

## Installation Procedures

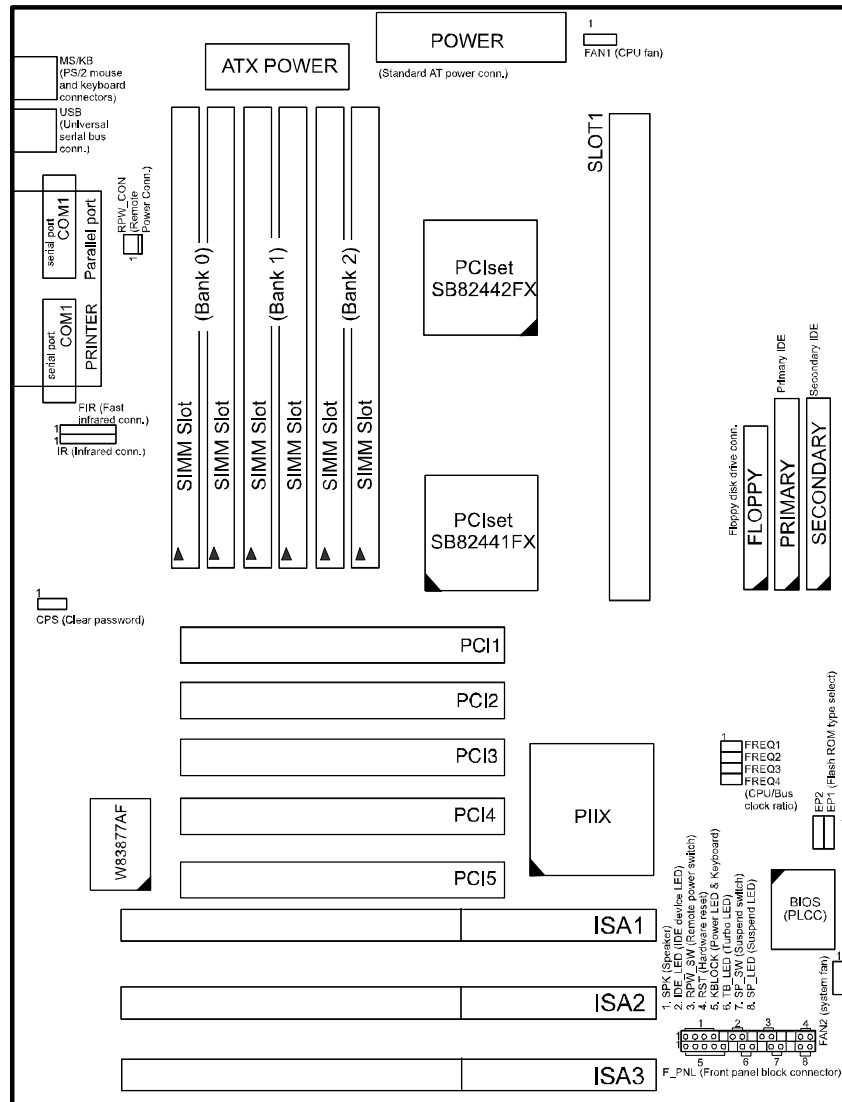
The KN-6010 has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

To set up your computer, you should follow these installation steps:

- Step 1 -  
Set system jumpers
- Step 2 -  
Install System RAM modules
- Step 3 -  
Install the CPU
- Step 4 -  
Install expansion cards
- Step 5 -  
Connect cables and power supply
- Step 6 -  
Set up BIOS feature (Please read Chapter 3.)

**CAUTION :** If you use an electric drill to install this mainboard on your chassis, please wear a static wrist strap. The recommended electric drill torque is from 5.0 to 8.0 kg/cm to avoid damaging chips' pins.

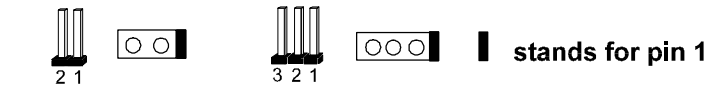
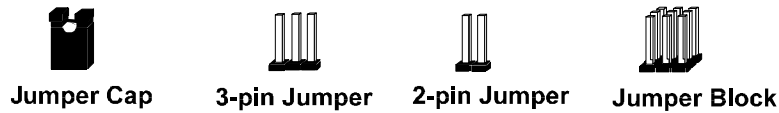
## Mainboard Layout



## 1). Set System Jumpers

### *Jumpers*

Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A jumper is said to be **shorted** when the black cap has been placed on one or two of its pins. The types of jumpers used in this manual are shown below:



