

## 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.

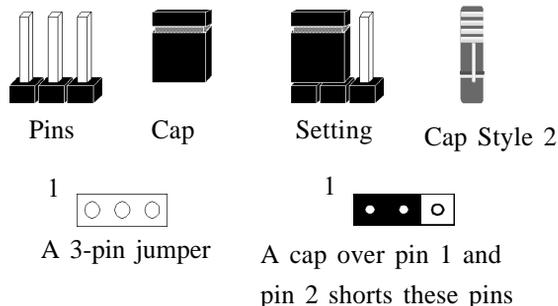


Figure 2-1

## 2-2 Installing an AMD Athlon Processor in Socket A

1. The Socket 462, designed for AMD Athlon processors, has been incorporated as a standard mainboard specification. To insert your CPU into Socket A please do the following:
2. 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.
3. Pull up the lever of Socket 462 so that it is perpendicular with the surface of the mainboard. Gently insert the CPU with Pin 1 at the same corner of Socket 462 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 burnout of your CPU.

## 2-3 Plug and Play CPU Configuration

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

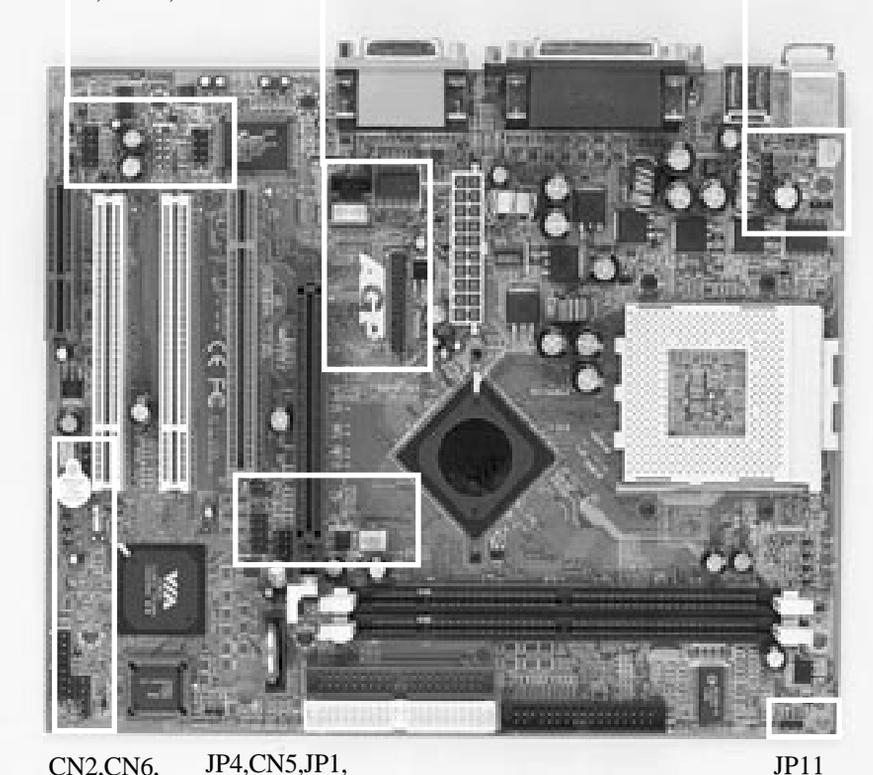


You do not need to make frequency ratio and voltage settings because this board will automatically set your CPU frequency ratio & voltage.

CN4A,CN4C,CN4B

CN3,CN4,CN1

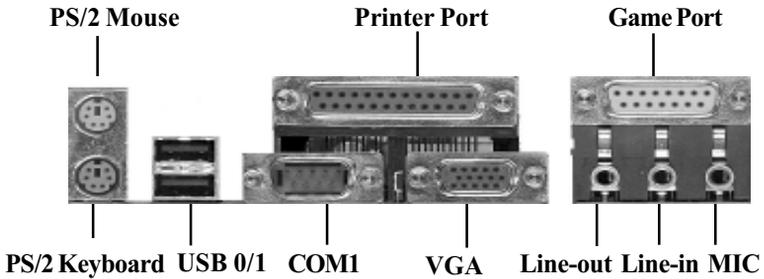
JP3,JP5,FAN1



CN2,CN6,  
CN17, IR1

JP4,CN5,JP1,  
FAN2,JP9B1

JP11



<b>Jumper &amp; Connector No.</b>	<b>Function</b>	<b>Page</b>
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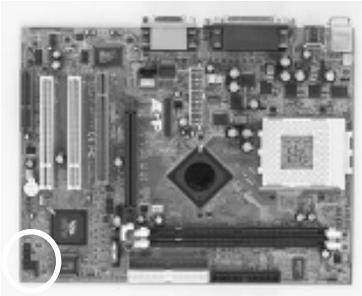
## 2-4 Connector and Jumper Settings

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 (PW1)



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.

