

Chapter 2

Hardware Setup

If your mainboard has already been installed in your computer you may still need to refer to this chapter if you plan to upgrade your system's hardware.



Be sure to disconnect the power cable from the power source before performing any work on your mainboard, i. e. Installing a CPU, memory module, changing a jumper setting, etc. Not doing so may result in electrical shock!

2-1 Introduction to Jumpers

Jumpers are used to select between various operating modes. A jumper consists of a row of gold colored pins that protrude from the surface of the mainboard. It is important not to confuse jumpers with connectors or headers.



Putting jumper caps on anything that is not a jumper may result in damaging your mainboard. Please refer to Section 1-3, Mainboard Layout, for the location of jumpers on your mainboard.

As indicated in Figure 2-1 below, a cap is used to cover the pins of a jumper, resulting in shorting those pins that it covers. If the cap is removed from the top of the pins, the jumper is left "open." The number 1 shown both in the diagram below and in all multiple pin jumper and header diagrams in this manual indicates the pin designated with the number 1. The numbering of the remaining pins follows in sequence.

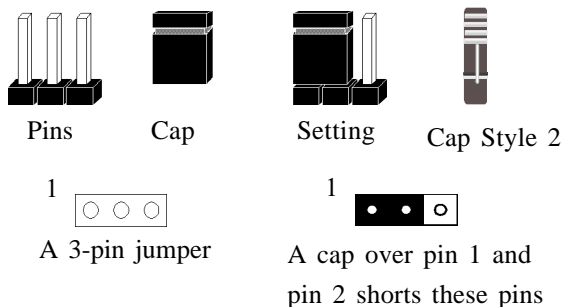


Figure 2-1

2-2 Installing a CPU in a Socket 370

The Intel Socket 370, designed for the Celeron and Coppermine processors, has been incorporated as a standard mainboard specification. To insert your CPU into Socket 370 please do the following:

1. Locate a small dot marked on the top surface of the CPU close to one of its corners. The same corner will also be cut off, leaving a noticeable notch in the CPU's corner. These markings indicate Pin 1 of the CPU.
2. Pull up the lever of Socket 370 so that it is perpendicular with the surface of the mainboard. Gently insert the CPU with Pin 1 at the same corner of Socket 370 that contains the end of the lever. Allow the weight of the CPU to push itself into place. Do not apply extra pressure as doing so may result in damaging your CPU. Snap the lever back into place.



Installing a heat sink with cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and possible burn-out of your CPU.

2-3 Setting Your CPU's Parameters

This board support plug and play CPU configuration, if you install a CPU on this mainboard, the board will automatically detect and set CPU parameters. It is no longer necessary to make many jumper settings as on conventional mainboards.

1. After installing all your hardware into your PC system, turn on your system's power. Enter the CMOS Setup Utility by pressing the Delete key when your BIOS identification screen appears.
2. Move the cursor to Frequency/Voltage Control Setup menu and press Enter. Find the CPU bus frequency at the left hand side of the BIOS screen. Commands for operating the cursor in BIOS are found at the Bottom right of the BIOS screen.
3. Set the CPU bus frequency according to your processor's specifications.
4. Press Esc to return to the CMOS Setup Utility, press F10 to Save and Exit Setup and choose 'Y' to confirm. The system will automatically reboot and during startup you will see the correct CPU type shown on the screen.



