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# **Memo**

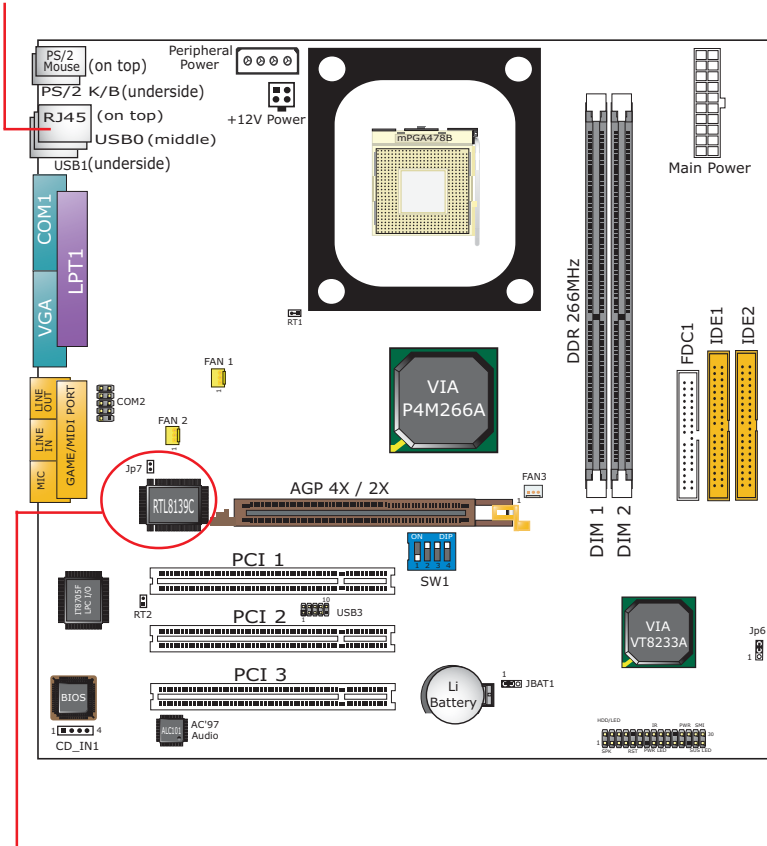
## ITEM CHECKUP

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- Mainboard
- Support CD
- Bundled Bonus Pack CD
- Bundled Bonus Pack Manual
- Thermal Sensor Cable (Optional)
- ATA66/100/133 IDE Cable
- FDD Cable
- User's Manual
- RS232 Cable (Optional)
- USB Cable (Optional)
- Multi-lingual Quick Installation Guide

## 85MIV2 / 85MIV2-L -- Components Locations

RJ45 LAN Connector for 85MIV2-L only



LAN Controller and Jp7 for 85MIV2-L only

# Chapter 1 Specification

## Introduction

This mainboard features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge of ProSavage P4M266A plus South Bridge VT8233A, by which the whole system performance is upgraded to 533 MHz system bus.

The Intel P4 processor is a rapid execution engine providing 533/400MHz quadpumped system bus, while, in addition to the built-in S3 Savage4 Graphics Accelerator, ProSavage P4M266A North Bridge plus VT8233A South Bridge supports Intel P4 processor to implement the AGP 4X external bus, the LPC Super I/O, the DDR SDRAM and UATA 133/100/66 data transfer rate. This chapter is to introduce to users every advanced function of this high performance integration.

**Topics included in this chapter are:**

**1-1 Mainboard Specifications\*\***

**1-2 Mainboard Specification Table**

**1-3 Chipset Diagram**

**\*\* If any difference is found between the mainboard description and the Mainboard you are using, please look up the Errata/Update Slip enclosed inside for the correction or updated information, or else contact the mainboard Dealer or visit our Web Site for the latest manual update.**

## **1-1 Mainboard Specifications**

### **1-1.1 CPU Socket**

CPU Socket 478B on board, supporting Intel® Pentium 4 and Northwood processors in the 478-pin package for :

- 533 / 400 MHz System Bus;
- Hyper-pipelined technology;
- Advanced dynamic execution;
- Advanced transfer cache;

### **1-1.2 System Chipsets**

North Bridge VIA ProSavage P4M266A plus South Bridge VT8233A to work with Intel Pentium 4 Processor for managing and arbitrating operations between all system interfaces.

