
Hardware Setup

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This chapter provide 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, you should also use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

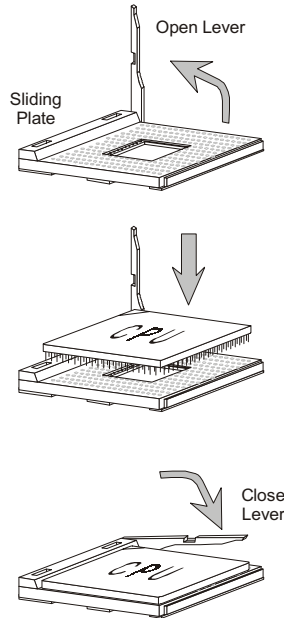
| | |
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Central Processing Unit: CPU

The mainboard supports AMD® Duron™ and Athlon™ processors. The mainboard uses a CPU socket called Socket A for easy CPU installation. Make sure the CPU have 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 cut edge on the corner of CPU. Hold the CPU firmly.
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.

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



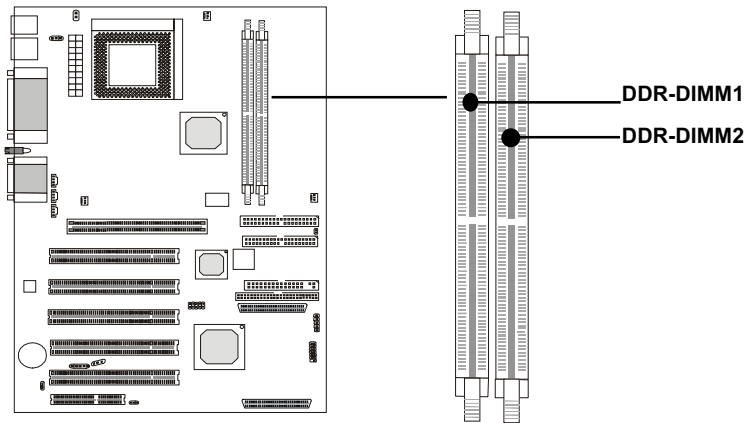
WARNING!

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 2 sockets for 184-pin DDR-DIMM with 4 memory banks. To operate properly, at least one DIMM module must be installed. The mainboard supports the memory size up to 2GB.



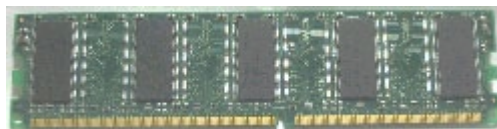
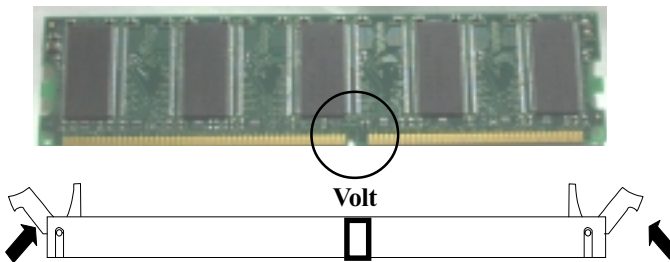
The DRAM Addressing & Size

| 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 Procedure

You can install the single sided or double sided DIMM according to your needs. Different from the SDRAM DIMM, the DDR DIMM has only one notch on the center of module. 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. The DIMM module will be plugged into the slot in one way only.
2. Press the ejector tab at the side of the DIMM slot to fix the installation.



Single Sided DIMM



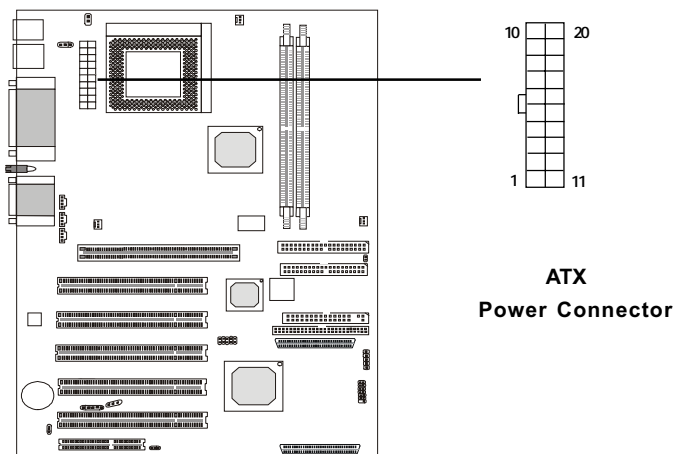
Double Sided DIMM

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.