Jumpers are shown as above



Jumper cap is shown as above

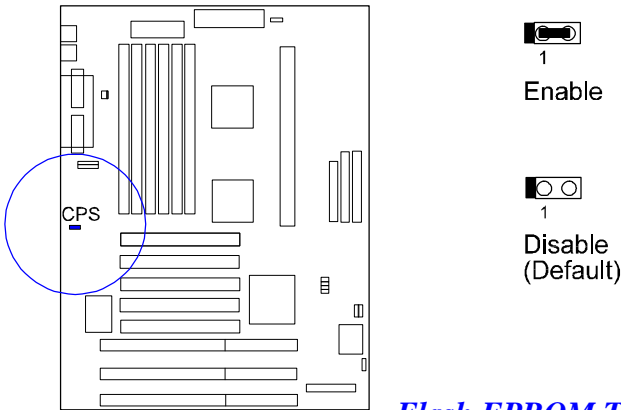


Jumpers in a Block

**NOTE :** Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

**Clear Password: CPS**

This jumper allows you to set the password configuration to **Enabled** or **Disabled**. You may need to enable this jumper if you forget your password.



**Flash EPROM Type Selection:**

**EP1, EP2**

These two jumpers allow you to configure the Flash EPROM chip

| 1M           | EP1 | EP2 |
|--------------|-----|-----|
| Intel 28F001 |     |     |
| SST 29EE010  |     |     |

| 2M              | EP1 | EP2 |
|-----------------|-----|-----|
| AMD AM29F002T   |     |     |
| SST 29EE020     |     |     |
| ATMEL AT29C020  |     |     |
| MXIC MX28F2000P |     |     |

## 2). Install RAM Modules

### DRAM Memory

The working space of the computer is the Random Access Memory (RAM). The system cannot act upon data unless it is loaded into RAM. The system RAM is comprised of industry-standard 72-pin Single In-line Memory Modules (SIMMs).

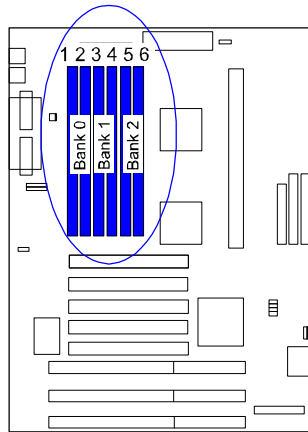
Occasionally the system must break apart data files because the entire file can not be fitted into the RAM area. Consequently, when the system needs data that is not in RAM, it must access the disk where the balance of the data is stored. Compared with the lightning speed accessing a RAM, accessing a mechanical disk drive is a much slower process.

When more RAM is added, the working area of the computer is larger, thereby increasing total performance. You should verify the type and speed of the RAM currently installed from your dealer. Mixtures of the RAM types, other than those described in this manual, will have unpredictable results.

The KN-6010 is able to support standard **FPM (Fast Page Mode) and EDO (Extended Data Out) DRAM**; and can accommodate onboard memory from **8 to 768MB** using SIMMs. The mainboard has three memory banks, Bank 0, Bank 1, and Bank 2. Each bank has two SIMM sockets which can accept either a pair of **4MB, 8MB, 16MB, 32MB, 64MB, or 128MB** SIMMs in each socket.



## RAM Module Configuration



The DRAM module installation must be in pairs of the same size for each bank. The minimum size of SIMM for each SIMM slot is 4MB; the maximum is 128MB\*. Both SIMM slots in a bank must be filled, though one whole bank can be left empty.

For instance, to install a total of 24MB DRAM you can use the following configuration; one 4MB DRAM module in SIM1, one 4MB DRAM module in SIM2, one 8MB DRAM modules into SIM3 and SIM4 and leave SIM5 and SIM6 empty.

### NOTE :

1. \* A RAM module of this size was not available for testing when this manual was printed.
2. This mainboard allows the DIMMs (with ECC support and parity check) which latency time are 70ns, 60ns.

## Install SIMMs

Complete the following procedures to install SIMMs:

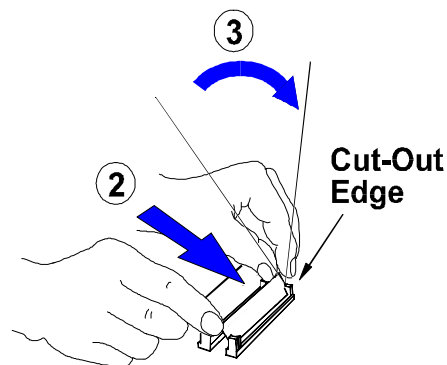
### CAUTION :

1. Always turn the system power off before installing or removing any device.
2. Always observe static electricity precautions.  
See "Handling Precautions" at the start of this manual.

1. Locate the SIMM slots on the mainboard.

**NOTE :** SIMMs in each bank must be of the same type; and the BIOS automatically configures the memory size.

2. Carefully fit a SIMM at a 45 degree angle into each empty socket to be populated. All the SIMMs must face the same direction.



