



## 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.

**! Besure 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.

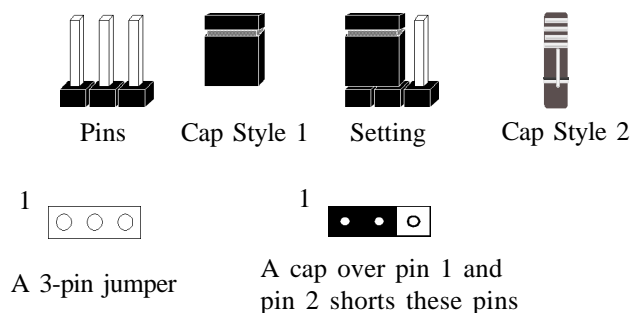


Figure 2-1



## Chapter 2

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### 2-2 Installing a CPU in Socket 370

The Intel Socket 370, designed for the Celeron processor, 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(SeePU Technology)

*SeePU* is a new user friendly technology that enables the user to setup a mainboard's CPU parameters through an easy to use BIOS setup procedure. 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 SeePU Setup menu and press Enter. Find the CPU HOST/SDRAM/PCI Clock option. Commands for operating the cursor in BIOS are found at the Bottom of the BIOS screen.
3. Use the CPU HOST/SDRAM/PCI Clock option to select your CPU's parameters. Set the clock ratio (also known as external clock multiplier factor) according to your processor's specifications (See Figure 2-3).



CPU-DRAM Frequency Setting Jumper (JP3/JP4/JP5) must be selected according to your processor. Set to AUTO(default) if your CPU is a frequency locked processor (See Section 2-4).



You do not need to make voltage settings because *SeePU* automatically sets your CPU voltage(See Figure 2-2).

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.





CPU TYPE	CPU Speed		
Intel PentiumII/III	External Clock	Freq. Ratio	Internal Clock
	100	3.5	350
		4	400
		4.5	450
		5	500
		5.5	550
		6	600
		6.5	650
		7	700
Intel PentiumIII	133	4	533
		4.5	600
		5	667

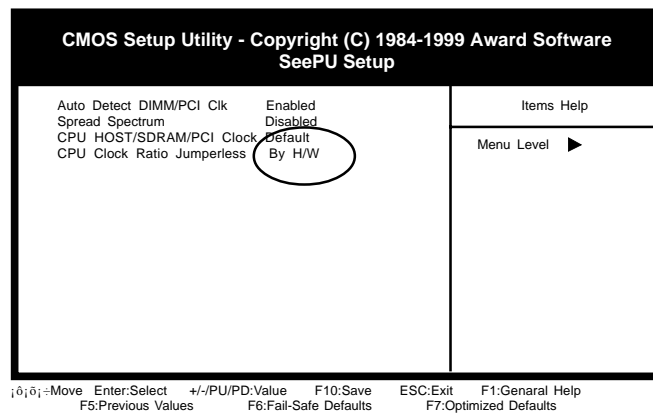


Figure 2-3



## Chapter 2

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### 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 burn-out, system failure, etc.

Many 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 the Home key on your keyboard
2. Turn on your computer, wait for five seconds and then release the Home key.  
(Pressing the Home key allows the computer to boot at a low system speed.)
3. Enter BIOS and reconfigure your CPU parameters as described in this section.





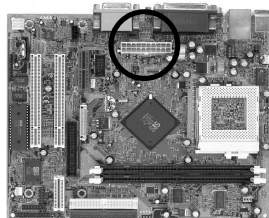
## 2-4 Connector and Jumper Settings

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 (CN8)



**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.**

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

### Software Power-Off Control

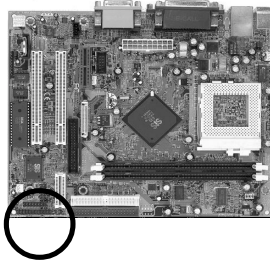
This mainboard can be powered down using the Windows 95 Software Power-Off function. To power down your computer, click the START button on the Windows 95 Task Bar. Select "Shut Down The Computer" and the system turns off. The message "It is now safe to turn off your computer" will not be shown when 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. Enable this function in BIOS's Power Management Setup menu.

