
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 them in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

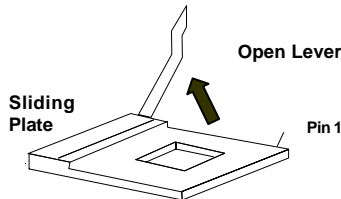
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Central Processing Unit: CPU

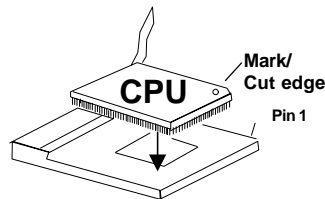
The mainboard supports Intel® Celeron™ and Pentium !!! processor. The mainboard uses a CPU socket called Socket 370 for easy CPU installation. Make sure the CPU has a Heat Sink and a cooling fan attached on top to prevent overheating. If you do not find the Heat Sink and cooling fan, contact your dealer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

CPU Installation Procedures

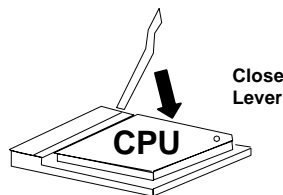
1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.



2. Locate Pin 1 in the socket and look for the mark or cut edge on the corner of CPU. Align Pin 1 with the mark/cut edge of CPU and then insert the CPU.



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 from overheating.

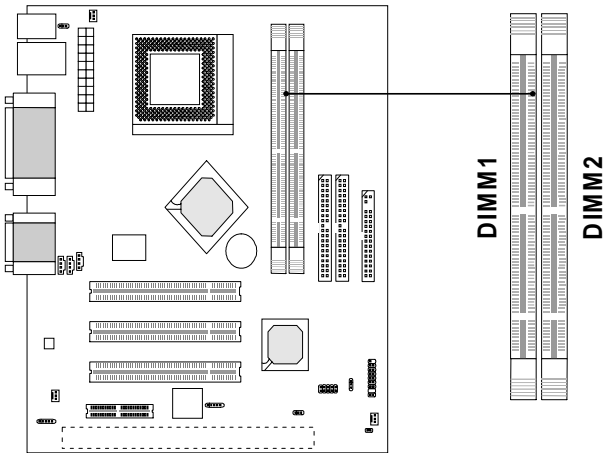
CPU Core Speed Derivation Procedure

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

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

Memory Installation

The mainboard provides 2 slots for 168-pin, 3.3V SDR DIMM with 4 memory banks. To operate properly, at least one DIMM module must be installed.

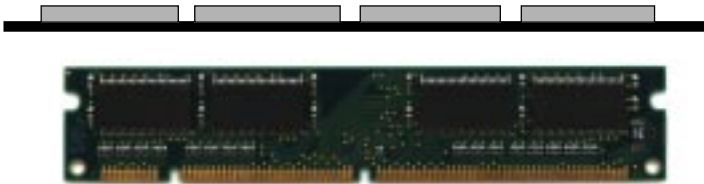


The SDRAM Addressing & Size

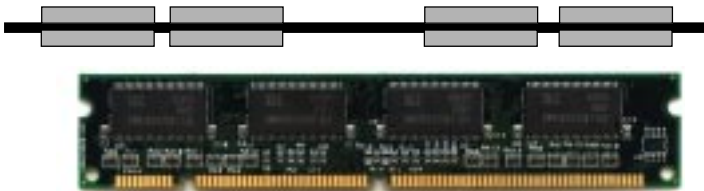
DRAM Tech.	DRAM Density & Width	DRAM Addressing	Address Size		MB/DIMM	
			Row	Column	Single no. Side(S) pcs.	Double no. Side(D) pcs.
16M	1Mx16	ASYM	11	8	8MBx4	16MBx8
	2Mx8	ASYM	11	9	16MBx8	32MBx16
	4Mx4	ASYM	11	10	32MB	64MB
64M	2Mx32	ASYM	11	9	32MBx2	64MBx4
	2Mx32	ASYM	12	8	16MBx2	32MBx4
	4Mx16	ASYM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

Module Installation Procedures

You can install single sided or double sided 168-pin DIMMs into DIMM slots according to your needs.

