

Installation Procedures

The mainboard has several user-adjustable jumpers/switches on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various hardware settings on your mainboard.

To set up your computer, you should follow these installation steps:

- [Step 1 - Set system jumpers/switches](#)
- [Step 2 - Install memory modules](#)
- [Step 3 - Install the CPU](#)
- [Step 4 - Install expansion cards](#)
- [Step 5 - Connect devices](#)
- [Step 6 - Set up BIOS features](#)

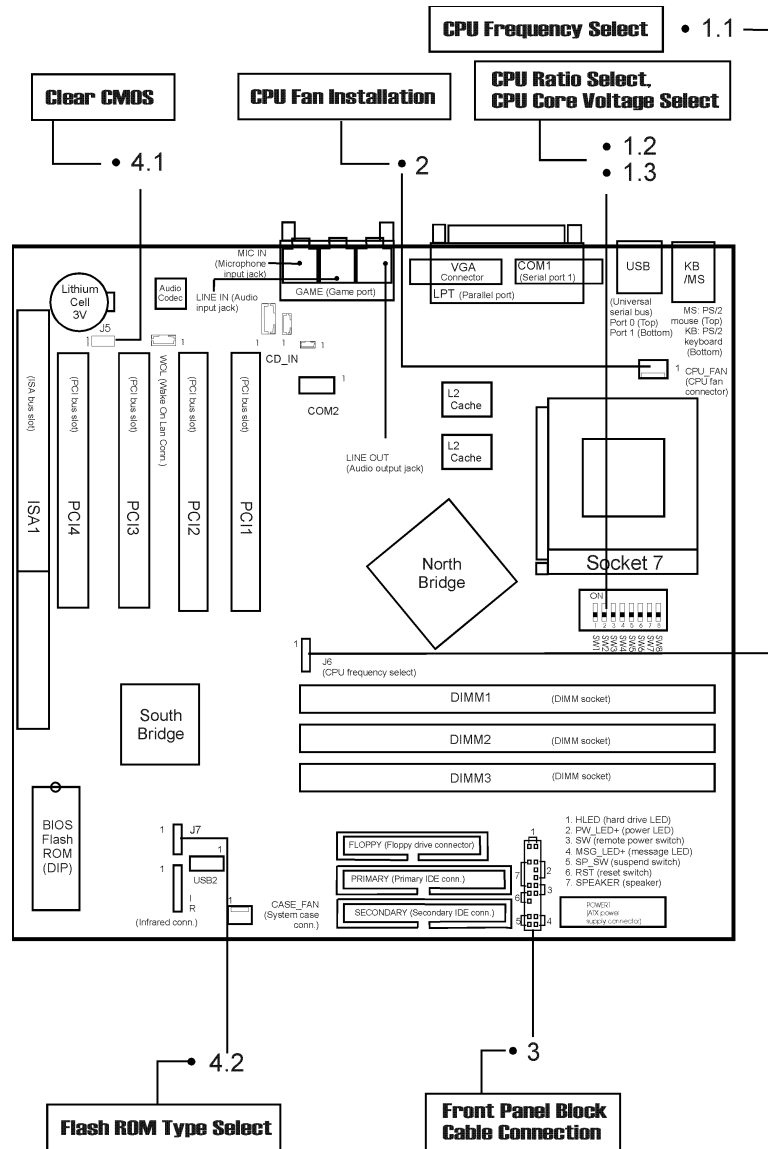


WARNING: If you use an electric drill to install this mainboard on your chassis, please wear a static wrist strap. The recommended electric drill torque is from 5.0 to 8.0 kg/cm to avoid damaging the chips' pins.

PAG-2130



*This Chapter is intended to aid quick and easy installation.
In the event that more detailed information is required, please
consult the Installation Procedures Chapter.*



1.1 J6 (CPU Frequency Select)

1.2 SW1/2/3 (CPU Ratio Select)

NOTE: ON is short, OFF is open

CLOCK (MHz)	1-2	3-4	5-6	7-8
60	OFF	OFF	OFF	OFF
66.8	ON	OFF	OFF	OFF
75	OFF	OFF	OFF	ON
83	OFF	ON	OFF	ON
95.25	OFF	ON	ON	OFF
100	ON	ON	ON	OFF
*105	ON	ON	OFF	ON
*110	OFF	OFF	ON	ON
*115	ON	OFF	ON	ON
*120	OFF	ON	ON	ON
*124	ON	ON	ON	ON

Ratio	SW1	SW2	SW3
1.5/3.5 x	OFF	OFF	OFF
2.0 x	ON	OFF	OFF
2.5 x	ON	ON	OFF
3.0 x	OFF	ON	OFF
4.0 x	ON	OFF	ON
4.5 x	ON	ON	ON
5.0 x	OFF	ON	ON
5.5 x	OFF	OFF	ON

* These settings are not guaranteed by FIC!

