Technical Support

If you need technical assistance, our technical support engineers will be glad to assist you with all technical difficulties, you can reach them by dialing our toll-free service and technical support number : 1-877-DELTA-2K/1-877-335-8225 (USA / CANADA Only). Not only you will get to speak with our experience technical support team, we also provide web-site address **(http://pc.delta.com.tw),** product ,sales and RMA/warranty information. Our skillful technical engineers will be available between 8: 00AM to 5:00PM, PST (Pacific Standard Time).

PRINTED IN TAIWAN

Table of Contents

P/N : 5011503801 MAY/2000 REV1.1

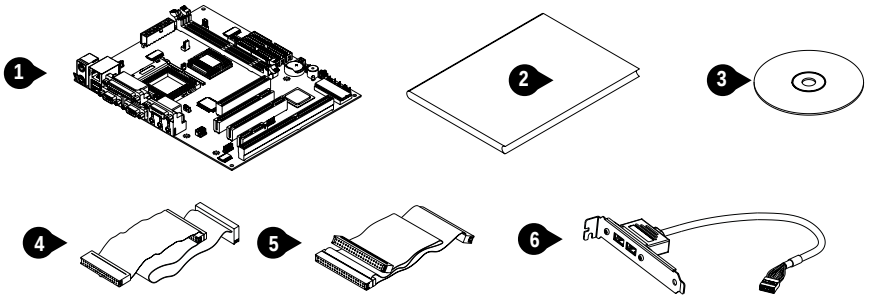
1. Introduction

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

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.

1. M694X-MX series Motherboard
2. User's Manual
3. Driver and Utility CD
4. FDD Ribbon Cable Assembly
5. IDE Ribbon Cable Assembly
   - The 80-Pin ribbon cable is designed with 40-Pin connector for Ultra ATA33/66 IDE device.
6. Auxiliary USB Cable Assembly with Bracket (Optional)



- ***Item 6 is optional at the time of purchase that you can ignore it on checklist.***

Hardware Specifications and Features

Chipset

- M694X-MX series motherboard consists of the VIA VT82C694X system controller into a single 510-Pin BGA package and VT82C686A PCI to ISA bridge into a single 324-Pin BGA package.
- SIS 900 10Base-T / 100Base-TX Ethernet onboard (Optional)
- Digital link sound with AC'97 Codec onboard

CPU Support

- Intel FC-PGA Celeron and Pentium III series processors
- VIA CyrixIII series processors

System Speed Support

- 66/100/133MHz FSB for CPU Interface
- 33MHz PCI Bus for PCI Interface
- 66MHz AGP Bus for AGP Interface
- 100MHz (PC-100) / 133MHz (PC-133) SDRAM Bus for Memory Interface

Memory

- 64-bit Advanced Memory Controller supporting PC-100 / PC-133 SDRAM, VCM SDRAM memory types.
- Support 3 DIMMs socket, 168-Pin, 3.3V unbuffered for up to 1.5GB of DRAM (256MB DRAM technology).

Expansion Slots Support

- Two 32-bit PCI master slots with v2.2 compliant
- One 32-bit AGP (2X / 4X) slot with v2.0 compliant
- One 8/16-bit legacy ISA slot
- One AMR slot

System I/O Support

- Two PCI Bus masters IDE-channels support Ultra ATA33/66 up to 66MB/sec DTR
- One FDD port
- Two DB-9 16550 UART serial port
- One DB-25 ECP/EPP parallel port
- Four USB (v1.1) ports

- One mini DIN-6 PS/2 mouse port
- One mini DIN-6 PS/2 keyboard port
- One IR (Infrared) I/O compliant connector (Optional)
- One 10Base-T / 100Base-TX Ethernet RJ-45 port (Optional)
- One game / MIDI port
- Three audio jacks (Line-in, Line-out, 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 on LAN function

Power

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

Compliancies

- FCC compliant and CE certification

Form Factor

- Micro ATX 9.6" (L) x 7.87" (W) x 4 layers PCB

Environment

- Operating Temperature : 0 ~ 50^0C
- 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

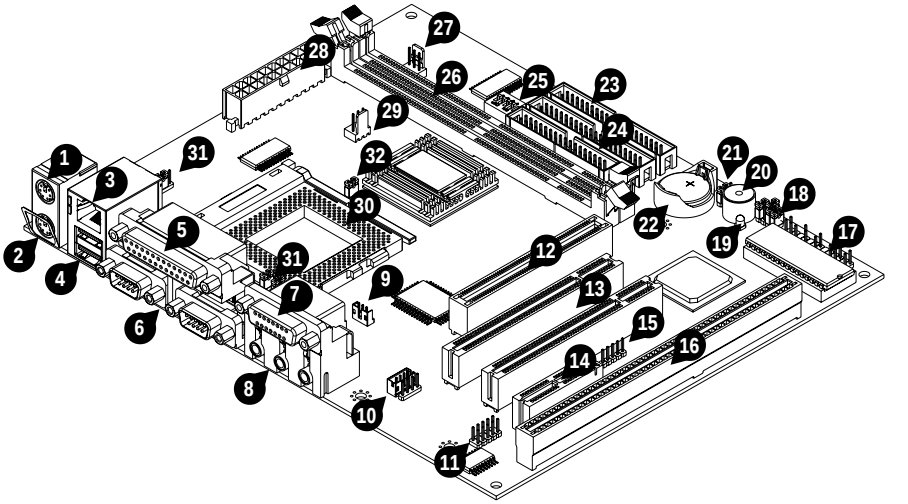
You are now ready to install your system, the first thing you should do is ready this user's manual. It contains important information which will make configuration and setup much easier.

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 troubleshoot the system, as well as to set it up.***

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 & LAN (Upper)	RJ-45 Ethernet port (Optional)
4	USB1 & LAN (Lower)	USB ports
5	LPT1 (Upper)	Parallel port
6	COM1, 2	Serial ports
7	GAME_AUDIO (Upper)	Game / MIDI port
8	GAME_AUDIO (Lower)	Three audio jacks, (Line-in, Line-out, Microphone)
9	J5	Wake up on LAN connector
10	J6, 7	Analog audio connector for sound output from CD-ROM/DVD drives
11	USB2	Auxiliary USB connector
12	AGP1	One AGP slot for AGP(2X / 4X) graphics adapter
13	PCI1, 2	Two 32-bit PCI expansion slots

14	AMR1	One AMR (Audio Modem Riser) slot
15	J8	Infrared connector (Optional)
16	ISA1	One 8/16-bit ISA expansion slot
17	FSP1	Connectors for panel switches and indicators
18	JP2	Jumper to set clock ratio
19	PWR LED	Power LED for monitoring power state
20	BZ1	Warning and judging the system state by buzzer
21	JP4	Jumper to set CMOS state
22	BAT1	Lithium CR2032 battery
23	IDE1,2	Primary/Secondary IDE channel connector
24	FDC1	Floppy disk drive connector
25	SWDIP4	Dip switches for CPU FSB setting
26	DIMM1,2	DIMM socket for SDRAM memory module
27	J10	Fan connector for chassis cooling fan
28	ATX1	Connector for the ATX power supply cable
29	J9	Fan connector for CPU cooling fan
30	PGA370	CPU socket for PGA370 processors
31	JP1, 6, 7	Connectors for the CPU type setting
32	JP8	Jumper for VIA CyrixIII 133MHz FSB CPU only

- ***Infrared and LAN 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 sepa-***

rated from the system.

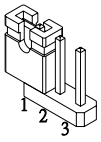
- ***Do not place the system in the following locations. It may cause malfunctions of the system.***
  - ***Locations with sudden changes in temperature. A sudden change in temperature causes condensation to form, which could result in failures of the system.***
  - ***Locations with strong vibration, 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

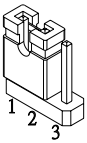
Before you install your motherboard into a chassis, it's convenient to install the CPU, install the memory modules, and set all the jumpers to correct settings.

Jumpers Setting Explain

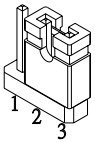
This motherboard has jumpers that need to be set correctly. You can use a jumper cap to connect two adjacent pins. When a jumper cap connects two pins, we say that the pin are SHORT. If you remove a jumper cap from two pins (or placed on just a single pin), we say that the pin are OPEN. The examples 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

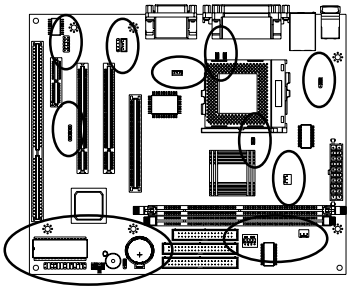


3-Pin jumper with pins 1-2 SHORT



3-Pin jumper with pins 2-3 SHORT

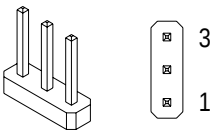
Locate the Jumpers on the Motherboard



JP4: 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 JP4 for 3-5 seconds.
- Return the jumper cap to Pins 1-2 (Default setting) of JP4.
- Reconnect the power supply cable and turn on your system power. Then access BIOS setup, please refer to the BIOS configuration application.