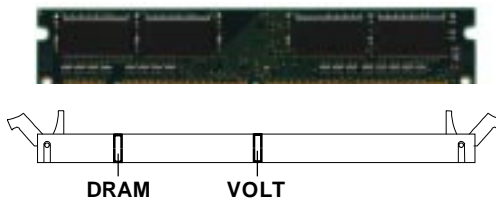


Single Sided DIMM



Double Sided 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.



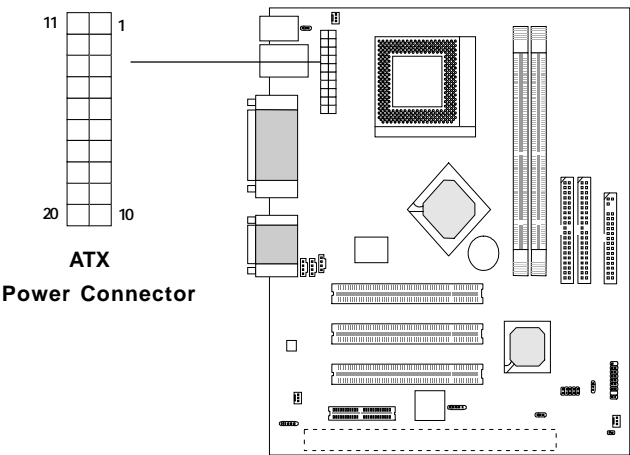
3. The plastic clips at sides of the DIMM slot will automatically close.

Power Supply

The mainboard supports ATX power supply for the power system. Before connecting to the power supply, always make sure that all components are installed properly and no damage will be caused.

ATX 20-Pin Power Supply

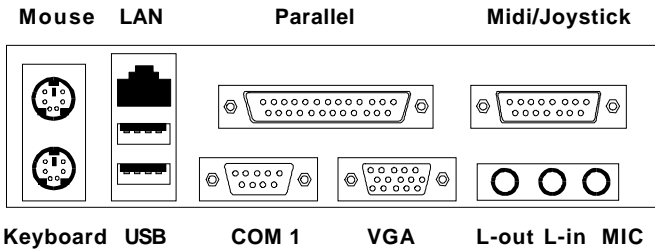
This connector allows you to connect to an ATX power supply. To connect to the ATX power supply, make sure the power supply connector is installed in the right orientation and the pins are aligned. Then push down the power supply connector firmly into the power connector on the mainboard.



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

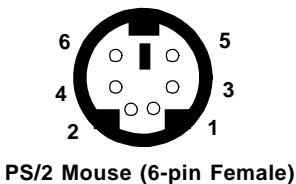
Back Panel

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.

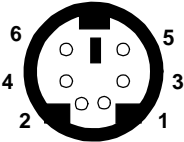


Pin Definition

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

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.

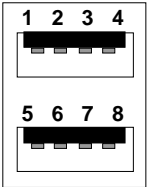


PS/2 Keyboard (6-pin Female)

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

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-compatible devices. You can plug the USB device directly into the connector.

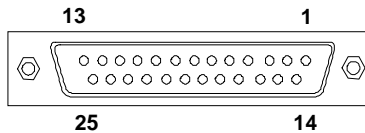


USB Ports

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

Parallel Port Connector

The mainboard provides a 25-pin female centronic connector for LPT. A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.



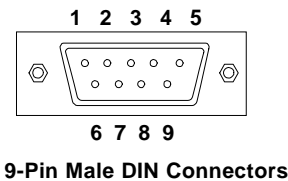
Pin Definition

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

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Serial Port Connector: COM 1

- The mainboard has two 9-pin male DIN connectors for serial port COM
1. You can attach a serial mouse or other serial devices.

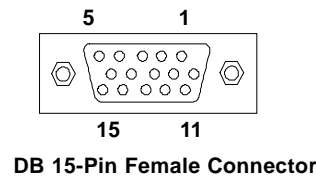


Pin Definition

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

VGA DB 15 Pin Connector

The mainboard provides one DB 15-pin female connector to connect a VGA monitor.