1.3 SW4/5/6/7/8 (CPU Core Voltage Select)

CLOCK (MHz)	SW4	SW5	SW6	SW7	SW8
2.1V	ON	OFF	OFF	OFF	OFF
2.2V	OFF	ON	OFF	OFF	OFF
2.3V	ON	ON	OFF	OFF	OFF
2.4V	OFF	OFF	ON	OFF	OFF
2.5V	ON	OFF	ON	OFF	OFF
2.6V	OFF	ON	ON	OFF	OFF
2.7V	ON	ON	ON	OFF	OFF
2.8V	OFF	OFF	OFF	ON	OFF
2.9V	ON	OFF	OFF	ON	OFF
3.0V	OFF	ON	OFF	ON	OFF
3.1V	ON	ON	OFF	ON	OFF
3.2V	OFF	OFF	ON	ON	OFF
3.3V	ON	OFF	ON	ON	OFF
3.4V	OFF	ON	ON	ON	OFF
3.5V	ON	ON	ON	ON	OFF

2). CPU Fan Installation

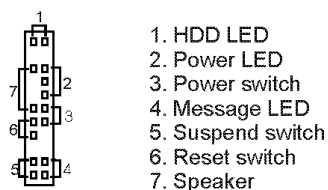
This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full on mode, the fan will turn back on. Without sufficient air circulation, the CPU may overheat and cause damage to both the CPU and the mainboard.



NOTE: Damage may occur to the mainboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

3). Front Panel Block Cable Connection

This connector is linked to the CPU fan. When the system is in suspend mode,



4). Other Enabled/Disabled Jumpers

4.1 J5 (Clear CMOS if not Power On)



4.2 J7 (Flash ROM Type Select)

J7 (Flash ROM Voltage Select)



5).Load BIOS Setup Default

Load BIOS Defaults

BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

Load Setup Defaults

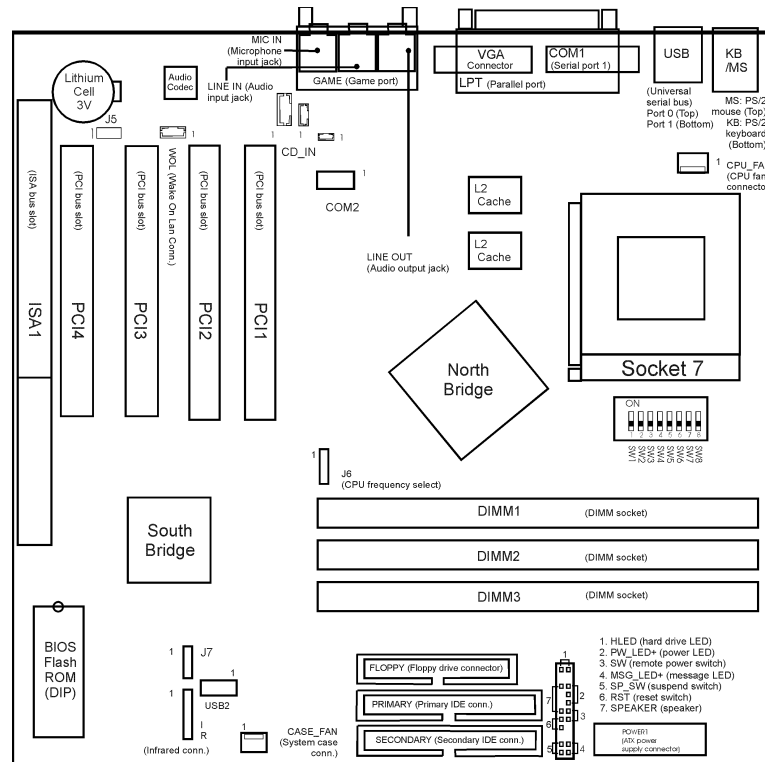
Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

6).How to Upgrade BIOS

1. Format a bootable system floppy diskette by typing **format a:/s** at the command prompt.
2. Visit the the web site of the vendor and visit the BIOS Update page in the related Technical Support section.
3. Select the BIOS file you need and download it to your bootable floppy diskette.
4. Insert the bootable diskette containing the BIOS file into the floppy diskette drive.
5. Assuming that the floppy diskette drive is A, reboot the system by using the A: drive. At the A: > prompt, run the BIOS upgraded file by executing the Flash BIOS utility and the BIOS file with its appropriate extension.

Do not turn off or reset the computer during the flash process or there will be a problem booting up your system.

