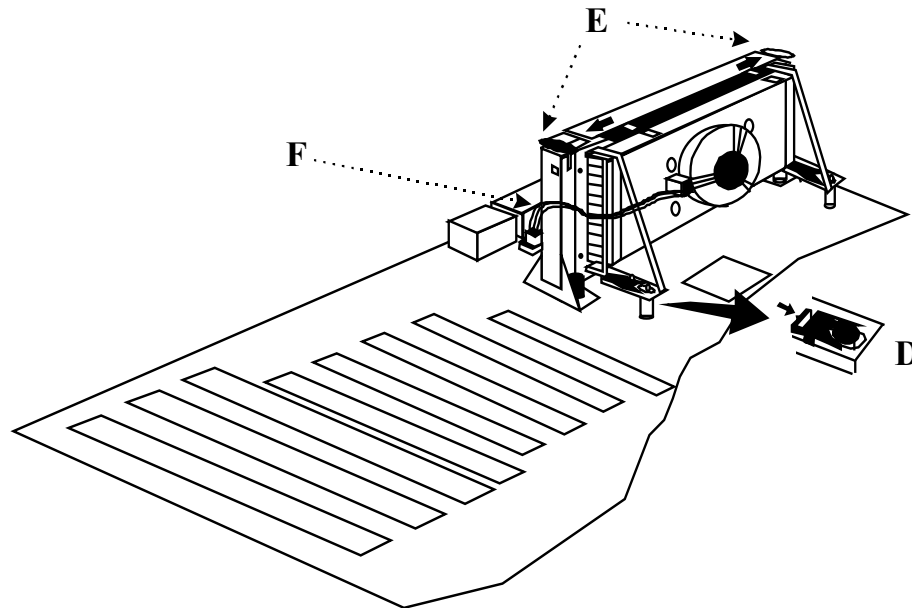


- Slide the clip (A) on each support toward the processor, exposing the hole that will fit over the peg on the mainboard. Push the latches (B) on the processor toward the center of the processor until they click into place.
- Hold the processor so that the fan shroud is facing toward the pegs on the mainboard. Slide the processor (C) into the Retention Mechanism and slide the supports onto the pegs. Ensure that the pegs on the mainboard slide into the holes in

the heat sink support and that the alignment notch in the processor fits over the plug in Slot1. Push the processor down firmly, with even pressure on both sides of the top, until it is seated.



6. Slide the clips on the supports (D) forward until they click into place to hold the pegs securely. (Apply slight pressure on the peg and push the peg toward the clip while pushing the clip forward.) Push the latches on the processor (E) outward until they click into place in the retention mechanism. The latches must be secured for proper electrical connection of the processor.
7. Attach the small end of the power cable (F) to the three-pin connector on the processor, then attach the large end to the three-pin connector on the mainboard. Consult the mainboard documentation to find the connector.



## A. REMOVING BOXED PENTIUM™ II PROCESSOR

This section describes the BOXED PENTIUM™ II PROCESSOR removing procedure. First, remove the mainboard from the chassis. To remove the processor from the main-board, please use the following steps (the reverse of the installation process).

1. Disconnect the fan power cable from the mainboard. (We recommend that you leave the cable connected to the processor.)
2. Slide the clips on the supports backward to release the pegs in the mainboard. Push the latches on the processor toward the center of the processor until they click into place.
3. Lift one end of the processor until it is free from Slot1. Lift the other end of the processor until it is free from Slot1. Lift the entire processor (with the fan heat sink supports attached) until it is free from the Retention Mechanism.
4. Remove the heat sink support pegs from the mainboard and discard them. With one hand, squeeze together the two halves of the peg on the bottom side of the mainboard. With the other hand, pull the peg out of the hole in the mainboard. Do not reuse the pegs.

**WARNING !**

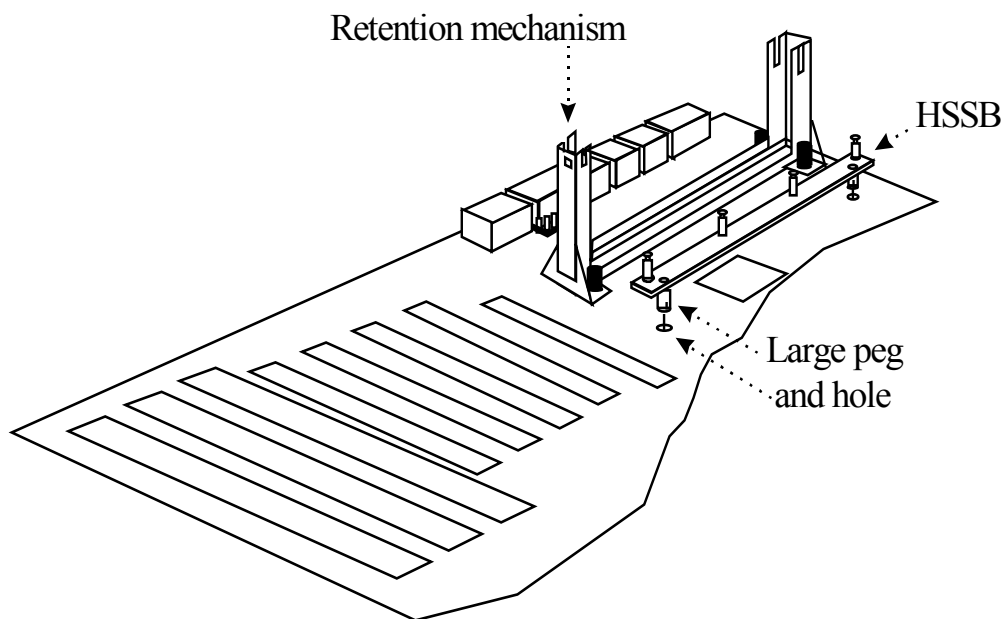
- 1 . When handling the processor, avoid placing direct pressure on the label area of the fan.
- 2 . When removing the processor, avoid pressing down on the mainboard or components. Instead, press down on plastic connectors.



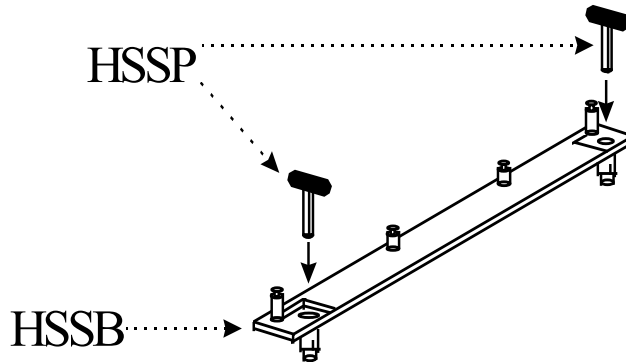
## A. INSTALLING OEM PENTIUM™ II PROCESSOR

Before you can install the OEM PENTIUM™ II PROCESSOR onto the mainboard, you have to install the OEM fan and heat sink onto the Processor first. Please install the OEM fan and heat sink by following the manufacture's instructions. If there is no Installation instructions, please inquire to your fan and heat sink supplier before proceeding. Please refer to page 3-4 for the detail of the required parts when installing OEM PENTIUM™ II PROCESSOR.

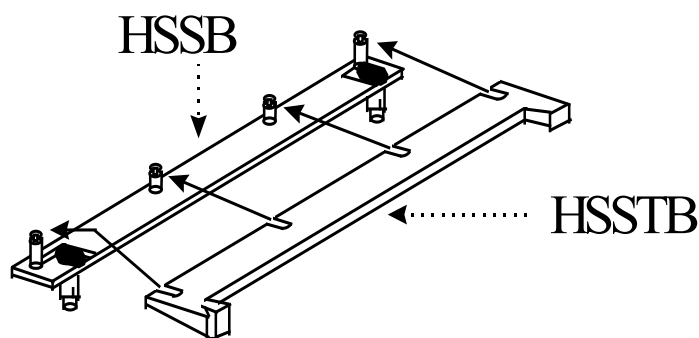
1. Mount the Heat Sink Support Base (HSSB) onto the mainboard. The HSSB will be used to attach the OEM fan and heat sink. Notice that the HSSB has two pegs, one peg is larger than another one. Push each peg into the appropriate hole firmly until you hear it "click" into place.



2. Insert the Heat Sink Support Pin (HSSP) through the hole on the HSSB to secure it to the mainboard.



3. Hold the processor so that the fan and heat sink is facing toward the HSSB on the mainboard. Slide the processor into the Retention Mechanism, ensure that the alignment notch in the processor fits over the plug in Slot1. Push the processor down firmly, with even pressure on both sides of the top, until it is seated.
4. Push the latches on the processor outward until they click into place in the Retention Mechanism. The latches must be secured for proper electrical connection of the processor.
5. Slide the HSS Top Bar (HSSTB) onto the HSSB through the fins on the OEM fan and heat sink so that the HSSB clips the OEM fan and heat sink.



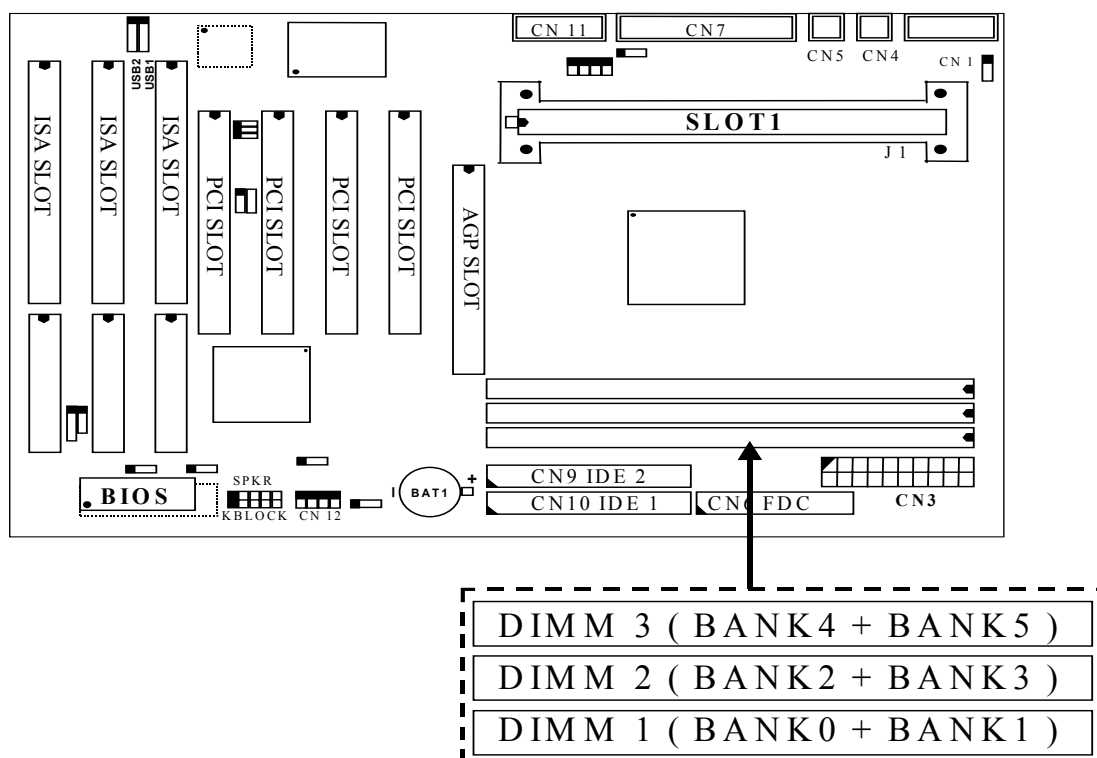
6. Connect the power cable to the power supply directly (If the OEM heat sink has no fan support you may skip this step)