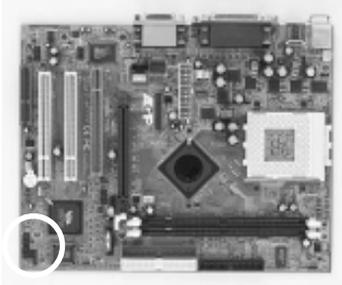


The ATX power supply provides a single 20-pin connector interface which incorporates standard +/-5V, +/-12V, optional 3.3V and Soft-power signals. The Soft-power signal, a 5V trickle supply is continuously supplied when AC power is available. When the system is in the Soft-Off mode, this trickle supply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

### Software Power-Off Control

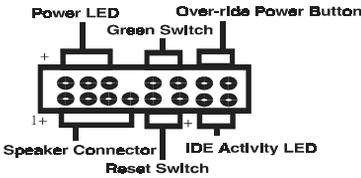
This mainboard can be powered down using the Windows 95/98 Software Power-Off function. To power down your computer, click the START button on the Windows 95 task bar. Select "Shut Down The Computer" and the system turns off. The message "It is now safe to turn off your computer" will not be shown when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

## Front Panel Connector Set (CN6) A through F

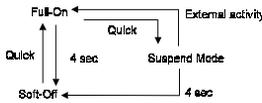


### A. Over-ride Power Button Connector

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. (See section 3-5)



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.



Over-ride Power Button Operation

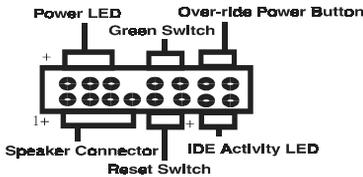
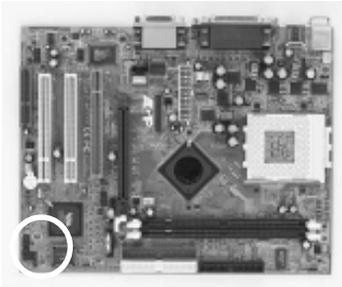
### B. Power Indicator LED Connector

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.)

	Pin	Definition
Power Indicator LED	1	+5V DC
	2	No Connection
	3	Ground
Keyboard Lock	4	Key Lock
	5	Ground

## 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. (See section 3-4)



### C. Green Switch 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 waken 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

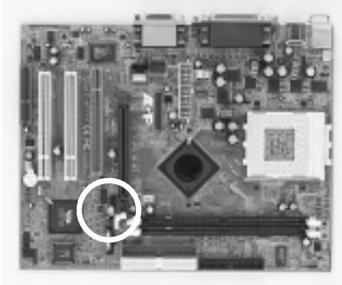
### F. IDE Activity LED Connector

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

## 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.

## Clear CMOS Data Jumper (JP1)

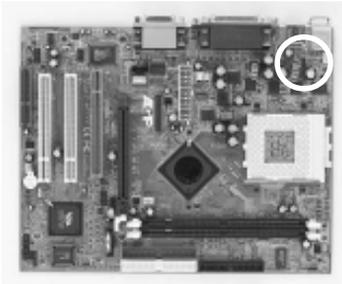


- 1  Normal (default)      1  Clear CMOS Data

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.

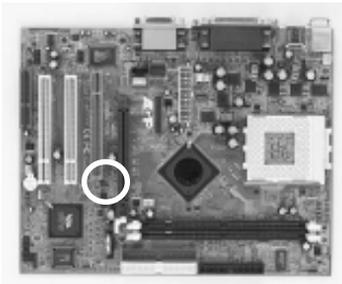
## USB 0/1 Device Power On Function (JP3)



- 1  Disable (default)      1  Enable

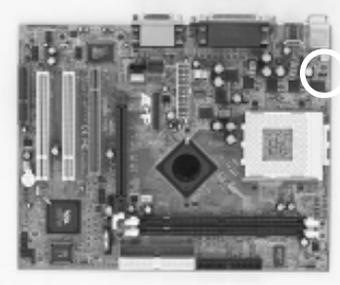
This board is able to be turned on by a USB keyboard hot key or a USB mouse click. To use this function, select a hot key of your choice at the USB Resume From S3/S4/S5 option under Wake Up Events in BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

## ACR Support for USB Function (JP4)



This feature allows you to enable and disable the USB function on ACR slot. You must set the jumper's cap to pins 1-2 and 3-4 to enable this function. Leave jumper's pin 1-2 and 3-4 open to disable this function.

