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# *Hardware Setup* **2**

This chapter provides you with the information about hardware setup procedures. During installation, be careful when handling the components and follow the installation procedures properly. For some components, installing it in a wrong orientation will cause it to become unstable.

Remember to use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

|                               |      |
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| Central Processing Unit (CPU) | 2-2  |
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| Connectors                    | 2-12 |
| Power Supply                  | 2-21 |
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| Slots                         | 2-31 |

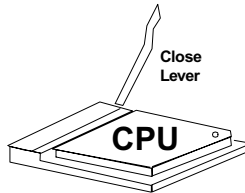
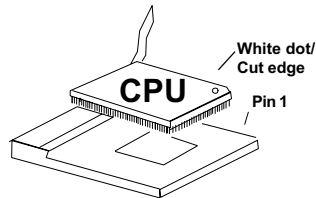
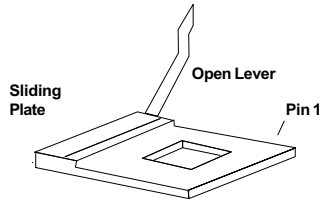
## CHAPTER 2

# Central Processing Unit: CPU

The mainboard operates with **Intel® Celeron™ Pentium® II/III (FC-PGA) processor**. The mainboard uses a CPU socket called Socket 370 for easy CPU installation. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

### • CPU Installation Procedures

1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.
2. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot/cut edge. Then, insert the CPU. It should insert easily.
3. Press the lever down to complete the installation.



### • CPU Core Speed Derivation Procedure

The BIOS can be used to set the CPU Host Bus Frequency Clock.

**If**    CPU Clock        = 100MHz  
         Core/Bus ratio       = 7  
**then** CPU core speed       = Host Clock x Core/Bus ratio  
                                     = 100MHz x 7  
                                     = 700MHz

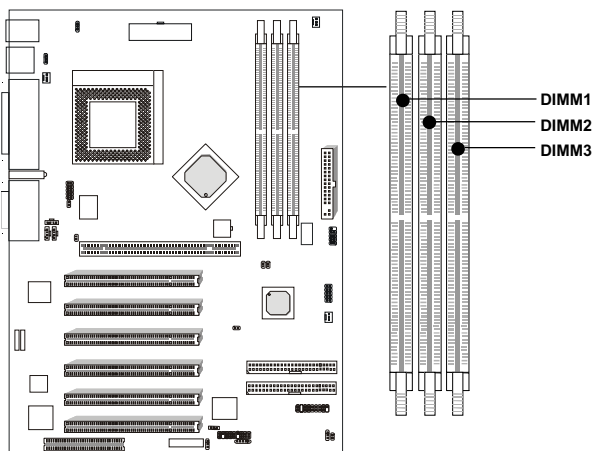
## CHAPTER 2

# Memory Installation

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### • Memory Bank Configuration

The mainboard supports a maximum memory size of 3GB. It provides three 184-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets. It supports 64 MB to 1 G Mbytes DIMM memory module.

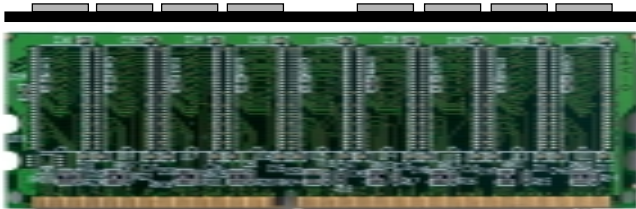


#### WARNING!

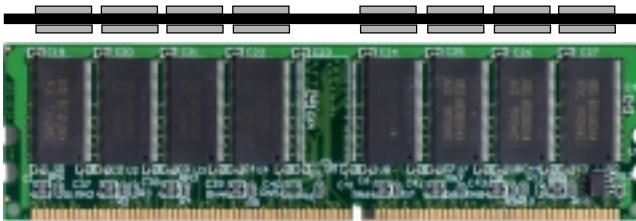
*There are two kinds of DIMM specification supported by this mainboard: DDR266 & DDR200. If you use 66MHz CPU Bus Frequency, PC200 DIMM Specs. is supported. If you use 100 MHz CPU Bus Frequency, PC200 and PC266 DIMM Specs. are supported. If you use 133MHz CPU Bus Frequency, PC200 and PC266 DIMM Specs. will be supported*

### • Memory Installation Procedures

#### How to install a DIMM Module

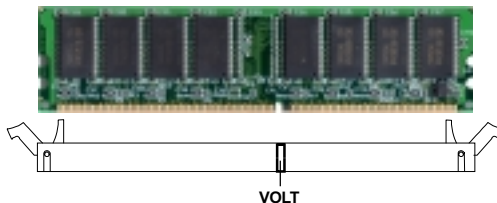


**Single Sided DDR DIMM**



**Double Sided DDR DIMM**

1. The DIMM slot has 2 Notch Keys “VOLT and DRAM”, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in.



3. The plastic clip at the side of the DIMM slot will automatically close.

## CHAPTER 2

### • Memory Population Rules

1. Supports only DDR DIMM.
2. To operate properly, at least one 184-pin DIMM module must be installed.
3. This mainboard supports Table Free memory, so memory can be installed on DIMM1, DIMM 2 or DIMM 3 in any order.
4. Supports 2.5 volt DIMM.