## A. REMOVING OEM PENTIUM™ II PROCESSOR

First, remove the mainboard from the chassis, then remove the processor according to the reverse procedure of the installation process. Please note that when removing the Heat Sink Support Pin (HSSP) and the Heat Sink Support Base (HSSB) you will need some special tools due to the integrate risks will damage the mainboard during removing. Contact with your mainboard supplier or a professional technician to get some helps, or you can contact Dexter Design at Tel. No. 1-503-648-7000, to purchase the required tool to remove the processor from the mainboard.

## A. INSTALLING THE DRAM MODULES

The PT-6IL mainboard supports three 168-pin DIMM sockets (DIMM1, DIMM2 and DIMM3), each DIMM can be single-bank or double-bank, 8MB up to 384 MB of local memory can be populated on the board. It supports two types of DRAM memory and they are either the Extended Data Out (EDO) or Synchronous (SDRAM) memory. (Both Symmetrical and Asymmetrical DRAM addressing are supported.) Please note the DIMM modules suggested on the mainboard must be 3.3V, unbuffered and DRAMs' speed must be either 60ns or 50ns,.



PT-6IL mainboard has the new technology called SPD (Serial Presence Detect) designed in the DRAM subsystem. SPD will be available in the future and it is designed to make system more stable and compatible. If the DIMM module with this technology is populated on the mainboard, the system BIOS will gather some information (such as DRAM type, size, access timing ... etc.) stored in the DIMM module and then BIOS will determine what operating parameters will be used for the individual populated DIMM module automatically.

#### Picture of DIMM module

In order to increase of the system performance, two suggestions are recommended when you are installing the DIMM modules :

- 1. Always install DIMM module starting from DIMM 1 socket first, and then DIMM 2 and then DIMM 3.***
- 2. Avoid populating EDO DIMM module and SDRAM DIMM module on the mainboard at the same time.***

In the DRAM subsystem, ECC feature can be used to checked on the DRAM interface and make sure the data transmission is correct ( this feature can be selected in the BIOS CMOS setup, please refer to page 4-6 for the BIOS setting, the default status is Non-ECC selected.) Before you enable the ECC checking feature, please make sure that all DIMM modules have the true ***parity bit***.

The ECC is an optional data integrity feature provided by the mainboard and the processor. This feature provides single-bit error correction, multiple-bit error detection, and detection of all errors confined to single nibble for DRAM memory subsystem.

The recommended DIMM modules for PT-6IL are shown in the following tables:

(1)EDO DRAM

DRAM Technology	DRAM Depth x Width	DRAM Address Row x Col	TOTAL SIZE			
			Singled-Density		Doubled-Density	
			1 DIMM	3 DIMMs	1 DIMM	3 DIMMs
16 Mbit	1M x 16	10 x 10	8 MB	24 MB	32 MB	96 MB
16 Mbit	1M x 16	12 x 8	8 MB	24 MB	32 MB	96 MB
16 Mbit	2M x 8	11 x 10	16 MB	48 MB	64 MB	192 MB
16 Mbit	2M x 8	12 x 9	16 MB	48 MB	64 MB	192 MB
64 Mbit	2M x 32	11 x 10	16 MB	48 MB	64 MB	192 MB
64 Mbit	2M x 32	12 x 9	16 MB	48 MB	64 MB	192 MB
64 Mbit	2M x 32	13 x 8	16 MB	48 MB	64 MB	192 MB
64 Mbit	4M x 16	11 x 11	32 MB	96 MB	128 MB	384 MB
64 Mbit	4M x 16	12 x 10	32 MB	96 MB	128 MB	384 MB
64 Mbit	8M x 8	12 x 11	64 MB	192 MB	128 MB	384 MB

(2)SYNCHRONOUS DRAM

DRAM Technology	DRAM Depth x Width	DRAM Address Row x Col	TOTAL SIZE			
			Singled-Density		Doubled-Density	
			1 DIMM	3 DIMMs	1 DIMM	3 DIMMs
16 Mbit *	1M x 16	11 x 8	8 MB	24 MB	32 MB	96 MB
16 Mbit *	2M x 8	11 x 9	16 MB	48 MB	64 MB	192 MB
64 Mbit *	2M x 32	11 x 9	16 MB	48 MB	64 MB	192 MB
64 Mbit *	2M x 32	12 x 8	16 MB	48 MB	64 MB	192 MB
64 Mbit *	4M x 16	11 x 10	32 MB	96 MB	128 MB	384 MB
64 Mbit	4M x 16	13 x 8	32 MB	96 MB	128 MB	384 MB

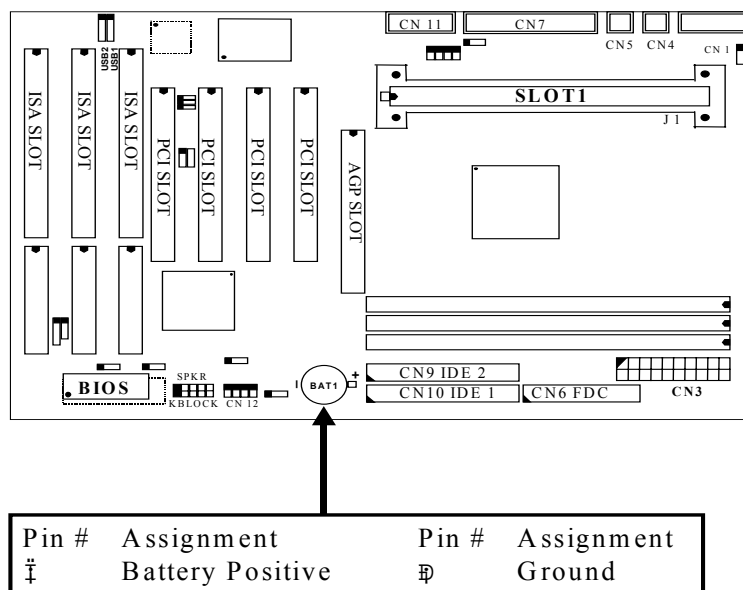
*						
64 Mbit *	8M x 8	13 x 9	64 MB	192 MB	128 MB	384 MB
64 Mbit **	2M x 32	11 x 8	16 MB	48 MB	64 MB	192 MB
64 Mbit **	4M x 16	12 x 8	32 MB	96 MB	128 MB	384 MB
64 Mbit **	8M x 8	12 x 9	64 MB	192 MB	128 MB	384 MB

- Note :
- \* Using the 2-bank SDRAM DIMM modules.
  - \*\* Using the 4-bank SDRAM DIMM modules.
  - \*\*\* Don't use x 32 SDRAM on DIMM 3 and populate x 8 SDRAM on DIMM 1 or/and DIMM 2 at the same time.

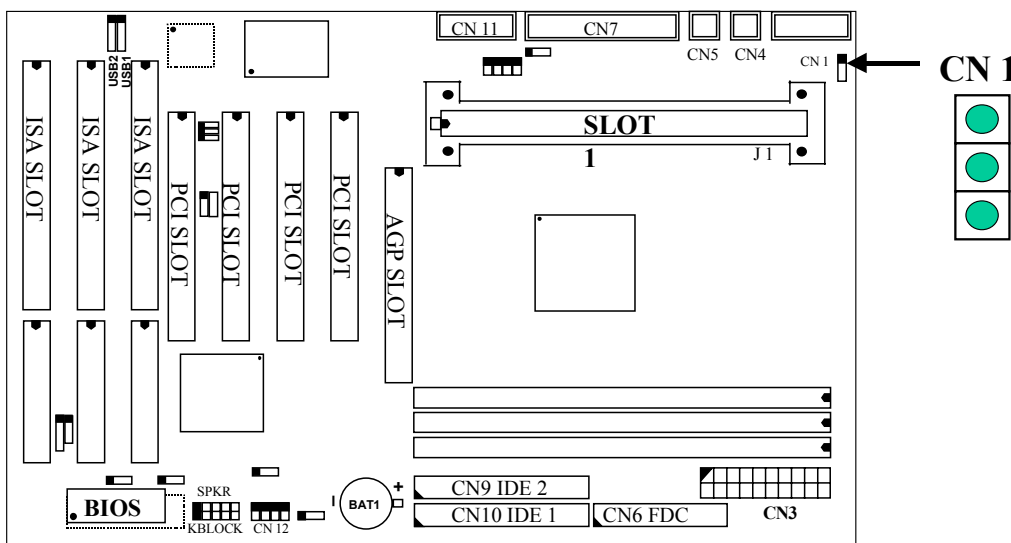
**A. CONNECTORS**

The connectors on PT-6IL 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.). Following is the connectors with its description and pin assignment which is designed on the mainboard.

