



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.

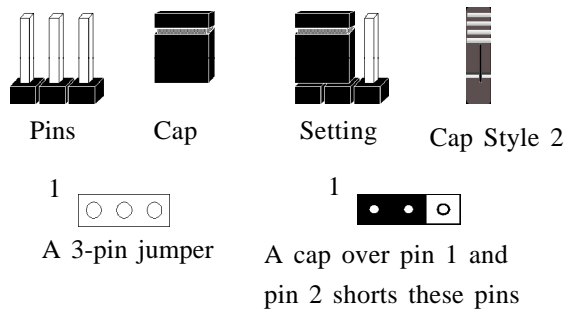



Figure 2-1

2-2 Installing an AMD Athlon Processor in Slot A

1. Insert the AMD Athlon processor into the retention mechanism. Press evenly and gently until the snaps on the upper side of the processor have been inserted into the holes at the top of the retention mechanism.
2. Note that when removing the processor, these snaps should be clicked into a completely vertical position, leaving your hands free to stabilize the board. Pull the processor evenly and gently out of the retention mechanism.
3. Also note that like PCI and ISA slots, Slot 1 has a divider that prevents backwards insertion of the CPU.


 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 support 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.

CPU Host/PCI Clock Timing

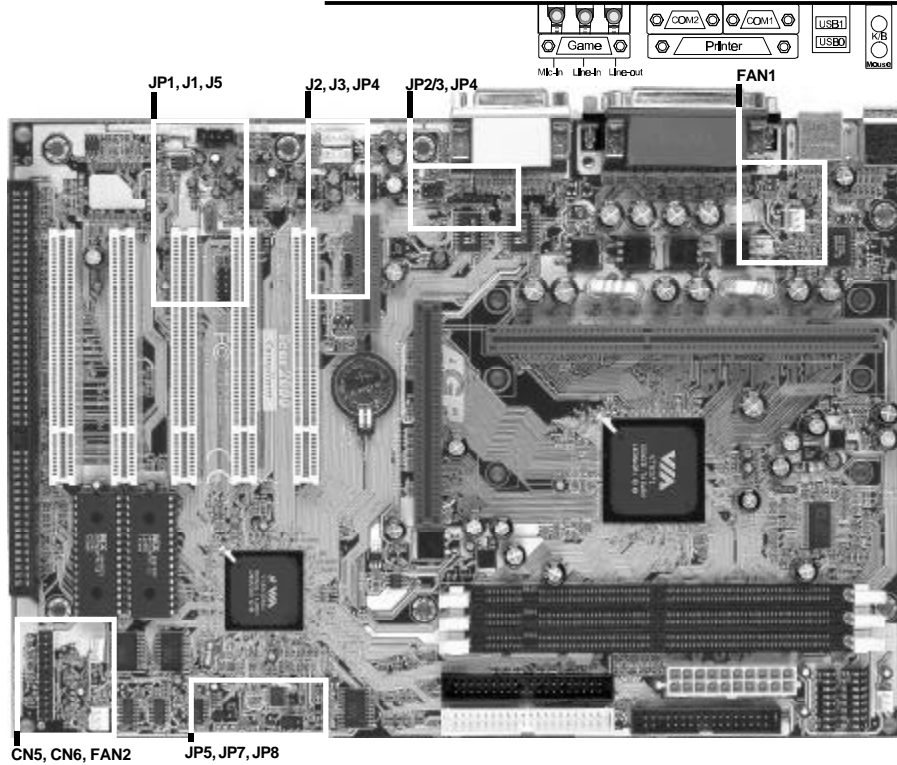
1. After installing all your hardware into your PC system, turn on your system's power. Enter the CMOS Setup Utility by pressing the Delete key when your BIOS identification screen appears.
2. Move the cursor to Frequency/Voltage Control Setup menu and press Enter. Select the CPU Host/PCI Clock Setup commands at the left hand side of the BIOS screen.
3. Select the CPU Host/PCI Clock value according to the speed of your CPU processor and PCI bus. (See section 3-8)
4. Press Esc to return to the CMOS Setup Utility, press F10 to Save and Exit Setup and choose to confirm. The system will automatically reboot and during start-up you will see the correct CPU type shown on the screen.

