

Installation Procedures

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

To set up your computer, you must complete the following steps:

- Step 1 - Set system jumpers
- Step 2 - Install system RAM modules
- Step 3 - Install the Central Processing Unit (CPU)
- Step 4 - Install expansion cards
- Step 5 - Connect ribbon cables, cabinet wires, and power supply
- Step 6 - Set up BIOS software (see Chapter Three)
- Step 7 - Set up supporting software tools



WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

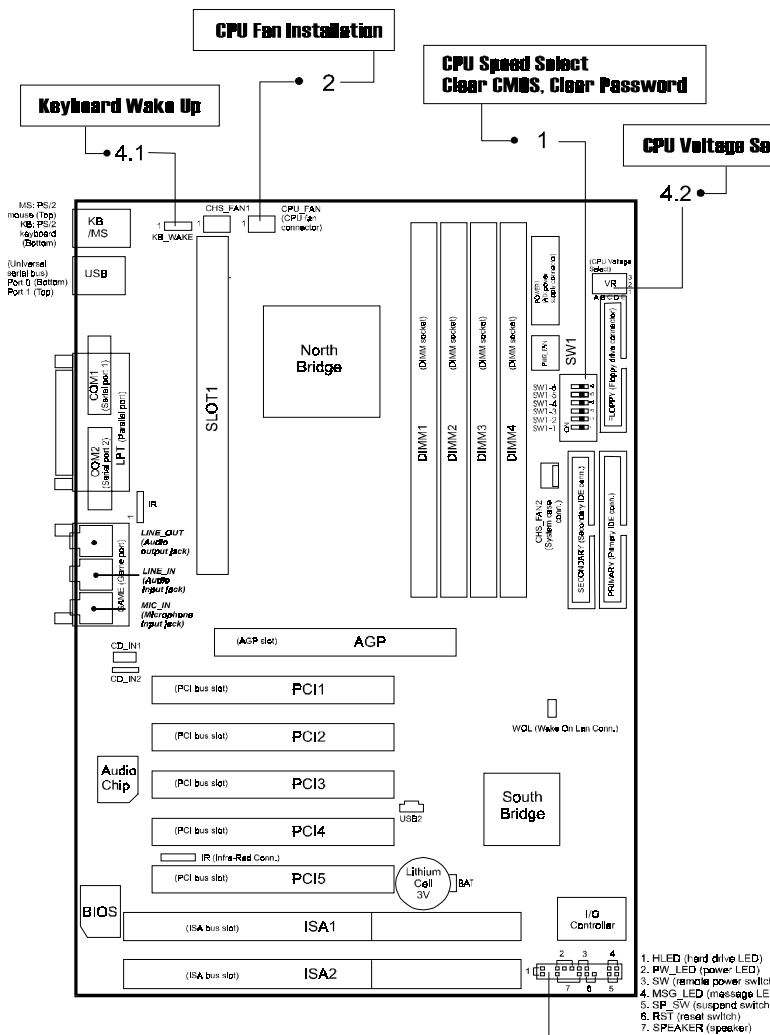
Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the mainboard's sensitive components, you should follow some precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.



QUICK REFERENCE

*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.*



Chapter 2
Installation
Procedures

- 1. HLED (hard drive LED)
- 2. PW_LED (power LED)
- 3. SW (remote power switch)
- 4. MMS_LED (message LED)
- 5. SP_SW (suspend switch)
- 6. RST (reset switch)
- 7. SPEAKER (speaker)

1). CPU Speed Select, Clear CMOS, Clear Password

CPU Speed (Hz)			SW1-1	SW1-2	SW1-3	SW1-4
133M	100M	66M				
466M	350M	233M	ON	ON	OFF	OFF
533M	400M	266M	ON	OFF	ON	ON
600M	450M	300M	ON	OFF	ON	OFF
667M	500M	333M	ON	OFF	OFF	ON
733M	550M	366M	ON	OFF	OFF	OFF
800M	600M	400M	OFF	ON	ON	ON
866M	650M	433M	OFF	ON	ON	OFF
933M	700M	466M	OFF	ON	OFF	ON
1G	750M	500M	OFF	ON	OFF	OFF
1066M	800M	533M	OFF	OFF	ON	ON

SW1-5 (Clear CMOS)

SW1-6 (Clear Password)



Enable (Clear CMOS)



Disable (Default)



Enable (Clear Password)



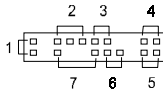
Disable (Default)

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.