**(A) BAT1: Battery Socket (Using the 3 Volts Lithium battery : CR2032)**

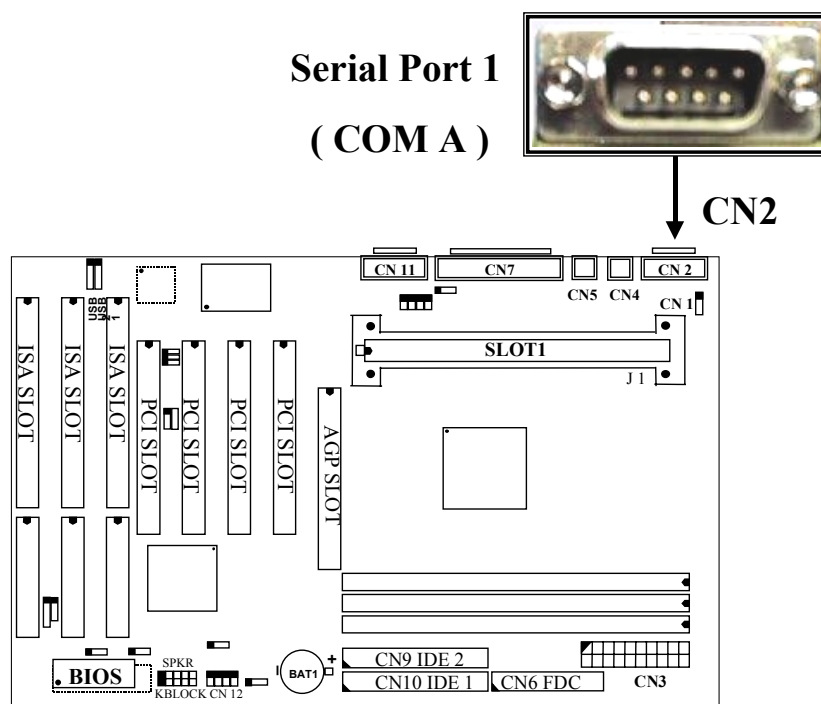


**(B) CN1: Switching Power Supply Fan Power Connector ( optional )**  
 ( CN1 will be available only when LM78 or LM79 is installed on the board )



**Pin assignment of Switching Power Supply Fan Power Connector:**

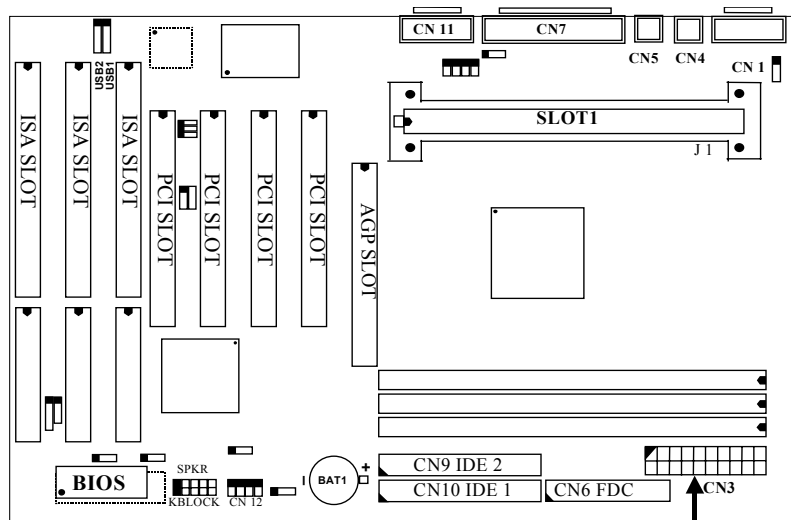
1	<input type="checkbox"/>	Ground
2	<input type="checkbox"/>	+ 12V DC
3	<input type="checkbox"/>	Fan Sense Signal

**(C) CN2: COM A (Serial Port 1) Connector****Pin assignment of serial port connector:**

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

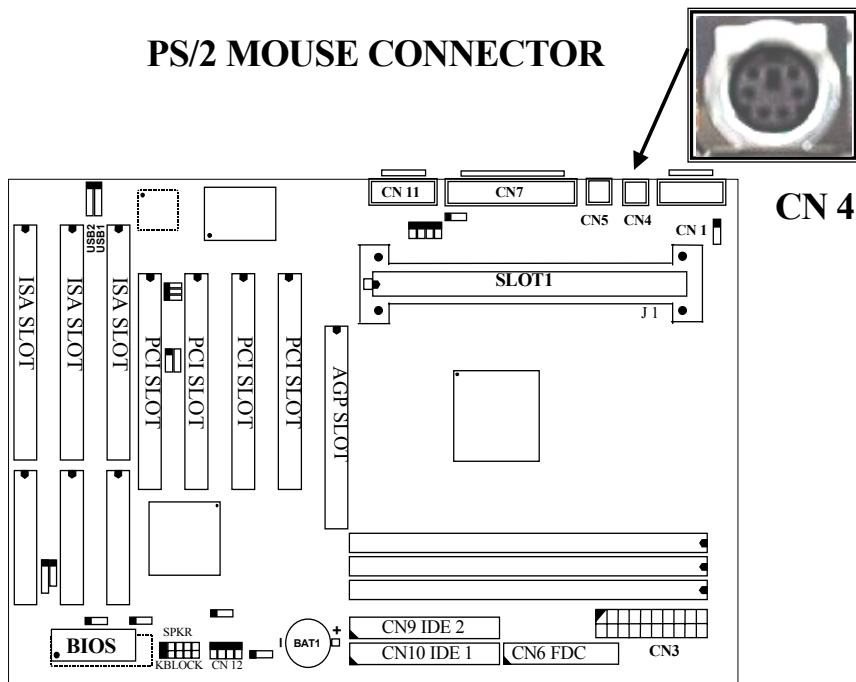
I/O address 3F8H/2F8H/3E8H/2E8H, IRQ4/IRQ3, selected by CMOS setup.



**(D) CN3: ATX Power Connector****ATX POWER CONNECTOR****Pin assignment of ATX power connector**

<u>11</u>	<u>1</u>	<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>
□	□	11	+ 3.3V DC	1	+ 3.3V DC
□	□	12	- 12V DC	2	+ 3.3V DC
□	□	13	Ground	3	Ground
□	□	14	PS-ON	4	+ 5V DC
□	□	15	Ground	5	Ground
□	□	16	Ground	6	+ 5V DC
□	□	17	Ground	7	Ground
□	□	18	- 5V DC	8	PW-OK
□	□	19	+ 5V DC	9	+ 5V SB
□	□	20	+ 5V DC	10	+ 12V DC
20	10				

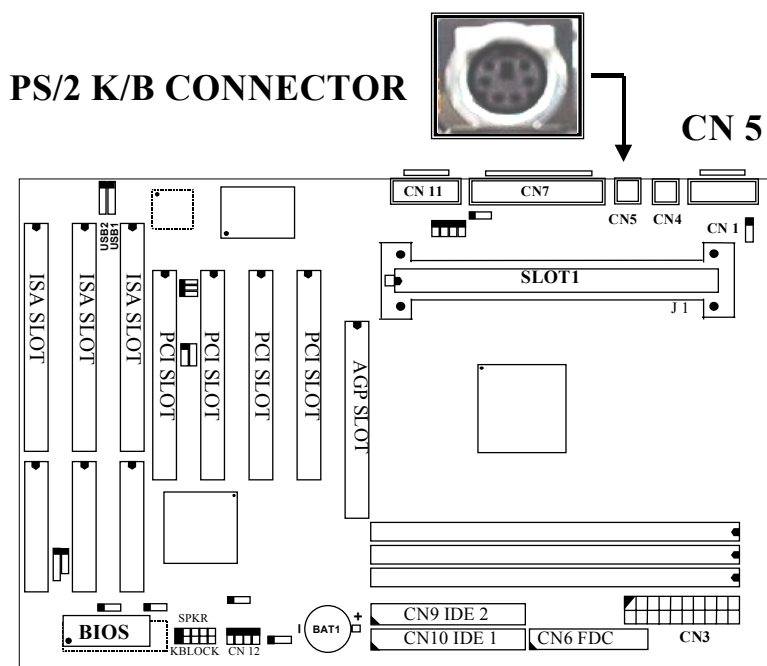
**(E) CN4: PS/2 Mouse Connector**



**Pin assignment of PS/2 mouse connector:**

<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>
1	Mouse Data	3	Ground	5	Mouse Clock
2	No Connection	4	+ 5V DC	6	No Connection

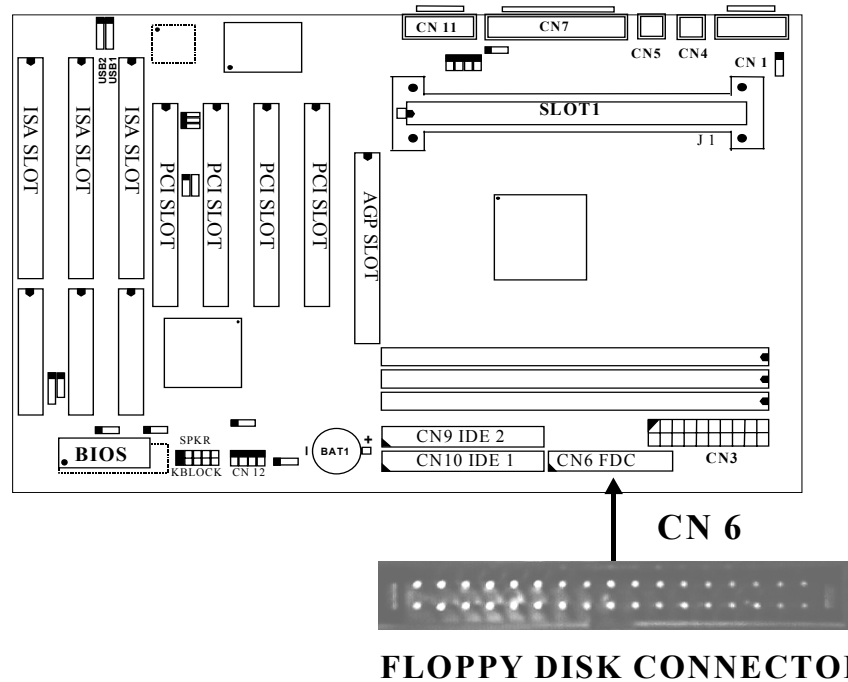
**(F) CN5: PS/2 Keyboard Connector**



**Pin assignment of keyboard connector**

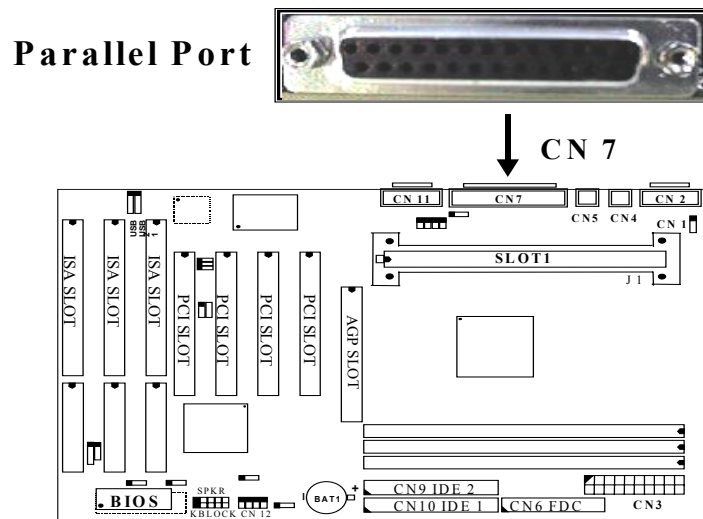
<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>
1	Keyboard Data	3	Ground	5	Keyboard Clock
2	No Connection	4	+ 5V DC	6	No Connection