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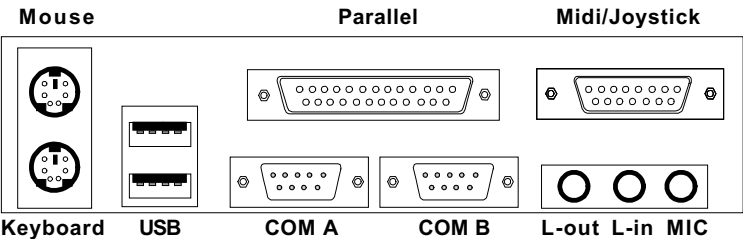
### • DDR Memory Addressing

| DRAM Tech. | DRAM Density & Width | DRAM Addressing | Address Size |        | MB/DIMM                 |                         |
|------------|----------------------|-----------------|--------------|--------|-------------------------|-------------------------|
|            |                      |                 | Row          | Column | Single no. Side(S) pcs. | Double no. Side(D) pcs. |
| 16M        | 1Mx16                | ASYM            | 11           | 8      | 8MBx4                   | 16MBx8                  |
|            | 2Mx8                 | ASYM            | 11           | 9      | 16MBx8                  | 32MBx16                 |
|            | 4Mx4                 | ASYM            | 11           | 10     | 32MB                    | 64MB                    |
| 64M        | 2Mx32                | ASYM            | 11           | 9      | 32MBx2                  | 64MBx4                  |
|            | 2Mx32                | ASYM            | 12           | 8      | 16MBx2                  | 32MBx4                  |
|            | 4Mx16                | ASYM            | 11           | 10     | 32MB                    | 64MB                    |
|            | 4Mx16                | ASYM            | 13           | 8      | 32MB                    | 64MB                    |
|            | 8Mx8                 | ASYM            | 13           | 9      | 64MB                    | 128MB                   |
| 64M        | 16Mx4                | ASYM            | 13           | 10     | 128MB                   | 256MB                   |
|            | 2Mx32                | ASYM            | 12           | 8      | 16MB                    | 32MB                    |
|            | 4Mx16                | ASYM            | 13           | 8      | 32MB                    | 64MB                    |
|            | 8Mx8                 | ASYM            | 13           | 9      | 64MB                    | 128MB                   |
|            | 16Mx4                | ASYM            | 13           | 10     | 128MB                   | 256MB                   |

# Back Panel

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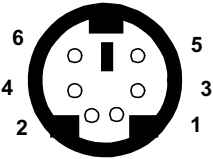
The mainboard provides the following back panel connectors:



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## Mouse Connector: JKBMS1

The mainboard provides a standard PS/2<sup>®</sup> mouse mini DIN connector for attaching a PS/2<sup>®</sup> mouse. You can plug a PS/2<sup>®</sup> mouse directly into this connector.



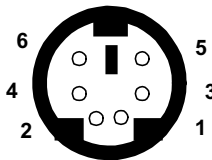
**PS/2 Mouse (6-pin Female)**

| PIN | SIGNAL      | DESCRIPTION   |
|-----|-------------|---------------|
| 1   | Mouse DATA  | Mouse DATA    |
| 2   | NC          | No connection |
| 3   | GND         | Ground        |
| 4   | VCC         | +5V           |
| 5   | Mouse Clock | Mouse clock   |

CHAPTER 2

Keyboard Connector: JKBMS1

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.

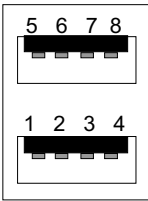


PS/2 Keyboard (6-pin Female)

| PIN | SIGNAL         | DESCRIPTION    |
|-----|----------------|----------------|
| 1   | Keyboard DATA  | Keyboard DATA  |
| 2   | NC             | No connection  |
| 3   | GND            | Ground         |
| 4   | VCC            | +5V            |
| 5   | Keyboard Clock | Keyboard clock |
| 6   | NC             | No connection  |

USB Connectors

The mainboard provides a **UHCI (Universal Host Controller Interface) Universal Serial Bus root** for attaching USB devices like: keyboard, mouse and other USB devices. You can plug the USB device directly to this connector.



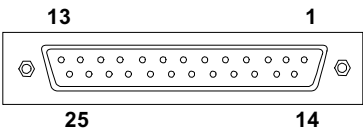
USB Ports

| PIN | SIGNAL  | DESCRIPTION             |
|-----|---------|-------------------------|
| 1   | VCC     | +5V                     |
| 2   | -Data 0 | Negative Data Channel 0 |
| 3   | +Data 0 | Positive Data Channel 0 |
| 4   | GND     | Ground                  |
| 5   | VCC     | +5V                     |
| 6   | -Data 1 | Negative Data Channel 1 |
| 7   | +Data 1 | Positive Data Channel 1 |
| 8   | GND     | Ground                  |



**Parallel Port Connector: LPT1**

The mainboard provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port (EPP) and Extended capabilities Parallel Port (ECP). See connector and pin definition below:

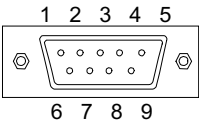


| PIN | SIGNAL     | DESCRIPTION        |
|-----|------------|--------------------|
| 1   | STROBE     | Strobe             |
| 2   | DATA0      | Data0              |
| 3   | DATA1      | Data1              |
| 4   | DATA2      | Data2              |
| 5   | DATA3      | Data3              |
| 6   | DATA4      | Data4              |
| 7   | DATA5      | Data5              |
| 8   | DATA6      | Data6              |
| 9   | DATA7      | Data7              |
| 10  | ACK#       | Acknowledge        |
| 11  | BUSY       | Busy               |
| 12  | FE         | Paper End          |
| 13  | SELECT     | Select             |
| 14  | AUTO FEED# | Automatic Feed     |
| 15  | ERR#       | Error              |
| 16  | INIT#      | Initialize Printer |
| 17  | SLIN#      | Select In          |
| 18  | GND        | Ground             |
| 19  | GND        | Ground             |
| 20  | GND        | Ground             |
| 21  | GND        | Ground             |
| 22  | GND        | Ground             |
| 23  | GND        | Ground             |
| 24  | GND        | Ground             |
| 25  | GND        | Ground1            |

CHAPTER 2

Serial Port Connectors: COM A and COM B

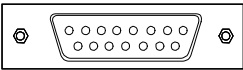
The mainboard provides two 9-pin male DIN connectors for serial port COM A & COM B. These port are 16550A high speed communication port that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into this connector.



| PIN | SIGNAL                             |
|-----|------------------------------------|
| 1   | DCD (Data Carry Detect)            |
| 2   | SIN (Serial In or Receive Data)    |
| 3   | SOUT (Serial Out or Transmi Data ) |
| 4   | DTR (Data Terminal Ready)          |
| 5   | GND                                |
| 6   | DSR (Data Set Ready)               |
| 7   | RTS (Request To Send)              |
| 8   | CTS (Clear To Send)                |
| 9   | RI (Ring Indicate)                 |

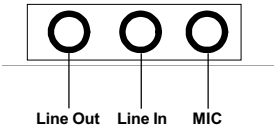
Joystick/Midi Connectors

You can connect a joystick or game pad to this connector.



Audio Port Connectors

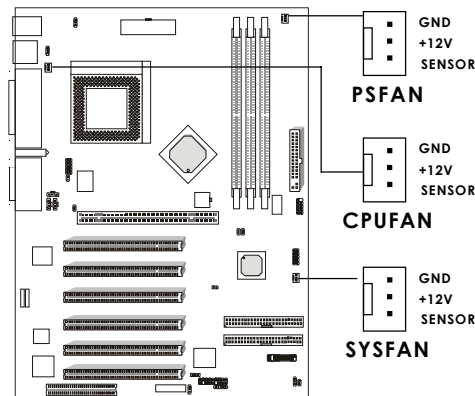
Line Out is a connector for Speakers or Headphones. Line In is used for external CD player, Tape player, or other audio devices. Mic is a connector for the microphones.



## Connectors

### Fan Power Connectors: PSFAN/CPUFAN/SYSFAN

These connectors support system cooling fan with + 12V. It supports three pin head connector. When connecting the wire to the connector, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If your mainboard has System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.



**PSFAN:** Power Supply Fan

**CPUFAN:** Processor Fan

**SYSFAN:** System Fan

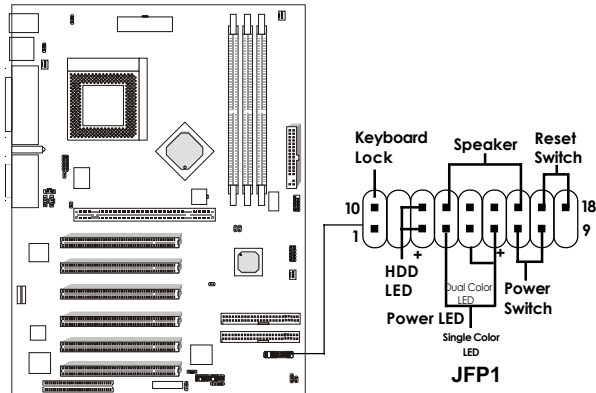
For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

**Note:** 1. Always consult your reseller for proper CPU cooling fan.  
2. CPU FAN supports the FAN control. You can install PC Alert utility. This will automatically control the CPU FAN Speed according to the actual CPU temperature.

## CHAPTER 2

### Case Connector: JFP1

The Power Switch, Reset Switch, Power LED, Speaker, and HDD LED are all connected to the JFP1 connector block.



#### Power Switch

Connect to a 2-pin push button switch. This switch has the same feature with JRMS1.

#### Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD LED is lit. You can connect the Reset switch from the system case to this pin.

#### Power LED

The Power LED is lit while the system power is on. Connect the Power LED from the system case to this pin.

There are two types of LED that you can use: 3-pin single color LED or 2-pin dual color LED (ACPI request).

- 3 pin single color LED connect to pin 4, 5, & 6. This LED will lit when the system is on.
- 2 pin dual color LED connect to pin 5 & 6.  
**GREEN** Color: Indicate the system is in full on mode.  
**ORANGE** Color: Indicate the system is in suspend mode.

#### Speaker

Speaker from the system case is connected to this pin.

