
Hardware Setup

2

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Besides, please use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

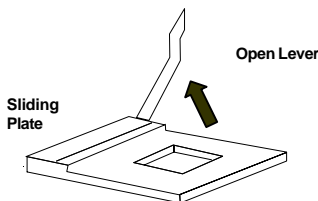
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Central Processing Unit: CPU

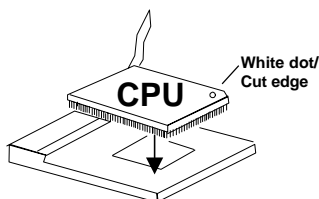
The mainboard supports Intel® Celeron™ / Pentium!!! (FC-PGA) processors. The mainboard uses a CPU socket called Socket 370 for easy CPU installation. Make sure that the CPU has a Heat Sink and a cooling fan attached to prevent overheating. If you do not find the Heat Sink and cooling fan, contact your dealer or purchase them before turning on the computer.

CPU Installation Procedures

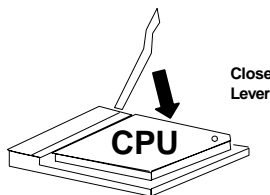
1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.



2. Look for the white dot or cut edge in the CPU. Insert the CPU. It should insert easily.



3. Press the lever down to complete the installation.



WARNING!

Overheating will seriously damage the CPU and system. Always make sure the cooling fan can work properly to protect the CPU.

CPU Core Speed Derivation Procedure

The mainboard can automatically set the CPU Host Bus Frequency Clock.

$$\begin{array}{llll} \text{If} & \text{CPU Clock} & = & 100\text{MHz} \\ & \text{Core/Bus ratio} & = & 7 \\ \text{then} & \text{CPU core speed} & = & \text{Host Clock} \times \text{Core/Bus ratio} \\ & & = & 100\text{MHz} \times 7 \\ & & = & 700\text{MHz} \end{array}$$



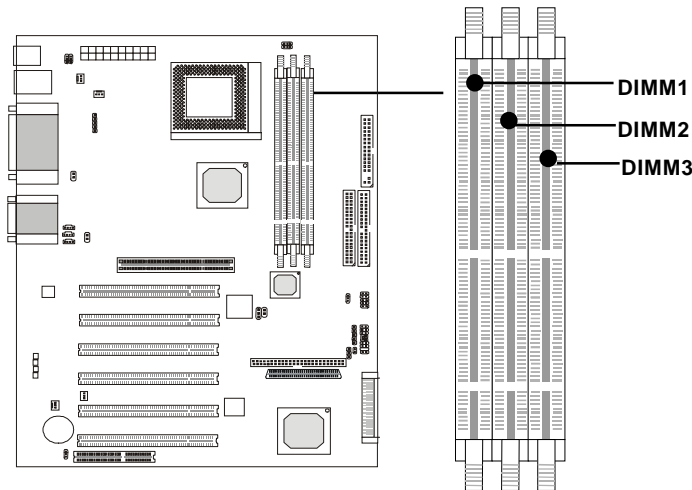
WARNING!

Overclocking

*This motherboard are designed to support overclocking . However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications are not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***

Memory Installation

The mainboard provides 3 sockets for 168-pin, 3.3V SDRAM with 6 memory banks. To operate properly, at least one DIMM module must be installed. The mainboard supports the memory size up to 512MB.



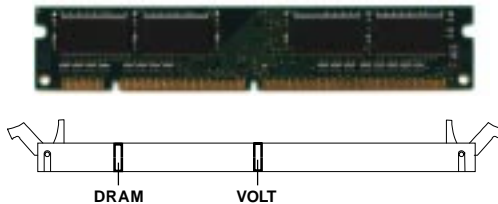
The DRAM Addressing & Size

DRAM Tech.	DRAM Density & Width	DRAM Addressing	Address Size		M B / D I M M	
			Row	Column	Single no Side (S) pcs.	Double no. Side (D) pcs.
16 M	1 M x 16	A S Y M	1 1	8	8 M B x 4	16 M B x 8
	2 M x 8	A S Y M	1 1	9	16 M B x 8	32 M B x 8
64 M B	2 M x 32	A S Y M	1 1	9	32 M B x 2	64 M B x 4
	2 M x 32	A S Y M	1 2	8	16 M B x 2	32 M B x 4
	4 M x 16	A S Y M	1 1	10	32 M B	64 M B
	4 M x 16	A S Y M	1 3	8	32 M B	64 M B
	8 M x 8	A S Y M	1 3	9	64 M B	128 M B
64 M B	2 M X 32	A S Y M	1 1	8	16 M B	32 M B
	4 M x 16	A S Y M	1 2	8	---	---
	8 M x 8	A S Y M	1 2	9	---	---

Module Installation Procedures

You can install the single sided or double sided DIMM according to your needs. There are two notches on each DIMM. The pins on the either side of the breaks are different. Pay attention to the orientation as shown below. The module will only fit in the right orientation.