**(G) CN6: Floppy Disk Control Port Connector (Using IRQ6, DMA channel 2)**



**(H) CN7: Parallel Port Connector**

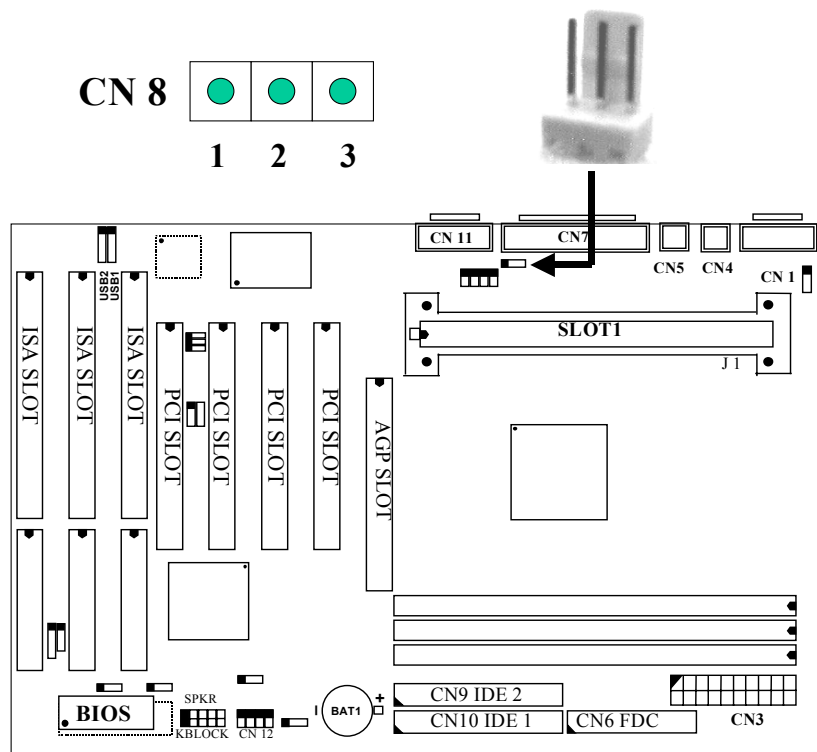
(Supports SPP/EPP/ECP modes, IRQ7 or IRQ5 is selectable, ECP mode will use either DMA channel 3 or channel 1 which can be selected by the CMOS setup program)



**Pin assignment of parallel port:**

1	14	Pin #	Signal name	Pin #	Signal name
<input type="checkbox"/>	<input type="checkbox"/>	1	STROBE <input type="checkbox"/>	14	AUTO FEED <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	2	Data Bit 0	15	ERROR <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	3	Data Bit 1	16	INIT <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	4	Data Bit 2	17	SLCT IN <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	5	Data Bit 3	18	Ground
<input type="checkbox"/>	<input type="checkbox"/>	6	Data Bit 4	19	Ground
<input type="checkbox"/>	<input type="checkbox"/>	7	Data Bit 5	20	Ground
<input type="checkbox"/>	<input type="checkbox"/>	8	Data Bit 6	21	Ground
<input type="checkbox"/>	<input type="checkbox"/>	9	Data Bit 7	22	Ground
<input type="checkbox"/>	<input type="checkbox"/>	10	ACK <input type="checkbox"/>	23	Ground
<input type="checkbox"/>	<input type="checkbox"/>	11	BUSY	24	Ground
<input type="checkbox"/>	<input type="checkbox"/>	12	PE	25	Ground
<input type="checkbox"/>		13	SLCT		

**(I) CN8: CPU Cooling Fan Power Connector**

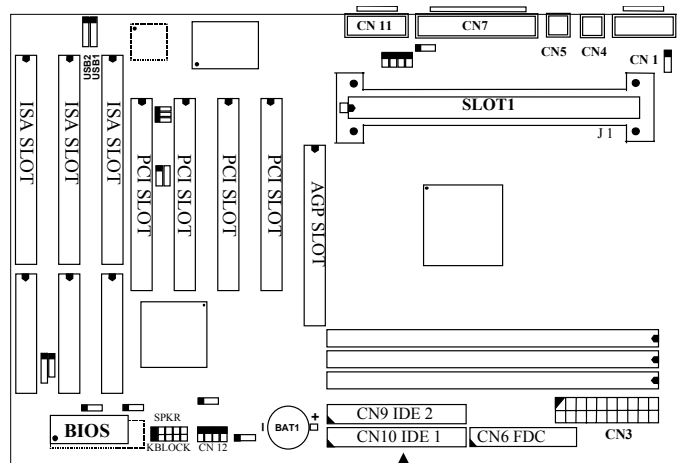


**Pin assignment of CPU Cooling Fan Power Connector:**

1	2	3	Pin #	Signal name	Pin #	Signal name	Pin #	Signal name
□	□	□	1	Ground	2	+ 12V DC	3	Fan Sense Signal

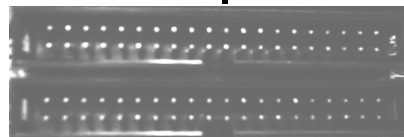
**(J) CN9 IDE 2 Connector** (Secondary IDE Port: 170H, IRQ15)

**(K) CN10 IDE 1 Connector** (Primary IDE Port: 1F0H, IRQ14)



**IDE 2**

**IDE 1**

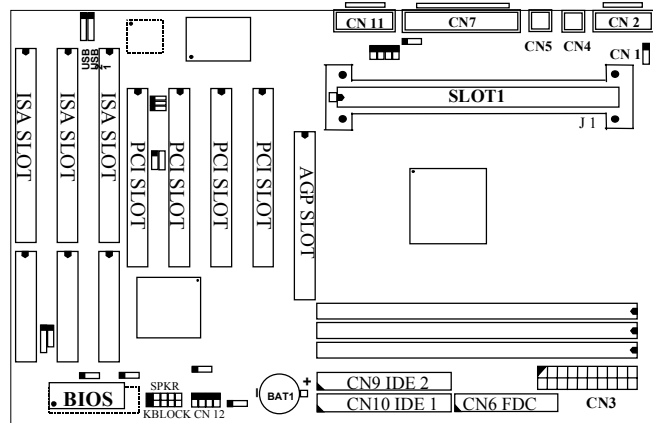


**(L) CN11: COM B (Serial Port 2) Connector**

**Serial Port 2  
(COM B)**



**CN 11**



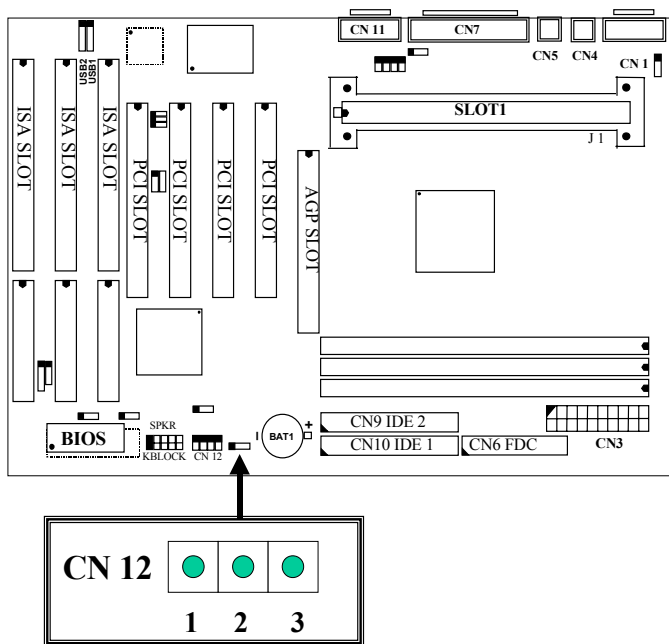
**Ping assignment of serial port connector:**

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

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

**(M) CN12: Chassis Fan Power Connector (optional)**

( this connector is available only when LM78 or LM79 is installed on the board )

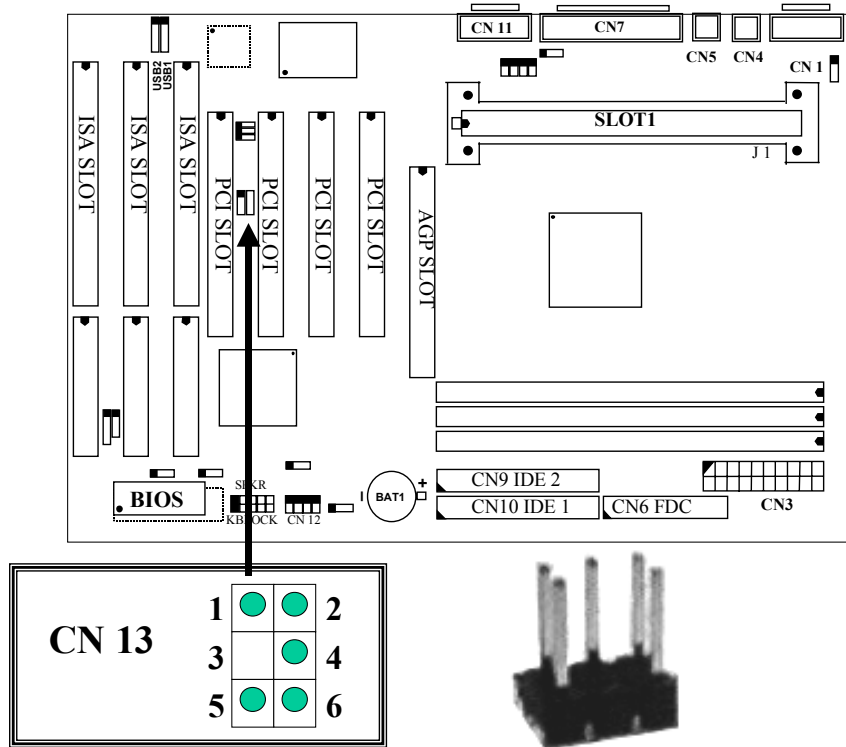


**Pin assignment of Chassis Fan Power Connector**

<u>1</u>	<u>2</u>	<u>3</u>	<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	Ground	2	+ 12V DC	3	Fan Sense Signal