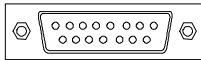


Pin Definition

Analog Video Display Connector (DB-15S)	
PIN	SIGNAL DESCRIPTION
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Not used
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

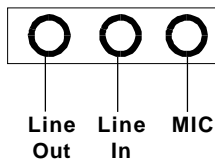
Joystick/Midi Connectors

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



Audio Port Connectors

Line Out is to connect speakers or headphones. **Line In** is a connector for external CD player, Tape player or other audio devices. **Mic** is used to connect to a microphone.



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LAN Jack (RJ-45)

The mainboard provides one standard RJ-45 jack for connection to Local Area Network (LAN). You can connect a network cable to the LAN jack.



LAN RJ-45 Jack

Pin Definition

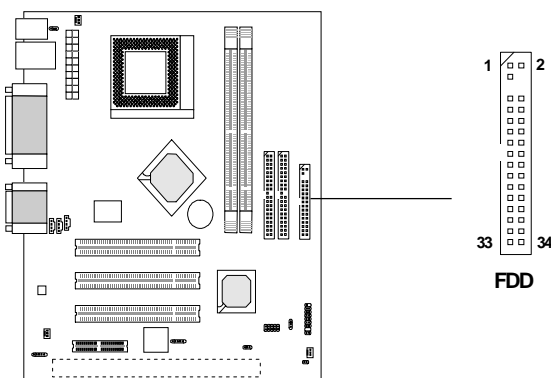
PIN	SIGNAL	DESCRIPTION
1	RDN	Receive Differential Pair
2	RDP	Receive Differential Pair
3	GND	Ground
4	GND	Ground
5	GND	Ground
6	GND	Ground
7	TDN	Transmit Differential Pair
8	TDP	Transmit Differential Pair

Connectors

The mainboard provides connectors to connect to FDD, IDE HDD, IDE RAID HDD, case, modem, LAN, USB Ports, IR module and CPU/Power Supply/System FAN.

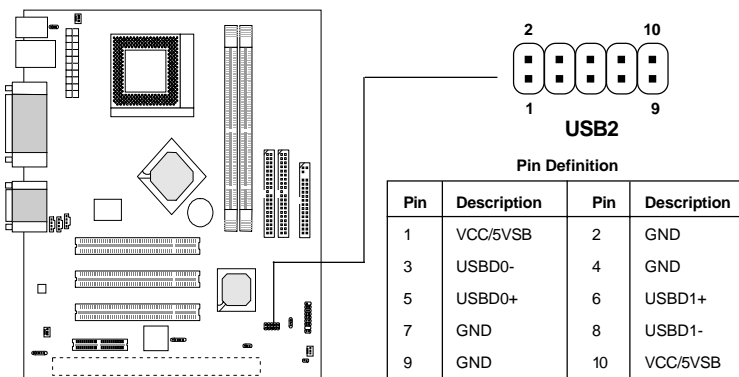
Floppy Disk Drive Connector: FDD1

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 Panel Connector: USB2

The mainboard provides one Front USB (Universal Serial Bus) pin header that allows you to connect two optional USB ports for Front Panel.



Chapter 2

Hard Disk Connectors: IDE1 & IDE2

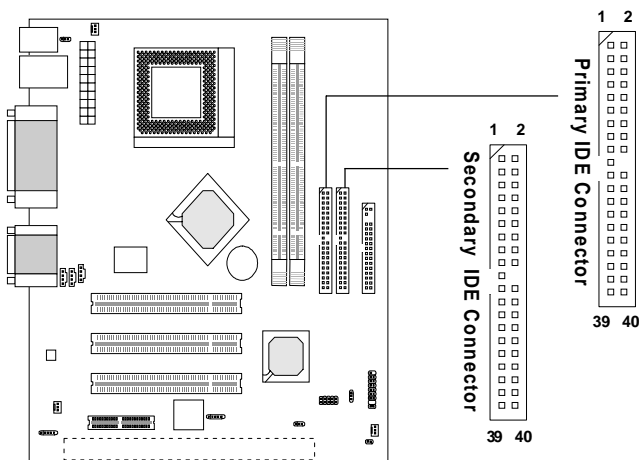
The mainboard uses an IDE controller on the VIA® VT82C686A chipset that provides PIO mode 0-4, Bus Master, and Ultra DMA 33/66 modes. It has two HDD connectors IDE1 (Primary) and IDE2 (Secondary). You can connect up to four hard disk drives, CD-ROM or 120MB Floppy to IDE1 and IDE2.

