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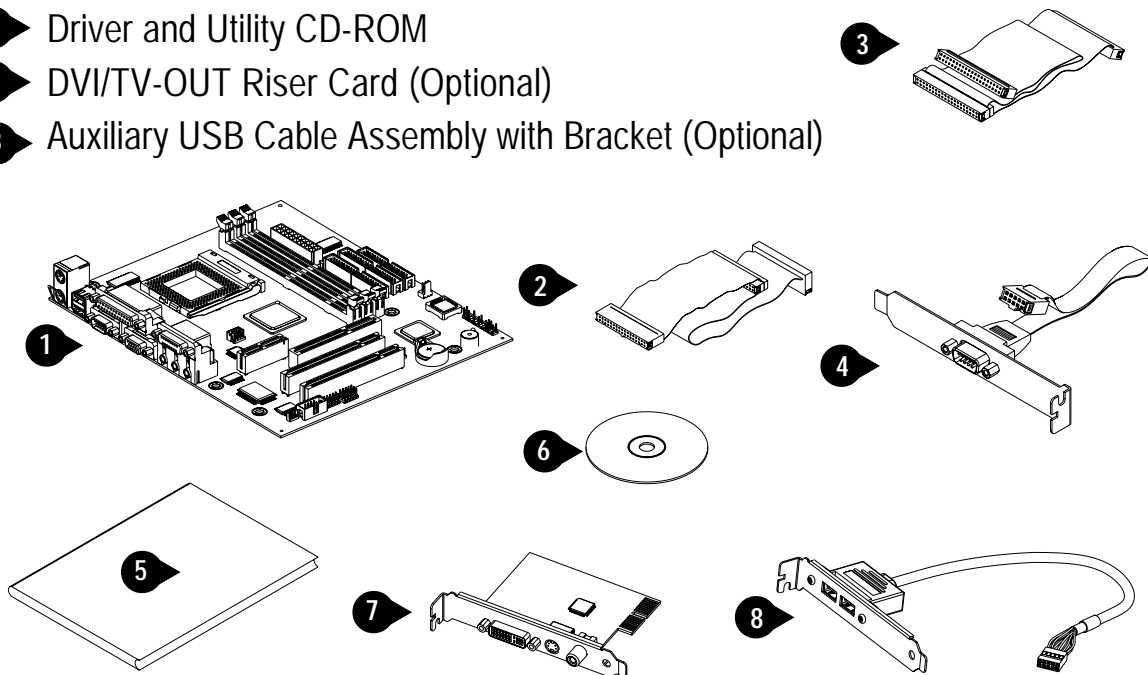
## 1. Introduction

This chapter provides information that you should be familiar with before using the system. It includes checklist and specification of the motherboard.

### Checklist

Thank you for choosing the system. The package box contains the following contents. After unpacking, make sure that you have everything and that individual components are not damaged. If you find any component missing or damaged, contact your retailer immediately.

- ➊ M815-MX series Motherboard
- ➋ FDD Ribbon Cable Assembly
- ➌ IDE Ribbon Cable Assembly
  - ❖ The 80-Pin ribbon cable is designed with 40-Pin connector for UltraDMA33/66 IDE device.
- ➍ Auxiliary Serial Cable Assembly with Bracket
- ➎ User's Manual
- ➏ Driver and Utility CD-ROM
- ➐ DVI/TV-OUT Riser Card (Optional)
- ➑ Auxiliary USB Cable Assembly with Bracket (Optional)



❖ *Items 7,8 is optional at the time of purchase that you can ignore it on checklist.*

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## ***Hardware Specifications and Features***

### **Chipset**

- M815-MX series motherboard consists of the Intel 815 chipset Graphics and Memory Controller Hub (GMCH into a single 544-Pin BGA package), the I/O Controller Hub (ICH into a single 241-Pin mBGA package), and the Firmware Hub (FWH into a single 32-Pin PLCC package).
- Winbond W83627HF-AW LPC Super I/O chipset
- Digital link sound with AC'97 Codec onboard

### **CPU Support**

- Intel PPGA/FC-PGA Celeron and FC-PGA Pentium III series processors

### **System Speed Support**

- 66/100/133MHz FSB for CPU Interface
- 33MHz PCI Bus for PCI Interface
- 66MHz AGP Bus for AGP Interface (either via a connector or a slot on the motherboard)
- 100MHz (PC-100)/133MHz (PC-133) SDRAM Bus for Memory Interface

### **Memory**

- 64-bit Advanced Memory Controller supporting PC-100/PC-133 SDRAM, memory types.
- Support 3 DIMMs socket, 168-Pin, 3.3V unbuffered for up to 512MB of DRAM (128MB DRAM technology).
- Integrated Local Graphics Memory Controller supporting 133MHz memory clock for up to 4MB of display cache

### **Expansion Slots Support**

- Two 32-bit PCI master slots with v2.2 compliant
- One 32-bit AGP (2X/4X) slot with v2.0 compliant (Supporting graphics adapter or AIMM card)
- One AMR slot (Supporting AMR or DVI/TV-OUT function via a riser card)

### **System I/O Support**

- Two PCI Bus master IDE-channels support Ultra ATA33/66 up to

# 1. Introduction

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66MB/s DTR and one FDD port

- Two DB-9 16550 UART serial port (If you want to have auxiliary serial port available in your system, you must install the serial cable assembly which is supplied with this motherboard), and one DB-25 ECP/EPP parallel port
- Five USB ports with v1.1 compliant (If you want to have auxiliary USB ports available in your system, you must purchased the USB cable assembly from sales agent)
- One mini DIN-6 PS/2 mouse and one mini DIN-6 PS/2 keyboard port
- One IR (Infrared) I/O compliant connector (Optional)
- One standard DB-15 analog VGA port
- One game/MIDI port and three audio jacks (Line-out, Line-in, Microphone)

## BIOS Support

- Award Plug and Play flash BIOS, Soft power-down and Suspend-to-DRAM
- PCI (v2.2), APM (v1.1), DMI (v2.0), SM (v2.3), ACPI compliant
- Smart BIOS ROM protect function
- Power recovery after interrupt feature

## Extend Feature Support

- Hardware monitoring temperature, supply voltages and fan speed
- System power on by PS/2 keyboard and mouse
- Modem Ring-On and Wake-up On LAN function

## Power

- Harris HIP6021 PWM power controller
- ATX Power Supply configuration
- Utilizes GTL+bus to reduce power consumption and EMI

## Compliances

- FCC compliant and CE certification

## Form Factor

- Micro ATX 9.60" (L) x 8.27"(W) x 4 layers PCB

## Environment

- Operating Temperature : 0 ~ 50°C
- Operating Humidity : 10 ~ 80%RH
- Vibration : 0 ~ 500Hz

---

## ***2. Hardware Installation***

This chapter provides information that you should be familiar with before install the system. It describes how to install on a step-by-step guide and explains how to use your motherboard to build a powerful system.

### ***Installation Steps***

Before install your system. You must complete the steps:

- Check Motherboard Jumper Settings
- Install CPU and Heatsink/Cooling Fan
- Install SDRAM Memory Module
- Mounting the Motherboard in the Chassis
- Connect IDE, CD-ROM Drives and Ribbon Cables
- Install Add-on Card
- Connect Panel Wires and Power Supply
- Connect PS/2, USB, Serial, Parallel and Others Devices
- Setup the BIOS Configuration and Utility Software

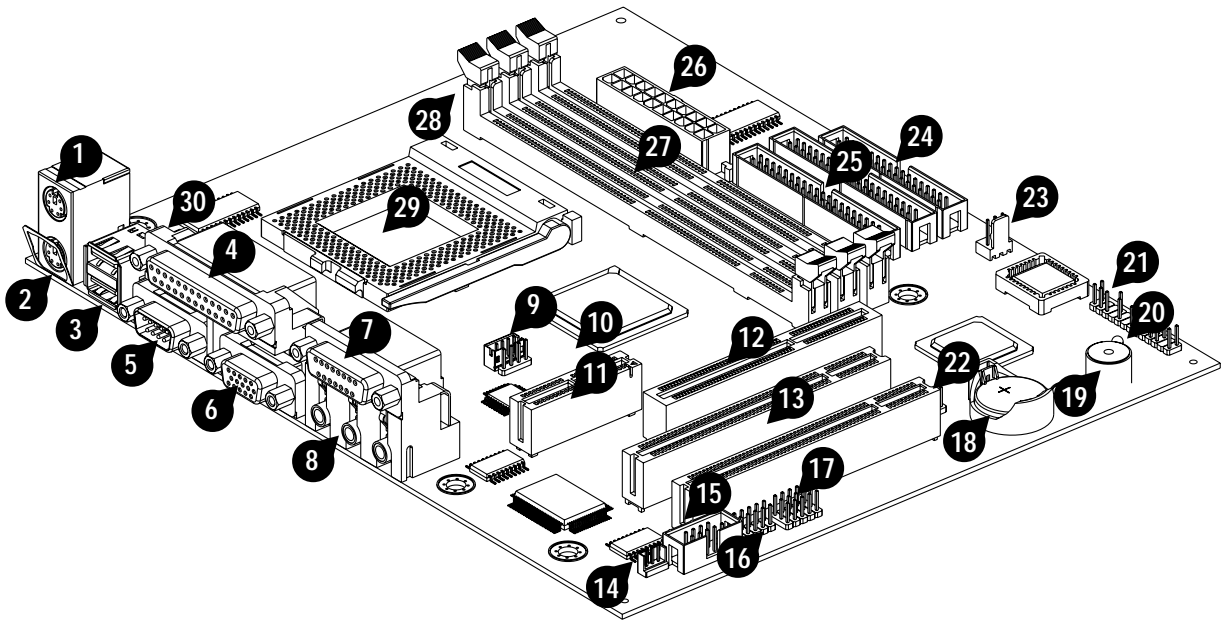
You are now ready to install your system, the first thing you should do is ready this user's manual. It contains important information which will make configuration and setup much easier. Here are some precautions you should follow when installing and selecting side for the system.

- ❖ ***Store the provided accessories in a designated place for your convenience. You will need them to install an optional device or trouble shoot the system, as well as to set it up.***

## 2. Hardware Installation

### Motherboard Layout Map

Use the following illustration and key to identify the major components on the motherboard.



No.	Location	Function
1	K/B & MS (Upper)	PS/2 Mouse port
2	K/B & MS (Lower)	PS/2 Keyboard port
3	USB1	USB ports
4	LPT1 (Upper)	Parallel port
5	COM1	Serial port
6	VGA1	VGA display port
7	GAME_AUDIO (Upper)	Game/MIDI port
8	GAME_AUDIO (Lower)	Three audio jacks, (Line-out, Line-in, Microphone)
9	J2, 3 (CD-IN)	Analog audio connector for sound output from CD-ROM/DVD drives
10	JP2	Jumper to set AMR or DVI/TV-OUT function
11	AMR1	One AMR (Audio Modem Riser) slot
12	AGP1	One AGP slot for AGP(2X/4X) graphics adapter

13	PCI1, 2	Two 32-bit PCI expansion slots
14	J9 (WOL)	Wake-up On LAN connector
15	COM2	Connector for auxiliary serial COM2 port
16	J10 (IrDA)	Infrared connector (Optional)
17	J11, 12 (USB2)	Auxiliary USB connector (Optional)
18	BAT1	Lithium CR2032 battery
19	BZ1	Warning and judging the system state by buzzer
20	LED (PWR LED)	Power LED for monitoring power state
21	FSP1	Connectors for panel switches and indicators
22	JP3	Jumper to set CMOS state
23	J8 (CHASSIS FAN)	Fan connector for chassis cooling fan
24	FDC1	Floppy disk drive connector
25	IDE1, 2	Primary/Secondary IDE channel connector
26	ATX1	Connector for the ATX power supply cable
27	DIMM1, 2, 3	DIMM socket for SDRAM memory module
28	J1(CPU FAN)	Fan connector for CPU cooling fan
29	PGA370	CPU socket for PGA370 processors
30	JP1	Jumper to set keyboard or mouse power on

- ❖ ***Infrared function are optional at the time of purchase that you can ignore it.***
- ❖ ***Ground yourself properly before removing your any devices from the anti-static bag. To protect them against damage from static electricity. Unplug the power from your system and then touch any metal part on the system chassis.***
- ❖ ***Avoid touching device components, such as IC chips, leads, and connectors. Hold the device by its edges and do not touch the bottom of the board.***
- ❖ ***Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.***
- ❖ ***Do not place the system in the following locations. It may cause mal-functions of the system.***



## 2. Hardware Installation

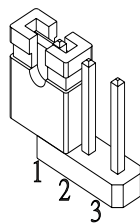
- *Locations with sudden changes in temperature. A sudden change in temperature causes condensation to form, which could result in failures of the system.*
- *Locations with strong vibration, Failure to follow this warning may cause not only malfunctions of the system but personal injury or property damage to the surroundings.*
- *Do not use a power outlet that shares the ground line with another (especially the one to which a device with large power consumption is connected) for the system.*

### Pre-Installation Procedure

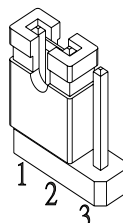
Before you install your motherboard into a chassis, it's convenient to install the CPU, install the memory modules, and set all the jumpers to correct settings.

#### Jumpers Setting Explain

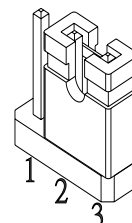
This motherboard has jumpers that need to be set correctly. You can use a jumper cap to connect two adjacent pins. When a jumper cap connects two pins, we say that the pin are SHORT. If you remove a jumper cap from two pins (or placed on just a single pin), we say that the pin are OPEN. The examples and illustrations below show the different positions of a jumper cap on the typical 3-Pin jumper. By changing the jumper cap, you change the circuit of the motherboard and enable or disable certain feature or properties of the board.



3-Pin jumper with a single jumper cap

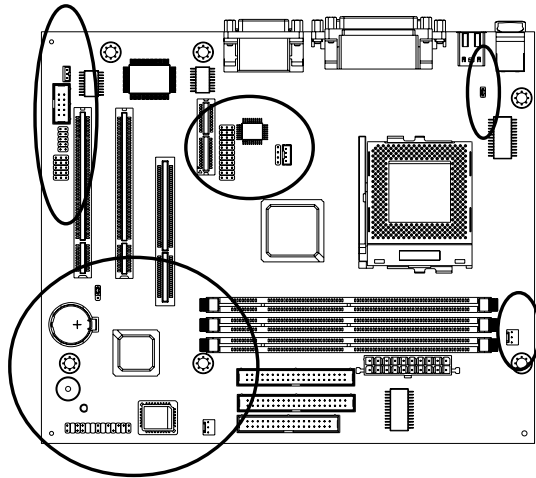


3-Pin jumper with pins 1-2 SHORT



3-Pin jumper with pins 2-3 SHORT

#### Locate the Jumpers on the Motherboard



### JP3: Clear CMOS Memory Jumper

Use this jumper to clear the contents of the CMOS memory. The setup utility is stored in CMOS, so you might need to clear this memory if incorrect setup data is stopping your system from starting, or your system can not boot-up because you forgot password and the system BIOS has been updated. Please following instructions can be performed to clear CMOS memory.