1. Insert the DIMM module vertically into the DIMM slot. Make sure the notch is on the right orientation.
2. The plastic clip at the side of the DIMM slot will automatically close.



Single Sided



Double Sided DIMM

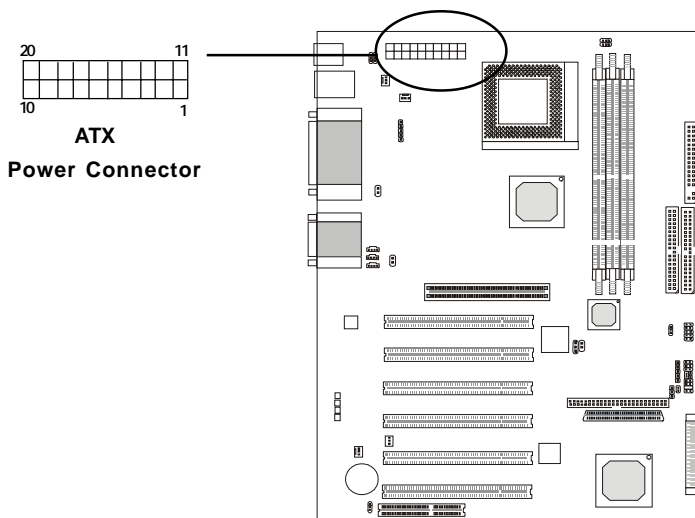


Power Supply

The mainboard supports ATX power supply for the power system. As the mainboard has the instant power on function, make sure that all components are installed properly before inserting the power supply connector to ensure that no damage will be done.

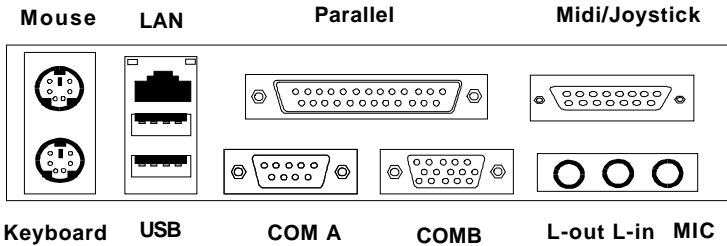
ATX 20-Pin Power Supply

This connector allows you to connect to an ATX power supply. To connect to the ATX power supply, make sure the plugs of the power supply insert in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.



Back Panel

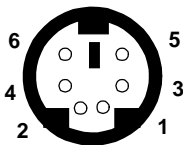
The Back Panel provides the following connectors:



Mouse Connector

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

PS/2 Mouse (6-pin Female)



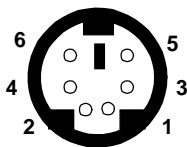
PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock
6	NC	No connection

Pin Definition

Keyboard Connector

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

PS/2 Keyboard (6-pin Female)



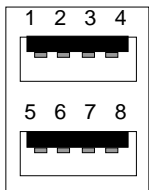
PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

Pin Definition

USB Connectors

The mainboard provides a UHCI (Universal Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB devices. You can plug the USB device directly into this connector.

USB Ports



PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Positive Data Channel 1
7	+Data 1	Negative Data Channel 1
8	GND	Ground

USB Port Description

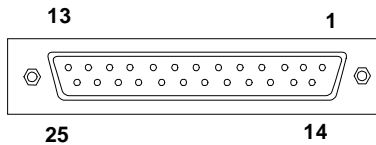
LAN Port

The mainboard provides a LAN port for connection to Local Area Network (LAN). You can connect the network cable to the LAN port.



Parallel Port Connector

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).



Pin Definition

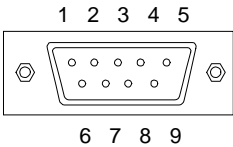
PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	FE	Paper End
13	SELECT	Select
14	AUTO FEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select 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 & COM B

The mainboard has two 9-pin male DIN connectors for serial ports COM A & COM B. You can attach a mouse or other serial devices directly into these connectors.

9-Pin Male DIN Connectors

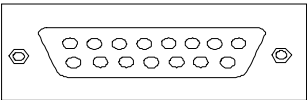


Pin Definition

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

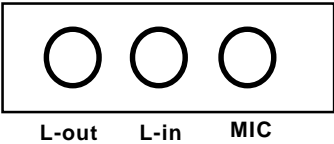
Joystick/Midi Connectors

You can connect game joysticks or game pads to this 15-pin female connector for playing game. You can also connect MIDI devices for playing or editing professional audio.



Audio Port Connectors

Line Out is a connector for headphone or speakers. **Line In** is used for external CD player, tape players or other audio devices to be recorded by your computer or played through the Line Out. **Mic** is a connector for the microphone.