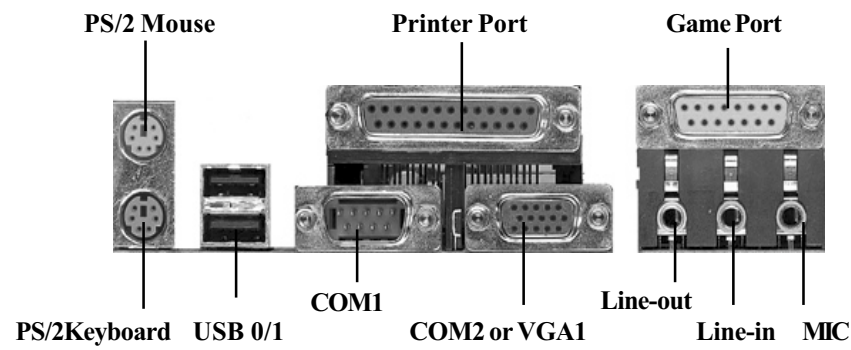
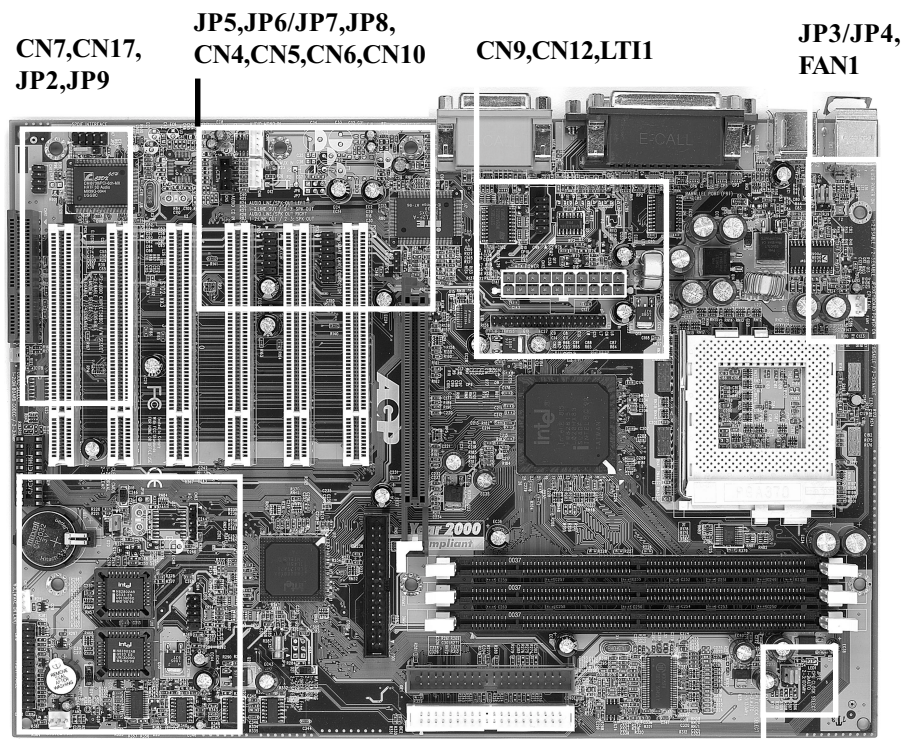
You do not need to make voltage settings because *SeePU* automatically sets your CPU voltage.

Overclocking

Operating a CPU at a higher frequency than its specification allows is called overclocking. If the CPU frequency is set at a higher frequency than its specification allows, it may or may not run at that frequency, depending on the quality of your CPU and the extent to which the frequency has been overset. The mainboard manufacturer highly discourages overclocking as it may result in data loss, CPU burnout, system failure, etc.

Many Intel processors are frequency locked processors and are not able to perform overclocking. Regardless of whether the processor is a frequency locked, overclocking may cause some processors to hang when turning on the system. When the processor hangs, the screen remains blank and the system does not boot. To solve this problem, do the following.

1. Turn off the computer and then press and hold the Home key on your keyboard
2. Turn on your computer, wait for five seconds and then release the Home key.
3. Enter BIOS and reconfigure your CPU parameters as described in this section.



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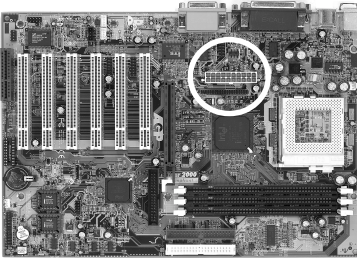
2-4 Connector and Jumper Settings

Connectors are used to link the system board with other parts of the system, including the power supply, the keyboard, and the various controllers on the front panel of the system case.