- Disconnect the ATX power supply cable from the motherboard, then move the jumper cap to short Pins 2-3 of JP3 for 3-5 seconds.
- Return the jumper cap to Pins 1-2 (normal setting) of JP3.
- Reconnect the power supply cable and turn on your system power. Then access BIOS setup, please refer to the BIOS configuration application.

	3	<b>Jumper Setting</b>	<b>Function</b>
	1-2	<b>SHORT Pins 1-2</b>	Normal Operation
	2-3	<b>SHORT Pins 2-3</b>	Clear CMOS

### JP1: PS/2 Keyboard/Mouse Power On Jumper

System power can be turned on by a PS/2 keyboard or a PS/2 mouse. To enable the Power On by PS/2 keyboard or mouse feature, you need to short JP1 pin1-2 and set "Power On Function" in "Integrated Peripherals" setup accordingly. See chapter 3 BIOS setup for more information.

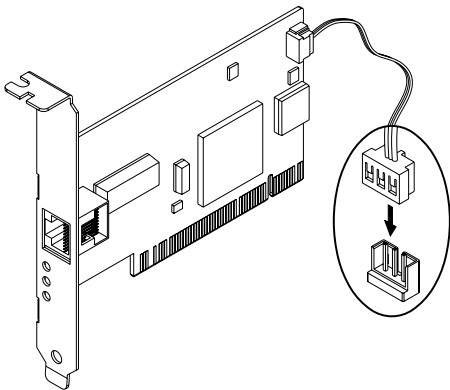
## 2. Hardware Installation

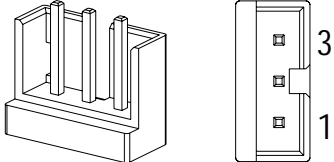
	<b>Jumper Setting</b>	<b>Function</b>
	<b>SHORT Pins 1-2</b>	Wake-Up Enabled
	<b>OPEN Pins 1-2</b>	Wake-Up Disabled

### J9: Wake-up On LAN Connector

This connector that used for remote wake up system through a network. If you have install a network adapter add-on card, you can cable the card to the J9 connector. If you enable the wake on LAN setting in the BIOS setup, incoming network traffic can resume the system from a power-saving mode or software power down.

This feature requires that the Wake-Up by PCI card is set to enabled (see “Power Management” under chapter 3 BIOS setup) and that your system has an ATX power supply unit with at least 720mA/+5V standby power.



	
<b>Pin</b>	<b>Assignment</b>
1	+5VSB
2	GND
3	Wake-Up Signal

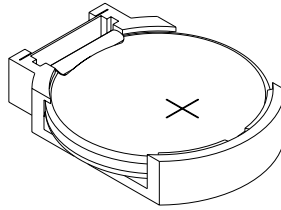
### BAT1: Lithium CR2032 Battery

It is a coin-cell style Lithium CR2032 battery is used to provide power to the Realtime Clock and CMOS memory for keep the data inviolate and effective. The Realtime Clock which provides the data and time to the system. The CMOS memory is used for keeping the information of the system configuration, so the system can automatically boot-up OS every time.

The battery has a 2-3 years life if the system is not power up. When the system power up, the power for the Realtime Clock and CMOS memory is supplied from the 3.3V

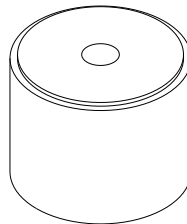
power to extend the life of battery. The users can change a new battery to replace old one after it can't work or BIOS doesn't keep its settings.

Replace only with the same or equivalent type, we recommend by the manufacturer or retailer.



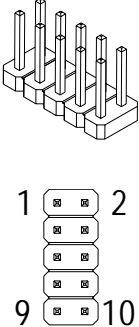
### BZ1: Buzzer

It is a 5 volts buzzer when system has any abnormally state or fatal error that you will hear a series of audible beep.



### J10: Infrared Connector (Optional)

This connector supports the optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system chassis that support this feature. You must also configure the setting through "UART Mode Select" in chapter 3 "Integrated Peripherals" to select whether UART is directed for use with [IrDA] or [ASKIR]. See chapter 3 for more information. Connect a ribbon cable from the module to the motherboard according to the pin definitions.

	SIR		CIR	
	Assignment	Pin	Pin	Assignment
	+5V	1	2	NC
	NC	3	4	CIRRx
	IRRx	5	6	+5VSB
	GND	7	8	GND
	IRTx	9	10	NC

## 2. Hardware Installation

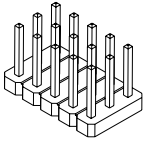
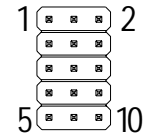



- ❖ *Read the manual and installation notes that come with the infrared module. They contain important information which will help you install the component right, the first time.*

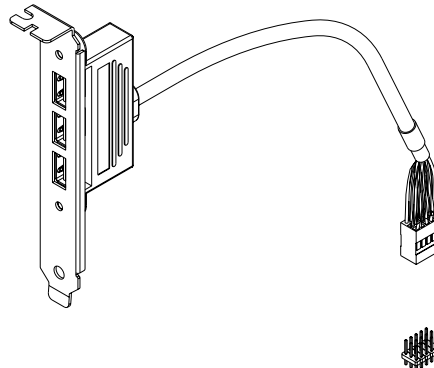
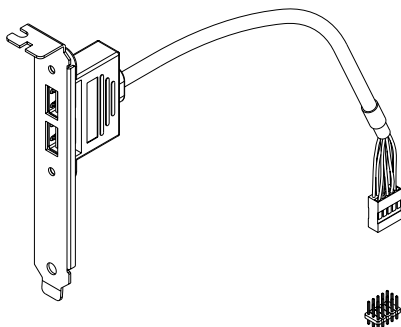
### USB2(J11, 12): Auxiliary USB Connector (Optional)

It provides 3 USB connections (via USB Hub) to the rear of your system case by the USB cable assembly.

Follow the procedure below to install the USB cable assembly.

- Locate the USB2 connector on the motherboard.
- In the system case, remove the blanking plate for the opening in the case adjacent to the slot you are going to use (keep the removed blanking plate for future use).
- Insert the cable assembly and drive a screw through the metal bracket on the edge of the cable assembly to secure it in place.
- Plug the connector of the cable assembly into the USB2 connector on the motherboard (select either methods to install cable assembly).

		J12		J11			
		Pin	Assignment	Assignment	Pin	Pin	Assignment
		1	GND	+5V	1	2	GND
		2	GND	USB D3N	3	4	GND
		3	USB D2P	USB D3P	5	6	USB D4P
		4	USB D2N	GND	7	8	USB D4N
		5	+5V	GND	9	10	+5V

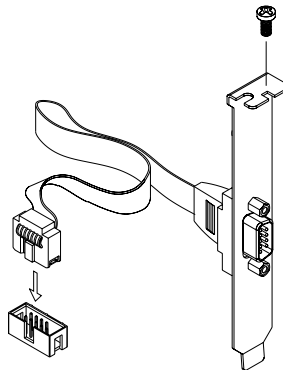


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## COM2: Auxiliary Serial Connector

If you want to have auxiliary serial port available in your system, you must install the auxiliary serial cable assembly with bracket. The cable assembly is supplied with this motherboard. Follow the procedure below to install the auxiliary serial cable assembly.

- Locate the COM2 connector on the motherboard.
  - In the system case, remove the blanking plate from the opening in the case adjacent to the slot you are going to use (keep the removed blanking plate for future use).
  - Insert the cable assembly and drive a screw through the metal bracket on the edge of the cable assembly to secure it in place.
  - Plug the connector of the cable assembly into the COM2 connector on the motherboard.
- ❖ ***Serial cable connector is usually keyed so that they can only be installed correctly on the connector.***



## To Install the CPU and Cooling Fan

This motherboard designed for Intel PPGA/FC-PGA Celeron and FC-PGA Pentium III processors. The system utilizes the Intel 815 chipset with Award BIOS. It can support speed of 300MHz through 1GHz on the Intel CPU and FSB of 66MHz to 133MHz.

- ❖ ***The CPU is a sensitive electronic component and it can easily be damaged by static electricity. Do not touch the CPU pins with your fingers. You should be able to insert the CPU into the socket with virtually zero***

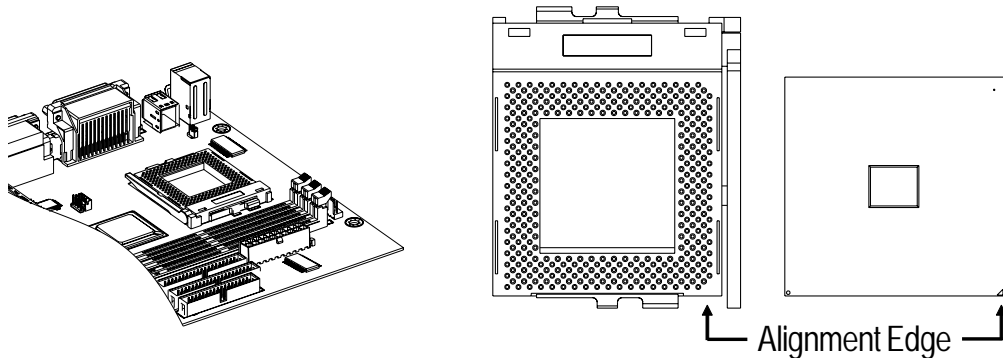
## 2. Hardware Installation

*force. Do not press down hard on the CPU as you will bend or break pins.*

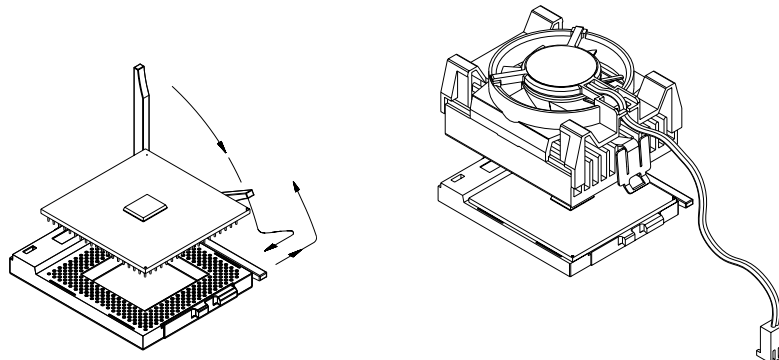
- ❖ *The CPU require a heatsink/fan. Failure to provide adequate cooling of the CPU may seriously affect system performance or cause permanent damage to the CPU.*
- ❖ *This motherboard operates on a 3.3 volt standby for the clock generator. Because of this, you need to unplug the AC power cord before changing your CPU operates on different FSB. Otherwise, may cause malfunctions or failures of the system.*

Follow the procedure below to install the PGA370 type CPUs.

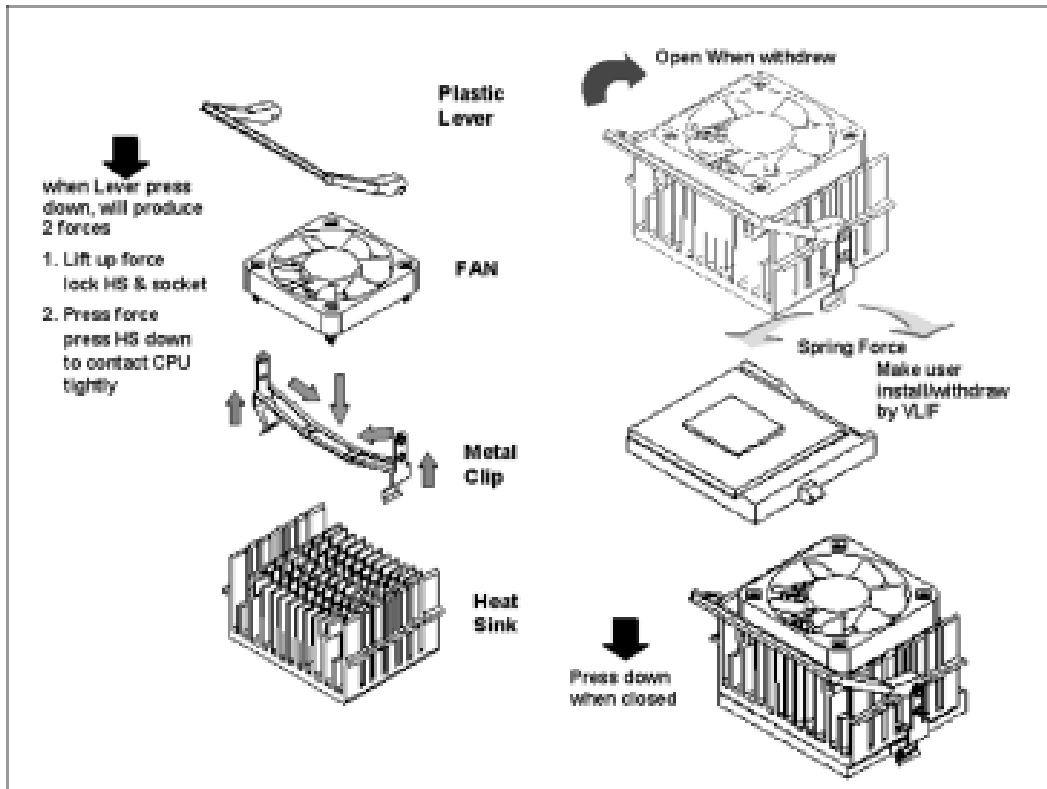
- On the motherboard, locate Pin-1 on the CPU is denoted by a small dot on one of the corners and Pin-1 on the PGA370 socket is denoted by an angled corner.



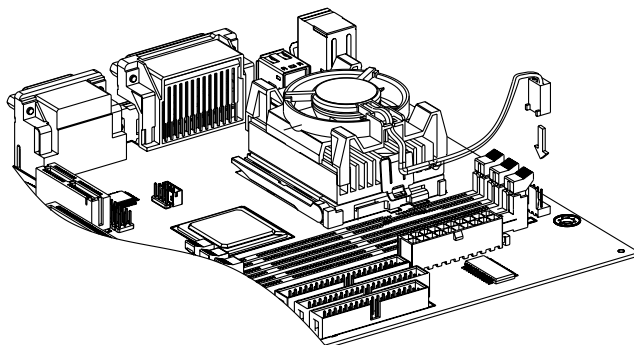
- Then open the locking lever when the CPU is insert into the PGA370 socket. Push down lightly on the CPU, and lower the arm on the PGA370 socket to secure the CPU. A squeaking noise is normal as the arm lowers. Never force a CPU into a socket. Forcing a CPU to seat will bend the pins on the CPU and possible damage the motherboard.



- After the CPU is securely seated, install the appropriate cooling device. We strongly recommends a heatsink/fan combination. Consult with your retailer for other cooling options. See the figure below to install the heatsink/fan.



