

Chapter 2

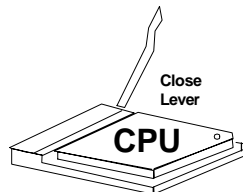
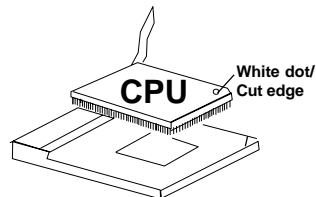
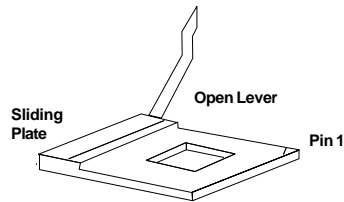
HARDWARE INSTALLATION

2.1 Central Processing Unit: CPU

The **Baby TX8** mainboard operates with **Intel® Pentium® processors/ Pentium® processors with MMX™ technology, Cyrix® 6x86/6x86L/ 6x86MX** and **AMD® K5/K6** processors. It could operate with 2.0V to 3.5V processors. The mainboard provides a 321-pin ZIF Socket 7 for easy CPU installation, a DIP switch (SW1) to set the proper speed for the CPU and a Jumper block (JV0 - JV3, JSD) for setting the CPU voltage. The CPU should always have a cooling fan attached to prevent overheating.

2.1-1 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.



2.1-2 CPU Core Speed Derivation Procedure

1. The Switch SW1 (4 & 5) is used to adjust the CPU clock frequency.

SW1		CPU
4	5	Clock
ON	ON	55MHz
ON	OFF	60MHz
OFF	OFF	66MHz

ON = Short OFF = Open

2. The Switch SW1 (1, 2, and 3) is used to set the Core/Bus (Fraction) ratio of the CPU. The actual core speed of the CPU is the Host Clock Frequency multiplied by the Core/Bus ratio. For example:

If	<u>CPU Clock</u>	=	66MHz
	<u>Core/Bus ratio</u>	=	3/2
then	<u>CPU core speed</u>	=	<u>Host Clock</u> x <u>Core/</u>
			<u>Bus ratio</u>
		=	66MHz x 3/2
		=	100MHz

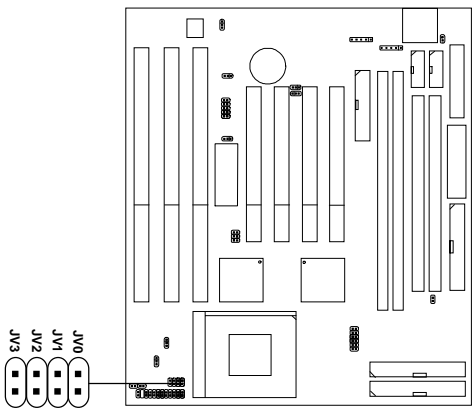
SW1			Intel	Cyrus		AMD	
			6x86	6x86MX	K5	K6	
1	2	3	Core/Bus Ratio				
OFF	OFF	OFF	1.5	3	3.5	1.5	3.5
ON	OFF	OFF	2	2	2	2	
OFF	ON	OFF	3		3		3
ON	ON	OFF	2.5		2.5		
ON	OFF	ON					4

ON = Short OFF = Open









3. The PCI Bus Clock is the CPU Clock Frequency divided by 2.





2.1-3 CPU Voltage Setting: JV0-JV3

These jumpers is for setting the CPU voltage. While **JSD** is used to set the voltage regulator between **Single** power or **Dual** power.





V I/O Vcore		JV0~JV3
3.5	3.5	
3.3	3.4	
3.3	3.3	
3.3	3.2	

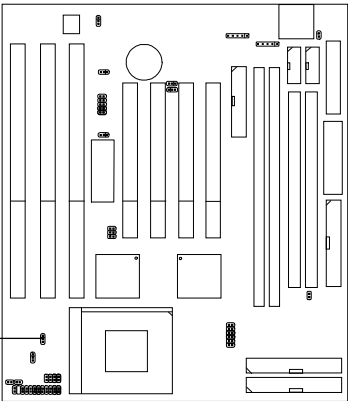

V I/O	Vcore	JV0~JV3
3.3	3.1	
3.3	3.0	
3.3	2.9	
3.3	2.8	
3.3	2.7	
3.3	2.6	
3.3	2.5	
3.3	2.4	

V I/O	Vcore	JV0~JV3
3.3	2.3	
3.3	2.2	
3.3	2.1	
3.3	2.0	

a. CPU Single or Dual Voltage Setting: JSD

This jumper is used to set the CPU single or dual voltage.