If on-board Buzzer is available:

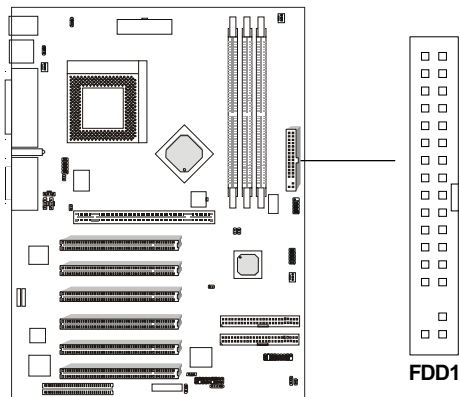
- Short pin 14-15: On-board Buzzer Enabled.
- Open pin 14-15: On-board Buzzer Disabled.

#### HDD LED

HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

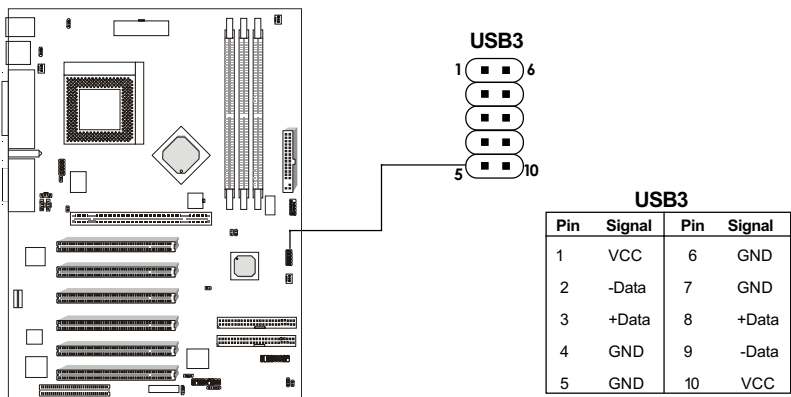
**Floppy Disk Connector: FDD1**

The mainboard also provides a standard floppy disk connector FDD that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.



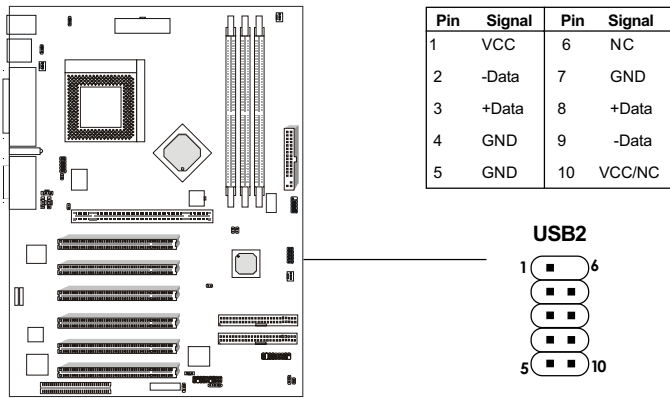
**USB Front Connectors: USB2 & USB3**

The mainboard provides two front Universal Serial Bus connectors USB 2 & USB3.



**CHAPTER 2**

The USB2 can be used for USB PC to PC communication network (option).  
The pin 10 will be NC while USB2 is used for USB PC to PC function.



USB PC to PC Networking feature allows users to transfer and receive data from other computers or share system resources with other computers without using any network adapter. See below for instructions.

**To Attach the USB PC to PC cable**

1. Check whether the package includes the following items. If any is missing, contact your dealer.



USB PC to PC Bracket



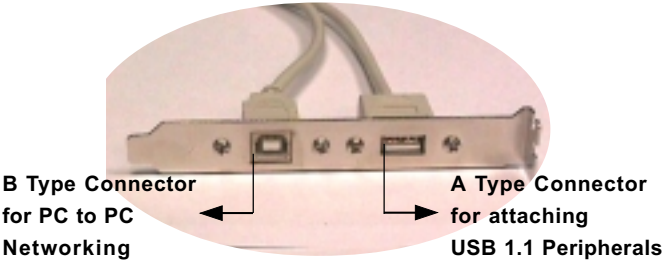
USB PC to PC Cable

## HARDWARE SETUP

2. Connect the USB Bracket cable to the USB2 pin header on the mainboard. Locate the pin hole marked with the ARROW on the connector of USB Bracket and Pin# 6 of USB2. Then align the pin hole with Pin# 6 to attach the USB Bracket.