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.

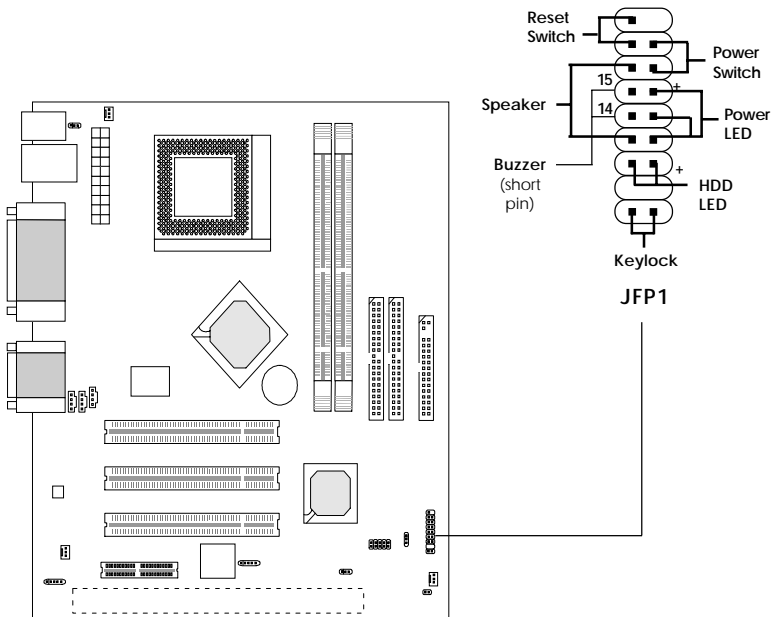


TIP:

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

Case Connector: JFP1

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



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Power Switch

Connect to a 2-pin push button switch. Pressing this button can turn the system power on or off.

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. You can connect the Power LED from the system case to this pin. When the system enters the suspend mode, the Power LED will blink.

Speaker

Speaker from the system case is connected to this pin.

If on-board Buzzer is available, then:

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

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

HDD LED

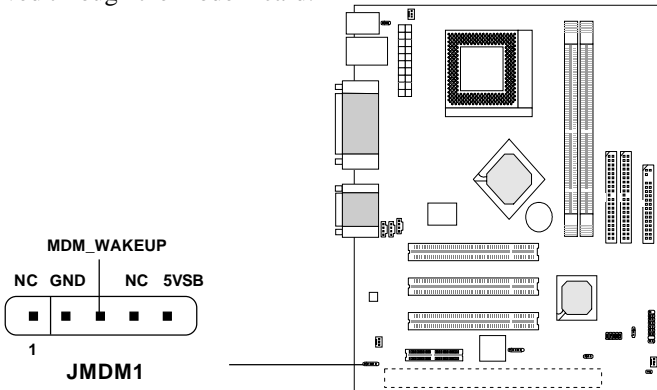
HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

Keylock

Keylock allows you to disable the keyboard for security purpose. You can connect the keylock to this connector.