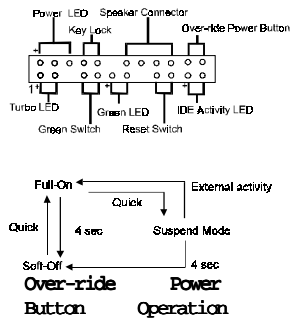


## Front Panel Connector Set (CN18) A through G



### 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 button 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 Power Button Over Ride function in BIOS's Power Management Setup menu must be set to "Delay 4 Sec." to activate this function.



When the Power Button Over Ride function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurrence of external activity 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.

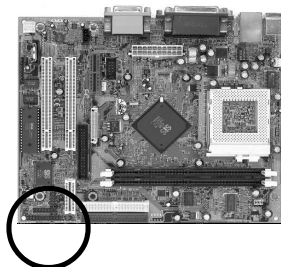
### B. Keyboard Lock & Power Indicator LED Connector

Plugging this connector into the lock on the front panel of the system case allows the lock to enable or disable the keyboard. This function provides limited security against casual intruders. The power indicator LED shows the system's power status. It is important to pay attention to the correct cable and pin orientation (i.e., not to reverse the order of these two connectors.)

	Pin	Definition
Power Good LED	1	+5V DC
	2	No Connect
	3	Ground
Keyboard Lock	4	Keylock
	5	Ground

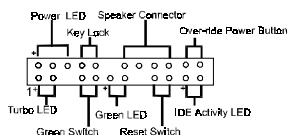
### Blinking LED in Suspend Mode

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.



### 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	NC
3	NC
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

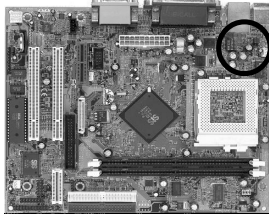
This mainboard does not have a Turbo/De-turbo speed modes. Even though this function does not exist, the turbo LED will light when the LED is connected and turbo button pressed.

## 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.



### PS/2 Keyboard/Mouse Power-on Function (JP1)

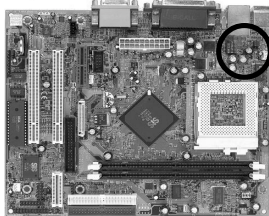


1 Disable

1 Enable

This board is able to be turned on by the PS/2 keyboard (hot key/Password). 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 this jumper's cap to pins 2-3 to use this function.

### USB (1/2 )Device Power On Function (JP2)

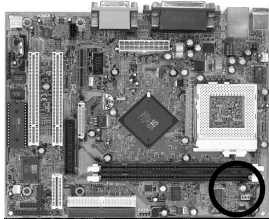


1 Enabled

1 Disabled

This board is able to be turned on by a USB keyboard (hot key/Password). 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 this jumper's cap to pins 2-3 to use this function.

### CPU-DRAM Frequency Setting Jumper(JP3/JP4/JP5)



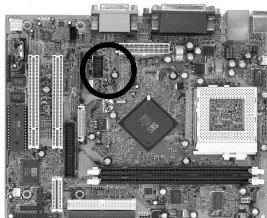
CPU	SDRAM	JP3	JP4	JP5
AUTO	PC-100	1 ~ 2	1 ~ 2	1 ~ 2
133		1 ~ 2	2 ~ 3	1 ~ 2
100		2 ~ 3	1 ~ 2	1 ~ 2
AUTO	PC-133	1 ~ 2	1 ~ 2	2 ~ 3
133		1 ~ 2	2 ~ 3	2 ~ 3
100		2 ~ 3	1 ~ 2	2 ~ 3

This this feature will only work if, the CPU is frequency locked free. Set all jumpers to pin 1-2 AUTO (default) for frequency locked CPU.





