FS39T

MAINBOARD MANUAL

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Table of Contents

Overview

The new Micro ATX, Socket 370 1stMainboard FS39T supports a full range of the latest generation Intel® and Cyrix processors. Intel's new Celeron ™ and lightening fast Coppermine processors of up to 1GHz* and up are supported with Front Side Bus speeds of 66/100/133 MHz. Built using the leading edge 0.18 micron technology the Intel FCPGA Pentium®III processors provide a significant performance scaling boost over previous Pentium®III processors. (*: not yet test)

The Intel 815EP (B-Step) accelerated Hub architecture provides onboard audio provided by the state of the art embedded codec. Support for the Ultra DMA-100 protocol and its high-speed interface further ensures that data transfer speeds are improved, especially for long sequential transfers required by audio/visual applications. With 2 DIMM sockets, the board supports up to total 512 MB by using 100/133MHz 3.3V SDRAM.

The 1stMainboard FS39t comes with a versatile range of I/O features such as 2 serial ports, 1 parallel port, 1 PS/2 mouse and keyboard connector, 2 USB connectors, 2 extra for either rear or front USB connections, 1 front audio pin header, 1 media connector (MIDI /game port, Line-in, Line-out and Mic-in). Ample expansion is available through 1 AGP, 3 PCI and 1 CNR.

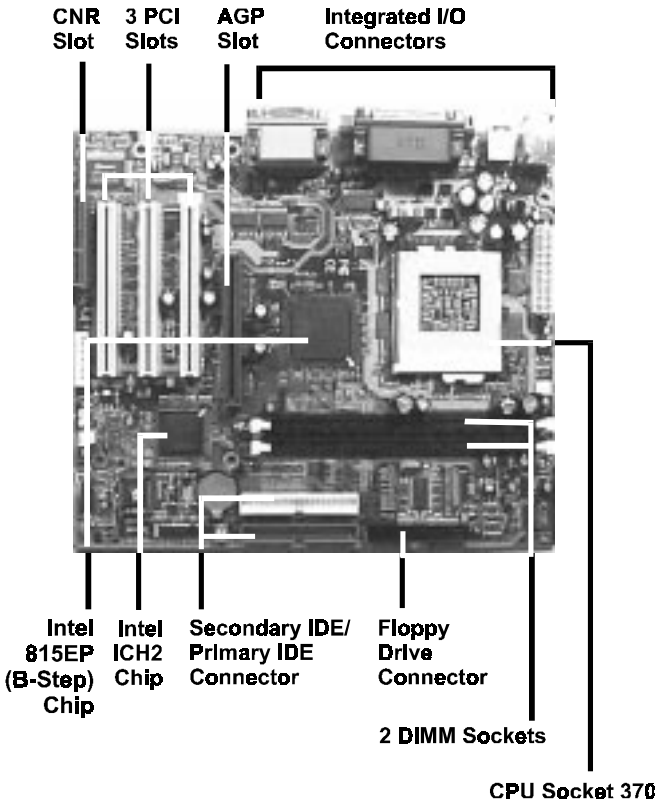
Other key features are Remote On/Off, Auto Power Failure Recovery, Keyboard /Mouse Power On, integrated temperature monitoring and system fan control. Included also is CD Pro with enhanced drivers and the new CD Plus package.

Package Checklist

If you discover any item below was damaged or lost, please contact your vendor.

- ☑ The mainboard
- ☑ This user manual
- ☑ One FDD cable
- ☑ One HDD cable
- ☑ One ATA/66 cable
- ☑ Two software CDs (CD Pro, CD Plus)

The FS39T Mainboard



Main Features

- Easy Installation

  BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, IDE ZIP drives, Windows 95, Windows 98, Windows 98SE, Windows ME, Windows NT, Windows 2000, and OS/2.

- Leading Edge Chipset

  Intel 815EP (B-Step) provides integrated DRAM controllers with new Dynamic Power Management Architecture (DPMA), concurrent PCI , AGP compliant and USB.

- Versatile Main Memory Support

  Accepts up to 512MB SDRAM using two DIMMs of 32, 64, 128, 256MB with support for lightning-fast SDRAM (100/133MHz).