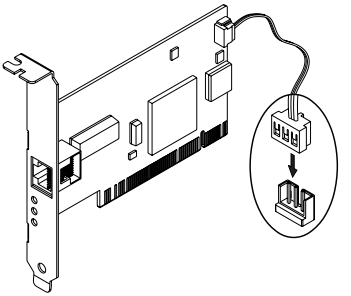


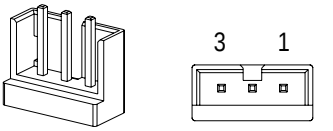
Jumper Setting	Function
SHORT Pins 1-2	Normal Operation
SHORT Pins 2-3	Clear CMOS

J5: 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 J5 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 Setup" under chapter 3 BIOS setup) and that your system has an ATX power supply unit with at least 720mA / +5V standby power.





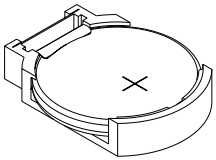
Pin	Assignment
1	+5VSB
2	GND
3	Wake-Up Signal

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.

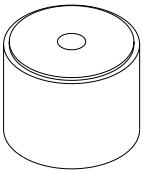
The battery has a 2-3 years life if the system is not power up. When the system power up, the power for the Realtime Clock and CMOS memory is supplied from the 3.3V power to extend the life of battery. The users can change a new battery to replace old one after it can't work or BIOS doesn't keep its settings.

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



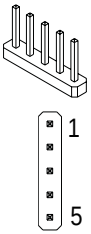
BZ1: Buzzer

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



J8: 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 "UART2 Mode Select" in chapter 3 "Integrated Peripherals" to select whether UART2 is directed for use with [**HPSIR**]or [**ASKIR**]. Connect a ribbon cable from the module to the motherboard according to the pin definitions.

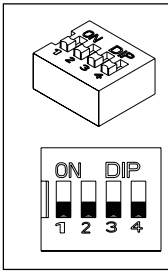


Pin	Assignment
1	+5V
2	NC
3	IRRx
4	GND
5	IRTx

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

SWDIP4: CPU FSB Setting

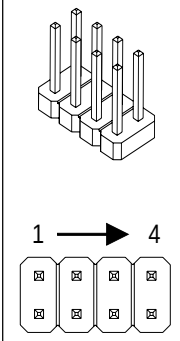
This option settings the clock generator what frequency to send to the CPU, SDRAM, and VIA VT82C694X chipset. This allows the selection of the CPU's FSB. Depending on your CPU type, select the appropriate SDRAM speed along with the CPU speed. The following table is for CPU FSB setting.



SWDIP4 / FSB	1	2	3	4
66MHz	OFF	ON	OFF	ON
100MHz	ON	OFF	OFF	ON
133MHz	ON	OFF	ON	OFF
AUTO	OFF	OFF	OFF	OFF

JP2: Clock Ratio Setting

Table list the available clock ratios (internal / external) and the corresponding jumper settings. Note that these settings are also included in the CPU FSB and Type setting.



Jumper / Ratio	1	2	3	4
2.5	ON	ON	OFF	ON
3	ON	OFF	ON	ON
3.5	ON	OFF	OFF	ON
4	OFF	ON	ON	ON
4.5	OFF	ON	OFF	ON
5	OFF	OFF	ON	ON
5.5	OFF	OFF	OFF	ON
6	ON	ON	ON	OFF
6.5	ON	ON	OFF	OFF
7	ON	OFF	ON	OFF
7.5	ON	OFF	OFF	OFF

- ***Overlocking can result in system instability or even shortening the life of the CPU. If FSB above 133MHz exceed the specification for the onboard chipset and are not guaranteed to be stable.***

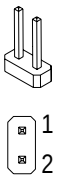
JP1, 6, 7: CPU Type Setting

Find the CPU manufacture then configure the jumpers according to the tables below.

Setting / CPU Type	JP1	JP6	JP7
Intel	SHORT Pins 1-2	OPEN Pins 1-2	OPEN Pins 1-2
VIA Cyrix	SHORT Pins 2-3	SHORT Pins 1-2	SHORT Pins 1-2

JP8: VIA CyrixIII 133MHz FSB CPU setting

The jumper settings the 133MHz FSB for VIA CyrixIII CPU only. The following table is for application.



Jumper Setting	Function
SHORT Pins 1-2	Default Setting
OPEN Pins 1-2	Support VIA CyrixIII 133MHz FSB CPU only

USB2: Auxiliary USB Connector

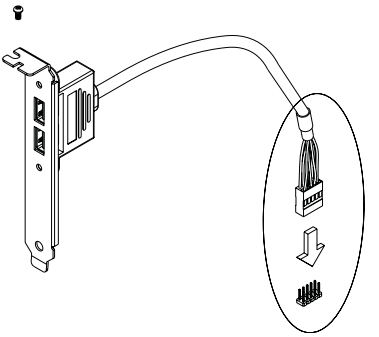
It provides 2 USB connections to the rear of your system case by the USB cable assembly.

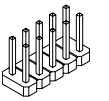
Follow the procedure below to install the USB cable assembly.

- Locate the USB2 connector on the motherboard.
- In the system case, remove the blanking plate 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 USB2 connector on the motherboard.





Assignment	Pin	Pin	Assignment
+5V	**1**	**2**	GND
USBD2N	**3**	**4**	GND
USBD2P	**5**	**6**	USBD3P
GND	**7**	**8**	USBD3N
GND	**9**	**10**	+5V

To Install the CPU and Cooling Fan

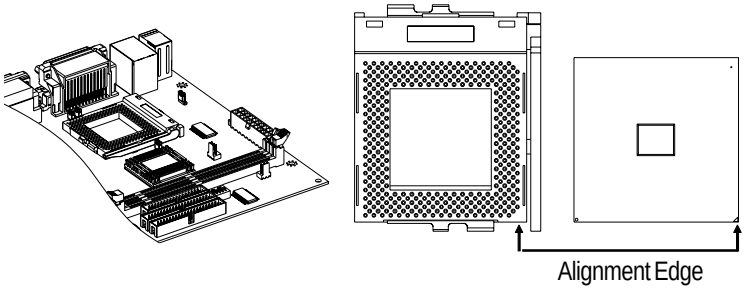
This motherboard designed for Intel FC-PGA Celeron / Coppermine and VIA CyrixIII processors. The system utilizes the VIA Apollo Pro-133A chipset with Award BIOS. It can support speed of 300MHz through 733MHz on the Intel CPU and up to 533MHz on the CyrixIII CPU, and FSB of 66MHz to 133MHz.

- ***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 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***

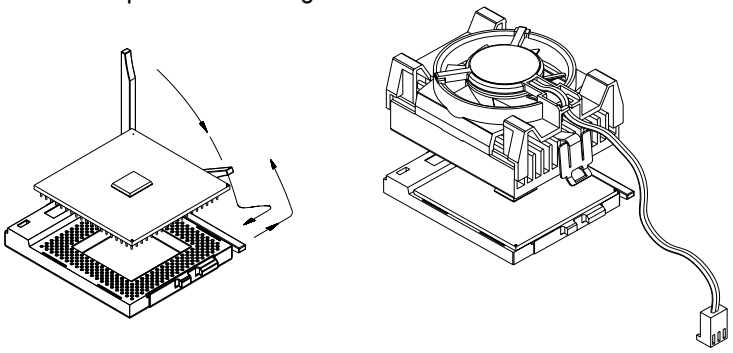
cause permanent damage to the CPU.

Follow the procedure below to install the PGA370 type CPUs.

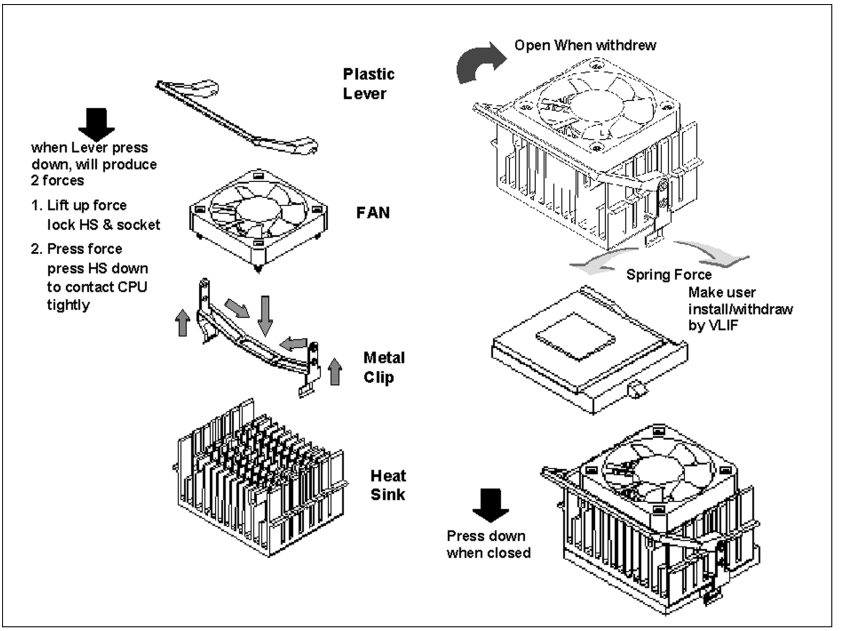
- On the motherboard, locate Pin-1 on the CPU is denoted by a small dot on one of the corners and Pin-1 on the PGA370 socket is denoted by an angled corner.



