FV24

FC-PGA/FC-PGA2 Celeron and FC-PGA/FC-PGA2 Pentium III Processor Based Main Board

User's Manual

FV24

FC-PGA/FC-PGA2 Celeron and
FC-PGA/FC-PGA2 Pentium III processor based Mainboard
Manual Version 3.0

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About This Manual

1 INTRODUCTION

1.1 To Different Users

First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience successful, right from the start, we have designed the **Chapter 3 Hardware Installation** section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new FV24 mainboard.

Experienced DIY User

Congratulate on your purchase of the FV24 mainboard. You will find that installing your new FV24 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated FV24 mainboard provides you with a total solution to build the most stable and reliable system. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** to find out how to get the best out of your new mainboard. **Chapter 5 BIOS Setup** also contains the relevant information on how to tune up your system to achieve higher performance.

System Integrator

You have wisely chosen FV24 to construct your system. FV24 incorporates all the state-of-the-art technology of the PL133 chipset from VIA. It integrates the most advanced functions you can find to date in a compact FlexATX board. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** for an in-depth view of system construction.

1.2 Item Checklist

Check all items with your FV24 mainboard to make sure nothing is missing. The complete package should include:

✶ One pices of FV24 Mainboard
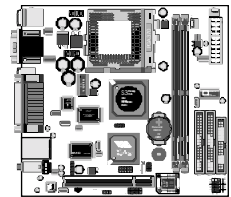
✶ One pices of ATA100/66/33 Ribbon Cable
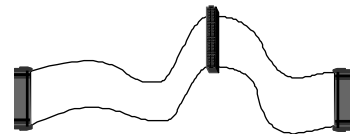
✶ One pices of Floppy Ribbon Cable

✶ One pices of twin ports USB Cable **(optional)**
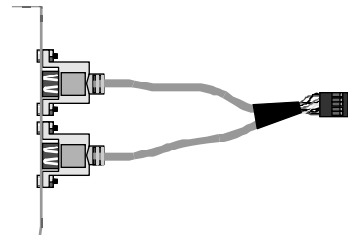
✶ One pices of 6P to 6P IEEE1394 Cable **(optional)**
   or 6P to 4P IEEE1394 Cable **(optional)**

✶ One I/O back-Panel Shielding
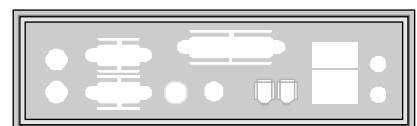
✸ FV24 User's Manual
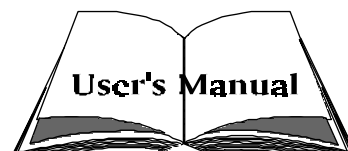
✸ One piece of Bundled CD-ROM with containing:
  ➢ FV24 user's manual on PDF format
  ➢ VIA 4-IN-1 driver
  ➢ VIA AGP driver
  ➢ VIA Audio driver
  ➢ VIA Hardware Monitor driver
  ➢ LAN driver
  ➢ Award Flashing Utility
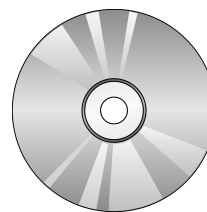
2 FEATURES

FV24 mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

2.1 Specifications

✸ CPU Support

Intel FC-PGA Celeron processors with 66/100 MHz FSB.
Intel FC-PGA2 Celeron processors with 100 MHz FSB.
Intel FC-PGA Pentium III processors with 100/133 MHz FSB.
Intel FC-PGA2 Pentium III processors with 133 MHz FSB.
VIA C3 processors with 100/133 MHz FSB.

✸ Chipset

Features VIA PL133, VT8604/VT82C686B Chipset.
Onboard Lan
Realtek 8139C, support 10Mb/ sand 100Mb/s operation.
Onboard TV-out (optional)
Chrontel CH7006C.
Onboard 1394
Lucent FW323, support 400Mb/s, 200Mb/s, 100Mb/s data transfer rate.

✸ Jumperless CPU Configuration

Soft-configuration FSB (The FSB speed is software configurable from 66MHz to 150MHz in the Frequency/Voltage Control of BIOS setup program.)

✸ Integrated Graphics Controller

3D Hyper Pipelined Architecture.
Full 2D Acceleration.
Motion Video Acceleration.
4 to 32MB frame buffer using system memory.

✸ AC'97 Link for Audio and Telephony CODEC

AC'97 2.1 compliant.
Spread independent PCI functions for Audio and Modem.

✱ **Versatile Memory Support**

Two **168-pin DIMM** slots to support up to 1GB of PC100 or PC133 compliant SDRAM.

✱ **PCI Expansion Slots**

Provides one 32-bit PCI slot.

✱ **I/O Interface**

Provides a variety of I/O interfaces:

➢ 1 × Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, or 2.88MB format or for 5.25-inch FDD with 360K or 1.2MB format.

➢ 1 × PS/2 mouse connector.

➢ 1 × PS/2 Keyboard connector.

➢ 1 × DB9 Serial connectors 16550 UART compatible.

➢ 1 × DB15 VGA connector.

➢ 1 × S-Video and Composite Video connector. **(optional)**

➢ 2 × 1394 connector.

➢ 1 × RJ45 LAN connector.

➢ 1 × DB25 Parallel port supporting Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), and Extended Capabilities Port (ECP) data transmission schemes.

➢ 1 × Line-In connector.

➢ 1 × Line-Out connector.

✱ **4 USB Interface Onboard**

➢ 2 × USB connectors on back-panel and one 10-pin header for optional USB cable to extend another 2 USB ports .

✱ **PCI Bus Master IDE Controller Onboard**

Two UltraDMA **100/66/33** Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements the data transfer speed up to **100/66/33** MB/sec and also supports Enhanced PIO Modes.

80-pin Cable Backward Compatible Legacy ATAPI Devices, ATAPI IDE CD-ROM, CD-R, CD-RW, and LS-120 Supports.

✴ ATX Power Supply Connector

ATX power supply unit can be connect to the onboard 20-pin ATX power connector, supporting Suspend and Soft-On/Off by dual-function power button.

✴ Advanced Configuration and Power Interface

Features four power saving modes: Snoop, Suspend to RAM, Suspend to Disk, and Soft-Off. ACPI provides more efficient Energy Savings Features controlled by your operating system that supports OS Direct Power Management (OSPM) functionality.

✴ System BIOS

Provides licensed Award BIOS V6.0 PG on 2Mb Flash EEPROM and supports Green PC, Desktop Management Interface (DMI).

✴ Flex ATX Form Factor

System board conforms to the Flex ATX specification.
Board dimension: 190mm × 175mm.

✴ Advanced Features

➢ **Dual Function Power Button -** The system can be in one of two states; one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode. When the power button is pressed for longer than 4 seconds, the system enters the Soft-Off mode.

➢ **CPU Clock Setting-** This item allows users to adjust CPU Host Clock in BIOS.

✴ Intelligent Features

➢ **Voltage Monitoring -** Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure stable current passing through mainboard components. System voltages include Vcore on CPU, and +2.5V, +3.3V, +5V, +12V on system etc.

➢ **Fan Status Monitoring -** To prevent CPU from overheating, the CPU fan is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required.)

➢ **Temperature Monitoring -** This item allows users to make sure whether the CPU or system runs in a suitable temperature.

3 HARDWARE INSTALLATION

Before removing or installing any of these devices including CPU, DIMMs, Add-On Cards, Cables, please make sure to unplug the onboard power connector.

This section outlines how to install and configure your FV24 mainboard. Refer to the following mainboard layout to help you identify various jumpers, connectors, slots, and ports. Then follow these steps to guide you through a quick and correct installation of your system.

3.1 Step-by-Step Installation

Accessories Of FV24

PCI Riser pin - **J4**
Socket 370
PS/2 Keyboard/Mouse Connectors
COM1 & VGA Connectors
S/Composite Video Connectors (optional)
Parallel Port Connector
Chrontel CH7006C TV-out Controller (optional)
1394 Controller
1394 Connector
RTL8139C LAN Controller
LAN & USB Connectors
Line-In/Line-Out Connectors
Onboard Audio Connector - **SJP1**
Onboard VIA CODEC
Speaker-Out & Mic-In Connectors - **JP2**
One PCI Slot
USB2 Power-On Setting - **J10**
VIA VT82C686B

Two DIMM Socket
PL133 VT 8604
FAN2
FAN1
ATX Power Connector
One Floppy Connector
Two IDE Connectors
Front-Panel Connectors - **JP3/JP4**
Programmable 2Mb Flash EEPROM
Clear CMOS - **J9**
One Modem Riser Connector - **JP5**
Extended two USB Connectors header - **USB2**

Step 1

Install the CPU:

1. Locate the CPU ZIF (Zero Insertion Force) socket on the upper-right sector of your mainboard (between the back-panel connectors and the DIMM memory slots).

2. Pull the CPU ZIF socket lever slightly sideways away from the socket to unlock the lever, and then bring it to an upwardly vertical position.

3. Place your FC-PGA/FC-PGA2 370 processor in the ZIF socket. Note that the CPU's edges have been purposely designed non-symmetrically to prevent from inserting the processor in the wrong direction. The following diagram demonstrates the correct placement of the CPU in the ZIF socket. You can see that the two blunt-edged corners should face towards the socket-lever.

FC-PGA CPU   FC-PGA2 CPU

Blank   Lever   Blank   Notch   Notch
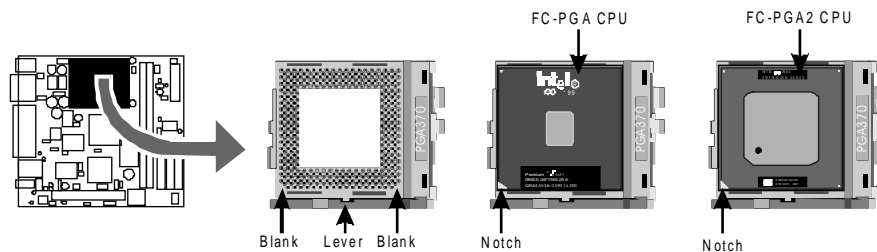
4. Slightly push the FC-PGA/FC-PGA2 370 processor into the socket without applying excessive force while making sure there is no gap between CPU and socket. Then lower the socket-lever all the way down to its horizontal position and lock it to secure the CPU in place.

5. The FC-PGA/FC-PGA2 370 processor requires a set of heatsink/fan to ensure proper cooling of the processor. If heatsink/fan have not been already mounted on your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable through the heatsink/fan in the CPU fan power connector located nearby. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hardware monitoring function, a 3-pin fan power connector should allow your system to detect the CPU fan's speed . The CPU fan can also run with a 2-pin fan power connector, however, detection of CPU fan's speed is not supported. Another type of CPU fan may feature a large 4-pin fan power connector, which does not support CPU fan's speed detection and must be directly connected to the system's power supply unit. Please refer to the following diagram.

Step 2.

Set Jumpers

This mainboard is jumperless! The default jumper settings have been set for the common usage standard of this mainboard. Therefore, you do not need to reset the jumpers unless you require special adjustments as in any of the following cases:

1. Over-clock your CPU
2. Clear CMOS

For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their system, section **3.2 Jumper Settings** will provide detailed information on how to configure your mainboard manually.

Step 3.

Install SDRAM System Memory

To insert memory module(s) in any one or two DIMM slot(s). Please note that modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM slots, lift the clips of both sides of the DIMM slot to lock the module in place.
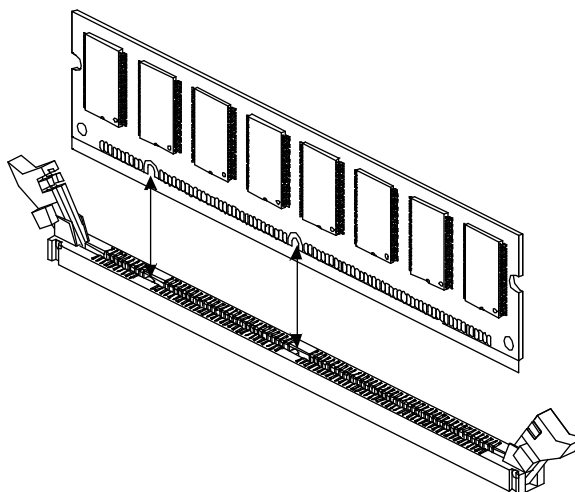
Step 4

Install Internal Peripherals in System Case

Before you install and connect the mainboard into your system case, we recommend that you first assemble all the internal peripheral devices into the computer housing, including but not limited to the hard disk drive (IDE /HDD), floppy disk drive (FDD), CD-ROM drive, and ATX power supply unit. This will greatly facilitate in making the connections to the mainboard described below.

To install IDE & FDD drives, follow this procedure:

1. Set the required jumpers on board each device according to the instructions provided by the manufacturer. (IDE devices, HDD, and CD-ROM have to set jumpers on Master or Slave mode depending on your willing to install more than one device for each kind.)

2. Connect IDE cable and FDD cable on the back-panel of the internal peripheral devices to the corresponding headers on board. Note that the cable should be oriented with its colored stripe (usually in red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.

3. Connect an available power cable through your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if it is not properly positioned.

Step 5

Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose a correct mounting hole, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.
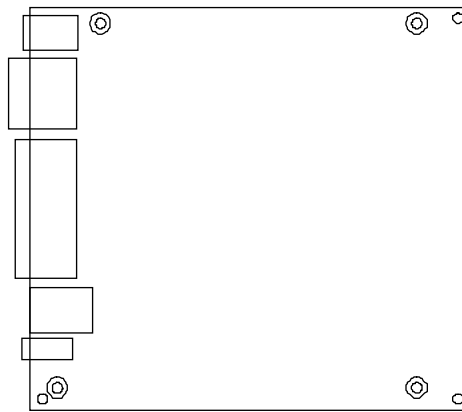
2. After deciding on the proper mounting holes, position the studs between the frame of chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical shortage between the board and the metal frame of chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

> **Note:** In most computer housings, you will be able to find 4 or more attachment points to install mounting studs and fix the mainboard. If there aren't enough matching holes, then make sure to install at least 4 mounting studs to ensure proper attachment of the mainboard.