- Flexible Processor Support

  Onboard CPU socket supports:
  Intel® Celeron™ FC-PGA 533 - 733MHz at 66MHz FSB; 800MHz and up* @100MHz FSB
  Intel® Pentium™ III FC-PGA 500 - 850MHz and up* @100MHz FSB
  Intel® Pentium™ III FC-PGA 533MHz - 1GHz and up* @133MHz FSB
  Intel® Tualatin 1.26*GHz @133MHz FSB
  Cyrix® III 667AMHz and up* @ 100/133MHz FSB
  (*: not tested yet)

- CNR, AGP, and PCI Expansion Slots

  One CNR, 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 Audio Subsystem

  Embedded audio features in the ICH2 with an integrated PCI audio controller, DOS games compatible engine. The subsystem utilizes line-out, line-in, and MIC mini-jack external jacks, one joystick port with MIDI interface.

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

  Integrated Plug and Play multi-I/O chipset features two high-speed UART 16550 compatible serial ports, one EPP/ECP capable parallel port, one game port, and one FDD connector.

- Convenient Rear Panel USB Connection Support

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

- Accelerated Graphics Port (AGP) Slot

  The motherboard is installed one 32-bit AGP bus slot with a dedicated 66MHz/133MHz path from the graphics card to the system memory offering much greater bandwidth than the 32-bit PCI bus does. AGP enabled 3D graphics cards can directly access main memory across this fast path instead of using local memory. To make use of the improved AGP performance, the motherboard should be installed with SDRAM type memory and the VGA card and drivers should also be fully AGP compliant. Using Microsoft's Windows 98 and Windows 2000 which implement DirectDraw will allow the system to take full use of AGP's benefits without the need to install additional drivers.

ACPI Ready

This mainboard fully implements the new ACPI (Advanced Configuration and Power Interface) 1.0B Hardware and BIOS requirement. If you install ACPI aware of operating system, such as Windows 98, you fully utilized the power saving under ACPI. *(Windows ME/2000 Professional supports ACPI functions.)*

FIC Unique Innovation for Users (NOVUS) - Enhanced Mainboard Features and System Support

■ LogoGenie

A user friendly GUI supporting Windows 95/98 (not Windows 2000/NT/ME), LogoGenie allows you to customize, create or select a Logo which will be displayed when the system is booting.

NOTE:
1. LogoGenie supports Award BIOS only.
2. If you create a Logo file (.bmp) by LogoGenie, the file size must be 640 x 464 x 256 colors.

To enable this utility, please proceed as follows:

1. Insert CD Pro. Select LogoGenie from the Menu and follow the installation instructions.
2. After LogoGenie has been installed, go to Windows Start Box. In Programs Menu, select LogoGenie 2.0, then select LogoGenie.
3. Press F1 to read Help file to understand how to use this software if it is new to you.

■ Easy Key

Instead of completing the multi-layered BIOS setup process these 3 Easy Key functions provide direct access to Sub-Menu's when completing BIOS settings adjustments.

Easy-Keys are as follows:

Ctrl + c: To enter clock settings menu.
Ctrl + p: To load Performance Default settings and restart.
Ctrl + f: To load Fail-Safe Default settings and restart.

■ BIOS Guardian

BIOS Guardian by default is enabled. It must be disabled in order to reflash BIOS, thus effectively acts as a fire-wall against viruses that can attack the BIOS while the system is running.

WARNING: While excute Step3 below, please do not turn off the sytsem power in order to avoid BIOS damage.

BIOS Guardian can be disabled as follows:

1. Go to BIOS Set Up Menu. (Press **Del** key while booting.)
2. Go to Advanced BIOS Features Set Up Submenu.
3. Disable BIOS Guardian.
4. Save the setting, and restart system.

NOTE: However, if it is disabled and while boot the system, the POST screen will be held and shows you the message to let you know the current status of BIOS Guardian. To press **G** key will enable the BIOS Guardian again; or simply to press the **space bar** will continue the booting process.