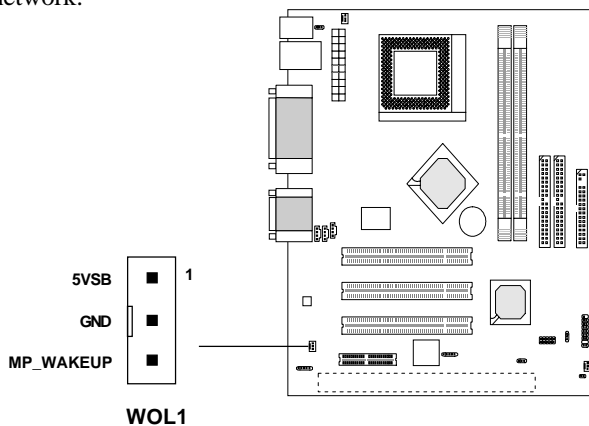
Wake On Ring Connector: JMDM1

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



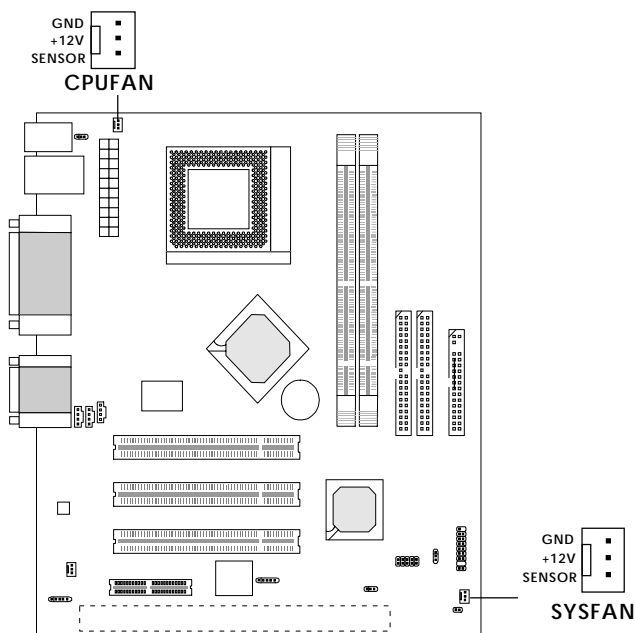
Wake On LAN Connector: WOL1

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.



Fan Power Connectors: CPUFAN/SYSFAN

The CPUFAN (processor fan) and SYSFAN (system fan) support system cooling fan with +12V. It supports three-pin head connector. When connecting the wire to the connectors, 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 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.

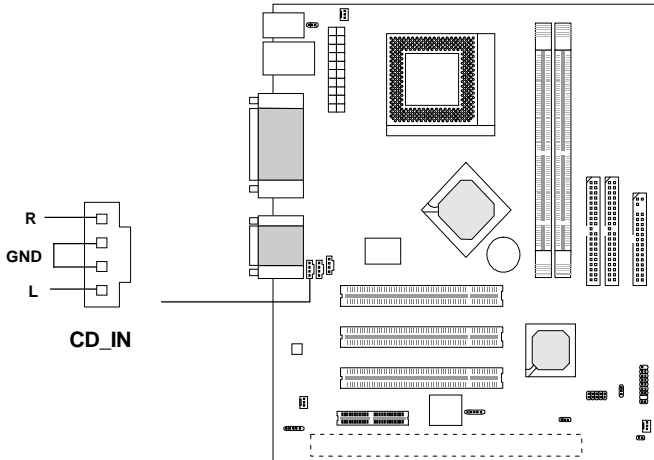


Note:

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.

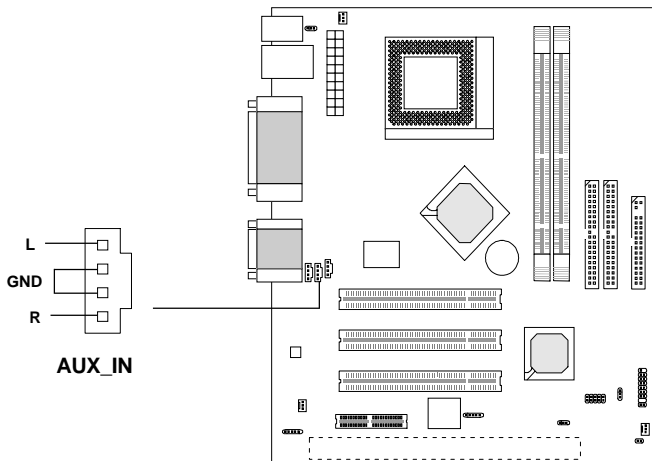
CD-In Connector: CD_IN

The connector is for CD-ROM audio connector.