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



1. HDD LED
2. Power LED
3. Remote Power Switch
4. Message LED
5. Suspend Switch
6. Reset Switch
7. Speaker

4). Other Enabled/Disabled Jumpers

4.1 KB_WAKE (Keyboard Wake Up)



Enable



Disable



WARNING: The table below provides users with the jumper settings if they want to set CPU voltage for overclocking. Before set this jumper, please check the CPU specification to avoid CPU damage.

4.2 VR (CPU Voltage Select)

Default Settings: Pin cap set at pin pair 2-3 for automatic detection of CPU voltage

CPU Voltage	A	B	C	D	E
1.3V	-	-	-	-	1-2
1.35V	1-2	-	-	-	1-2
1.4V	-	1-2	-	-	1-2
1.45V	1-2	1-2	-	-	1-2
1.5V	-	-	1-2	-	1-2
1.55V	1-2	-	1-2	-	1-2
1.6V	-	1-2	1-2	-	1-2
1.65V	1-2	1-2	1-2	-	1-2
1.7V	-	-	-	1-2	1-2
1.75V	1-2	-	-	1-2	1-2
1.8V	-	1-2	-	1-2	1-2
1.85V	1-2	1-2	-	1-2	1-2
1.9V	-	-	1-2	1-2	1-2
1.95V	1-2	-	1-2	1-2	1-2

<i>CPU Voltage</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
2.0V	-	1-2	1-2	1-2	1-2
2.05V	1-2	1-2	1-2	1-2	1-2
2.1V	1-2	-	-	-	-
2.2V	-	1-2	-	-	-
2.3V	1-2	1-2	-	-	-
2.4V	-	-	1-2	-	-
2.5V	1-2	-	1-2	-	-
2.6V	-	1-2	1-2	-	-
2.7V	1-2	1-2	1-2	-	-
2.8V	-	-	-	1-2	-
2.9V	1-2	-	-	1-2	-
3.0V	-	1-2	-	1-2	-
3.1V	1-2	1-2	-	1-2	-
3.2V	-	-	1-2	1-2	-
3.3V	1-2	-	1-2	1-2	-
3.4V	-	1-2	1-2	1-2	-
3.5V	1-2	1-2	1-2	1-2	-

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.

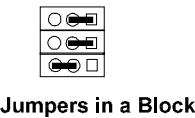
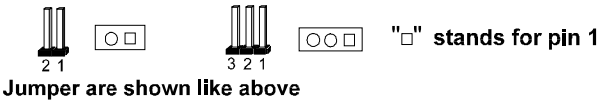
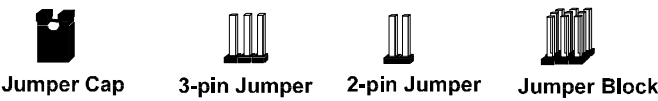
6). How to Upgrade BIOS

1. Format a bootable system floppy diskette by typing the command **format a:/s** in command mode.
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. The CD-Pro contained in the package with this mainboard provides the flash utility in the subdirectory: **\utility\flash**. (If your BIOS is Award, the subdirectory **\utility\flash\Award**. If BIOS is AMI, the subdirectory **\utility\flash\AMI**.) You need copy the flash tool to the bootable diskette.
5. Insert the bootable diskette containing the BIOS file into the floppy diskette drive.
6. 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.

1). Set System Jumpers

Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A “1” is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A jumper is said to be **shorted** when the black cap has been placed on one or two of its pins. The types of jumpers used in this manual are shown below:



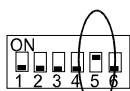
NOTE: Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

[illegible]