■ Overclock Partner

Should the system not start because clock speed settings have been increased to a speed incompatible with the system, the Overclock Partner allows you to reboot at system default settings, protecting hardware from any damages.

Complete the following steps:

1. Turn the system off.
2. Restart while holding down the **Insert** key. It is important that the **Insert** key is held down until the default clock speed is shown on the POST screen.
3. Enter BIOS settings menu, and re-set clock speed desired or default.

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**

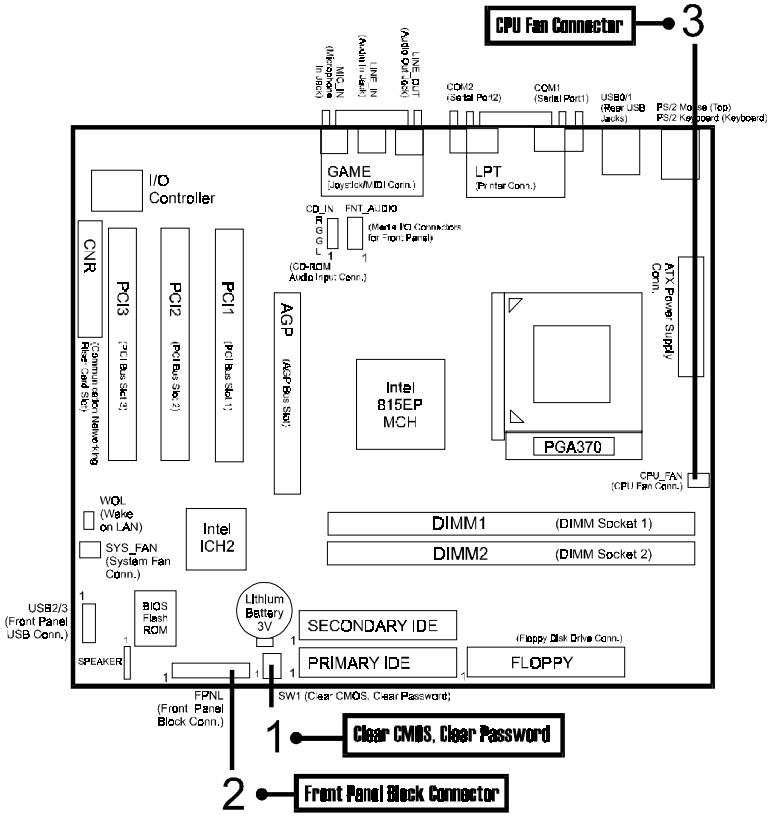
WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

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

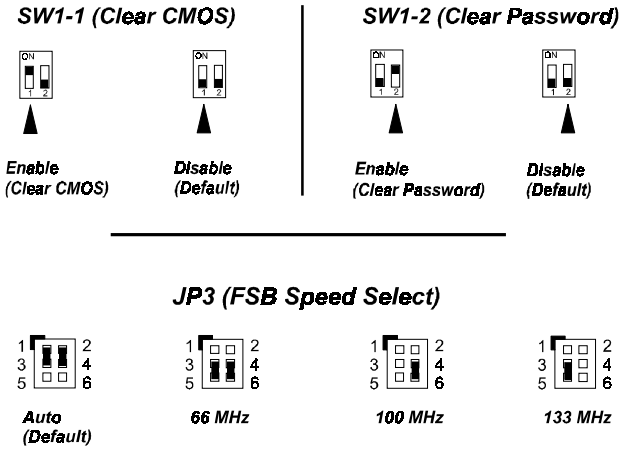
1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever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

Quick Reference (from Page 2-2 to 2-4)

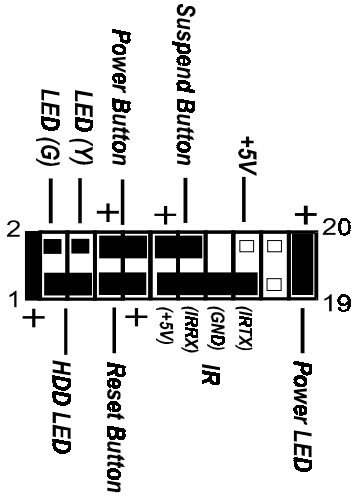
Mainboard Layout



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



2). Front Panel Block Cable Connection



3). CPU Fan Installation

This connector is linked to the CPU fan. When the system is in power saving 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 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.