Step 6

Connect Front-Panel Switches/LEDs/Speaker/Audio/USB connectors

You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (HDD LED, Power LED, Reset Switch, or USB devices etc.) These cables serve to connect the front-panel switches, LEDs, USB, Speaker-Out, and Mic-In connectors to the mainboard's front-panel connectors group (JP3, JP4, USB2, and JP2), as shown below.
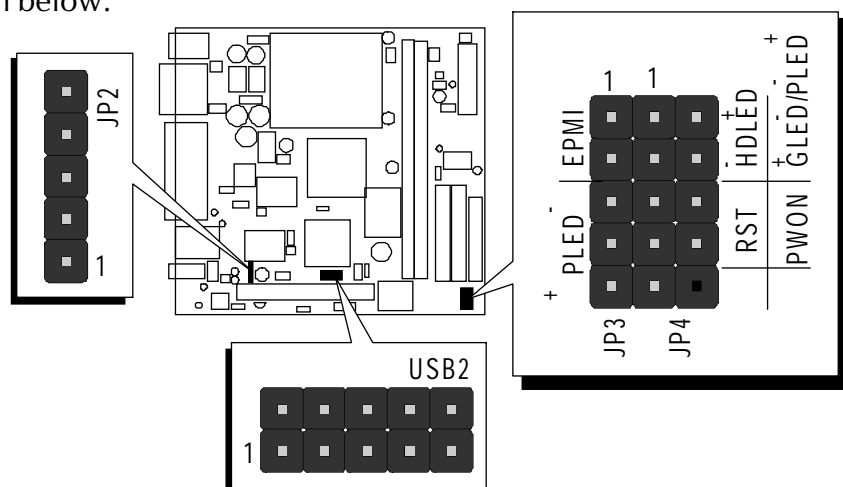
1. ATX Soft Power On/Off (PW ON)

2. EPMI
   (Hardware System Management
   Interface)
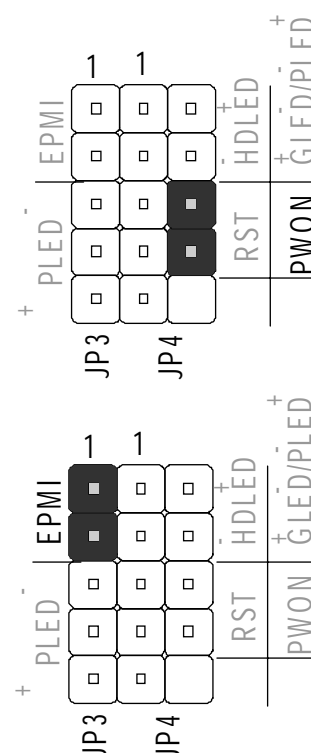
3. Green_LED/ Power_LED (GLED/PLED)
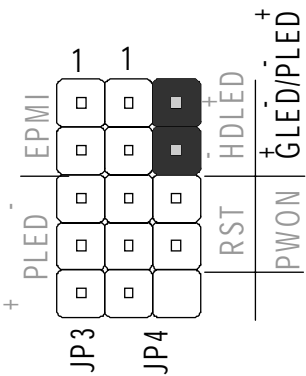
4. HDD_LED (HDLED)
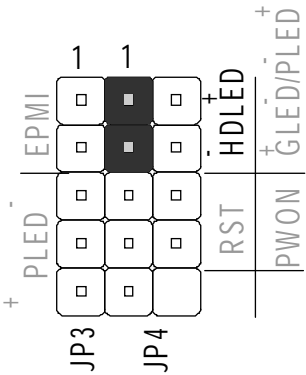
5. Power-LED (PLED)
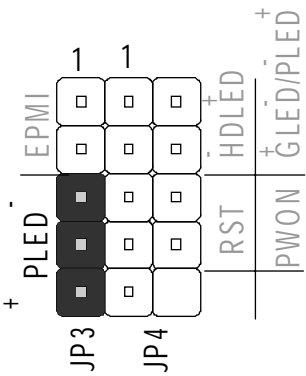
6. Hardware Reset Switch (RST)

7. Speaker-Out and Mic-In header

```
MIC-IN        ●   5
MIC-VCC       ●   4
AGND          ●   3   JP2
R SPEAKER-OUT ●   2
L SPEAKER-OUT ■   1
```

8. Extended two USB connectors header

USB Port 4

```
         GND  GND  USBD3+  USBD3-  +5V
      2  ●    ●    ●       ●       ●   10
      1  ■    ●    ●       ●       ●   9
         +5V  USBD2-  USBD2+  GND  GND
```

USB Port 3
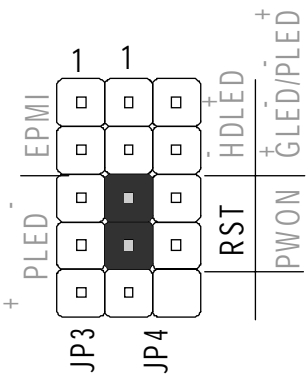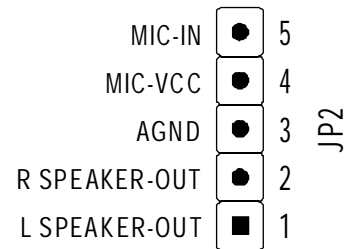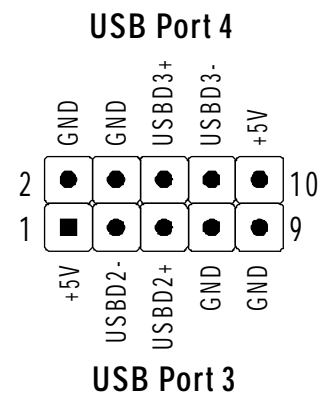
Step 7

Connect IDE & Floppy Disk Drives

1. IDE cable connector

IDE1   IDE2
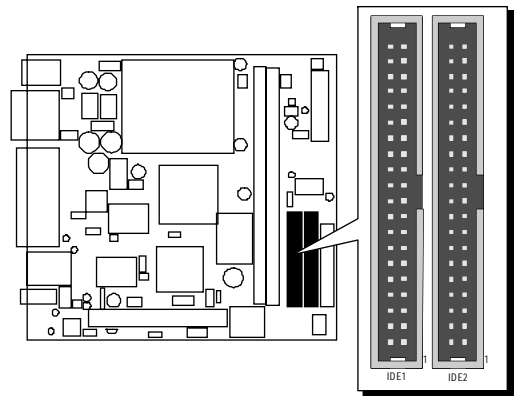
2. FDD cable connector

FDD1
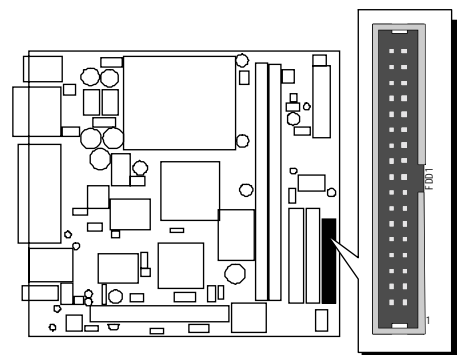
Step 8

Connect Other Internal Peripherals

1. CD_IN connector
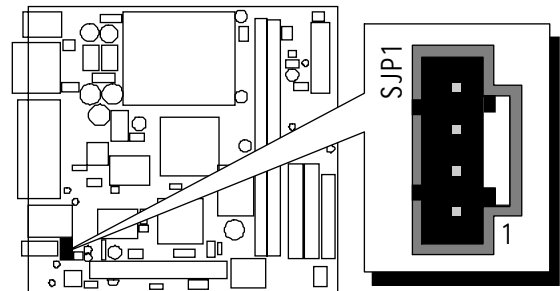
2. Optional Modem Riser adapter connector
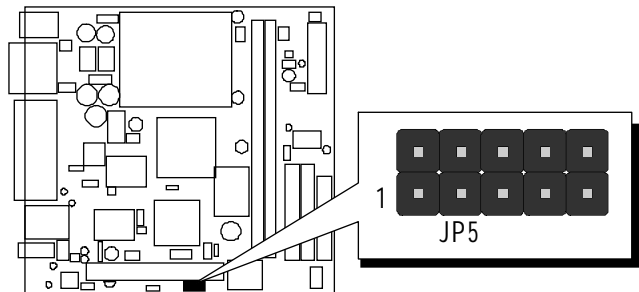
Step 9

Connect Power Supply

1. System power connector
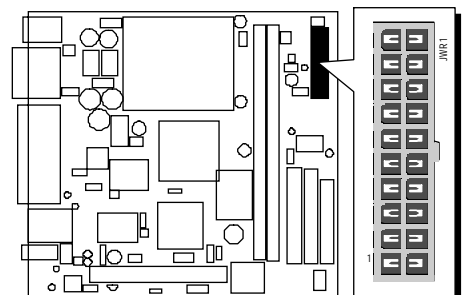
Step 10

Install Add-on Cards in Expansion Slots

1. PCI Card
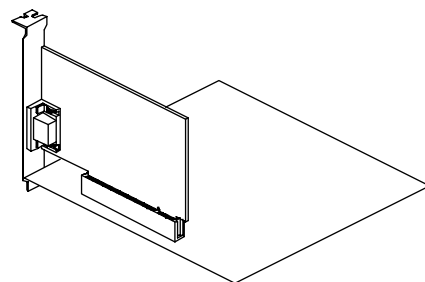
Step 11

Connect External Peripherals to Back-Panel

You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back-panel.
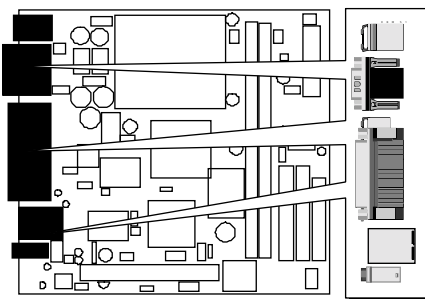
1. PS/2 Mouse and Keyboard

PS/2 Mouse
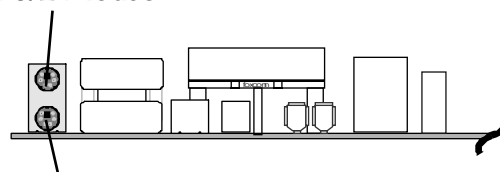
PS/2 keyboard

2. VGA Port
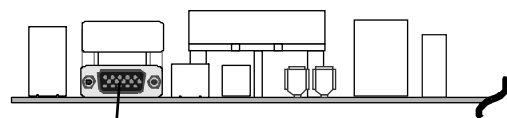
VGA Port

3. COM1 Port

COM1 Port
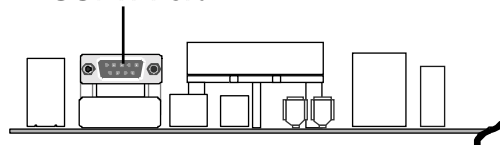
4. Parallel Port

Parallel Port
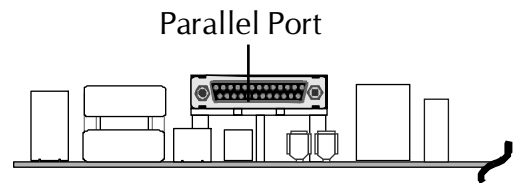
5. Optional S-Video and Composite Video Ports for TV-out

S-Video Port   CompositeVideo Port
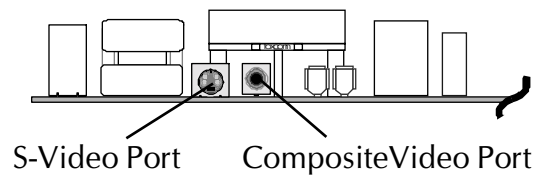
6. IEEE 1394 Ports

IEEE1394 Ports
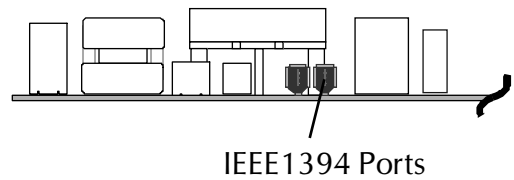
7. 10/100 base-T LAN Port

LAN Port

8. USB Ports

USB2 Port

USB1 Port
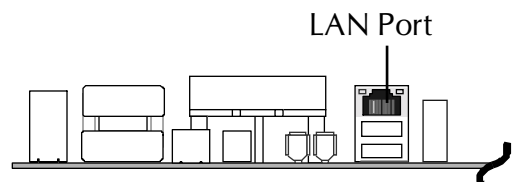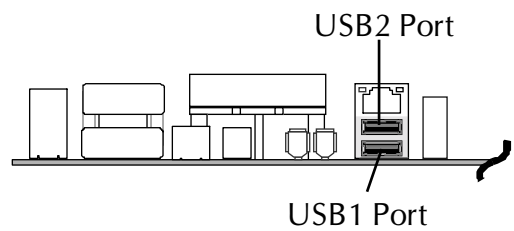
9. Line-In and Line-Out Port

Line-In Port

Line-Out Port
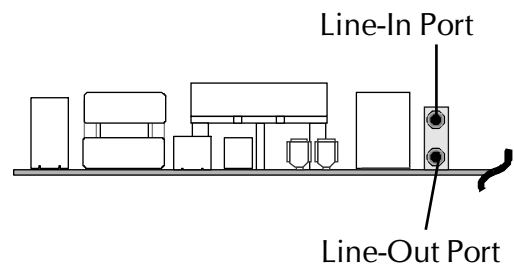
Step 12

First Time System Boot Up

To assure the completeness and correctness of your system installation, you may check the above installation steps once again before you boot up your system for the first time.

1. Insert a bootable system floppy disk (DOS 6.2x, Windows 95/98/NT, or others) which contains FDISK and FORMAT utilities into the FDD.

2. Turn on the system power.

3. First, you must use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partition(s) to occupy all the space available in the extended partition. The FDISK utility will assign a drive letter (i.e., C:, D:, E:,...) to each partition which will be shown in the FDISK program. After FDISK procedure, reboot your system by using the same system floppy disk.