JSD	CPU
	Dual Voltage CPU
	Single Voltage CPU



2.1-4 CPU Speed and Voltage Setting: SW1 & JV0-JV3, JSD

To adjust the speed and voltage of the CPU, you must know the specifications of your CPU (*always ask the vendor for CPU specifications*). Then refer to **Table 2.1 (Intel® processors)**, **Table 2.2 (Cyrrix® processors)** and **Table 2.3 (AMD® processors)** for proper setting.

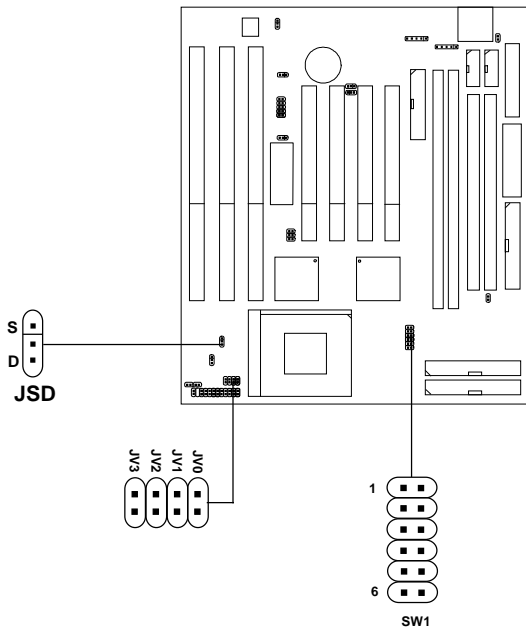


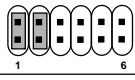
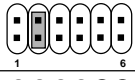
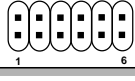


Table 2.1 Intel® processors

Intel® Pentium® processors

CPU Type	CPU Voltage				CPU Speed
	VI/O	Vcore	JSD	JV0~JV3	SW1
90MHz	3.3		<div>S</div> <div>D</div>	<div><div>3.3V</div><div>2.8V</div><div>3.0V</div></div>	<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>
	3.5			<div><div>3.3V</div><div>2.8V</div><div>3.0V</div></div>	
100MHz	3.3			<div><div>3.3V</div><div>2.8V</div><div>3.0V</div></div>	<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>
120MHz	3.3				<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>
133MHz	3.5			<div><div>3.3V</div><div>2.8V</div><div>3.0V</div></div>	<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>
150MHz	3.5				<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>
166MHz	3.5				<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>
200MHz	3.5				<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>

Intel® Pentium® processors with MMX™ technology













166MHz	3.3	2.8			
200MHz					
233MHz					

Note: If you encounter a CPU with different voltage, just go to Section 2.1-3 and look for the proper voltage settings.






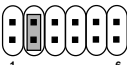

Table 2.2 Cyrix® processors

Cyrix® 6x86 processor uses PR to rate the speed of their processors based on Intel® Pentium® processor core speed. For example PR150 (120MHz) has 150MHz core speed of Intel® Pentium® processor but has 120MHz core speed in Cyrix®. Cyrix® 6x86 processor should always use a more powerful fan (ask vendor for proper cooling fan).

Cyrix® 6x86/6x86L processors

CPU Type	CPU Voltage				CPU Speed
	VI/O	Vcore	JSD	JV0~JV3	SW1
6x86 PR133	3.3				
6x86 PR150	3.5				
6x86 PR166	3.3				
6x86L PR166	3.3	2.8			

Cyrix® 6x86MX processors

CPU Type	CPU Voltage				CPU Speed
	VI/O	Vcore	JSD	JV0~JV3	SW1
PR166 (60x2.5)	2.9				
(66x2)					
PR200 (66x2.5)					
PR233 (66x3)					
PR266 (66x3.5)					

Note: If you encounter a CPU with different voltage, just go to Section 2.1-3 and look for the proper voltage settings.

Table 2.3 AMD® processors

AMD® K5 processor uses PR to rate the speed of their processors based on Intel® Pentium® processor core speed . For example PR133(100MHz) has 133MHz core speed of Intel® Pentium® processor but has 100MHz core speed in AMD® K5 processor.

