

VI31

MAINBOARD MANUAL

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PCB : 2.2 (for HP)

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Handling Precautions

Warning:

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.
4. Never run the processor without the heatsink properly and firmly attached. **PERMANENT DAMAGE WILL RESULT!**

Observe the following basic precautions when handling the motherboard or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, motherboards, and modules with the *golden fingers* connectors plugged into the expansion slot. It is best to handle system components by their mounting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

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Handling Precautions

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Overview

The Micro ATX, 478-pin FC-PGA2 package supports the latest generation Intel® P4 level processors that achieve from 1.4 to 2.2 GHz being with 2 Double Data Rate PC2100/PC1600 DDR DIMMs for up to 2 GB of DDR SDRAM. t

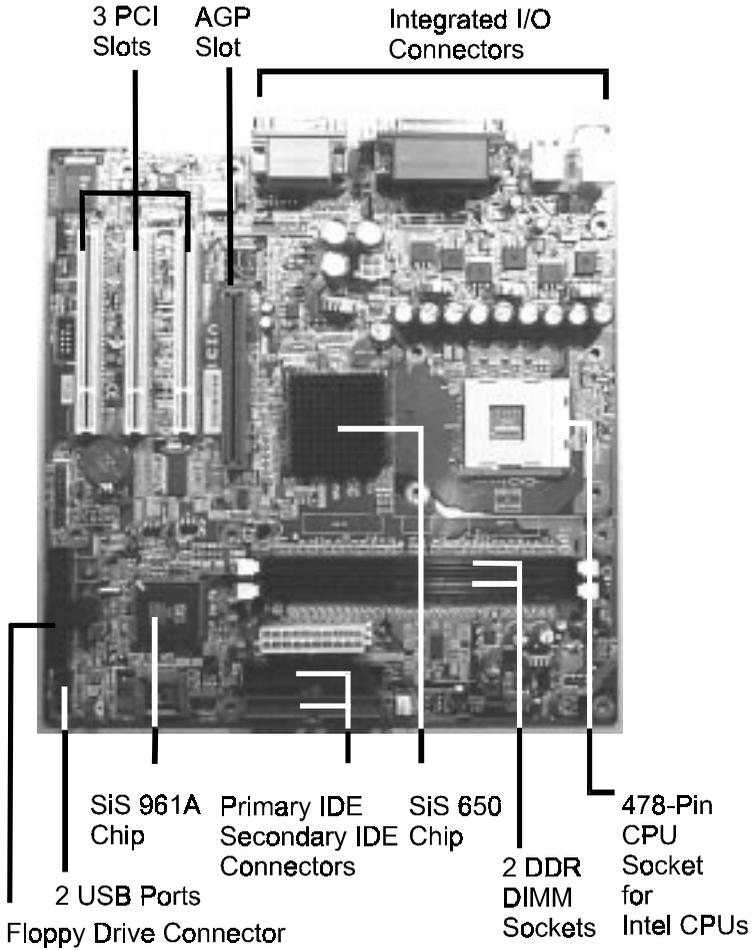
The board is built around the new SiS® 650 chip containing video features on chip, fully supporting Intel® Pentium 4 CPUs. Support for the Ultra DMA/100 protocol ensures for high data transfer speeds especially for long sequential transfers required by audio/visual applications. With 2 DIMM there is up to 1 GB available SDRAM.

*** The Audio features of this mainboard do not have an amplifier, an active speaker is a must.**

Expansion is provided by 1 AGP (2X/4X) and 3 PCIs. I/O connections include 1 serial port, 1 parallel port, 1 VGA port, 1 PS/2 mouse and keyboard connector, 4 USB connectors and 1 media connector (Line-In, Line-Out, Mic-In, Game/Midi).

The VI31 Mainboard

Chapter 1
Overview



Main Features

- **Easy Installation**
BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, IDE ZIP drives, Windows XP.

- **Leading Edge Chipset**
SiS650 Chipset (650 + 961A) provides high-performance 2D/3D graphic engine and video accelerator, advanced hardware acceleration MPEGI/ MPEGII video decoder, and DDR266 memory controller, and AGP (2X/ 4X).