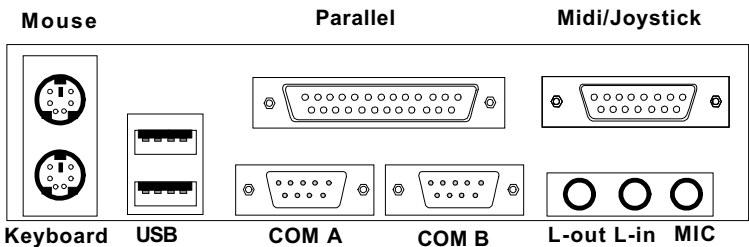
ATX 20-Pin Power Supply

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

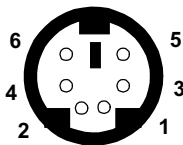
The Back Panel provides the following connectors:



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)



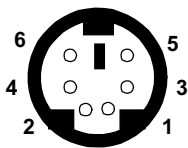
| PIN | SIGNAL | DESCRIPTION |
|-----|-------------|---------------|
| 1 | Mouse DATA | Mouse DATA |
| 2 | NC | No connection |
| 3 | GND | Ground |
| 4 | VCC | +5V |
| 5 | Mouse Clock | Mouse clock |
| 6 | NC | No connection |

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)



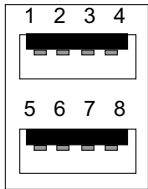
| PIN | SIGNAL | DESCRIPTION |
|-----|----------------|----------------|
| 1 | Keyboard DATA | Keyboard DATA |
| 2 | NC | No connection |
| 3 | GND | Ground |
| 4 | VCC | +5V |
| 5 | Keyboard Clock | Keyboard clock |
| 6 | NC | No connection |

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

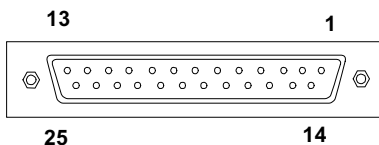


| PIN | SIGNAL | DESCRIPTION |
|-----|---------|-------------------------|
| 1 | VCC | +5V |
| 2 | -Data 0 | Negative Data Channel 0 |
| 3 | +Data0 | Positive Data Channel 0 |
| 4 | GND | Ground |
| 5 | VCC | +5V |
| 6 | +Data 1 | Positive Data Channel 1 |
| 7 | -Data 1 | Negative Data Channel 1 |
|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

USB Port Description

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

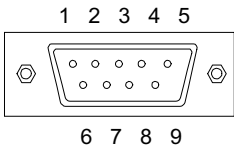
| PIN | SIGNAL | DESCRIPTION |
|-----|-----------|--------------------|
| 1 | STROBE | Strobe |
| 2 | DATA0 | Data0 |
| 3 | DATA1 | Data1 |
| 4 | DATA2 | Data2 |
| 5 | DATA3 | Data3 |
| 6 | DATA4 | Data4 |
| 7 | DATA5 | Data5 |
| 8 | DATA6 | Data6 |
| 9 | DATA7 | Data7 |
| 10 | ACK# | Acknowledge |
| 11 | BUSY | Busy |
| 12 | FE | Paper End |
| 13 | SELECT | Select |
| 14 | AUTOFEED# | 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 port COM A and COM B. You can attach a mouse or other serial devices.

9-Pin Male DIN Connectors

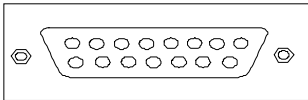


Pin Definition

| 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 |

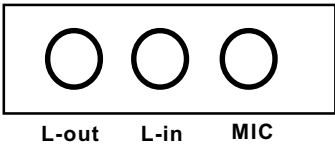
Joystick/Midi Connectors

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.