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



Hardware Setup

Back Panel I/O Connector



CN5, CN6, FAN2

JP5, JP7, JP8

Jumper & Connector No.	Function	Page
JP1	Onboard Audio select	13
JP2/JP3	Audio line out or speaker out	13
JP4	Primary Audio CODEC select	13
JP5	Boot BIOS select (Optional)	14
JP7	Clear CMOS data jumper	14
JP8	Chassis Intrusion Detection	14
J1	CD-ROM audio in connector	15
J2	Audio Mono-in/out connector	15
J3	AUX audio in connector	15
J4	Infrared / Consumer Infrared connector	16
J5	USB 2/3 connector	16
CN1	PS/2 mouse and keyboard ports	16
CN2	USB 0/1 ports	16
CN5	Over-ride power button connector	11
	Power indicator LED connector	11
	Green switch / Green LED connector	12
	System reset switch connector	12
	Speaker connector	12
	IDE activity LED connector	12
	Turbo LED connector	12
CN6	WOL(Wake On LAN) connector	17
PW1	ATX Power supply connector	10
FAN1/2	CPU/ System cooling fan connector	17

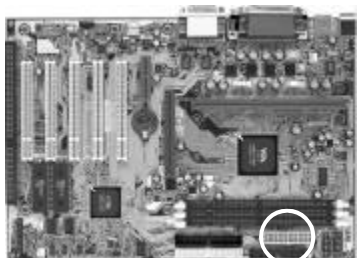
2-4 Connector and Jumper Settings

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.

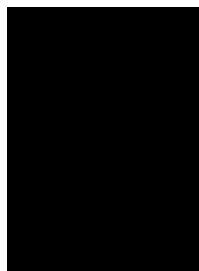


The power supply connector is the last connection to be made while installing a mainboard. Before connecting the power supply, please make sure it is not connected to the power source.

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

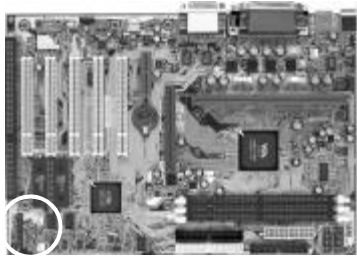
This mainboard can be powered down using the Windows 95/98 Software Power-Off function. To power down your computer, click the START button on the Windows 95 task bar. Select "Shut Down The Computer" and the system turns off. The message "It is now safe to turn off your computer" will not be shown when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

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. (See section 3-4)

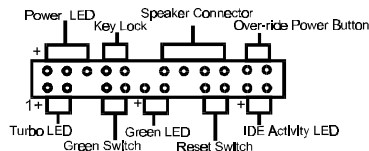


Front Panel Connector Set (CN5) A through G

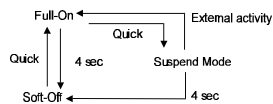


A. Over-ride Power Button Connector

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

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

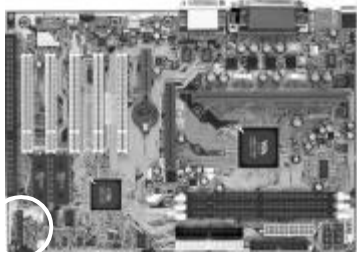
Power Indicator LED connects to pins 1, 2, and 3.
Keyboard Lock connects to pins 4 and 5.

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)

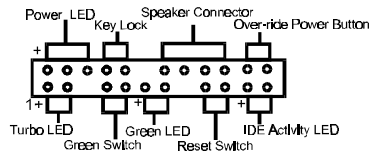


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C. Green Switch/Green LED Connector

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 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.

G. Turbo LED Connector

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

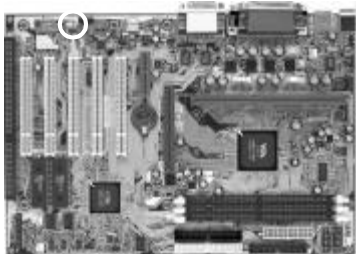
Poly-fuse Over Current Protection

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.