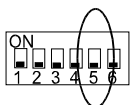
ONBOARD MARK	MEANING	PAGE
<i>Jumpers</i>		
SW1-5	Clear CMOS Data	2 - 12
SW1-6	Clear Password	2 - 12
KB_WAKE	Keyboard Wake-Up Feature Enable	2 - 13
<i>Slots</i>		
DIMM1/2/3/4	DIMM Memory Module Support	2 - 13
SLOT1	CPU Cartridge Slot	2 - 15
PCI1/2/3/4/5	PCI Bus Expansion Slot	2 - 18
ISA1/2	ISA Bus Expansion Slot	2 - 18
AGP	AGP Bus Expansion Slot	2 - 18
<i>Connectors</i>		
FLOPPY	Floppy Diskette Drive Connector	2 - 20
PRIMARY, SECONDARY	IDE HDD Device Connectors	2 - 20
POWER	ATX Power Connector	2 - 21
CPU_FAN	CPU Fan Connector	2 - 22
CHS_FAN1/2	System Case Fan Connectors	2 - 22
WOL	Wake on LAN Connector	2 - 23
CHASSIS	System Chassis Intrusion Alarm	2 - 23
IR	Infrared Port Module Connector	2 - 24
CD_IN1/2	CD Audio-Out Connector	2 - 24
PWR_FAN	Power Fan Connector	2 - 25
FPNL	Connectors for Front Panel LEDs and Switches on Front Panel	2 - 26
KB, MS	PS/2 Keyboard and Mouse Connector	2 - 27
USB0/1, USB2	Universal Serial Bus Connectors	2 - 27
LPT	Printer Connector	2 - 28
COM1/2	Serial Port Connector	2 - 28
GAME	Joystick/MIDI Device Connector	2 - 29
LINE_OUT, LINE_IN, MIC_IN	Audio I/O Jacks	2 - 29

Clear CMOS: SW1-5

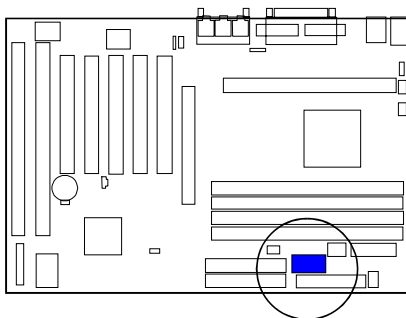
The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer. (2) Move the CMOS Clear switch SW1-5 to “On” (Enabled). (3) Turn on your computer to display “CMOS checksum error”. (4) Turn off your computer. (5) Move the CMOS Clear switch SW1-5 to “Off” (Disabled). (6) Turn on your computer. (7) Hold down the **Delete** key when boots. (8) Enter the BIOS Setup to re-enter user preferences.



Enable
(Clear CMOS)

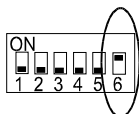


Disable (Default)

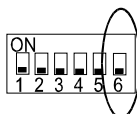


Clear Password: SW1-6

This switch allows you to enable or disable the password configuration. You may need to enable this switch by moving it to the “On” (Enabled) position if you forget your password. To clear the password setting: (1) Turn off your computer. (2) Move the Clear Password switch SW1-6 to “On” (Enabled). (3) Turn on your computer. (4) Hold down the **Delete** key during bootup and enter BIOS Setup to re-enter user preferences. (5) Turn off your computer, (6) Move the Clear Password switch SW1-6 to “Off” (Disabled). (7) Turn on your computer for the new settings to take effect.



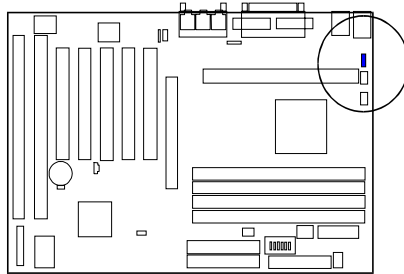
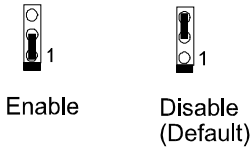
Enable
(Clear Password)



Disable (Default)

Enabling Keyboard Wake-Up Feature: KB_WAKE

The 3-pin jumper allows you to use your keyboard to power on or wake up your computer system.



NOTE: For the mainboard to use the Keyboard Wake-up + Wake-on-LAN function, the ATX power supply used should have a current of 1AMP at 5V Stand-By. To use the Keyboard Wake-up function only without using the Wake-on-LAN function, the ATX power supply used should have a current of 400milliAmpere at 5V Stand-By.

2). Install RAM Modules

RAM Module Configuration

This mainboard provides four onboard DIMM sockets for allowing 3.3V (un-buffered) SDRAM DIMM modules. Either 8, 16, 32, 64, 128, 256MB DIMM can be installed on these four sockets. The maximum total memory supported is up to 1GB.