AMD® K5 processors

CPU Type	CPU Voltage				CPU Speed
	VI/O	Vcore	JSD	JV0~JV1	SW1
PR90	3.5		<div>S</div> <div>D</div>	<div>3.5V</div> <div>3.5V</div> <div>3.5V</div> <div>3.5V</div>	<div>SW1</div>
PR100					<div>SW1</div>
PR120					<div>SW1</div>
PR133/PR150					<div>SW1</div>
PR166					<div>SW1</div>

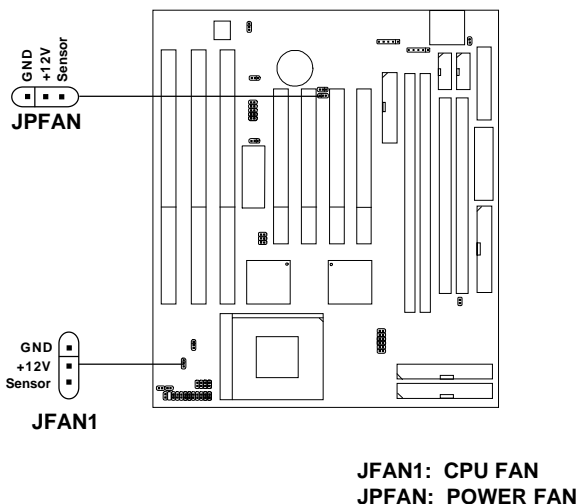
AMD® K6 processors

PR166	3.3	2.9	<div>S</div> <div>D</div>	<div>3.3V</div> <div>3.3V</div> <div>3.3V</div> <div>3.3V</div>	<div>SW1</div>
PR200					<div>SW1</div>
PR233	3.3	3.2		<div>3.3V</div> <div>3.3V</div> <div>3.3V</div> <div>3.3V</div>	<div>SW1</div>

Note: If you encounter a CPU with different voltage, just go to Section 2.1-3 and look for the proper voltage settings.

2.1-5 CPU Fan Power Connector: JFAN1/JPFAN

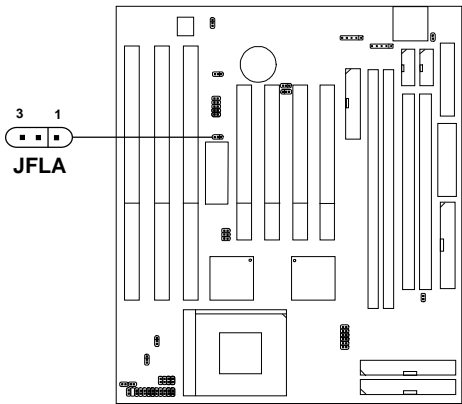
These connectors support CPU cooling fan with +12V. It supports both two and three pin head connector. When connecting the wire to the connector, always take note that the red wire is the positive and should be connected to the +12V. It also supports three pin head connector. When connecting the wire 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, the yellow is the speed sensor. If your mainboard has LM78 on board, you need to use a specially designed fan with speed sensor to take advantage of LM78's CPU fan control function.



Note: Always consult vendor for proper CPU cooling fan.

2.2 Flash ROM Programming Voltage: JFLA

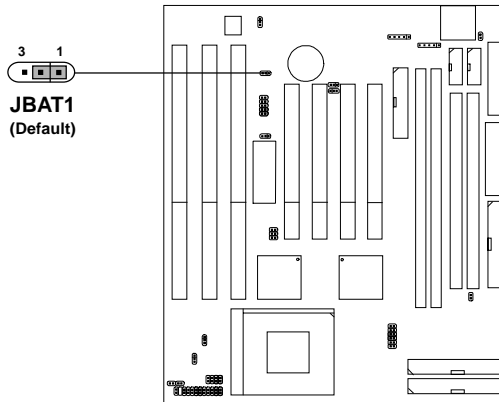
This jumper is for setting the voltage of the Flash ROM BIOS.



<div><div>+12V</div><div>(Default)</div></div>	<div><div><div><div>3</div><div>2</div><div>1</div></div><div><div></div><div></div><div></div></div></div><div>JFLA</div></div>
<div><div>+5V</div><div>(Reserved)</div></div>	<div><div><div><div>3</div><div>2</div><div>1</div></div><div><div></div><div></div><div></div></div></div><div>JFLA</div></div>

2.3 Battery Connector: JBAT1

A battery must be used to retain the mainboard configuration in CMOS RAM. To retain the on-board battery you must always short pins 1,2 of JBAT1.