Mainboard Layout



Chapter 2 Installation Procedures

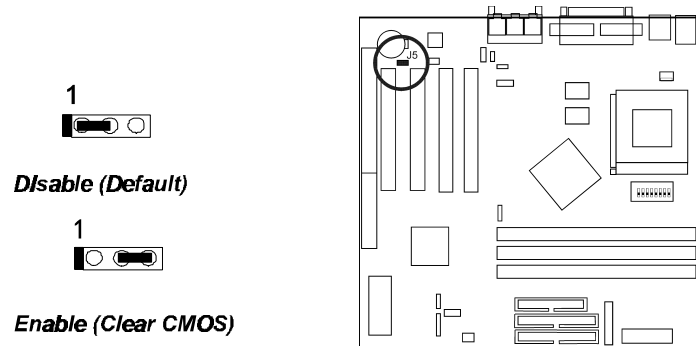
Onboard Mark	FUNCTION	PAGE
J5	Clear CMOS Data	2-9
J7	Flash ROM Type Selection	2-10
DIMM1/2/3	DIMM Memory Module Support	2-11
J6	CPU Internal Frequency Selection	2-14
SW1/2/3	CPU Ratio Selection	2-15
SW4/5/6/7/8	CPU to Bus Frequency Ratio Selection	2-16
PCI1/2/3/4	PCI Bus Expansion Slot (32-bit)	2-17
ISA1	ISA Bus Expansion Slot (16-bit)	2-17
FLOPPY	Floppy Diskette Drive Connector	2-18
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POWER	ATX Power Connector	2-19
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WOL	Wake-On-LAN Connector	2-22
*Front Panel Block Connector	Connectors for LEDs and Switches on Front Panel	2-23
CASE_FAN	Power Supply Fan Connectors	2-24
KB	PS/2 Keyboard Connector	2-25
MS	PS/2 Mouse Connector	2-25
COM1/2	Serial Port	2-25
USB0/1/2	Universal Serial Bus Connector	2-26
IR	Infrared Port Module Connector	2-27
CD_IN	CD-ROM Drive Audio-out Connector	2-27
LPT	Printer Connector	2-28
GAME	Joystick/MIDI Connector	2-28
MIC IN	Audio Microphone Jack	2-29
LINE IN	Audio Line-In Jack	2-29
LINE OUT	Audio Line-Out Jack	2-29

* includes IDE LED, power LED, remote power button, message LED, suspend button, reset button and speaker (See Page 2-23 for more information.)

1). Set System Jumpers/Switches

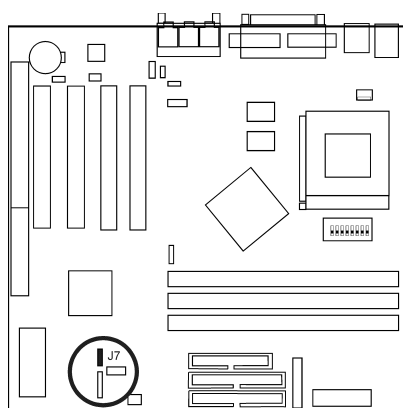
Clear CMOS: J5

The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1). Turn off your computer, (2). Enable this feature by placing the jumper cap to 2-3 pins on J5, or (3). Disable this feature by placing the jumper cap to 1-2 pins on J5, (4). Turn on the computer, (5). Hold down the Delete key when boots and enter BIOS Setup to re-enter user preferences.



Flash ROM Type Selection: J7

This jumper allows you to configure the type of flash ROM chip. This jumper setting is correct by manufactory default. If you want to know the flash ROM type installed on this mainboard, remove the sticker from the chip to see its type.



2). Install RAM Modules

RAM Module Configuration

PC100 modules may have a serial EEPROM containing a number of critical timing parameters and data regarding the chip and module vendor. This guarantees that the VIA MVP4 chipset will properly recognize the module by reading all of the important timing parameters specified in the EEPROM over the serial presence detect interface. The module supplier must understand these differences in detail and provide the correct information so that the VIA MVP4 chipset will be programmed properly to control the memory.

This mainboard provides three onboard DIMM sockets for allowing only 3.3V (unbuffered) SDRAM DIMM modules and supports DIMMs with data access time of 12ns, 10ns, 8ns or less. ECC memory and parity check are also supported. If DIMM runs at the speed of 100MHz, it must meet the PC100 Specification. Either 8, 16, 32, 64, 128MB, or 256MB DIMM can be installed on these three sockets. (Please use the same memory sizes of DIMM on each socket for better performance.) The maximum total memory supported is up to 768MB.

<i>Socket</i>	<i>Acceptable Memory Module</i>		<i>Total Memory</i>
1	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	
2	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	
3	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	

Total System Memory allowed up to 768MB =



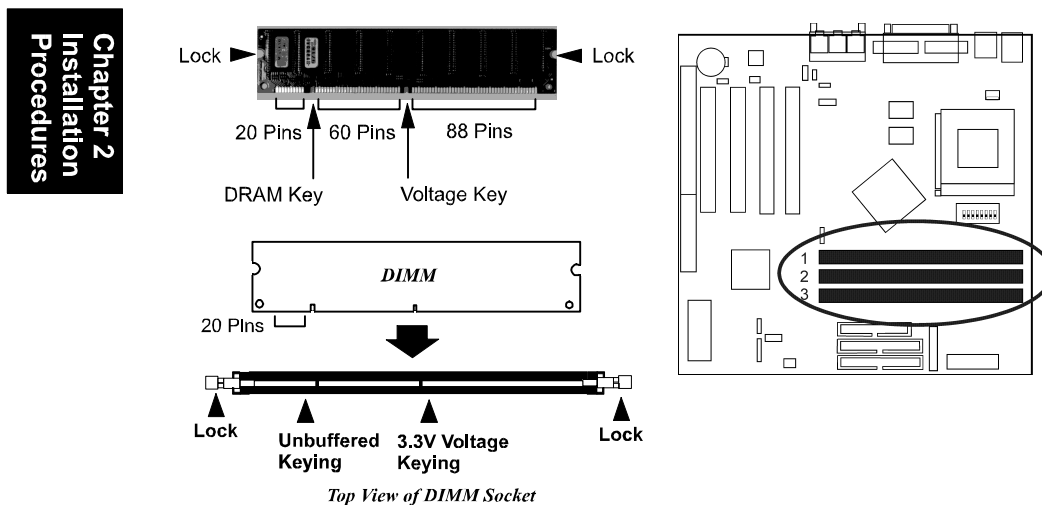
NOTE: The latest Virtual Channel Memory (VCM) SDRAM is also supported on this mainboard. Thus with the use of VCM-SDRAMs, memory performance can be greatly enhanced.