Socket	Acceptable Memory Module		Total
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	
4	8, 16, 32, 64, 128, 256MB 168-pin 3.3V SDRAM	x1	

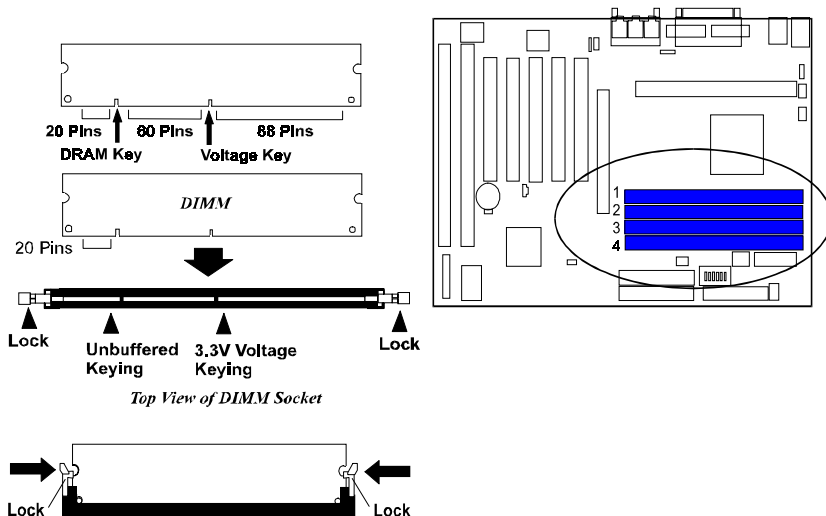
Total System Memory Allowed up to 1GB =



NOTE: This mainboard supports DIMMs with access speeds of 12ns, 10ns, or faster. ECC memory and parity check is also supported.

Install and Remove DIMMs

1. Locate the DIMM slots on the mainboard.
2. Install the DIMM straight down into the DIMM slot with both hands.
3. The clip on both ends of the DIMM 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.



WARNING:

1. If your system runs under PC133 specification, the 4th DIMM slot is suggested to leave empty in order to avoid unstable performance.
2. VC M SDRAM is allowed, but not mix used with other DIMM types.

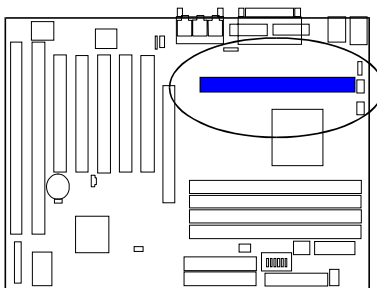
3). Install the CPU

The CPU module resides in the SLOT1 on the motherboard. The Retention Mechanism Assembly that is foldable for saving space when shipping and packing had been installed on the board by the manufacturer. Please following the steps introduced below to complete the CPU installation.

**CAUTION:**

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

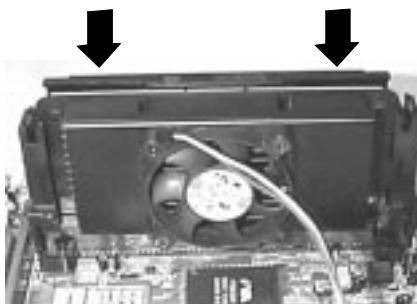
1. Locate SLOT1 on the mainboard.



2. Pull out two columns of the Retention Mechanism Assembly upward to the right position.



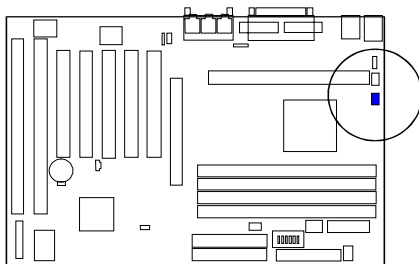
3. Insert the CPU module downward along with the columns of the Retention Mechanism Assembly until it is inserted the SLOT1 firmly.



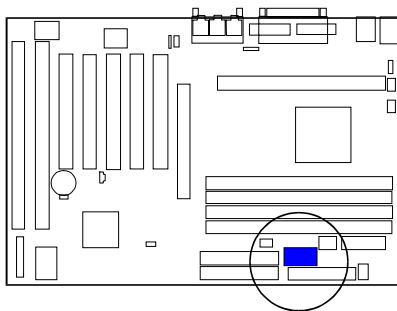
- Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



- Connect the plug of the wires that linked with the CPU fan.



CPU Frequency Selection



CPU Speed (Hz)			SW1-1	SW1-2	SW1-3	SW1-4
133M	100M	66M				
466M	350M	233M	ON	ON	OFF	OFF
533M	400M	266M	ON	OFF	ON	ON
600M	450M	300M	ON	OFF	ON	OFF
667M	500M	333M	ON	OFF	OFF	ON
733M	550M	366M	ON	OFF	OFF	OFF
800M	600M	400M	OFF	ON	ON	ON
866M	650M	433M	OFF	ON	ON	OFF
933M	700M	466M	OFF	ON	OFF	ON
1G	750M	500M	OFF	ON	OFF	OFF
1066M	800M	533M	OFF	OFF	ON	ON

CPU Voltage Selection



WARNING: The table below provides users with the jumper settings if they want to set CPU voltage for overclocking. Before set this jumper, please check the CPU specification to avoid CPU damage.