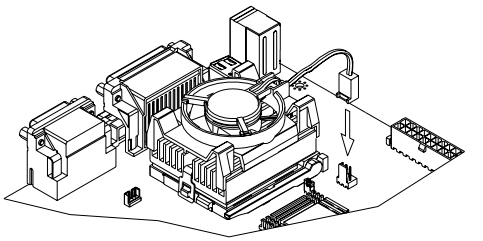
- Then open the locking lever when the CPU is insert into the PGA370 socket. Push down lightly on the CPU, and lower the arm on the PGA370 socket to secure the CPU. A squeaking noise is normal as the arm lowers. Never force a CPU into a socket. Forcing a CPU to seat will bend the pins on the CPU and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



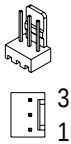
- Locate the cooling fan connector J9 on the motherboard. Plug the CPU's cooling fan cable into the cooling fan connector on the motherboard.
- ***There will be a plastic clip assembly that will force you to connect the fan cable correctly.***



J9,10: 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.

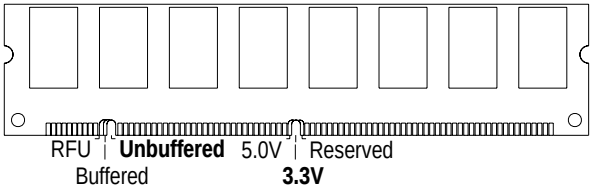
When the system goes into sleep state, the fan should be shut down to eliminate audible noise and reduce power consumption. You can monitor the fan speed and the fan must come with a tachometer output. The CPU and / or motherboard will overheat if there is no airflow across the CPU and onboard heatsink. 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 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.



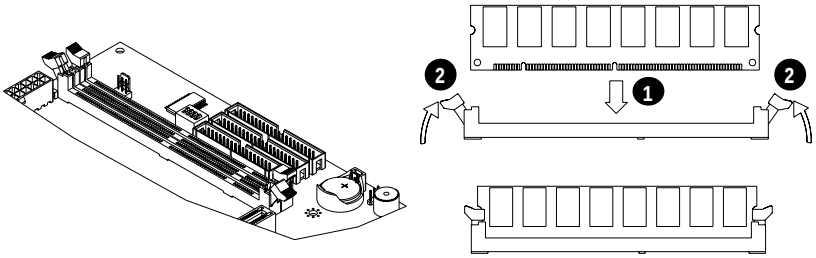
- ***The SDRAM memory module is an extremely sensitive electronic component. Make sure to touch a metal object to discharge static electricity from your body before working with the SDRAM. Do***

not touch the board terminals with a bare hand nor place the board directly on the desk.

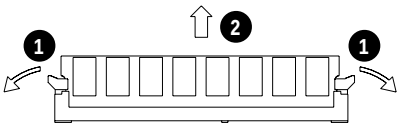
- ***This motherboard operates on a 3.3 volt standby for the DIMM banks. Because of this, you need to unplug the AC power cord before installing your SDRAM memory modules. Otherwise, the motherboard may automatically power up when the memory is inserted into the socket.***
- ***PC-100 or PC-133 SDRAM 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).



- 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 portarry 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 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

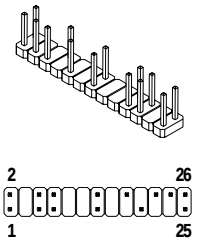
This motherboard connectors to the front panel I/O are located an jumper block FSP1. Follow the instructions carefully for proper connections to your front panel display and control. It is provides front panel I/O connections for the following functions.

- **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.

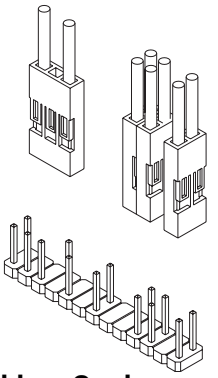
❖ ***If the case-mounted LED doesn't light, try reversing the 2-pin plug.***

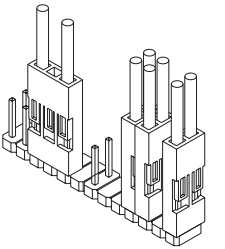


Pin	Assignment
1, 2	PW-SW
5, 6	RST-SW
7, 8	HD-LED
19, 21, 23, 25	SPEAKER
18, 20, 22	PW-LED
24, 26	KB-LK

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, one AMR slot and one 8/16-bit ISA 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**udio **M**odem **R**iser) provides high speed communication between your personal system and a remote location, such as an Internet Service Provider (ISP).
- ISA stands for **I**ndustry **S**tandard **A**rchitecture. ISA is a slower 8 or 16-bit bus (data pathway).

❖ ***Never force a card into a slot. If it doesn't fit look at the slot on***

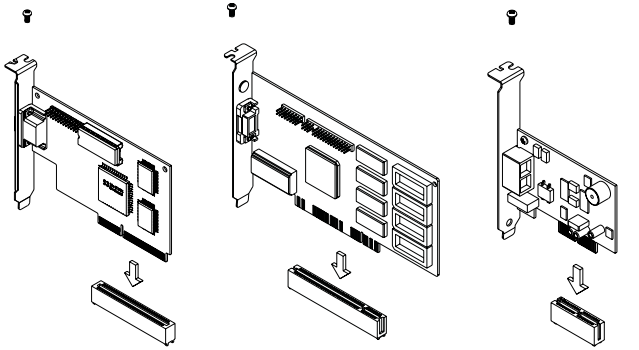
the motherboard to make sure there are no wires or other obstructions to the slot.

- ***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.
  - ***The AMR slot and the ISA slot that are side by side (AMR1 and ISA1) are shared. This means that you can use either of these slots but you cannot use them both at the same time.***

- ***Remember, set jumper cap to the secondary, position on the AMR card while you are installing the card, also read the manual and installation notes that come with the adapter card.***



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. 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***

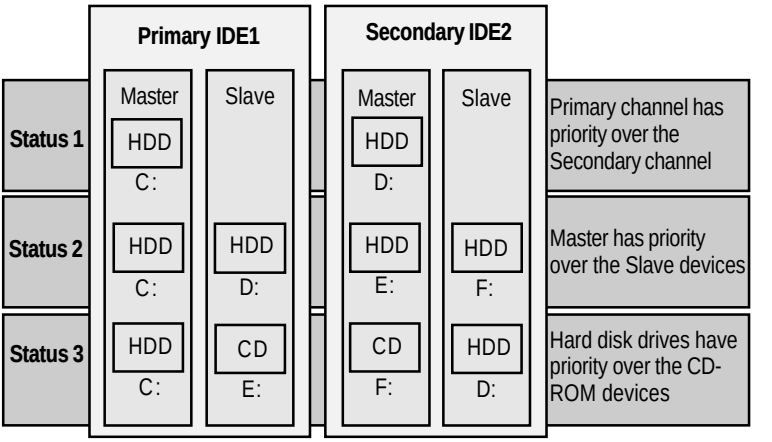
80-Pin ribbon cable is designed with 40-Pin connector which has additional grounding wire. The cable is included and is required when using ATA-66 drives, this cable will also support all legacy IDE devices.

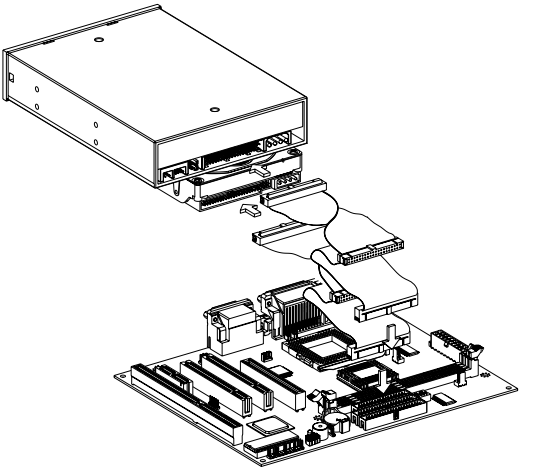
Follow the procedure below to install the IDE devices.