Install and Remove DIMMs

This mainboard supports 100MHz SDRAM DIMMs; when the system frequency set to 100MHz, PC100-compliant SDRAM should be used.

Complete the following procedures to install DIMMs:

1. Locate the DIMM slots on the mainboard.



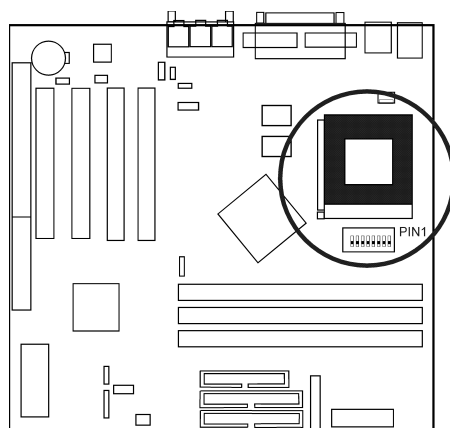
2. Install the DIMM straight down into the DIMM slot with both hands.
3. The clips of the slot will close up to hold the DIMM in place when the DIMM touches the slot's bottom.



Press the clips with both hands to remove the DIMM.

3). Install the CPU

The CPU module resides in the Zero Insertion Force (ZIF) socket on the motherboard.



WARNING:

1. Always turn the system power off before installing or removing any device.
2. Always observe static electricity precautions.
3. See “Handling Precautions” at the start of this manual.

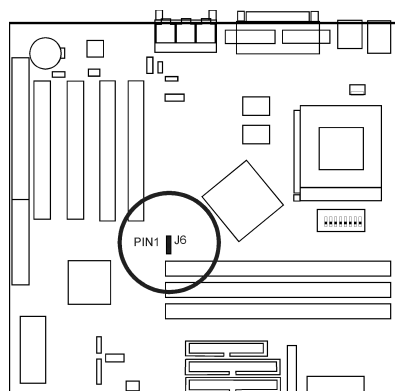
Inserting the CPU chip incorrectly may damage the chip.

To install the CPU, do the following:

1. Lift the lever on the side of the CPU socket.
2. Handle the chip by its edges and try not to touch any of the pins.
3. Place the CPU in the socket. The chip has a notch to correctly locate the chip. Align the notch with pin one of the socket. Pin one is located in the blank triangular area. Do not force the chip. The CPU should slide easily into the socket.
4. Swing the lever to the down position to lock the CPU in place.

CPU Internal Frequency Selection: J6

These eight pins in four rows are used to decide the internal frequency of the CPU.

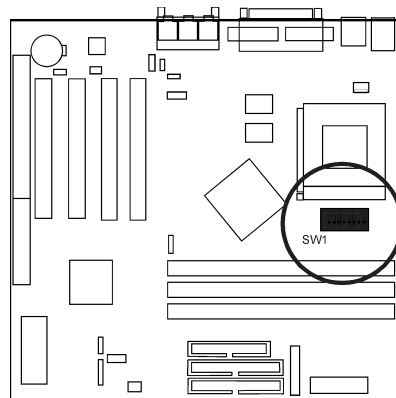


Note: ON is short; OFF is open

CPU (MHz)	PCI (MHz)	1-2	3-4	5-6	7-8
124.00	41.33	ON	ON	ON	ON
120.00	40.00	OFF	ON	ON	ON
114.99	38.33	ON	OFF	ON	ON
109.99	36.66	OFF	OFF	ON	ON
105.00	35.00	ON	ON	OFF	ON
100.00	33.33	ON	ON	ON	OFF
97.00	32.33	OFF	OFF	ON	OFF
83.31	27.77	ON	OFF	ON	OFF
75.00	37.50	OFF	OFF	OFF	ON
70.00	35.50	OFF	ON	OFF	OFF
66.82	33.41	ON	OFF	OFF	OFF
60.00	30.00	OFF	OFF	OFF	OFF

CPU Ratio Selection: SW1/2/3

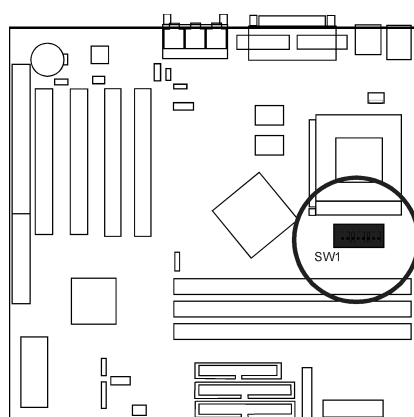
These three switches are used in combination to decide the ratio of the internal frequency of the CPU to the bus clock.