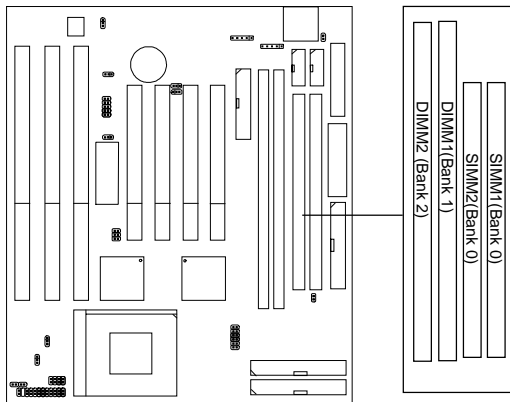


Note: You can clear CMOS by shorting 2-3 pin, while the system is off. Then, return to 1-2 pin position. Avoid clearing the CMOS while the system is on , it will damage the mainboard.

2.4 Memory Installation

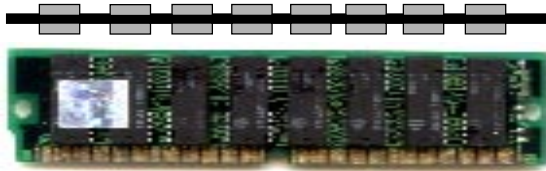
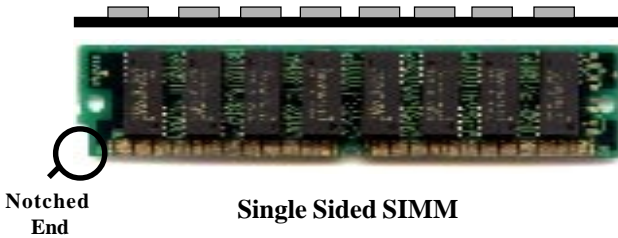
2.4-1 Memory Bank Configuration

The mainboard provides two 72-pin SIMMs (Single In-Line Memory Module) and two 168-pin DIMM(Double In-Line Memory) sockets. It supports four memory banks for a maximum of 256MB memory. Each bank supports up to 64MB memory. You can use SIMM from 4MB, 8MB, 16MB, 32MB, 64MB to 128MB, and DIMM from 8MB, 16MB, 32MB, 64MB to 128MB.

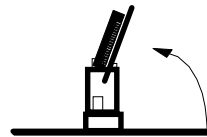
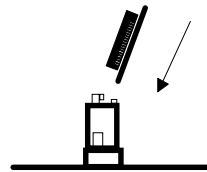


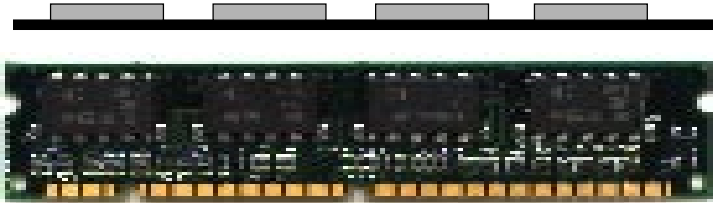
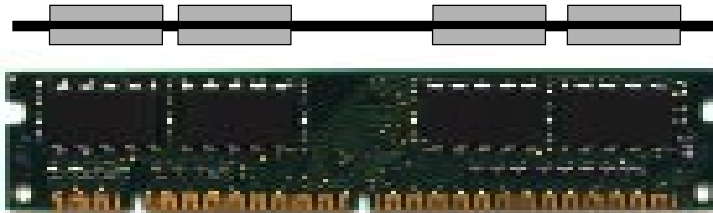
2.4-2 Memory Installation Procedures:

A. How to install SIMM Module

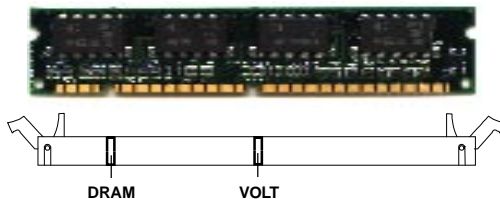


1. The SIMM slot has a “*Plastic Safety Tab*” and the SIMM memory module has a “*Notched End*”, so the SIMM memory module can only fit in one direction.
2. Insert the SIMM memory modules into the socket at 45-degree angle, then push into a vertical position so that it will snap into place.
3. The Mounting Holes and Metal Clips should fit over the edge and hold the SIMM memory modules in place.