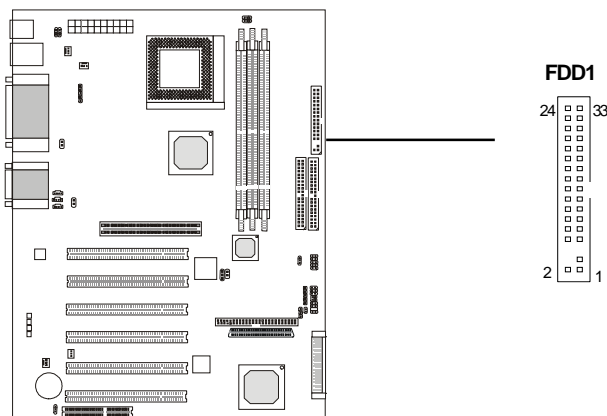


Connectors

The mainboard provides the connectors to connect to FDD1, JUSB1, HDD, case, modem, LAN, FAN, SCSI, thermistor, power saving switch/LED, IR module, chassis intrusion switch, CD-ROM and DVD add on card.

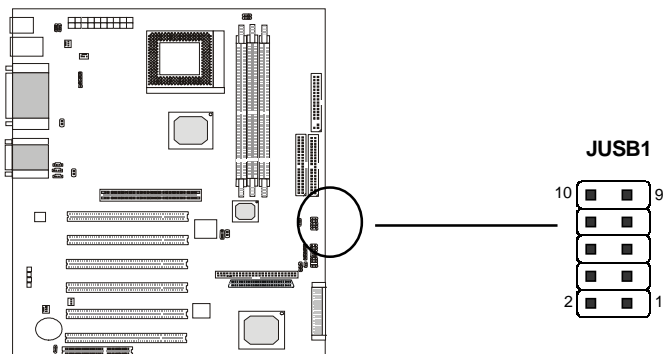
Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.



USB Front Connector: JUSB1

The mainboard provides a front Universal Serial Bus connector. This is an optional USB connector for Front Panel.



Chapter 2

Hard Disk Connectors: IDE1 & IDE2

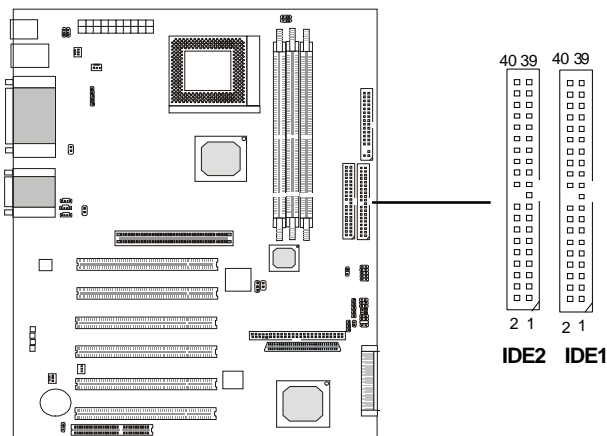
The mainboard has an IDE controller on the ICH chipset that provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA66/100 operations modes. It has two HDD connectors IDE1 (Primary) and IDE2 (Secondary). You can connect up to four hard disk drives, CD-ROM or 120MB Floppy to IDE1 and IDE2.

IDE1 (Primary IDE Connector)

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

IDE2 (Secondary IDE Connector)

- You can connect a Master and a Slave drive to IDE2.

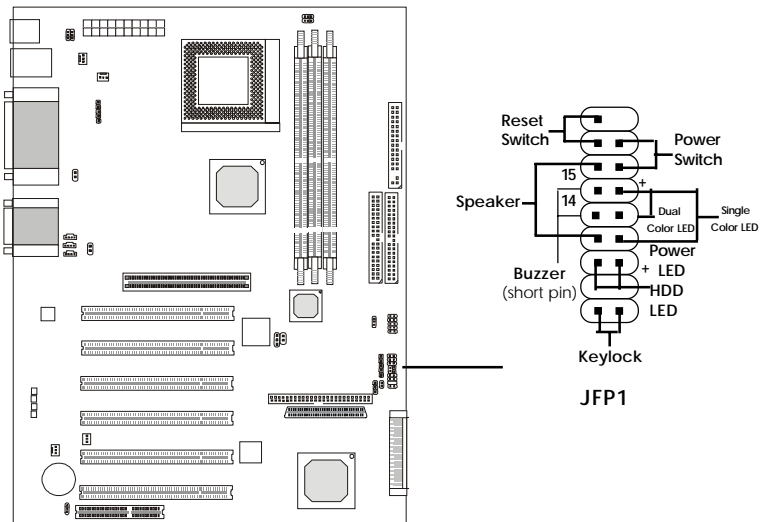


TIP:

If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Refer to the hard disk documentation for the jumper setting.

Case Connector: JFP1

The case connector block JFP1 allows you to connect the Power Switch, Reset Switch, Power LED, Speaker, Key Lock and HDD LED.



Chapter 2

Power Switch

Connect to a 2-pin push button switch. This switch had 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.

PowerLED

The Power LED is lit while the system power is on. You can 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).

- a. 3 pin single color LED connector to pin 4,5 & 6. This LED will lit when the system is on.
- b. 2 pin dual color LED connector 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.