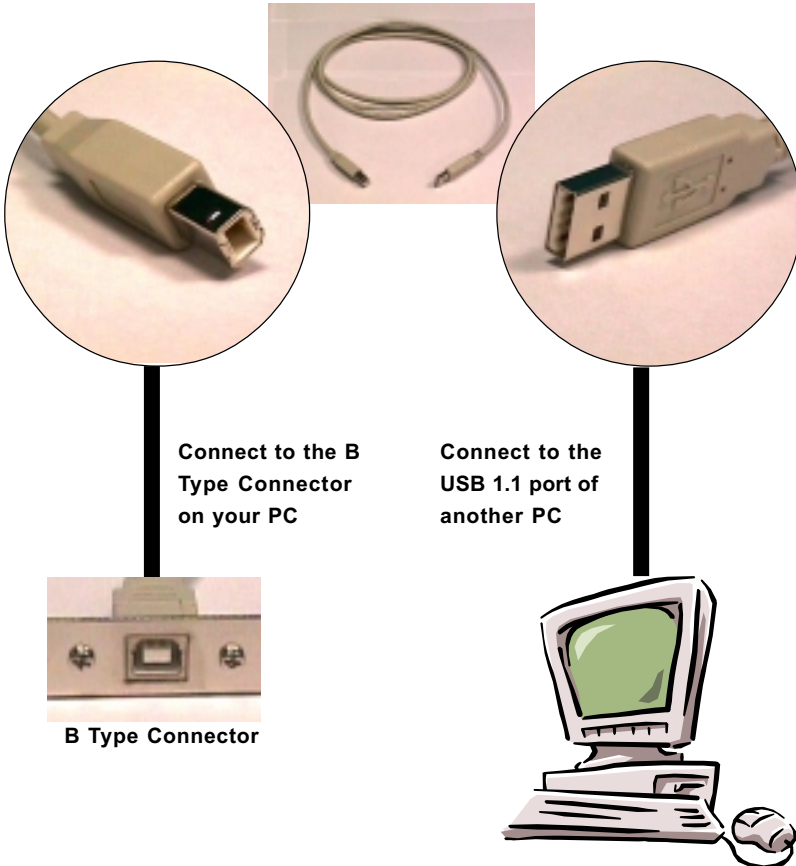


3. Identify the **B Type Connector** on the bracket used for PC to PC Networking function.



## CHAPTER 2

4. Connect your PC to another PC via USB PC to PC cable. The transfer rate will run at USB 1.1 speed (12Mbps/s)

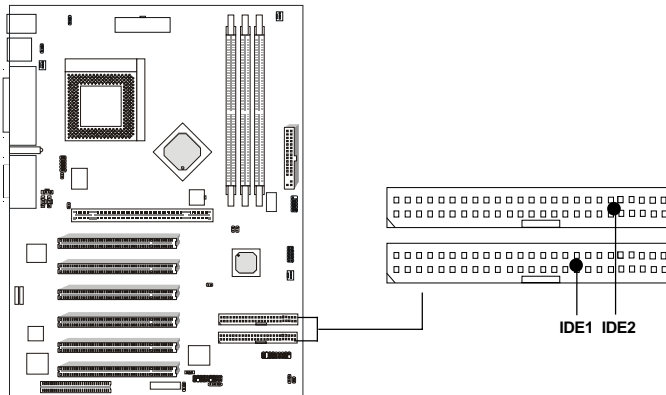


*For more information on USB PC to PC Networking function, please refer to Appendix: USB PC to PC Networking Function.*



### Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA/100 Controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66/100 function. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2. These connectors support the provided IDE hard disk cable.



#### IDE1 (Primary IDE Connector)

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

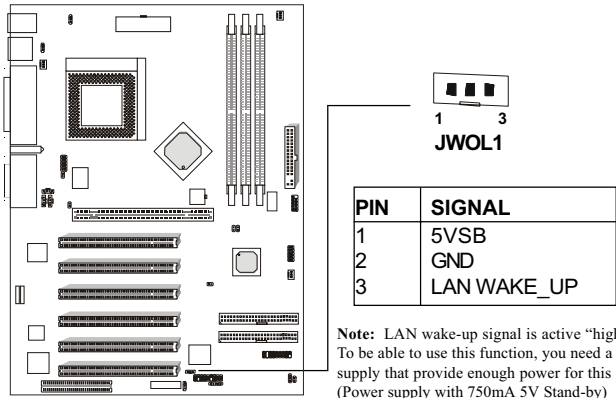
#### IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

CHAPTER 2

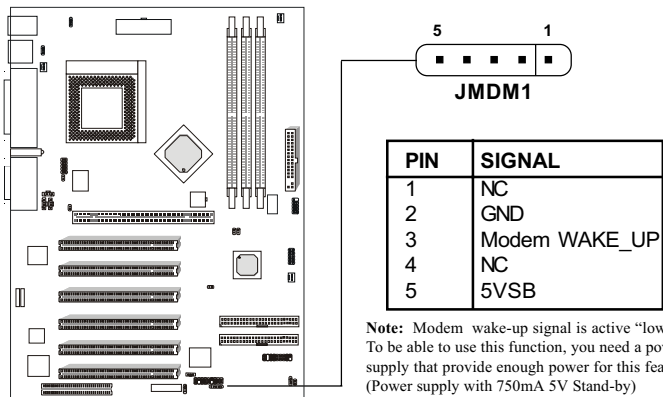
Wake-Up on LAN Connector: JWOL1

The JWOL1 connector is for use with LAN add-on cards that supports Wake Up on LAN function. To use this function, you need to set the “Wake-Up on LAN” to enable at the BIOS Power Management Setup.



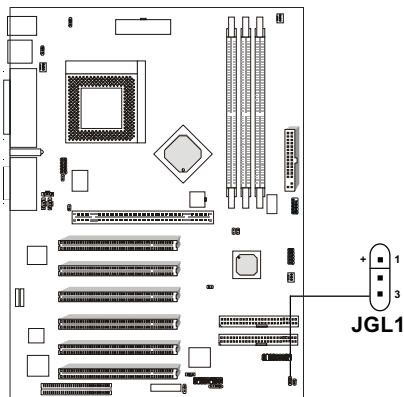
Modem Wake Up Connector: JMDM1

The JMDM1 connector is for use with Modem add-on card that supports the Modem Wake Up function.