**(N) CN13: SB-LINK Connector**

(For PCI bus sound cards, such as Creative™ Labs EMU8008 sound chip)

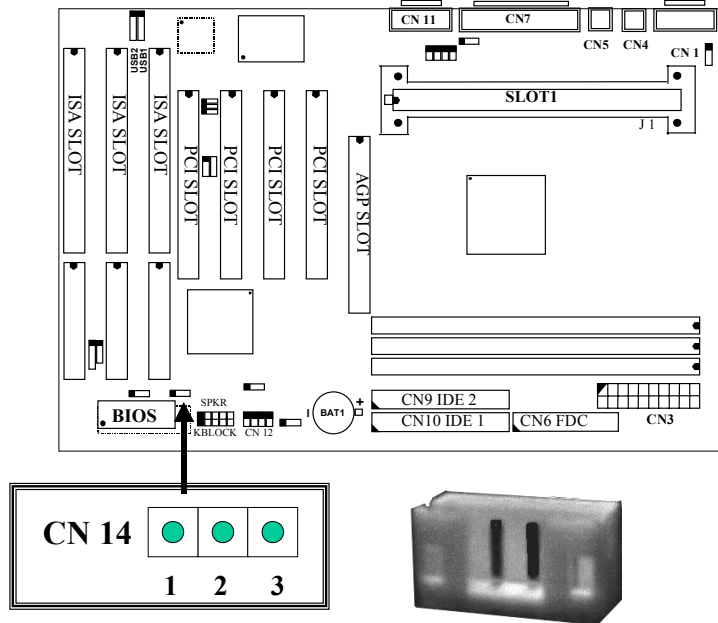


**Pin assignment of SB-LINK Connector:**

<u>1</u>	<u>2</u>	<u>Pin #</u>	<u>Signal name</u>	<u>Pin #</u>	<u>Signal name</u>
□	□	1	GNT#	2	Ground
□	□	3	Key	4	REQ#
□	□	5	Ground	6	SERIRQ
5	6				

**(O) CN14: 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 700mA current driving ability on the “5V standby” voltage.

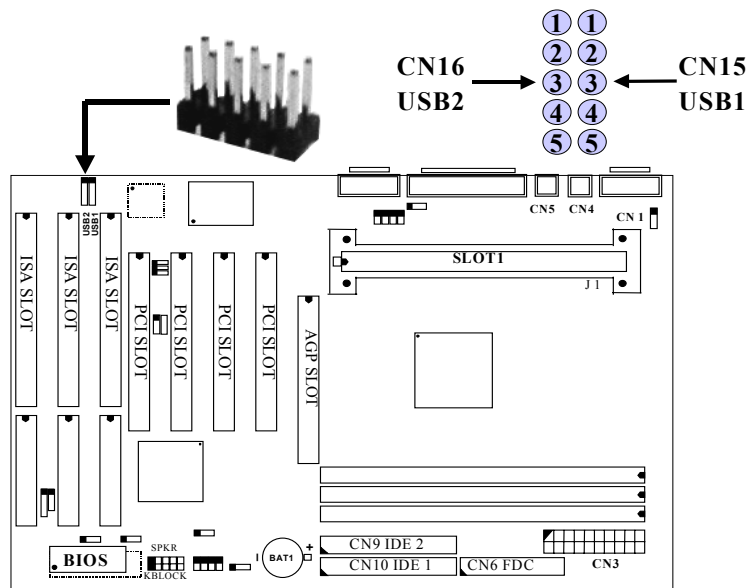


**Pin assignment of WOL Connector**

1	2	3	Pin #	Signal name	Pin #	Signal name	Pin #	Signal name
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	5V standby	2	Ground	3	WOL Signal

**(P) CN15: USB 1 (Universal Serial Bus port 1) Connector**

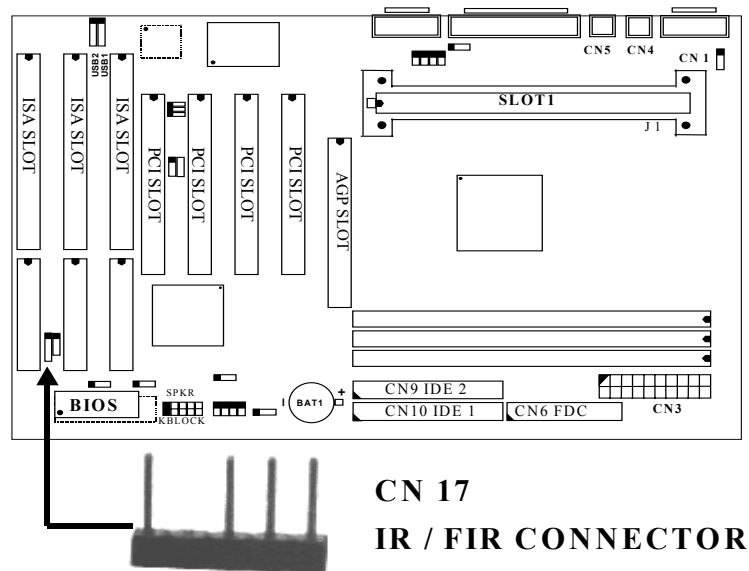
**(Q) CN16: USB 2 (Universal Serial Bus port 2) Connector**





**Pin assignment of USB connector:**

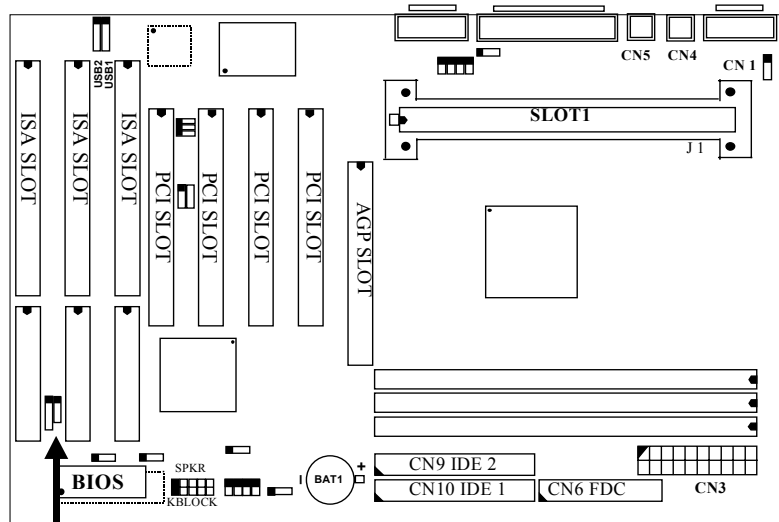
1	Pin #	Signal name
<input type="checkbox"/>	1	+ 5V DC
<input type="checkbox"/>	2	DATA <input type="checkbox"/>
<input type="checkbox"/>	3	DATA <input type="checkbox"/>
<input type="checkbox"/>	4	Ground
<input type="checkbox"/>	5	Ground

**(R) CN17: IR / FIR (Infrared Rays) Connector****Pin assignment of IR / FIR Connector:**

1A	Pin #	Signal name
<input type="checkbox"/>	1A	+ 5V DC
<input type="checkbox"/>	2A	No Connection (Fast IR Receive, optional for W83977ATF )
<input type="checkbox"/>	3A	IR Receive
<input type="checkbox"/>	4A	Ground
<input type="checkbox"/>	5A	IR Transmit

**(S) CN17: Consumer IR Connector**

( IR connector is active only when W83977ATF-AW I/O Chip is installed on position U11 )



**CN 17**

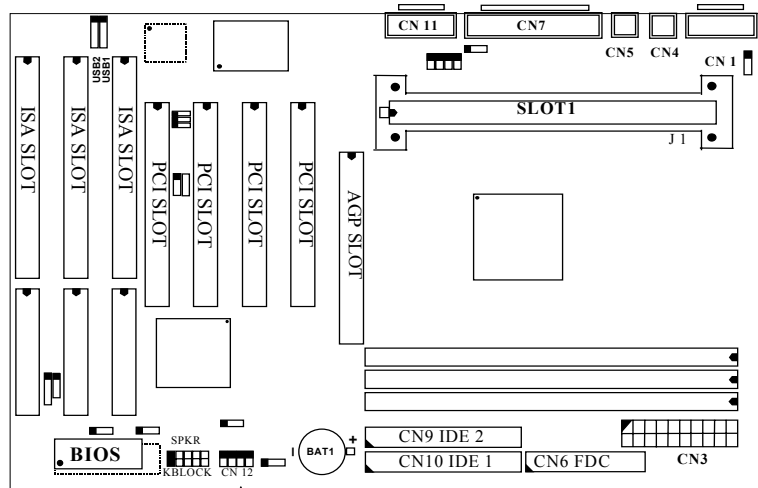
**COMMERCIAL IR CONNECTOR**

**Pin assignment of consumer IR connector:**

1B	<u>Pin #</u>	<u>Signal name</u>
<input type="checkbox"/>	1B	+ 5V DC
<input type="checkbox"/>	2B	IR Transmit
<input type="checkbox"/>	3B	Consumer IR Receive
<input type="checkbox"/>	4B	Ground
4B		

**(T) 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:



**RS: Reset Button connector**  
**HL: HDD LED connector**  
**SL: Sleep LED connector**  
**PW: Power On / Off Suspend switch**

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

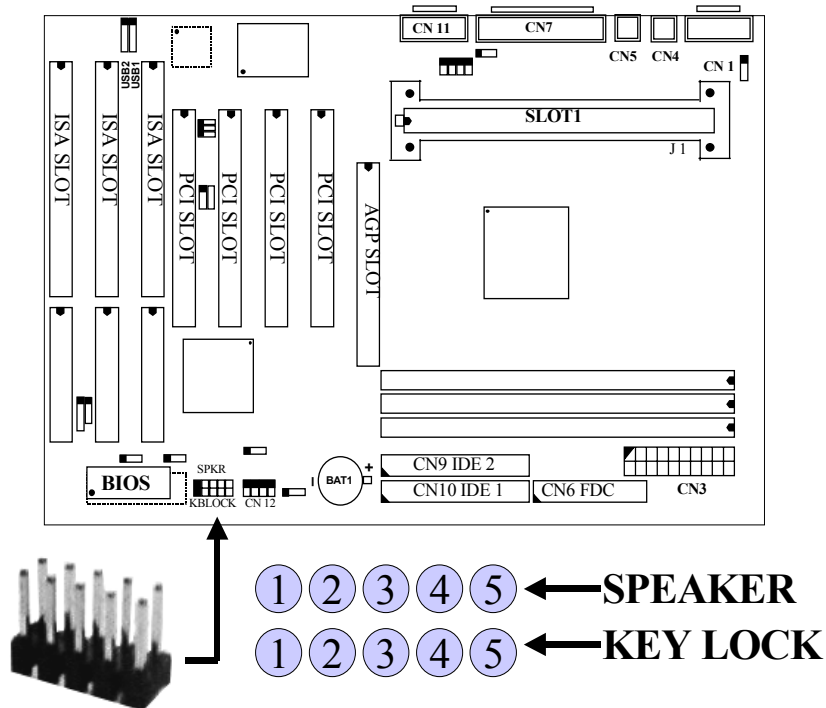
3. **SL** Sleep LED Connector

This LED will be lightened when the AC power is connected and the system is power off, darkened when the AC power is disconnected or the system is powered on.