- Locate the cooling fan connector J1 on the motherboard. Plug the CPU's cooling fan cable into the cooling fan connector on the motherboard.
- ❖ *There will be a plastic clip assembly that will force you to connect the fan cable correctly.*

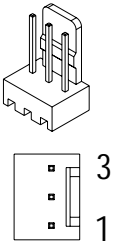




## 2. Hardware Installation

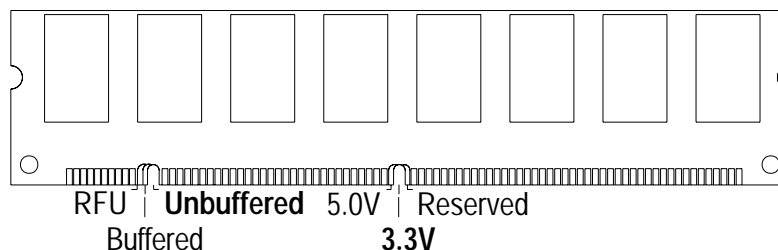
### J1,8: CPU, Chassis FAN Connector

This connector support cooling fan of 500mA (6W) or less. Orientate the fan so that the heatsink fins allow airflow to go across the onboard heatsink. When the system goes into sleep state, the fan should be shut down to eliminate audible noise and reduce power consumption. You can monitor the fan speed and the fan must come with a tachometer output. The CPU and/or motherboard will overheat if there is no airflow across the CPU and onboard heatsink. Damage may occur to the motherboard and/or the CPU fan if these pins are incorrectly used.

	Pin	Assignment
	1	GND
	2	+12V
	3	Speed/RPM

### To Install the SDRAM Memory Module

This motherboard uses a 64-bit data path from memory to CPU and can accommodate up to 512MB of SDRAM. The 168-Pin DIMMs (Dual In-line Memory Modules) must be of the 3.3V, unbuffered variety. The position of the notch in the SDRAM key position will tell you whether or not a SDRAM is unbuffered (see the figure below), also to prevent the wrong type from being inserted into the DIMM socket on the motherboard. You must tell your retailer the correct SDRAM type before purchasing.



- ❖ ***The SDRAM memory module is an extremely sensitive electronic component. Make sure to touch a metal object to discharge static electricity from your body before working with the SDRAM. Do not touch***

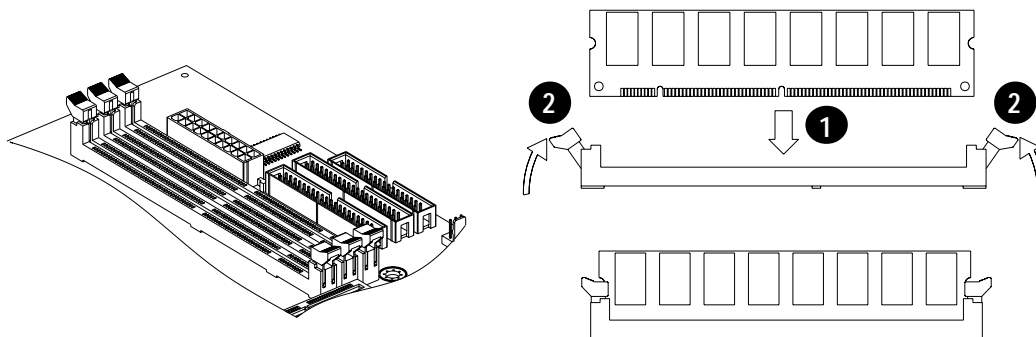
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*the board terminals with a bare hand nor place the board directly on the desk.*

- ❖ *This motherboard operates on a 3.3 volt standby for the DIMM banks. Because of this, you need to unplug the AC power cord before installing your SDRAM memory modules. Otherwise, the motherboard may automatically power up when the memory is inserted into the socket.*
- ❖ *PC-100 or PC-133 SDRAM memory module is required if CPU bus speed is at 100MHz or 133MHz. Since the motherboard are manufactured with performance in mind, you should use add-in components that match. It is highly recommended that the SDRAM memory are PC-100 or PC-133 compliant. Also at least one unbuffered SDRAM memory module must be installed for the system to POST.*

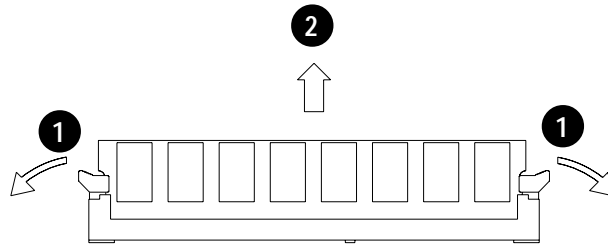
Follow the procedure below to install the SDRAM memory module.

- On the motherboard, locate the DIMM socket.
- Open the plastic clips on both end of a desired DIMM socket. To install your SDRAM memory module, align your module up so that the pins fit into the socket. There is only one way that your memory module can fit properly. Make sure that the short row of pins is align up with the short gap in the DIMM socket. Install the memory module to the DIMM sockets, starting from DIMM1, push down vertically on the module with even force. Do not shove one end in first; doing so will bend the DIMM socket pins.
- To lock the memory module into place, push the plastic clips on both end of the socket onto the notches in the ends of the SDRAM memory module (see the figure below).



## 2. Hardware Installation

- To remove your SDRAM simply pull the clips back, and pull up on the modules. Then place the SDRAM memory module in an anti-static bag as soon as you remove them to avoid static damage. Keep it in a location with little dust, low humidity environment.



### *Install the Motherboard in a Case*

After you have prepared the motherboard by installing a processor, one or more memory modules, and have set the jumpers correctly, install the motherboard into a chassis and begin connecting essential peripherals items to the connectors on the motherboard.

This is a Micro ATX motherboard, so you must use a system case that is installed with an ATX power supply unit. The case should have opening in the rear edge for all the four expansion slots that are available on this motherboard. Make sure that the system case has a two-tier I/O template on the rear side that matches the two-tier I/O portarray on this motherboard.

This motherboard can support two floppy disk drives and four IDE devices, so you might want to choose a case that allows you to install a full component of six devices. Follow the instructions given with the case to install the motherboard onto the mounting brackets inside the case. The motherboard has six holes drilled through it, and you should be able to drive a screw through some of these holes into the mounting brackets in the case.

- ❖ ***Make sure that the case power supply unit has enough capacity to power all the drives that you plan to install.***
- ❖ ***Don't overtighten the screws as this can stress the motherboard.***
- ❖ ***Disconnect the power plug from the outlet before working with the optional devices. Turn off the system and disconnect the power from***

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*the outlet before installing/removing any optional internal device to/from the system.*

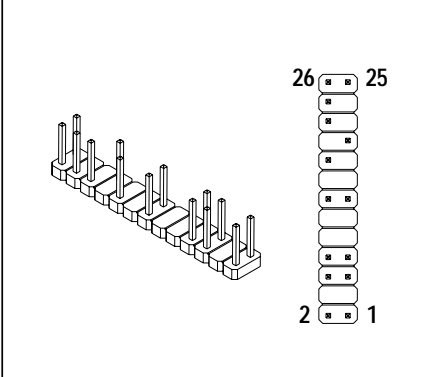
- ❖ *Do not hold the power plug with a wet hand. Do not disconnect/connect the plug while your hands are wet. Failure to follow this warning may cause an electric shock.*

## Connecting Front Panel I/O

This motherboard connectors to the front panel I/O are located an jumper block FSP1. Follow the instructions carefully for proper connections to your front panel display and control. It is provides front panel I/O connections for the following functions.

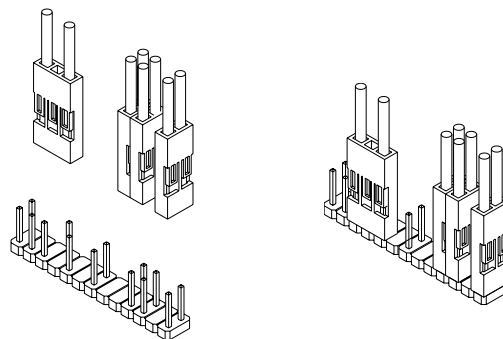
- **PW-SW** (Power Switch, Pins 1, 2) : The system power is controlled by a momentary switch connected to this connector. Pushing the switch while in the ON mode for more than 4 seconds will turn the system off. The system power LED shows the states of the system's power.
  - **RST-SW** (Reset Switch, Pins 5, 6) : The reset switch on your cases front panel provides you with the hardware reset function, which is the same as power on/off. The system will do a cold start after the reset button is pushed.
  - **HD-LED** (IDE Device Activity LED, Pins 7, 8) : This connector supplies power to the cabinet IDE devices or IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE ports will cause the LED to light up.
  - **SPEAKER** (Speaker, Pins 19, 21, 23, 25) : The connector connects to the case-mounted speaker. When system has any abnormally state or fatal error that you will hear a series of audible beep (if you have a speaker on the case that we recommend not to use them because it will have buzzer noise when the system is bootup).
  - **PW-LED** (System Power LED, Pins 18, 20) : The connector connects the system Power LED, which lights when the system is powered on.
  - **KB-LK** (Keyboard Lock Switch, Pins 24, 26) : This connector connects to the case-mounted lock switch, that is used to lock the keyboard for security purpose. If any.
- ❖ *If the case-mounted LED doesn't light, try reversing the 2-pin plug.*

## 2. Hardware Installation

	Pin	Assignment
		1, 2
	5, 6	RST-SW
	7, 8	HD-LED
	19, 21, 23, 25	SPEAKER
	18, 20, 22	PW-LED
	24, 26	KB-LK

Follow the procedure below to install the front panel I/O.

- Locate the FSP1 connector on the motherboard, begin connecting the front panel switch and indicators to the appropriate pins on the FSP1 connector. Use the illustration below to make the correct connections.



### Installing Add-on Card

This motherboard has one AGP slot, two 32-bit PCI slots, and one AMR slot .

- The AGP (**A**ccelerated **G**raphics **P**ort) is a PCI-based interface which was designed specifically for demands of 3D graphics applications. The 32-bit AGP channel directly links the graphics controller to the main memory. While the channel run at only 66MHz, it supports data transmission during both the rising and falling end of the clock cycle, yielding an effective speed of 133MHz.
- PCI stands for **P**eripheral **C**omponent **I**nterconnect. PCI is a 32-bit local bus (data pathway) which is faster than the ISA bus. Local buses are those which operate with in a single system (as opposed to a network bus, which connects multiple systems).
- AMR (**A**udion **M**odem **R**iser)/DVI (**D**igital **V**isual **I**nterface) specification provides a high speed communication between your personal system and a remote

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location, such as an Internet Service Provider (ISP), or a high-speed digital connection for visual data types that is display technology independent.

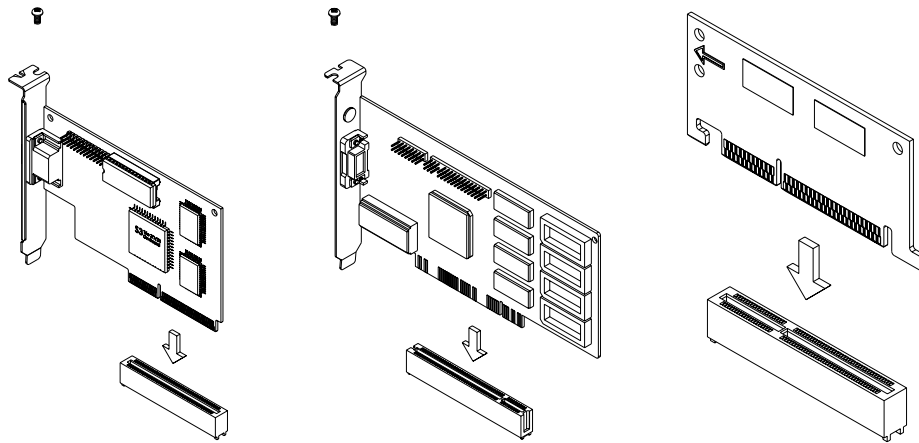
- ❖ ***Never force a card into a slot. If it doesn't fit look at the slot on the motherboard to make sure there are no wires or other obstructions to the slot.***
- ❖ ***When plugging the card in, try to push the entire card in at one time. Don't force one end of the card into the slot-first and then the other. This will create a rocking motion between the card and the slot and it will damage the pins with in the slot.***
- ❖ ***Make sure that the card is seated securely into the slot.***
- ❖ ***This motherboard operates on a 3.3 volt standby for PCI v2.2. Because of this, you need to unplug the AC power cord before installing your card. Otherwise, the motherboard may automatically power up when the card is inserted the slot.***

Follow the procedure below to install the add-on card.

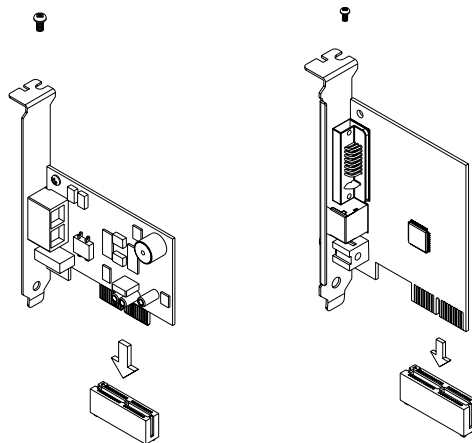
- Locate the expansions slots on the motherboard. Select which slot you plan to use according to the kind of add-on card you are going to install.
- In the system case, remove the blanking plate from the opening in the case adjacent to the slot you are going to use.
- Hold the edge connector of the add-on card directly over the slot that you are going to use. The metal bracket on one edge of the add-on card fit into the opening from which you removed the blanking plate.
- Carefully press the card down so that the edge connector installs into the expansion slot. You might need to rock the card slightly to make sure that the edge connector is seated properly into the slot.
- Drive a screw through the metal bracket on the edge of the card to secure it in place.
  - ❖ ***AIMM (AGP In-line Memory Module): The AIMM is intended for use as a local memory subsystem for a graphics core integrated in a core-logic chipset. These AIMMs are intended to provide 4MB of addressable SDRAM (arranged as 1M x 32). Which resides on a module in a 3.3V or universal AGP slot (see the figure below to***

## 2. Hardware Installation

*make the correct install).*



- The AMR slot is an industry standard slot that allows for the installation of a special audio/modem riser card or a DVI/TV-OUT riser card (This riser card is for a digital LCD panel and TV set) to add optional feature to your system. You can only install one riser card, however, so you must choose what kind of riser card for application.



### JP2: AMR or DVI/TV-OUT Function Jumper

If you have installed an AMR card or a DVI/TV-OUT card, you should check the setting of jumpers JP2. Use the illustration below to make the correct connections.

	A B C	<b>Jumper setting</b>	<b>Function</b>
	SHORT Line AB	Support DVI/TV-OUT Card	
	SHORT Line BC	Support AMR Card	

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## Install the IDE Devices

The motherboard has two IDE channel connectors, the Primary IDE channel and the Secondary IDE channel. Each IDE channel can support two devices for a maximum of four devices. IDE devices include hard disk drives, CD-ROM drives, and removable media drives such as ZIP drives and LS-120 drives.