- 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 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 in dentified as drive C. A second IDE drive on the Primary IDE channel is in dentified as drive D.***

The Primary channel has priority to the Secondary channel. Within each channel, the two different devices are distinguished by MASTER and SLAVE

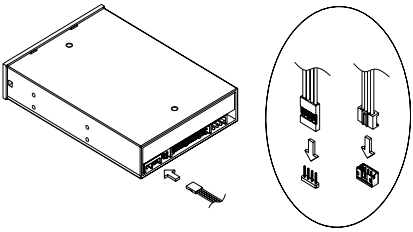
relationship. The MASTER device has priority over the SLAVE device (refer to illustration on the below).





CD_IN J6, J7 : Audio Connector

You can connect the audio output from your CD-ROM (or DVD) drive into the audio input connectors (either J6 or J7) on the motherboard.

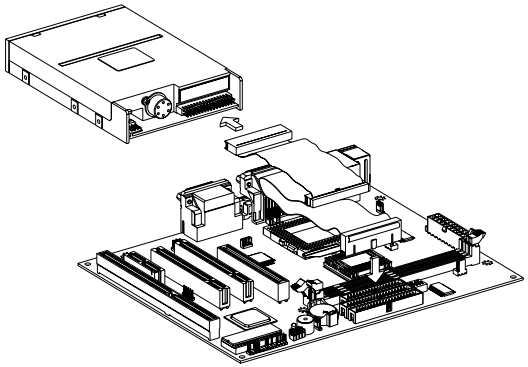


Pin	Assignment	
	J6	J7
1	CD-L	CD-L
2	GND	GND
3	GND	CD-R
4	CD-R	GND

Install the FDD Drive

The motherboard has FDD interface that will support one or two floppy 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.



- ***If the connector is not keyed make sure that you match the Pin-1 side of the cable connector with the Pin-1 side of the device connector. Each connector has the Pin-1 side clearly warked. The Pin-1 side of the each ribbon cable is always***

marked with red stripe on the cable.

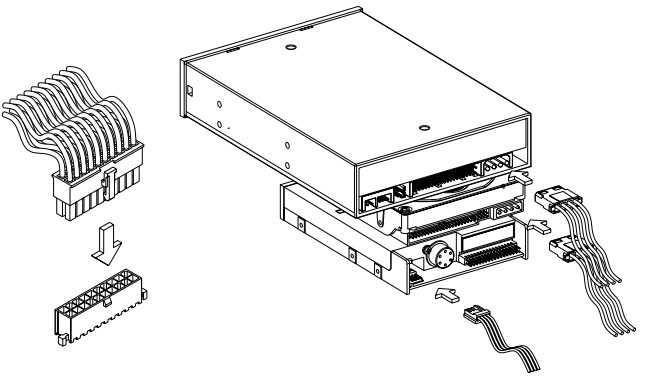
- ***When you start up your assembled system, the floppy disk drive will be identified as drive A. If you have installed two drives on the cable, they will be identified as drives A and B.***

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).



- ***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 mohterboard when you trun 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, LAN, 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 RJ-45 port, two serial ports, 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.
  - **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 & LAN** (Black 8-Pin RJ-45 Port) allows you connecting a Local Area

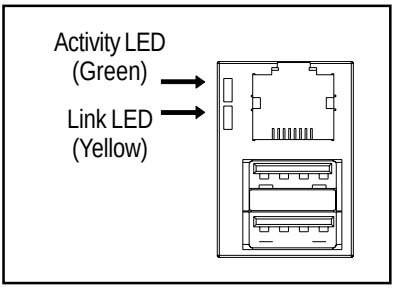
Network (LAN) through a network hub.

- **USB1 & LAN** (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, 2** (Teal / Turquoise Two 9-Pin Serial Ports) is ready for a mouse or other serial devices.
- **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).

USB1 & LAN: RJ-45 Port

This connector support the Ethernet either 10Base-T or 100Base-TX network. The motherboard provides an RJ-45 port to connect to the Hub with the TPE (Twisted Pair Ethernet) cable. Orient the connector so the key is aligned with the port, then push the connector into port until you hear a click voice.

The RJ-45 port has two LED indicators which indicate the presence of station Link and Activity status for installation verification and diagnostic purpose.



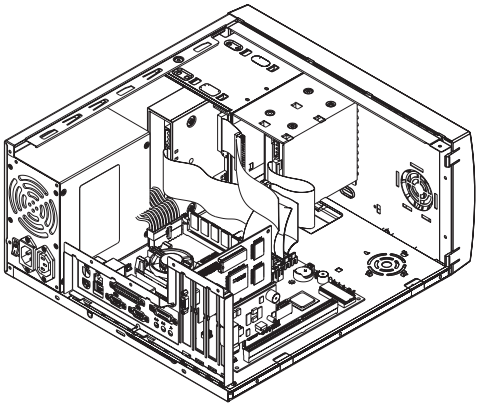
- **Link LED** (Yellow): The Link LED is located on the left part of the port. It is associated with the RJ-45 phone jack to indicate whether the twisted pair link connected. When there is no coming network data packet on the jack, the jack will start to detect periodical link-integrity pulses which should be sent by the device connected at the other end of the link, on the received pair of the twisted-pair cable. If link-integrity pulse is not detected, there is a link failure and the Link LED will be turned off and the transmit and receive functions of the jack will also be disabled. Table shows all the status of the Link LED, it is useful as a trouble-shooting aid. Match the activity of LED on the port with one of the status indicated in the table.

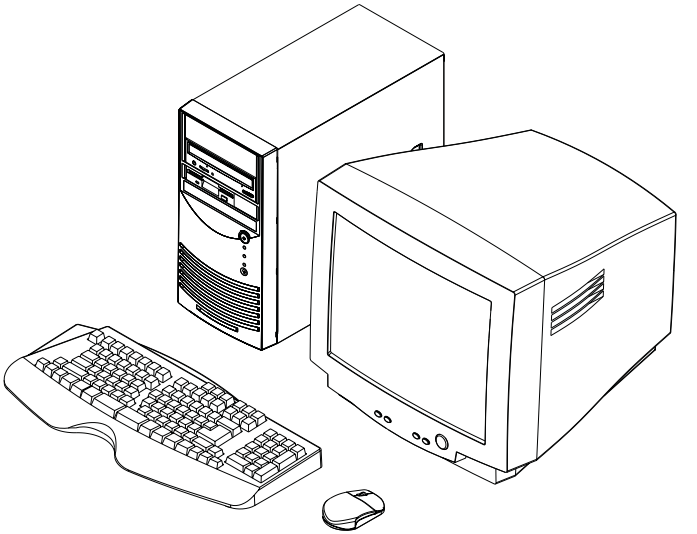
State	Description
On	• Normal data packet are received or link-integrity pulse is detected.
Off	• When no twisted-pair connected. • When link test is disabled. • No power source into Hub. • Twisted-pair is faulty. • Non 10Base-T or non 100Base-TX device connected at the other end of the twisted-pair. • A twisted-pair wire exceeds the recommended length (Maximum length is 100 meters).

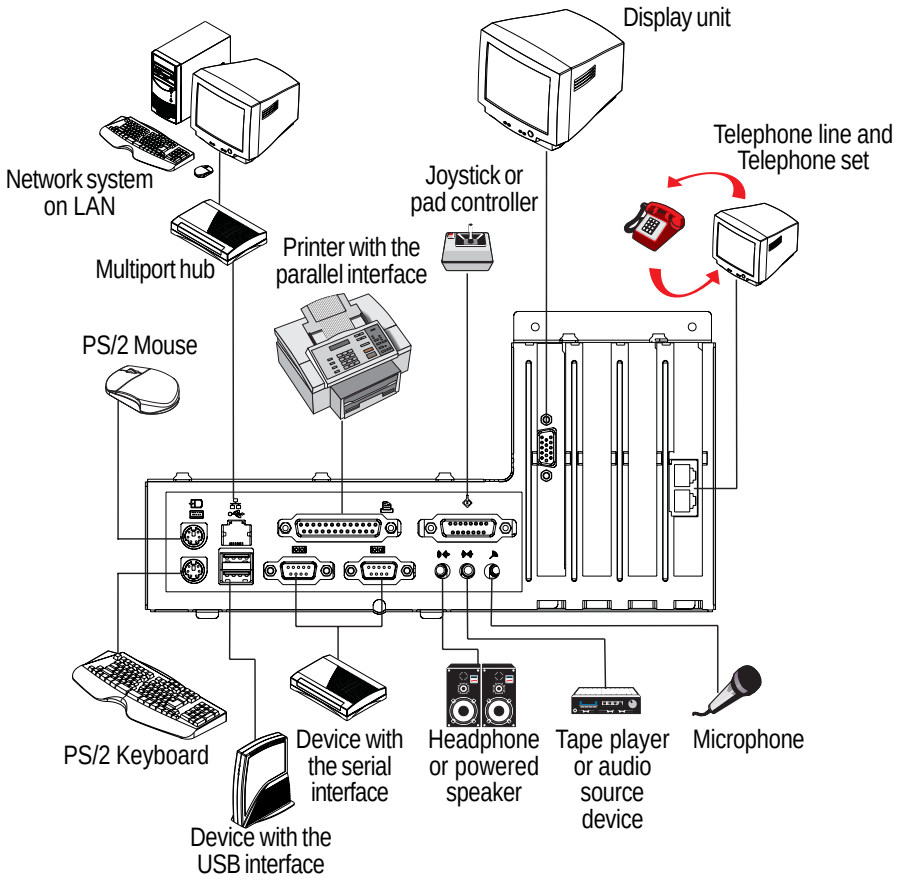
- **Activity LED** (Green): The activity LED is located on the left part of the port. It indicates the activity (transmit data) status of the system. The LED

should be blinking when the data packet being transmitted from the cable. Table shows status of the activity LED.