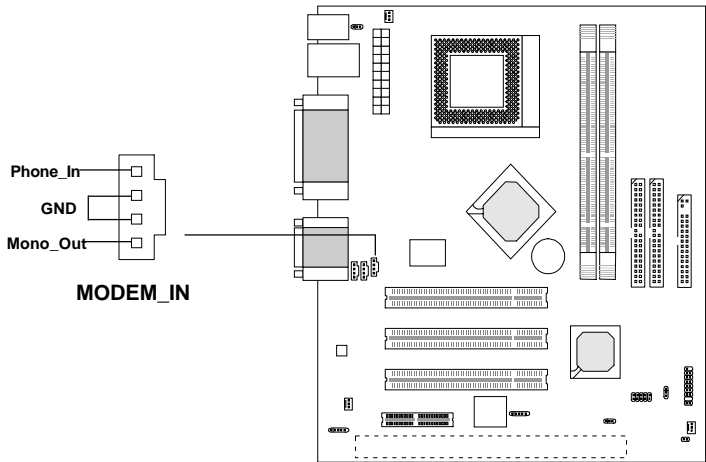
Aux Line-In Connector: AUX_IN

The connector is for DVD add-on card with Line-in connector.



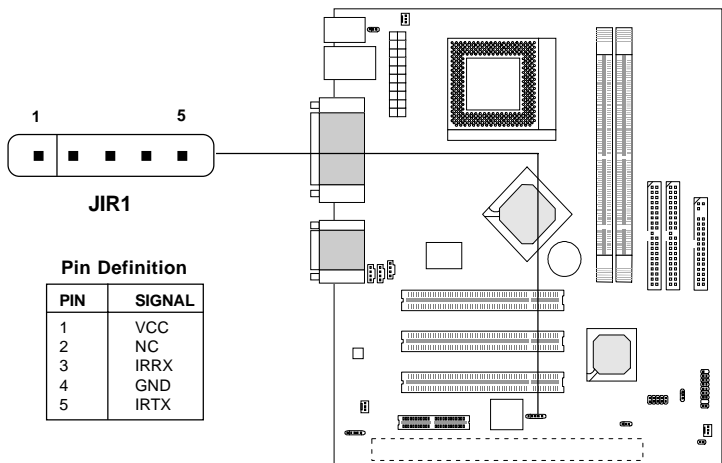
Modem-In Connector: MODEM_IN

The connector is for modem with internal audio connector.



IrDA Infrared Module Connector: JIR1

This connector allows you to connect to an IrDA Infrared module. You must configure the setting through the BIOS setup to use the IR function.

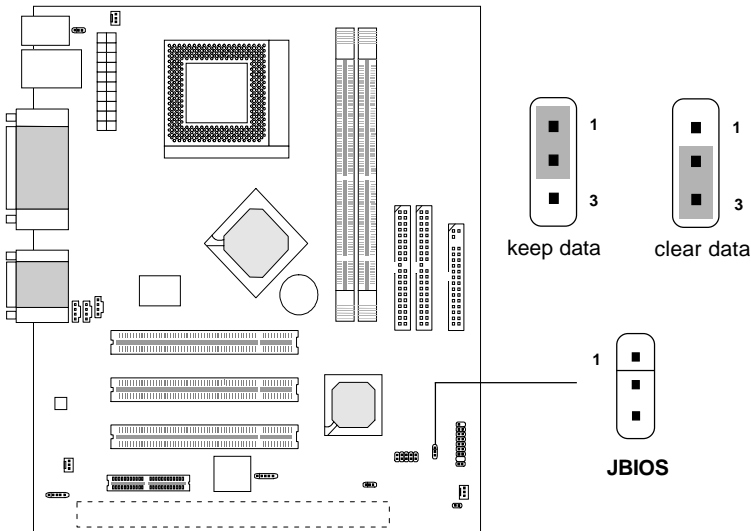


Jumpers

The motherboard provides the following jumpers for you to set the computer's function. This section describes how to change your motherboard's function through the use of jumpers.