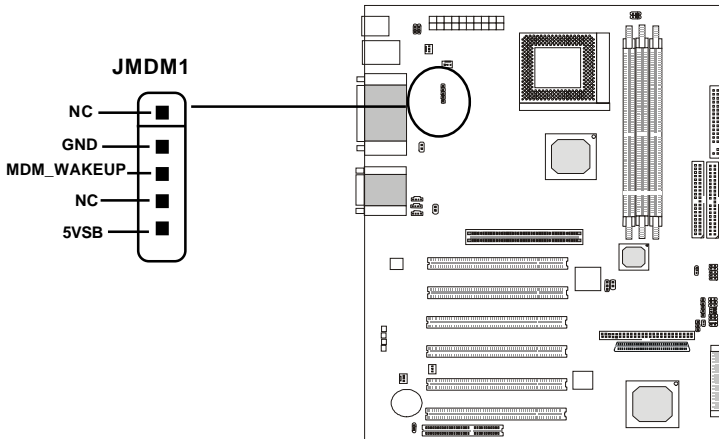
Open pin 14-15: On-board Buzzer Disabled.

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.

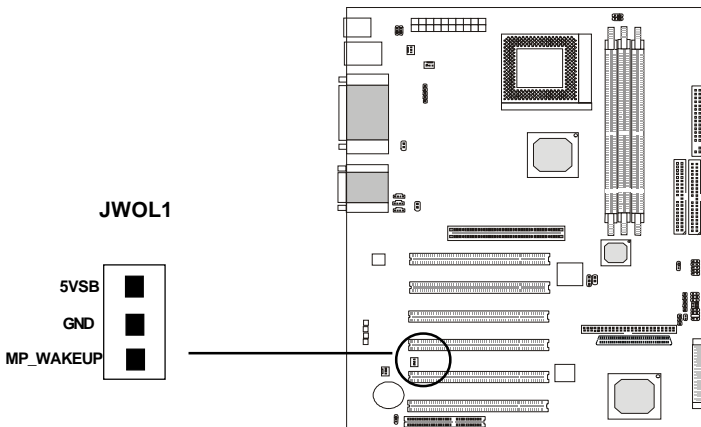
Wake On Ring Connector: JMDM1

This connector allows you to connect to a modem card with Wake On Ring function. The connector will power on the system when a signal is received through the modem card.



Wake On LAN Connector: JWOL1

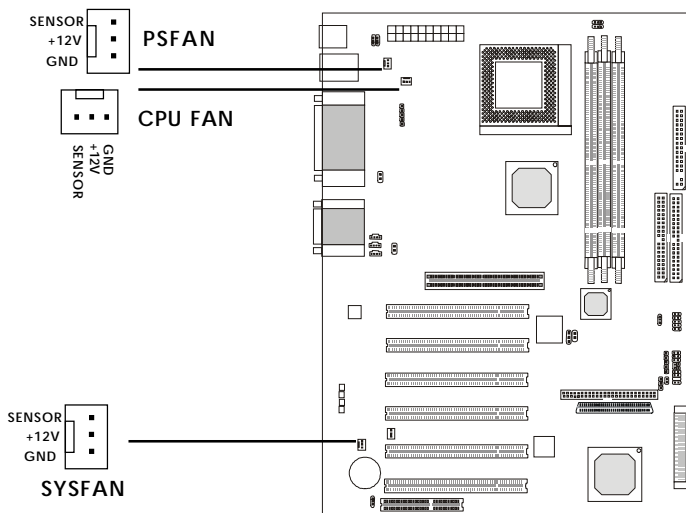
This connector allows you to connect to a LAN card with Wake On LAN function. You can wake up the computer via remote control through a local area network.



Chapter 2

Fan Power Connectors: CPU FAN/SYSFAN/PSFAN

The CPUFAN (processor fan), SYSFAN (system fan) and PSFAN (power supply fan) 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. As the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