**Power Saving LED Connector: JGL1**

JGL1 can be connected with dual color LED. There are two types of LED that you can use: 3-pin LED or 2-pin LED (ACPI request). When the 2-pin LED is connected to JGL1, the light will turn green, when system is On. During sleep mode, the 2-pin LED will change color from Green to Orange. For 3-pin LED, when LED is connected to JGL1, this will light when the system is On and blinks when it is in suspend/sleep mode.

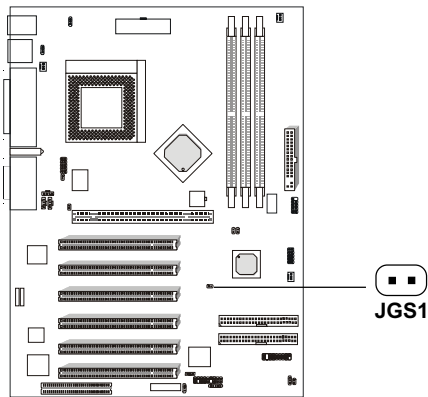


| 3-pin LED   | 2-pin LED   |
|---|---|
| <div><div>Green Color</div><div>Orange Color</div><div>13</div></div> | <div><div>Green Color</div><div>Orange Color</div><div>13</div></div> |
| 1-2 Single Color<br>1-3 Blink   | 1-2 Dual Color  |

**CHAPTER 2**

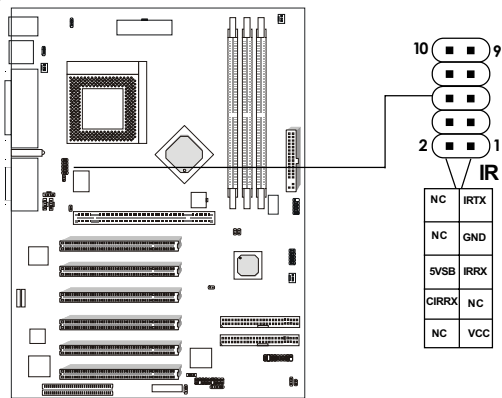
**Power Saving Switch Connector: JGS1**

Attach a power saving switch to **JGS1**. When the switch is pressed, the system immediately goes into suspend mode. Press any key and the system wakes up.



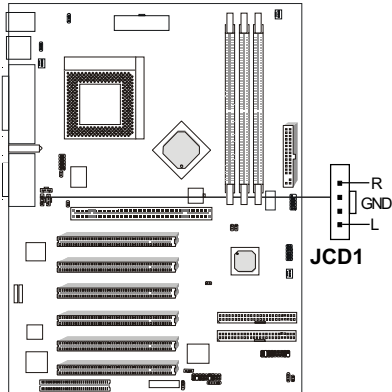
**IrDA Infrared Module Connector: IR**

The mainboard provides one infrared (IR) connector for IR modules. This connector is for optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



**CD-In Connector: JCD1**

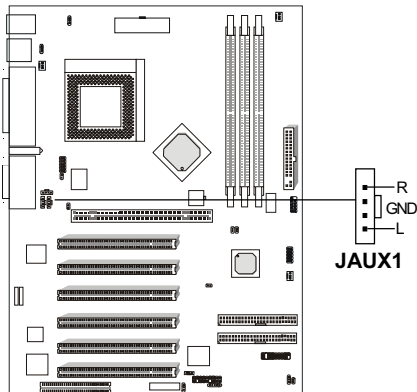
This connector is for CD-ROM audio connector.



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**AUX Line In Connector: JAUX1**

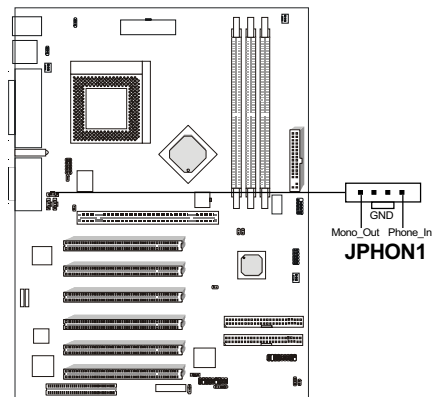
This connector is used for DVD Add on Card with Line In connector.



**CHAPTER 2**

**Modem-In: JPHON1**

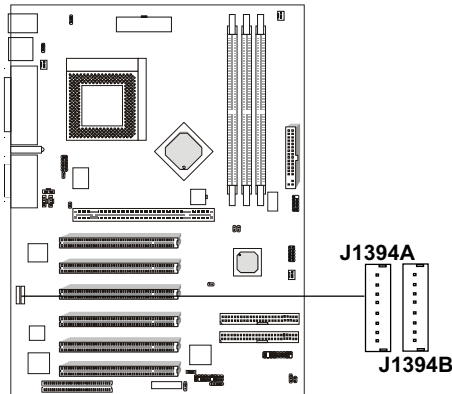
The connector is for Modem with internal voice connector.



Mono\_Out is connected to the Modem Speaker Out connector.  
Phone\_In is connected to the Modem Microphone In connector.

### IEEE 1394 Connector

The IEEE 1394 high-speed serial bus complements USB by providing enhanced PC connectivity for a wide range of devices, including consumer electronics audio/video (A/V) appliances, storage peripherals, other PCs, and portable devices.



### \*Software Support

IEEE 1394 Driver is provided by Windows® 98 SE and Windows® 2000. Just plug in the IEEE 1394 connector into J1394A & J1394B. These Operating System will install the driver for IEEE 1394.