State	Description
Blink	• Data packet being transmitted
Off	• Power off • No data package transmitted







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 / Pentim III or VIA CyrixIII)
- One SDRAM memory module
- One graphics adapter
- One IDE HDD drive, one CD-ROM drive, and one FDD drive

- One display monitor
- One PS/2 mouse and one PS/2 keyboard

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

- ***If the power cord is connected to the power control unit such as the UPS, turn on the power control unit, also choose an appropriate input voltage for your system.***
- ***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.***
- ***Make sure to power off the system before connecting or disconnecting cable between the system and peripheral devices. Connecting or disconnecting the cables while the system is powered may cause malfunctions or failures of the system.***
- ***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 (**B**asic **I**nput **O**utput **S**ystem) 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

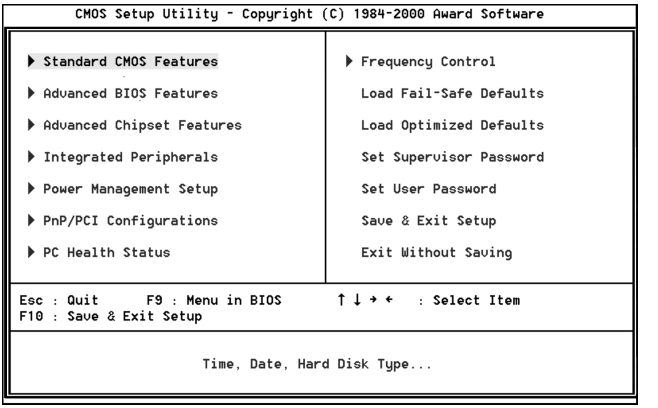
This chapter describes how to configure the system with the BIOS Setup Utility. It also describes system parameters and which parameter to select for your particular needs. The motherboard provides a 2MB, 32-Pins DIP package FWB that can be updated using provided BIOS utility. The setup utility is like 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.



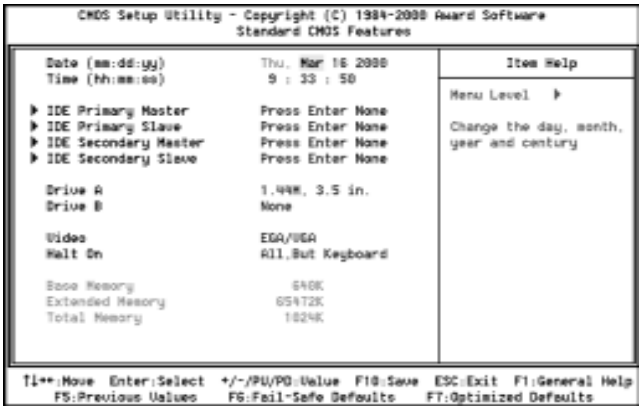
Use the following keys to work with the setup utility. Available key operations

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

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**

IDE Hard Drive

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

The BIOS can automatically detect the specification and optimal operating

mode of almost all IDE hard disk drives. When you select type auto for a hard disk drive, the BIOS detects its specifications during POST, every time the system boots.

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

- [**Auto**] : The BIOS automatically determines the optional mode.
- [**Normal**] : Maximum number of cylinders, heads, and sectors supports are 1024, 16, and 63.
- [**Large**] : For drives that do not support LBA and have more than 1024 cylinders.
- [**LBA**] (Logical Block Addressing) : During 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.

Floppy Drive

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.

Floppy 3 Mode is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5" diskette

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]

The available options for Floppy 3 Mode are : [Disabled] [Drive A] [Drive B] [Both]

Video

Select the type of primary video subsystem in your system. The BIOS usually detects the correct video type automatically. The BIOS supports a sec-

ondary 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.

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

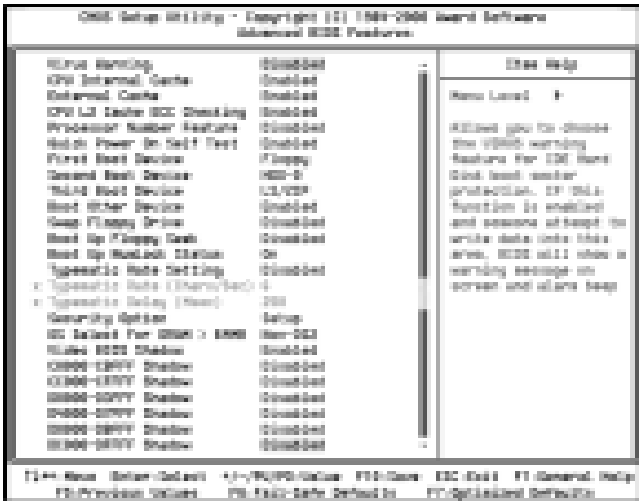
These item are display-only which is determine by POST of the BIOS.

- **[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 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 / Second / Third Boot Device are : [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.)

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].

Video BIOS Shadow

Software that resides in a read-only memory (ROM) chip on a device is called firmware. The EliteBIOS permits shadowing of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some expansion peripherals, for example, a SCSI adaptor.

Shadowing improves the performance of the system BIOS and similar ROM firmware for expansion peripherals, but it also reduces the amount of high memory (640KB to 1MB) available for loading device drivers, etc.

Enable shadowing into each section of memory separately. Many system designers hardware shadowing of the system BIOS and eliminate a System BIOS Shadow option.

Video BIOS shadows into memory area C0000-C7FFF. The remaining areas shown on the BIOS Feature Setup screen may be occupied by other expansion card firmware. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it in to the correct area of RAM.

The available option for Video BIOS Shadow are : [Enabled] [Disabled].

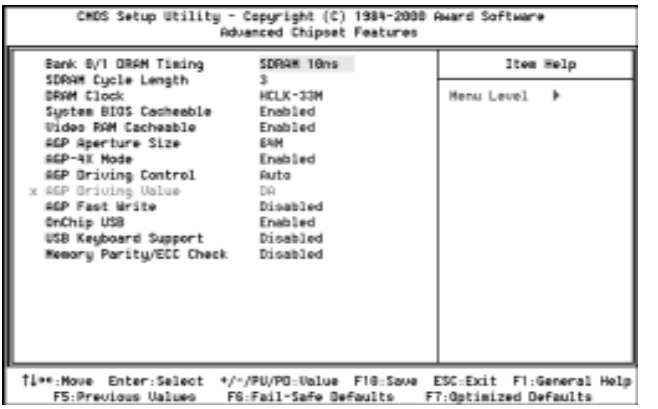
The available options for C8000-CBFFF / CC000-CFFFF / D0000-D3FFF / D4000-D7FFF / D8000-DBFFF / DC000-DFFFF Shadow are : [Disabled]

[Enabled]

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 :



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.

Bank 0/1 DRAM Timing

The motherboard designer must select the proper value for this field, according to the specifications of the installed SDRMA chips.

The available options for Bank 0/1 DRAM Timing are : [SDRAM 10ns] [SDRAM

8ns] [Normal] [Medium] [Fast] [Turbo].

SDRAM Cycle Length

This field sets the CAS latency timing.

The available options for SDRAM Cycle Length are : [3] [2].

DRAM Clock

Allows you to set the memory clock speed to any [HCLK-33M], [HCLK+33M] or [Host CLK], depending on your memory speed.

The available options for DRAM Clock are : [HCLK-33M] [HCLK+33M]]Host CLK].

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFh, resulting in better system performance. However, if any program writes to this memory area, may cause a system error.

The available options for System BIOS Cacheable are : [Enabled] [Disabled].

Video RAM Cacheable

Selecting Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, may cause a system error.

The available options for Video RAM Cacheable are : [Enabled] [Disabled].

AGP 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 translation. See www.agpforum.org for AGP information.

The available options for AGP Aperture Size are : [64M] [128M] [4M] [8M] [16M] [32M].

AGP-4X Mode

Enables the 4X AGP mode for higher AGP throughput. A 4X AGP graphics is required to enable this function.

The available options for AGP-4X Mode are : [Enabled] [Disabled].

AGP Driving Control / AGP Driving Value

Allows you to adjust the AGP driving force. Choose Manual to key in a AGP driving value in the next selection. This field is recommended to set in Auto for avoiding any error in your system.

The available options for AGP Driving Control are : [Auto] [Manual].