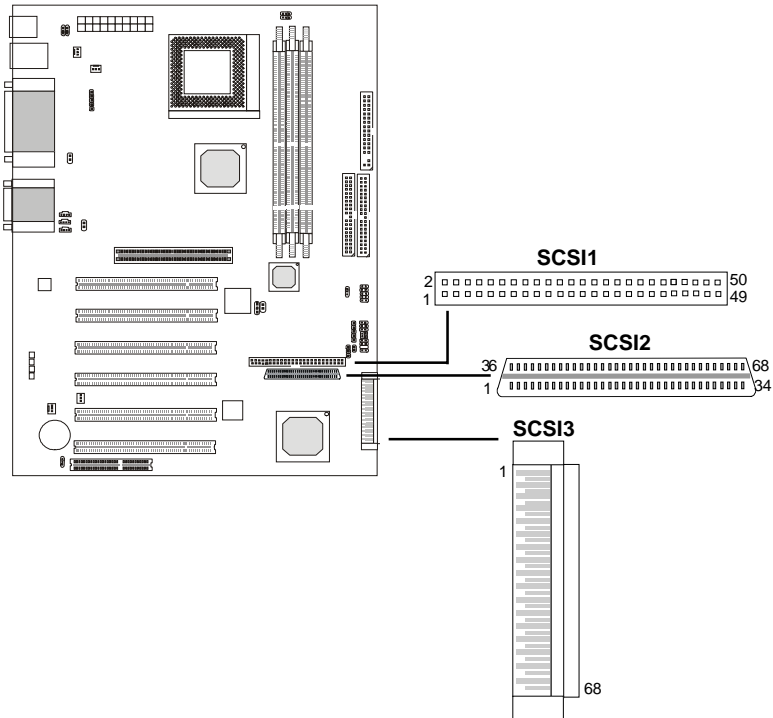


Note:

1. Always consult the vendor for proper CPU cooling fan.
2. CPU Fan supports the fan control. You can install the PC Alert utility that will automatically control the CPU Fan speed according to the actual CPU temperature.

SCSI Connectors: SCSI 1, SCSI 2, SCSI 3

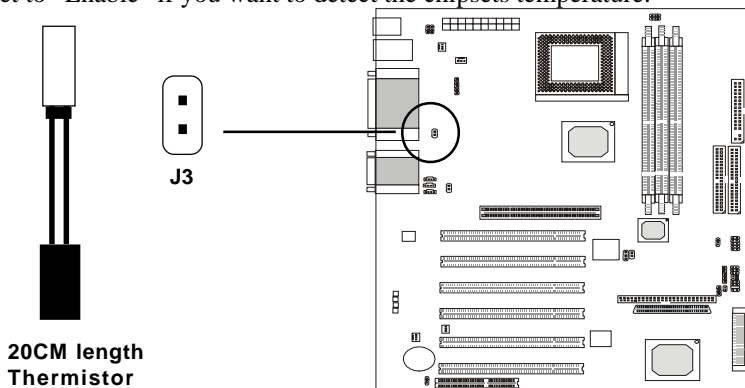
SCSI (Small Computer System Interface) pronounced “scuzzy”. SCSI is a hardware interface that allows for the connection of up to 15 peripheral devices. The mainboard provides the on-board SCSI function. There are three SCSI connectors (SCSI1, SCSI2, SCSI3) for you to connect to the wires.



Chapter 2

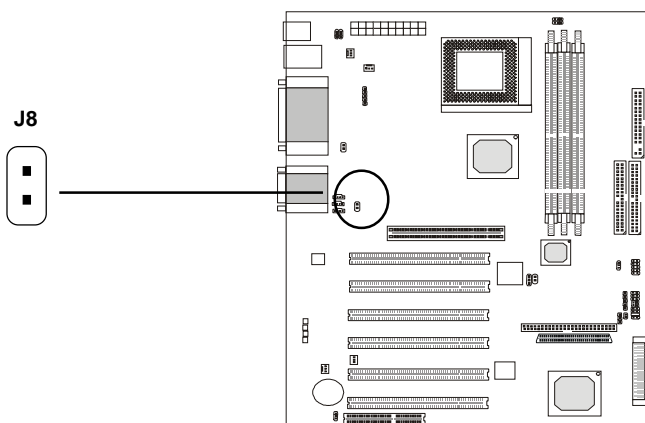
Top Tech III: J3

The mainboard provides a 2-pin connector which can be inserted with a 20cm length thermistor. It is located near the chipset heatsink that monitors the AGP and 815EP chipsets temperature. The BIOS setup for “Top Tech III” should be set to “Enable” if you want to detect the chipsets temperature.



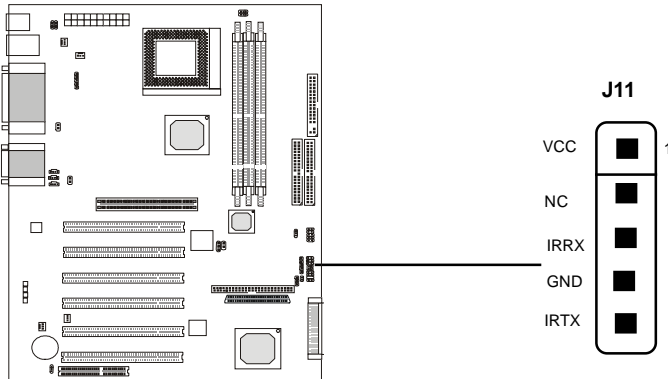
Chassis Intrusion Switch Connector: J8

J8 is connected to a 2-pin chassis intrusion switch. If the chassis is open, the switch will be open. The system will record the status. To clear the warning, you must enter the BIOS setting and clear the status.