- **Advanced High Performance Memory Controller**
Accepts up to 2 GB DRAM using two DDR DIMMs from 256 MB to 1 GB with support for lightening-fast (PC1600/PC2100) DDR SDRAM .

- **Intel P4 Processors Support**
Intel P4 478-pin FC-PGA2 package from 1.4 to 2.2 GHz and up*
(*: not tested yet)

- **AGP and PCI Expansion Slots**
One AGP Bus expansion slot and three PCI Bus expansion slots provided the room to install a full range of add-on cards.

- **Enhanced PCI Bus Master IDE Controller with Ultra DMA 33/66/100 Support**
Integrated Enhanced PCI Bus Master IDE controller features two dual-channel connectors that up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives supporting the new Ultra DMA 100 protocol. Standard PIO Mode 3, PIO Mode 4, DMA Mode 2, DMA Mode 4, UltraDMA-100 Mode 5 devices are also supported.

- **Integrated Onchip Audio Subsystem**

Embedded in SiS961A, the audio features provided 6 channels of AC97 2.2 compliance audio to present 5.1-channel Dolby digital material. It also generates stereo audio with simultaneous V.90 HSP modem operation.

- **Super Multi Input/Output (I/O) Support**

SiS961A integrates the functionalities of AC97 interface, the Ethernet MAC, the dual USB controllers, the IDE master/slave controllers, the PCI-to-LPC bridge, I/O advanced programmable interrupt controller and legacy power management. It utilizes an universal interface supporting the asynchronous I/O of the X86 compatible CPUs, such as PIII, K7, P4.

- **Convenient Rear Panel USB Connection Support**

Two USB ports integrated in the rear I/O panel and two extra USB ports for either front or rear panel connection allow convenient and high-speed Plug and Play connections to the growing number of USB compliant peripheral devices on the market.

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/switches
- Step 2 - Install memory 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
- Step 7 - Install supporting software tools



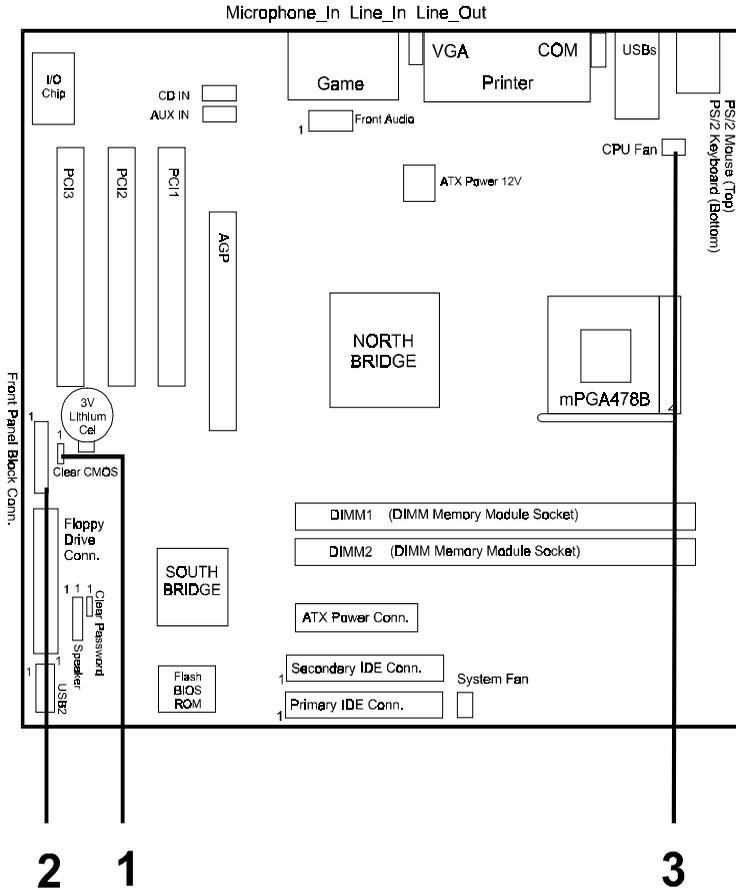
WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the sensitive components, you should follow the following 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 (from Page 2-2 to 2-4) Mainboard Layout

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Installation
Procedures



* When link to Line_Out jack, please use speakers with amplifier .