AGP Fast Write

Select Enabled if your system has an AGP adapter installed on the mother-board in order to improve performance.

The available options for AGP Fast Write are : [Disabled] [Enabled].

Onchip USB

The chipset contains an integrated USB controller. Select Enabled if you have USB peripherals.

The available options for Onchip USB are : [Enabled] [Disabled].

USB Keyboard Support

Select Enabled if your system contains a USB controller and you have a USB Keyboard.

The available options for USB keyboard Support are : [Disabled] [Enabled].

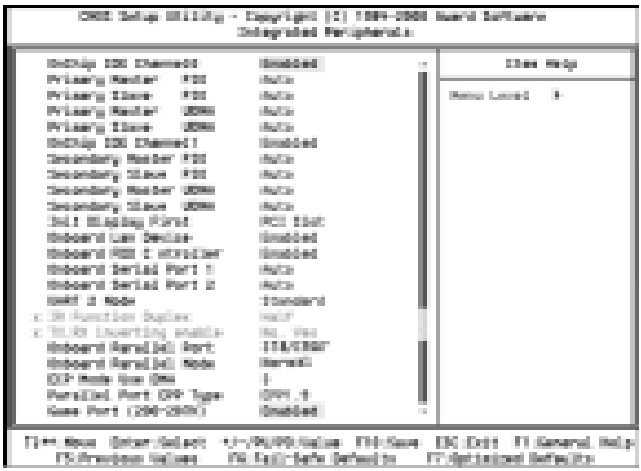
Memory Parity / ECC Check

Select Enabled to detect the memory parity and error checking & correcting.

The available options for Memory Parity / ECC Check are : [Disabled] [Enabled].

Integrated Peripherals

Selecting **"Integrated Peripherals"** on the main program screen display this menu :



The screen allows you to configure the onboard device controllers.

OnChip IDE Channel 0 / Channel 1

Primary / Secondary Master / Slave PIO

Primary / Secondary Master / Slave UDMA

- OnChip IDE Channel 0 / Channel 1

  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 Onchip IDE Channel 0 / Channel 1 are :[Enabled] [Disabled].

- 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. Mode 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The available options for Primary / Secondary Master / Slave PIO are : [Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4].

- 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 of 66MB/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 Primary / Secondary Master / Slave UDMA are : [Auto] [Disabled].

Init Display First

Allows you to decide to active whether PCI Slot of VGA card or AGP first.
The available options for Init Display First are : [PCI Slot] [AGP].

Onboard Lan Device

Select Enabled if your system has a LAN controller installed on the motherboard and you wish to use it. If you install an add-in LAN card or the system has no LAN controller, select Disabled in this field.
The available options for Onboard Lan Device are : [Enabled] [Disabled].

Onboard FDD 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 FDD Controller are :[Enabled] [Disabled].

Onboard Serial Port 1 / Port 2

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

UART 2 Mode / IR Function Duplex / TX, RX inverting enabled

Select an operating mode for the onboard serial port 2. If you select [HPSIR] or [ASKIR], the IR Function Duplex and TX, RX inverting enable items will appear.

- The [HPSIR] is Hewlett Packard infrared communication protocol with maximum baud rate up to 115.2k bps.
- The [ASKIR] is Sharp infrared communication protocol with maximum baud rate up to 57.6K bps.

The available options for UART 2 Mode are : [Standard] [HPSIR] [ASKIR].

Onboard Parallel Port

Allows you to determine onboard parallel port controller I/O address setting. The available options for Onboard Parallel Port are : [378 / IRQ7] [278 / IRQ5] [3BC / IRQ7] [Disabled].

Onboard Parallel Port Mode / ECP Mode Use DMA / Parallel Port EPP Type

Select an operating mode for the onboard parallel port. Select [Normal] unless you are certain your hardware and software both support one of the other available modes. If you select other mode, the ECP Mode Use DMA and Parallel Port EPP Type items will appear.

- **[SPP]** : Standard Parallel Port is the IBM AT and PS/2 compatible mode.
- **[EPP]** : Enhanced Parallel Port is enhances the parallel port throughput by directly writing / reading data to / from parallel port without latch.
- **[ECP]** : Extended Parallel Port is supports DMA and RLE (Run Length

Encoded) compression and decompression.

The available option Onboard Parallel Mode are : [Normal] [EPP] [ECP] [ECP / EPP].

ECP Mode Use DMA allows you to select a DMA channel for the parallel port for use during ECP mode.

The available options for ECP Mode Use DMA are [3] [1].

Parallel Port EPP Type allows you to select a DMA channel for the parallel port for use during EPP mode.

The available options for Parallel Port EPP Type are : [EPP1.9] [EPP1.7].

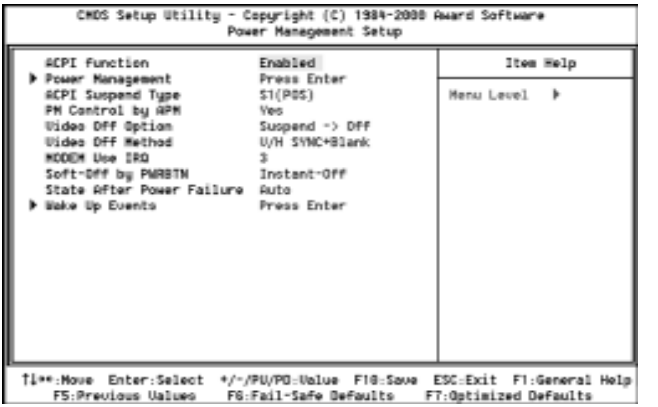
Game Port (200-207H)

This setting Enabled the game port or MIDI device available on the motherboard.

The available options for Game Port (200-207H) are : [Enabled] [Disabled].

Power Management Setup

Selecting **"Power Management Setup"** on the main program screen display this menu:



The Power Management Setup option controls the power management functions. This motherboard supports ACPI (Advanced Configuration and Power management Interface). The system has various power saving modes that allows the system to be automatically resumed by certain events.

ACPI Function

This item allows you to Enabled or Disabled the ACPI (Advanced Configuration and Power management Interface) function.

The available options for ACPI Function are : [Enabled] [Disabled].

Power Management / HDD Power Down / Doze Mode / Suspend Mode

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

- [**User Define**] : allows you to set each mode individually. Select time-out periods in the HDD Power Down, Doze Mode, and Suspend Mode section.
- [**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]

HDD Power Down

After the selected period of drive inactivity (1 to 15 minutes), the hard disk drive power down while allother devices remain active.

Doze Mode

After the selected period of system inactivity (1 minute to 1 hour), the CPU clock run at slower speed while all other devices still operate at full speed.

Suspend Mode

After the selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off.

ACPI Suspend Type

This item allows you to set how your system suspends.

- **[S1(POS)]** : This suspend mode is equivalent to a software power down.
- **[S3(STR)]** : This motherboard features the suspend to RAM function. In a suspend to RAM, the system is totally powered down with the exception of the small current required to refresh the system memory. To resume from a suspend to RAM, press the power button (or use the hot keys or password if you have enabled a hot key or password power on). The system will resume in just a few seconds, and it will appear in exactly the same state as it was before it was suspended to RAM.

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

PM Control by APM

If APM (Advance Power Management) is installed on your system, selecting Yes gives better power savings.

When enabled, an APM device will be activated to enhance the max. power saving mode and stop the CPU internal clock.

The availaable options for PM Control by APM are : [Yes] [No].

Video Off Option

Select the power saving modes during which the monitor goes blank

- [**Suspend**] →Off : Monitor blanked when system enters suspend mode.
- [**All Modes**] →Off : Monitor blanked when system enters any power-saving mode.
- [**Always On**] : Monitor remains on during power-saving modes.

The available options for Video Off Option are : [Suspend →Off] [All Modes →Off] [Always On].

Video Off Method

Deter mines 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 sub system to select video power management values.

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

MOMEM Use IRQ

Allows you to determines the IRQ in which the modem can use.

The available options for MODEM Use IRQ are : [3] [1].

Soft-Off by PWRBTN

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 PWRBTN are : [Instant-Off] [Delay 4 Sec].

State After Power Failure

A traditional ATX system should remain at power off stage when AC power

resumes from power failure. This design is inconvenient for a network serve or work station without an UPS, that need to keep power on. This item is used to solve this problem.

- [**Auto**] : If you select Auto, the system will power-on or power-off based on the original state.
- [**On**] : If you select On, the system can automatically power-on after AC power resume.
- [**Off**] : If yu select Off, the system keep power-off state after AC power resume.