The power supply connector is the last connection to be made while installing a mainboard. Before connecting the power supply, please make sure it is not connected to the power source.

ATX Power Supply Connector (CN12)



The power cord leading from the system's power supply to the external power source must be the very last part connected when assembling a system.



To support this function, a switching power supply with a minimum of **750mA 5VSB** is required.

12V	⑩	⑫	5V
5VSB	⑨	⑪	5V
PW-OK	⑧	⑬	-5V
Ground	⑦	⑭	Ground
5V	⑥	⑮	Ground
Ground	⑤	⑯	Ground
5V	④	⑰	PS-ON
Ground	③	⑱	Ground
3.3V	②	⑲	-12V
3.3V	①	⑳	3.3V

The ATX power supply provides a single 20-pin connector interface which incorporates standard +/-5V, +/-12V, optional 3.3V and Soft-power signals. The Soft-power signal, a 5V trickle supply is continuously supplied when AC power is available. When the system is in the Soft-Off mode, this trickle supply maintains the system in it's minimum power state.

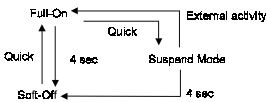
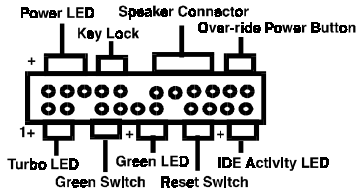
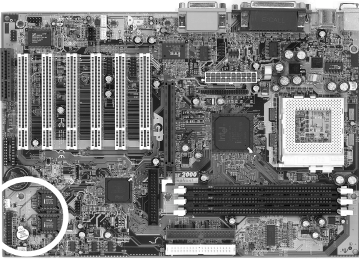
Power-On By Modem

While in Soft-off state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. You may enable this function in BIOS's Power Management Setup menu.

Poly-fuse Over Current Protection

The poly-fuse protects the system from dangerous voltages the system might be exposed to via the keyboard or USB connectors. In case of such exposure, the poly-fuse will immediately be disconnected from the circuit, just like a normal fuse. After being disconnected for a certain period of time, the poly-fuse will return to its normal state, after which the keyboard or USB can function properly again. Unlike conventional fuses, the poly-fuse does not have to be replaced, relieving the user wasted time and inconvenience.

Front Panel Connector Set (CN16) A through F



Over-ride Power Button Operation

Pin	Definition
1	+5V DC
2	No Connection
3	Ground

Power Indicator LED

A. Over-ride Power Button Connector

The power button on the ATX chassis can be used as a normal power switch as well as a device to activate Advanced Power Management Suspend mode. This mode is used for saving electricity when the computer is not in use for long periods of time. The Soft-OFF by PWR-BTTN function in BIOS's Power Management Setup menu must be set to "Delay 4 Sec." to activate this function.

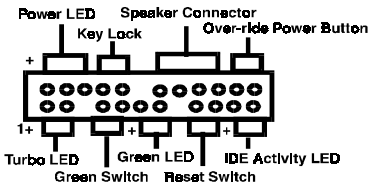
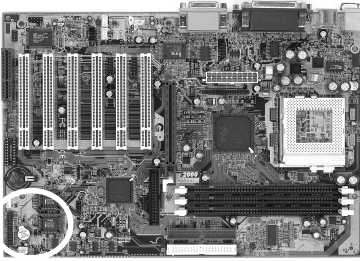
When the Soft-OFF by PWR-BTTN function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurrence of external activities such as pressing a key on the keyboard or moving the mouse will bring the system back to Full-On. Pushing the button while in Full-On mode for more than 4 seconds will switch the system completely off. See Over-ride Power Button Operation diagram.