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

4. **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 page 4-10 for the BIOS setup)
- ① **If the setup in CMOS is “Delay 4 Sec.”, the switch function will be:**
- A. When system is power off :**  
Press this switch, the system will power on. (when “password” is selected in the CMOS setup program, you will be unable to use the PW button to power on the PC system, please see page 2-2 and page 4-0 for more details. )
- 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. (get into a 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. (when “password” is selected in the CMOS setup program, you will be unable to use the PW button to power on the PC system, please see page 2-2 and page 4-0 for more details. )
- B. When system power is on :**  
Click on this switch, the system will be powered off instantly.

**SPEAKER AND KEY LOCK CONNECTOR:**



**(X) SPKR Speaker Connector**

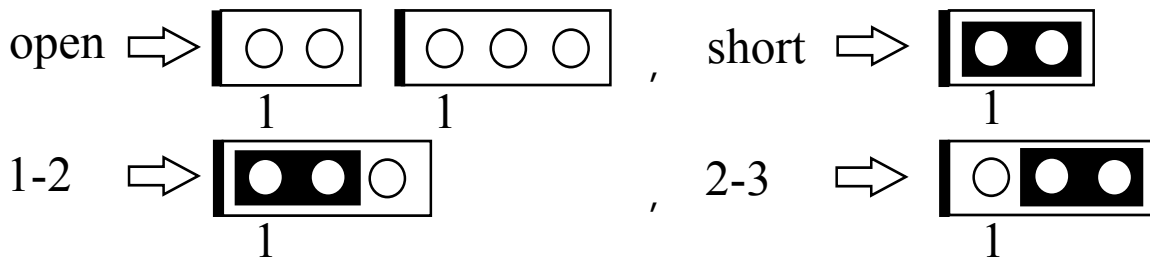
1	Pin #	Signal name
<input type="checkbox"/>	1	+ 5V DC
<input type="checkbox"/>	2	No Connection
<input type="checkbox"/>	3	No Connection
<input type="checkbox"/>	4	Speaker Data Signal
<input type="checkbox"/>	5	No Connection

**(Y) KBLOCK Front Panel Power LED and Key-Lock Connector**

1	Pin #	Signal name
<input type="checkbox"/>	1	Pullup (+ 5V DC for Power LED)
<input type="checkbox"/>	2	No Connection
<input type="checkbox"/>	3	Ground
<input type="checkbox"/>	4	Keyboard Lock
<input type="checkbox"/>	5	Ground

## A. JUMPERS

This section will discuss the jumper setting on the PT-6IL 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.



*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. (They are JP1-JP4 and JP6-JP9). In order to make the mainboard works properly in your PC system, please make sure all jumper settings are at correct before installing this mainboard.*

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.

### (A) JP1-JP4: CPUs Speed Selection (*optional*)

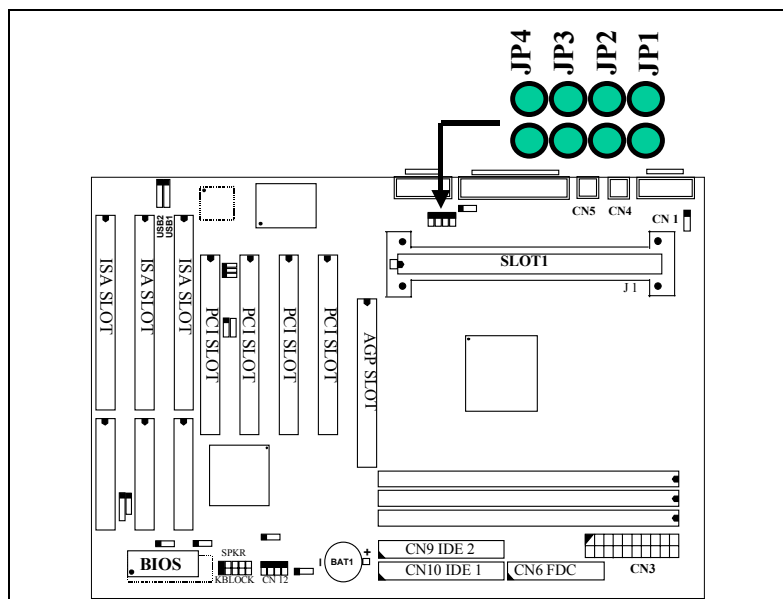
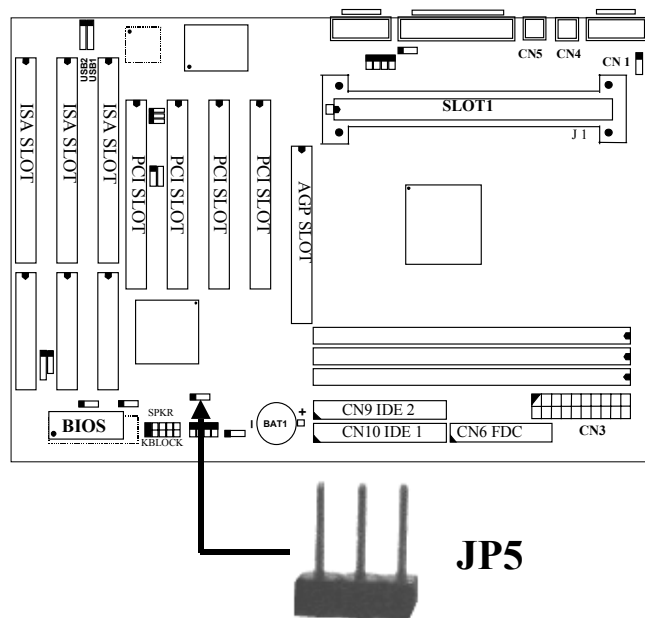


Table of CPU frequency jumper settings:

CPU (MHz)	JP1	JP2	JP3	JP4	Ratio
233 MHz	open	open	short	Reserved	x 3.5
266 MHz	short	short	open	Reserved	x 4
300 MHz	open	short	open	Reserved	x 4.5
333 MHz	short	open	open	Reserved	x 5

*Note: The CPU speed can be selected by CMOS setup utility and its priority is always higher than hardware jumper setting, please refer to page4-6 and 4-7 for BIOS settings.*

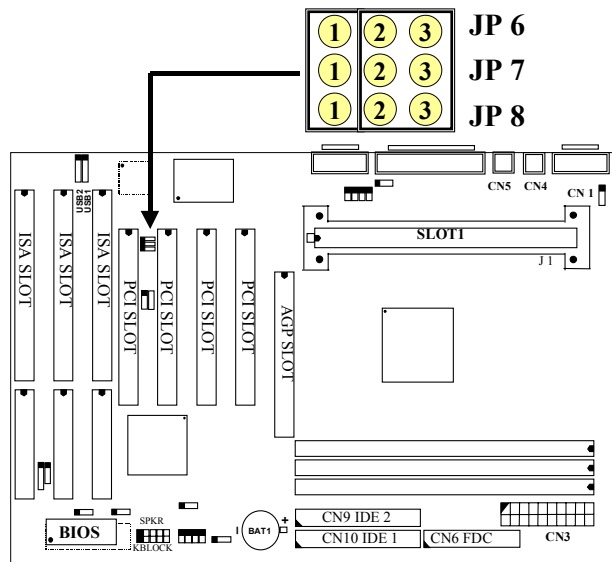
### (B) JP5: Clear CMOS Data Button



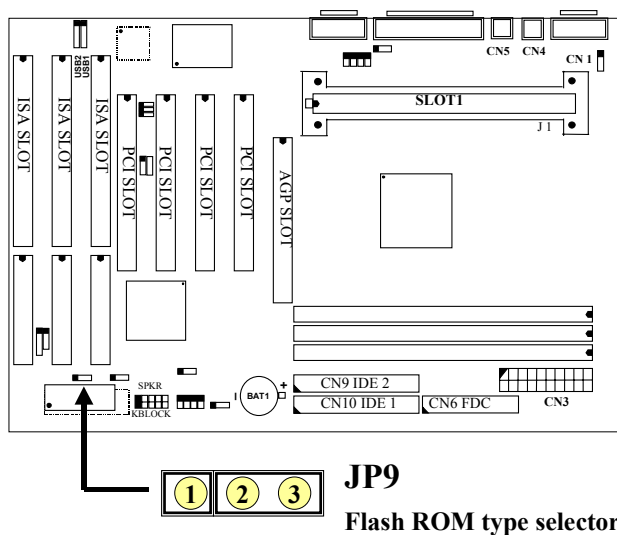
Pin #	Function
1-2	Normal operation
2-3	Clear CMOS

*Note: Improper BIOS setting may cause hang-up to the PC system, In case that it should be happened, you may use JP5 to clear the information which is stored in the CMOS memory and get the PC system back to normal. Improper connection may cause permanent damage to the mainboard. Please refer to the following steps to clear the CMOS*

1. Unplug the AC power cable from the PC system.
2. Put the mini jumper on pin 2-3 of JP5 around 3 to 5 seconds and then return it to the original position ( pin 1-2 ).
3. Re-connect the AC power cable.

**(C) JP6-JP8: USB Port 2 Function Selection (optional)****Pin #    Function**

- 1-2    USB function on CN16 (USB2) enable. (default)
- 2-3    USB function on J2 (AGP slot) enable.

**(C) JP9    Flash ROM (BIOS) Type Selection (optional)****Pin #    Function**

- 1-2    For +5V FLASH ROM
- 2-3    For +12V FLASH ROM (default)



## I. AWARD BIOS SETUP

### A. GETTING STARTED

When the system is first time power on or reset by user, the BIOS will enter the Power On Self Test routines ( POST, which will display a copyright message on the screen and execute a diagnostics and initialization procedure.) In case that there is any error or malfunction detected, the BIOS will give a series of beep sound or display the error message on screen.