Default Settings: Pin cap set at pin pair
2-3 for automatic detection of CPU voltage

CPU Voltage	A	B	C	D	E
1.3V	-	-	-	-	1-2
1.35V	1-2	-	-	-	1-2
1.4V	-	1-2	-	-	1-2
1.45V	1-2	1-2	-	-	1-2
1.5V	-	-	1-2	-	1-2
1.55V	1-2	-	1-2	-	1-2
1.6V	-	1-2	1-2	-	1-2
1.65V	1-2	1-2	1-2	-	1-2
1.7V	-	-	-	1-2	1-2
1.75V	1-2	-	-	1-2	1-2
1.8V	-	1-2	-	1-2	1-2
1.85V	1-2	1-2	-	1-2	1-2
1.9V	-	-	1-2	1-2	1-2
1.95V	1-2	-	1-2	1-2	1-2

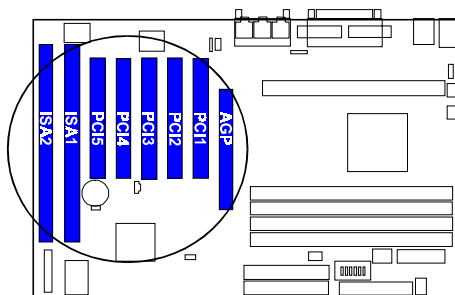
*continued on
the next page*

CPU Voltage Selection *(continued)*

CPU Voltage	A	B	C	D	E
2.0V	-	1-2	1-2	1-2	1-2
2.05V	1-2	1-2	1-2	1-2	1-2
2.1V	1-2	-	-	-	-
2.2V	-	1-2	-	-	-
2.3V	1-2	1-2	-	-	-
2.4V	-	-	1-2	-	-
2.5V	1-2	-	1-2	-	-
2.6V	-	1-2	1-2	-	-
2.7V	1-2	1-2	1-2	-	-
2.8V	-	-	-	1-2	-
2.9V	1-2	-	-	1-2	-
3.0V	-	1-2	-	1-2	-
3.1V	1-2	1-2	-	1-2	-
3.2V	-	-	1-2	1-2	-
3.3V	1-2	-	1-2	1-2	-
3.4V	-	1-2	1-2	1-2	-
3.5V	1-2	1-2	1-2	1-2	-

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. The mainboard features five PCI bus, two ISA bus and one AGP bus expansion slots.



CAUTION: Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards.

Always observe static electricity precautions.

Please read “Handling Precautions” at the start of this manual.

To install an expansion card, follow the steps below:

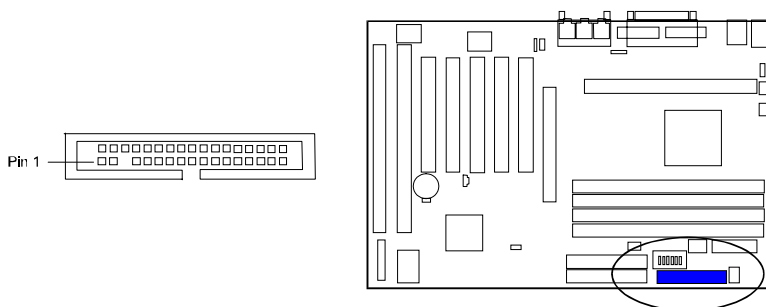
1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.
3. Holding 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

Floppy Diskette Drive Connector: FLOPPY

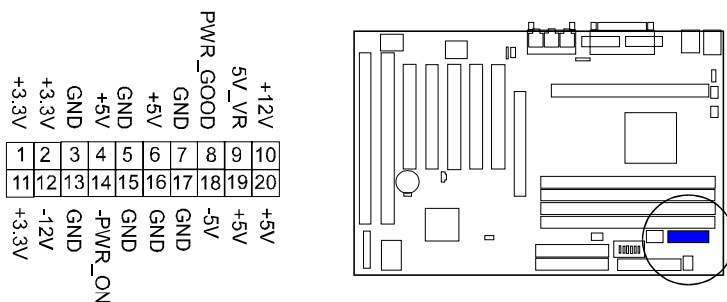
This connector provides the connection with your floppy disk drive. The red stripe of the ribbon cable must be the same side with the Pin 1.