> **Note:** DOS 6.2x and Windows 95A can only support up to 2.1GB of HDD partition. If you use the FDISK utility with one of the operating systems mentioned above, you can only decide your HDD into partitions no larger than 2.1GB each.

4. Now, use the FORMAT utility to format all the partitions you've created. When formatting the primary partition (C:), make sure to use the FORMAT C: /S command.

> **Note:** FORMAT C: /S can transfer all the necessary system files into the primary partition of your hard disk. Then, your HDD will become a bootable drive.

5. Install all the necessary drivers for CD-ROM, Mouse, etc.

6. Setup the complete operating system according to your OS installation guide.

Step 13

Install Driver & Software Components

Please note that all the system utilities and drivers are designed for Win 9x/ 2000/ME/NT operating systems only. Make sure your operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the FV24 bundled CD-ROM into your CD-ROM drive. The auto-run program will display the drivers main installation window on screen.
2. Select the Mainboard related program.
3. Install VIA 4-in-1, AGP, and Audio drivers.
4. Return to the main installation window and select the Hardware Monitor related program.
5. Install Hardware Monitor driver.
6. Return to the Hardware Monitor installation window and exit the auto-run driver installation program.
7. Install LAN driver.

❈ Please refer to section **Chapter 4 Software Utility** to install LAN driver.

3.2 Jumper Settings

Several hardware settings are made through the use of jumper caps to connect jumper pins to the mainboard. Pin #1 could be located at any corner of each jumper; you just find a location marked with a while right angle, which stands for pin1#. There are several types of pin 1# shown as below:

3-pin and multi-pin (＞3) jumpers show as follows:

Pin #1 to the left:

Pin #1 on the top:

Pin #1 to the right:

Pin #1 on the bottom:

Jumpers with two pins are shown as [▬▬▬] for Close [On] or [■][●] for Open [Off]. To Short jumper pins, simply place a plastic jumper cap over the desired pair of pins.

Caution!

1. Do not remove the mainboard from its antistatic protective packaging until you are ready to install it.
2. Carefully hold the mainboard by its edges and avoid touching its components. When putting the mainboard down, place it on the top of its original packaging film and on an even surface, and components side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) whenever handling this equipment.

Jumper & Connector Guide

Use the mainboard layout on page 12 to locate CPU socket, memory slots, expansion slots, jumpers and connectors on the mainboard during installation. The following list will help you identify jumpers, slots, and connectors along with their assigned functions:
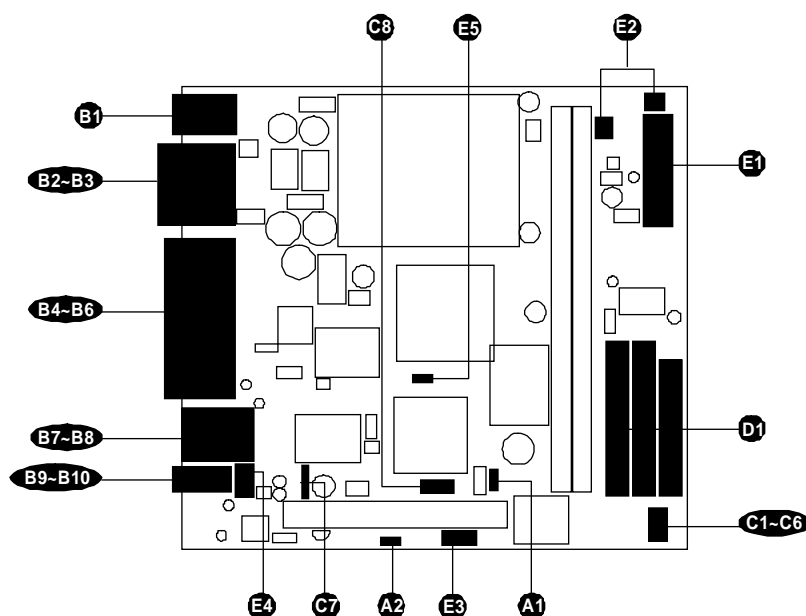
CPU/Memory/Expansion Slots

Socket 370	: CPU Socket for FC-PGA and FC-PGA2 370 processors
DIMM1/2	: Two DIMM Slots for 16, 32, 64, 128, 256, 512 MB, and 1GB of 3.3V SDR SDRAM
PCI	: One 32-bit PCI Expansion Slot

Jumpers

A1	J9	: Clear CMOS
A2	J10	: USB port 3/4 Power-On Setting

Back-Panel Connectors

B1	KB	: PS/2 Keyboard
B1	MS	: PS/2 Mouse
B2	VGA	: VGA Port (DB15 female)
B3	COM1	: Serial Port 1 (DB9 male)
B4	PRINTER	: Parallel Port (DB25 female)

ⓑ5	S/Video	: S-Video and Composite Video Ports
ⓑ6	1394	: 2 x 1394 Ports
ⓑ7	LAN	: 10/100 base-T LAN Port
ⓑ8	USB	: 2 × USB(1/2) Ports (Universal Serial Bus)
ⓑ9	LINE-IN	: Line-In Port
ⓑ10	LINE-OUT	: Line-Out Port

Front-Panel Connectors (JP3, JP4, JP2, and USB2)

ⓒ1	PWON	: ATX Power On/Off Momentary Type Switch
ⓒ2	EPMI	: Hardware System Management Interface Momentary Type switch
ⓒ3	GLED/PLED	: Green LED (ON when system stays in power saving mode) / System Power LED
ⓒ4	HDLED	: IDE Drive Active LED
ⓒ5	PLED	: System Power LED
ⓒ6	RST	: Hardware Reset Switch
ⓒ7	SPK/MIC	: Extended Spk-Out and Mic-In Header
ⓒ8	USB3/4	: Extended USB Header (USB2)

Internal Peripherals Connectors

ⓓ1	FDD	: Floppy Disk Drive Interface
ⓓ1	IDE1	: IDE Primary Interface (Dual-channel)
ⓓ1	IDE2	: IDE Secondary Interface (Dual-channel)

Other Connectors:

ⓔ1	JWR1	: ATX Power (20-pin header)
ⓔ2	FAN1	: Cooling Fan Power
ⓔ2	FAN2	: Cooling Fan Power
ⓔ3	JP5	: Modem Riser Connector
ⓔ4	SJP1	: CD-in
ⓔ5	J4	: PCI Riser pin

☞ *Jumpers*

Ⓐ1 Clear CMOS (J9)

J9 is used to clear CMOS data. Clearing CMOS will result in the permanent erasing of previous system configuration settings and the restoration of original (factory-set) system settings.

Pin 1-2 (Default)

Pin 2-3 (Clear CMOS)
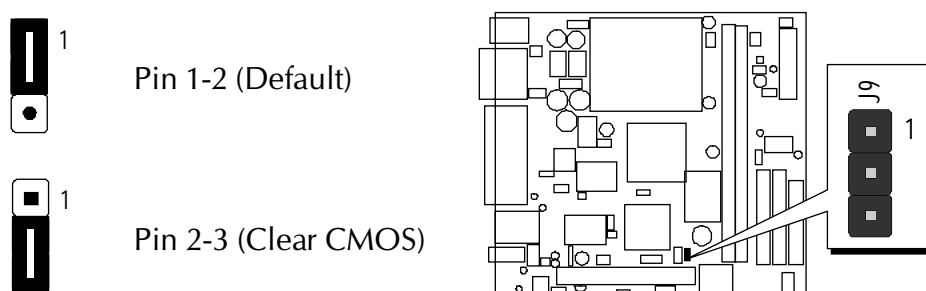
Step 1. Turn off the system power (PC-> Off).
Step 2. Remove jumper cap from J9 pins 1-2.
Step 3. Place the jumper cap on J9 pin 2-3 for a few seconds.
Step 4. Return the jumper cap to pin 1-2.
Step 5. Turn on the system power (PC-> On).

Ⓐ2 USB Port 3/4 Power-On Setting (J10)

FV24 provides one jumper to set USB devices which connect to front-panel to power-on system from Soft off stage.

Place jumper cap on J10 for enabling or disabling USB device (USB port 3 and USB port 4) power-on function.

Disabled (Default)
(USB power-on function)

Enabled
(USB power-on function)
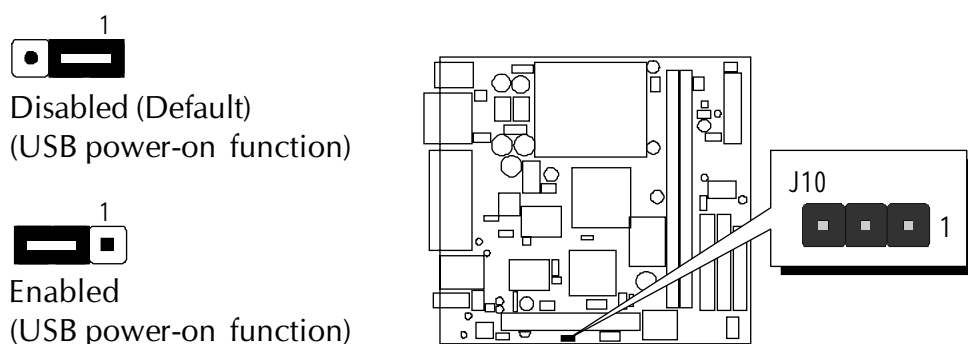
☞ *Back-Panel Connectors*

B1 PS/2 Keyboard & PS/2 Mouse Connectors

Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of mainboard. Depending on the computer housing you use (desktop or tower), the PS/2 Mouse connector is situated at the top of the PS/2 Keyboard connector when the mainboard is laid into a desktop, as opposed to a tower where the PS/2 Mouse connector is located at the right of the PS/2 Keyboard. Plug the PS/2 keyboard and mouse jacks into their corresponding connectors.

PS/2 Mouse

PS/2 keyboard
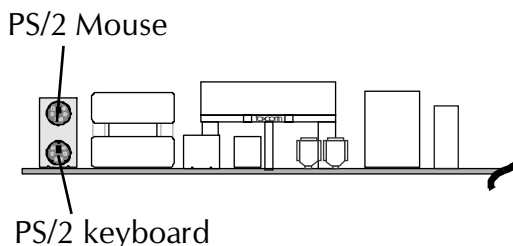
B2 VGA Port Connector

A 15-pin VGA connector is located at the rear panel of mainboard.

VGA Port
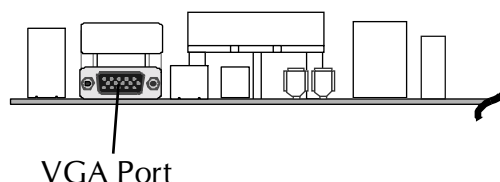
B3 COM1 Port Connector

This mainboard can accommodate one serial device on COM1. Attach a serial device cable to the DB9 serial port COM1 at the back-panel of your computer.

COM1 Port
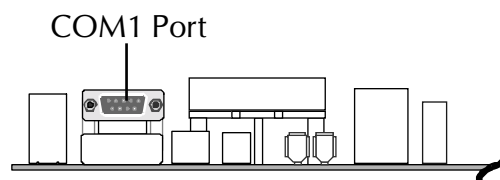
B4 Parallel Port Connector

One DB25 female parallel connector is located at the rear panel of the mainboard. Plug the connection cable from your parallel device (printer, scanner, etc.) into this connector.

Parallel Port
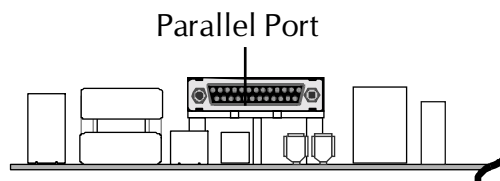
B5 Optional S/Composit Video TV-Out Connectors

This mainboard can accommodate S-Video and Composite Video ports on back-panel.

S-Video Port   CompositeVideo Port
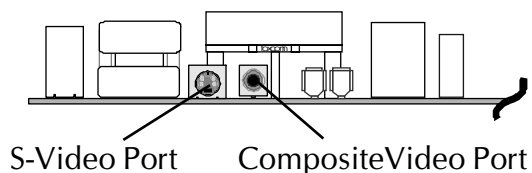
B6 IEEE 1394 Port Connectors

This mainboard offers two 1394 ports on back-panel. Plug each device jack into an available 1394 connector.

IEEE 1394 Ports
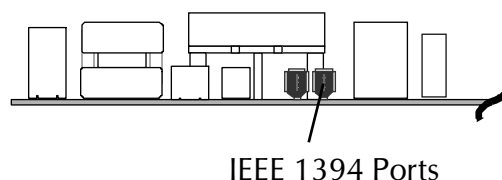
B7 10/100 base-T LAN Port Connector

LAN Port

This mainboard can accommodate one device on LAN.
Attach a RJ45 cable to the LAN port at the back-panel of your computer.
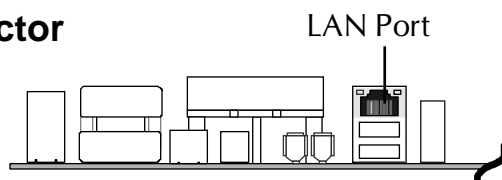
B8 USB1/USB2 Port Connectors

USB2 Port

Two female connectors USB1/USB2 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB1/USB2 connector.