### **1-1.3 Memory DDR266 / 200 SDRAMs**

2 DDR DIMM 184-pin slots on board for PC2100 and PC1600 DDR SDRAMs, at 64bit data transfer rate:

- North Bridge P4M266A directly supporting pseudo-synchronous SDRAM up to 2GB unbuffered DDR SDRAMs.
- Installation of mixed volumes of DDR SDRAM modules supported .

### **1-1.4 BIOS**

Flash Memory for easy upgrade, supporting BIOS Writing Protection, Year 2000 compliant, and supporting various hardware configuration during booting system (See Chapter 4 BIOS Setup):

- Standard CMOS Features (Times, Date, Hard Disk Type etc.)
- Advanced BIOS Features (Virus Protection, Boot Sequence etc.)
- Advanced Chipset Features (AT Clock, DRAM Timing etc.)
- Power Management Features (Sleep Timer, Suspend Timer etc.)
- PNP/PCI Configurations (IRQ Settings, Latency Timers etc.)
- Integrated Peripherals (Onboard I/O, IRQ, DMA Assign. etc.)
- SmartDoc Anti-Burn Shield (CPU/System Temp., Fan speed etc.)
- Frequency/Voltage Control (CPU clock, Voltage of CPU, DIMM, AGP etc.)



### **1-1.5 Integrated AGP interface and additional AGP Slot**

S3 Graphics ProSavage8 is embedded in chip, supporting:

- 1.5V (4x) / 3.3V (2x) power mode
- 2x/ 4x AD and SBA signalling, AGP pipelined split-transection long-burst transfers up to 1GB/sec
- 15-pin VGA connector on board for analog display
- Additional AGP Slot on board, AGP v2.0 compliant for AGP card application
- VGA Driver enclosed in Support CD for user's installation

### **1-1.6 Advanced System Power Management**

- ACPI 1.0B compliant (Advanced Configuration and Power Interface), including ACPI Suspend mode support (See Power management of BIOS Setup)
- APM V1.2 compliant (Legacy Power Management)
- Wake On Modem (External) and Wake On LAN supported by Ring Power On Control through the RJ45 Connector on board (for 85MIV2-L only)
- Real Time Clock (RTC) with date alarm, month alarm, and century field.

### **1-1.7 Multi-I/O Functions:**

- PCI EIDE Controller, supporting:
  - 2x Ultra ATA 133/100 / 66 / 33 IDE Connectors supporting up to 4 IDE devices;
- Dedicated IR Functions:
  - Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR.
- Multi-mode parallel Data transfer:
  - Standard mode, ECP and EPP support;
- Floppy Disk connector:
  - One FDD connector with drive swap support;
- Universal Serial Bus Transfer Mode:
  - USB V1.1 compliant;
  - 2 built-in USB connectors and one USB Header which requires one optional USB cable to provide 2 more optional USB ports;
- PS/2 Keyboard
- PS/2 Mouse
- UARTs (Universal Asynchronous Receiver / Transmitter):
  - Two complete Serial Ports (COM1 & COM2) on board;

### **1-1.8 Expansion Slots**

- 3 PCI Bus Master slots
- One AGP 4x/2x slot
- Two DDR DIMM slots

### **1-1.9 Hardware Monitor on board**

- Hardware Monitor in IT8705F, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds.
- Utility Software SmartGuardian for displaying Monitoring status is enclosed in Support CD for user's installation.