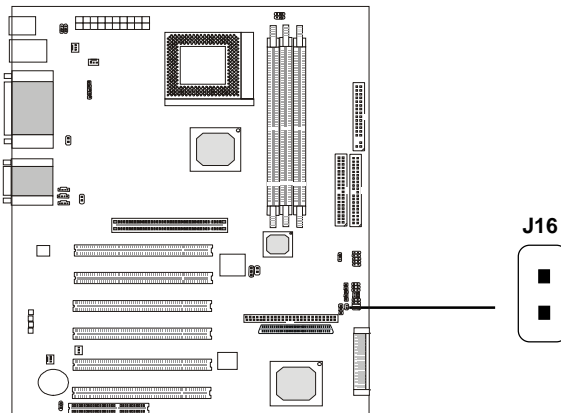
IrDA Infrared Module Connector: J11

The mainboard provides one 5-pin 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.



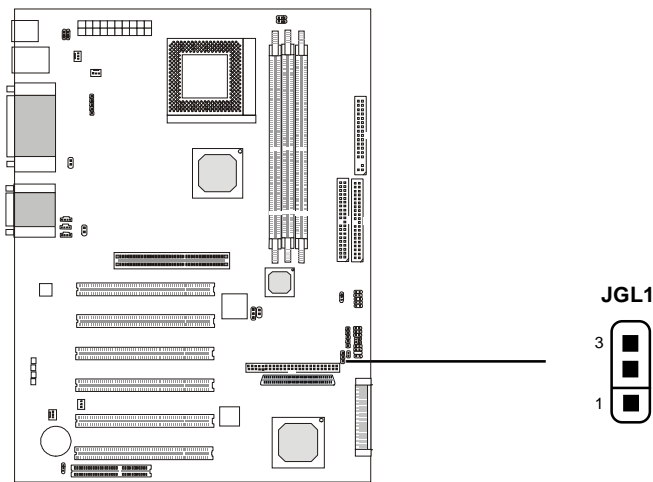
Power Saving Switch Connector: J16

You can attach a power saving switch to J16. When the switch is pressed, the system immediately goes into suspend mode. You can press any key to wake up the system.



Power Saving LED Connector: JGL1

JGL1 can be connected with an 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 the 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><p>Green Color</p><p>1 3</p><p>Orange Color</p></div>	<div><p>Green Color</p><p>1 3</p><p>Orange Color</p></div>
1-2 Single Color 1-3 Blink	1-2 Dual Color

AUX Line In Connector: J5

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

CD-In Connector: J6

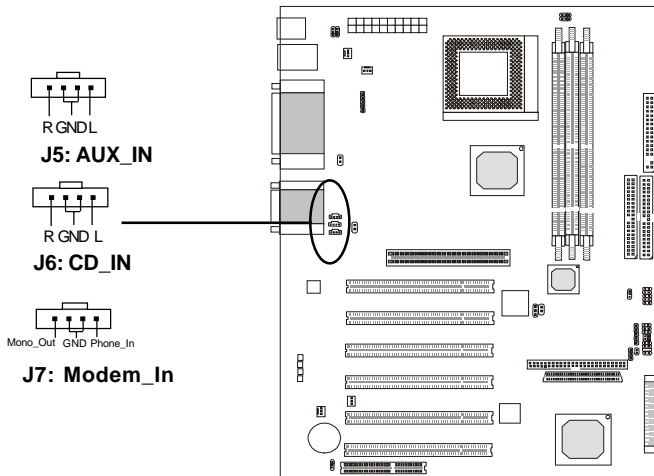
This connector is for CD-ROM audio connector.

Modem-In: J7

This 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.

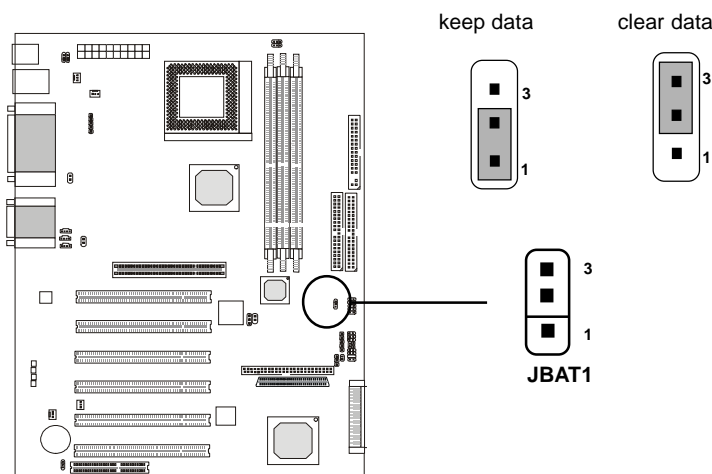


Jumpers

The motherboard provides the following jumpers for you to set the computer's function. Besides jumper settings, some of the motherboard's onboard functions are adjusted through the DIP switches. This section will mention how to change your motherboard's function through the use of jumpers and/or switches.