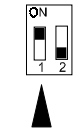
1). Set System Jumpers/Switches

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.

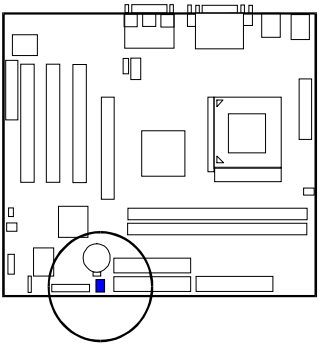
Clear CMOS: SW1-1

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 SW1-1 to "On" (Enabled). (3) Turn on your computer to display "CMOS checksum error". (4) Turn off your computer. (5) Move the CMOS Clear switch SW1-1 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: SW1-2

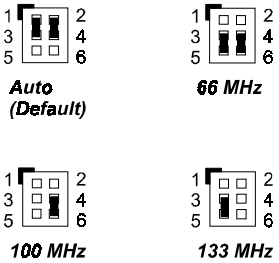
This switch allows you to enable or disable the password configuration. You may need to enable this switch by moving it to the "On" (Enabled) position if you forget your password. To clear the password setting: (1) Turn off your computer. (2) Move the Clear Password switch SW1-2 to "On" (Enabled). (3) 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 SW1-2 to "Off" (Disabled). (7) Turn on your computer for the new settings to take effect.

Enable
(Clear Password)

Disable
(Default)

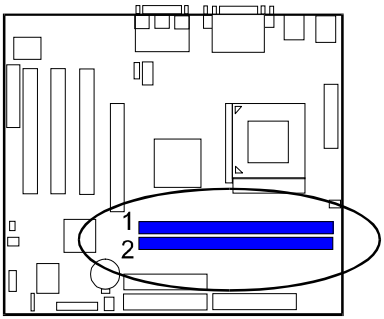
FSB Speed Select: JP3

This jumper allows you to select the FSB speed of your mainboard.



2). Install Memory Modules

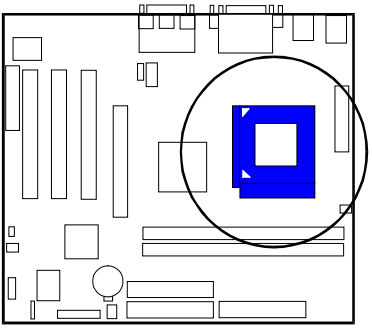
1. Locate the DIMM slots on the mainboard.
2. Install the DIMM straight down into the DIMM slot using both hands.
3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM reaches the slot's bottom.



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.

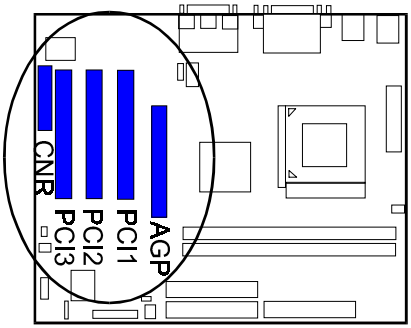


To install the CPU, do the following:

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. Place the cooling fan with heatsink on top of the installed CPU.

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 one CNR, 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:

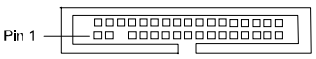
1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.

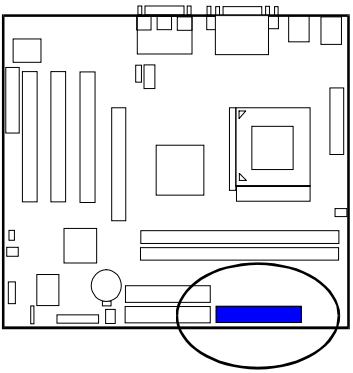
3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.
4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this “rocking” motion until the add–on card is firmly seated inside the expansion slot.
5. Secure 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

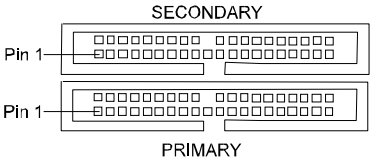
This connector provides the connection with your floppy disk drive.
The red stripe of the ribbon cable must be the same side with the Pin 1.