B. How to install DIMM Module**Single Sided DIMM****Double Sided DIMM**

1. The DIMM slot has two keys marked “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.



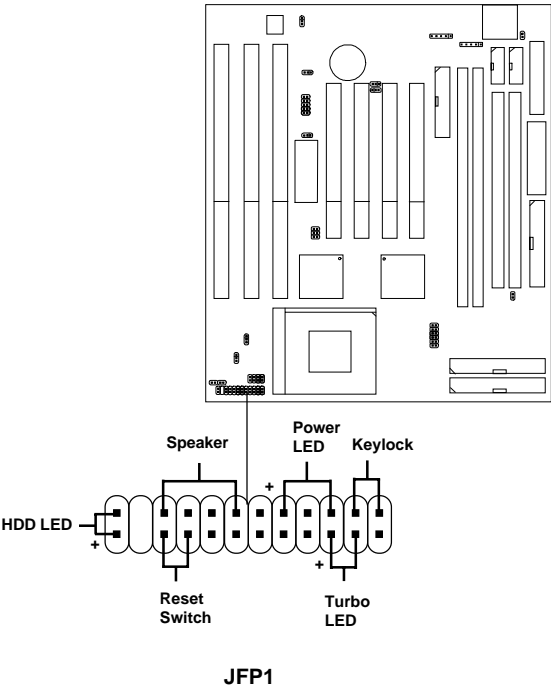
3. The plastic clip at the side of the DIMM slot will automatically close.

2.4-3 Memory Population Rules

1. Make sure that the SIMM banks are using the same type and equal size density memory.
2. To operate properly, at least two 72-pin SIMM module must be installed in the same bank or one 168-pin DIMM module must be installed. The system cannot operate with only one 72-pin SIMM module.
3. This mainboard supports Table Free memory, so memory can be installed on (SIMM1 + SIMM2), (DIMM1), or (DIMM 2), in any order.
4. Use only 5v SIMM.
5. Use only 3.3v unbuffered DIMM.
6. DIMM and SIMM cannot be used at the same time. Only one kind can be used at a time.

2.5 Case Connector: JFP1

The Turbo LED, Hardware Reset, Key Lock, Power LED, Speaker and HDD LED are all grouped in JFP1 connector block for easy installation.



2.5-1 Turbo LED

This mainboard is always on Turbo speed. Connecting a Turbo LED will just lit the LED.

2.5-2 Hardware Reset

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

2.5-3 Keylock

Keylock allows you to disable the keyboard for security purposes. You can connect the keylock to this pin.

2.5-4 Power LED

The Power LED is always lit while the system power is on. You can connect the Power LED from the system case to this pin.

2.5-5 Speaker

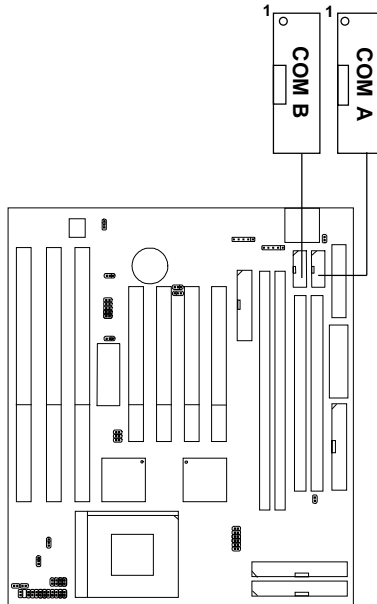
Speaker from the system case are connected to this pin. (See Figure 2.1)

2.5-6 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.

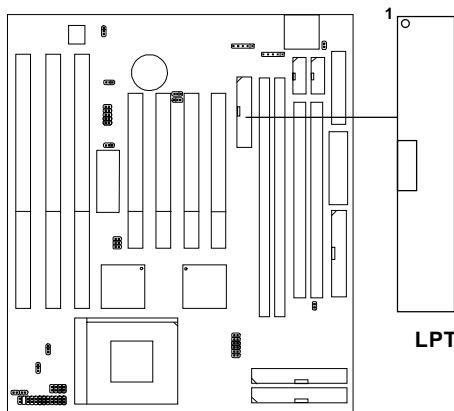
2.6 Serial Port Connectors: COM A & COM B

The mainboard has two serial ports COM A and COM B. These two ports are 16550A fully compatible high speed communication ports that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into these connectors.