USB1 Port

B9 Line-In

Line-In Port
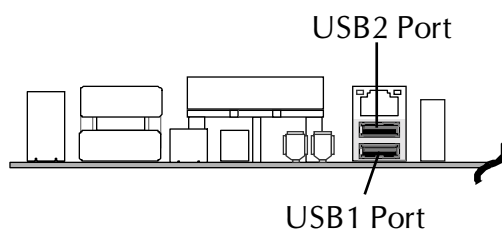
Line-In is a stereo line-level input port that accepts a 1/8-inch TRS stereo plug. It can be used as a source for digital sound recording, a source to be mixed with the output, or both.
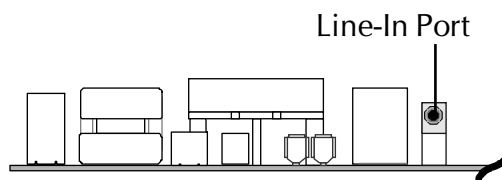
ⓑ⓪ Line-Out

Line-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers.
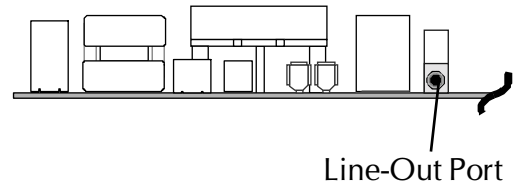
Line-Out Port

☞ *Front-Panel Connectors*

Ⓒ1 ATX Power On/Off Switch Connector (PWON)

The Power On/Off Switch is a momentary- type switch used for turning on or off the system's ATX power supply. Attach the connector cable from the Power Switch to the 2-pin PWON header on the mainboard.
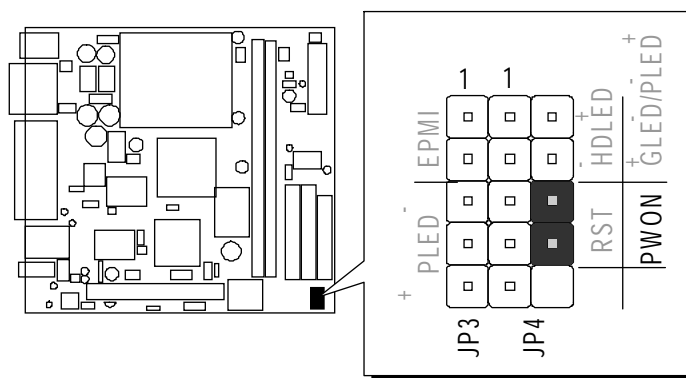
> **Note :** Please note the Speaker and all the LED connectors are directional. If your chassis's LED does not light up during running, please simply change to the opposite direction.

Ⓒ2 EPMI Connector (EPMI)

Hardware System Management Interface (EPMI) header may attach to a 2-pin momentary switch. Press the EPMI switch to force the system into power saving mode; press again to resume normal operation.
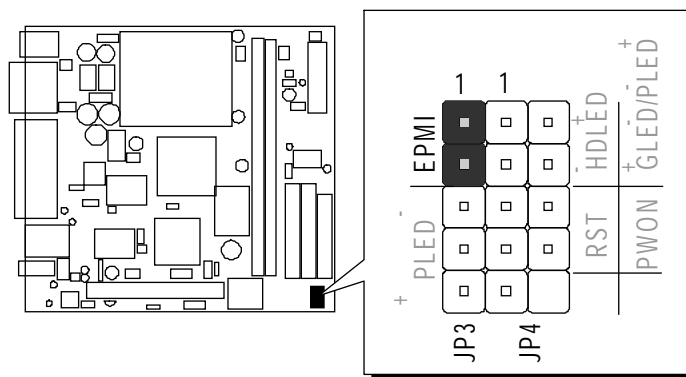
C3 Green LED/Power LEC Connector (GLED/PLED)

This header is dual color LED function.

Dual color LED function is defined by either Power LED or Green LED, the header can be in these states.

The Green LED indicates that the system is currently in one of the power saving mode (Doze/Standby/Suspend). When the system resumes to normal operation mode, the Green LED will go off, Power LED on.

This Power LED will go off during Power saving mode.

Attach a 2-pin Green LED/Power LED cable to GLED/PLED header.
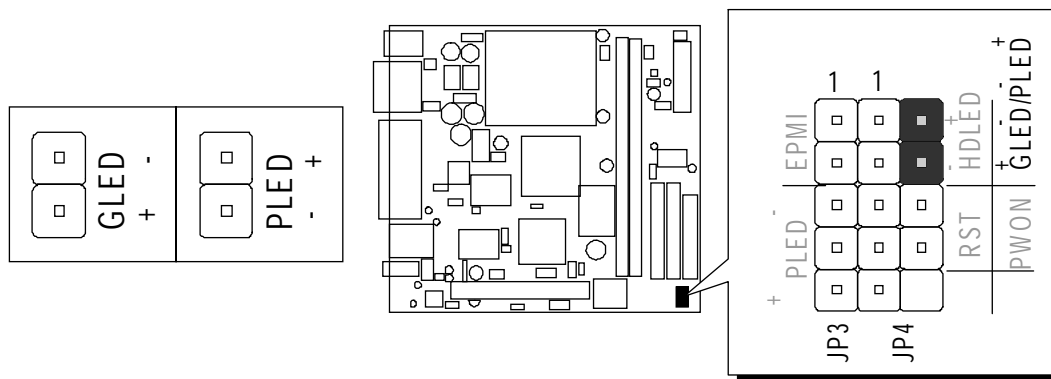
C4 HDD LED Connector (HDLED)

Attach the connector cable from the IDE device LED to the 2-pin HDLED header.

The HDD LED lights up whenever an IDE device is active.
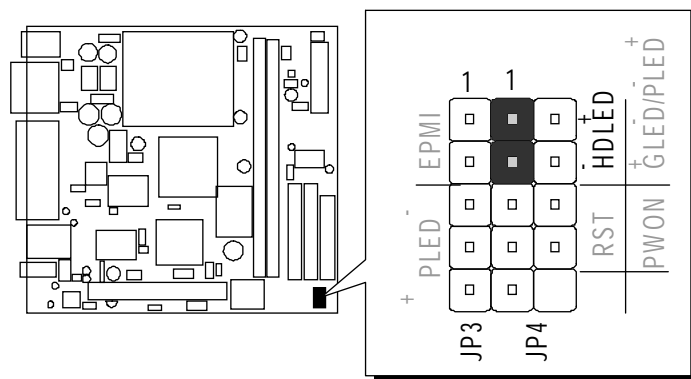
C5 PWR LED Connector (PLED)

Attach the 3-pin Power-LED connector cable from the housing front-panel to the PLED header on the mainboard. The power LED stays light while the system is on.
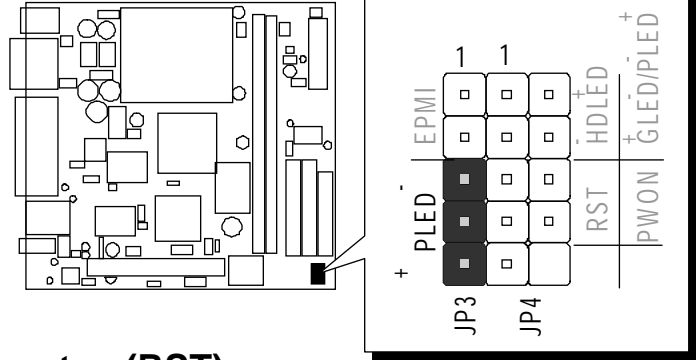
C6 Hardware Reset Connector (RST)

Attach the 2-pin hardware reset switch cable to the RST header. Pressing the reset switch causes the system to restart.
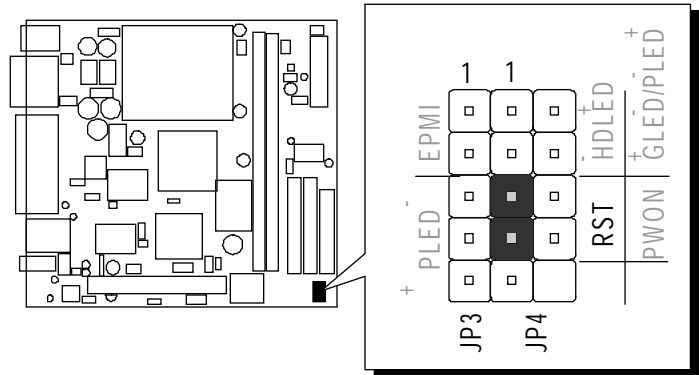
C7 Spk-Out and Mic-In Header (JP2)

This header is used to connect the cable attached to Spk-Out and Mic-In phone jacks which are mounted on front-panel.
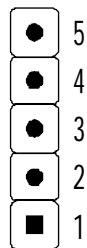
Pins Assignment:

1 = L Speaker-out   2 = R Speaker-out

3 = AGND   4 = MIC_VCC

5 = MIC_IN
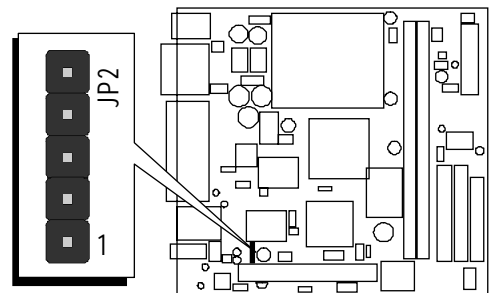
ⓒ8 **Extended USB Header (USB2)**

The headers are used to connect the cable attached to USB connectors which are mounted on front-panel or back-panel. The USB cable is optional at the time of purchase.

USB Port 4

USB Port 3
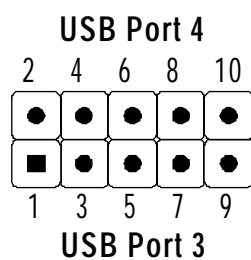
Pins Assignment:

1 = + 5V	3 = USBD2-
5 = USBD2 +	7 = GROUND
9 = GROUND	

2 = GROUND	4 = GROUND
6 = USBD3 +	8 = USBD3-
10 = + 5V	
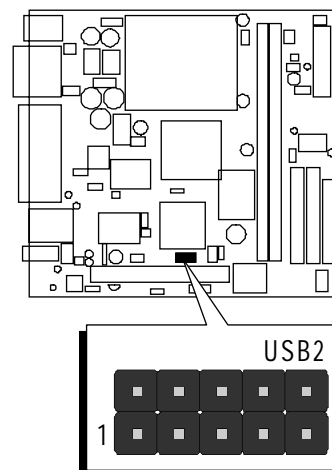
☞ *Internal Peripherals Connectors*

⓪ Enhanced IDE Ports and Floppy Connector

The FV24 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2) providing support to up to four IDE devices, such as CD-ROM and Hard Disk Drives (H.D.D.). This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (F.D.D.). Moreover, this mainboard comes with one 80pin ATA100/66/33 ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.
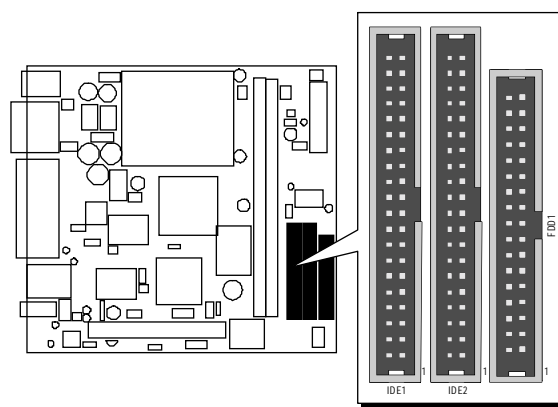
> **Note:** Please connect you system H.D.D. to IDE 1

> **Important:** Ribbon cables are directional, therefore, make sure to always connect with the red cable stripe on the same side as pin #1 of the IDE1/IDE2 or FDC connector on the mainboard.

☞ *Other Connectors*

ⓔ➊ ATX Power Supply Connector (JWR1)

Locate the 20-pin male header ATX power connector (JWR1) on your mainboard. Plug the power cable from the ATX power supply unit directly into JWR1 ATX power supply connector.
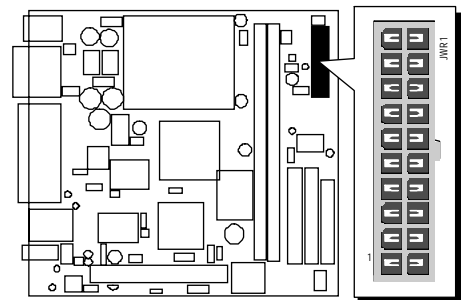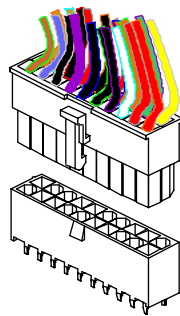
Note 1: The ATX power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.

Note 2: Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.

Note 3: Your ATX power supply must be supplied to ACPI +5V standby power and at least 720mA compatible.

Note 4: Make sure your power supply have enough power for higher speed processor installed.

ⓔ➋ Cooling Fan Connectors for CPU (FAN1/2)

The mainboard provides two onboard 12V cooling fan power connectors to support CPU and Chassis cooler.

GND   +12V   SENSE
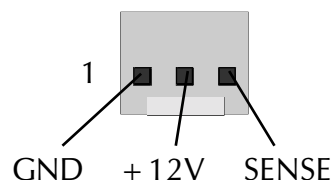
Note: Both cable wiring and type of plug may vary depending on the fan maker. Keep in mind that the red wire should always be connected to the +12V header, and the black wire, to the ground (GND) header.
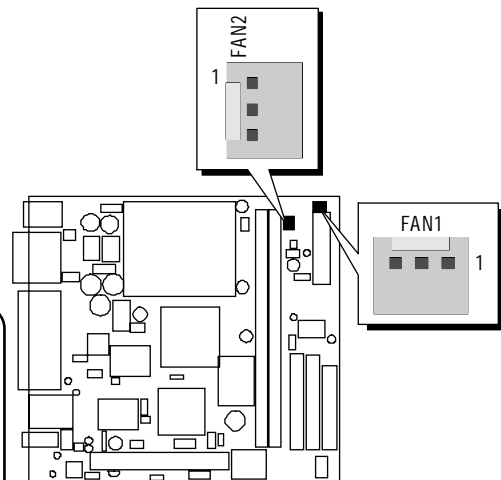
㉝ Optional Modem Riser Adapter Connector (JP5)

This header can be used to connect a optional MR slot adapter cable to FV24 mainboard. Typically, you would use this connector must be disabled onboard modem on back-panel.
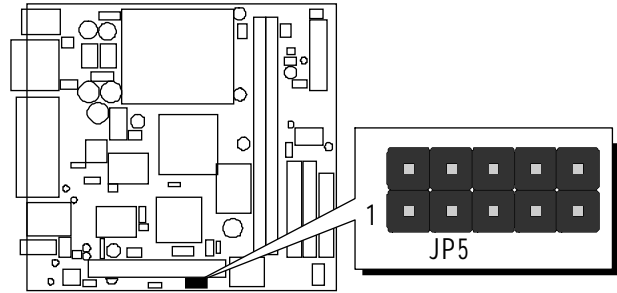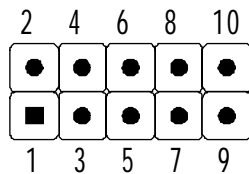
Pins Assignment:

1 = SDIN	2 = BITCLK	3 = PRIMARY
4 = GND	5 = KEY	6 = 3V3_SB
7 = SYNC	8 = SDOUT	9 = SDIN2
10 = -ACRST		

㉞ Audio Connector CD _In (SJP1)

Port SJP1 is used to attach an audio connector cable from the CD-ROM drive.