1). Clear CMOS, Clear Password

CLR_CMOS
(Clear CMOS)



Enable
(Clear CMOS)



Disable
(Default)

CLR_PASSWORD
(Clear Password)

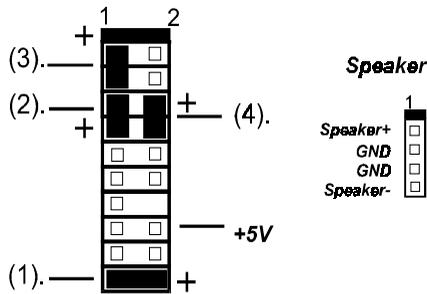


Enable
(Clear Password)



Disable
(Default)

2). Front Panel Block Cable Connection



- (1). **Power LED** (3). **HDD LED**
(2). **Reset Button** (4). **Power Button**

3). CPU Fan Installation

This connector is linked to the CPU fan. Without sufficient air circulation, the CPU may overheat resulting in damage to both the CPU and the mainboard.

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

1). Set System Jumpers

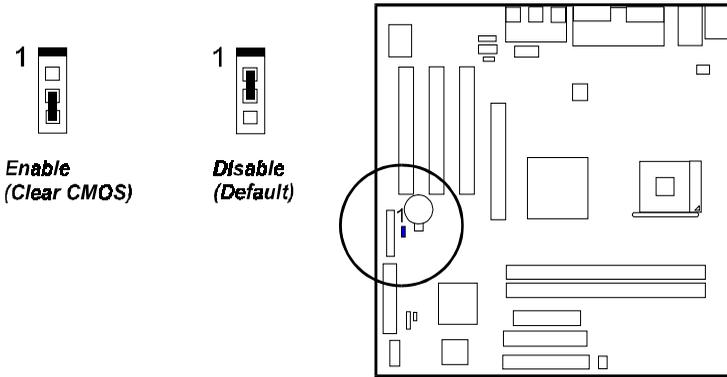
Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A **1** is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper 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.



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.

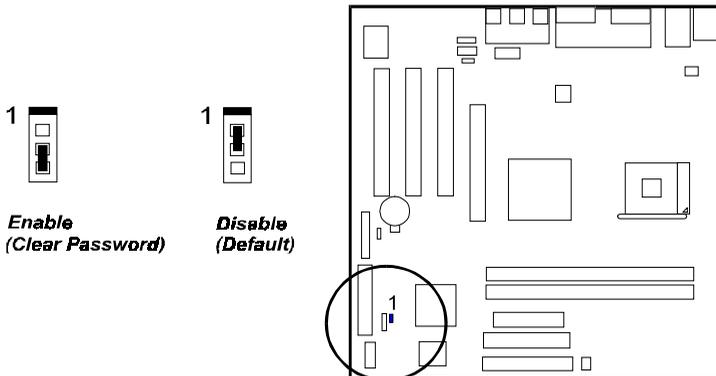
Clear CMOS: CLR_CMOS

The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer. (2) Place the jumper cap onto the pinpair 2-3 to clear CMOS (3) Turn on your computer until CMOS checksum error appears (4) Turn off your computer (5) Place the jumper cap onto the pinpair 1-2 to Normal (6) Turn on your computer. (7) Hold down the **Delete** key when boots. (8) Enter the BIOS Setup to re-enter user preferences.



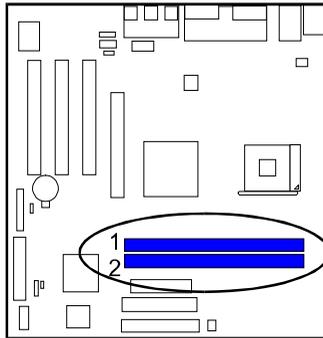
Clear Password: CLR_PASSWORD

This jumper allows you to enable or disable the password configuration. You may need to enable it if you forget your password. To clear the password setting: (1) Turn off your computer (2) Move the jumper cap onto pinpair 2-3 (3) Turn on your computer until CMOS checksum error appears (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 jumper cap to pinpair 1-2 to disable this function (7) Turn on your computer for the new settings to take effect.