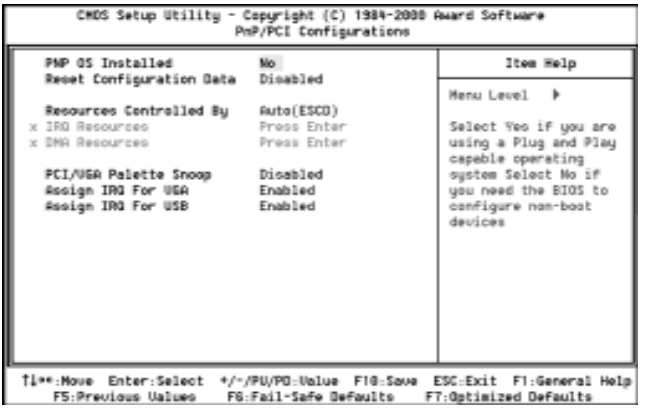
The available options for State A fter Power Failure are :[Auto] [On] [Off].

Wake Up Events

Wake Up Events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as on, even when the system is in a power down mode.

PnP / PCI Configurations

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



This section describes configuring the PCI bus system. PCI (Personal Computer Interconnect) is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself use when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

PNP OS Installed

Select Yes if the system operating environment is plug and play aware (Windows 95/98).

The available options for PnP OS Installed are : [No] [Yes].

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to rest Extened 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 confilict that the operating system connot boot.

The available options for Reset Configuration Data are : [Auto (ESCD)] [Manual].

Resources Controlled By

The Plug and Play Elite BIOS 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].

PCI / VGA Palette Snoop

This item is designed to overcome some problem that can be caused by some non-standard graphics adapters. If you're having problems with the VGA system, try enabling this item.

The available options for PCI / VGA Palette Snoop are : [Disabled] [Enabled].

Assign IRQ For VGA

Assign an IRQ number to your VGA adapter.

The available options for Assign IRQ For VGA are : [Enabled] [Disabled].

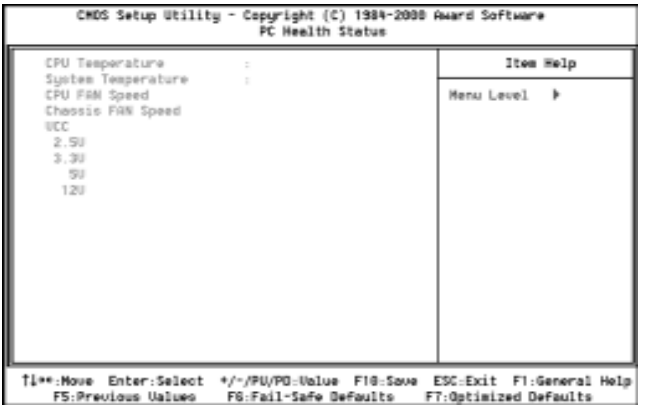
Assign IRQ For USB

Assign an IRQ number to the onboard USB port.

The available options for Assign IRQ For USB are : [Enabled] [Disabled].

PC Health Status

Selection **"PC Health Status"** on the main program screen display this menu



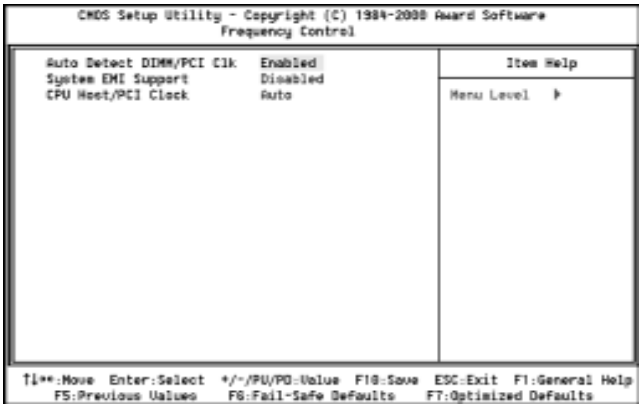
You cannot change any values in the **PC Health Status** fields, they are only for your information. The fields the CPU temperature, FAN speed and voltages about your system.

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 :



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

Auto Detect DIMM / PCI Clk

If you Enabled this item, 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].

System EMI Support

If you Enabled this item, the EMI generated by the system is greatly reduced.

The available option for System EMI Support are : [Disabled] [Enabled].

CPU Host / PCI Clock

The motherboard automatically detects and installs the CPU FSB on the system. This item allows you to set Host CPU / PCI Clock.

If your CPU Bus Frequency is support to 66MHz.

The available options for Host CPU / PCI Clock are : [Auto] [66/33MHz] [68/34MHz] [75/37MHz] [83/41MHz].

If your CPU Bus Frequency is support to 100MHz.

The available options for Host CPU / PCI Clock are : [Auto] [95/31MHz] [100/33MHz] [103/34MHz] [112/37MHz].

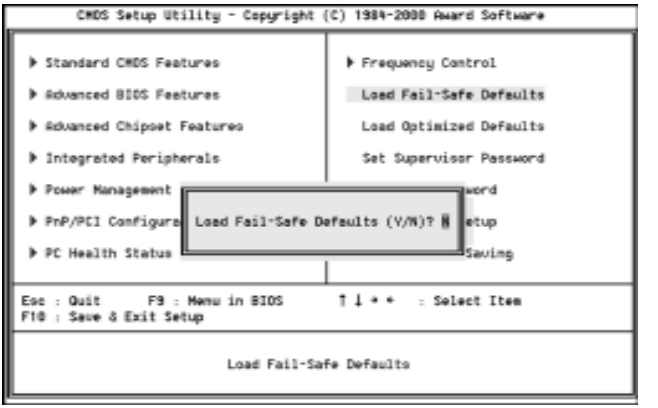
If your CPU Bus Frequency is support to 133MHz.

The available options for Host CPU / PCI Clock are : [Auto] [133/33MHz] [138/34MHz] [140/35MHz] [150/37MHz].

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"** 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.

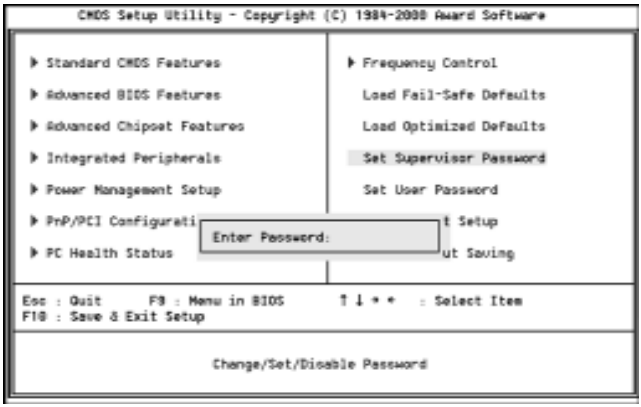
When you pressing "**Y**" key to load the default values that are factory setting for optimal performance system operations.

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.



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

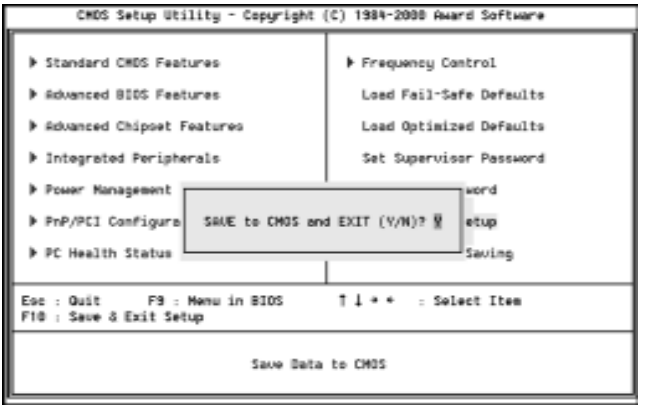
disabled. Once the password is disabled, the system will boot and you can enter setup freely.

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 unanthorzed 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”** on the main program screen and press <**Enter**> key on this option. You get a confirmation dialog box with a message display this 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 this 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

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 system.

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 Figure1.1.

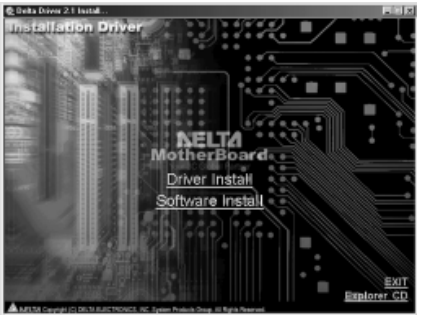


Figure 1

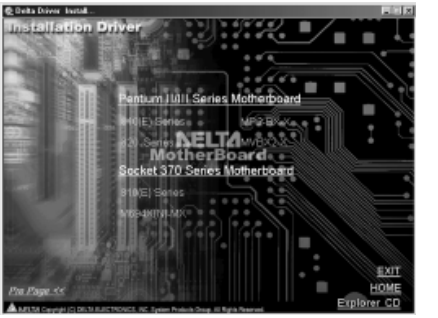


Figure 1.1

Using the Installation Program

When you click on "**M694X(N)-MX**" under "**Socket 370 Series Motherboard**" from the opening screen of the installation program, the drivers menu displays seven items as shown below Figure 2.