- ❖ *When you install two devices on a single IDE channel, you must configure one of the devices as a MASTER device and one of the devices as a SLAVE device. These configurations have no effect on performance and are just a naming convention so that your system can distinguish between the two devices on the same channel.*
- ❖ *All IDE devices have documentation that tells you how to set the device as MASTER or SLAVE. Normally you do this by changing a jumper cap on the rear edge of the device. If you are installing two devices on the IDE ribbon cable, configure one device as MASTER and one device as SLAVE before you begin.*
- ❖ *In order to achieve higher data transfer, you must be used a special 80-Pin ribbon cable is designed with 40-Pin connector which has additional grounding wire. The cable is included and is required when using ATA-66 drives, this cable will also support all legacy IDE devices.*

Follow the procedure below to install the IDE devices.

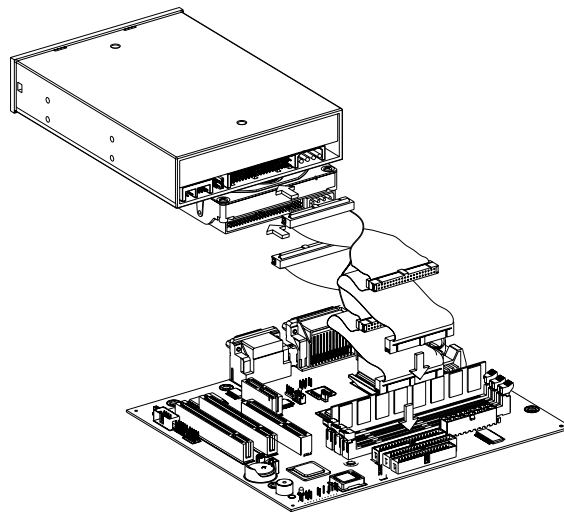
- Install the IDE device(s) into a suitable drive bay in your system case.
- Locate the Primary IDE channel connector on the motherboard. The connector is named IDE1(Blue). Plug one end connector (Blue) of the IDE ribbon cable into IDE1. Plug one of the other connector into the data connector on the rear edge of the IDE device. If you are installing two devices, plug the other connector into the data connector on the rear edge of the second device.
- If you have install a CD-ROM (or DVD) drive, you need to connect the audio output of the drive to the sound system integrated on the motherboard. This procedure is explained in the following section audio connections.
  - ❖ *If the connector is not keyed make sure that you match the Pin-1*



## 2. Hardware Installation

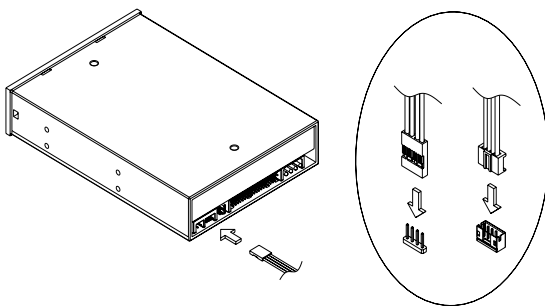
*side of the cable connector with the Pin-1 side of the device connector. Each connector has the Pin-1 side clearly marked. The Pin-1 side of the each ribbon cable is always marked with red stripe on the cable.*

- ❖ *When you start up your assembled system, an IDE hard disk drive on the Primary IDE channel is identified as drive C. A second IDE drive on the Primary IDE channel is identified as drive D.*



### CD\_IN J2, J3 : Audio Connector

You can connect the audio output from your CD-ROM (or DVD) drive into the audio input connectors (either J2 or J3) on the motherboard.



Pin	Assignment	
	J3	J2
1	CD-L	CD-L
2	GND	GND
3	GND	CD-R
4	CD-R	GND

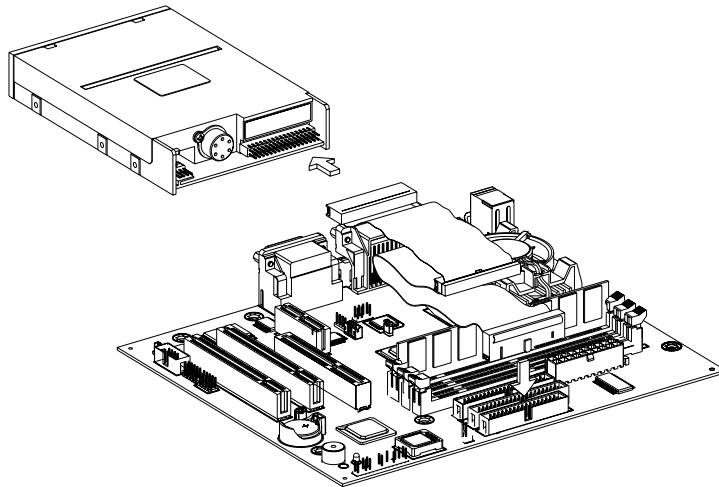
### Install the FDD Drive

The motherboard has floppy disk drive interface that will support one or two floppy

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disk drives. The floppy ribbon cable connector for two 3.5" wide disk drives. Follow the procedure below to install the FDD drives.

- Install the floppy disk drive into a suitable drive bay in your system case.
- Locate the floppy disk drive connector on the motherboard. The connector is named FDC1. Plug one end of the floppy ribbon cable into FDC1. Plug one of the other connectors into the data connector on the rear edge of the floppy disk drive.



- ❖ *When you start up your assembled system, the floppy disk drive will be identified as drive A. If you have installed two drives on the cable, they will be identified as drives A and B.*

## Connecting the Power Supply

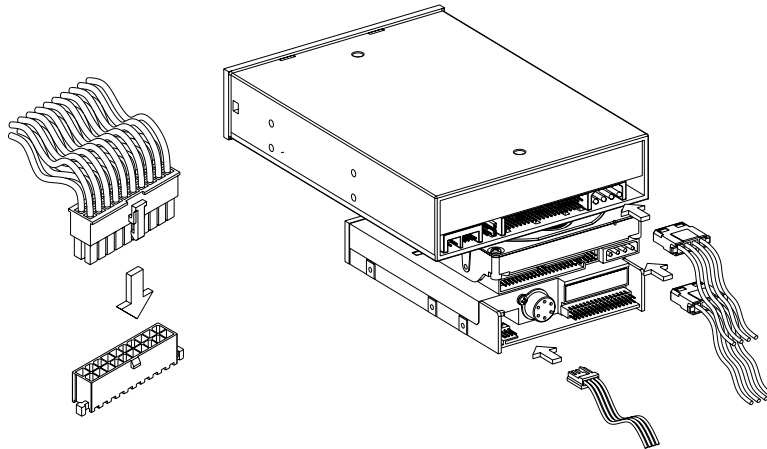
Most cases include a power supply unit, it requires an ATX power supply for system application.

Follow the procedure below to connect the power supply.

- Locate the power connector ATX1 on the motherboard and devices
- Plug the main power supply cable from the power supply unit into the ATX1 connector on the motherboard.
- Plug a free power supply cable from the power supply unit into the power connector on the rear edge of the floppy disk drive(s).
- Plug a free power supply cable from the power supply unit into the power connector on the rear edge of the IDE device(s).

## 2. Hardware Installation

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- ❖ ***Incorrect connection of the power supply could result in serious damage to the motherboard and connected peripherals. Make sure the power supply is unplugged from the AC outlet before connecting the leads from power supply.***
- ❖ ***Make certain that you do not miss any pins because if you do, you will void your warranty and cause damage to yourself or your motherboard when you turn the system on. After connecting the power, make sure the connector is seated firmly into its socket so it will not become loose or fall off when the system is jostled or moved.***

### Connecting PS/2, USB, Serial, Parallel, VGA and Audio-MIDI Devices

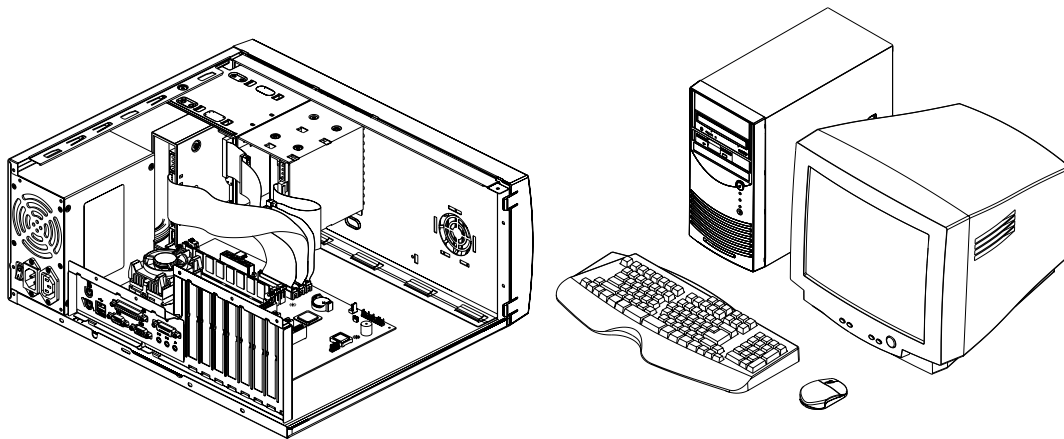
After you have installed the motherboard, make the connections to the external ports. The motherboard rear I/O panel provides external access to PS/2 style keyboard and mouse port, two USB ports, a parallel port, a serial port, a VGA display port, a game/MIDI port and three audio jacks, which are integrated on the motherboard and PC99 compliant.

- ❖ ***When plugging in your keyboard and mouse, or when plugging anything into devices port, make sure the power is off. Connecting these devices and ports while the power is on is called “hot plugging” and may damage your system and devices.***

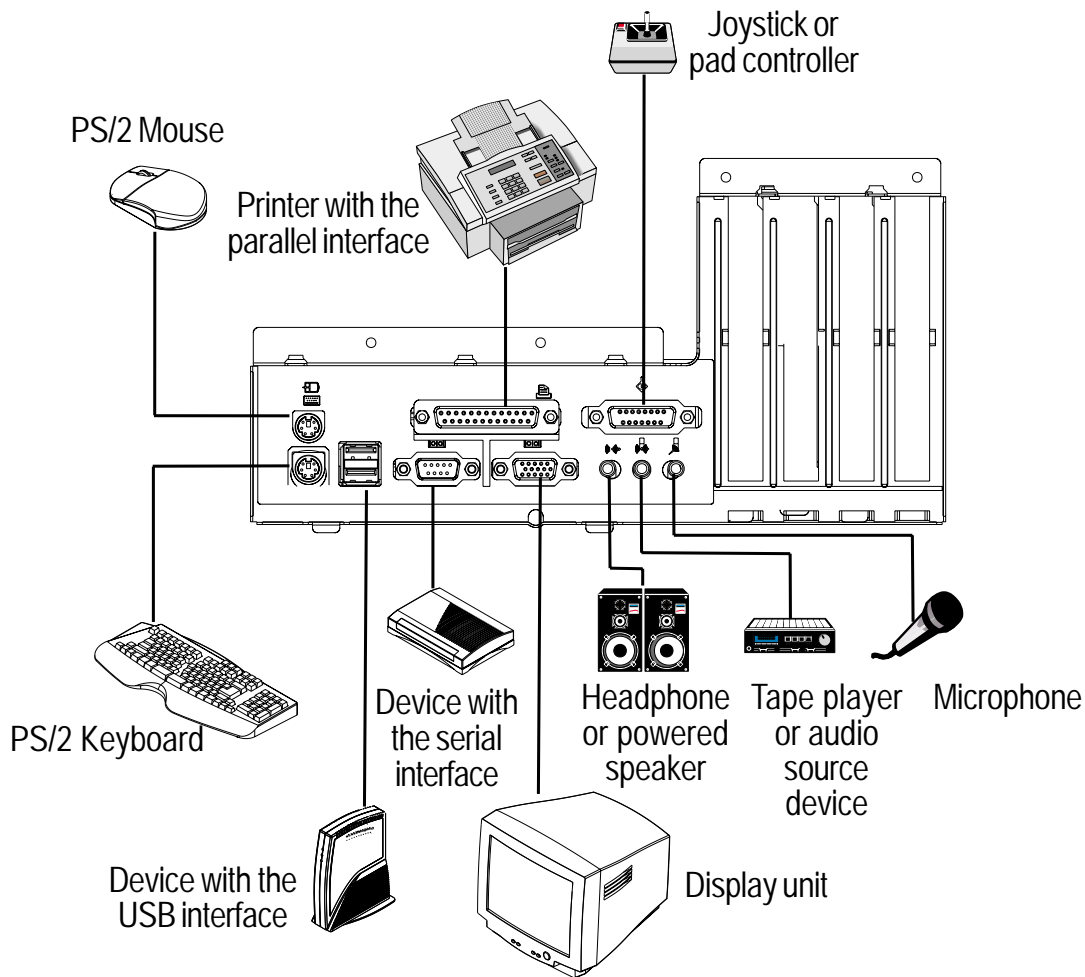
Follow the instruction carefully to properly connecting I/O peripherals to your system.

- K/B & MS is a stack of two PS/2 mini DIN ports.

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- **K/B & MS** (Green 6-pin Mouse Port) can be used by a PS/2 mouse or pointing device.
  - **K/B & MS** (Purple 6-pin Keyboard Port) can be used by a PS/2 keyboard.
  - **USB1** (Black two 4-pin USB Ports) is a versatile port which can function as a serial, parallel, mouse, keyboard or joystick device. It is fast enough to support video transfer, and is capable of supporting up to 127 daisy-chained peripheral devices.
  - **LPT1** (Burgundy 25-pin Parallel Port) can be used by a printer or other parallel communication devices.
  - **COM1** (Teal/Turquoise 9-pin Serial Port) is ready for a mouse or other serial devices.
  - **VGA1** (Blue 15-pin VGA display port) you can use this port to connect the display unit.
  - **GAME\_AUDIO** is a game/MIDI port and three audio jacks.
    - **GAME\_AUDIO** (Gold 15-pin Game/MIDI Port) you can use this port to connect a joystick or pad for playing games or connect a MIDI device for playing or editing professional audio.
    - **GAME\_AUDIO** (Lime/Light-Blue/Pink Three 1/8" Audio Jacks) you can connect a headphone or preferably powered speaker to the left side jack (Line-Out), or connect a tape player or other audio source to be recorded by your system or played through the middle jack (Line-In), or connect a microphone for inputting voice to the right side jack (MIC-In).



## 2. Hardware Installation



- ❖ ***May cause USB Hub failure or malfunction due to system was not properly shut down. For stable operation of the system, however, we recommends you remove device and reinstall driver by Windows OS.***

### Get Ready to Boot the System

At a minimum, you will need the following components in order to build a fully functioning system.