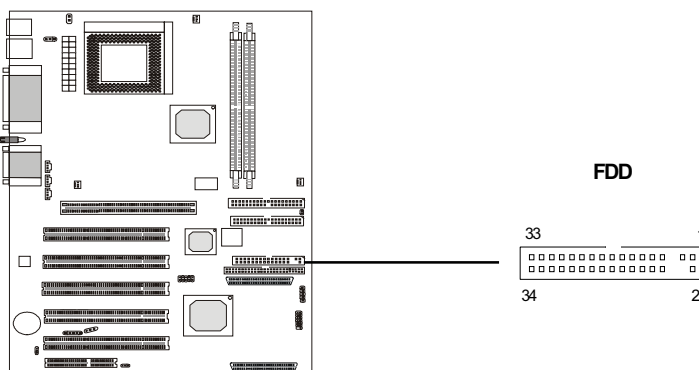


Connectors

The mainboard provides the connectors to connect to FDD, HDD, case, modem, LAN, USB, power saving switch, IR module, CPUFAN, SYSFAN and SCSI interface.

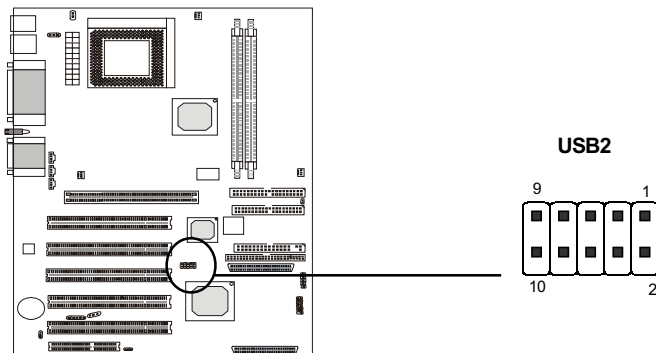
Floppy Disk Drive Connector: FDD

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



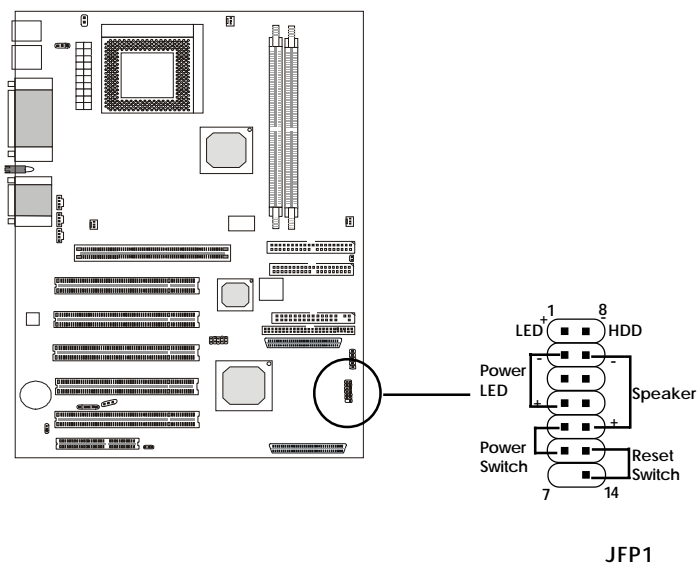
USB Front Connector: USB2

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



Case Connector: JFP1

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



Chapter 2

Power Switch

Connect to a 2-pin push button switch.

Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD is working. 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. When the system enters suspend mode, 3-pin/2-pin LED will blink.

Speaker

Speaker from the system case is connected to this pin.

If on-board Buzzer is available:

Short pin 10-11: On-board Buzzer Enabled.

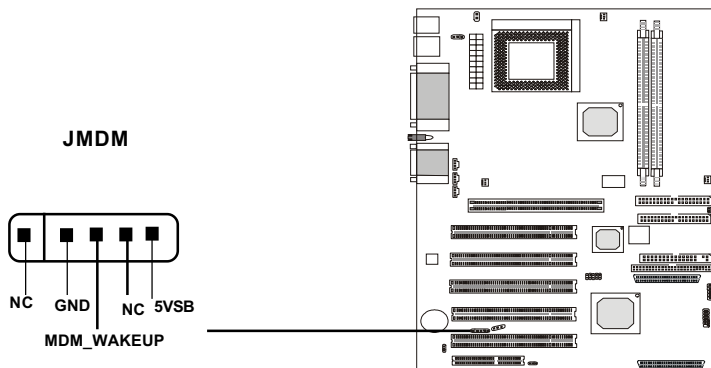
Open pin 10-11: On-board Buzzer Disabled.