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.



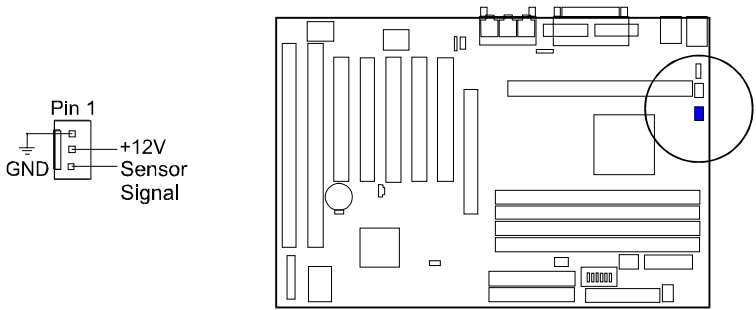
This 20-pin male block connector is connected to the ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.



NOTE: The power supply must provide +3.3V voltage.

CPU Fan Connector: CPU_FAN

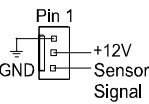
This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full-on mode, the fan will turn back on. Please refer to the CPU fan installation manual for more information.



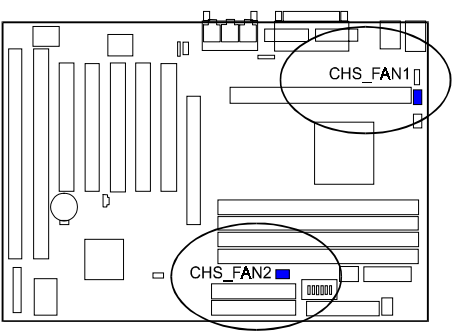
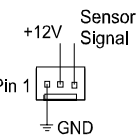
System Case Fan Connectors: CHS_FAN1, CHS_FAN2

There two 3-pin connectors onboard that either one allows you to link with the cooling fan on the system case to lower the system temperature.

CHS_FAN1

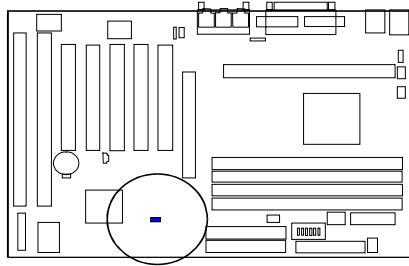
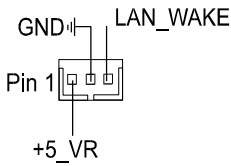


CHS_FAN2



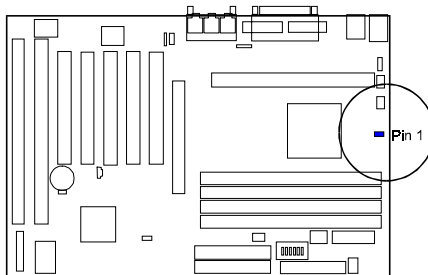
Wake-On-Lan Connector: WOL

This 3-pin connector allows the remove servers to manage the system that installed this mainboard via your network adapter which also supports WOL. When you install such a LAN card, please read its installation guide for more information.



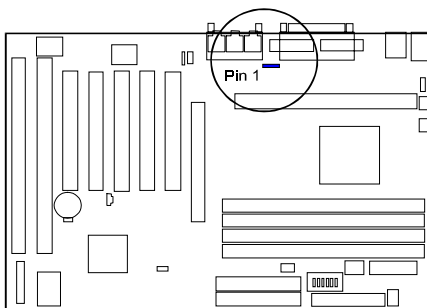
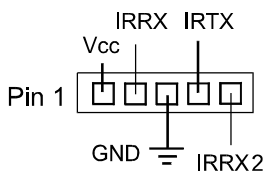
System Chassis Intrusion Alarm Connector: CHASSIS

This 2-pin connector allows your system to enable or disable the system alarm if the system case being removed.