### **1-1.10 AC'97 Audio Codec on board**

AC'97 Audio Codec on board

- Supporting 2-channel PCM audio output
- AC'97 Audio Codec Driver enclosed in Support CD for user's installation

### **1-1.11 LAN on board (for 85MIV2-L only)**

PCI local bus single-chip Fast Ethernet Controller RTL8139C on board:

- Supporting 10/100Mb data transfer
- Supporting Wake On LAN function through the on-board RJ45 LAN Connector

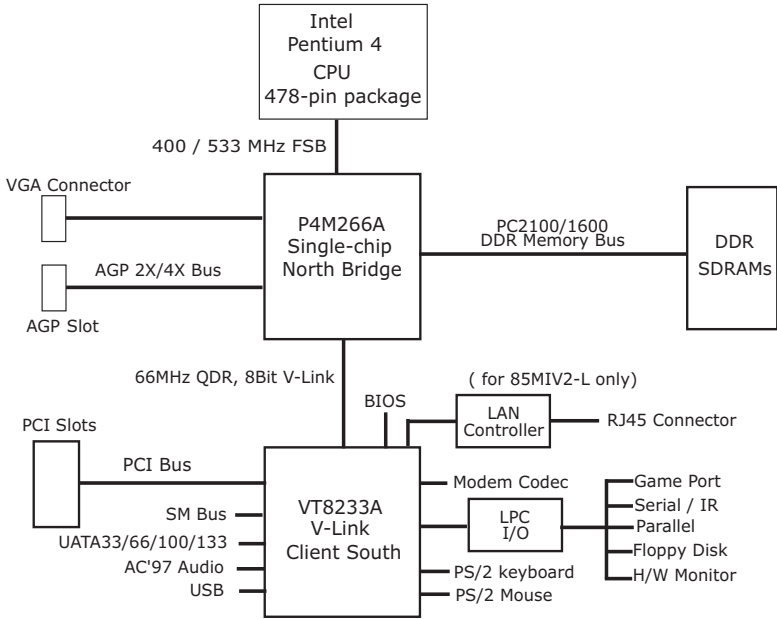
### **1-1.12 Form Factor**

- Micro-ATX Form Factor, Power Supply ATX spec. version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector, and one Peripheral Power Connector
- Mainboard size: 245mm x 245mm

## 1-2 Mainboard Specification Table

<b>SL-85MIV2 / 85MIV2-L Specifications and Features</b>	
CPU	Socket 478B for Intel Pentium 4 CPUs
North Bridge	VIA ProSavage P4M266A
South Bridge	VIA VT8233A
BIOS	Award BIOS
Memory	Supporting DDR 266/200 SDRM, up to 2GB in two DDR DIMM slots
I/O Chip	ITE IT8705F
AGP interface	AGP4X / 2X Mode; 1 AGP Slot on board
Audio	AC'97 Audio V2.1 compliant, 2-channel audio
IDE Interface	2 UATA 33/66/100/133 IDE ports
Networking	Fast Ethernet Controller, 1xRJ45 on board
PCI Slots	3 PCI Master slots on board
I/O Connectors	4xUSB ports (V1.1), 1xFDD port, 2xCOM ports, 1xLPT, 1xIrDA, 1xPS/2 K/B, 1xPS/2 Mouse,
VGA Display	1 x VGA connector on board for analog display
Other Features	BIOS Writing Protection Hardware Monitoring in IT8705F ATX 2.03 Power Supply Micro-ATX Form Factor

### 1-3 Chipset System Block Diagram



Intel Pentium 4 + VIA P4M266A + VT8233A Diagram

# Chapter 2 Hardware Setup

## To Get things ready for Hardware setup !

1. We recommend to install your CPU before any other components. For detailed installation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heatsink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heatsink for proper installation. Improper fan and installation will damage your CPU.
3. In case CPU Vcore, CPU clock or Frequency Ratio is adjustable on board, please follow the instructions described in the User manual for proper setup. Incorrect setting will cause damage to your CPU.