- System case with ATX power supply unit
- PGA370 Processor (Intel Celeron/Pentium III), and one SDRAM memory module
- One IDE HDD drive, one CD-ROM drive, and one FDD drive
- One PS/2 mouse, one PS/2 keyboard, and one display monitor

Of course you can use the system I/O ports and expansion slots to add many more

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features and components to your system than the essential items listed above. Verify the state or the connection, you are done. Now ready to boot the system for the first time. Turn on the system and follow the on-screen instructions for setup.

- ❖ *While the tests are running, additional messages will appear on the screen. If you do not see anything within 30 seconds from the time you run on the power, the system may have failed a power-on test. Recheck your jumper setting and connections or call your retailer for assistance.*
- ❖ *Verify that the access LED on the system is unlit before turn off the system or ejecting the CD-ROM or floppy disk. Doing so while the access LED is lit may damage the data being stored or the CD-ROM or floppy disk.*
- ❖ *When you have just turn off the system, wait at least 10 seconds before turning it back on. Immediate power cycling may cause malfunctions or failures of the system.*

## POST

Powering on the system starts POST and displays its check results. If the logo is displayed, press the <ESC> key. After a few seconds, the following message appears at bottom left on the screen.

{ Press DEL to enter SETUP }

When the error message appears, the POST displays the result upon completion and the system waits for a key entry. Press the <DEL> key to start the setup utility.

- ❖ *We recommends you print out or write down your current system parameters. This information will be need to restore your system after motherboard replacement, if any.*

The post runs automatically when you power on the system or reset it with a keyboard operation (Ctrl + Alt + Delete). The POST run diagnostics, initializes the system, sets interrupt vectors, detects installed peripheral devices, and boots the operating system (if installed).

Please continue to the next section to configure your BIOS (Basic Input Output System) setting that allow you to view and enter system configuration data. The setup utility is pre-installed on your system and ready to run.

## 3. BIOS Setup Utility

### 3. BIOS Setup Utility

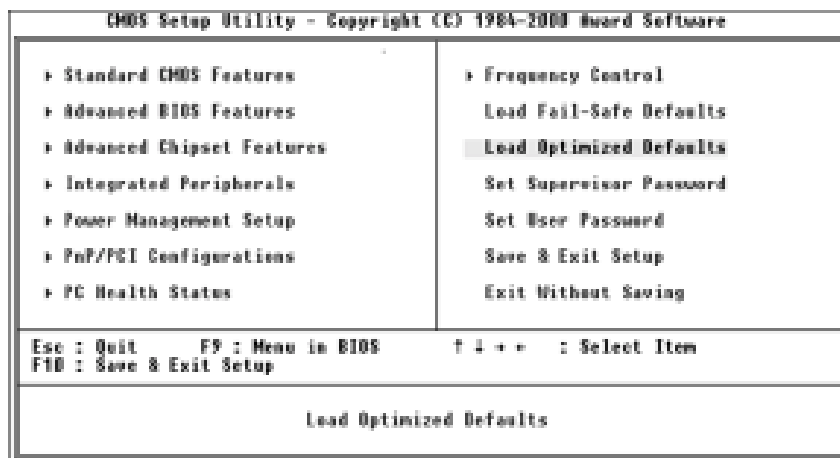
This chapter describes how to configure the system with the BIOS Setup Utility. It also describes system parameters and which parameter to select for your particular needs. The motherboard provides a 4MB, 32pin-PLCC package FWB that can be updated using provided BIOS utility. The setup utility is like a database of the hardware that is installed in your system. It contains information about the configuration of the hardware.

When you have assembled your system, you should immediately run the setup utility to configure the new hardware that you have used to build your system. Thereafter, you may not need to attend the setup utility again unless you make changes to the hardware configuration of the system.

❖ *If you are not sure how to configure the Setup utility, we suggest that you select “Load Optimized Defaults” on the Main Menu screen, then exit saving changes. This loads optimized default settings for normal use.*

#### Running the Setup Utility

To run the setup utility immediately when booting your system, press the <Delete> key when prompted to enter the Main Menu.

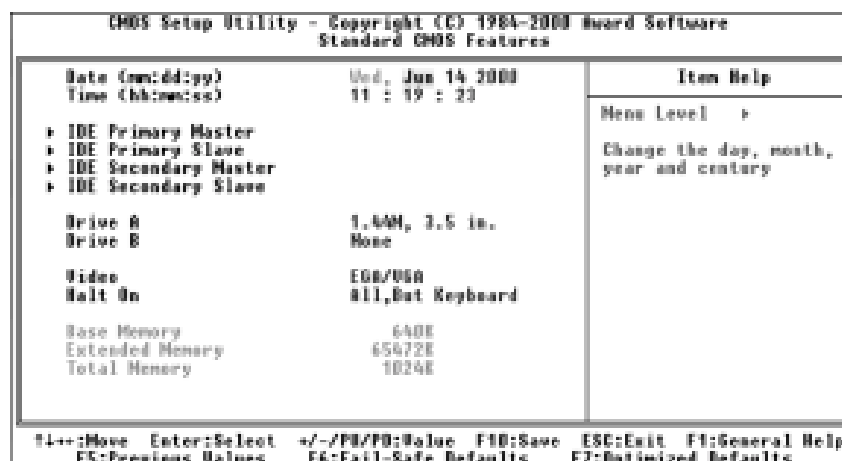


Use the following keys to work with the setup utility. Available key operations are also indicated at the bottom of the screen.

Navigation Key(s)	Function Description
<F1>	Displays the General Help screen from anywhere in the BIOS setup.
<Esc>	Jumps to the EXIT menu or returns to the main menu from a sub-menu
← or → (Keypad arrow)	Selects the menu item to the left or right
↑ or ↓ (Keypad arrow)	Moves the highlight up or down between fields
- (Minus key)	Scrolls backward through the values for the highlighted field
+ (Plus key)	Scrolls forward through the values for the highlighted field
<Enter>	Brings up a selection menu for the highlighted field
<Home> or <PgUp>	Moves the cursor to the first field
<End> or <PgDn>	Moves the cursor to the last field
<F5>	Load previous values from CMOS
<F6>	Load the fail-safe defaults from BIOS default table
<F7>	Load the optimized defaults
<F10>	Save all the CMOS changes and exit

## **Standard CMOS Features**

Selecting “Standard CMOS Features” on the main program screen display this menu :



In the **Standard CMOS** menu you can set the system clock and calendar, record disk drive parameters and the video subsystem type, and select the type of errors that stop the BIOS POST.

### **Date and Time Setting**



## 3. BIOS Setup Utility

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The BIOS determines the day of the week from the other date information. This field is for information only. Press the arrow keys to move to the desired field (date, month, year). Press the <PgUp> or <PgDn> key to increment the setting, or type the desired value into the field.

Follow the month, day and year format. Valid values for month, day and year are : **Month** : (1 to 12), **Day** : (1 to 31), **Year** : (up to 2079).

The time format is based on the 24-hour military-time clock. Press the arrow keys to move to the desired field. Press the <PgUp> or <PgDn> key to increment the setting, or type the desired value into the field.

Follow the hour, minute and second format. Valid values for hour, minute and second are : **Hour** : (00 to 23), **Minute** : (00 to 59), **Second** : (00 to 59).

Press enter twice if you do not want to modify the current time.

### IDE Primary/Secondary Master/Slave

Select these options to configure the various drives. A screen with a list of drive parameters appears.

IDE Device Configuration : The BIOS can automatically detect IDE drive, select Auto. Otherwise, you may select Manual for the drive type, you can enter the characteristics of the drive in the columns marked Capacity, Cylinder, Head, etc.

Here is a brief explanation of drive specification : Access Mode : [Auto] [CHS] [Large] [LBA].

- **[Auto]** : The BIOS automatically determines the optional mode.
- **[CHS]** : Match the specifications of your installed IDE hard disk drive(s) with the preprogrammed values for drive types 1 through 45.
- **[Large]** : For drives that do not support LBA and have more than 1024 cylinders.
- **[LBA]** (Logical Block Addressing) : During drive accesses, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.

❖ *The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard disk types, such as SCSI drives. We recommend that you select type Auto for all drives.*

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## Drive A/B

These fields record the type of floppy disk drives installed in your system. To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using <PgUp> or <PgDn> key.

The available options for Drive A/Drive B are : [360K, 5.25in] [ 1.2M, 5.25in] [720K, 3.5in] [1.44M, 3.5in] [2.88M, 3.5in] [None]

## Video

Select the type of primary video subsystem in your system. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in setup.

- **[EGA/VGA]** : Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters.
- **[CGA 40]** : Color Graphics Adapter, power up in 40 column mode.
- **[CGA 80]** : Color Graphics Adapter, power up in 80 column mode.
- **[MONO]** : Monochrome adapter, includes high resolution monochrome adapters.

The available options for Video are : [EGA/VGA] [CGA 40] [CGA 80] [MONO].

## Halt On

During the power-on self-test (POST), the system stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections :

- **[All, But Keyboard]** : The system boot will not stop for a keyboard error; it will stop for all other errors.
- **[All, But Diskette]** : The system boot will not stop for a disk error; it will stop for all other errors.
- **[All, But Disk/Key]** : The system boot will not stop for a keyboard or disk error; it will stop for all other errors.
- **[All Errors]** : Whenever the BIOS detects a non-fatal error the system will be stopped.
- **[No Errors]** : The system boot will not stop for any error that may be detected and you will be prompted.

## 3. BIOS Setup Utility

The available options for Halt On are : [All, But Keyboard] [All, But Disk/Key] [All Errors] [No Errors] [All, But Diskette].

### Base Memory, Extended Memory, Total Memory

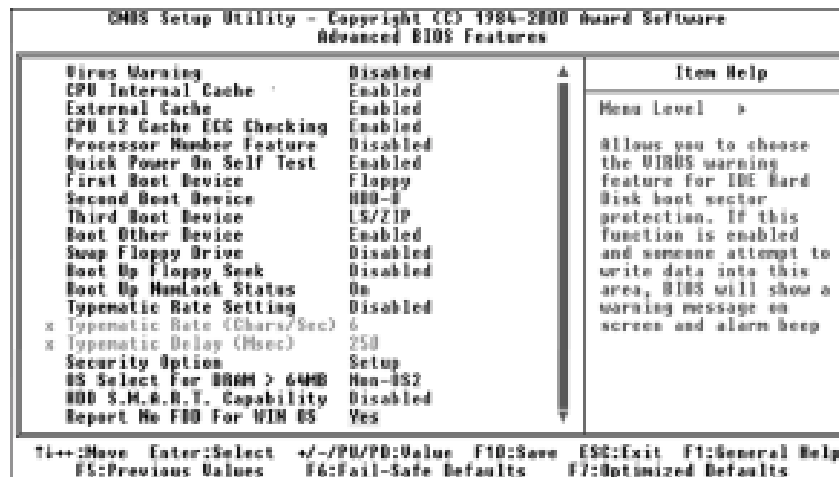
These item are display-only which is determine by POST of the BIOS.

- **[Base Memory]** : Display the amount of conventional memory detected during boot up.
- **[Extended Memory]** : Display the amount of extended memory detected during boot up.
- **[Total Memory]** : Display the total memory available in the system.

*After you have made your selection(s) in the Standard CMOS Features, press the <Esc> key to go back to main program screen.*

## Advanced BIOS Features

Selecting “Advanced BIOS Features” on the main program screen display this menu :



The screen allows you to improve your system performance, or let you set up some system feature according to your preference. Some entries are required by the motherboard’s design to remain in their default setting.

### Virus Warning

When enabled, you receive warning message if a program attempts to write the boot sector or the partition table of the hard disk drive. You should then run an anti-virus

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programs. Keep in mind that this feature protects only the boot sector, not the entire hard disk drive.

- ❖ ***Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you first disable the virus warning.***

The available options for Virus Warning are : [Disabled] [Enabled].

### **CPU Internal Cache/External Cache**

These item enabled or disabled the cache of your system. The cache feature enhances system performance because the most frequently used data is accessed from and written to the high-speed cache memory. The available options for CPU Internal Cache and External Cache are : [Enabled] [Disabled].

### **CPU L2 Cache ECC Checking**

When this item is enabled, it allows the system to carry out cache memory error checking if the cache memory chips support ECC (Error Checking and Correction). The available options for CPU L2 Cache ECC Checking are : [Enabled] [Disabled].

### **Processor Number Feature**

The Pentium III processors are installed with a unique processor identification number. If you Disabled this item, the number will be suppressed so that it cannot be read by other systems on the network. The available options for Processor Number Feature are : [Disabled] [Enabled].

- ❖ ***You can ignore this item while you unused Pentium III processor on the system.***

### **Quick Power On Self Test**

This will skip some diagnostic checks during the Power On Self Test (POST) to speed up the booting process. The available options for Quick Power On Self Test are : [Enabled] [Disabled].

### **First/Second/Third Boot Device**

These items to setting the priority and sequence the devices that your system will search for an operating device during bootup. The available options for First/Sec-

## 3. BIOS Setup Utility

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ond/Third Boot Device are : [Floppy] [HDD-0] [SCSI] [CDROM] [HDD-1] [HDD-2] [HDD-3] [LAN] [Disabled] [LS/ZIP].

### **Boot Other Device**

If you enable this item, the system will search all other possible locations for an operating device it fails to find one in the devices specified under First, Second and Third Boot Devices. The available options for Boot Other Device are : [Enabled] [Disabled].

### **Swap Floppy Drive**

If you have two floppy drive in your system, this item allows you to swap around the assigned drive letters so that drive A become drive B, and drive B become drive A. The available options for Swap Floppy Drive are : [Enabled] [Disabled].

### **Boot Up Floppy Seek**

If this item is enable, it checks the geometry of the floppy drive at start up time. The available options for Boot Up Floppy Seek are : [Disabled] [Enabled].

### **Boot Up NumLock Status**

This item defines if the keyboard <NumLock> key is active when your system is bootup. The available options for Boot Up NumLock Status are : [On] [Off].

### **Typematic Rate Setting/Rate (Chars/Sec)/Delay (Msec)**

When Disabled, the two items (Typematic Rate and Typematic Delay) are irrelevant. Keystrokes repeat at a rate determined by the keyboard controller in your system. When Enabled, you can select a typematic rate and typematic delay.

When the typematic rate (the rate at which character repeats when you hold down a key) to define how many characters per second.

When the typematic rate setting is enabled, you can select a typematic delay (the delay before key strokes begin to repeat) to define how many milliseconds.

The available options for Typematic Rate Setting are : [Disabled] [Enabled].

The available options for Typematic Rate (Chars/Sec) are : [6] [8] [10] [12] [15] [20] [24] [30].

The available options for Typematic Delay (Msec) are : [250] [500] [750] [1000].

---

## Security Option

This item allows you to limit access to the system and setup, or just to setup.

- **[Setup]** : The system will boot, but access to setup will be denied if the correct password is not entered at the prompt.
- **[System]** : The system can not boot and can not access to setup page will be denied if the correct password not entered at the prompt.

The available options for Security Option are : [Setup] [System].