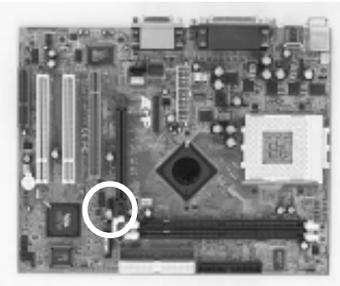
## PS/2 Keyboard Power-on Function (JP5)



1  Disable (default)      1  Enable

This board is able to be turned on by the PS/2 keyboard (hot key). To use this function, select a hot key of your choice at the PS2KB Wakeup option under Wake Up Events in BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

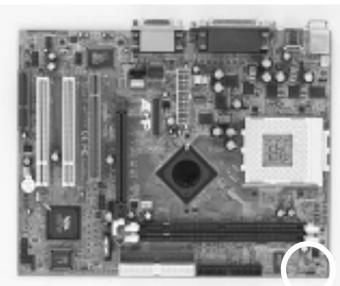
## USB 2/3 Device Power On Function (JP9B1)



1  Disable (default)      1  Enable

This board is able to be turned on by a USB keyboard hot key or a USB mouse click. To use this function, select a hot key of your choice at the USB Resume From S3/S4/S5 option under Wake Up Events in BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

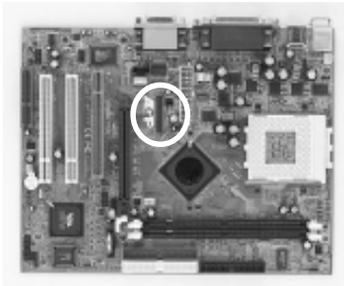
## CPU Bus Frequency (JP11)



1  100MHz      1  133MHz.

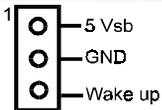
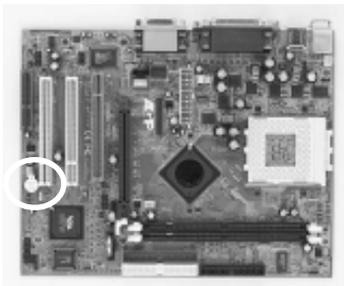
This jumper allows you to select the CPU bus frequency clock speed. Set jumper's cap to pin 1-2 for 100MHz FSB. Set jumper's cap to pin 2-3 FOR 133MHz FSB.

### Optional TV out/DFP Connector (CN1)



This connector is to be connected to an optional TV-out/DFP adapter card.

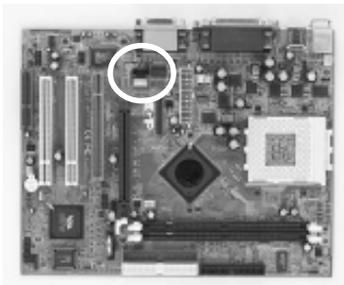
### WOL (Wake-on-LAN) Connector (CN2)



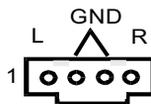
Enable the Wake Up On LAN selection in BIOS's Power Management Menu to use this function. The capability to remotely manage PCs on a network is a significant factor in reducing administrative and ownership costs. Magic Packet technology is designed to give WOL (Wake-on-LAN) capability to the LAN controller. 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 motherboard.

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

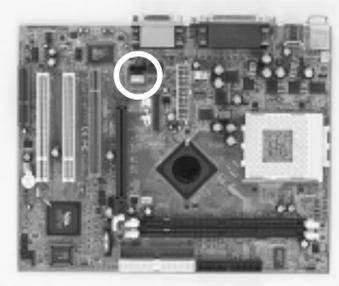
### CD-ROM Audio-in Connector (CN3)



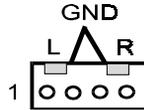
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your motherboard. This will enable your CD-ROM's audio function.



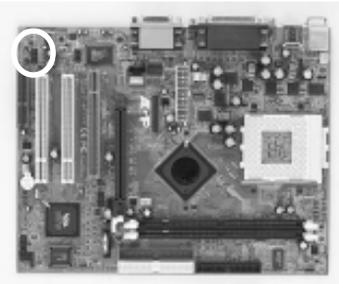
## Auxiliary Audio-in Connector (CN4)



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.