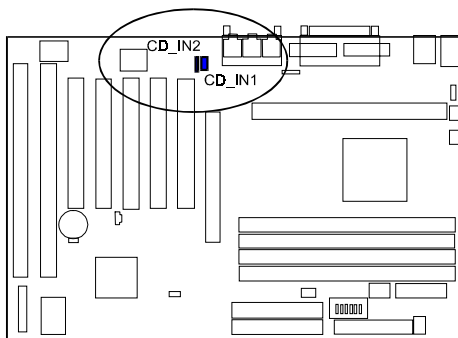
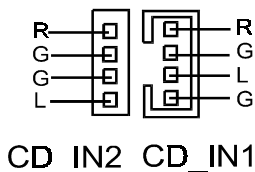


Infrared Connector: IR

This 5-pin connector is used to link with your ID device to allow transmission of data to another system that also supports the IR feature. This module mounts to a small opening on system cases that support it.

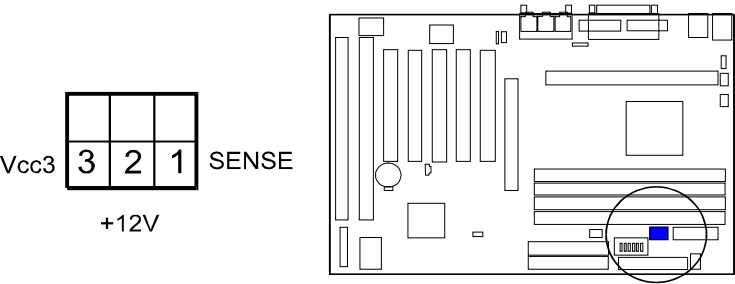
***CD Audio-Out Connectors: CD_IN1, CD_IN2***

These two 4-pin connectors are used for different types of the AUDIO-OUT port of your CD drive.



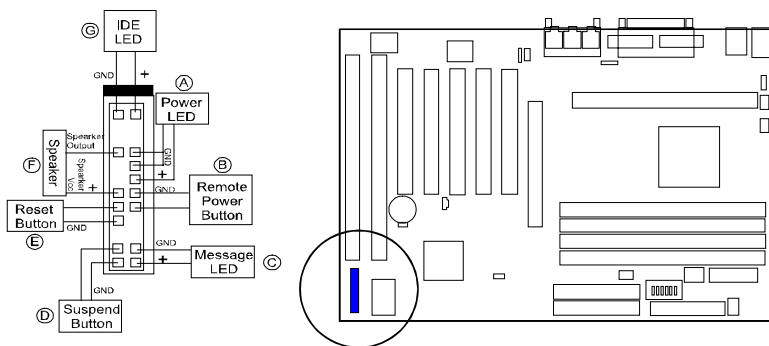
Power Fan Connector: PWR_FAN

This connector is connected with your power supply that supported a 6-wire plug to lower the power supply temperature. The signal which comes from the hardware monitor chip lowers the temperature of the power supply.



Front Panel Block Connector: FPNL

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.

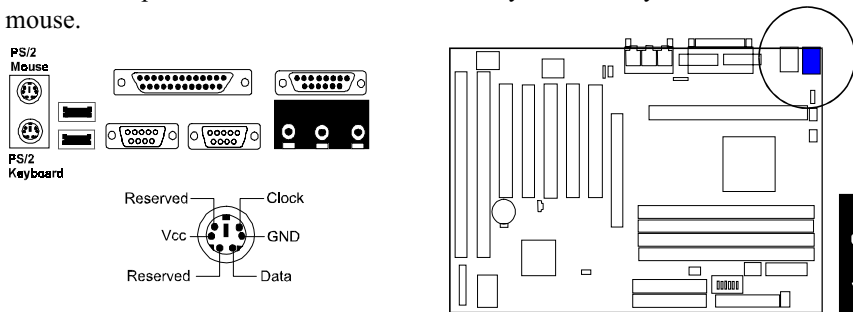
Reset Button (E) is connected to the reset switch. Push this switch to reboot the system instead of turning power switch off and on.

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.

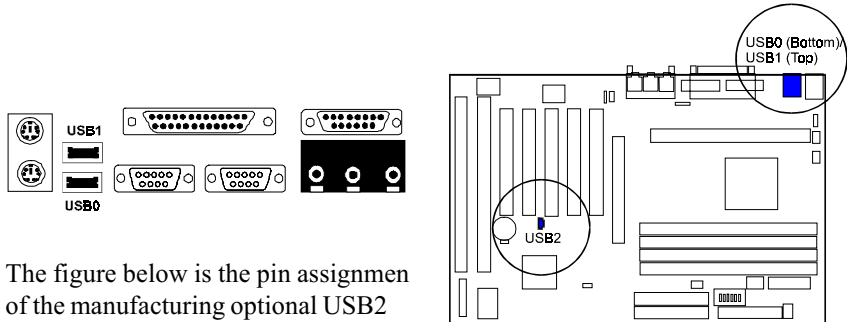
PS/2 Keyboard and Mouse Connector: KB, MS

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

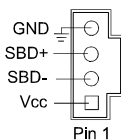


Universal Serial Bus Connectors: USB0, USB1, USB2 (optional)

These two connectors that integrated on the edge of the board are used for linking with USB peripheral devices. Also, this board provides an manufacturing optional connector USB2 for linking with the USB socket on the front panel of some system cases. If USB2 connector is used, it will make either USB0 or USB1 disabled. Your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.