Clear CMOS Jumper: JBIOS

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 it is turned on. The battery has long life time for at least 5 years. If you want to clear the system configuration stored in the CMOS RAM, use the JBIOS (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:

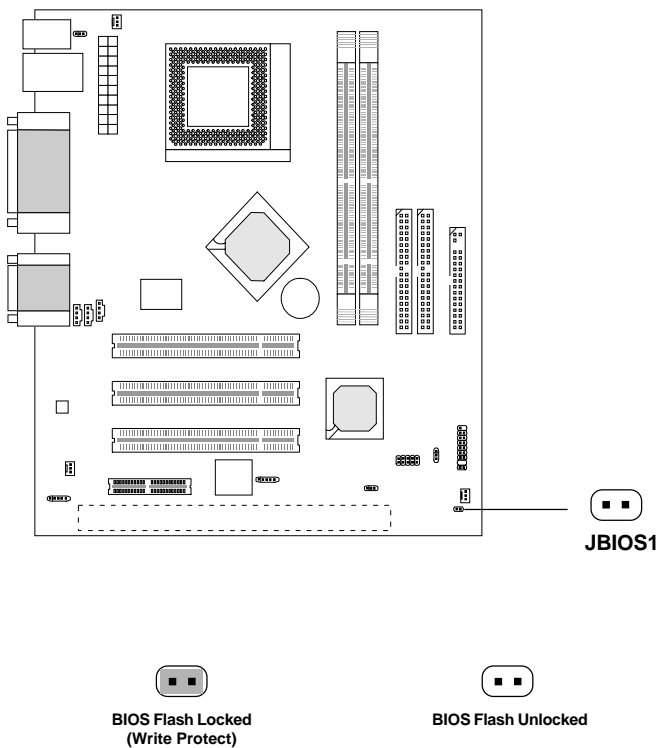


You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

Chapter 2

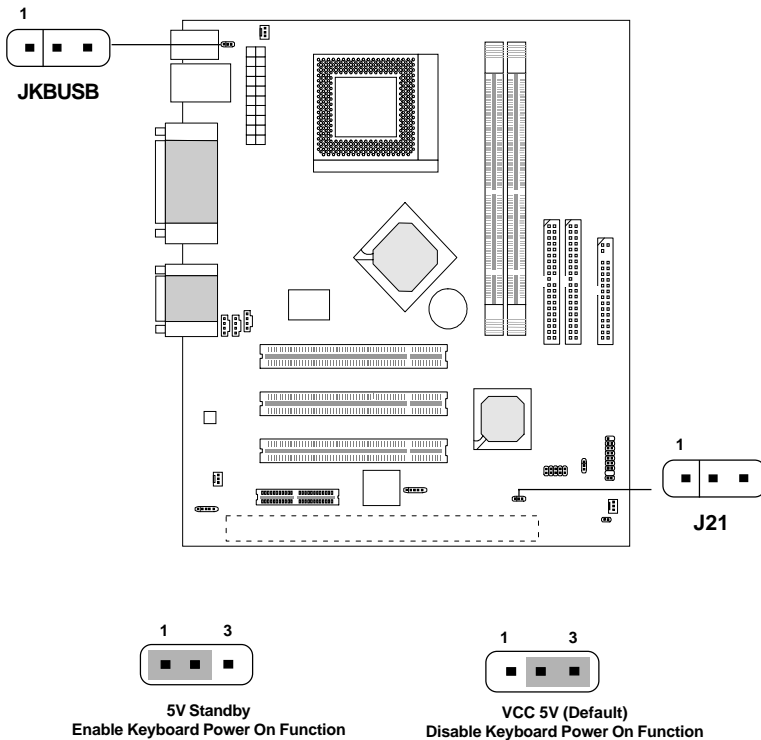
BIOS Flash Jumper: JBIOS1

The jumper is used to lock or unlock the BIOS Flash/Write function. The jumper should be unlocked when flashing/programming the BIOS.