3. Swing each SIMM into its upright, locked position.  
When locking a SIMM in place, push on each end of the SIMM - do not push in the middle, as shown above.

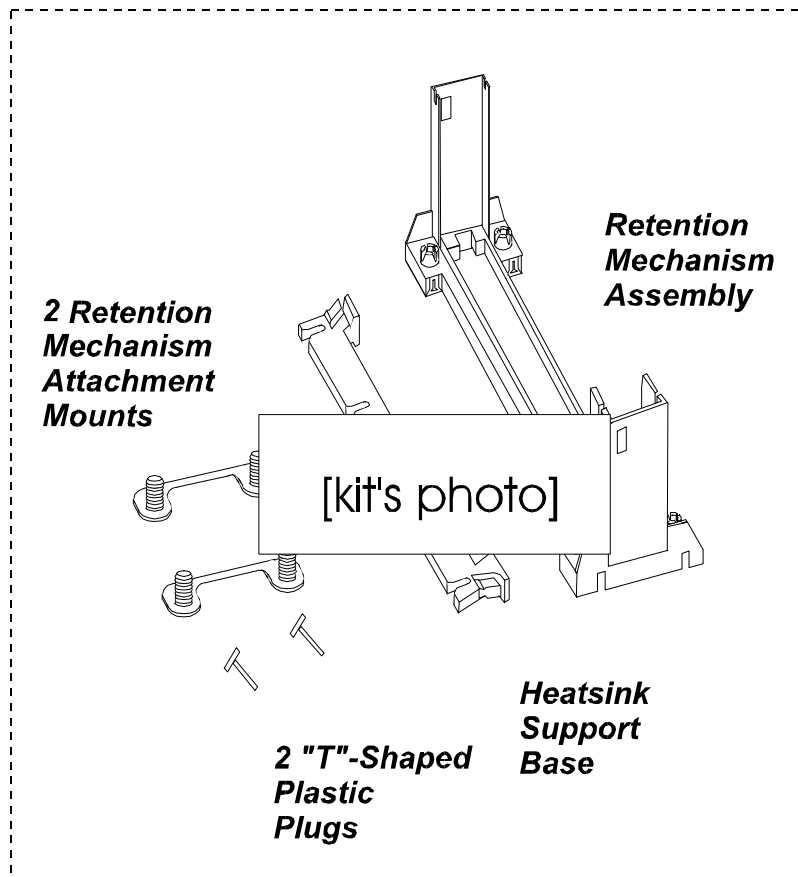
## Remove SIMMs

To remove the SIMMs, pull the retaining latch on both ends of the socket and reverse the procedure above.

### 3). Install the CPU

#### Retention Mechanism Kit

The mainboard comes with a Retention Mechanism Kit as shown below. If any piece is missing, please contact your local mainboard dealer to help you.

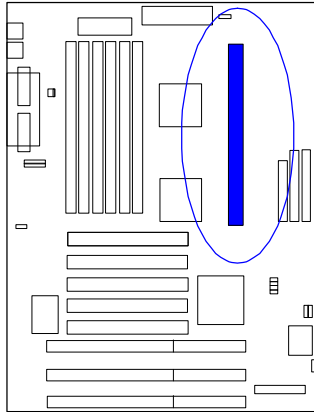


**NOTE :** If two "T"-shaped plastic plugs and heatsink support base are not in the package, they are installed onboard by manufactory.

#### CPU Module Installation

1. Locate Slot1 on the KN-6010 mainboard.

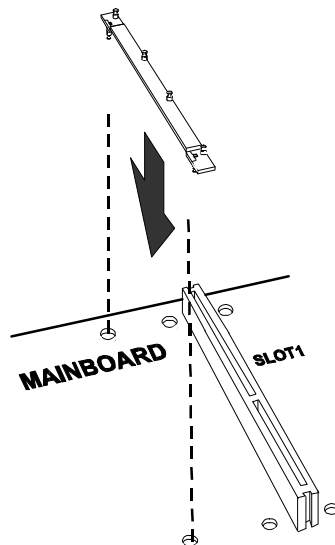




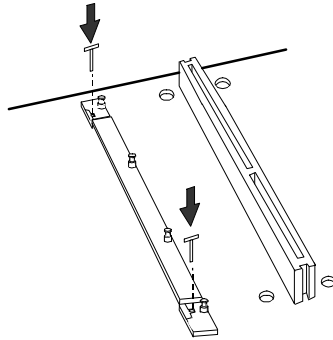
**NOTE :** If two "T"-  
heatsink support  
onboard by manufactory, please skip step 2 and 3.

shaped plastic plugs and  
base are installed

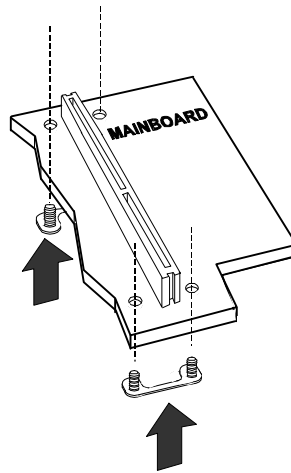
2. Place the Heatsink Support Base on the mainboard as shown.