### Clear CMOS Data Jumper (JP6)



Normal (default)

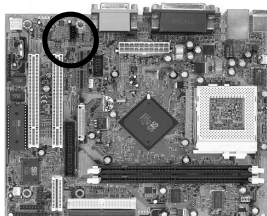


Clear CMOS data

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.

### AC'97 CODEC Jumper (JP7)



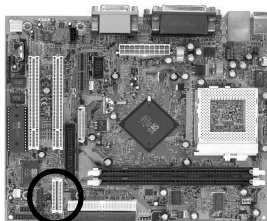
AC'97 CODEC Enabled



Soft-Audio/Modem Riser Enabled

Short pin 1-2 to enable Soft Modem riser only (Onboard AC'97 CODEC enabled). Short pin 2-3 to enable Soft Audio Modem Riser.

### Front Panel USB (3/4) Device Power On Function (JP8)



Enabled



Disabled

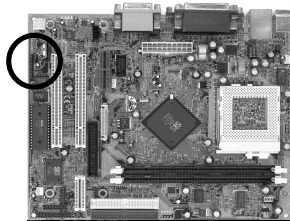
This board is able to be turned on by a USB keyboard (hot key/Password). To use this function, select a device of your choice at the Power on Function option in BIOS's Integrated Peripherals screen. You must also set this jumper's cap to pins 2-3 to use this function.







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### CIR Password Function Jumper(JP9)

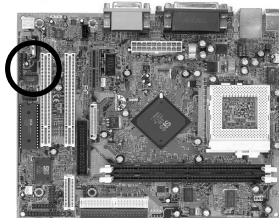


- 1  Disabled (default)      1  Enabled

This board is able to be turned on by a CIR Password Set jumper cap to pin 2-3 to enable this function. Set jumper car to pin 1-2 to disable this function.

USB3/4

### Optional Speaker Out and Mic In Connector (J1)

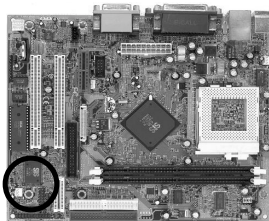


This optional connector must be connected to a speaker out and Mic-in jack adaptor.



- |   |               |
|---|---------------|
| 1 | Vrefaut       |
| 2 | MIC IN        |
| 3 | GND           |
| 4 | X             |
| 5 | X             |
| 6 | GND           |
| 7 | Speaker OUT-R |
| 8 | Speaker OUT-L |
| 9 | GND           |

Optional

### S/PDIF Connector (J2)



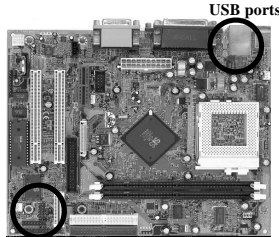
The S/PDIFconnector supports the digital audio. This connector must be connected to the cable from an external device. (Ex. 2-channel decoded AC-3 from DVD decoders)

- 1  IN  
2  GND

FAN2



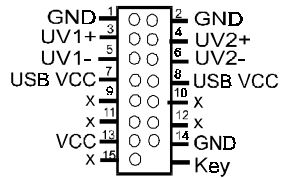
## USB(Universal Serial Bus) Ports and USB 3/4 Connector(J3)



USB3/4



Optional USB Adaptor



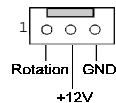
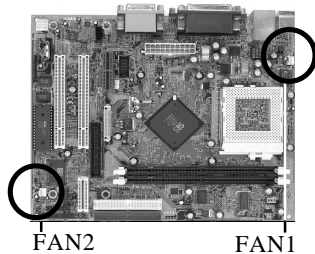
If you want to use a USB keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4). USB is an open industry standard, providing a simple and inexpensive way to connect up to 125 devices to a single computer port. Keyboards, mice, tablets, digitizers, 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 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.