<i>Ratio</i>	<i>SW1</i>	<i>SW2</i>	<i>SW3</i>
<i>1.5/3.5 x</i>	<i>OFF</i>	<i>OFF</i>	<i>OFF</i>
<i>2.0 x</i>	<i>ON</i>	<i>OFF</i>	<i>OFF</i>
<i>2.5 x</i>	<i>ON</i>	<i>ON</i>	<i>OFF</i>
<i>3.0 x</i>	<i>OFF</i>	<i>ON</i>	<i>OFF</i>
<i>4.0 x</i>	<i>ON</i>	<i>OFF</i>	<i>ON</i>
<i>4.5 x</i>	<i>ON</i>	<i>ON</i>	<i>ON</i>
<i>5.0 x</i>	<i>OFF</i>	<i>ON</i>	<i>ON</i>
<i>5.5 x</i>	<i>OFF</i>	<i>OFF</i>	<i>ON</i>

CPU Core Voltage Selection: SW4/5/6/7/8

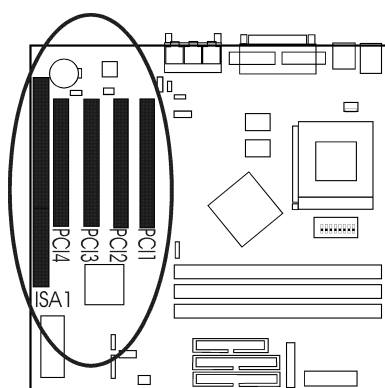
This section lists all possible CPU voltages that this board supports. There are five rows of CPU voltage (core voltage) switch setting in the diagram below.



CLOCK (MHz)	SW4	SW5	SW6	SW7	SW8
2.1V	ON	OFF	OFF	OFF	OFF
2.2V	OFF	ON	OFF	OFF	OFF
2.3V	ON	ON	OFF	OFF	OFF
2.4V	OFF	OFF	ON	OFF	OFF
2.5V	ON	OFF	ON	OFF	OFF
2.6V	OFF	ON	ON	OFF	OFF
2.7V	ON	ON	ON	OFF	OFF
2.8V	OFF	OFF	OFF	ON	OFF
2.9V	ON	OFF	OFF	ON	OFF
3.0V	OFF	ON	OFF	ON	OFF
3.1V	ON	ON	OFF	ON	OFF
3.2V	OFF	OFF	ON	ON	OFF
3.3V	ON	OFF	ON	ON	OFF
3.4V	OFF	ON	ON	ON	OFF
3.5V	ON	ON	ON	ON	OFF

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system's expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities. This mainboard features **one 16-bit ISA bus**, and **four 32-bit PCI bus** expansion slots.



To install an expansion card, do the following:

1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.
3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.
4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this “rocking” motion until the add-on card is firmly seated inside the expansion slot.
5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.
6. Replace the computer system’s cover.
7. Setup the BIOS if necessary.
8. Install the necessary software drivers for the expansion card.

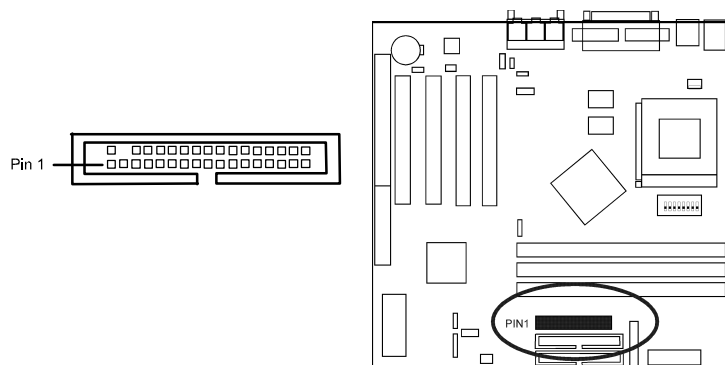
5). Connect Devices

Connectors to Internal Devices

Floppy Diskette Drive Connector: FLOPPY

This connector provides the connection with your floppy disk drive.

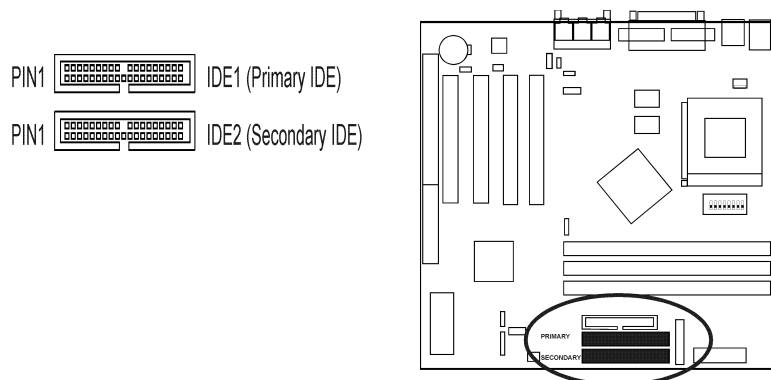
The red stripe of the ribbon cable must be the same side with the Pin 1.



IDE HDD Device Connectors: PRIMARY, SECONDARY

These two connectors are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives.

The red stripe of the ribbon cable must be the same side with the Pin 1.