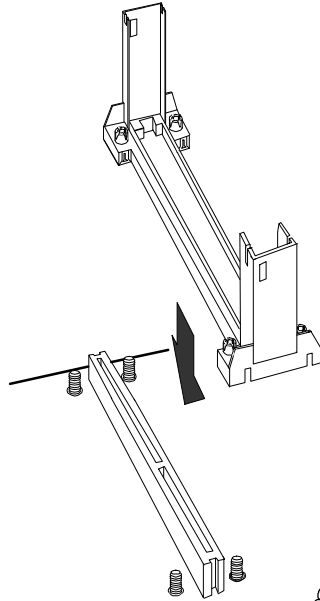
3. Affix it by inserting one “T”-shaped plastic plug into the hole on each end.



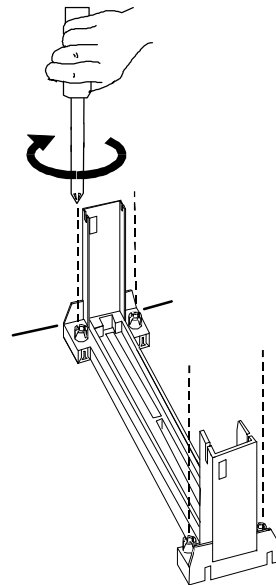
4. Install two Retention Mechanism Attachment Mounts on the board



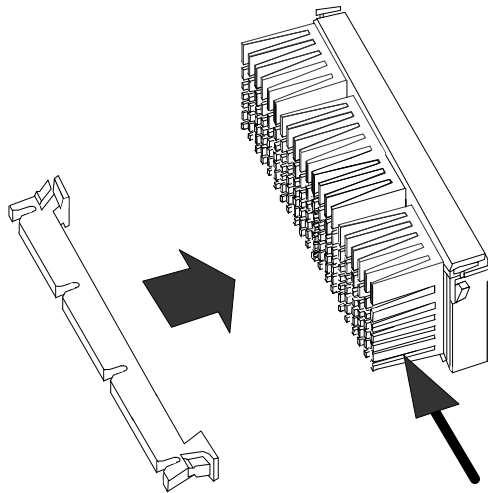
5. Place the Retention Mechanism Assembly on the board, on top of the Retention Mechanism Attachment Mounts.



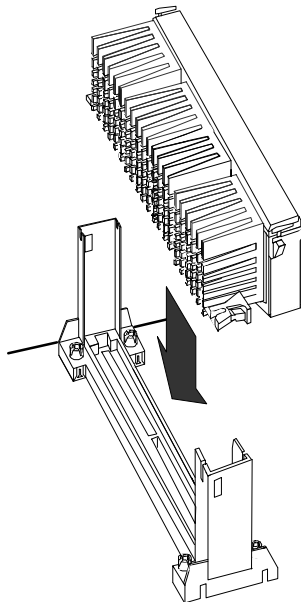
6. Affix the Retention Mechanism Assembly with four screws.



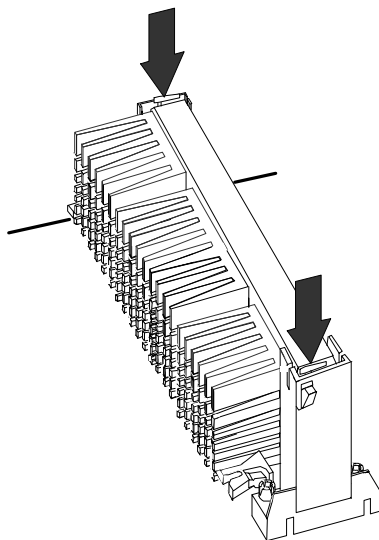
7. Horizontally slide the Heatsink Top Support into the lowest gaps on the CPU module heatsink as shown below.



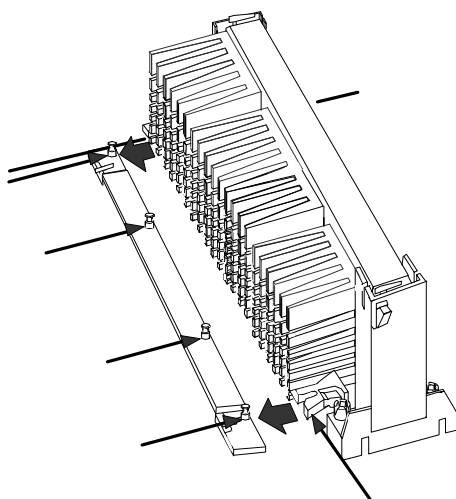
8. Slide the CPU module into the Retention Mechanism Assembly.