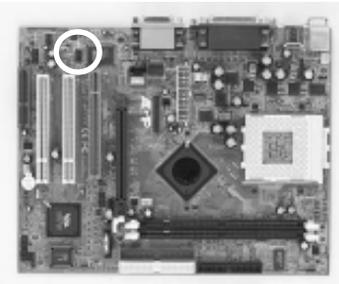


## Front Panel Audio Connector (CN4A)

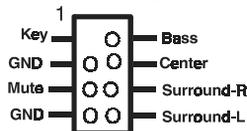


This connector is use for front panel audio jack ext. and is to be connector into a special custom designed system case.

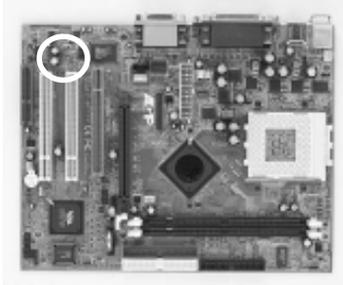
## Bass/Center and Rear L/R Connector (CN4B)



This connector is for Center+Bass speaker output ext. Plug in the optional AC3 Surround Center/Bass and Rear left/right 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.

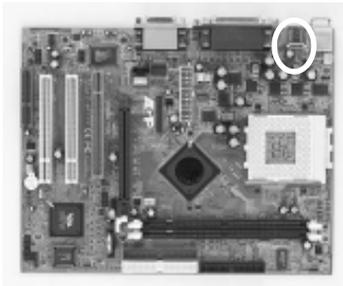


### Optional S/PDIF-In/Out Connector (CN4C)



The S/PDIF-In/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)

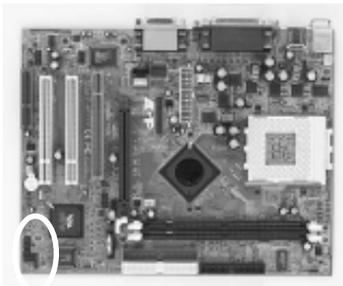
### USB Ports and USB 2/3 Connector (USB1/CN5)



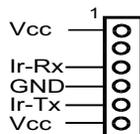
If you want to use a USB keyboard, you must enable the onchip USB & USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4). USB is an open industry standard, providing a simple and inexpensive way to connect up to 125 devices to a single computer port. Keyboards, mice, 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 (USB3/4). Four USB peripherals or hub devices are able to be connected.

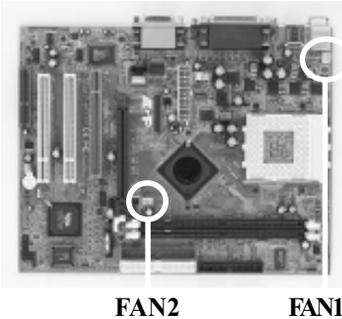
### Infrared Connector (IR1)



If you enable the UART 2 Mode in BIOS's Integrated Peripherals menu the COM2 port will support IR functions. (See section 3-4)



## CPU/System Cooling Fan Connectors (FAN1/FAN2)

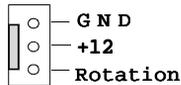


FAN2

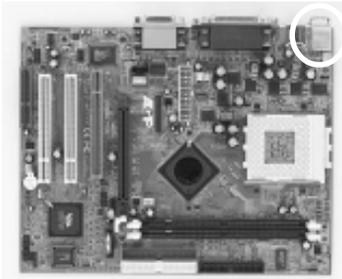
FAN1

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 3500 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.



## PS/2 Mouse and Keyboard Ports (PT1)

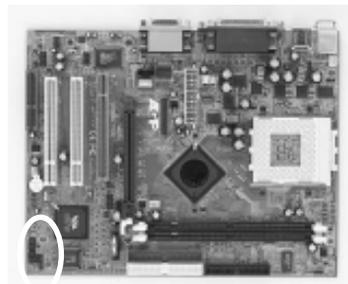


If a PS/2 mouse is used, BIOS will automatically detect and assign IRQ12 to the PS/2 mouse.



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

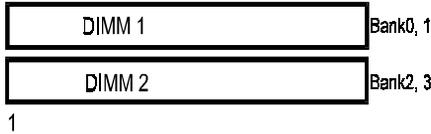
## Blue LED Connector(CN17)



This feature work entirely the same as the power indicator LED, both shows the system's power status. The only difference is that this one is blue while the other is red LED.

## 2-5 Main Memory Configuration

The DRAM memory system consists of two banks and the memory size ranges from 32~1GBytes. It does not matter which bank you want to install first.



### *DRAM Specifications*

DIMM type: 3.3V, unbuffered, registered, 64/72-bit SDRAM with SPD\*  
Module size: Single/double-side 32/64/128/256/512MBytes  
Parity: Either parity or non-parity

-  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.