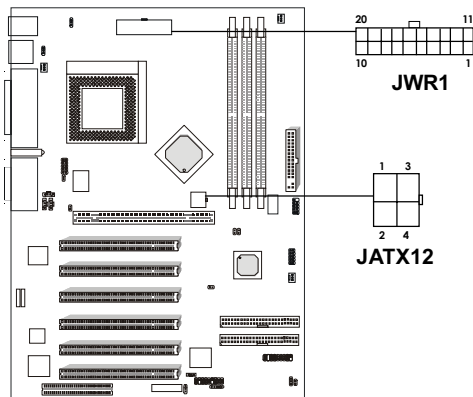
**CHAPTER 2**

**Power Supply**

**ATX 20-pin Power Connector: JWR1**

**ATX 12V Power Connector: JATX12**

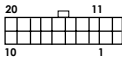
These connectors support the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported by this mainboard. These power connectors support instant power on function which means that system will boot up instantly when the power connector is inserted on the board. Refer to chapter 2-14 for pin definition.





**PIN DEFINITION TABLE**

Pin definition for JWR1



| PIN | SIGNAL | PIN | SIGNAL |
|-----|--------|-----|--------|
| 1   | 3.3V   | 11  | 3.3V   |
| 2   | 3.3V   | 12  | -12V   |
| 3   | GND    | 13  | GND    |
| 4   | 5V     | 14  | PS_ON  |
| 5   | GND    | 15  | GND    |
| 6   | 5V     | 16  | GND    |
| 7   | GND    | 17  | GND    |
| 8   | PW_OK  | 18  | -5V    |
| 9   | 5V_SB  | 19  | 5V     |
| 10  | 12V    | 20  | 5V     |

Pin definition for JATX12

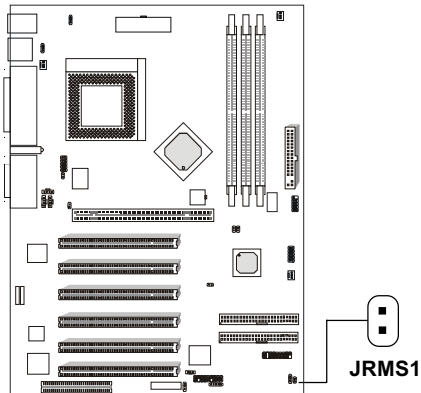


| PIN | SIGNAL |
|-----|--------|
| 1   | GND    |
| 2   | GND    |
| 3   | 12V    |
| 4   | 12V    |

## CHAPTER 2

### Remote Power On/Off: JRMS1

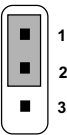
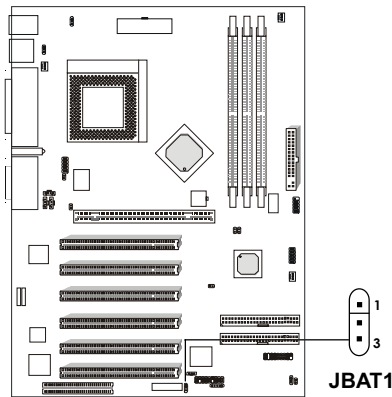
Connect to a 2-pin push button switch. During OFF state, press once and the system turns on. **During ON stage, push once and the system goes to sleep mode: pushing it more than 4 seconds will change its status from ON to OFF.** If you want to change the setup, you could go to the BIOS Power Management Setup. This is only used for ATX type power supply.



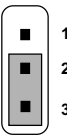
# Jumpers

## Clear CMOS Jumper: JBAT1

A battery must be used to retain the mainboard configuration in CMOS RAM. Short 1-2 pins of JBAT1 to store the CMOS data.



**Keep Data**



**Clear Data**



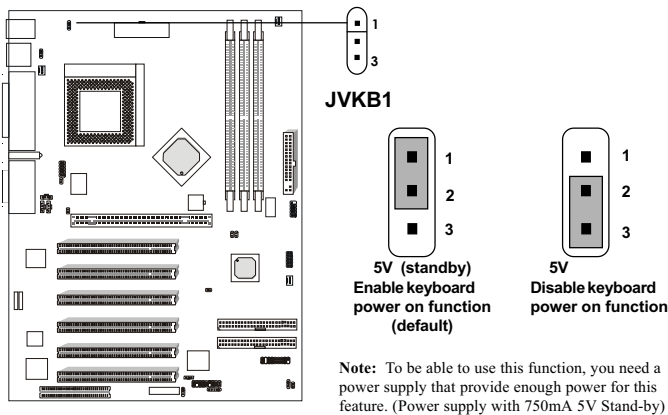
**WARNING!**

*You can clear CMOS by shorting 2-3 pin, while the system is off. Then, return to 1-2 pin position. Avoid clearing the CMOS while the system is on, it will damage the mainboard. Always unplug the power cord from the wall socket.*

CHAPTER 2

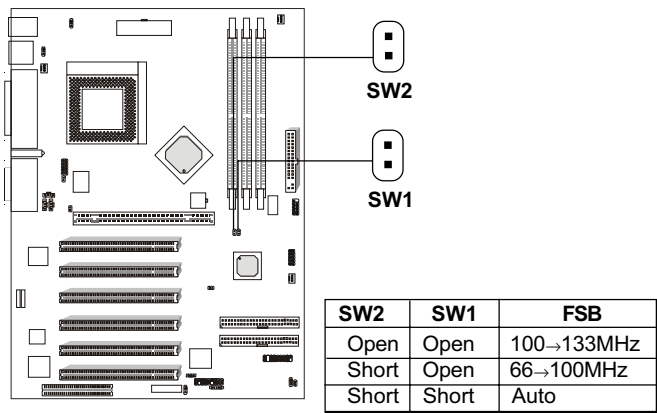
Keyboard Power: JVKB1

The JVKB1 jumper is for setting keyboard power. This function should be set in the BIOS for the keyboard and PS/2 mouse Wake-up function.