9. Press the buttons on either end of the CPU module.

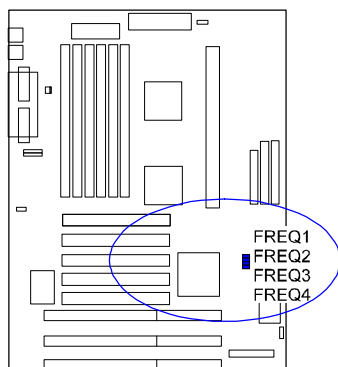


















10. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



### ***CPU to Bus Frequency Ratio: **FREQ1**, **FREQ2**, **FREQ3**, **FREQ4*****

















These four jumpers are used in combination to decide the ratio of the internal frequency of the CPU to the bus clock.



| Ratio | <b>FREQ1</b>   | <b>FREQ2</b>   | <b>FREQ3</b>   | <b>FREQ4</b>   |
|-------|--|--|--|--|
| 3.5 X | <br>1 | <br>1 | <br>1 | <br>1 |
| 4 X   | <br>1 | <br>1 | <br>1 | <br>1 |
| 4.5 X | <br>1 | <br>1 | <br>1 | <br>1 |
| 5 X   | <br>1 | <br>1 | <br>1 | <br>1 |

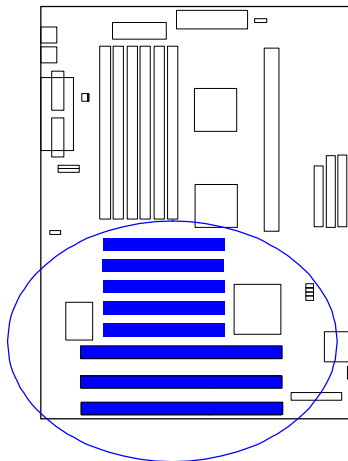
### **Intel Pentium II CPUs**

#### ***Frequency***

| CPU Speed | External (CPU/CLK) | CPU/Bus Ratio | CPU Clock Rate   |  |  |  |
|-----------|--------------------|---------------|--|--|--|--|
|           |                    |               | <b>FREQ1</b>   | <b>FREQ2</b>   | <b>FREQ3</b>   | <b>FREQ4</b>   |
| 333 MHz   | 66 MHz             | 5 x           | <br>1 | <br>1 | <br>1 | <br>1 |
| 300 MHz   | 66 MHz             | 4.5 x         | <br>1 | <br>1 | <br>1 | <br>1 |
| 266 MHz   | 66 MHz             | 4 x           | <br>1 | <br>1 | <br>1 | <br>1 |
| 233 MHz   | 66 MHz             | 3.5 x         | <br>1 | <br>1 | <br>1 | <br>1 |

## 4). Install Expansion Cards

Your KN-6010 features three 16-bit ISA Bus and five 32-bit PCI Bus expansion slots.



This section describes how to connect an expansion card to one of your system's expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities.

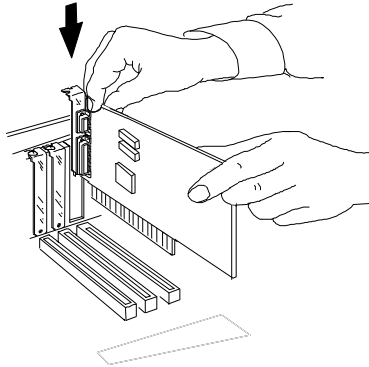
### **CAUTION :**

1. Always turn the system power off before installing or removing any device.
2. Always observe static electricity precautions.  
See "Handling Precautions" at the start of this manual.

To install an expansion card, do the following:

1. Remove the chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the chassis.  
Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the chassis. Keep the slot cover mounting screw nearby.

3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot. (See figure below.)