HDDLED

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

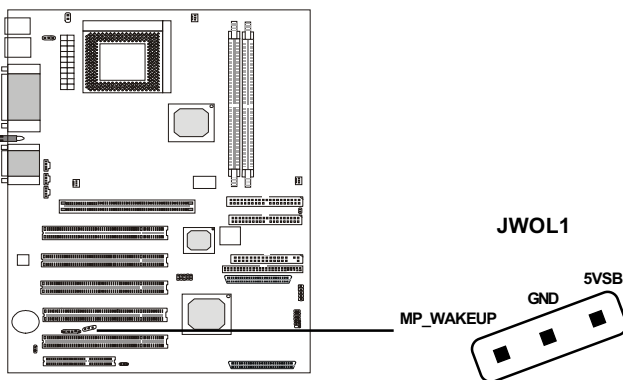
Wake on Ring Connector: JMDM

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.



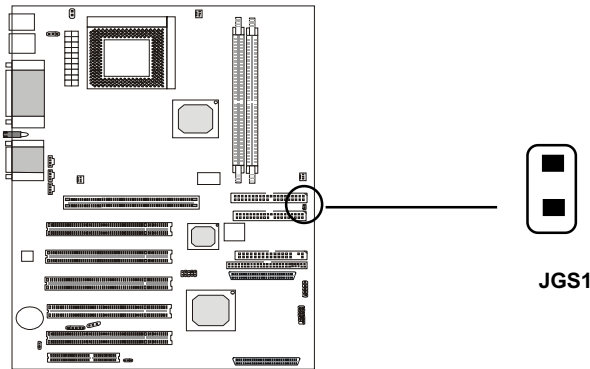
Wake on LAN Connector: JWOL1

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.



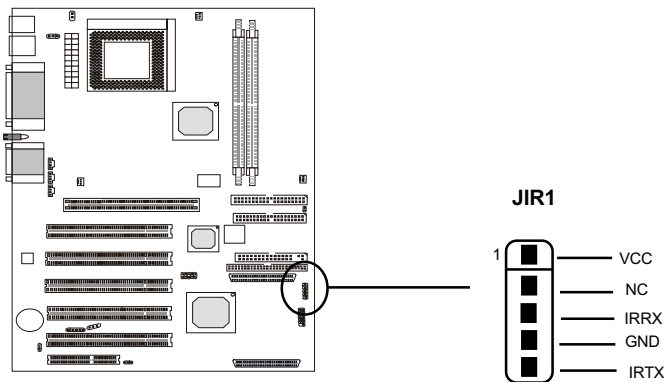
Power Saving Switch Connector: JGS1

This connector allows you to connect to a power saving switch. When the switch is pressed, the system immediately goes into the suspend mode. You can press any key to wake up the system.



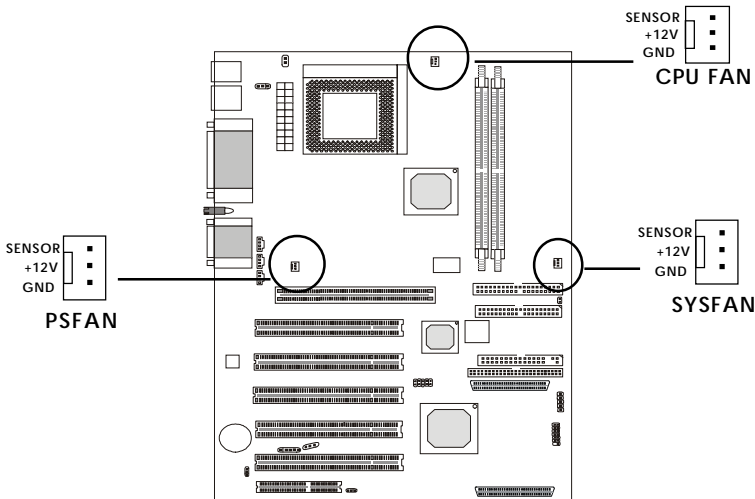
IrDA Infrared Module Connector: JIR1

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



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.