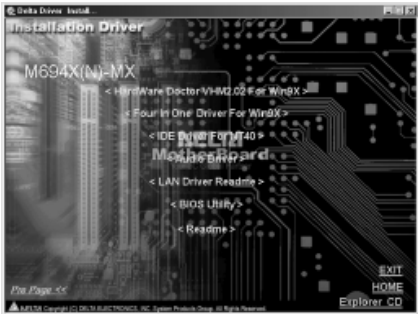


Figure 2

HardWare Doctor VHM2.02 For Win9X Installation

The system environment monitoring Utility with the onboard VIA VT82C686A 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 "**HardWare Doctor VHM2.02 For Win9X**" on the Figure 2, the screen will appear Figure 3. for VIA Hardware Monitor AP10.02.
- Click [**Next**], the screen will appear Figure 4. Then type in "**C:\VIAhm**" (assuming that your CD-ROM drive is drive D:). The installation program will now guide you through the rest of the install process.

Figure 3

Figure 4

- When completed, you will be prompted to reboot. Click [**Finsh**] to complete the installation.
- The "**HardWare Doctor VHM2.02**" option will be added to the "**Program**" directory. Click "**VIA HM**" to access the program, the screen will appear Figure 5.
- Then click "**VIA Hardware Monitor**", 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.

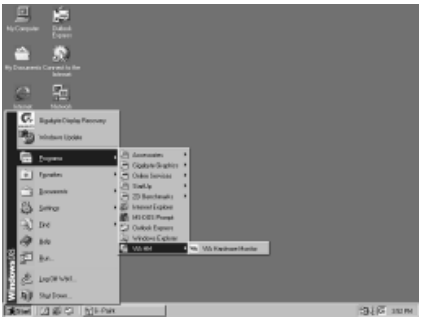


Figure 5

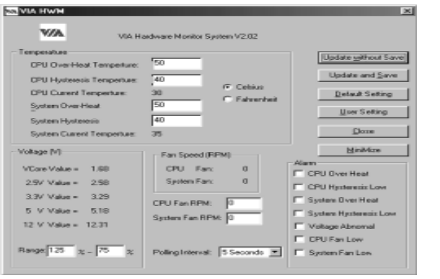


Figure 6

Four in One Driver For Win9X Installation

This folder installs upgraded information files for Windows' registry so that the features of the VIA chipset are fully supported. The files add or enhance the following features:

- Default IDE DMA Mode Setting.
- AGP VxD Driver
- VIA Chipset Functions' Registry
- IRQ Routing Miniport Driver

Only install this software if your system is running Windows 95/98 and you have at least 32MB of system memory. When you click "**Four in One Driver For Win9X**" on the Figure 2, the screen will appear Figure 7. The installation

program will now guide you through the rest of the install process.
When completed, the screen will appear Figure 8. you will be prompted to reboot, Click [**Finish**] to reboot and complete the installation.

Figure 7

Figure 8

IDE Driver For NT40 Installation

This folder provides bus mastering UltraDMA 66 drivers for IDE devices runing on Windows NT4.0 system. If you are runing Windows NT4.0, click on this item to install drivers.

- Click "**IDE Driver For NT40**" on the Figure 2, the screen will appear Figure 9. Then click [**Next**] to installation program will now guide you through the rest of the install process.

When completed, the screen will appear Figure 10. You will be prompted to reboot, Click [**Finish**] to reboot and complete the installation.

Figure 9

Figure 10

Audio Driver Installation

This folder let you select the drivers for the audio system that is integrated on this motherboard. Drivers are provided for Windows 95/98, NT4.0 and Win 2000.

- Click "**Audio Driver**" on the Figure 2, the screen will appear Figure 11. (Install the Audio driver from sub-folders for Windows 95/98, NT4.0 and Win 2000).
- Click "**Audio Driver For Win95/98**" on the Figure 11, the screen will appear Figure 12. The installation program will now guide you through the rest of the installation process. When completed, the screen will appear Figure 13. You will be prompted to reboot, Click [**Finish**] to reboot and complete the installation.

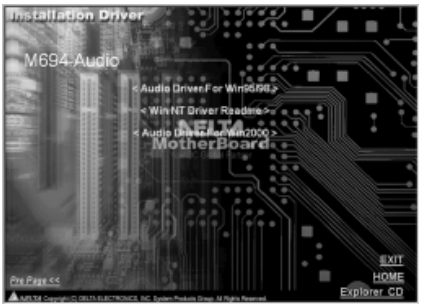


Figure 11

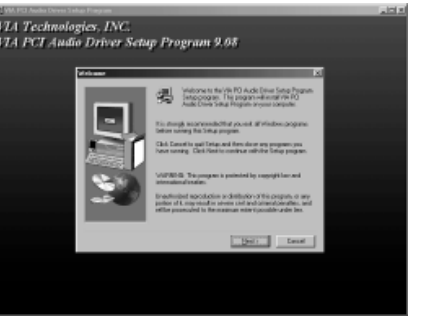


Figure 12

Figure 13

- View device through the Device Manager under Windows 98.
  - Click [**Start**] → Point to [**Setting**] → Click [**Control Panel**] to view program install state..
  - Double click [**System**] → Click [**Device Manager**] → Click "**+**" to the left of the [**Display adapters**], the screen will appear Figure 14. Highlight the "**Audio Driver For Win95/98**" driver is installed successfully.

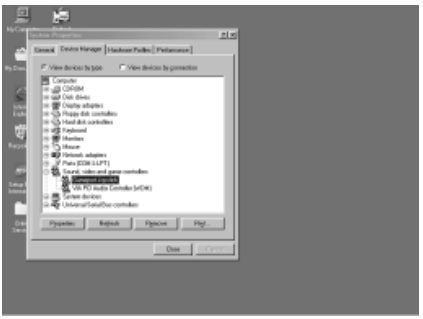


Figure 14

LAN Driver Installation

In the driver provides the information about the driver installation guide for SIS900 Ethernet network operation system. The following section will describe the most popular network operation system installation procedure.

- Click [**Start**] → Point to [**Setting**] → Click [**Control Panel**] to add the hardware function.
- Double click [**Add New Hardware**], The screen will appear Figure 15. The installation program will now guide you through the rest of the installation process. When completed, the screen will appear Figure 16. Then click [**Finish**] to complete the installation.

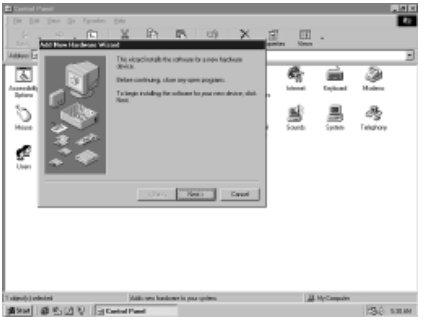


Figure 15

Figure 16

- View device through the Device Manager under Windows 98.
  - Click [**Start**] → Point to [**Setting**] → Click [**Control Panel**] view program install state.
  - Double click [**System**] → Click [**Device Manager**] → Click "**+**" to the left of the "**Network adapters**", the screen will appear Figure 17. Highlight the LAN driver is installed successfully.

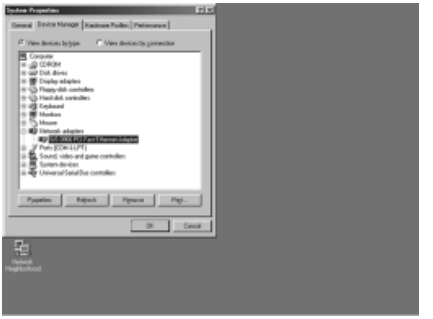


Figure 17

  - Or allows your OS specify the path for LAN driver install, please refer to "**LAN Driver Readme**" explain on the Figure 2.

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.

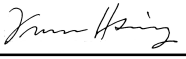
Responsible Party Name	**:**	**DELTA PRODUCTS CORPORATION**
Address	**:**	**4405 CUSHING PARKWAY FREMONT.CA 94538, U.S.A.**
Contact Person / Title	**:**	**Executive Vice President / Frank Hsiung**
Telephone	**:**	**1-510-668-5100**
Fax	**:**	**1-510-668-0680**

EUT Certification Summary

Standard	**:**	**FCC Part 15, Subpart B, Class B ANSI C63.4-1992**
Product	**:**	**MOTHER BOARD**
Model No.	**:**	**M694X-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. : M694X-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 CE R **(EC conformity marking)**

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Alex Cho

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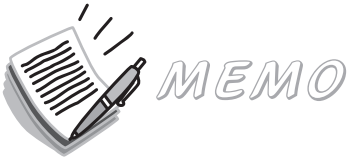
Alex Cho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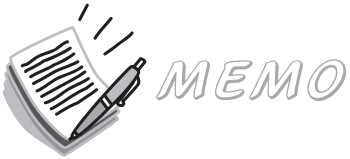
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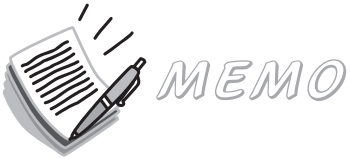
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