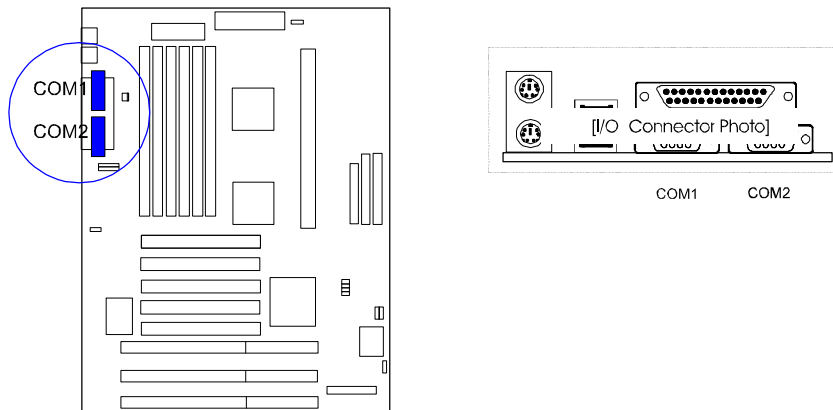
4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this “rocking” motion until the add-in card is firmly seated inside the slot.
5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.



## 5). Connect Cables and Power Supply

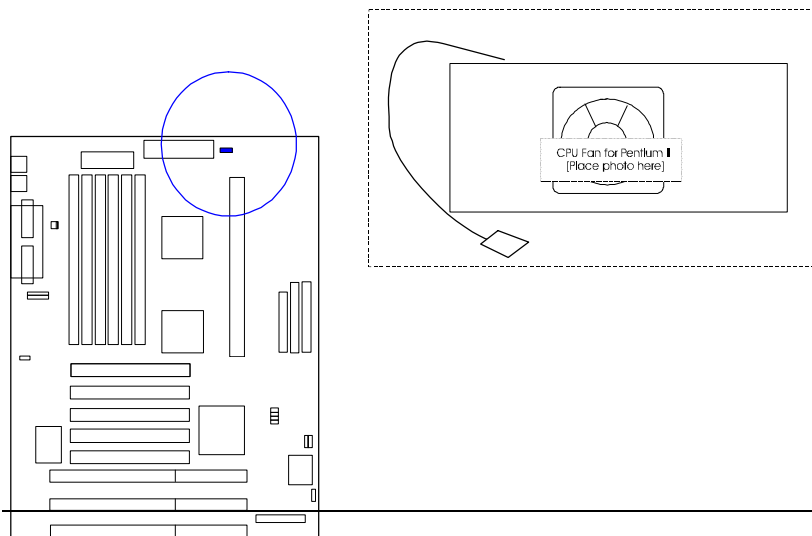
### *Serial Port Connectors: COM1, COM2*

These two 9-pin D-Sub male connectors allow you to connect with your devices that use serial ports, such as a serial mouse or a modem.



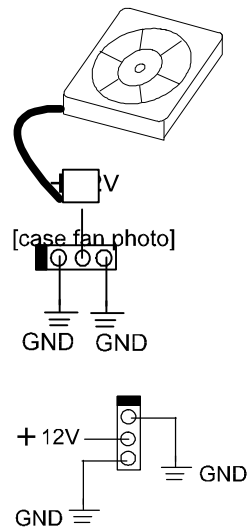
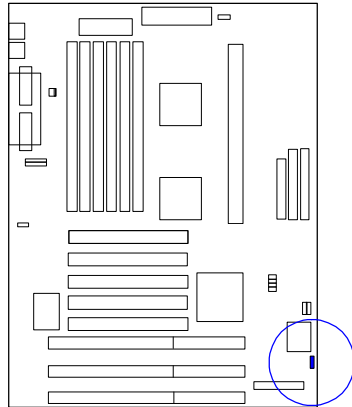
### *CPU Fan Connector: FAN1*

This connector is linked to the CPU fan. When the system is in Suspend mode, the CPU fan will turn off; when it goes back to full on mode, the fan will turn on. The photo below shows one type of the CPU fan for Pentium II card. The CPU card does not need a heatsink when this kind of fan is installed. Please read the CPU fan installation manual for more information.



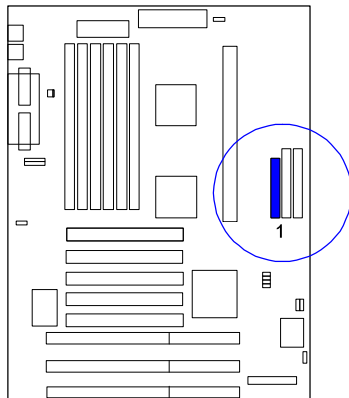
### ***System Case Fan Connector: FAN2***

This 3-pin connector links to your cooling fan on the system case to lower the system temperature.