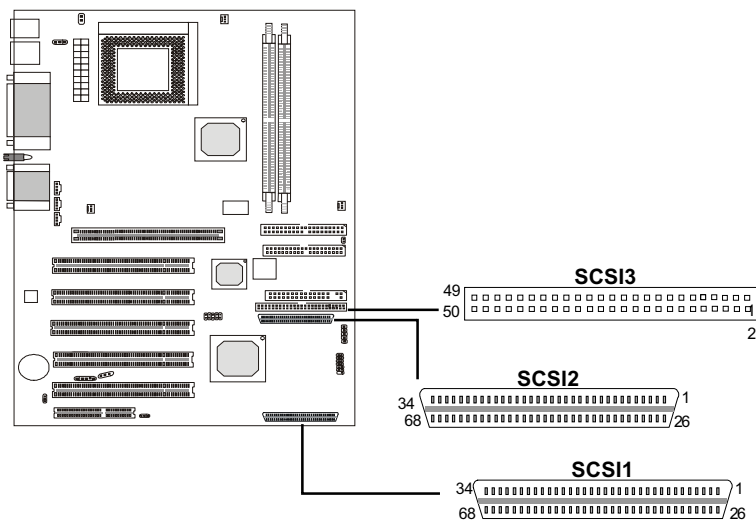
Note:

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.

Chapter 2

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.

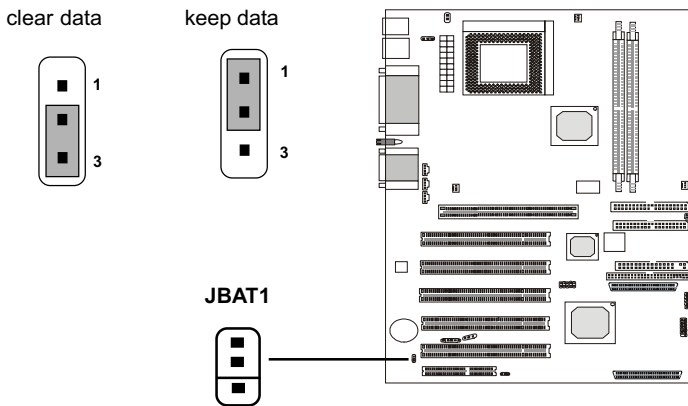


Jumpers

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

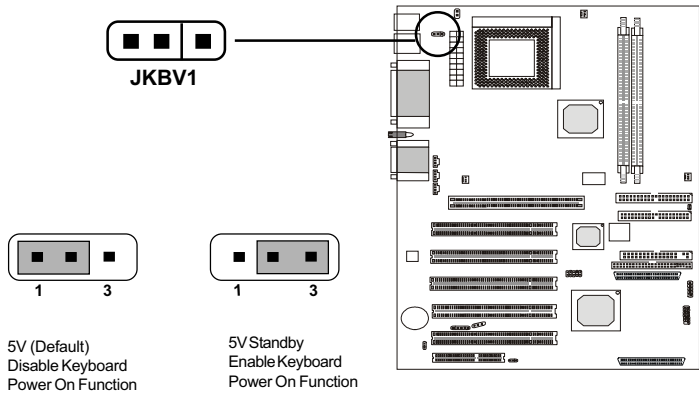
There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time. That battery has long life time for at least 5 years. If you want to clear the system configuration, you can use the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



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.

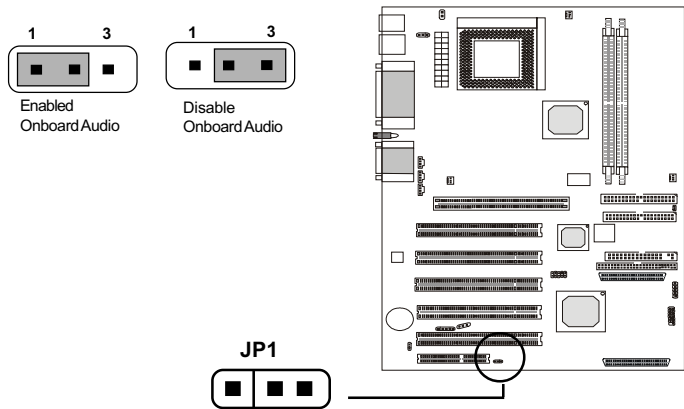
Keyboard Wake-up Jumer: JKBV1

The JKBV1 jumper is for setting PS/2 keyboard wake-up function from S3 (STR) mode.