CPU Fan Connector: CPU_FAN

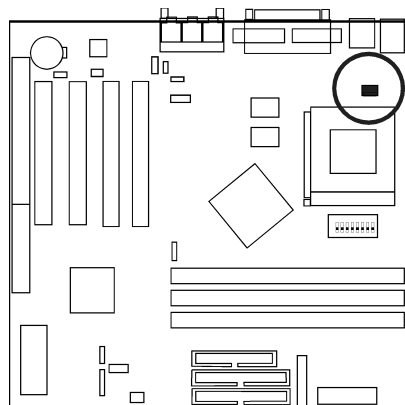
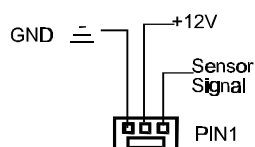
This connector is linked to the CPU fan for cooling the processor temperature. When the system enters the suspend mode, the CPU fan will shut off. Please read the CPU fan installation guide before connection.



WARNING: (Especially for AMD K6-2/III CPUs)
Higher performance processor and mainboards require better heatsinks to solve increasingly crucial thermal dissipation issue.

Please check the following website for AMD recommended list of thermal solution providers.
<http://www1.amd.com/products/cpg/thermals/>

Please make sure that you use proper cooling equipment to ensure the health and performance of your system. (Please read next page for further information.)



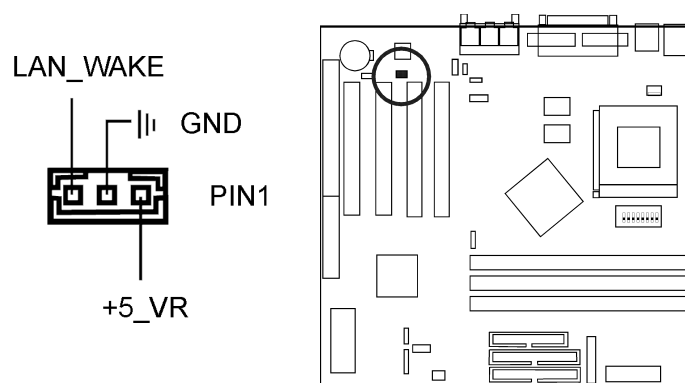
Installation Procedures

The table below was partly abstracted from the above-mentioned website for your convenience.

Manufacture	Contact Tel No.	Manufacture	Contact Tel No.
A & P Technology	408-260-9876	PC Power&Cooling	760-931-5700
Aavid	603-666-4100	Pentalpha Group	510-656-7100 886-2-8665-3248
ACT-RX	512-333-2375 886-2-2218-8000	Quality Computers	626-960-1933 626-337-5025
AVC	310-783-5480 886-2-2299-6929	RSI	512-386-7500
Cofan	510-490-7533	Siblings Investment	510-668-0368
Cooler Master	510-770-8566	Spring Spread	886-2-2847-3050
Coolsys	512-452-2100	Suria Computer	949-851-0596
Cosmotech Computer Corp.	913-888-7000 886-2-2207-0318 909-598-8188	TelTec	612-854-9177
Dynatron	510-498-8888 886-2-2881-8199	TennMax	781-944-3293 886-2-2695-4137
Elan Vital	886-3-460-2910	Thermalloy	972-243-4321
Global Win	408-747-1349 886-2-2881-7388	Titan	626-930-1822
Hoshino	408-526-1200 81-2-7778-6141	Tsuyama Kabushiki	408-526-1200
Jetart Tech	886-2-2695-2398	Wakefield	781-406-3071
Micro Labs	626-810-8100		

Wake-On-LAN Connector: WOL

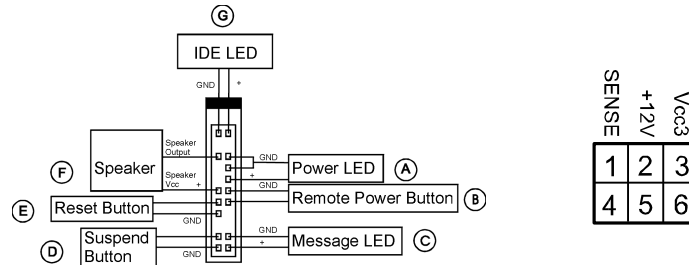
This 3-pin connector allows remote LAN servers to manage the system that installed this mainboard via a network adapter that also supports WOL. When you install a adapter with WOL connector, please read the network adapter card's installation guide for details.



Connectors to System Case

Front Panel Block Connector

This block connector concludes the connectors for linking with IDE LED, power LED, remote power button, message LED, suspend button, reset button and speaker on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wires' polarities of this buttons will not affect the function.



Power LED (A) is connected with the system power indicator to indicate whether the system is on/off. When the system enter the suspend mode, it blinks.

Remote Power Button (B) is connected with remote power (soft power) switch. Push this switch will turn off and on the system instead of turning the power switch on the power supply.

Message LED (C) is connected with the message LED. When the system is running normally, the indicator is off. It is controlled by the operating system or application software.

Suspend Button (D) is connected with suspend mode switch.