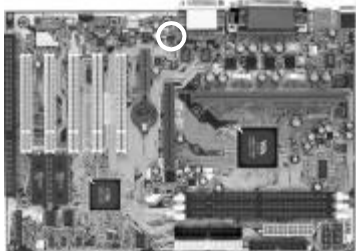
Onboard Audio select (JP1)



- 1 ● Enabled (default)
- 1 ○ Disabled

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.

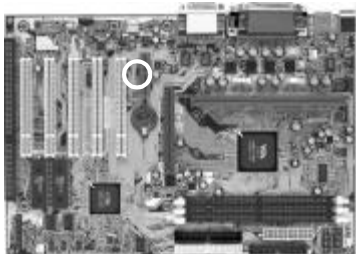
Audio Line_out or Speaker_out (JP2/JP3)



- JP2 1 ●●○ Line_out (default)
- JP2 1 ○●● Speaker_out
- JP3 ●●○
- JP3 ○●●

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..

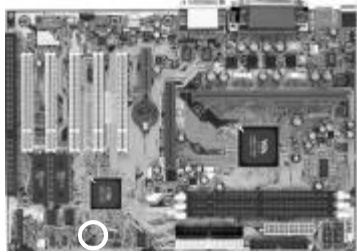
Primary Audio CODEC select (JP4)



- 1 ● Onboard CODEC (Default)
- 1 ○ AMR (Soft-Audio/Modem riser)

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

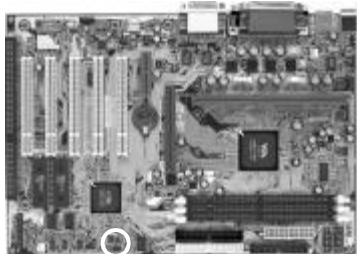
Optional Boot BIOS select (JP5)



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

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 to boot from BIOS 2.

Clear CMOS data jumper (JP7)

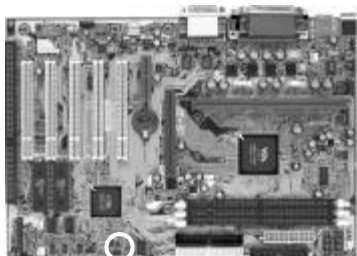


- 1 Normal (default)
- 1 Clear CMOS

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.

Chassis Intrusion Detection (JP8)

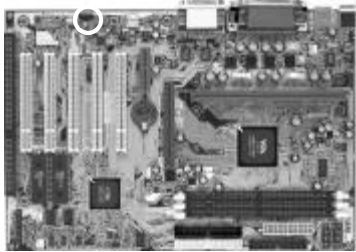


This board supports the chassis instruction monitoring feature of the management extension hardware by means of a mechanical or photo sensor switch attached to the motherboard through this 1x3-pin chassis security header. The mechanical switch is set to open for normal computer operation.

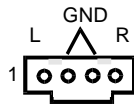
- 1 - 5 Vsb
- 1 - CASE Open
- 1 - GND



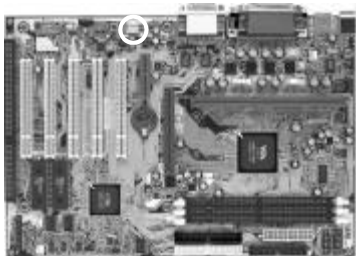
CD-ROM audio in connector (J1)



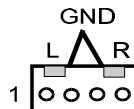
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.



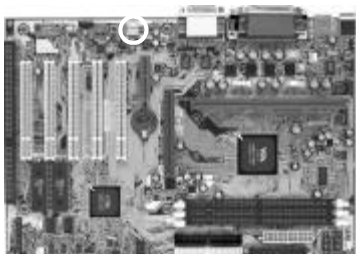
Audio Mono -in/out connector (J2)



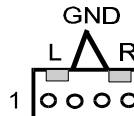
Use the mono audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable mono audio in/out function.