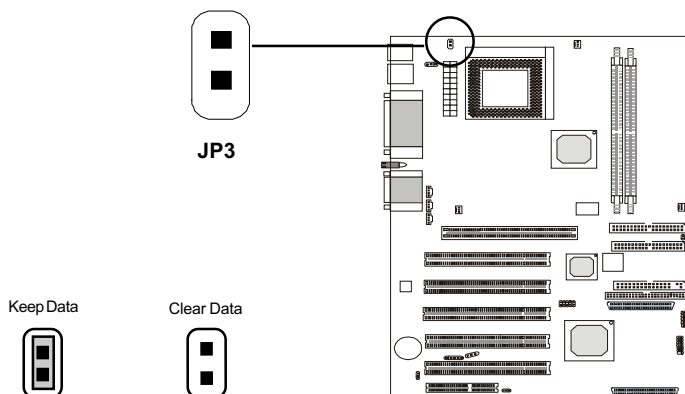
Onboard Audio Enabled/Disabled Jumper: JP1

This jumper is used to Enabled/Disabled the audio on board.



CPU Core Bus Ratio Setting: JP3

This allows you to set the CPU core bus ratio setting. While doing overclocking, setting this switch will let you keep the setting value.



Note:

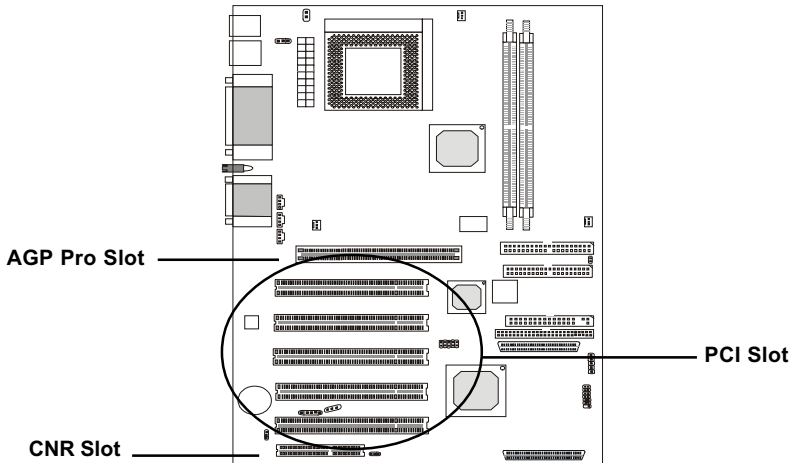
If the ATX power supply is interrupted or has power failure, the BIOS menu will appear the following message when restarting the computer:

"Warning! CPU Ratio and CPU Vcore has been restored to Default Value." "lease press "Delete" to enter SetUp and Remember to Save Before Exit"

The message reminds users that the CPU ratio and vcore has been restored to default value when restarting the computer. The message will disappear only if you enter the Setup menu to reset or use the "load default" and save it before exit.

Slots

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



AGP Pro Slot (Accelerated Graphics Port)

The AGP Pro Slot allows you to insert AGP card.

PCI Slot

The five 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 of 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.

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.

| | Order1 | Order2 | Order3 | Order4 |
|------------|--------|--------|--------|--------|
| AGP | INT B | INT A | INT C | INT D |
| 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 |
| PCI Slot 4 | INT D | INT A | INT B | INT C |
| PCI Slot 5 | INT A | INT B | INT C | INT D |
| SCSI 1 | INT C | INT D | INT A | INT B |
| SCSI 2 | INT D | INT A | INT B | INT C |
| AC97 | INT C | INT D | INT A | INT B |
| USB | INT D | INT A | INT B | INT C |

AGP & PCI2 shared

PCI 1 & PCI 5 shared

PCI 3 & SCSI 1 & AC97 shared

PCI 4 & SCSI 2 & USB shared

PCI 1~ PCI 5: Bus Master

Chapter 2