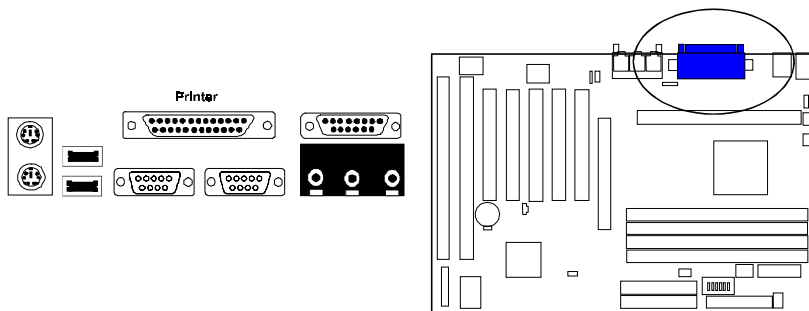


The figure below is the pin assignment of the manufacturing optional USB2 connector for front panel USB connection.



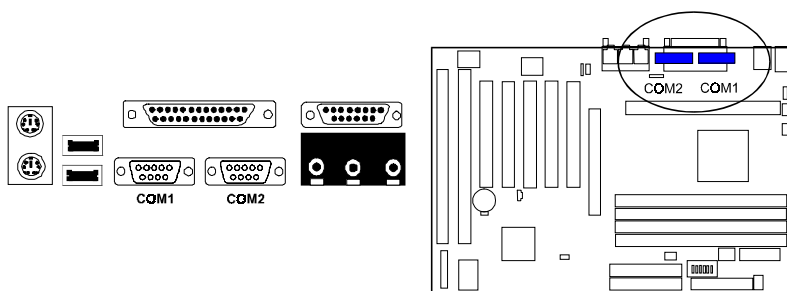
Printer Connector: LPT

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



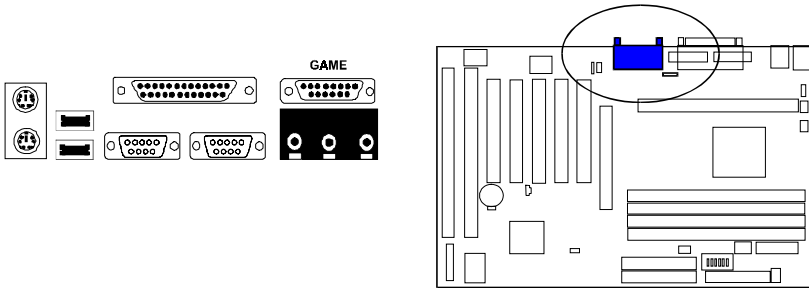
Serial Port Connectors: COM1, COM2

COM1 and COM2 allow you to connect with your devices that use serial ports, such as a serial mouse or an external modem.



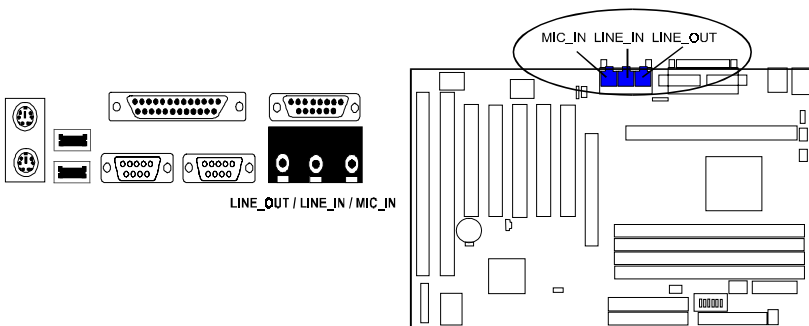
GAME/MIDI Connector: GAME

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: LINE_OUT, LINE_IN, MIC_IN

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 the LINE_OUT. MIC_IN allows microphones to be connected for input voice.



This Page Left Blank for Note