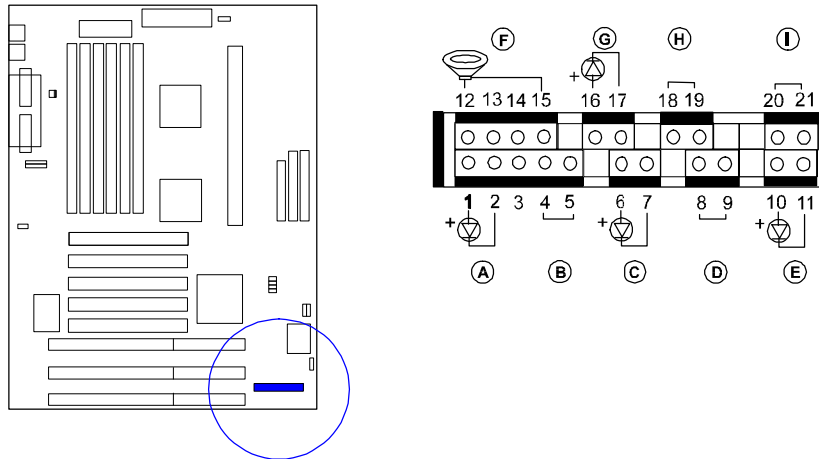
### ***Floppy Diskette Drive Connector: FLOPPY***

This 34-pin block connector connects to your floppy disk drive using the cable that is provided with this mainboard.



### Front Panel Block Connector: F\_PNL

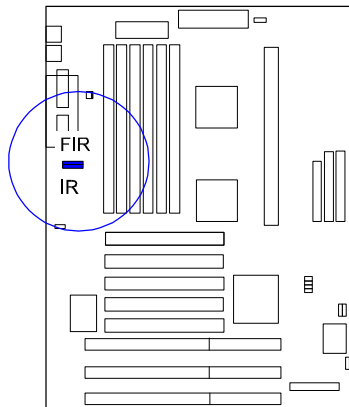
This block connector concludes : PW\_LED, KB\_LOCK, TB\_LED, SP\_SW, SPK, SP\_LED, IDE\_LED, RPW\_SW, and RST connectors.



| Item | Connector | Pin Type   | Feature  |
|------|-----------|------------|--|
| A    | PW_LED    | 2-pin male | indicates the system power status                      |
| B    | KB_LOCK   | 2-pin male | allows the keyboard to access the system               |
| C    | TB_LED    | 2-pin male | indicates the system speed is in normal or turbo speed |
| D    | SP_SW     | 2-pin male | Suspend mode switch                                    |
| E    | SP_LED    | 2-pin male | indicates the system into Suspend mode when LED lit    |
| F    | SPK       | 4-pin male | connects to speaker                                    |
| G    | IDE_LED   | 2-pin male | indicates the IDE HDD I/O access LED lit               |
| H    | RPW_SW    | 2-pin male | remote power switch                                    |
| I    | RST       | 2-pin male | allows you to reset the system                         |

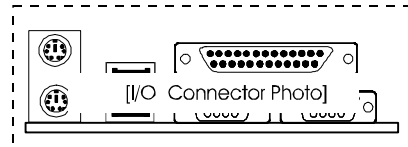
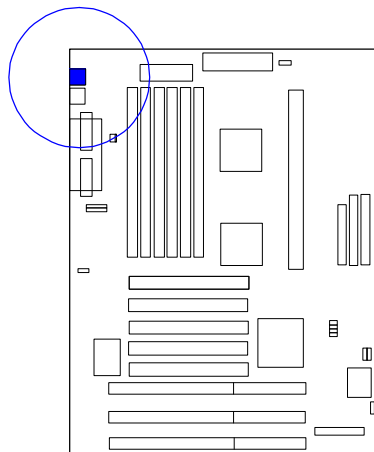
### ***Infrared Connector: IR***

These two 5-pin male connectors are used for connecting to the infrared (SIR) ports and allow transmission of data to another systems which also support the IR or FIR feature. The BIOS allows you to select either IR or FIR. Please read IR Mode Select, Chapter 3, page 55 of this manual for more information.

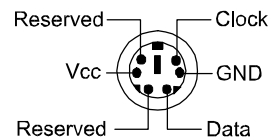


### ***PS/2 Keyboard Connector: PS2\_KB***

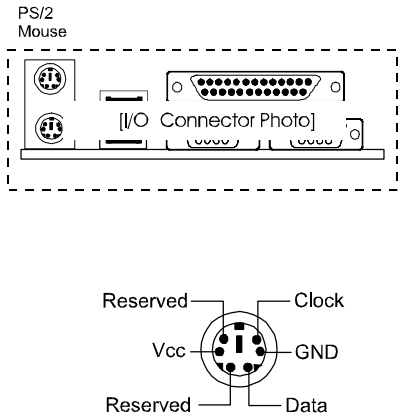
This 5-pin female connector is used for your PS/2 keyboard.