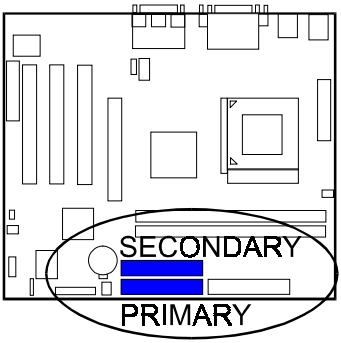




IDE Device Connectors

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.

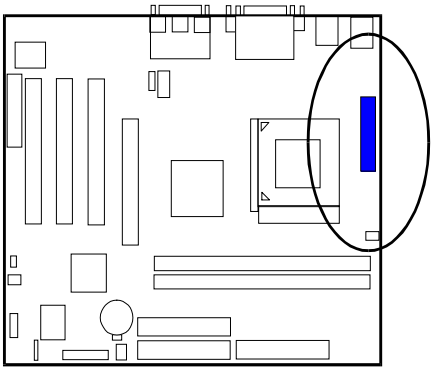




ATX Power Connector

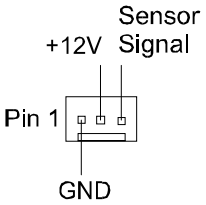
This 20-pin male block connector is connected to the ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

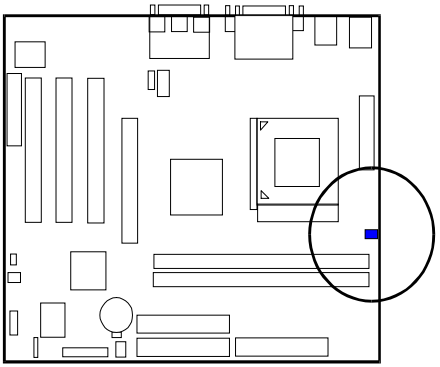
+12V	10	20	+5V
5V_VR	9	19	+5V
PWR_GOOD	8	18	-5V
GND	7	17	GND
+5V	6	16	GND
GND	5	15	GND
+5V	4	14	-PWR_ON
GND	3	13	GND
+3.3V	2	12	-12V
+3.3V	1	11	+3.3V



CPU Fan Connector

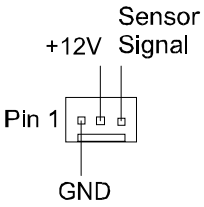
This connector is linked to the CPU fan. When the system is in S3 suspend mode, the CPU fan will turn off; when it reverts back to full–on mode, the fan will turn back on. Please refer to the CPU fan installation manual for more information.

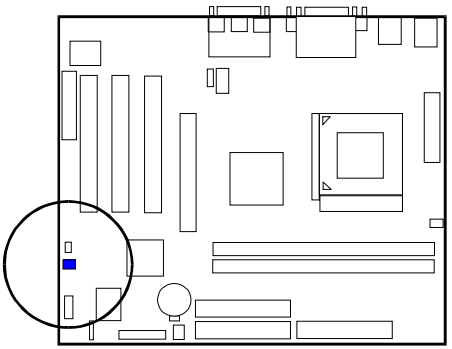




System Case Fan Connector

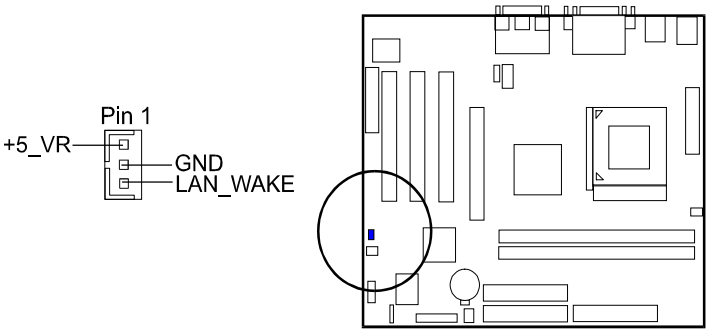
The 3-pin connector allows you to link with the cooling fan on the system case to lower the system temperature.