B. Power Indicator LED Connector

The power indicator LED shows the system's power status. It is important to pay attention to the correct cables and pin orientation (i.e., not to reverse the order of these two connectors.)

Software Power-Off Control

This mainboard can be powered down using the Windows 95/98 Software Power-Off function. To power down your computer, click the START button on the Windows 95/98 task bar. Select "Shut Down The Computer" and the system turns off. The message "It is now safe to turn off your computer" will not be shown when using this function.



C. Green Switch/Green LED Connector

Some ATX cases provide a Green switch which is used to put the system in Suspend mode. In Suspend mode, the power supply to the system is reduced to a trickle, the CPU clock is stopped, and the CPU core is in its minimum power state. The system is woken up whenever the keyboard or mouse is touched. The system resumes in different ways as defined by Power Management Setup screen in BIOS.

D. System Reset Switch Connector

This connector should be connected to the reset switch on the front panel of the system case. The reset switch allows you to restart the system without turning the power off.

Pin	Definition
1	System
2	GND

E. Speaker Connector

Pin	Definition
1	Speaker Signal
2	No Connection
3	No Connection
4	+5V DC

F. IDE Activity LED Connector

The IDE activity LED lights up whenever the system reads/writes to the IDE devices.

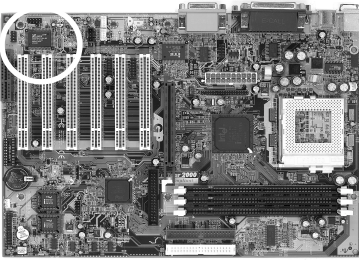
G. Turbo LED Connector

This mainboard does not have a Turbo/De-turbo speed modes. So the turbo LED will always light.

Blinking LED in Suspend Mode

While in Suspend mode, the LED light on the front panel of your computer will flash. Suspend mode is entered by pressing the Override Power Button, pushing the Green button on your ATX case, or enabling the Power Management and Suspend Mode options in BIOS's Power Management menu.

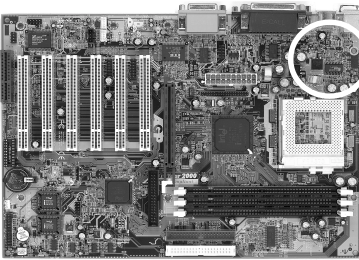
Onboard Audio (JP2)



1 Enable(default) 1 Disable

This function allows you to enable and disable the on board audio. You must set the jumper's cap to pins 1-2 to enable or set pins 2-3 to disable this function.

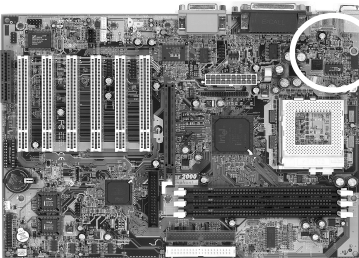
PS/2 Keyboard Power On Function (JP3)



1 Disabled (default) 1 Enabled

This board is able to be turned on by the keyboard. To use this function, enable the Power On Function option in BIOS's Integrated Peripherals screen (See section 3-8). You must also set this jumper's cap to pins 2-3 to use this function. Some out-of-date keyboards may require larger current than supplied by the Suspend 5V of modern power supplies. When using older keyboards disable this function.

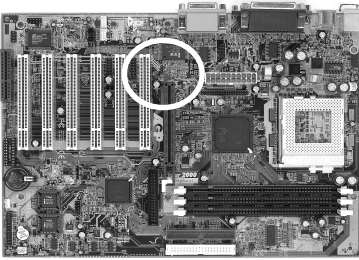
USB Device Power On Function (JP4)



1 Disable (default) 1 Enable

This board is able to be turned on by a USB keyboard (hot key/Password) or a USB mouse click. To use this function, select a device of your choice at the Power on Function option in BIOS's Integrated Peripherals screen. You must also set jumper caps to pins 2-3 to use this function.