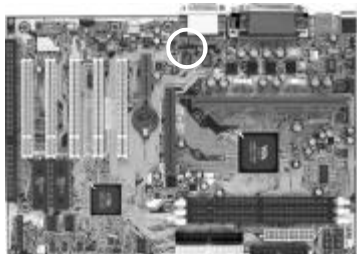
Auxiliary CD-ROM Audio-in Connector (J3)



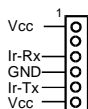
Use the auxiliary audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.



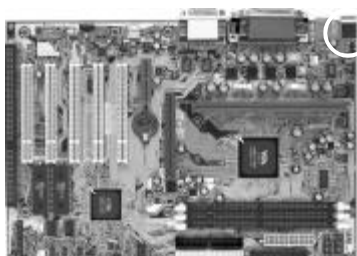
Infrared/Consumer Infrared Connector (J4)



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. (See section 3-9)



PS/2 Mouse and Keyboard Ports (CN1)

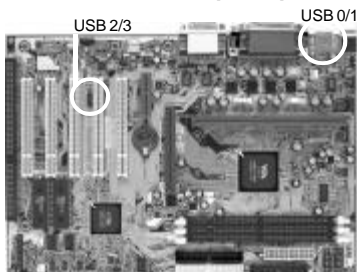


If a PS/2 mouse is used, BIOS will automatically detect and assign IRQ12 to the PS/2 mouse.



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

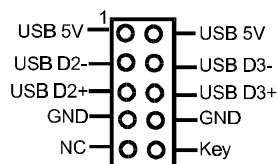
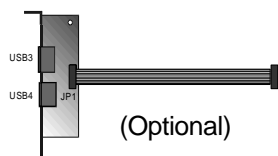
USB 0/1 Ports (CN2) and USB 2/3 Connector (J5)



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.

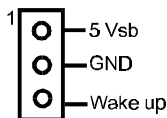
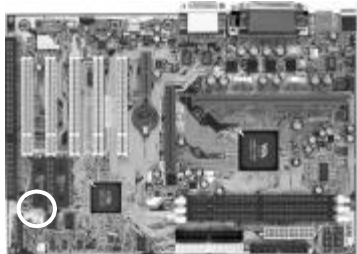
USB is a dynamically reconfigurable serial bus with an elementary data rate of 12Mbps. Based on off the shelf, low cost micro-controller technology, its modular layered software protocol supports sophisticated devices and application programs.

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.





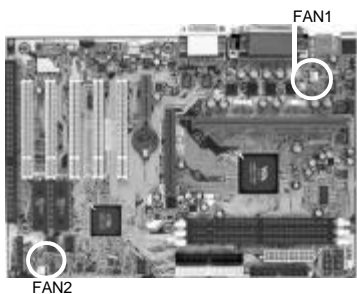
WOL (Wake-on-LAN) Connector (CN6)



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.

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

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 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.

2-5 Main Memory Configuration

The DRAM memory system consists of three banks and the memory size ranges from 16~768 MBytes. It does not matter which bank you want to install first.

DRAM Specifications

FSB	SDRAM Type	SDRAM Type	Max Memory
66	FSB	12ns or faster	768MB
	FSB+33	10ns or faster	
100	FSB-33	12ns or faster	
	FSB	10ns or faster	
	FSB+33	7.5ns or faster	
133	FSB-33	10ns or faster	
	FSB	7.5ns or faster	

DIMM type: 3.3V, unbuffered, registered, 64/72-bit SDRAM with SPD*
Module size: Single/double-side 16/32/64/128/256MBytes
Parity: Either parity or non-parity

- ⚠ The compatibility with 512MB and Registered DIMM is still under testing and cannot be guaranteed.
- ⚠ 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.

ECC DRAM Capability

This mainboard can be configured to support ECC (Error Check and Correct) function when utilizing parity DIMM modules. To utilize the chipset's ECC features, you must use a 72-bit DIMM module. These modules are automatically detected during bootup. However, the user must configure the DRAM Data Integrity Mode to "ECC" in BIOS's SeePU&Chipset Features Setup menu to enable the ECC function. ECC detects double bit errors and detects and corrects single bit memory errors on the fly without user intervention. Errors may be generated by a defective memory module, conflicting memory speeds between different banks, DMA, etc.





Chapter 2

Memo