Pins Assignment:
- 1 = CD_L
- 2 = CD_GND
- 3 = CD_GND
- 4 = CD_R
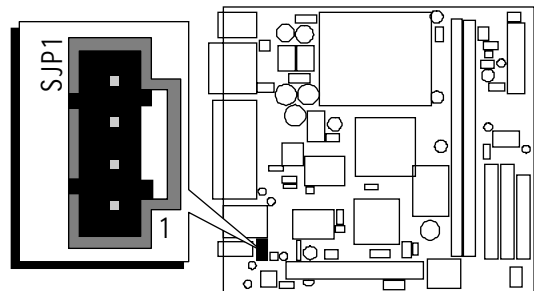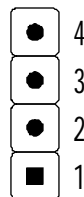
㉟ PCI Riser pin (J4)

Pins Assignment:
- 1 = REQ3
- 2 = GNT3
- 3 = PCICLK4
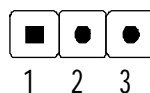
3.3 System Memory Configuration

The FV24 mainboard has two 168-pin DIMM slots that allow you to install from 16MB up to 1GB of system memory.

Each 168-pin DIMM (Dual In-line Memory Module) Slot can accommodate 16MB, 32MB, 64MB, 128MB, 256MB, and 512MB of PC100/PC133 compliant 3.3V single or double side 64-bit wide data path SDRAM modules.

Install Memory:

Install memory in any or all of the slots and in any combination shown as follows.

DIMM Slot	Memory Modules	Module Quantity
DIMM 1	16MB, 32MB, 64MB, 128MB, 256MB, and 512MB 168-pin 3.3V SDR SDRAM DIMM	x 1
DIMM 2	16MB, 32MB, 64MB, 128MB, 256MB, and 512MB 168-pin 3.3V SDR SDRAM DIMM	x 1

Note: You do not need to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

Upgrade Memory:

You can easily upgrade the system memory by inserting additional SDRAM modules in available DIMM slots. The total system memory is calculated by simply adding up the memory in all DIMM slots. After upgrade, the new system memory value will automatically be computed and displayed in the field " Standard CMOS Setup" of BIOS setup program.

4 SOFTWARE UTILITY

4.1 Mainboard CD Overview

Note: The CD contents attached in the FV24 mainboard are subject to change without notice.

To start your mainboard CD disc, insert it into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click or run D:\Autorun.exe (assuming that your CD-ROM drive is drive D:)

Navigation Bar Description:

☞ **Install Mainboard Software** - Installing 4 in 1, AGP, and Audio drivers.

☞ **Install VIA Hardware Monitor** - Installing Hardware Monitor driver.

☞ **LAN Driver Installation** - LAN driver installation guide.

☞ **Manual** - FV24 series mainboard user's manual in PDF format.

☞ **Browse this CD** - Allows you to see the contents of this CD.

☞ **Quit** - Close this CD.

❈ The Win 9x/NT LAN Device Driver must be installed manually.
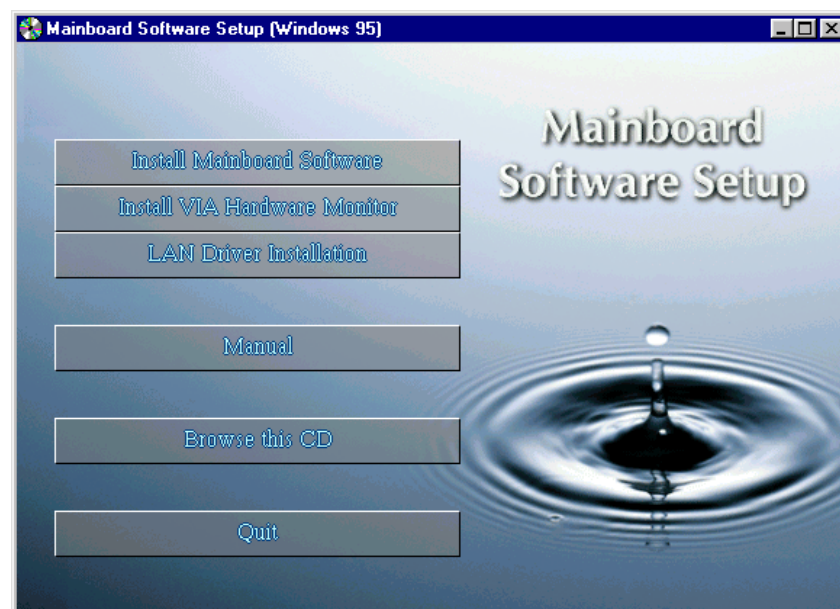
4.2 Install Mainboard Software

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Mainboard Software Setup** screen.

Select using your pointing device (e.g. mouse) on the "**Install Mainboard Software**" bar to enter the sub-menu.

The **Mainboard Software** include:

☞ [4.2.A]   Install VIA driver

☞ [4.2.B]   Install AGP Device Software

☞ [4.2.C]   Install Audio Device Software

Install VIA 4 in 1, AGP, and Audio Device Driver

[4.2.A] Select using your pointing device (e.g. mouse) on the "**Install VIA Driver**" bar to install VIA 4 in 1 driver.

[4.2.B] Click on the "**Install AGP Device Software**" bar to install AGP device driver.

[4.2.C] Click on the **"Install Audio Device Software"** bar to install Audio driver.
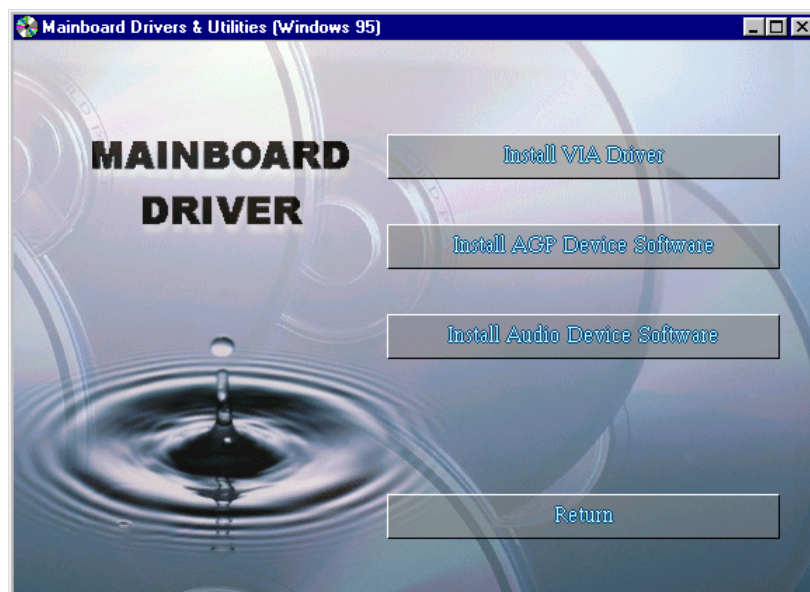
Once you made your selection, a Setup window runs the installation automatically.

When the copying files is done, make sure you **reboot** the system to take the installation effect.

4.3 Install VIA Hardware Monitor and LAN drivers

Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Mainboard Software Setup** screen.

Select the item using your pointing device (e.g. mouse) on the "**Install VIA Hardware Monitor**" bar to install VIA Hardware Monitor driver .

Then click on the "**LAN Driver Installation**" bar to install LAN driver.
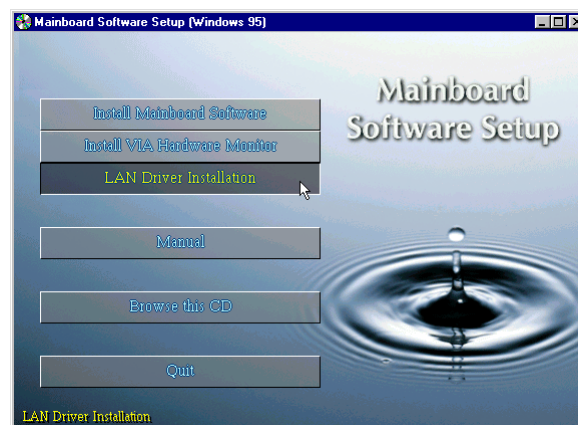
Once you make your selection, a Setup window will automatically runs the installation.

When the files are done copying, make sure you **reboot** the system to insure that the files are installed correctly.

Note: **When Install LAN driver, please confirm your OS and correctly install driver. If your OS is win 9X/NT, please take the following chapt description "Install LAN Software" for reference. The other OS such as win 2000/XP/ME can be automatical installed**

4.4 Install LAN Software

Install WIN98 LAN driver

The LAN Device Driver can't install automatically, you need double click on **My Computer** -> **Control Pnael** -> **System** icon to bring up **System Properties** screen.

Select tab **"Device Manager"**.

You will find a yellow "?" mark at **PCI Ethernet Controller**, that means the driver is not recognize.

Double click on the **Ethernet Controller.**
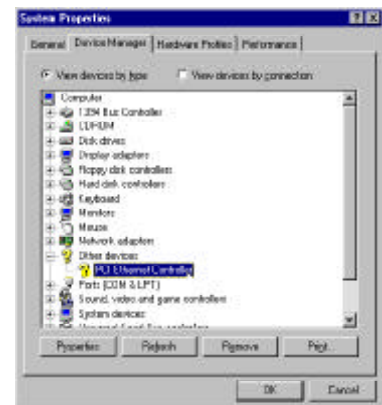
Then **PCI Ethernet Controller Properties** windows will appear on your screen.

Click on the **"Reinstall Driver"** bar to install driver.

The **Updade Device Driver Wizard** windows will appear on your screen.

Click on **"Next"** bar to continue.

Please choose **"Display a list of the drivers in a specific location, so you can select the driver you want"** to the manual install driver, and click on **"Next"** bar to continue.

Select **"Network adapters"** bar for LAN device and click on **"Next"** bar to continue.
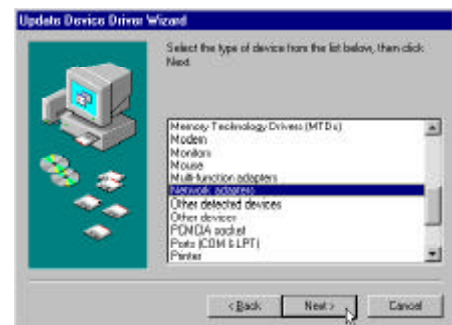
Insert the support CD by the mainboard manufacturer and choose "**Have Disk"** bar to continue next step.
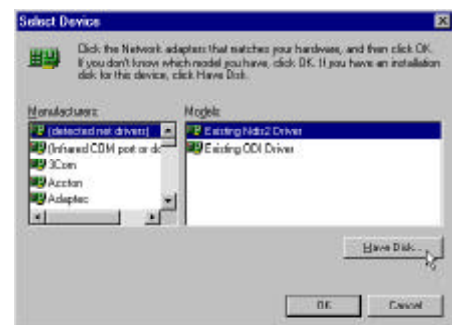
Indicate the driver's location as **"D:\lan\WIN98\NETRTS5.INF"** (In this location CD disk drive is supposed to be **"D"** letter.)

Select **"Realtek RTL8139/810X Family PCI Fast Ethernet NIC"** to install, and then click on **"OK"**.

Make sure **"Realtek RTL8139/810X Family PCI Fast Ethernet NIC"** driver, and click on **"Next"**.

Then the system will do the setup procddure automatically.

Completing the upgrade device driver, and click on **"Finish"** to restart the system to take all the changes effect.
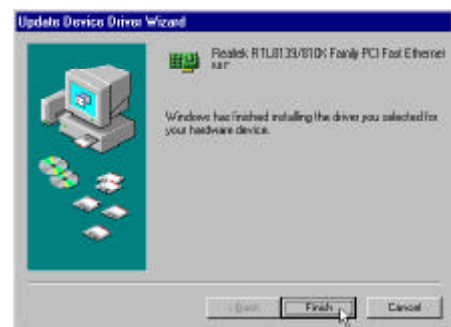
After restart, you may check Network adapters under the location mentioned at right figure.

The Network adapters shows correctly.
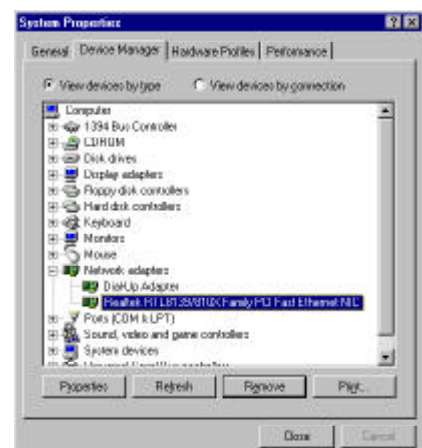
Install WINNT LAN driver

The LAN Device Driver can't install automatically, you need double click on **My Computer** -> **Control Pnael** -> **Network** icon to bring up **Network** screen.