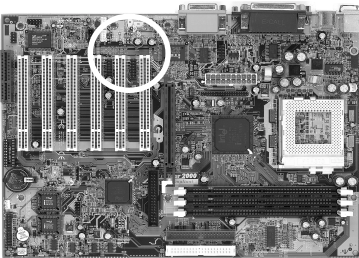
Chassis Intrusion Detection (JP5)



This board supports the chassis instruction monitoring feature of the management extension hardware by means of a mechanical or photo sensor switch attached to the motherboard through this 1x3-pin chassis security header. The mechanical switch is set to open for normal computer operation.



Optional Audio Line out or Speaker out Selector (JP6/JP7)



JP6 1 ● ● ○

JP7 ● ● ○

Line_out

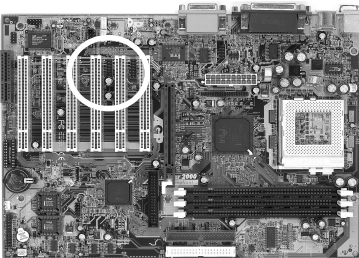
JP6 1 ○ ● ●

JP7 ○ ● ●

Speaker_out (default)

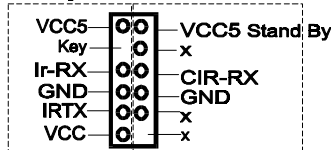
This jumper allows you to select between audio line-out or speaker out function. Set both JP2 and JP3 pins to 1-2 for line-out function or set both JP2 and JP3 pins to 2-3 for speaker out function..

IR/CIR Connector (JP8)

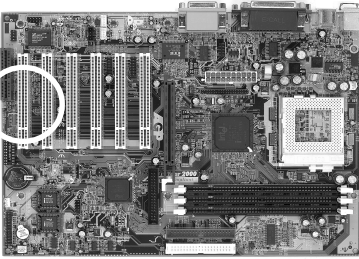


If you enable the IR/CIR Address Select in BIOS's Integrated Peripherals menu the IR/CIR port will let you select the IRQ and IR/CIR Mode to support IR/CIR functions.

Left: belongs to IR Right: belongs to CIR



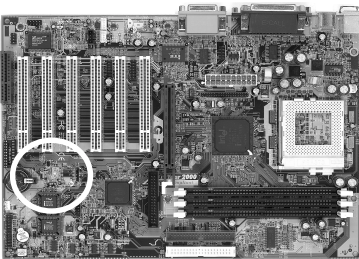
Primary Audio CODEC Selector (JP9)



- 1 Onboard CODEC (Default)
- 1 CNR (Soft-Audio/Modem riser)

Short pin 1-2 to enable onboard AC`97 CODEC.
Short pin 2-3 to enable CNR (Soft Audio/Modem riser).

Clear CMOS Data (JP10)

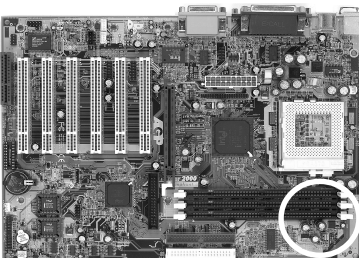


- 1 Normal (default)
- 1 Clear CMOS Data

To clear the contents of the CMOS, please follow the steps below.

1. Disconnect the system power supply from the power source.
2. Set the jumper cap at location 2~3 for 5 seconds, then set it back to the default position.
3. Connect the system's power and then start the system.
4. Enter BIOS's CMOS Setup Utility and choose Load Setup Defaults. Type Y and press enter.
5. Set the system configuration in the Standard CMOS Setup menu.