2). Install Memory Modules

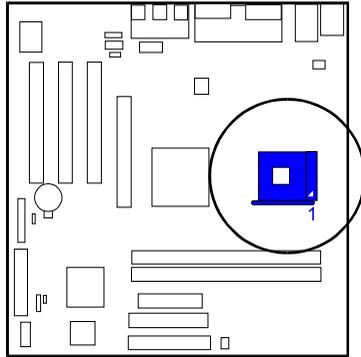
1. Locate the DIMM slots on the mainboard.
2. Install the DIMM straight down into the DIMM slot using both hands.
3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM reaches the slot bottom.



Press the clips with both hands to remove the DIMM.

3). Install the CPU

The mainboard has built-in Switching Voltage Regulator to support CPU Vcore autodetection. That is, It has the ability to detect and recognize the CPU voltage, clock, ratio and enables users to set up the CPU frequency from the BIOS Setup Screen. Users can adjust the frequency through **Frequency / Voltage Control** of the BIOS Setup Screen.



CAUTION:

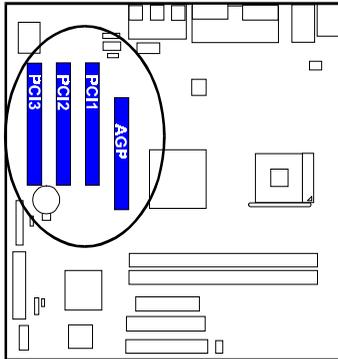
1. The heatsink and fan you installed must be approved by CPU manufacturers.
2. The mainboard must be placed on a solid place to avoid shaking while install the heatsink and fan on the board.
3. The heatsink must be contact with the CPU top tightly.
4. Never run the processor without the heatsink properly and firmly attached. **PERMANENT DAMAGE WILL RESULT!**

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 two notches to correctly locate the chip. Align two notches of the processor with the two triangular marks on the socket. 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.
5. Install the cooling fan with heatsink on top of the installed CPU.
6. Place the mainboard (with the CPU, its cooling fan, and heatsink) into the system chassis and affix it with screws.

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system 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 one AGP and three PCI 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 expansioncards.

Always observe static electricity precautions.

Please read **Handling Precautions** at the start of this manual.

To install an expansion card, follow the steps below:

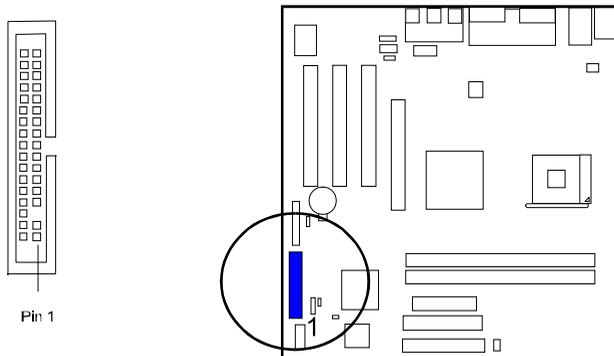
1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.

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

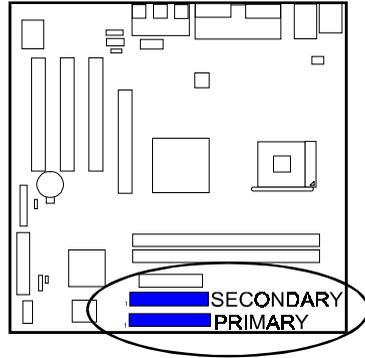
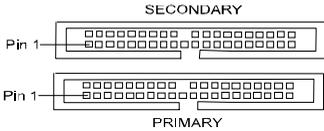
Floppy Diskette Drive Connector

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.