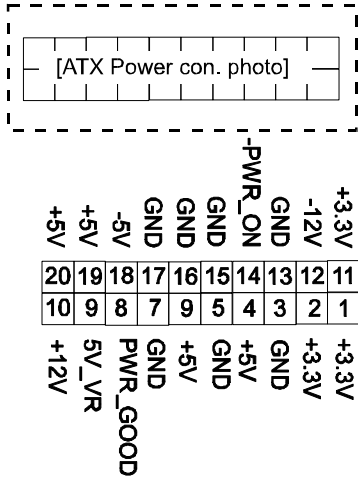
PS/2  
Keyboard



This connector is connected to the PS/2 mouse.

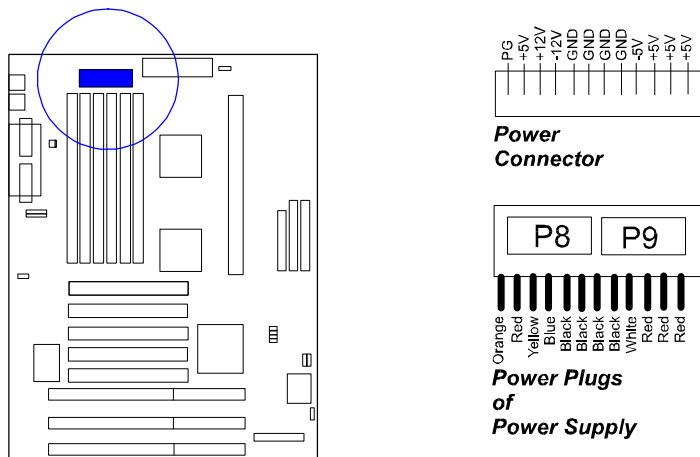


This 20-pin male block connector is connected to the ATX power supply.



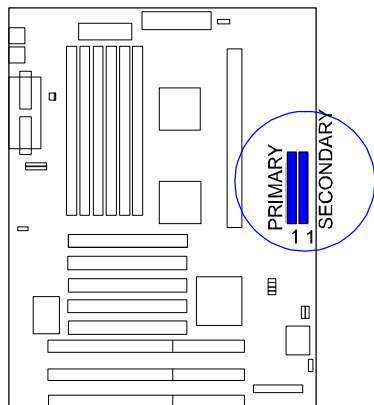
### ***Standard Power Connector: AT\_PWR***

This 12-pin block connector is used for connecting to the standard 5V power supply. In the picture below, notice that, in most cases, there are two marks “P8” and “P9” on the surface of the connector. You have to insert the “P8” plug into the “P8” section of the connector, and so forth for “P9”. Two black wires must be in the middle.



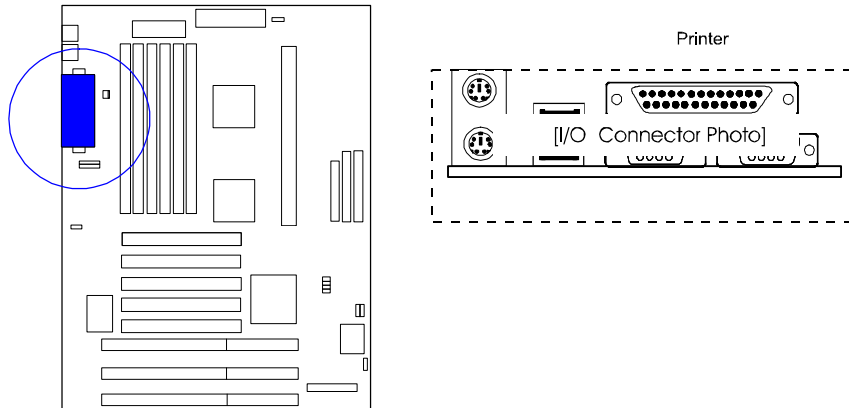
### ***IDE HDD Device Connectors: PRIMARY, SECONDARY***

These two 40-pin block connectors are used for your IDE hard disks. If you have one IDE hard disk, connect it to the PRIMARY connector using the IDE HDD flat cable provided with the mainboard. If you want to install another IDE hard disk or CD-ROM, please use the SECONDARY connector.



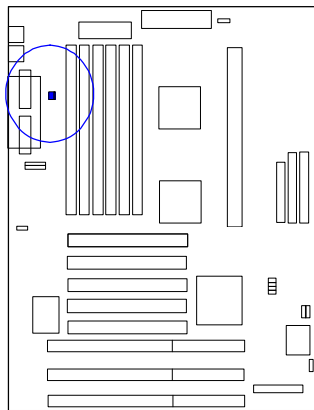
***Printer Connector: PRINTER***

This 25-pin D-Sub female connector is attached to your printer.



***Remote Power Connector: RPW\_CON***

This 3-pin male connector allows you to enable (or disable) the system power if the RPW\_SW is on (or off).



***Universal Serial Bus Connectors: USB0, USB1***

These two connectors are used for linking with USB peripheral devices.