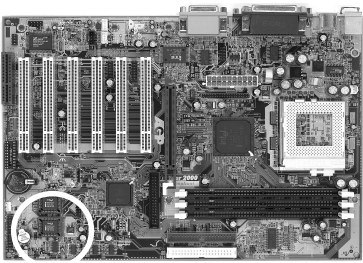
CPU Bus Frequency (JP11/JP12)



FSB	JP11	JP12
Auto(default)	1 ~ 2	1 ~ 2
100MHz	2 ~ 3	1 ~ 2
133MHz	Open	2 ~ 3

This jumper allows the CPU bus frequency to be determined either by the CPU or the user. Set both jumper caps to pin 1-2 (default) if you are not sure what frequency your CPU support.

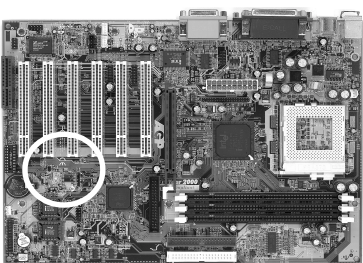
Optional Boot BIOS Selector (JP15)



- 1 Boot BIOS select (default)
- 1 BIOS 1 (Power on only)
BIOS 2 (Power on + Reset button)

This feature allows you to select a BIOS to boot up your system. Set the pin to 1-2 to enable Boot BIOS select in the BIOS Features Setup and then select either BIOS 1 or BIOS 2 for startup (see section 2-4). The feature also allows you to manually shift to another BIOS once the BIOS fail to boot. Set pin to 2-3 to boot from BIOS 1 and then press the power on button to boot up or press reset and power on button hold for 2-3 second and then release to boot from BIOS 2.

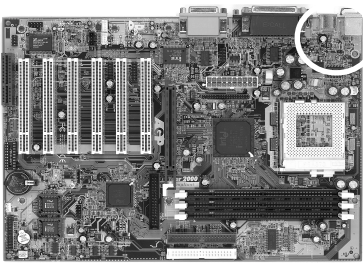
Optional Language Selector (JP16)



This feature allows you to select a language (voice warning during boot up) support for your system. **Short** the pin for English language or let the pin **open** for other language support.

- Short (English)
- Open (Other Language)

PS/2 Mouse and Keyboard Ports (CN1)

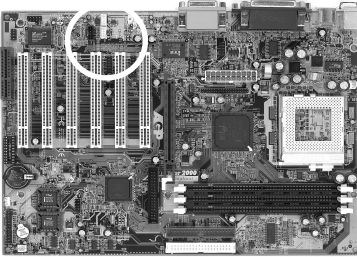


If a PS/2 mouse is used, BIOS will automatically detect and assign IRQ12 to the PS/2 mouse.

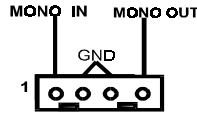


Pin	Definition
1	Data
2	No Connection
3	Ground
4	+ 5V (fused)
5	Clock
6	No Connection

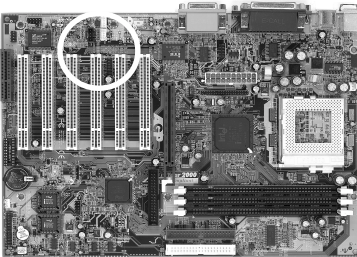
Optional Audio Mono-in/out Connector (CN4)



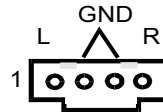
Use the mono audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable mono audio in/out function.



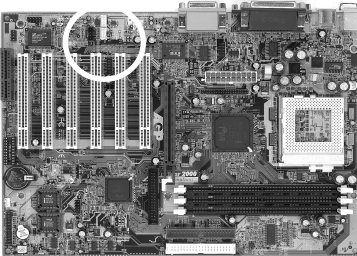
CD-ROM Audio-in Connector (CN5)



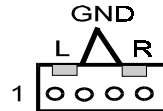
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.