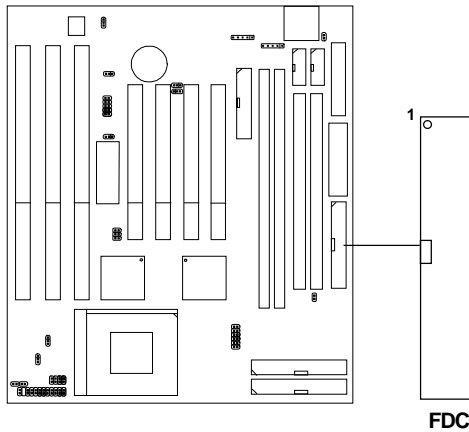
2.7 Parallel Port Connector: LPT

The mainboard provides a connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port(EPP) and Extended capabilities Parallel Port(ECP).



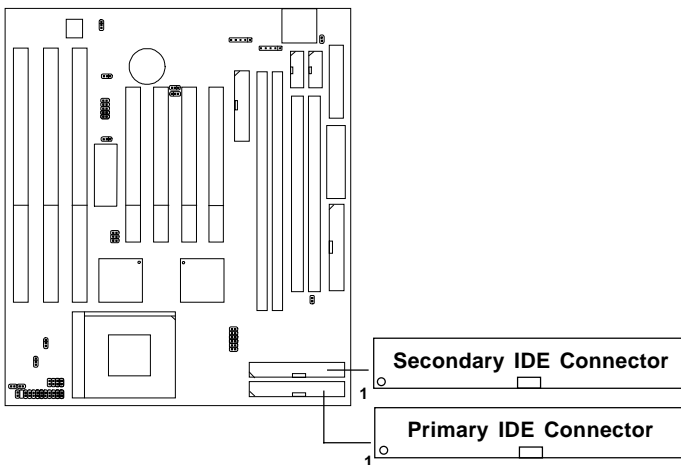
2.8 Floppy Disk Connector: FDC

The mainboard also provides a standard floppy disk connector, FDC that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. You can attach a floppy disk cable directly to this connector.



2.9 Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE Controller that provides for 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.



IDE1(primary IDE connector)

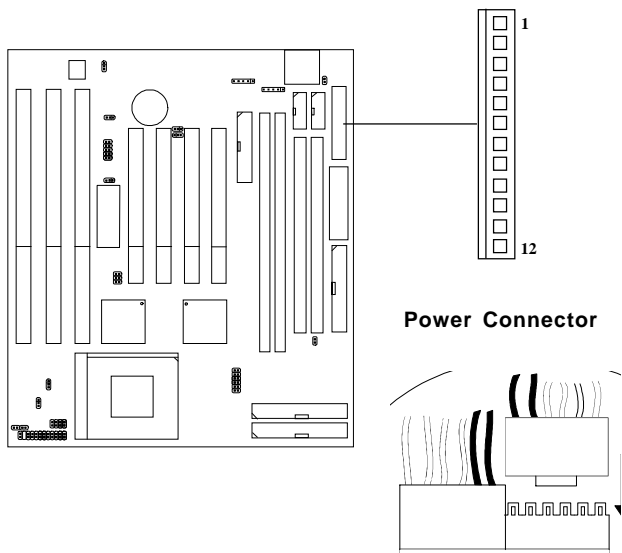
The first hard disk should always be connected to IDE1. IDE1 can connect a Master and a Slave drive.

IDE2(secondary IDE connector)

IDE2 can connect a Master and a Slave drive.

2.10 AT Power Supply Connector

This is a standard 12-pin AT® or PS/2® connector. Be sure to attach the connectors with the two black wires at the center.

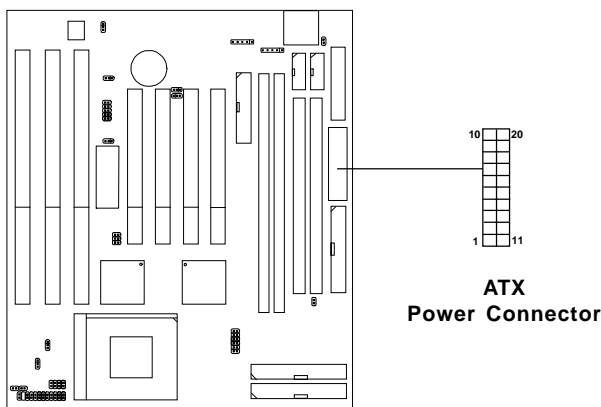


PIN DEFINITION

Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

2.11 ATX 20-pin Power Connector

This type of connector already supports the remote ON/OFF function. You don't need to connect the JRMCI. However, you need to connect the **Remote Power On/OFF switch (JRMS1 or JRMS2)**.