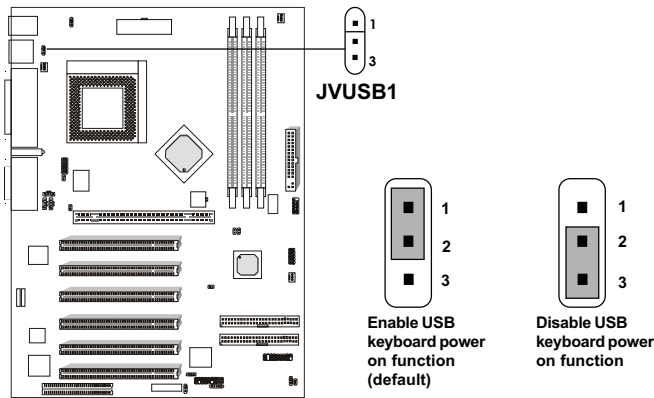
Overclocking Jumper: SW1 & SW2

Overclocking is operating a CPU/Processor beyond it's specified frequency. SW1 & SW2 jumpers are used for overclocking.



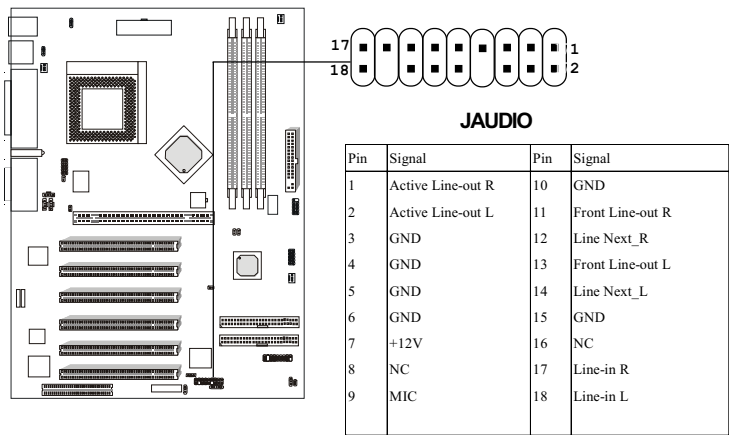
**USB Keyboard Power-On: JVUSB1**

This jumper is for setting the USB keyboard power-on.



**Front Panel Audio Header: JAUDIO (option)**

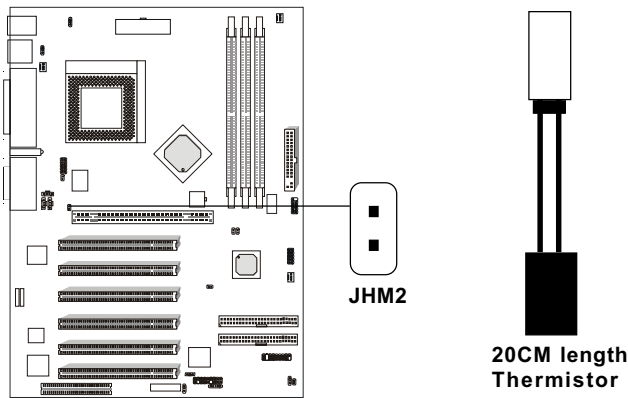
You can connect an optional audio connector to the Front Panel Audio Header.



**CHAPTER 2**

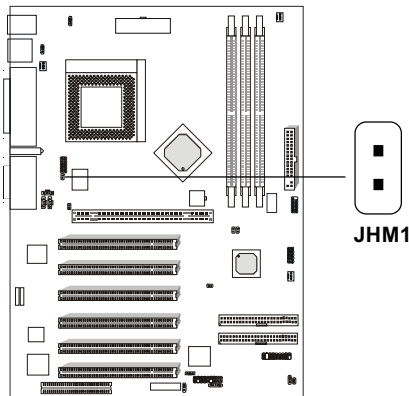
**TOP TECH. III: JHM2**

The JHM2 is a 2-pin connector which can be inserted with a 20cm length thermistor. It is located near AGP slot that monitors the AGP card temperature.



**Chassis Intrusion Switch Case: JHM1**

This connector is connected to 2-pin connector chassis switch. If the Chassis is open, the switch will be short. The system will record this status. To clear the warning, you must enter the BIOS setting and clear the status.



## Slots

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### **AGP Pro Slot (Accelerated Graphics Port)**

The mainboard provides an AGP Pro slot which you can install the AGP card.

### **PCI (Peripheral Component Interconnect) Slots**

The mainboard provides 6 PCI slots which you can insert the expansion cards according to your needs.

### **CNR1 (Communication Network Riser)**

The Communication Network Riser specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) mainboard riser board and interface, which supports modem only.