Select tab "**Adapters"** and **"Add"** bar to install driver.
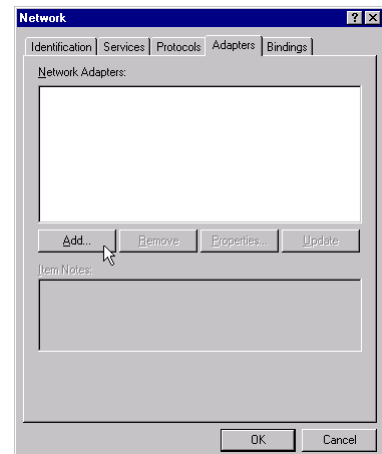
Insert the support CD by the mainboard manufacturer and choose "**Have Disk"** bar to continue next step.
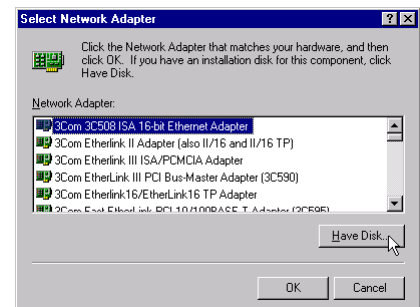
Key in the driver's location as

"D:\lan\WINNT4\" (In this location CD disk drive is supposed to be **"D"** letter.) and click on **"OK"**.
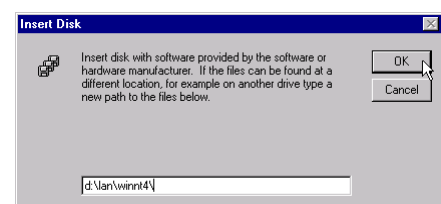
Select **"Realtek RTL8139/810X Family PCI Fast Ethernet Adapter"** to install then click on **"OK"**.
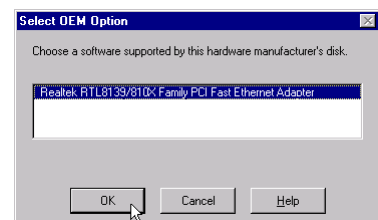
Chocse the proper Duplex Mode, and click on **"OK"**.
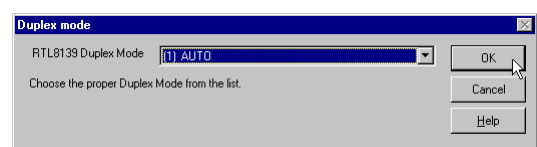
Make sure **"Realtek RTL8139/810X Family PCI Fast Ethernet Adapter"** driver, and click on **"Close"**.
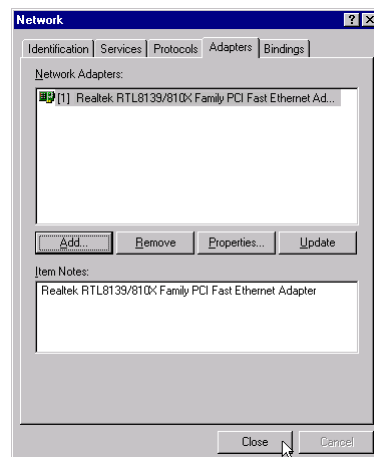
Setting yourself network.

Then the system will do the setup procddure automatically.
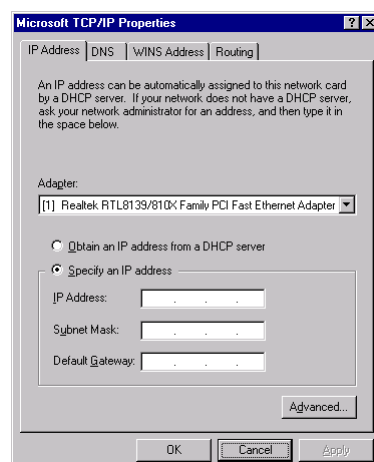
Completing the upgrade device driver, and click on **"Yes"** to restart the system to take all the changes effect.
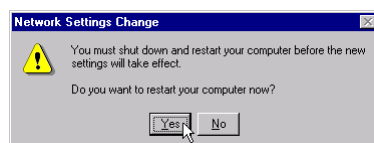
After restart, you may check Network adapters under the location mentioned at right figure. The Network adapters shows correctly.
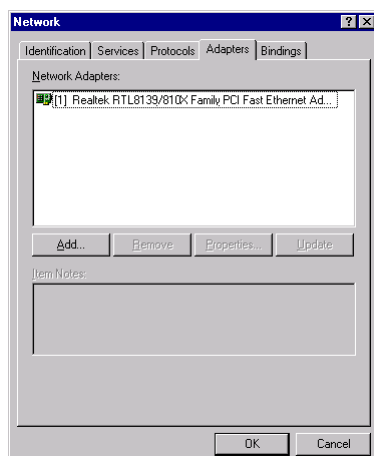
4.5   View the User's Manual

Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Mainboard Software Setup** screen.

Select the item using your pointing device (e.g. mouse) on the "**Manual**" bar.

Then **Online Information** windows will appear on the screen. Click on the "**Install Acrobe Reader**" bar if you need to install acrobe reader.
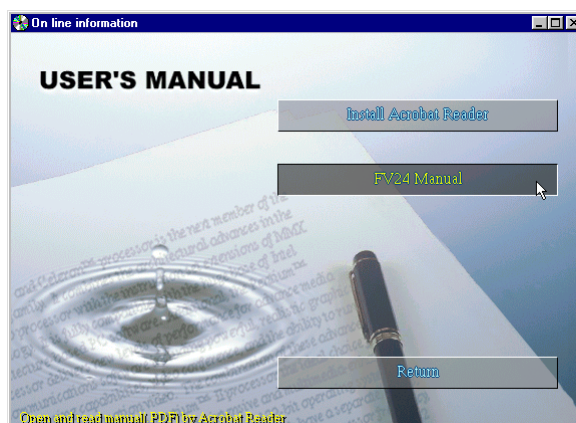
Then click on "**FV24 Manual**" bar to view FV24 user's manual.

5 BIOS SETUP

FV24 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored
in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

5.1 Enter the BIOS

To enter the BIOS (Basic Input / Output System) utility, follow these steps:

Step 1.   Power on the computer, and the system will perform its POST (Power-On Self Test) routine checks.

Step 2.   Press < Del > key immediately, or at the following message:
"Press DEL to enter SETUP"
,or simultaneously press < Ctrl >, < Alt >, < Esc > keys

> **Note 1.** If you miss trains of words mentioned in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the < RESET > switch located at the computer's front-panel. You may also reboot by simultaneously pressing the < Ctrl >, < Alt >, < Del > keys simultaneously.
>
> **Note 2.** If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:
> **"Press F1 to Continue, DEL to Enter Setup"**

Step 3.   As you enter the BIOS program, the CMOS Setup Utility will prompt you the Main Menu, as shown in the next section.

5.2 The Main Menu

Once you enter the AwardBIOS(tm) CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

```
           CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
      ┌──────────────────────────────────────────────────────────────────────┐
      │ ▶ Standard CMOS Features          ▶ Frequency/Voltage Control          │
      │                                                                        │
      │ ▶ Advanced BIOS Features             Load Fail-Safe Defaults           │
      │                                                                        │
      │ ▶ Advanced Chipset Features          Load Optimized Defaults           │
      │                                                                        │
      │ ▶ Integrated Peripherals             Set Supervisor Password           │
      │                                                                        │
      │ ▶ Power Management Setup             Set User Password                  │
      │                                                                        │
      │ ▶ PnP/PCI Configurations             Save & Exit Setup                 │
      │                                                                        │
      │ ▶ PC Health Status                   Exit Without Saving               │
      │                                                                        │
      ├──────────────────────────────────────────────────────────────────────┤
      │ Esc : Quit        F9 : Menu in BIOS    ↑ ↓ → ←   : Select Item         │
      │ F10 : Save & Exit Setup                                                │
      ├──────────────────────────────────────────────────────────────────────┤
      │                     Time, Date, Hard Disk Type...                      │
      └──────────────────────────────────────────────────────────────────────┘
```

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP / PCI Configuration

This entry appears if your system supports PnP / PCI.

PC Health Status

This entry shows the current system temperature, Voltage, and FAN speed.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance of your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory-set for optimal performance system operation. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet users' needs.

Supervisor / User Password

Use this menu to change, set, or disable supervisor/user password. It allows you to limit access to the system and Setup, or only to Setup.

Save & Exit Setup

Save CMOS value changes in CMOS and exit from setup.

Exit Without Saving

Abandon all CMOS value changes and exit from setup.

☞ **_Standard CMOS Features_**

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
       CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                         Standard CMOS Features
   ┌─────────────────────────────────────────────┬──────────────────────┐
   │  Date (mm:dd:yy)          Tue, Nov 20 2001   │      Item Help       │
   │  Time (hh:mm:ss)            9 : 55 : 30      │                      │
   │                                              │  Menu Level    ▶     │
   │  ▶ IDE Primary Master                        │                      │
   │  ▶ IDE Primary Slave                         │  Change the day, month, │
   │  ▶ IDE Secondary Master                      │  year and century    │
   │  ▶ IDE Secondary Slave                       │                      │
   │                                              │                      │
   │    Drive A                1.44M, 3.5 in.     │                      │
   │    Drive B                None               │                      │
   │                                              │                      │
   │    Video                  EGA/VGA            │                      │
   │    Halt On                All , But Keyboard │                      │
   │    Select Display Device  Auto               │                      │
   │    TV_type                US NTSC            │                      │
   │                                              │                      │
   │    Base Memory                  640K         │                      │
   │    Extended Memory            65472K         │                      │
   │    Total Memory                1024K         │                      │
   ├─────────────────────────────────────────────┴──────────────────────┤
   │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
   │      F5:Previous Values    F6:Fail-Safe Defaults   F7:Optimized Defaults │
   └─────────────────────────────────────────────────────────────────────┘
```

Date

<Month>   <DD>   <YYYY>

Set the system date. Note that the 'Day' automatically changes when you set the date.

Time

<HH : MM : SS>

The time is converted based on the 24-hour military-time clock. For example, 5 p.m. is 17:00:00.

IDE Primary Master

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

IDE Primary Slave

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

IDE Secondary Master
Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

IDE Secondary Slave
Options are in its sub menu.

Press <Enter> to enter the sub-menu of detailed options.

Drive A/Drive B
Select the type of floppy disk drive installed in your system.
➢ The choice: None, 360K, 5.25 in, 1.2M, 5.25 in, 720K, 3.5 in, 1.44M, 3.5 in, or 2.88M, 3.5 in

Video
Select the default video device.
➢ The choice: EGA/VGA, CGA 40, CGA 80, or MONO

Halt On
Select the situation in which you want the BIOS to stop the POST process and notify you.
➢ The choice: All Errors, No Errors, All, But Keyboard, All, But Diskette, or All, But Disk/Key

Select Display Device
Select the Display device.
➢ The choice: Auto, CRT, TV, or CRT+TV

TV Type
Select the TV type.
➢ The choice: US NTSC or PAL.

Base Memory
Displays the amount of conventional memory detected during boot up.
➢ The choice: N/A

Extended Memory
Displays the amount of extended memory detected during boot up.
➢ The choice: N/A

Total Memory
Displays the total memory available in the system.
➢ The choice: N/A

****

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub-menu to configure each hard disk drive.

IDE HDD Auto-Detection

Press < Enter > to auto-detect HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

  ➢ Press Enter

IDE Primary Master

Selecting 'manual' lets you set the remaining fields on this screen and select the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc., Note: PRECOMP = 65535 means NONE !

  ➢ The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

  ➢ The choice: CHS, LBA, Large, or Auto.

Capacity

Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk check-ing program.

  ➢ Auto-Display your disk drive size.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'

Cylinder

Set the number of cylinders for this hard disk.

  ➢ Min = 0, Max = 65535

Head

Set the number of read/write heads.

  ➢ Min = 0, Max = 255

Precomp

Warning: Setting a value of 65535 means no hard disk.

- ➢ Min = 0, Max = 65535

Landing zone

Set the Landing zone size.

- ➢ Min = 0, Max = 65535

Sector

Number of sector per track.

- ➢ Min = 0, Max = 255

****

☞ **Advanced BIOS Features**

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing, and security.