When the system is normal, the simulate figure *Fig. 5-1* will be displayed on the screen when the system is powered on.

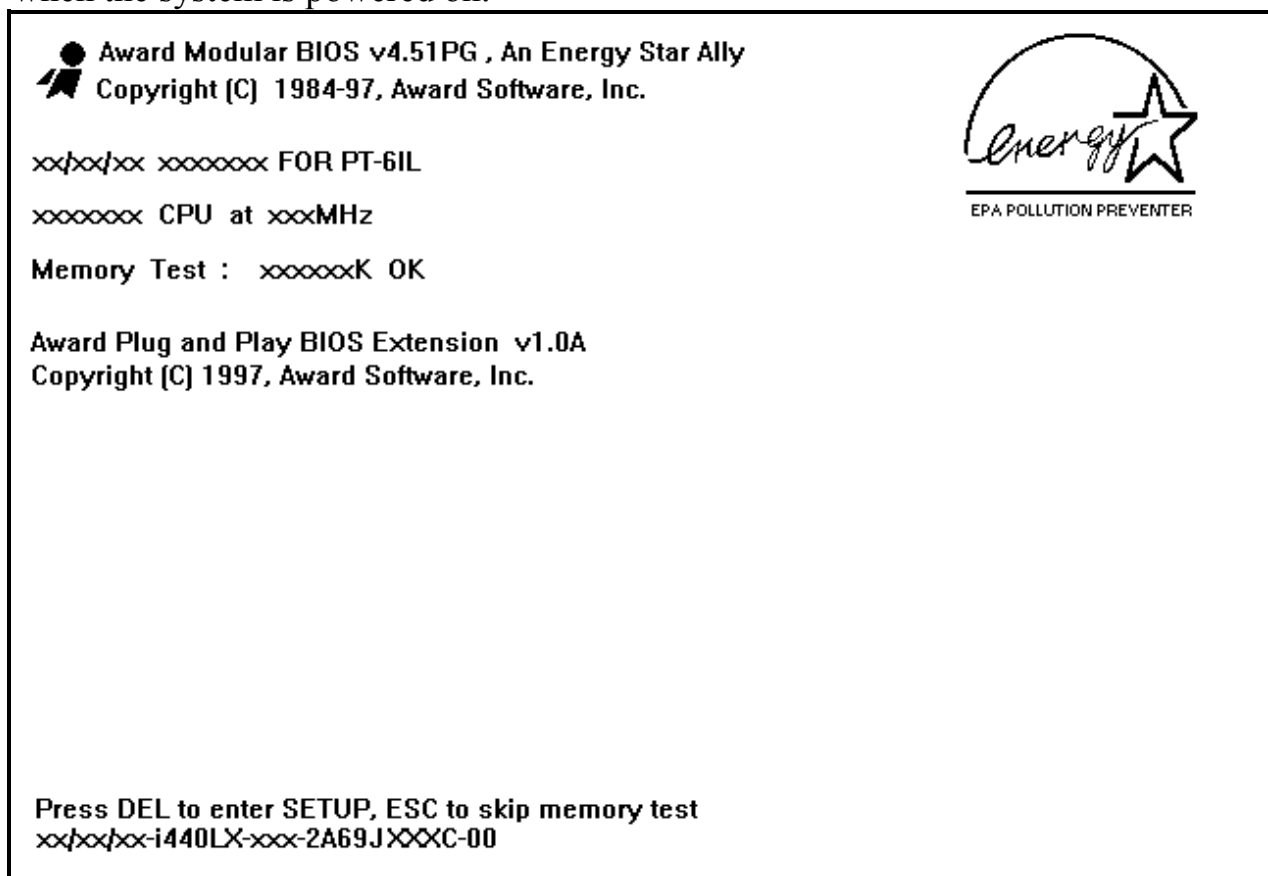


Fig. 4-1 Initial Power-On screen.

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 figure Fig. 5-2 will be triggered:



The following pages shows all the screens which you will find in the CMOS SETUP routine, each figure contains the setup items and its default settings. At the bottom of some figures, you may find the description of all function key which can be used to change the settings. If you are not quite sure of the definition for some specific items, please consult your mainboard supplier for details.

## A. STANDARD CMOS SETUP

ROM PCI/ISA BIOS (2A69JXXX)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Date (mm : dd : yy) : Thr, <b>Oct</b> 20 1997	
Time (hh : mm : ss) : 14 : 59 : 21	
HARD DISKS	TYPE    SIZE    CYLS    HEAD    PRECOMP    LANDZ    SECTOR    MODE
Primary Master	Auto    0    0    0    0    0    0    0    Auto
Primary Slave	None    0    0    0    0    0    0    0    -----
Secondary Master	Auto    0    0    0    0    0    0    0    Auto
Secondary Slave	None    0    0    0    0    0    0    0    -----
Drive A : 1.44M, 3.5 in.	
Drive B : None	
Video : EGA/VGA	
Halt On : All Errors	
Base Memory : 640 K Extended Memory : xxxxxx K Other Memory : xxxxxx K <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> Total Memory : xxxxxx K	
ESC : Quit <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item                    PU/PD/+/- : Modify F1 : Help                      (Shift)F2 : Change Color	

Fig. 4-3 STANDARD CMOS SETUP screen.

### MODE :

The BIOS on the mainboard is the updated one and which provides three different modes to support both normal size IDE hard disk drive and the hard disk drive which is above 528MB:

- NORMAL : For IDE hard disk drives which is smaller than 528MB.
- LBA : For IDE hard disk drive which is above 528MB (ideally, it can be as big as 8.4GB ) that use Logic Block Addressing (LBA) mode.
- Large : For IDE hard disk drive which is above 528MB and does not support LBA mode.

Note : "large mode" may not be fully supported by all operation systems. It is suggested to be used with the MS-DOS but such hard disk drive is not very popular nowadays.

Auto : This mode will auto-detect your IDE driver during boot-up.  
 (Note : Some certain operation systems ( such as SCO®-UNIX™ ), only "NORMAL mode" is allowed when installation.)

## A. BIOS FEATURES SETUP

ROM PCI / ISA BIOS (2A69JXXX)

BIOS FEATURES SETUP

AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
OS Select For DRAM > 64MB	: Non-OS2	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
PS/2 mouse function control	: Enable	F7 : Load Setup Defaults	

Fig. 4-4 BIOS FEATURES SETUP screen.

### Virus Warning :

Basically, The default setting of this feature is "Disabled" In order to avoid virus infection happens on your PC system, PT-6IL provides the virus warning features in the BIOS. During and after the operation system is loaded, any attempt to write to the boot sector or partition table on the IDE hard disk drive will trigger this feature and give you some warning messages on the screen and then halt the system. When you find the message on 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 :**

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

#### **Boot Sequence :**

This field allows you to use some other device to boot the operating system. The options available are “A,C,SCSI”, “C,A,SCSI”, “C,CDROM,A”, “CDROM,C,A”, “D,A,SCSI”, “E,A,SCSI”, “F,A,SCSI”, “SCSI,A,C”, “SCSI,C,A”, “C only” and “LS/ZIP,C”.

When select to load the OS from “CDROM,C,A” or “LS/ZIP,C”, you must select the “HARD DISK TYPE and MODE” properly, the “Auto” selection is recommended so that you can use CDROM or LS/ZIP device to load the OS into your system. (You can find these items in the “STANDARD CMOS SETUP” )

#### **PCI/VGA Palette Snoop :**

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.

#### **OS Select For DRAM > 64MB :**

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.

#### **PS/2 mouse function control :**

This mainboard built-in a PS/2™ mouse port, In case that you prefer to connect your mouse to the serial port instead of using the PS/2™ mouse, you may choose “Disable” in this field so that the IRQ12 can be released for the other devices; If you are using the PS/2™ mouse, leave this field “Enabled”.

## A. CHIPSET FEATURES SETUP

ROM PCI / ISA BIOS (2A69JXXX)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: <b>Enabled</b>	SDRAM RAS-to-CAS Delay	: Slow
DRAM Speed Selection	: 60ns	SDRAM RAS Precharge Time	: Slow
MA Wait State	: Slow	SDRAM CAS latency Time	: 3
EDO RAS# To CAS# Delay	: 3	CPU Speed	: 266 MHz
EDO RAS# Precharge Time	: 3		
EDO DRAM Read Burst	: x333		
EDO DRAM Write Burst	: x222		
DRAM Data Integrity Mode	: Non-ECC		
CPU-To-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole at 15M-16M	: Disabled		
Passive Release	: Enabled	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/- : Modify
AGP Aperture Size (MB)	: 4	F5 : Old Values	(Shift)F2 : Color
		F7 : Load Setup Defaults	

Fig. 4-5 CHIPSET FEATURES SETUP screen.

**WARNING :** *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, do not attempt to make any change except the following items.*

### Auto Configuration :

When “Enabled”, the optimum parameters for the chipset and CPU registers will be loaded automatically. When “Disabled”, users can modify the parameter manually.

### DRAM Speed Selection :

When “Auto Configuration” is “Enabled”, you may use this field to select the DRAM access time. There are two optimal values suggested for the chipset and CPU registers. You may select either “60 ns” or “50 ns” according to the different DRAMs which is installed on the board. Basically, “50 ns” will let you have better performance.

However, “60ns” is recommended in most case causes it works with most DRAM modules.

When “Auto Configuration” is “Enabled”, the “DRAM speed selection” field will be disappeared and you may use the other fields to configure the DRAM speed. Basically, it is not recommended unless you are the professional technician.

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

Some specific add-on cards may require a 1MB address space between 15MB and 16MB area. Please refer to the user’s manual of your add-on card carefully to see whether you will have to enable this field or not when you are installing a add-on card to the system..

**AGP Aperture Size (MB) :** ( default setting: 4MB )

There is the AGP slot on the board and which allows user to install the AGP display card in the system. The AGP display card will use some of the system memory to store 3D texture mapping data so that the video performance can be increased tremendously. You may use this field to define the memory size which you prefer to use with the AGP card. The memory size selectable in this field can be 4MB to 256MB.

**CPU Speed :** (default setting : 266MHz )

PT-6IL is “Jumper-free” mainboard, so users need not to do any jumper setting when installing the CPU. Simply use this field to decide the CPU speed. The selecting range in this field is 233MHz to 333MHz. The default setting of CPU speed is “266MHz”,

In order to make sure the system will always working normally. So the CPU speed will be switched to “233MHz” after you clear the CMOS data when you found the CMOS data is corrupted.

## A. POWER MANAGEMENT SETUP

ROM PCI / ISA BIOS (2A69JXXX)  
POWER MANAGEMENT SETUP  
AWARD SOFTWARE, INC.