❖ *Security takes effect only if a password is set. (See set Supervisor / User Password in this chapter.)*

## OS Select For DRAM > 64MB

This item is only required if you have installed more than 64MB of memory and running the OS/2 operating system. Otherwise, leave this item at the default [Non-OS2]. The available options for OS Select For DRAM > 64MB are : [Non-OS2] [OS2].

## HDD S.M.A.R.T. Capability

Set this option to Enabled to permit Award BIOS to use the **SMART** (System Management and Reporting Technologies) protocol for reporting server system information over a network. Enabling this feature allows you to back up your data when your hard disk is about to fail. The available options for HDD S.M.A.R.T. Capability are : [Disabled] [Enabled].

## Report No FDD WIN OS

If the BIOS is set to report no FDD under Windows OS there will be an error message suggesting that a floppy drive has not been installed. The available options for Report No FDD For WIN OS are : [Yes] [No].

*After you have made your selection(s) in the Advanced BIOS Features, press the <Esc> key to go back to the main program screen.*

## Advanced Chipset Features

Selecting “**Advanced Chipset Features**” on the main program screen display this menu :

## 3. BIOS Setup Utility

BIOS Setup Utility - Copyright (C) 1984-2000 Award Software Advanced Chipset Features		Item Help
SDRAM CAS Latency Time	3	
SDRAM Cycle Time Tras/Trc	6/8	
SDRAM RAS-to-CAS Delay	3	
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Enabled	
CPU Latency Timer	Enabled	
Delayed Transaction	Enabled	
On-Chip Video Window Size	64KB	
AGP Graphics Aperture Size	64MB	
Display Cache Frequency	100 MHz	
System Memory Frequency	Auto	
* Onboard Display Cache Setting *		
CAS# Latency	3	
Paging Mode Control	Open	
RAS-to-CAS Override	by CAS# LT	
RAS# Timing	Fast	
RAS# Precharge Timing	Fast	

F1++:Move Enter:Select +/-/PG/PO:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The screen allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. The default settings have been chosen because they provide the best operating conditions for your system. Do not reset these values unless you understand the consequences of your changes.

### SDRAM CAS Latency Time

This option specifies the number of SCLKs between the time when the Read command is sampled by DRAM and the Whitney Sample reads data from SDRAM. The available options for SDRAM CAS Latency Time are : [2] [3].

### SDRAM Cycle Time Tras/Trc

This option specifies the length of the DRAM cycle time in SCLKs. The available options for SDRAM Cycle Time Tras/Trc are : [6/8] [5/7].

### SDRAM RAS-to-CAS Delay

This option specifies the length of the delay inserted between the RAS and CAS signals of the DRAM system memory access cycle if SDRAM is installed. The available options for SDRAM RAS-to-CAS Delay are : [3] [2].

### SDRAM RAS Precharge Time

This option specifies the length of the RAS precharge part of the DRAM system memory access cycle when SDRAM system memory is installed in this system. The available options for SDRAM RAS Precharge Time are : [3] [2].

---

## System BIOS Cacheable

If Enabled, results in better system performance by permitting caching of the system BIOS ROM at F0000h-FFFFFh. Any program which tries to write to this memory area, however, may cause a system error. The available options for System BIOS Cacheable are : [Enabled] [Disabled].

## Video BIOS Cacheable

If Enabled, increases video performance by caching video memory. The available options for Video BIOS Cacheable are : [Enabled] [Disabled].

## CPU Latency Timer

This option only appear if the USB Controller option is set to Enabled. The settings are as follows:

- [Enabled] : The CPU cycle is only deferred after being held in Snoop Stall for 31 clocks and after another ADS# signal has arrived.
- [Disabled] : The CPU cycle is deferred immediately after receiving another ADS# signal.

The available options for CPU Latency Timer are : [Enabled] [Disabled].

## Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1. The available options for Delayed Transaction are : [Enabled] [Disabled].

## On-Chip Video Window Size

The option specifies the amount of cache available for the graphics local memory window. The available options for On-Chip Video Window Size are : [64MB] [32MB] [Disabled].

## AGP Graphics Aperture Size

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translations. See [www.agpforum.org](http://www.agpforum.org) for AGP information. The available options for AGP Graphics Aperture Size are : [64MB] [32MB].



## 3. BIOS Setup Utility

### System Memory Frequency

This option allows the user to adjust the system memory frequency. The available options for System Memory Frequency are : [Auto] [100MHz] [133MHz].

### Local Memory Frequency

If you have installed a AIMM module on the motherboard, this option allow the user to adjust the Local Memory Frequency for display cache. The available options for Local Memory Frequency are : [100MHz] [133MHz].

*After you have made your selection(s) in the Advanced BIOS Features, press the <Esc> key to go back to the main program screen.*

## Integrated Peripherals

Selecting “Integrated Peripherals” on the main program screen display this menu :



The screen allows you to set parameters for some of the peripheral items on your system.

### On-Chip Primary/Secondary PCI IDE

This chipset contains a PCI IDE interface with support for two IDE channels. Select

---

Enabled to activate the primary and/or secondary onboard IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface. The available options for On-Chip Primary/Secondary PCI IDE are : [Enabled] [Disabled].

### **IDE Primary/Secondary Master/Slave PIO**

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of up to four IDE devices that the internal PCI IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The available options for IDE Primary/Secondary Master/Slave PIO are : [Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 4].

### **IDE Primary/Secondary Master/Slave UDMA**

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate off 66 MB/s. When you select Auto in the four IDE UDMA fields, the system automatically determines the optimal data transfer rate for each IDE device. The available options for IDE Primary/Secondary Master/Slave UDMA are : [Auto] [Disabled].

### **USB Controller**

The chipset contains an integrated USB controller. Select Enabled if you have USB peripherals. The available options for USB Controller are : [Enabled] [Disabled].

### **USB Keyboard support**

This function enables the use of a USB keyboard function. The available options for USB Keyboard support are : [Enabled] [Disabled].

### **Init Display First**

This option allows you to decide to active whether PCI slot or on-chip VGA first. The available options for Init Display First are : [PCI Slot] [Onboard / AGP].

### **AC97 Audio/Modem**

This option allows you to decide to Auto/Disabled the 815 chipset family to support AC97 Audio/Modem. The available options for AC97 Audio/Modem are : [Auto]

## 3. BIOS Setup Utility

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[Disabled].

### POWER ON Function

This options enables power on from Windows 98 keyboard, right or left mouse button, password, hotkey, or power button.

❖ *If you use the keyboard password option to power on your system, the power button will be disabled.*

The available options for POWER ON Function are :[BUTTON ONLY] [Keyboard 98] [Password] [Hot KEY] [Mouse Left] [Mouse Right] [Any KEY].

### Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the motherboard and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disable in this field. The available options for Onboard FDC Controller are :[Enabled] [Disabled].

### Onboard Serial Port 1/Port 2

Select a logical COM port address and corresponding interrupt for the first and second serial ports. The second serial port offers infrared options in the next field. The available options for Onboard Serial Port 1/Port 2 are :[3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3] [Auto] [Disabled].

### UART Mode Select

This option specifies the operating mode for serial port 2. This option will not appear if the Onboard Serial Port 2 option is set to disabled, or is set to Auto and your system does not have an onboard serial port 2.

- **[Normal]** : Set serial port 2 to operate in normal mode.
- **[IrDA]** : Select this setting if you installed an infrared module via IrDA connector. This IrDA setting allows infrared serial communication at a maximum baud rate of 115K baud.
- **[ASKIR]** : Select this setting if you installed an infrared module via IrDA connector. The ASKIR setting allows infrared serial communication at a maximum baud rate of 56K baud.

The available options for UART Mode Select are : [Normal] [IrDA] [ASKIR].

---

## Onboard Parallel Port

Select a logical LPT port address and corresponding interrupt for the physical parallel port. The available options for Onboard Parallel Port are : [378/IRQ7] [278/IRQ5] [3BC/IRQ7] [Disabled].

## Parallel Port Mode

This option specifies the parallel port mode.

- **[SPP]** : The normal parallel port mode is used.
- **[EPP]** : The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bidirectional data transfer driven by the host device.
- **[ECP]** : The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates of up to 2.5 Megabits per second. ECP provides symmetric bidirectional communication.

The available options for Parallel Port Mode are : [SPP] [EPP] [ECP] [ECP+EPP].

## POWER After PWR-Fail

A traditional ATX system should remain at power off stage when AC power resumes from power failure. This design is inconvenient for a network server or workstation, without an UPS, that needs to keep power-on. This option is used to solve this problem.

- **[On]** : Selecting On lets the system can automatically power-on after AC power resumes.
- **[Off]** : The system will power-off if you select Off.
- **[Former-Sts]** : If Former-Sts option is selected, the system will power-on or power-off based on the original state.

The available options for POWER After PWR-Fail are : [Off] [On] [Former-Sts].

## Game Port Address

This option is used to assign an address for the Game Port. The available options for Game Port Address are : [201] [209] [Disabled].

## Midi Port Address

The option is used to assign an address for the Midi port. The available options for Midi

## 3. BIOS Setup Utility

Port Address are : [330] [300] [290] [Disabled].

### Midi Port IRQ

The option is used to assign an IRQ for the Midi port. The available options for Midi Port IRQ are : [10] [5].

*After you have made your selection(s) in the Integrated Peripherals, press the <Esc> key to go back to the main program screen.*

## Power Management Setup

Selecting “Power Management Setup” on the main program screen display this menu:



This screen allows you to set parameters for the system power management operation.

### ACPI Function

Enabled or Disabled Advanced Configuration Power Interface. The available options for ACPI Function are : [Enabled] [Disabled].

### ACPI Suspend Type

This option allows you to set ACPI suspend type of system.

- [S1 (POS)] : No system context is lost (CPU or chipset) and hardware maintain all system context (e.g.CPU clock stop).
- [S3 (STR)] : All system context is lost except system memory.

---

The available options for ACPI Suspen Type are : [S1 (POS)] [S3 (STR)].

## Power Management

Allows you to select the type of power saving for HDD Power Down. See the section PM Timers for a brief description of each mode.

- **[User Define]** : Set each mode individually. Select time-out periods in the HDD Power Down field.
- **[Max Saving]** : Maximum power savings. Only available for SL CPUs. Inactivity period is 1 minute in each mode.
- **[Min Saving]** : Minimum power savings. Inactivity period is 1 hour in each mode (except the hard disk drive).

The available options for Power Management are : [User Define] [Max Saving] [Min Saving]

## Video Off Method

Determines the manner in which the monitor is blanked. The Blank Screen option will let the system BIOS blank the screen when disabling video. V/H SYNC + Blank will allow the system BIOS to turn off the V-SYNC and H-SYNC signals running from the VGA interface to monitor.

- **[V/H SYNC + Blank]** : System turns off vertical and horizontal synchronization ports and writes blank to the video buffer.
- **[Blank Screen]** : System only writes blanks to the video buffer.
- **[DPMS Support]** : Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standard Association (VESA). Use the software supplied for your video subsystem to select video power management values.

The available options for Video Off Method are : [V/H SYNC + Blank] [Blank Screen] [DPMS Support].

## Video Off In Suspend

The option determines the manner in which the monitor is blanked. The available options for Video Off In Suspend are : [Yes] [No].

## Suspend Type

## 3. BIOS Setup Utility

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You can select suspend type by this option.

- **[PwrOn Suspend]** : If PwrOn Suspend is selected, the CPU will enter into doze mode.
- **[Stop Grant]** : If Stop Grant is selected, the CPU clock will enter into sleep mode.

In both of these modes, the system activities are detected by monitoring the IRQ signals or I/O.

The available options for Suspend Type are : [Stop Grant] [PwrOn Suspend] .

### MODEM Use IRQ

To enable the internal PnP modem ring to wake up your system from suspend mode, the IRQ assigned to the modem has to be the same as the setting in this option. The available options for MODEM Use IRQ are : [3] [4] [5] [7] [9] [10] [11] [NA].

### Suspend Mode

After the selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off. The available options for Suspend Mode are : [1 Min] [2 Min] [4 Min] [8 Min] [12 Min] [20 Min] [30 Min] [40 Min] [1 Hour] [Disabled].

### Soft-Off by PWR-BTTN

When you select Instant-Off or Delay 4 Sec., turning the system off with the on/off button places the system in a very low power usage state, either immediately or after 4 seconds, with only enough circuitry receiving power to detect wake-up event activity. The available options for Soft-Off by PWR-BTTN are : [Instant-Off] [Delay 4 Sec].

### Wake-Up by PCI card

This option let you specifies Enabled or Disabled PCI card wake-up function. The available options for Wake-Up by PCI card are : [Disabled] [Enabled].

### Power On by Ring/LAN

This feature allows remote power up through a LAN or Ring Indicator line awakens the system from suspend mode. The available options for Power On by Ring/LAN are : [Enabled] [Disabled].

### CPU Thermal-Throttling

This option specifies the speed at which the system clock run in the standby mode power saving state. The setting are expressed as a percentage between the normal CPU clock speed and the CPU clock speed when the system is in the power-conserving state. The available options for CPU Thermal-Throttling are : [50.0%] [37.5%] [25.0%] [12.5%] [87.5%] [75.0%] [62.5%].

## Resume by Alarm

This option allows you to set the date (day of the month), hour, minute and second to turn on your system. When you set "0" (zero) for the day of the month, the alarm will power on your system every day at the specified time. The available options for Resume by Alarm are : [Disabled] [Enabled].

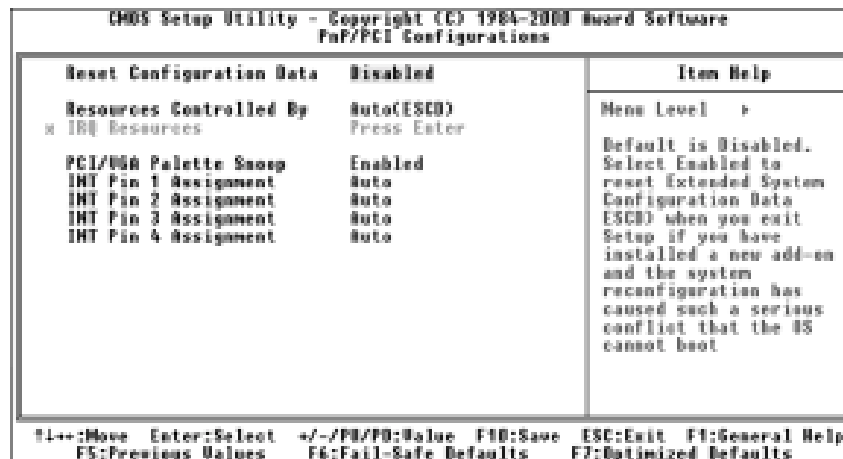
## Reload Global Timer Events

A power management (PM) event awakens the system from, or resets activity timer for suspend mode. You can disable monitoring of common interrupt request so they do not generate PM event.

*After you have made your selection(s) in the Power Management, press the <Esc> key to go back to the main program screen.*

## PnP / PCI Configurations

Selecting "PnP / PCI Configurations" on the main program screen display this menu:





## 3. BIOS Setup Utility

This screen allows you to configure the devices installed in your system. You must set up the IRQ assignments correctly, otherwise the system will not work properly.