USB Keyboard Wake-up Jumpers: JKBUSB & J21

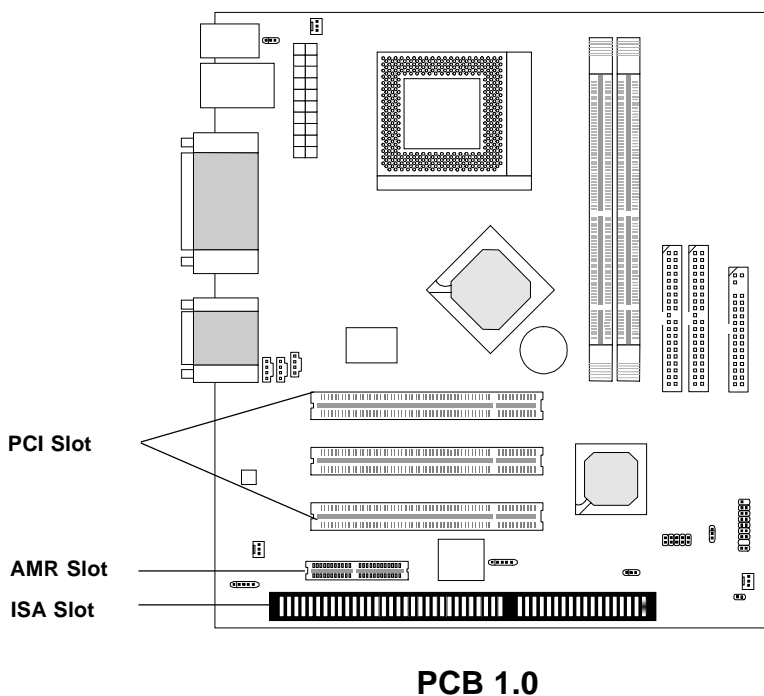
The JKBUSB/J21 jumpers are used to set USB keyboard wake-up function. (Please note JKBUSB is for USB rear ports and J21 is for USB front pin header: USB2) To use the function, you should also go to BIOS to enable the USB keyboard wake-up (power on) function.

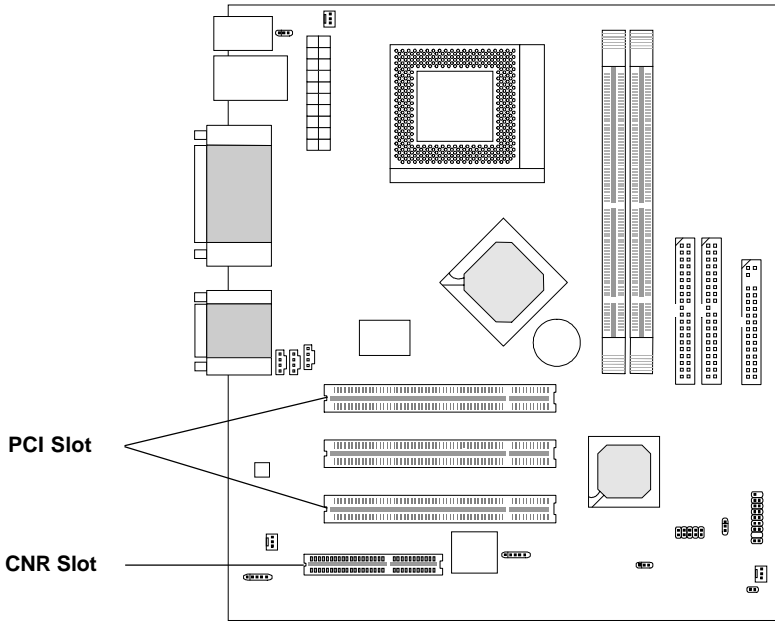


Note: To be able to use this function, you need a power supply that provides enough power for this feature. (Power supply with 750mA 5V Stand-by)

Slots

MS-6368 provides two models (PCB 1.0 and PCB 2.0) that have different slots. PCB 1.0 provides three 32-bit Master PCI Bus Slots, one AMR slot and one ISA slot while PCB 2.0 provides three 32-bit Master PCI Bus Slots and one CNR slot.





PCB 2.0

PCI Slots

Three PCI slots allow you to install expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

AMR (Audio Modem Riser) Slot (PCB 1.0 only)

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

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ISA Slot (PCB 1.0 only)

This slot allows you to install ISA expansion card.

CNR (Communication Network Riser) Slot (PCB 2.0 only)

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

PCI Interrupt Request Routing

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/USB/AC97 IRQ pins are typically connected to the PCI bus INTA#-INTD# pins as follows:

	Order 1	Order 2	Order 3	Order 4
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#
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#