Power Management	: User Define	** Reload Global Timer Events **	
PM Control by APM	: Yes	IRQ [3-7 , 9-15], NMI	: Enabled
Video Off Method	: Blank Screen	Primary IDE 0	: Disabled
Video Off After	: Standby	Primary IDE 1	: Disabled
MODEM Use IRQ	: 3	Secondary IDE 0	: Disabled
		Secondary IDE 1	: Disabled
Doze Mode	: Disable	Floppy Disk	: Disabled
Standby Mode	: Disable	Serial Port	: Enabled
Suspend Mode	: Disable	Parallel Port	: Disabled
HDD Power Down	: Disable		
VGA Active Monitor	: Enabled		
Soft-Off by PWR-BTTN	: Delay 4 Sec.		
CPUFAN Off In Suspend	: Enabled		
Resume by Ring or LAN	: Enabled	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
Resume by Alarm	: Disabled	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F7 : Load Setup Defaults	

Fig. 4-6 POWER MANAGEMENT SETUP screen.

**WARNING :** *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, do not attempt to make any change except the following items.*

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

This setting controls the Power Management functions. "User Define" will allow user to define their own parameters. "Min Saving" and "Max Saving" is a quick selection option which will fix the values of four parameters, including "Doze Mode", "Standby Mode", "Suspend Mode" and "HDD Power Down". When "Disable" is selected, it will disable all Power Management functions.



**Soft-Off by PWR-BTTN :** (Default setting: “Delay 4 Sec.”)

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 3-28 for details of function description.

**CPUFAN Off In Suspend :**

This selection allows user to controls the function of the “CN8” ( CPU cooling fan connector ). When “Enabled” is selected, the CPU cooling fan will stop in Suspend mode to decrease the system power consumption and noise. When “Disabled” the CPU cooling fan is keep on working when the system is in Suspend mode.

**Resume by Ring or LAN :** ( Default setting: “Enabled”.)

When “Enabled”, you can resume the system from Sleep or Suspend mode by using a MODEM Ring-in or a LAN signal. In order to make this feature works normally, there are some requirement need to be noticed, please see page 2-3 and page 2-4 for details.

**Resume by Alarm :** ( Default setting : “Disabled” )

When “Enabled”, the following two selection fields - “Date (of Month) Alarm” and “Time (hh:mm:ss) Alarm” will appear on the screen. 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. (for more detail information, please refer to page 2-3 ).

## A. INTEGRATED PERIPHERALS

ROM PCI / ISA BIOS (2A69JXXX)  
 INTEGRATED PERIPHERALS  
 AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard Serial Port 1	: 3F8/IRQ4
IDE Primary Master PIO	: Auto	Onboard Serial Port 2	: 2F8/IRQ3
IDE Primary Slave PIO	: Auto	UART Mode Select	: Normal
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto	Onboard Parallel Port	: 378/IRQ7
IDE Primary Slave UDMA	: Auto	Parallel Port Mode	: SPP
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Controller	: Disabled		
POWER ON Function	: BUTTON ONLY		
Onboard FDC	: Enabled	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
Controller		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F7 : Load Setup Defaults	

Fig. 5-7 INTEGRATED PERIPHERALS setup screen.

**WARNING:** *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, don't attempt to make any change except the following items.*

You may use the selection options on this screen to enable or disable some of the onboard interfaces like IDE, FDC and USB. You can also change the IDE ports to PIO Mode 0, mode 1, mode 2 or mode 4. The default setting is "auto", It is the recommended setting to users because it will decide the transfer protocol and let your PC system has the best performance.

**POWER ON Function :** ( Default setting : “BUTTON ONLY” )

This mainboard provides several flexible and convenient ways to power on the PC system. They are the “BUTTON ONLY”, “Password”, “Hot KEY”, “Mouse Left” and “Mouse Right”, please refer to page 2-2, page 2-3 and page 2-4 for details of each feature.

To change the way to power on your PC system, move the selection bar to “**POWER ON Function**” and use the arrow keys to select the option which you prefer to have.

When you want to use the password to power on your PC system, you may enter up to four alphanumeric characters in this field. When you have entered the password and press the “Enter” key, reconfirm the password once more to complete password setup.

If you press the “Enter” key twice, without keying in any alphanumeric character, the password will be disabled.

## A. PNP/PCI CONFIGURATION

ROM PCI / ISA BIOS (2A69JXXX)  
 PNP/PCI CONFIGURATION  
 AWARD SOFTWARE, INC.

PNP OS Installed	: <b>No</b>	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled By	: Manual	Primary IDE INT#	: A
Reset Configuration Data	: Disabled	Secondary IDE INT#	: B
IRQ-3 assigned to	: Legacy ISA	Used MEM base addr	: N/A
IRQ-4 assigned to	: Legacy ISA		
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: Legacy ISA		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: Legacy ISA		
IRQ-14 assigned to	: Legacy ISA		
IRQ-15 assigned to	: Legacy ISA		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
DMA-3 assigned to	: PCI/ISA PnP	F1 : Help	PU/PD/+/- : Modify
DMA-5 assigned to	: PCI/ISA PnP	F5 : Old Values	(Shift)F2 : Color
DMA-6 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults	
DMA-7 assigned to	: PCI/ISA PnP		

Fig. 4-8 PNP/PCI CONFIGURATION setup screen.

**WARNING :** *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, do not attempt to make any change.*

**PNP OS Installed :** ( Default setting is “No” )

The setting in this field tells the system BIOS whether your operating system (OS) is a PnP OS (such as Windows® 95) or not. A PnP OS will use the system resources record stored in the ESCD segment to arrange the system environment..

**Resources Controlled by :**

Manual : The system BIOS will not refer to the ESCD data to assign IRQ & DMA. Instead, it will refer to the information recorded in this field when assigning the IRQ & DMA resource. ( anyhow, the system BIOS will always refer to the ESCE data to assign the I/O and memory space resources ).

Auto : The system BIOS will refer to the ESCD segment for all legacy information.

**Reset Configuration Data :**

Disabled : The system BIOS will do nothing.

Enabled : The system BIOS will clear (reset) the ESCD data during “POST”. After clearing the ESCD data, the system BIOS will then change this item’s value back to “Disabled”, otherwise, the ESCD data will become useless.

**IRQ# / DMA# assigned to :**

There are only 15 IRQs and 8 DMAs available on the mainboard and most of them are assigned for some specific purposes. Sometimes, user may feel like to have some more IRQ and DMA in order to install the new add on cards. In this case, you may use this field to assign some certain IRQ and DMA to “PCI/ISA PnP” so that the new add on card will find the free IRQ or DMA available for it.

Legacy ISA : The system BIOS will skip and never assign the specified IRQ/DMA resource to PCI or ISA PnP devices and the IRQ and DMA can only be used by their specified Legacy ISA cards.

PCI/ISA PnP : When the “PCI/ISA PnP” is been selected, the related IRQ and DMA will be released and they can be used by other PCI or ISA devices. Whenever there is the new PCI or ISA devices plugged onto the mainboard, the system BIOS will detect it and assign a free IRQ or DMA for the new devices.

*.Note: Most IRQ and DMA have its own purpose and they can not be assigned to “PCI/ISA PnP”. For example, IRQ14 and IRQ15 is used by the onboard IDE device. If you change the setting on IRQ14 and IRQ15, you will be unable to connect the hard disk drive or CD ROM drive to the IDE interface on the mainboard. So please make sure to check the IRQ and DMA assignment in your system before you proceed to do the setting. For instance, if you do not have the printer (IRQ7) or PS/2™ mouse (IRQ12) connected to your PC system, you may assign IRQ7 and IRQ12 to “PCI/ISA PnP” so that you can have more IRQs available for new add on cards.*

**PCI IDE IRQ Map To :** (only for off-board PCI IDE cards)

PCI-AUTO : The BIOS will scan and check the existing of the PCI IDE device and identify the slot location where the PCI IDE locates, and then the system BIOS will assign IRQ 14 for the primary IDE, and assign IRQ 15 for the secondary IDE.

PCI-SLOT1 : In this field, you may tell the system BIOS to assign IRQ 14 for primary to IDE INT# and IRQ 15 for secondary IDE INT# on some certain PCI slot. Under the normal condition, this selection is not recommended because the IDE interfaces are already built on the mainboard.

ISA : The BIOS will not assign any IRQ even when the system BIOS detects the PCI IDE card on the PCI slot. The reason is because some certain IDE cards will connect the IRQ 14 and 15 directly from ISA slot. (Such ISA card is called as Legacy Header)

**Used MEM base addr and Used MEM Length :**

These fields are used for some special ISA legacy cards which will request memory space below 1M address. Please refer to the user's manual of your add on card to find whether it will need such memory space. If your add on card does need to have such memory space, please point out the memory address and its length of the legacy area in this field. According to what is recorded in this field, BIOS will skip the UMB area that is used by the legacy device to avoid the memory conflicting.

Note : No matter what is defined in the "Resources Controlled By" field ("Manual" or "Auto"), the system BIOS will always assign IRQ resources to PCI devices from the highest one first ( ie. IRQ15, 14, 13 ...) while assign IRQ resources to ISA PnP devices from the lowest one first ( ie. IRQ3,4,5 .. ).



“Del” key and enter the main setup screen. So you may select “SAVE & EXIT SETUP” to leave setup program and the system is loaded with the default settings.





In order to make the IDE hard disk known to the system, you need to tell the system what kind of hard disk is connected to the mainboard by giving a set of hard disk parameters. Sometimes it is not easy for users to find the proper parameters for their IDE hard disk drive. In order to help users to find the parameters, the system BIOS provides a convent way – the auto detection of IDE hard disk drive.

To run the auto detection program is extremely easy. Move the selection bar to “IDE HDD AUTO DETECTION” and then press “Enter”, the system BIOS take over the job and try to detect the type of IDE hard disk. If it succeeds, you will see a list of hard disk with its related parameters. You may press on the “Y” key (or select one of the hard disk type listed on the screen ). The system BIOS will transfer the parameters to the corresponding fields in the STANDARD CMOS SETUP menu and you have completed the IDE hard disk setup.

## A. SAVE & EXIT SETUP

ROM PCI/ISA BIOS (2A69JXXX)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
INTEGRATED PERIPHERALS	<b>SAVE &amp; EXIT SETUP</b>
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
ESC : Quit	□□□□ : Select Item

F10	:	Save & Exit	(Shift)	F2	:	Change
Setup				Color		
		Time, Date, Hard Disk Type ...				



program will be terminated and the system will start to reboot.