```
        CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                        Advanced BIOS Features
  ┌──────────────────────────────────────────────┬──────────────────────┐
  │ Virus Warning              Disabled           │     Item Help        │
  │ CPU Internal Cache         Enabled            ├──────────────────────┤
  │ External Cache             Enabled            │ Menu Level    ▶      │
  │ CPU L2 Cache ECC Checking  Enabled            │                      │
  │ Processor Number Feature   Enabled            │ Allows you to choose │
  │ Quick Power On Self Test   Enabled            │ the VIRUS warning    │
  │ First Boot Device          Floppy             │ feature for IDE Hard │
  │ Second Boot Device         HDD-0              │ Disk boot sector     │
  │ Third Boot Device          LS120              │ protection. If this  │
  │ Boot Other Device          Enabled            │ function is enabled  │
  │ Swap Floppy Drive          Disabled           │ and someone attempt to│
  │ Boot Up Floppy Seek        Enabled            │ write data into this │
  │ Boot Up NumLock Status     On                 │ area , BIOS will show│
  │ Gate A20 Option            Fast               │ a warning message on │
  │ Typematic Rate Setting     Enabled            │ screen and alarm beep│
  │ Typematic Rate (Chars/Sec) 6                  │                      │
  │ Typematic Delay (Msec)     250                │                      │
  │ Security Option            Setup              │                      │
  │ OS Select For DRAM > 64MB  Non-OS2            │                      │
  │ Video BIOS Shadow          Enabled            │                      │
  │ C8000-CBFFF Shadow         Disabled           │                      │
  │ CC000-CFFFF Shadow         Disabled           │                      │
  │ D0000-D3FFF Shadow         Disabled           │                      │
  │ D4000-D7FFF Shadow         Disabled           │                      │
  │ D8000-DBFFF Shadow         Disabled           │                      │
  │ DC000-DFFFF Shadow         Disabled           │                      │
  ├──────────────────────────────────────────────┴──────────────────────┤
  │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
  │      F5:Previous Values     F6:Fail-Safe Defaults    F7:Optimized Defaults   │
  └─────────────────────────────────────────────────────────────────────┘
```

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enables and someone attempts to write data into this area, BIOS will show a warning message on screen, and an alarm beep.

Enabled Activates automatically when the system boots up, causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

➢ The choice: Enabled or Disabled.

CPU Internal Cache

This item enables CPU internal cache to speed up memory access.

➢ The choice: Enabled or Disabled.

External Cache

This item enables CPU secondary cache to speed up memory access.
➢ The choice: Enabled or Disabled.

CPU L2 Cache ECC Checking

When you select Enabled, memory checking is enabled when the CPU internal L2 cache contains ECC SRAMs.
➢ The choice: Enabled or Disabled.

Processor Number Feature

Allows you to make Pentium III Processor Serial Number enabled/ disabled.
➢ The choice: Enabled, or Disabled.

Quick Power On Self Test

This item speeds up Power-On Self Test (POST) after you power on the computer. If it is set to enabled, BIOS will shorten or skip some check items during POST.
➢ The choice: Enabled, or Disabled.

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.
➢ The Choice: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, or Disabled.

Boot Other Device

Select Your Boot Device Priority.
➢ The choice: Enabled or Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignment.
➢ The choice: Enabled or Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot-up. Disabling speed boots up.
➢ The choice: Enabled or Disabled.

Boot Up NumLock Status

Selects power-on state for NumLock.

➢ The choice: Off or On.

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used for above 1MByte of address memory. Initially, the gate A20 was handled via a pin on the keyboard. Today, while a keyboard still provides this support, it is more common and much faster in setting to Fast for the system chipset to provide support for gate A20.

➢ The choice: Normal, or Fast.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When this controller enabled, the typematic rate and typematic delay can be selected.

➢ The choice: Enabled or Disabled.

Typematic Rate (Chars/Sec)

This item sets how many times the keystroke will be repented in a second when you hold the key down.

➢ The choice: 6, 8, 10, 12, 15, 20, 24, or 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

➢ The choice: 250, 500, 750, or 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System The system will not boot and access to Setup will be denied if the correct password is not entered promptly.

Setup The system will boot, but access to Setup will be denied if the correct password is not entered promptly.

➢ The choice: System or Setup.

> Note: To disabled security, select PASSWORD SETTING at Main Menu, and then you will be asked to enter password. Do not type anything and just press <Enter>; it will disable security. Once the security is disabled, the system will boot, and you can enter Setup freely.

OS Select For DRAM > 64MB

Selects the operating system that is running with greater than 64MB of RAM in the system.

➢ The choice: Non-OS2 or OS2.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

➢ The choice: Enabled or Disabled.

XX000-XXFFF Shadow

These categories determine whether option ROMs will be Chipset Feature Setup Auto Configuration copied to RAM. An example of such option ROM would be support of on-board SCSI.

➢ The choice: Enabled or Disabled.

☞   ***Advanced Chipset Features***

This section 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. It also coordinates communications between the conventional ISA bus and the PCI bus. It states that these items should never need to be altered.

The default settings have been chosen because they provide the best operating conditions for your system. If you discovered that data was being lost while using your system, you might consider making any changes.

```
        CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                        Advanced Chipset Features
   ┌────────────────────────────────────────┬─────────────────────────┐
   │ DRAM Timing By SPD        Disabled      │      Item Help          │
   │ DRAM Clock                Host CLK      ├─────────────────────────┤
   │ SDRAM Cycle Length        3             │ Menu Level    ►         │
   │ Bank Interleave           Disabled      │                         │
   │ DRAM Drive Strength       Manual        │                         │
   │ DRAM Drive Value          2F            │                         │
   │ Memory Hole               Disabled      │                         │
   │ P2C/C2P Concurrency       Enabled       │                         │
   │ Fast R-W Turn Around      Disabled      │                         │
   │ System BIOS Cacheable     Disabled      │                         │
   │ Video RAM Cacheable       Disabled      │                         │
   │ Onchip AGP VGA            Enabled       │                         │
   │ Frame Buffer Size         8M            │                         │
   │ OnChip USB                Enabled       │                         │
   │ USB Keyboard Support      Disabled      │                         │
   │ USB Mouse Support         Disabled      │                         │
   │ OnChip Sound              Auto          │                         │
   │ OnChip Modem              Auto          │                         │
   │ CPU to PCI Write Buffer   Enabled       │                         │
   │ PCI Dynamic Bursting      Enabled       │                         │
   │ PCI Master 0 WS Write     Enabled       │                         │
   │ PCI Delay Transaction     Disabled      │                         │
   │ PCI#2 Access #1 Retry     Enabled       │                         │
   ├────────────────────────────────────────┴─────────────────────────┤
   │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
   │      F5:Previous Values    F6:Fail-Safe Defaults    F7:Optimized Defaults     │
   └───────────────────────────────────────────────────────────────────┘
```

DRAM Timing By SPD

This item allows you to select the value in this field, depending on whether the board using which kind of SDR DRAM.

➢ The Choice: Enabled or Disabled.

DRAM Clock

This item allows you to control the DRAM speed.

➢ The Choice: Host CLK, HCLK-33M, HCLK+33M.

SDRAM Cycle Length

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

➢ The Choice: 3, or 2.

Bank Interleave

The interleave number of internal banks, can be set to 2 way, 4 way interleave or disabled. For VCM and 16Mb type dram chips, the bank interleave is fixed at 2 way interleave.

When the dram timing is selected by SPD, it will be set by the value on SPD of the RAM module(DDR or SDR).

➢ The Choice: Disabled, 2 Bank, or 4 Bank.

DRAM Drive Strength

This item enables the system to automatically select its output buffer drive strength or make it manually selectable by an end user.

➢ The Choice: Auto or Manual.

DRAM Drive Value

This item enables an end user to manually select the DRAM output buffer drive strength.

➢ Key in a HEX number: Min = 0000, Max = 00FF.

Memory Hole

In order to improve performance, some space in memory can be reserved for ISA cards.

➢ The Choice: Disabled or 15M-16M.

P2C/C2P Concurrency

This item allows you to enable/disable the PCI to CPU and CPU to PCI concurrently.

➢ The Choice: Enabled or Disabled.

Fast R-W Turn Around

This item controls the DRAM Timing. It allows you to enable/disable the fast read/write turn-around.

➢ The Choice: Enabled or Disabled.

System BIOS Cacheable

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

➢ The choice: Enabled or Disabled.

Video RAM Cacheable

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

➢ The Choice: Enabled or Disabled.

On Chip AGP VGA

This item allows you to control the onboard AGP VGA.

➢ The Choice: Enabled or Disabled.

Frame Buffer Size

This item allows you to control the VGA frame buffer size.

➢ The choice: N/A, 8M, 16M, or 32M.

On Chip USB

This should be enabled if your system has a USB installed on the system board and you want to use it. Even when on chip USB so equipped, if you add a higher performance controller, you will need to disable this feature.

➢ The Choice: Enabled or Disabled.

USB Keyboard Support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

➢ The Choice: Enabled or Disabled.

USB Mouse Support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB Mouse.

➢ The Choice: Enabled or Disabled.

On Chip Sound

This item allows you to control the onboard AC 97 audio.

➢ The Choice: Auto or Disabled.

On Chip Modem

This item allows you to control the onboard MC 97 Modem.

➢ The Choice: Auto or Disabled.

CPU to PCI Write Buffer

When this field is Enabled, the writing from CPU to PCI bus is buffered, to compensate for the speed differences between the CPU and the PCI bus. When Disabled, the writing is are not buffered and the CPU must wait until the write is complete before starting another write cycle.

➢ The Choice: Enabled or Disabled.

PCI Dynamic Bursting

This item allows you to enable/disable the PCI dynamic bursting function.

➢ The Choice: Enabled or Disabled.

PCI Master 0 WS Write

When this item enabled, writing to the PCI bus is executed with zero wait state.

➢ The Choice: Enabled or Disabled.

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

➢ The Choice: Enabled or Disabled.

PCI #2 Access #1 Retry

When this item disabled, PCI#2 will not be disconnected until access finishes (default); On the contrary, PCI#2 will be disconnected if max etries are attempted without success.

➢ The Choice: Enabled or Disabled.

☞ **Integrated Peripherals**

```
         CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                          Integrated Peripherals
┌─────────────────────────────────────────────────┬──────────────────────┐
│ OnChip IDE Channel0          Enabled             │      Item Help       │
│ OnChip IDE Channel1          Enabled             ├──────────────────────┤
│ IDE Prefetch Mode            Enabled             │ Menu Level    ▶      │
│ Primary Master   PIO         Auto                │                      │
│ Primary Slave    PIO         Auto                │                      │
│ Secondary Master PIO         Auto                │                      │
│ Secondary Slave  PIO         Auto                │                      │
│ Primary Master   UDMA        Auto                │                      │
│ Primary Slave    UDMA        Auto                │                      │
│ Secondary Master UDMA        Auto                │                      │
│ Secondary Slave  UDMA        Auto                │                      │
│ Init Display First           PCI Slot            │                      │
│ IDE HDD Block Mode           Enabled             │                      │
│ Onboard FDD Controller       Enabled             │                      │
│ Onboard Serial Port 1        Auto                │                      │
│ Onboard Parallel Port        378/IRQ7            │                      │
│ Onboard Parallel Mode        Normal              │                      │
│ ECP Mode Use DMA             3                   │                      │
│ Parallel Port EPP Type       EPP1.9              │                      │
│ Onboard Legacy Audio         Enabled             │                      │
│ Sound Blaster                Disabled            │                      │
│ SB I/O Base Address          220H                │                      │
│ SB IRQ Select                IRQ 5               │                      │
│ SB DMA Select                DMA 1               │                      │
│ MPU-401                      Disabled            │                      │
│ MPU-401 I/O Address          330-333H            │                      │
├─────────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│    F5:Previous Values     F6:Fail-Safe Defaults   F7:Optimized Defaults  │
└─────────────────────────────────────────────────────────────────────────┘
```

OnChip IDE Channel0

The chipset contains a PCI IDE interface with support to two IDE channels. Select Enabled to activate the primary IDE interface; select Disabled to deactivate this interface

➢ The choice: Enabled or Disabled.

OnChip IDE Channel1

The chipset contains a PCI IDE interface with support to two IDE channels. Select Enabled to activate the secondary IDE interface; select Disabled to deactivate this interface

➢ The choice: Enabled or Disabled.

IDE Prefetch Mode

The onboard IDE drive interfaces support IDE prefetching for faster drive access. If you install a primary and/or secondary add-on IDE interface, set this field to Disabled if the interface does not support prefetching.

➢ The choice: Enabled or 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 the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

➤ The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, or Mode 4.

Primary/Secondary Master/Slave UDMA

Ultra DMA/100 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If both of your hard drive and your system software support Ultra DMA/100, select Auto to enable BIOS support.

➤ The choice: Auto or Disabled.

Init Display First

This item allows you to decide to activate PCI Slot or on-chip VGA first.

➤ The choice: PCI Slot or AGP.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

➤ The choice: Enabled or Disabled

Onboard FDD Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you want to use it. If you install add-on FDC or the system has no floppy drive, select Disabled in this field.

➤ The choice: Enabled or Disabled.

Onboard Serial Port1

Select an address and corresponding interrupt for the first and second serial ports.

➤ The choice: 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, 2F8/IRQ3,Auto, or Disabled.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address setting.

➤ The choice:: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, or Disabled.

Onboard Parallel Mode

Select an operating mode for the onboard parallel (printer) port. Select Normal or Compatible unless you are certain your hardware and software both support one of the other available modes.

➢ The choice: Normal, EPP, ECP, or ECP/EPP.

ECP Mode Use DMA

Select a DMA channel for the parallel port for use during ECP mode.

➢ The choice: 1 or 3.

Parallel Port EPP Type

Select a DMA channel for the parallel port for use during ECP mode.

➢ The choice: EPP1.7 or EPP1.9.

Onboard Legacy Audio

This field controls the onboard legacy audio.

➢ The choice: Enabled or Disabled.

Sound Blaster

This item enables/disables the onboard Sound Blaster.

➢ The choice: Enabled or Disabled.

SB I/O Base Address

This item selects the Sound Blaster I/O Base Address.

➢ The choice: 220H, 240H, 260H, or 280H.

SB IRQ Select

This item selects the Sound Blaster IRQ.

➢ The choice: IRQ5, IRQ7, IRQ 9, or IRQ10.

SB DMA Select

This item selects the Sound Blaster DMA.

➢ The choice: DMA0, DMA1, DMA2, or DMA3.

MPU-401

This item enables/disables on-board MPU-401.

➢ The choice: Enabled or Disabled.

MPU-401 I/O Address

This item selects MPU-401 I/O Address.

➢ The choice: 300-303H, 310-313H, 320-323H, or 330-333H.

☞ **Power Management Setup**