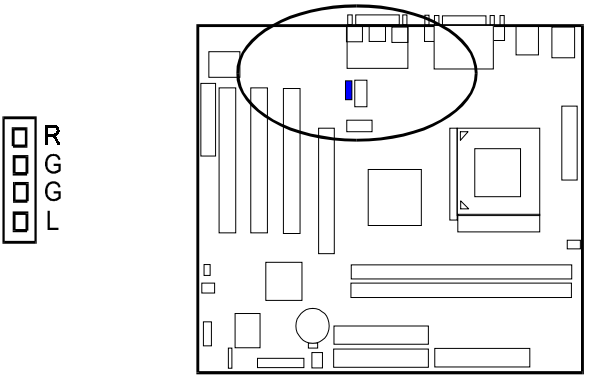
Wake-On-Lan Connector

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.



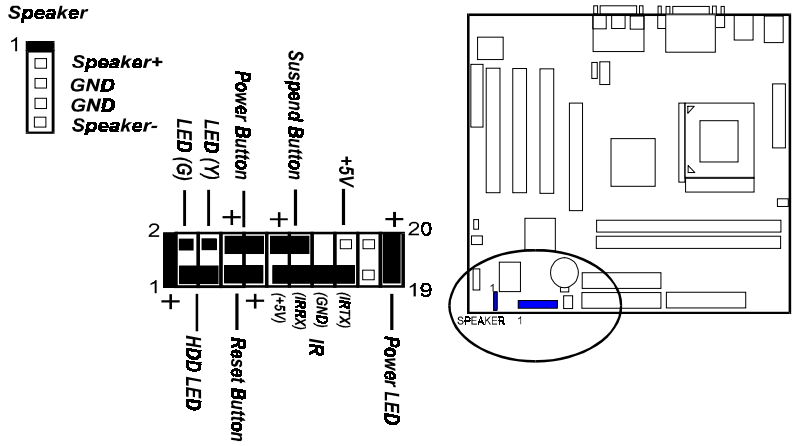
CD Audio-In Connector

The CD_IN connector is used for CD-ROM drive audio input.



Front Panel Block and Speaker Connector

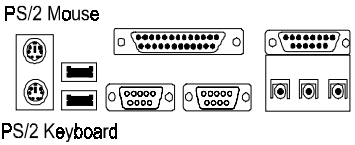
This block connector includes the connectors for linking with HDD LED, power LED, dual power LED, power button, suspend button, reset button, and IR on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information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

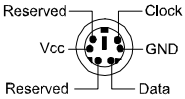


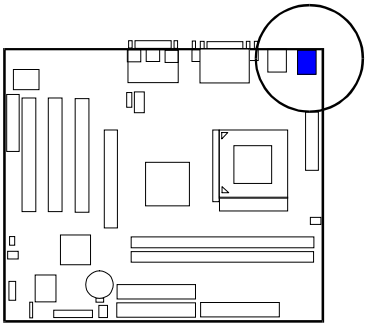
Power LED is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.
IR is used to communicate with another IR device via a 4-wire plug.
Reset Button is connected to the reset button. Push this switch to reboot the system 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.
LED(G) is in green light when the system in power on status.
LED(Y) is in yellow light when the system in suspend mode.
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.
Suspend Button is connected with suspend button. To enter the system into power saving mode, simply press this button when the system is in full-on mode.
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.