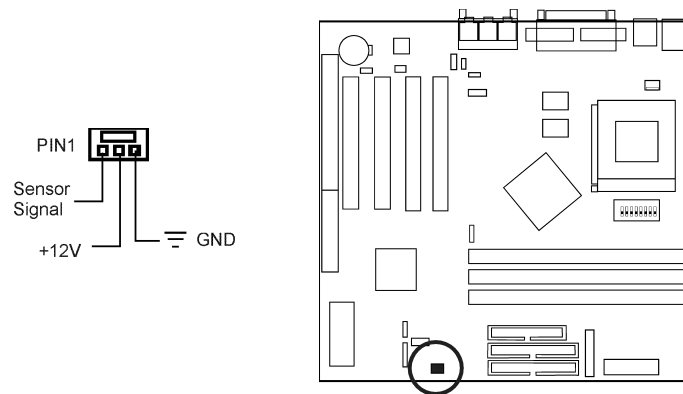
Reset Button (E) is connected to the reset switch. Push this switch to reboot the system instead of turning power switch off and on.

Speaker (F) is connected with the case speaker.

IDE LED (G) is connected IDE device indicator. This LED will blink when the hard disk drives are activated.

System Case Fan Connector: CASE_FAN

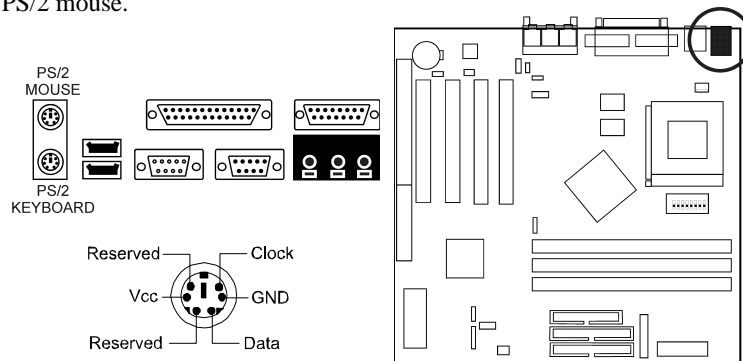
This 3-pin connector links to your cooling fan on the system case to lower the system temperature.



Connectors to External Devices

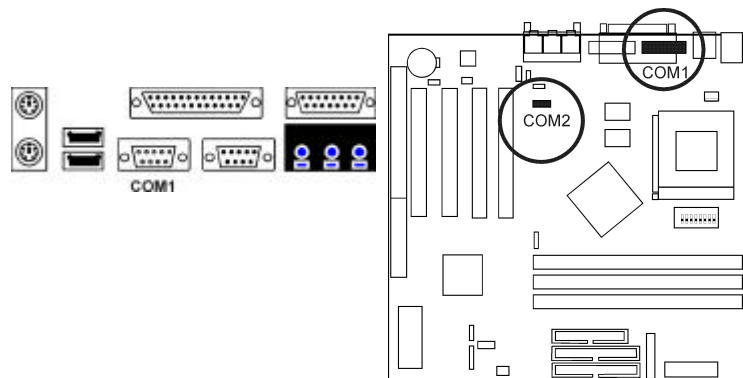
PS/2 Keyboard and Mouse Connector: KB, MS

These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse.



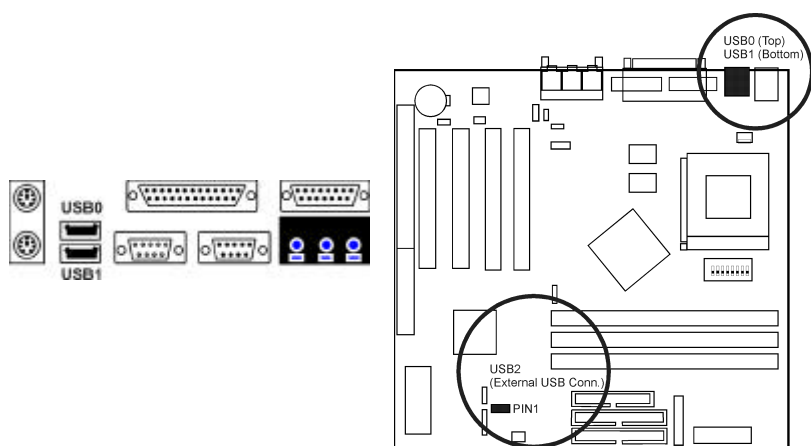
Serial Port Connectors: COM1, COM2

The COM1 9-pin D-Sub male connector allows you to connect devices that use serial ports, such as a serial mouse or a modem. The additional ribbon cable with 9-pin D-Sub male connector is used for connecting to COM2.

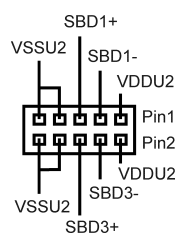


Universal Serial Bus Connectors: USB0, USB1, USB2

These two connectors that integrated on the edge of the board are used for linking with USB peripheral devices. Also, this board provides an connector USB2 for linking with the USB socket on the front panel of some system cases. If this connector is onboard and is used, the USB0 connector is disabled. Your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.