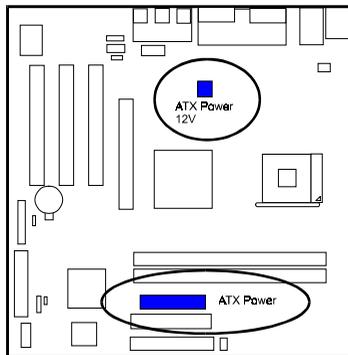
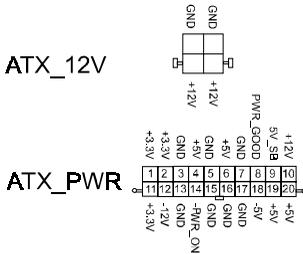
IDE Device Connectors

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.



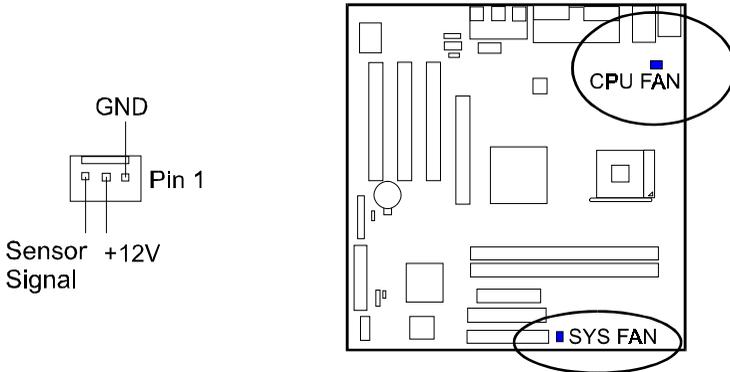
Power Connectors

The 20-pin male block connector is connected to the ATX power supply. The 4-pin male block connector is for the 12V power use. They are linked with your 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.



Fan Connectors

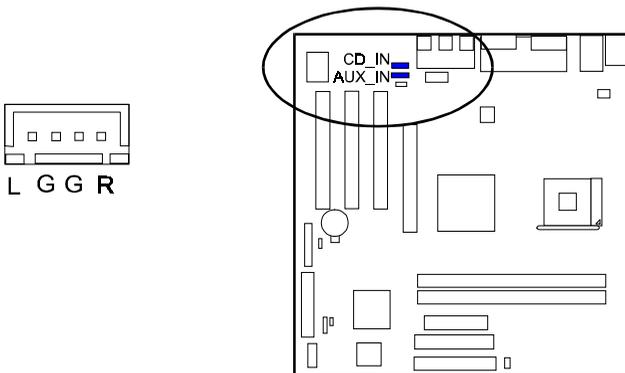
The two connectors, CPU_FAN and SYS_FAN, are linked to CPU fan and case fan respectively.



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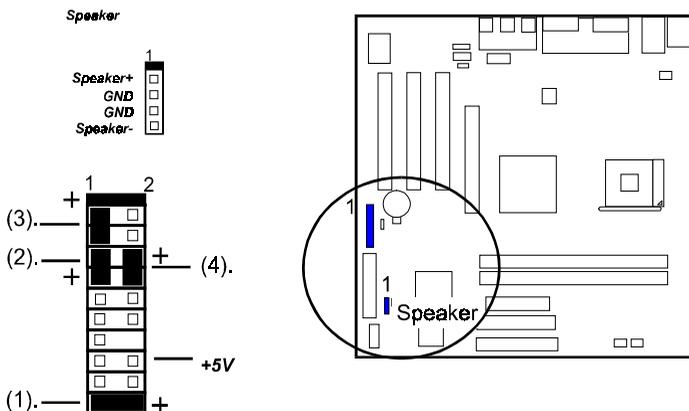
CD Audio-In Connectors

The two connectors are used for CD drive audio input.



Front Panel Block and Speaker Connector

This block connector includes the connectors for linking with HDD LED, power LED, power button, reset button 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 these buttons will not affect the function.



- (1). **Power LED** (3). **HDD LED**
 (2). **Reset Button** (4). **Power Button**

Power LED is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.