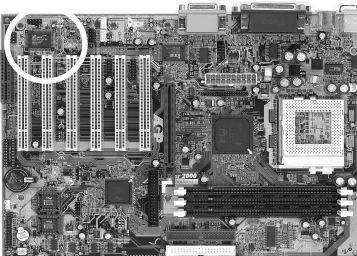
Auxiliary Audio-in Connector (CN6)



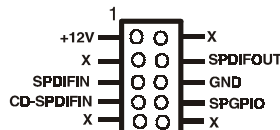
Use the auxiliary audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.



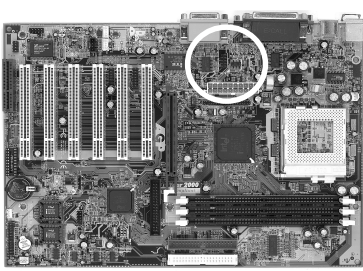
S/PDIF-Out Connector (CN7)



The S/PDIF-Out connector supports the digital audio. This connector must be connected to the cable from an external device. (Ex. 2-channel decoded AC-3 from DVD decoders)

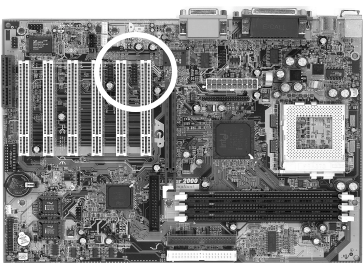


Optional COM 2 Header (CN9)

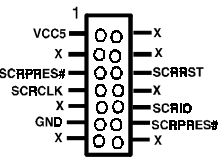


Use the optional serial port cable enclosed with your mainboard. Plug into the header and attached the other end with the bracket to the system case back panel.

Smart Card Reader Connector (CN10)

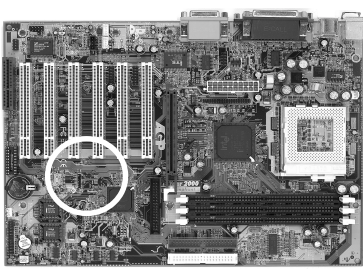


This connector must be connected to a Smart card reader(Optional).

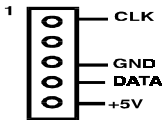


Smart Card Reader (Optional)

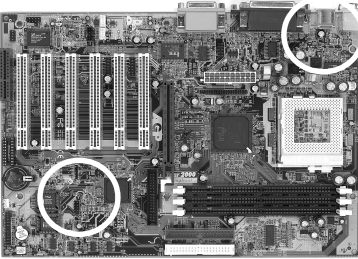
Alert On LAN Connector (CN13)



Alert On LAN enabled LAN controller to report messages to a network management console without the aid of the system processor. This is crucial in cases where the processor is malfunctioning or cannot function due to being in a low power state. In order to use this function, the connector must be connected to a LAN card that support AOL feature.



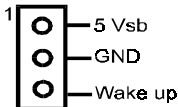
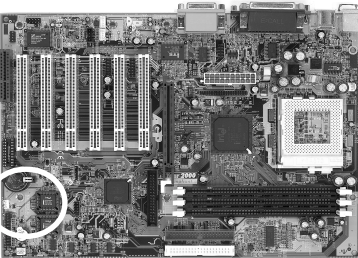
USB Ports and USB 2/3 Connector (CN14)



If you want to use a USB keyboard, you must enable the onchip USB & USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4). USB is an open industry standard, providing a simple and inexpensive way to connect up to 125 devices to a single computer port. Keyboards, mice, tablets, digitizers, scanners, bar-code readers, modems, printers and many more can all be used at the same time.

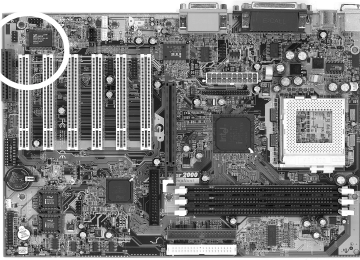
This board contains a USB Host controller and includes a root hub with two USB 0/1 ports (meets USB Rev 1.0 spec.) and a connector for optional USB Adaptor (USB2/3). Four USB peripherals or hub devices are able to be connected.