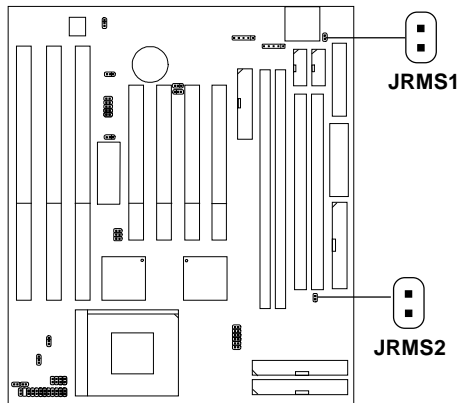


PIN DEFINITION

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

2.12 Remote Power On/Off Switch: JRMS1/JRMS2

Connect to a 2-pin push button switch to JRMS1 or JRMS2. Every time the switch is shorted by pushing it once, the power supply will change its status from OFF to ON and ON to OFF. This is used for ATX type power supply. You can program this through BIOS. Refer to Soft-Off by PWR-BTTN in BIOS.



2.13 Power On Mode Jumper: J2

The mainboard supports two kinds of system boot up: the Boot-Up by switch and the Immediate Boot-Up. With the Boot-Up by Switch, the system will boot up only when the power on switch is pressed. For Immediate Boot-Up, the system will boot up instantly when the power connector is connected into the system.

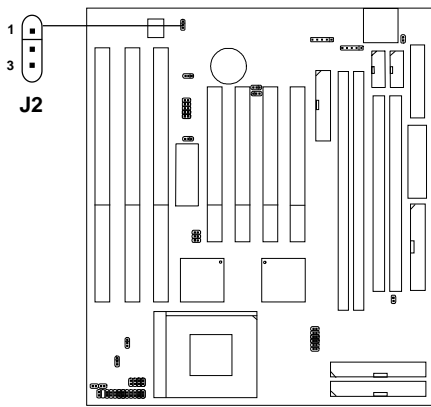
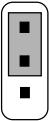



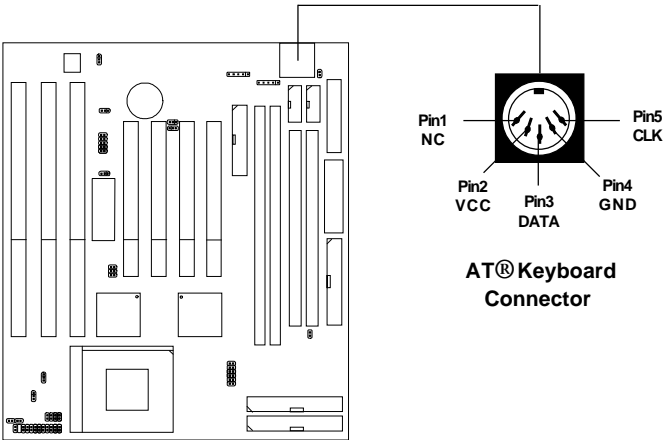
Table 2.13: Power On Mode Feature

J2	Feature
	Select Boot-Up by Switch
	Select Immediate Boot-Up

Note: Short J2 1-2, when using Boot-Up by Switch feature. Open J2, to enable Immediate Boot-Up.

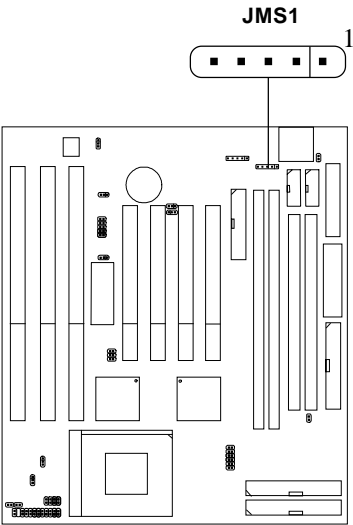
2.14 Keyboard Connector: ATKBC

The mainboard provides a standard AT® keyboard DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.