Clear CMOS Jumper: JBAT1

There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time you turn on the computer. That battery has long life time for at least 5 years. If you want to clear the system configuration, you can use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the steps below to clear the data:

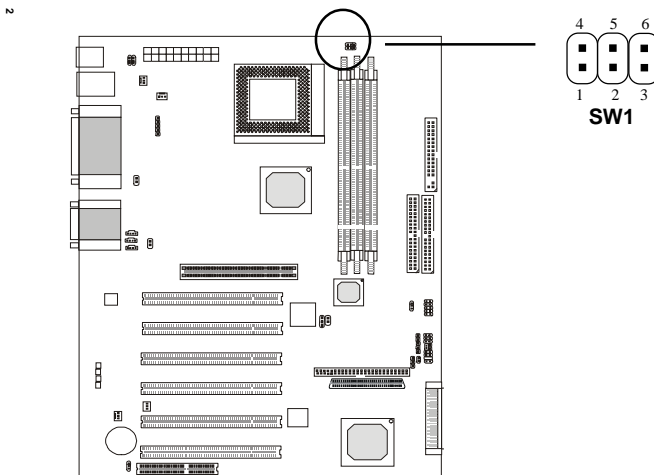


WARNING!

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.

Overclocking Jumper: SW1

Overclocking is operating a CPU/processor beyond its specified frequency. SW1 jumper is used for overclocking.

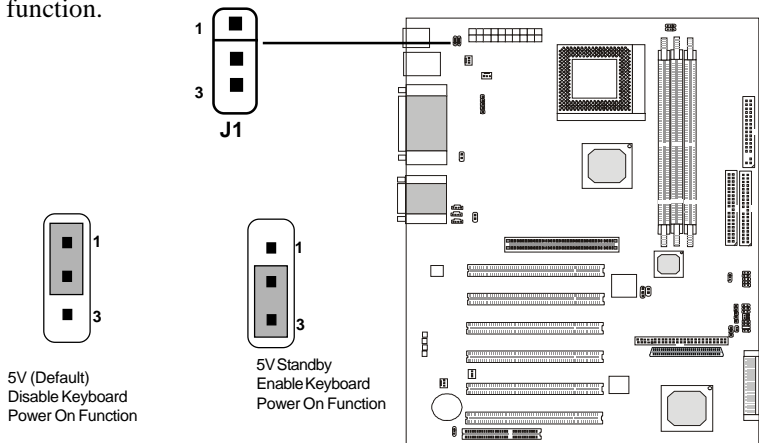


SW1	Function
	Auto
	66.6→100 133→100
	133→66.6 100→66.6
	100→133

Note: If you used this jumper for overclocking, you also need to modify the CPU Bus ratio through BIOS.

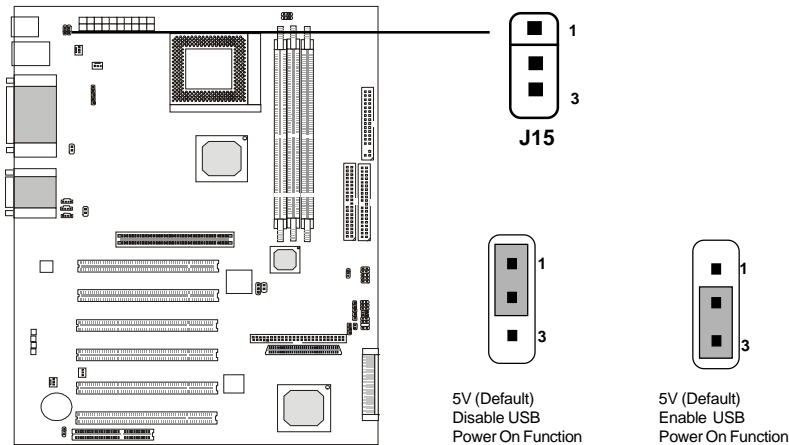
Keyboard Wake-up Jumper: J1

The J1 jumper is for setting keyboard wake-up function. To use this function, you must also go to BIOS to set the keyboard and PS/2 mouse wake-up function.



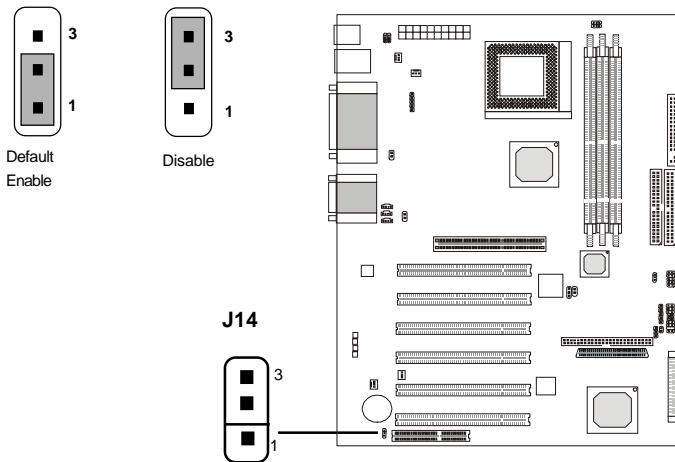
USB Wake-up Jumper: J15

This jumper is used to set USB wake-up function.