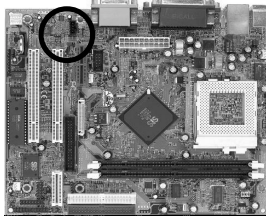
## CPU/System Cooling Fan Connectors (FAN1/FAN2)



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 3500RPM. The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black



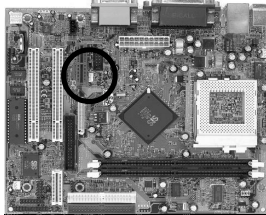
## CD-ROM Audio-in (CN10)



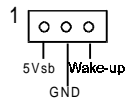
Use the cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.



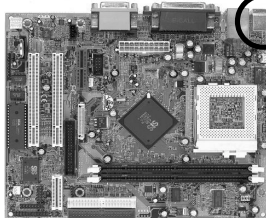
## WOL (Wake-on-LAN) Connector (CN11)



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.



## PS/2 Mouse and Keyboard Ports



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



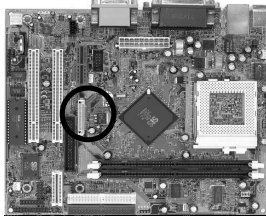
Pin	Definition
1	Data
2	No Connect
3	Ground
4	+5V (fused)
5	Clock
6	No Connect



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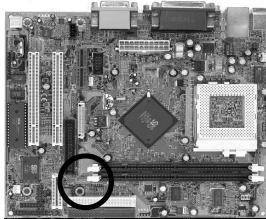
## Hardware Setup

### Optional LTI-II Connector (CN12)

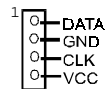


This connector is to be connected to an optional TV/LCD/2nd CRT Output adapter card.

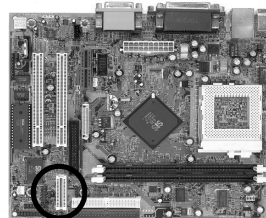
### I<sup>2</sup>C Connector (CN13)



The I<sup>2</sup>S Connector supports the MPEG sound decoder. This connector must be connected to the cable from the MPEG card.



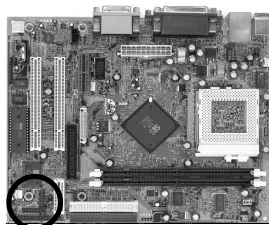
### Optional PCI Riser Connector (CN14)



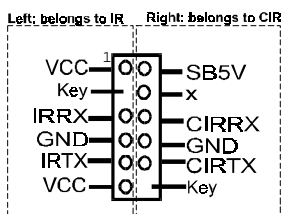
This connector is to be connected to a PCI riser card (optional) for additional PCI slots support.



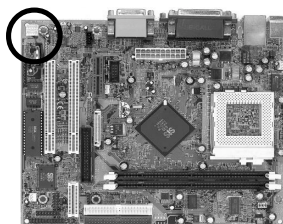
## IR/CIR Connector (CN15)



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. Connect this connector to the IR/CIR devices to enable this function.



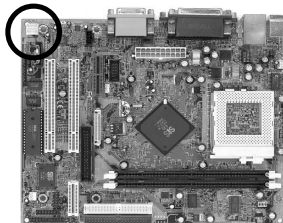
## Audio Mono -in/out (CN16)



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.



## AUX- IN Connector (CN17)



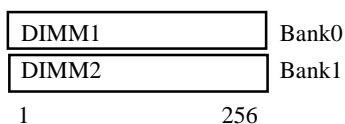
Use the auxiliary audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.





## 2-5 Main Memory Configuration

The DRAM memory system consists two banks and the memory size ranges from **16~256 MBytes**. If you only use one bank it does not matter which one you use and if you use two or more banks, it does not matter which bank you 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, 64/72-bit Synchronous DRAM  
Module size: Single/double-sided 16/32/64/128/256 MBytes  
DRAM speed: 10/12ns for Synchronous DRAM  
Parity: Either parity or non-parity



The compatibility of 512MB DIMM is still under testing and cannot be 100% guaranteed.



This mainboard supports 3.3v, unbuffered, 4-clock, SDRAM DIMM only. Buffered, 5V, or 2-clock SDRAM DIMMs should not be used.



Chapter 2



Memo