2.15 Mouse Connector: JMS1

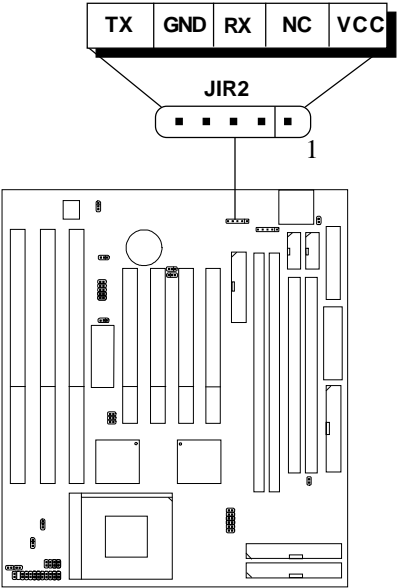
The mainboard provides a 5-pin connector for PS/2[®] mouse cable (optional). You can plug a PS/2[®] mouse to PS/2[®] mouse cable. The connector location as shown below.



Pin 1	VCC
Pin 2	-
Pin 3	GND
Pin 4	CLK
Pin 5	DATA

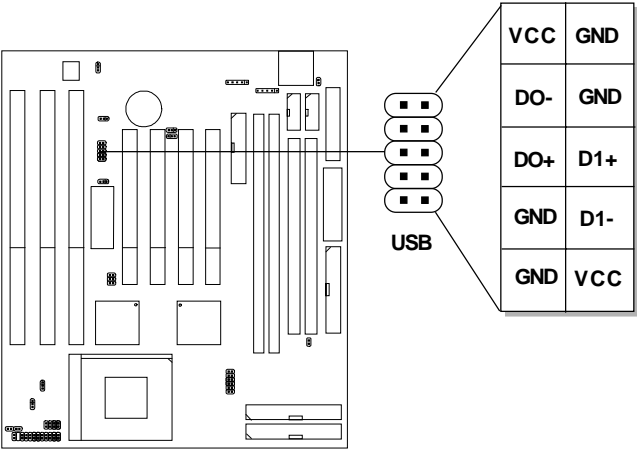
2.16 Infrared Module Connector: JIR2

The mainboard provides a 5-pin infrared connector(IR) for IR module. This connector is for optional wireless transmitting and receiving infrared module. If you want to use this function, you must configure the setting through BIOS setup.



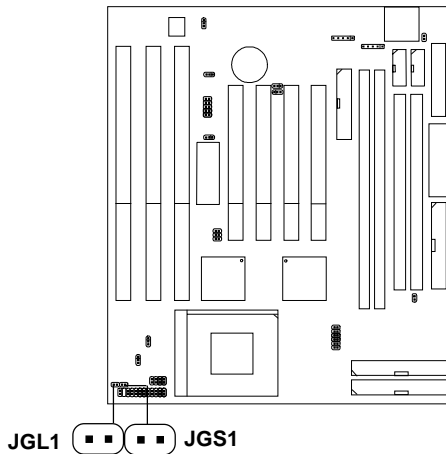
2.17 USB Connector: USB

Connect a USB cable to support USB device, such as keyboard and mouse.



2.18 Power Saving Switch Connector: JGS1/ Power Saving LED Connector: JGL1

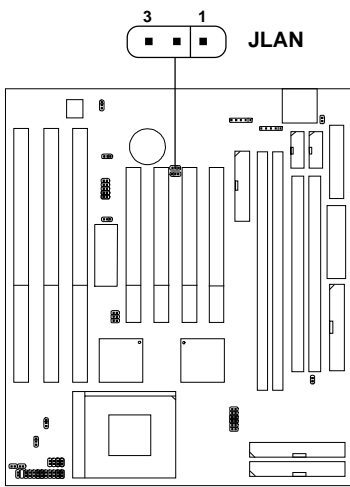
Attach a power saving switch to JGS1. When the switch is pressed, the system immediately goes into suspend mode. Press any key and the system wakes up. JGL1 can be connected with LED to monitor the JGS1. This will lit while the system is in suspend mode.



Note: To make JGS1 function, you must go to the BIOS power management and enable it there.

2.19 Wake-Up on LAN Connector: JLAN

This connector is for use with LAN add-on cards that supports Wake Up on LAN function.



PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

Note: LAN wake-up signal is active “high”.

Note: To be able to use this function, you need a power supply that provide enough power for this feature.
(750 mA power supply with 5V Stand-by)

2.21 Add-On Card Sound Connector: JSOUND

The mainboard provides a distributed DMA connector for PCI sound card with this feature, such as Creative® PCI 3D sound card.