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

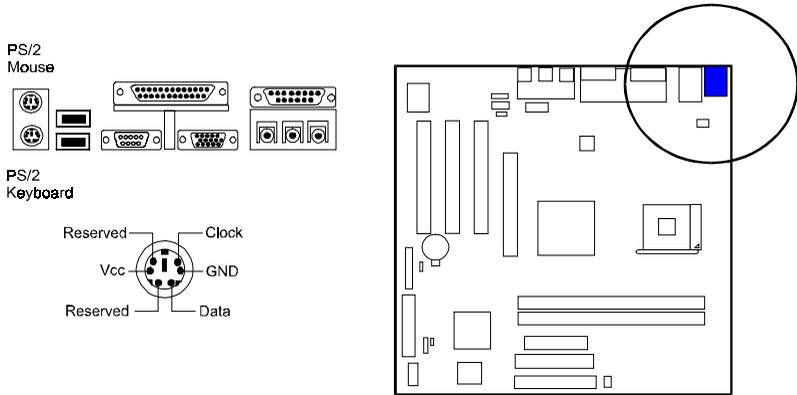
HDD LED is connected to the IDE device indicator. This LED will blink when the hard disk drives are activated.

Power Button is connected with power button. Push this switch allows the system to be turned on and off rather than using the power supply button.

Speaker is connected with the case speaker.

PS/2 Keyboard and Mouse Connector

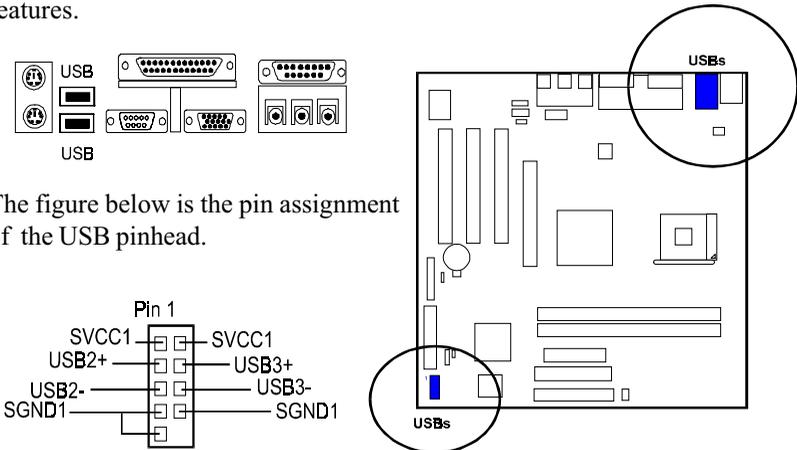
These two 6-pin female (PS/2 keyboard is purple color and PS/2 mouse is green color) connectors are used for your PS/2 keyboard and PS/2 mouse.



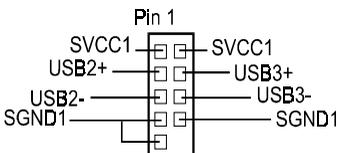
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Universal Serial Bus Connectors

These two black connectors integrated on the edge of the board are used for linking with USB peripheral devices. This board also provides one extra connector (two USB ports) for either linking with front or rear USB sockets of system cases. Please note that your operating system must support USB features.

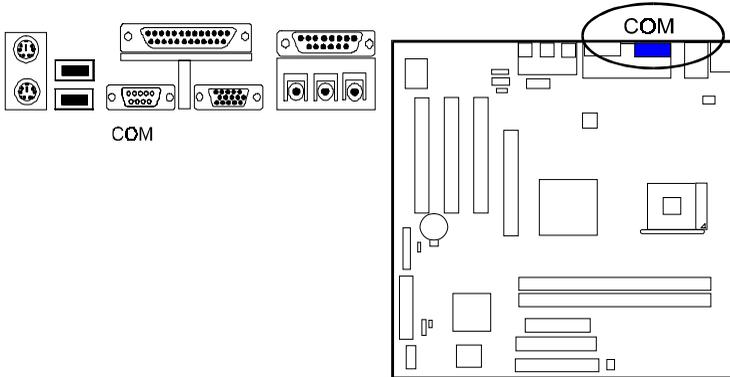


The figure below is the pin assignment of the USB pinhead.