### Rest Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot. The available options for Rest Configuration Data are : [Disabled] [Enabled].

### Resources Controlled By

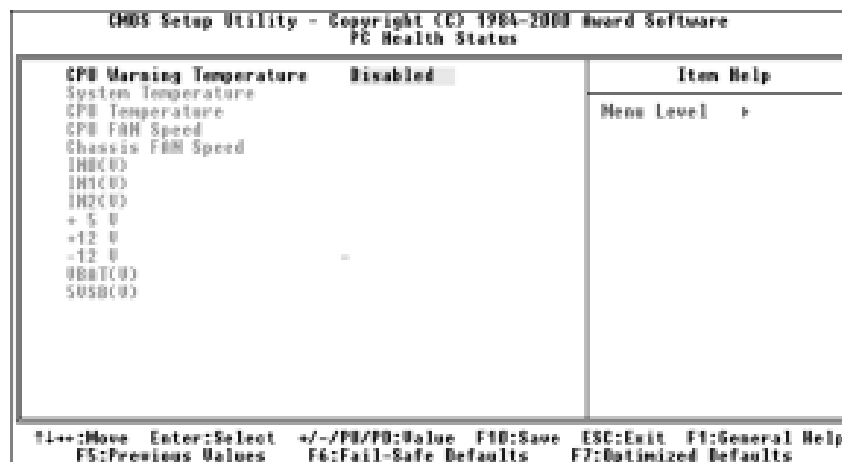
The Plug and Play EliteBIOS can automatically configure all the boot and Plug and Play compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, because the BIOS automatically assigns them. The available options for Resource Controlled By are : [Auto (ESCD)] [Manual].

### IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

## PC Health Status

Selection “PC Health Status” on the main program screen display this menu



This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your

motherboard supplier to get proper value about your setting of the CPU temperature.

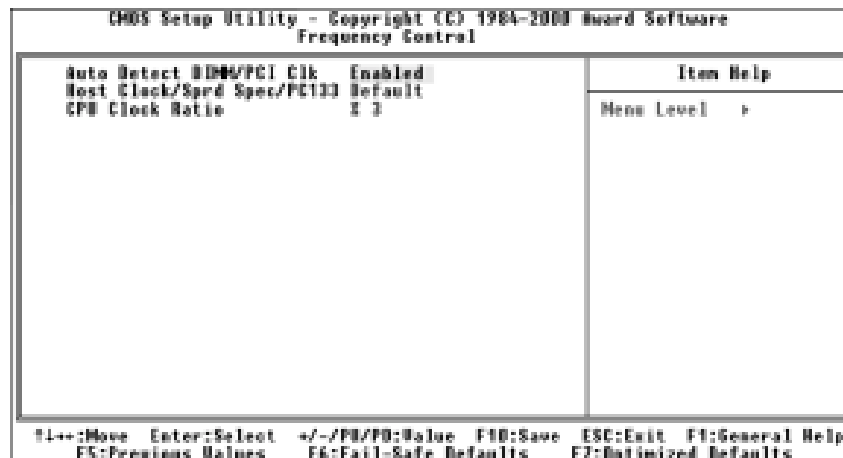
### CPU Warning Temperature

This option is used to specify a CPU warning temperature. When the CPU's temperature is higher than this predefined value, the CPU's speed will automatically slow down and there will be a warning from BIOS. The available options for CPU Warning Temperature are : [Disabled] [50°C/122°F] [53°C/127°F] [56°C/133°F] [60°C/140°F] [63°C/145°F] [66°C/151°F] [70°C/158°F].

*After you have made your selection in the PC Health Status, press the <Esc> key to back to the main program screen.*

## Frequency Control

Selecting "Frequency Control" on the main program screen display this menu :



This section allows you to set the CPU and system bus clock for your system, also system clock will automatically be modulated which help reducing electromagnetic interference.

### Auto Detect DIMM/PCI Clk

If you Enabled this option, the system does not generate clock signals for unused PCI or DIMM slots, so that EMI (Electromagnetic Interference) is reduced. The available options for Auto Detect DIMM/PCI Clk are : [Enabled] [Disabled].

### Host Clock / Sprd Spec / PC133

## 3. BIOS Setup Utility

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This option allows you to check your processor and function accordingly, also select the clock generator spread spectrum function the EMI generated by the system is greatly reduced.

If your CPU FSB is support to 66Mhz.

The available options for Host Clock / Sprd Spec / PC133 are : [Default] [66MHz%/0.60%/No] [65MHz/Off/No] [75MHz/Off/No] [78MHz/Off/No] [80MHz/Off/No]

If your CPU FSB is support to 100MHz.

The available options for Host Clock / Sprd Spec / PC133 are : [Default] [100MHz/0.60%/No] [105MHz/Off/No] [110MHz/Off/No] [114MHz/Off/No] [117MHz/Off/No] [122MHz/Off/No] [127MHz/Off/No] [129MHz/Off/No].

If you CPU FSB is support to 133MHz.

The available options for Host Clock / Sprd Spec / PC133 are : [Default] [133MHz/0.45%/Yes] [140MHz/Off/Yes] [144MHz/Off/No] [146MHz/Off/No] [150MHz/Off/Yes] [157MHz/Off/No] [160MHz/Off/No] [166MHz/Off/No].

### CPU Clock Ratio

Use this option to select a multiplier for the system front side bus frequency. The value of the multiplier must be set to that Multiplier x Front Side Bus Frequency = CPU Clock speed. For example, if you have a processor that is rated to run at 550MHz and the system is running a front side bus frequency of 100MHz, you should select a multiplier of 5.5 so that :

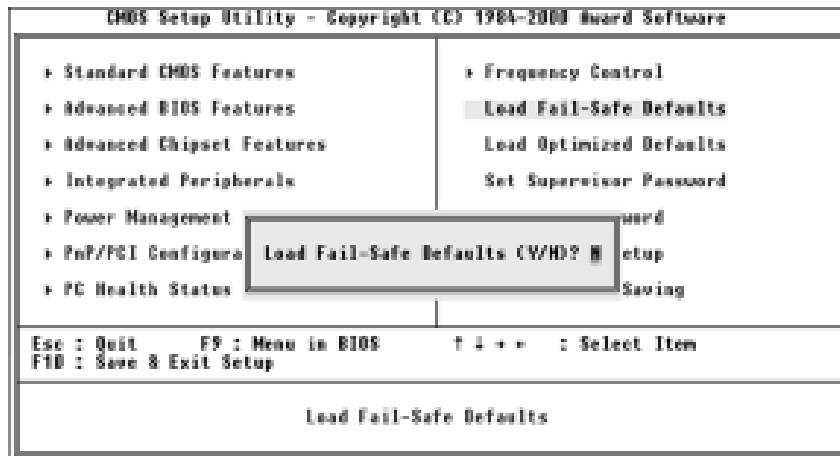
5.5 (Multiplier) x 100MHz (Front Side Bus) = 550MHz (CPU Clock)

The available options for CPU Clock Ratio are : [X3] [X3.5] [X4] [X4.5] [X5] [X5.5] [X6] [X6.5] [X7] [X7.5] [X8].

*After you have made your selection in the Frequency Control, press the <Esc> key to go back to the main program screen.*

### Load Fail-Safe / Optimized Defaults

Selecting “Load Fail-Safe Defaults” or “Load Optimized Defaults” on the main program screen and press <Enter> key on this option. You get a confirmation dialog box with a message display the menu :



When you pressing “Y” key to load the BIOS default values for the most stable, minimal performance system operations.

Selecting “**Load Optimized Defaults**” on the main program screen and press <Enter> key on this option. You get a confirmation dialog box with a message display the menu.

When you pressing “Y” key to load the default values that are factory setting for optimal performance system operations.

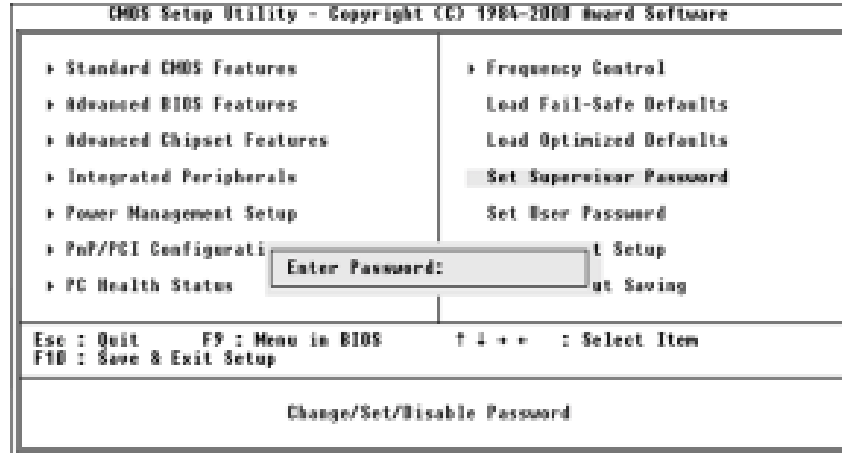
## ***Set Supervisor / User Password***

You can set either Supervisor or User Password, or both of them. The differences between are:

- **Supervisor Password** : Can enter and change the options of the setup menus.
- **User Password** : Just can only enter but do not have the right to change the options of the setup menus.

When you select these function, the following message will appear at the center of the screen to assist you in creating a password.

## 3. BIOS Setup Utility



Type the password, up to eight characters in length, and press <Enter> key. The password typed now will clear any previously entered password from CMOS memory. It will be asked to confirm the password, type the password again and press <Enter> key, or you may also press <Esc> key to abort the selection and not enter a password.

To disabled a password, just press <Enter> key when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter setup freely.

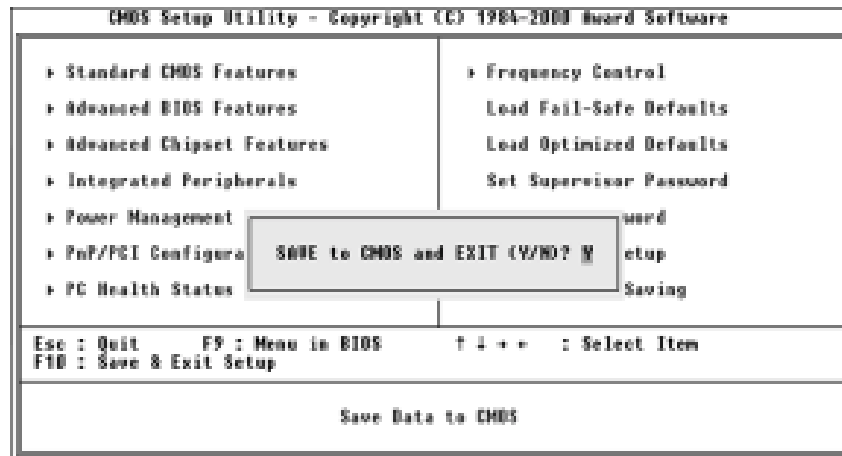
When a password has been enabled, you will be prompted to enter it every time you try to enter setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your system. You determine when the password is required within the Advanced BIOS Feature setup menu and its Security Options. If the security option is set to "System" the password will be required both at boot and at enter to setup. If set to "Setup", prompting only occurs when trying to enter setup.

### ***Save & Exit Setup / Exit Without Saving***

Selecting "Save & Exit Setup" or "Exit Without Saving" on the main program

screen and press <Enter> key on this option. You get a confirmation dialog box with a message display the menu :



Pressing <Y> key to stores the selections made in the menus in CMOS special section of memory that stays on after you turn your system off. The next time you boot your system, the BIOS configures your system according to the setup selections stored in CMOS. After saving the values the system is restarted again.

Selecting “**Exit Without Saving**” on the main program screen and press <Enter> key on this option. You get a confirmation dialog box with a message display the menu :

This allow you to exit setup without storing in CMOS any change. The previous selections remain in effect. This exits the setup Utility and restarts your system.

## 4. Installing the Utilities

# 4. *Installing the Utilities*

Once you have assembled your system, fine-tuned the Setup utility, and installed your computer with an operating system, you can begin installing the support software that ships with the motherboard.

The support software is supplied on a CD-ROM, it is assumed that the CD-ROM drive in your system is identified as drive D. Make the necessary changes to the text if your CD-ROM drive is identified as some other drive letter.

The CD-ROM has an installation program that runs automatically when you insert the CD-ROM into your CD-ROM drive. If the program doesn't run, open the Windows run **[Command]** from the **[Start]** menu and browse to the file Autorun on the CD-ROM. The drivers menu displays two items as shown below Figure 1 for your particular motherboard. When you click on Drivers from the opening screen of the **[Driver Install]** program, the Drives menu displays as shown below Figure 1.1.

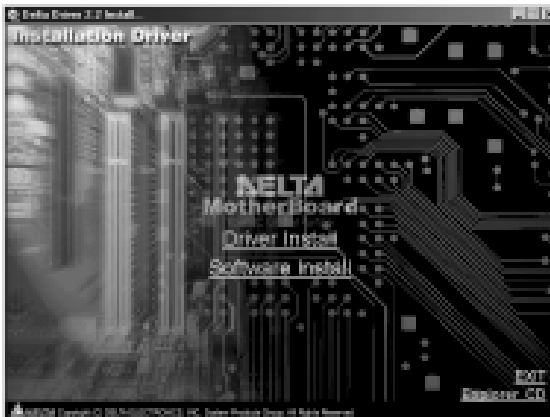


Figure 1

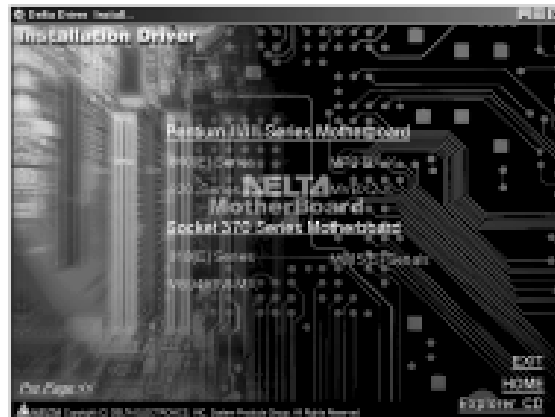


Figure 1.1

### Using the Installation Program

When you click on "M815(E) Series" under "Socket 370 Series Motherboard" from the opening screen of the installation program, the drivers menu displays six items shown as below Figure 2.

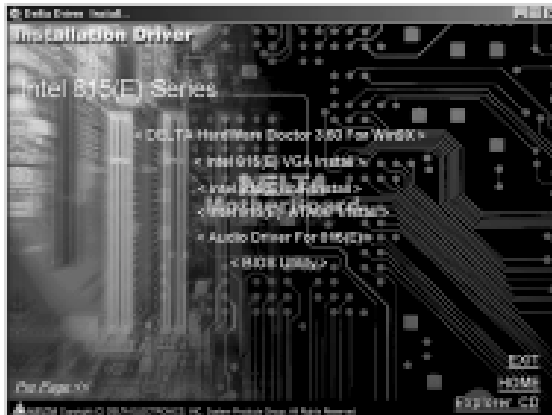


Figure 2

### DELTA HardWare Doctor 3.60 For Win9X Installation

The system environment monitoring Utility with the onboard Winbond W83627HF-AW system monitor chip allow you to monitor your system's temperature, fan speed, CPU and system voltage. Using this Utility, you can setup the upper and lower limits of these monitored parameters. A per-warning message will pop up on the screen when the monitored parameters is out of the preset range. This software have to installed under Windows OS.