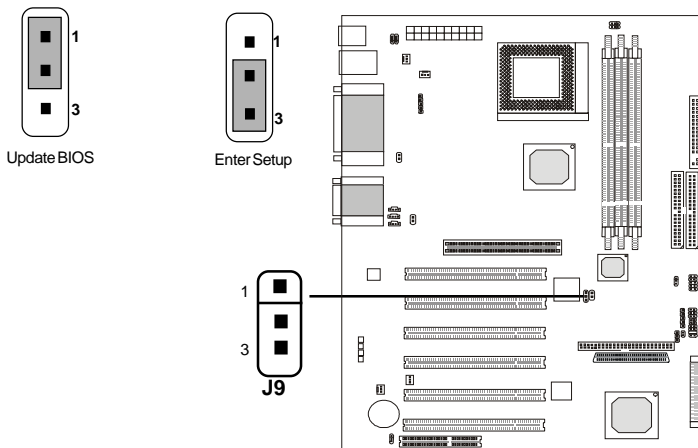
Enable On Board Codec: J14

This allows you to enable/disable the on board codec.



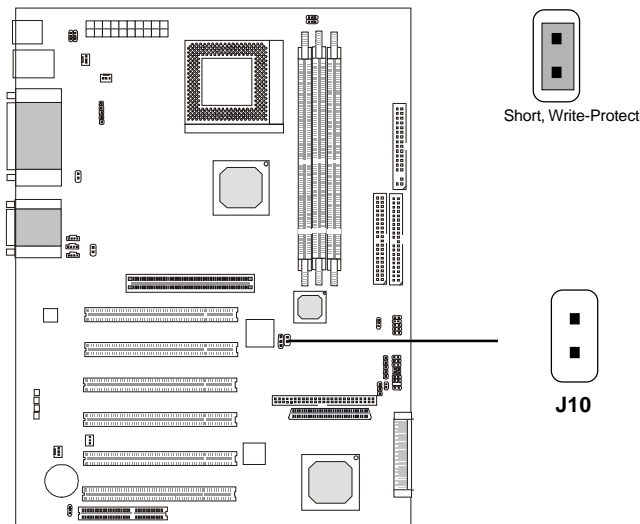
Update BIOS Jumper: J9

This jumper is used to update BIOS.



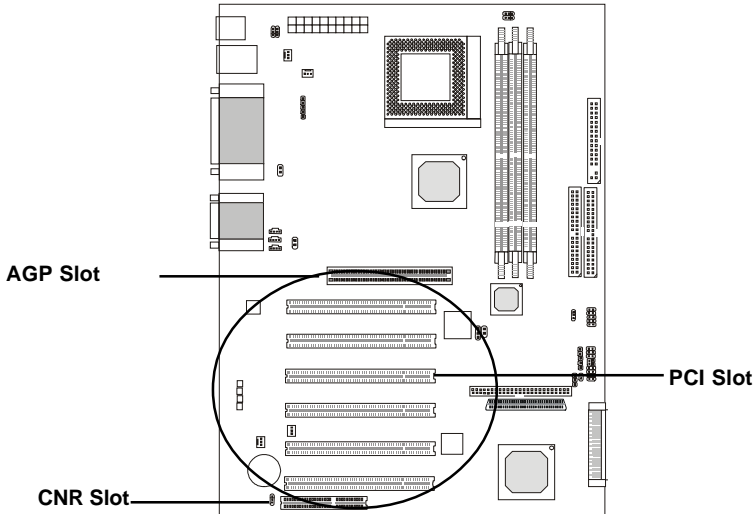
Write-Protect Jumper: J10

This jumper is used to set the function of write-protect for BIOS.



Slots

The motherboard provides one AGP (Accelerated Graphics Port) slot, one CNR (Communication Network Riser) slot and six 32-bit Master PCI Bus Slots.



AGP Slot (Accelerated Graphics Port)

The AGP Slot allows you to insert AGP card.

PCI Slot

The six PCI slots allow you to insert the expansion cards according to your needs. When adding or removing expansion cards, make sure that you unplug the power supply. Meanwhile, read the documentation for the expansion card and make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS.

CNR (Communication Network Riser)

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

Chapter 2

PCI Interrupt Request

The IRQ, abbreviation of interrupt request line, and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus INTA#-INTD# pins as follows.

AGP	INT A #	INT B#	INT C#	INT D#
PCISlot 1	INT A#	INT B#	INT C#	INT D#
PCISlot 2	INT B#	INT C#	INT D#	INT A#
PCISlot 3	INT C#	INT D#	INT A#	INT B#
PCISlot 4	INT C#	INT A#	INT B#	INT C#
PCISlot 5	INT A#	INT B#	INT C#	INT D#
PCISlot 6	INT B#	INT C#	INT D#	INT A#
USB-1	INT D#	INT A#	INT B#	INT C#
USB-2	INT D#	INT A#	INT B#	INT C#
AC97	INT C#	INT D#	INT A#	INT B#

PCI#1~PCI#5: Bus Master