WOL (Wake-on-LAN) Connector (CN15)

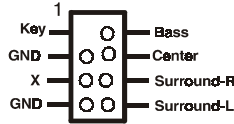


Enable the Wake Up On LAN selection in BIOS's Power Management Menu to use this function. The capability to remotely manage PCs on a network is a significant factor in reducing administrative and ownership costs. Magic Packet technology is designed to give WOL (Wake-on-LAN) capability to the LAN controller. When a PC capable of receiving wake up command goes to sleep, the Magic Packet mode in the LAN controller is enabled. When the LAN controller receives a Magic Packet frame, the LAN controller will wake up the PC. This header is used to connect an add-in NIC (Network Interface Card) which gives WOL capability to the mainboard.

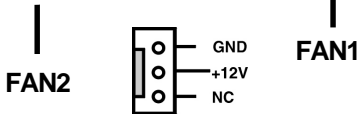
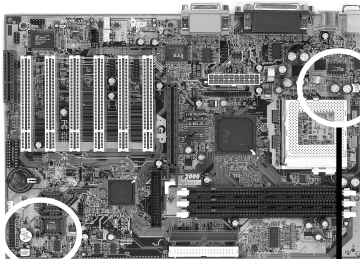
Optional AC3 Surround/Center + Bass Connector (CN17)



This connector is for Surround and Center+Bass speaker output ext. Plug in the optional AC3 Surround/Center+Bass jack extension into this connector. The black colored jack is for surround speaker output and the orange colored jack is for center+bass speaker output.



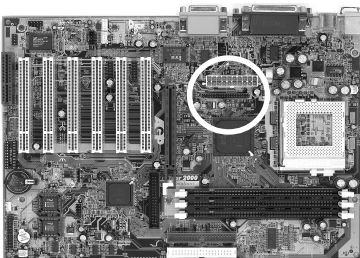
CPU/System Cooling Fan Connectors (FAN1/FAN2)



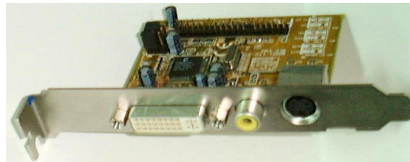
These added connectors allow the fan to draw their power from the mainboard instead of the disk drive connector.

The board's management extension hardware is able to detect the CPU and system fan speed in rpm (revolutions per minute). These connectors supports 3-pin cooling fans with minimum of 4000 RPM. The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black is ground, and the yellow wire is the rotation signal.

LTI-II Riser (LT11) Optional



This connector is to be connected to an optional TV/LCD/2nd CRT Output adapter card.



2-5 Main Memory Configuration

The DRAM memory system consists of three banks and the memory size ranges from **32~512 MBytes**. It does not matter which bank you want to install first.




DRAM Specifications

FSB Freq. (MHz)	System Memory Bus Freq. (MHz)
66	100
100	100
133	100
133	133

DIMM type : 3.3V, unbuffered, registered, 64/72-bit SDRAM with SPD*

Module size: Single/double-side 32/64/128/256 MBytes

Parity : Either parity or non-parity

-  This mainboard supports up to 2 double sided or 3 single sided DIMMs at 133MHz system memory bus.
-  This mainboard supports 3.3v, unbuffered, 4-clock, SDRAM DIMM only. Buffered, 5V, or 2-clock SDRAM DIMMs should not be used.
-  Due to loading anomalies, using DIMM with an 'n x 4' DRAM base on this mainboard is not recommended. For example, a DIMM that uses sixteen 16Mb x 4 devices should not be used.

SPD (Serial Presence Detect)

This is an EPROM that contains speed and design information about the memory module. The mainboard queries the module and makes adjustments to system operation based on what it finds.

Memo