- Click "**DELTA HardWare Doctor 3.60 For Win9X**" on the Figure 2, the screen will appear Figure 3. for HardWare Doctor 360 Setup.
- Click on the [OK] button, the screen will appear Figure 4. Then type in "**C:\Program\Files\HWDoctor\**" (assuming that your CD-ROM drive is drive D:). The installation program will now guide you through the rest of the installation process.



Figure 3

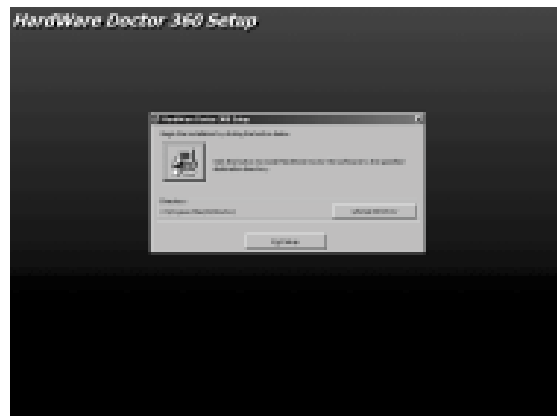


Figure 4

- When completed, you will be prompted to reboot. Select [**Finsh**] button to reboot



## 4. Installing the Utilities

and complete the installation.

- The **“DELTA HardWare Doctor 3.60”** option will be added to the **“Program”** directory. Click on the **“HardWare Doctor 360”** icon to access the program, the screen will appear Figure 5.
- Then click on the **“HardWare Doctor 360”**, the screen will appear Figure 6. Set the threshold you want for system temperature, voltages and fan speed, by clicking the option item to increase/decrease setting.

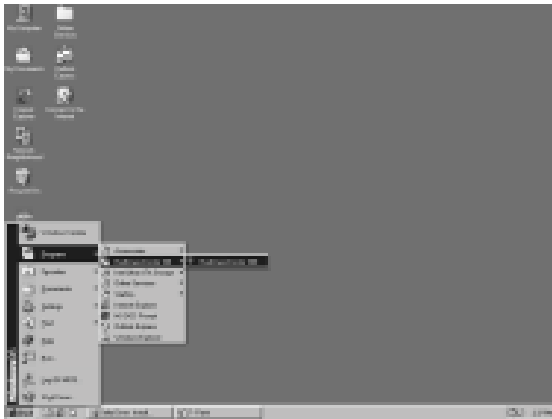


Figure 5

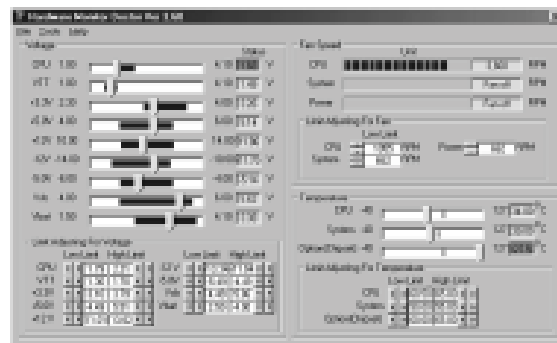


Figure 6

### Intel 815(E) VGA Installation

This folder has the software and drivers for graphics system built into the 815 chipset.

- Click **“Intel 815(E) VGA Install”** on the Figure 2, the screen will appear Figure 7. (Install the VGA driver from sub-folders for Windows 95/98, NT4.0, and 2000).
- Click **“VGA For Win98”** on the Figure 7, the screen will appear Figure 8. The installation program will now guide you through the rest of the installation process.

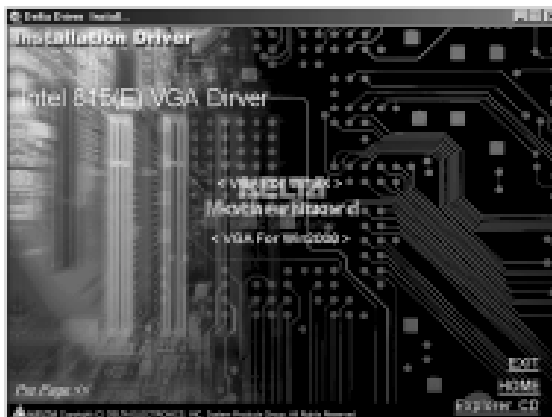


Figure 7



Figure 8

- When completed, you will be prompted to reboot. Click **[Finish]** to reboot and

complete the installation.

- View device through the **[Device Manager]** under Windows 98.
  - Click **[Start]** → Point to **[Setting]** → Click **[Control Panel]**, the screen will appear Figure 9.
  - Double click **[System]** → Click **[Device Manager]** → Click **[+]** to the left of the **[Display adapters]**, the screen will appear Figure 10. Highlight the “**Intel 815(E) VGA Install**” driver is installed successfully.

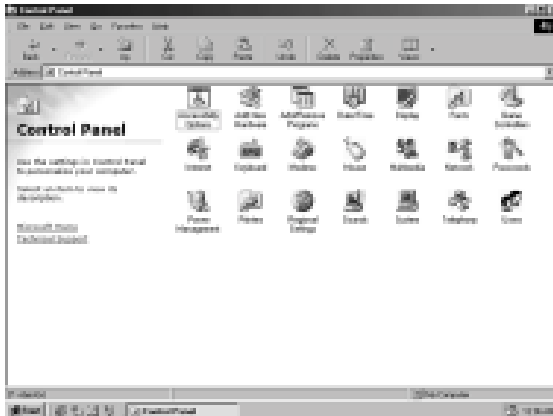


Figure 9



Figure 10

## Intel 815(E) INF Installation

This Utility will enable Plug & Play INF support for Intel(R) chipset components.

- Click “**Intel 815(E) INF Install**” on the Figure 2, the screen will appear Figure 11. The Intel(R) INF installation program will now guide you through the rest of the install process.
- When completed, you will be prompted to reboot. Select **[Finish]** button to reboot and complete the installation.
- View device through the **[Device Manager]** under Windows 98.
  - Click **[Start]** → Point to **[Setting]** → Click **[Control Panel]**, the screen will appear Figure 9.
  - Double Click **[System]** → Click **[Device Manager]** → Click **[+]** to the left of the **[System devices]**, the screen will appear Figure 12. Highlight the “**Intel 815(E) INF Install**” driver is installed successfully.

## 4. Installing the Utilities

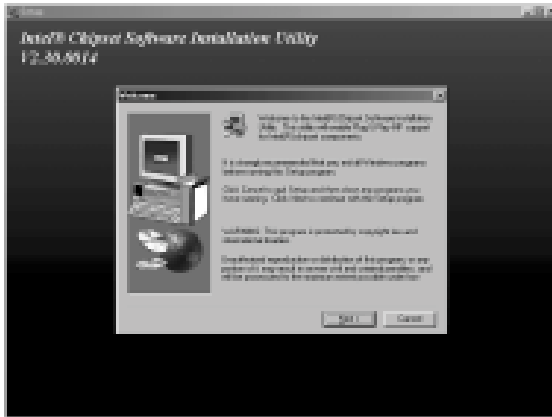


Figure 11



Figure 12

### Intel 815(E) Ultra ATA Storage Driver Install

This folder installs Intel Ultra ATA Storage Driver Setup program on you system.

- Click “**Intel 815(E) Ultra ATA66 Storage Driver Install**” on the Figure 2, the screen will appear Figure 13, for Intel Ultra ATA Storage Driver install.
- Click **[Next]** button, the screen will appear Figure 14. The installation program will now guide you through the rest of the install process.



Figure 13

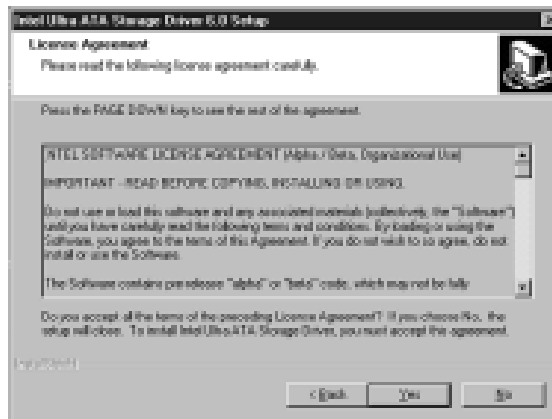


Figure 14

- When completed, you will be prompted to reboot. Select **[Finish]** button to reboot and complete the installation.
- View device through the **[Device Manager]** under Windows 98.
  - Click **[Start]** → Point to **[Setting]** → Click **[Control Panel]**, the screen will appear Figure 9.
  - Double Click **[System]** → Click **[Device Manager]** → Click **[+]** to the left of the **[Hard disk controllers]**, the screen will appear Figure 15. Highlight the “**Intel 815(E) Ultra ATA66 Storage Install**” driver is installed successfully.



Figure 15

## Audio Driver For 815(E) Installation

This folder let you select the drivers for the audio system that is integrated on this motherboard. Drivers are provided for Windows95/98, NT4.0 and 2000.

- Click **“Audio Driver For 815(E)”** on the Figure 2, the screen will appear Figure 16 (Install the audio driver from sub-folders for Windows 95/98, NT4.0 and 2000).
- Click **“Audio Driver For Win98”** on the Figure 16, the screen will appear Figure 17. The installation program will now guide you through the rest of the install process. When complete, the screen will back to Figure 16.



Figure 16

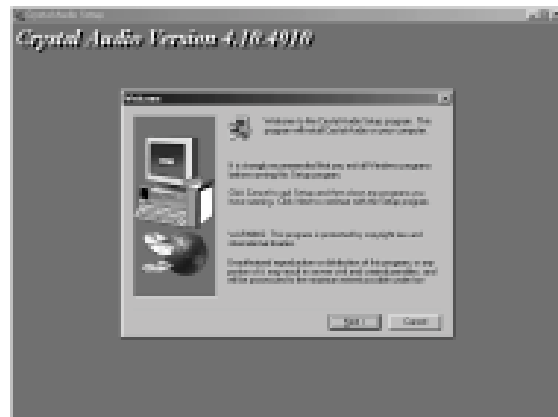


Figure 17

- View device through the [Device Manager] under Windows 98.
  - Click [Start] → Point to [Setting] → Click [Control Panel], the screen will appear Figure 9.
  - Double Click [System] → Click [Device Manager] → Click [+] to the left of the [Sound,video and game controllers], the screen will appear Figure 18. Highlight the **“Audio Driver For Win98”** driver is installed successfully, or refer to

## 4. Installing the Utilities

explain of “**Audio Readme**” on the Figure 16.



Figure 18

### BIOS Utility

This utility lets you erase the system BIOS stored on a Flash Memory chip on the motherboard, and let you copy an updated BIOS to the chip. Take care how you use this program. If you erase the current BIOS and fail to write a new BIOS, or write a new BIOS that is incorrect, your system will malfunction.

The flash memory utility is called **AWDFLASH.EXE**. To use the utility, you must be in real-mode DOS (not the DOS box that is available in Windows 95/98/NT). If you are using Windows 95/98, shut down your system and select the option restart in DOS in the shut down dialog box. If you are running Windows NT, shut down your system and boot from a DOS diskette temporarily in order to run the flash memory utility. You can easily flash a BIOS by following the step below :

- After downloading the appropriate BIOS file from website, extract it to a bootable DOS 6.X or Windows 98 diskette.
  - If you are using DOS 6.X, reboot your system with the bootable diskette in the A: drive. To make sure a clean DOS environment is loaded, press the [F5] key while “Starting MS-DOS” is displayed. After the system has rebooted, the cursor will appear at the A:\>prompt.
  - If you are using Windows 95 or 98, press [F8] key when you see “Starting MS Windows 95 or 98”. Select the option “Safe Mode Command Prompt only”.
- Now you can run the flash utility from the A:\>prompt. For example, to update the motherboard to BIOS version xx, you would type :

**A:\>AWDFLASH xxxxxx.BIN**

- 
- Then press [**Enter**] key, after the flash screen appear, select [**Y**] to save the current BIOS or [**N**] if you do not want to save the current BIOS. We recommended that you save the current BIOS.
  - When prompted, select [**Yes**] to program the BIOS.
  - After the update process has completed, you will be prompted to power off or reset your system. Once the system reboots, verify that the new BIOS version appear on the screen.
  - ❖ *After reprogramming the BIOS, you may need to enter BIOS setup and reset your settings.*
  - ❖ *Make a backup copy of each provided drivers and utility CD-ROM, if any store the original disk as the master disk in a designated place, and use its copy.*

# DECLARATION OF CONFORMITY



This device is in conformance with Part 15 of the FCC Rules and Regulations for Information Technology Equipment. Operation of this Product is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Responsible Party Name** : DELTA PRODUCTS CORPORATION  
**Address** : 4405 CUSHING PARKWAY FREMONT.CA  
94538, U.S.A.  
**Contact Person / Title** : Executive Vice President / Frank Hsiung  
**Telephone** : 1-510-668-5100  
**Fax** : 1-510-668-0680

## EUT Certification Summary

**Standard** : FCC Part 15, Subpart B, Class B ANSI C63.4-1992  
**Product** : MOTHER BOARD  
**Model No.** : M815-MX  
**Tested by** : SPORTON INTERNATIONAL INC.

The Mother Board was tested to conform to the applicable FCC Rule and regulations. The method of testing was in accordance to the most accurate measurement standards possible, equipment will continue to comply with the Federal Communications Commission's requirements.

Representative Person's Name : Frank Hsiung

Signature : 

# EC DECLARATION OF CONFORMITY

This certifies that the following designated product

**MOTHER BOARD**

**MODEL NO. : M815-MX**

-----  
(Product identification)

complies with the essential protection requirements of Council Directive 89/336/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

This declaration applies to all specimens manufactured in accordance with the attached manufacturing drawings which form part of this declaration.

Assessment of compliance of the product with the requirements relating to electromagnetic compatibility was based on the following standards :

**EN 50081-1 / 1992 : EN55022**

**EN 50082-1 / 1997 : EN61000-4-2/-3/-8, EN 50204**

-----  
(Identification of regulations / standards)

This declaration is the responsibility of the manufacturer / importer

**DELTA ELECTRONICS, INC.**

**11F-3, 266, 2ND WEN-HWA ROAD., SEC. 1, LINKOU,**

**TAIPEI HSIEN, TAIWAN, R.O.C.**

-----  
(Name / Address)

MANUFACTURER



(EC conformity marking)

.....

*Alex Cho*

.....  
**Alex Cho**