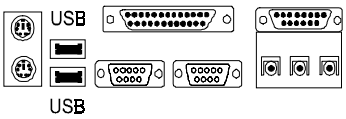




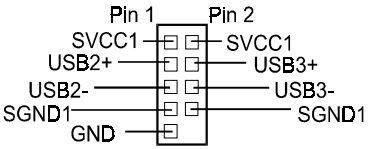


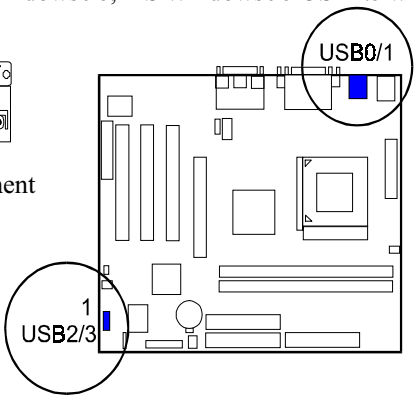
Universal Serial Bus Connectors

These two black connectors integrated on the edge of the board are used for linking with USB peripheral devices. This board also provides a connector USB2/3 for linking with the two extra USB connections. They can link with front panels of some system cases. Please note your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.



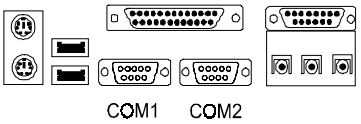
The figure below is the pin assignment of the USB2/3.

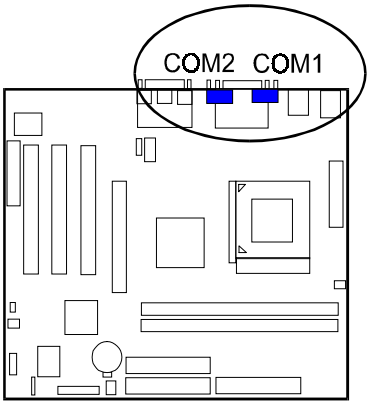




Serial Port Connectors

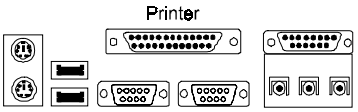
COM1/2 (9-pin D-sub male connector with teal color) allow you to connect with your devices that use serial ports, such as a serial mouse or an external modem.

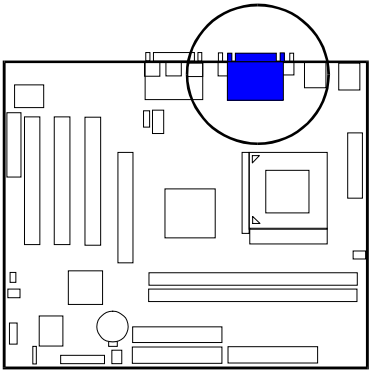




Printer Connector

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

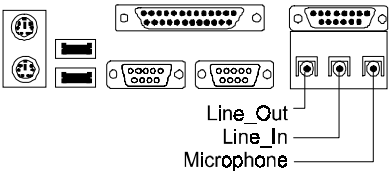


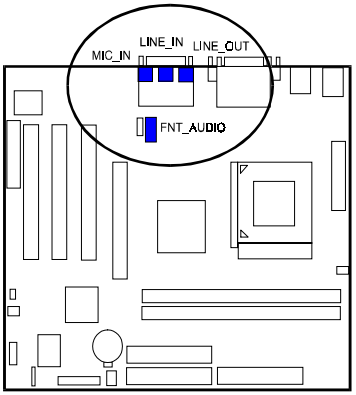


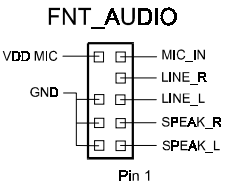
Audio I/O Jacks

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

*** Please use an active speaker with LINE_OUT.**

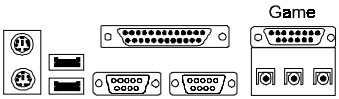


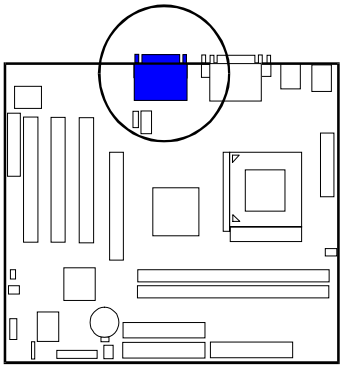




Game/MIDI Connector

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





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 monting brackets.

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

Trademark

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Handling Precautions

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