Serial Port Connector

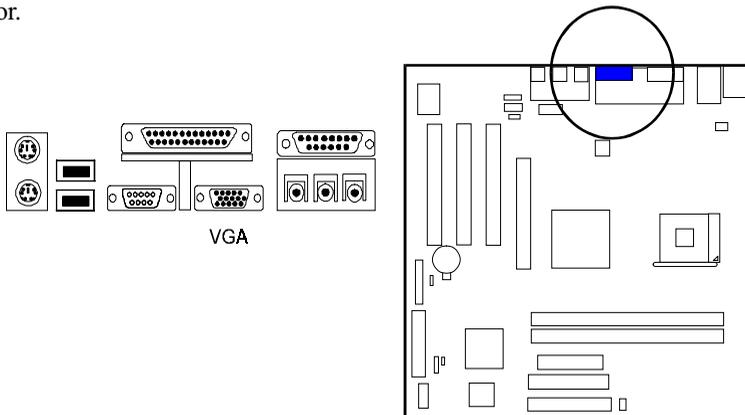
COM1 (9-pin D-sub male connector with teal color) allows you to connect with your device that use serial port, such as a serial mouse or an external modem.



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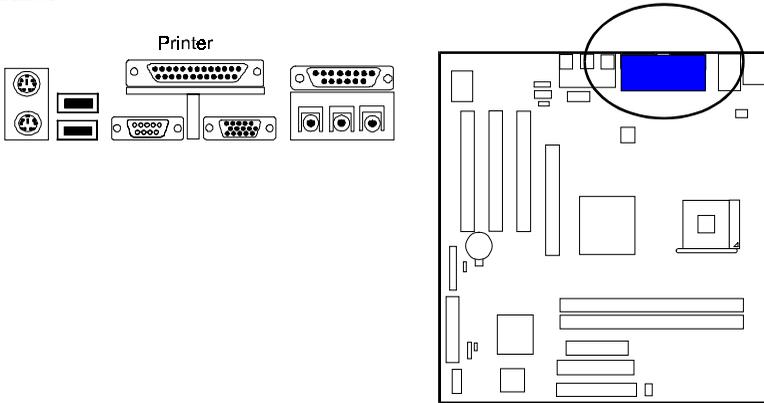
Video Graphics Accelerator Connector

This 15-pin female D-sub blue connector is connected to your display monitor.



Printer Connector

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

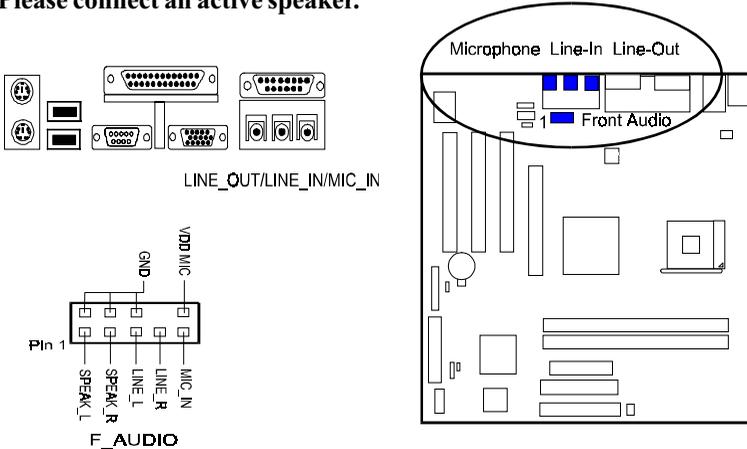


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Audio I/O Jacks

LINE_OUT* (lime) can be connected to powered speakers. LINE_IN (light blue) allows tape players or other audio sources to be recorded by your computer. MIC_IN (pink) allows microphones to be connected for voice input. The mainboard also provides you with a front panel audio port connector, F_AUDIO, when needed. Its pin definitions were presented below.

*** Please connect an active speaker.**



Game/MIDI Connector

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