```
         CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                          Power Management Setup
   ┌─────────────────────────────────────────────┬───────────────────────┐
   │  ACPI function             Enabled           │      Item Help        │
   │ ▶ Power Management          Press Enter       ├───────────────────────┤
   │  ACPI Suspend Type         S1(POS)           │  Menu Level   ▶       │
   │  PM Control by APM         Yes               │                       │
   │  Video Off Option          Suspend -> Off    │                       │
   │  Video Off Method          V/H SYNC+Blank    │                       │
   │  MODEM Use IRQ             3                  │                       │
   │  Soft-Off by PWRBTN        Instant-Off       │                       │
   │  State After Power Failure Off               │                       │
   │ ▶ Wake Up Events            Press Enter       │                       │
   │                                              │                       │
   │                                              │                       │
   │                                              │                       │
   │                                              │                       │
   │                                              │                       │
   ├─────────────────────────────────────────────┴───────────────────────┤
   │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
   │     F5:Previous Values    F6:Fail-Safe Defaults   F7:Optimized Defaults │
   └─────────────────────────────────────────────────────────────────────┘
```

The Power Management Setup allows you to configure your system to most effectively saving energy while operating in a manner consistent with your own style of computer use.

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI)

➢ The choice: Enabled or Disabled.

Power Management

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

This category allows you to select the type (or degree) of power saving mode settings.

Min Saving   Minimum power management.

HDD Power Down = Allows you to set each mode individually.

Doze Mode = 1 hr.

Suspend Mode = 1 hr.

Max Saving   Maximum power management.

HDD Power Down = Allows you to set each mode individually.

Doze Mode = 1 Min

Suspend Mode = 1 Min

User Define   Allows you to set each mode individually.
HDD Power Down = Disabled or 1min. ~ 15min.
Doze Mode = Disabled or 1 min ~ 1 hr.
Suspend Mode = Disabled or 1 min ~ 1 hr.
➢ The choice: User Define, Min Saving, or Max Saving.

HDD Power Down

When this item enabled and after the set up time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
➢ The choice: Disabled or 1 Min ~ 15 Min.

Doze Mode

When enabled and after the set time of system inactivity, the CPU clock will run at slower sped while all other devices still operate at full speed.
➢ The choice: Disabled, 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, or 1 Hour.

Suspend Mode

When this item enabled and after the set up time of system inactivity, all devices except the CPU will be shut off.
➢ The choice: Disabled, 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, or 1 Hour.

ACPI Suspend Type

This item allows you to select sleep state when suspend.
➢ The choice: S1(POS), or S3(STR).

PM Control by APM

When this item enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting Yes gives better power saving.

If the Max. Power Saving is not enabled, this will be preset to No.

➢ The choice: Yes or No.

Video Off Option

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Always On   Monitor will remain on during power saving mode.

Suspend -- > Off   Monitor is blanked when the system enters the Suspend mode.

All Modes -- > Off Monitor is blanked when the system enters any power saving mode.

➢ The choice: Always On, Suspend - > off, or All Modes - > off.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen   This option only writes blanks to the video buffer.

DPMS Support   Initial display power management   signaling.

➢ The choice: V/H SYNC + Blank, Blank Screen, or DPMS Support.

MODEM Use IRQ

This determines the IRQ which the MODEM can use.

➢ The choice: 3, 4, 5, 7, 9, 10, 11, or N/A.

Soft-Off by PWRBTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung.".

➢ The choice: Instant-Off or Delay 4 Sec.

State After Power Failurs

This item to set the ATX power supply status when power resume after unexpected power fail.

When off is selected, power supply will maintain on soft-off status, when power is resume. When on is selected, power supply will turn on, and when Auto is selected, power supply will maintain on the status before unexpected power fail.

➢ The choice: Auto, Off, or On.

Wake Up Events

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

Power-On by USB

This item enables/disables the power on function of USB device.
➢ The choice: Disabled or Enabled.

VGA

When this item enabled, you can set VGA to awaken the system.
➢ The choice: OFF or ON

LPT & COM

When LPT & COM stays On, any activity from one of the listed system peripheral devices or IRQs wakes up the system.
➢ The choice: NONE, LPT, COM, or LPT/COM

HDD & FDD

When HDD & FDD stays On, any activity from one of the listed system peripheral devices wakes up the system.
➢ The choice: OFF or ON

PCI Master

When PCI Master stays On, any activity from one of the listed system peripheral devices wakes up the system.
➢ The choice: OFF, or ON

Power-On by PCI Card

This item enables/disables the power on function of PCI Card.
➢ The choice: Disabled or Enabled.

Wake Up On Ring

This item determines the system will resume by activity of Ring. If enabled this feature enabled, system will power on itself from power-off mode when the activity of Ring
➢ The choice: Disabled or Enabled.

RTC Alarm Resume

When this item enabled, your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.
➢ The choice: Disabled or Enabled.

Data (of Month)

This item selects the alarm date.
➢ Key in a DEC number:Min = 0, Max = 31.

Resume Time (hh:mm:ss)

This item selects the alarm Time.
[hh]
➢ Key in a DEC number:Min = 0, Max = 23.
[mm/ss]
➢ Key in a DEC number:Min = 0, Max = 59.

Primary INTR

Press Enter to on/off the wake up ability of a specified IRQ.
➢ The choice: OFF, or ON.

IRQs Activity Monitoring

In the following is a list of IRQ's, Interrupt ReQuests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

When On mode exist, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ3 (COM 2)
IRQ4 (COM 1)
IRQ5 (LPT 2)
IRQ6 (Floppy Disk)
IRQ7 (LPT 1)
IRQ8 (RTC Alarm)
IRQ9 (IRQ2 Redir)
IRQ10 (Reserved)
IRQ11 (Reserved)
IRQ12 (PS / 2 Mouse)
IRQ13 (Coprocessor)
IRQ14 (Hard Disk)
IRQ15 (Reserved)
➢ The choice: Disabled or Enabled.

☞　 **PnP/PCI Configuration**

```
        CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                          PnP/PCI Configurations
   ┌────────────────────────────────────────────┬───────────────────────┐
   │ PNP OS Installed          No               │       Item Help       │
   │ Reset Configuration Data  Disabled         ├───────────────────────┤
   │                                            │ Menu Level    ▶       │
   │ Resources Controlled By   Manual           │                       │
   │ ▶ IRQ Resources           Press Enter      │ Select Yes if you are │
   │ ▶ DMA Resources           Press Enter      │ using a Plug and Play │
   │                                            │ capable operating     │
   │ PCI/VGA Palette Snoop     Disabled         │ system Select No if   │
   │ Assign IRQ For VGA        Enabled          │ you need the BIOS to  │
   │ Assign IRQ For USB        Enabled          │ configure non-boot    │
   │                                            │ devices               │
   │                                            │                       │
   │                                            │                       │
   │                                            │                       │
   │                                            │                       │
   ├────────────────────────────────────────────┴───────────────────────┤
   │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
   │    F5:Previous Values    F6:Fail-Safe Defaults    F7:Optimized Defaults       │
   └──────────────────────────────────────────────────────────────────────────────┘
```

This section describes the configuration of PCI bus system. PCI or Personal Computer Interconnection is a system which allows I/O devices to operate at the speed CPU itself keeps when CPU 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

This item allows you to determine PnP OS is installed or not.

➢ The choice: Yes or No.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit from Setup if you have installed a new device or software and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

➢ The choice: Enabled or Disabled .

Resource controlled By

The Award Plug-and-Play BIOS has the capacity to automatically configure all of the boot and Plug-and-Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug-and-Play operating system such as Windows 95.

If you set this field to "manual" , choose specific resources by going into each of the sub-menu that follows this field (a sub-menu is proceeded by a " ＞ ").

➤ The choice: Auto(ESCD) or Manual.

IRQ/DMA Resources

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

IRQ 3/4/5/7/9/10/11/12/14/15 assigned

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices is compliant with the original PC AT bus specification; PCI/ISA PnP for devices is compliant with the Plug-and-Play standard whether designed for PCI or ISA bus architecture.

➤ The choice: Legacy ISA or PCI/ISA PnP.

DMA 0/1/3/5/6/7 assigned

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ISA PnP Devices compliant with the Plug-and-Play standard, whether designed for PCI or ISA bus architecture.

➤ The choice: Legacy ISA or PCI/ISA PnP.

PCI/VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. If you have MPEG ISA/VESA VGA Cards and PCI/VGA Card worked, Enable this field. Otherwise, please Disable it.

➤ The choice: Enabled or Disabled.

Assign IRQ For VGA

This item allows the user to set VGA IRQ Routing table Enabled or Disabled.

➢ The choice: Enabled or Disabled.

Assign IRQ For USB

This item allows the user the option to assign an IRQ to on-board USB controller.

Since the on-board controller is always enabled, if no IRQ is assigned to it, there will be a question mark report on the sytem device under Windows95/98.

➢ The choice: Enabled or Disabled.

☞ **PC Health Status**

```
          CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                              PC Health Status
┌──────────────────────────────────────────────┬─────────────────────┐
│   Current CPU Temp.                            │      Item Help      │
│   Current CPUFAN1 Speed                        │                     │
│   Current CPUFAN2 Speed                        │   Menu Level    ▶   │
│   Vcore                                        │                     │
│    2.5V                                        │                     │
│    3.3V                                        │                     │
│     5V                                         │                     │
│    12V                                         │                     │
│                                                │                     │
│                                                │                     │
│                                                │                     │
│                                                │                     │
│                                                │                     │
│                                                │                     │
│                                                │                     │
├──────────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│      F5:Previous Values      F6:Fail-Safe Defaults   F7:Optimized Defaults   │
└──────────────────────────────────────────────────────────────────────┘
```

Current CPU Temp.

Since the mainboard support System and CPU temperature monitoring and overheat alert. This item indicates the current Processor temperature.

Current CPUFAN1/2 Speed

The mainboard can detect three fans rotation speed for CPU cooler, and system .

Vcore, 2.5V, 3.3V, 5V, 12V

The mainboard supports CPU and mainboard voltages monitoring. The onboard hardware monitor is able to detect the CPU voltage (Vcore) and the voltage output from power supply.

☞   *Frequency/Voltage Control*

```
          CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                           Frequency/Voltage Control
 ┌─────────────────────────────────────────────┬───────────────────────────┐
 │   Auto Detect DIMM/PCI Clk    Enabled        │        Item Help          │
 │   Spread Spectrum             Disabled       │                           │
 │                                              │   Menu Level     ▶        │
 │                                              │                           │
 │                                              │                           │
 │                                              │                           │
 │                                              │                           │
 │                                              │                           │
 │                                              │                           │
 │                                              │                           │
 │                                              │                           │
 │                                              │                           │
 ├──────────────────────────────────────────────┴──────────────────────────┤
 │  ↑↓←→:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │     F5:Previous Values     F6:Fail-Safe Defaults   F7:Optimized Defaults  │
 └──────────────────────────────────────────────────────────────────────────┘
```

Auto Detect DIMM/PCI Clk

This item allows you to enable/disable auto detection DIMM/PCI Clock.

➢ The choice: Enabled or Disabled.

Spread Spectrum

This item allows you to enable/disable the spread spectrum.

➢ The choice: 0.25%, 0.50%, or Disabled.

☞ **Load Fail-Safe Defaults**

When you press ＜Enter＞ on this item, you will get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal performance system operations.

☞ **Load Optimized Defaults**

When you press ＜Enter＞ on this item, you will get a confirmation dialog box with a message similar to:
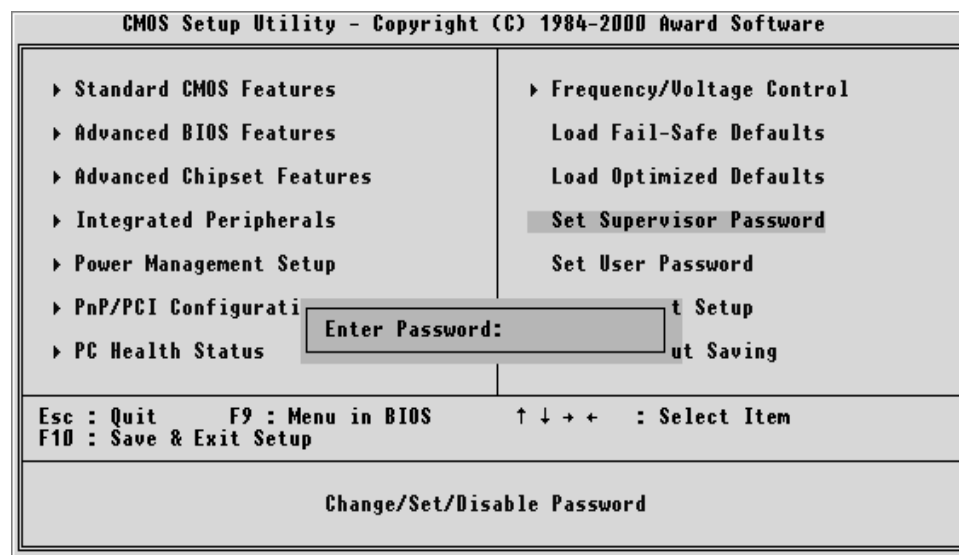
Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory-set for optimal performance system operation.

☞ **Supervisor/User Password Setting**

You can set either supervisor or user password, or both of them. The differences between them are:

```
        CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
┌──────────────────────────────────────────────────────────────────────┐
│                                                                        │
│  ▶ Standard CMOS Features          ▶ Frequency/Voltage Control         │
│                                                                        │
│  ▶ Advanced BIOS Features             Load Fail-Safe Defaults          │
│                                                                        │
│  ▶ Advanced Chipset Features          Load Optimized Defaults          │
│                                                                        │
│  ▶ Integrated Peripherals             Set Supervisor Password          │
│                                                                        │
│  ▶ Power Management Setup             Set User Password                 │
│                                                                        │
│  ▶ PnP/PCI Configurati ┌──────────────────────────┐ t Setup           │
│                        │  Enter Password:         │                    │
│  ▶ PC Health Status    └──────────────────────────┘ ut Saving          │
│                                                                        │
├──────────────────────────────────────────────────────────────────────┤
│  Esc : Quit       F9 : Menu in BIOS     ↑ ↓ → ←  : Select Item         │
│  F10 : Save & Exit Setup                                               │
├──────────────────────────────────────────────────────────────────────┤
│                      Change/Set/Disable Password                       │
└──────────────────────────────────────────────────────────────────────┘
```

Supervisor Password and User Password

The options on the Password screen menu make it possible to restrict access to the Setup program by enabling you to set passwords for two different access modes: Supervisor mode and User mode.

In general, Supervisor mode has full access to the Setup options, whereas User mode has restricted access to the options. By setting separate Supervisor and User password, a system supervisor can limit who can change critical Setup values.

Enter Password

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

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

Password Disable

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted in entering the password whenever the system is rebooted or you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

Warning :   Retain a record of your password in a safe place. If you forget the password, the only way to access the system is to clear CMOS, please refer to "Clear CMOS" on page 28.

☞   **Save & Exit Setup**

Pressing < Enter > on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

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

☞   **Exit Without Saving**

Pressing < Enter > on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit from Setup without storing in CMOS any change. The previous selections remain in effect. This exits from the Setup utility and restarts your computer.