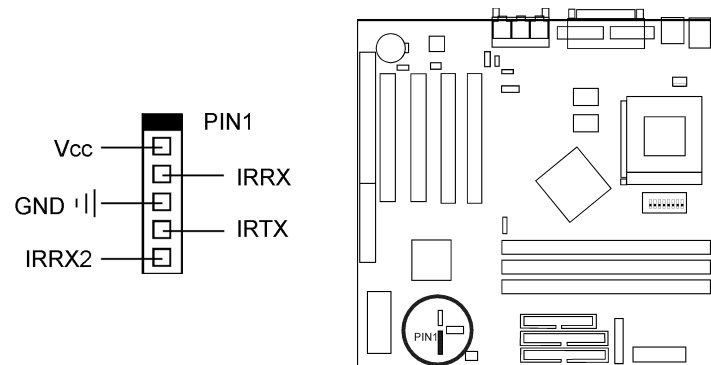


The figure below is the pin assignment of the manufacturing optional USB2 connector for front panel USB connection.



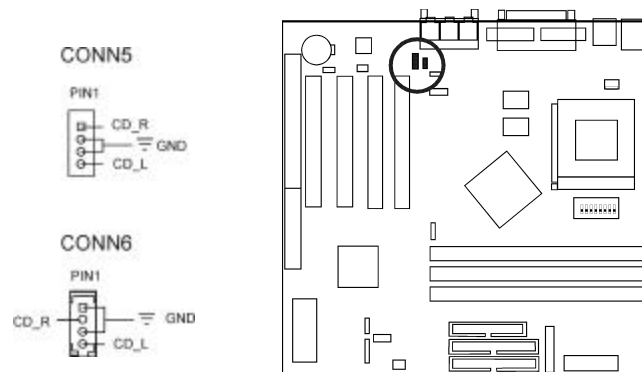
Infrared Connector: IR

This 5-pin connector is used to link with your IR device.



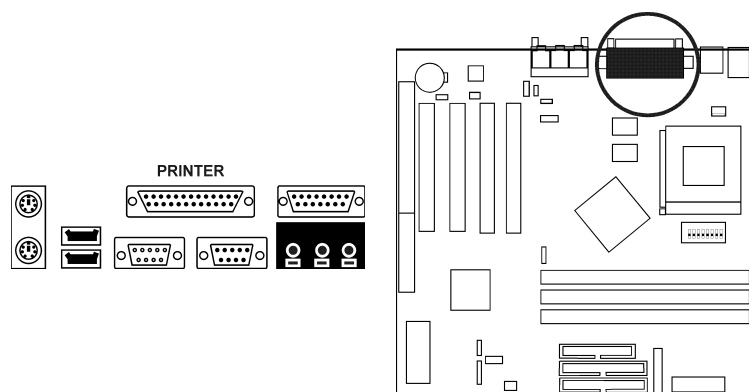
CD-ROM Drive Audio-out Connector: CD_IN

These 4-pin block connectors are linked to the AUDIO_OUT port of your CD-ROM drive by a cable which comes with it. Read the CD-ROM drive manual for detailed installation instructions.



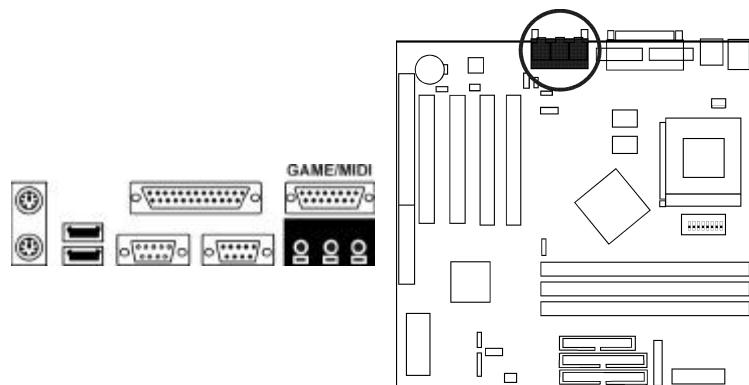
Printer Connector: LPT

This 25-pin D-Sub female connector is attached to your printer.



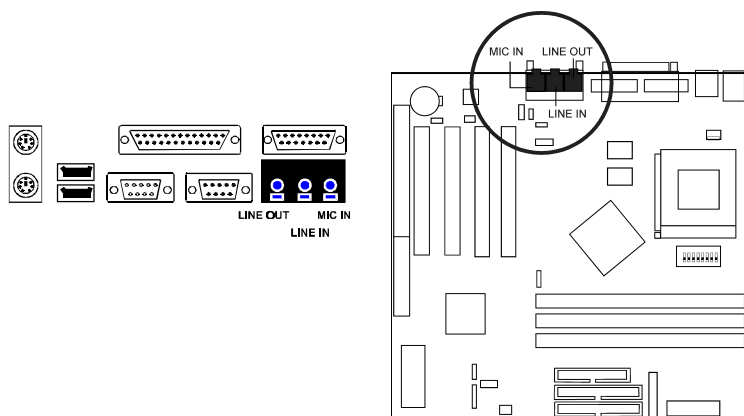
Joystick/MIDI Connector: GAME

This 15-pin female connector allows you to connect game joysticks or game pads for playing games. Connect MIDI devices for playing or editing audio.



Audio I/O Jacks: MIC IN, LINE IN, LINE OUT

LINE OUT can be connected to headphones or preferably powered speakers. LINE IN allows tape players or other audio sources to be recorded by your computer or played through LINE OUT. MIC IN allows microphones to be connected for input voice.



NOTE: The mainboard does not support Pre-AMP function. An external amplifier is necessary for LINE OUT.

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