**The following topics are included in this chapter:**

**2-1 Pentium 4 CPU Installation**

**2-2 Pentium 4 CPU Fan Installation**

**2-3 Memory Installation**

**2-4 VGA connector and AGP slot Installation**

**2-5 HDD/FDD Installation**

**2-6 ATX 2.03 Power Supplier Installation**

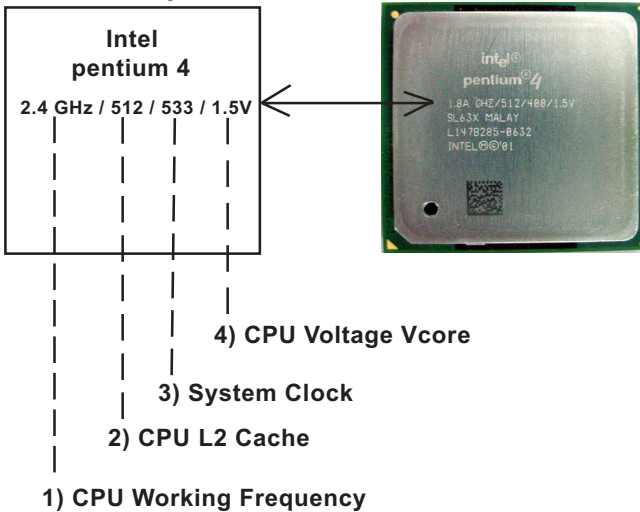
**2-7 Jumper and Switch Settings**

**2-8 Other Connectors Configuration**

**2-9 IRQ Description**

## 2-1 CPU Installation with Socket 478B

### 2-1.1 To Identify a Pentium 4 CPU



On the heatsink side of a Pentium 4 CPU, there printed a line of figures to identify its specifications. The line consists of 4 parts:

1. CPU Working Frequency: this part depicts the working frequency of the CPU. For example,
  - 2.4 GHz depicts that this CPU is locked to 2.4 GHz working frequency (18 x 133MHz CPU clock);
  - 2A GHz depicts that this CPU is an A version, locked to 2.0 GHz working frequency (20 x 100MHz CPU clock)
2. CPU L2 Cache: this part depicts the L2 Cache size. For example,
  - 512 stands for 512 KB L2 Cache; 256 stands for 256 KB L2 Cache
3. System Clock: this part depicts the System Clock (Front Side Bus) provided by the CPU. For example,
  - 533 stands for a 533MHz system clock provided by a 133MHz CPU times 4;
  - 400 stands for a 400 system clock provided by a 100 MHz CPU x 4.
4. CPU Voltage Vcore: this part depicts the CPU Voltage. For example,
  - 1.5V stands for a CPU of 1.5V Vcore.

Note: System Clock vs CPU Clock

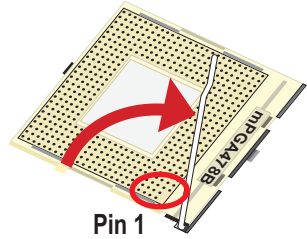
P4 CPU is a quadpumped CPU. The system bus is provided by the CPU clock x 4. Therefore, users can figure out the P4 CPU clock by the System Clock divided by 4.

## 2-1.2 CPU Installation with Socket 478B

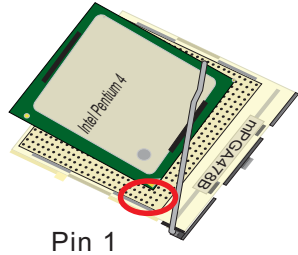
This mainboard is built with CPU Socket 478B ( 478-pin) supporting the Intel Pentium 4 CPU:

- Follow the steps described in this section to install the 478-pin Pentium 4 CPU into the on board Socket 478B.
- After installation of Pentium 4 CPU, you must also install the specific Pentium 4 CPU fan designed in tandem with this CPU. This CPU Fan installation is described in next section.

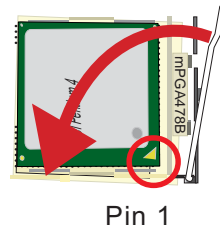
1. First pull sideways the lever of Socket 478B, and then turn it up 90° so as to raise the upper layer of the socket from the lower platform.



2. Configure Pin 1 of CPU to Pin 1 of the Socket, just as the way shown in the diagram on the right. Adjust the position of CPU until you can feel all CPU pins get into the socket.



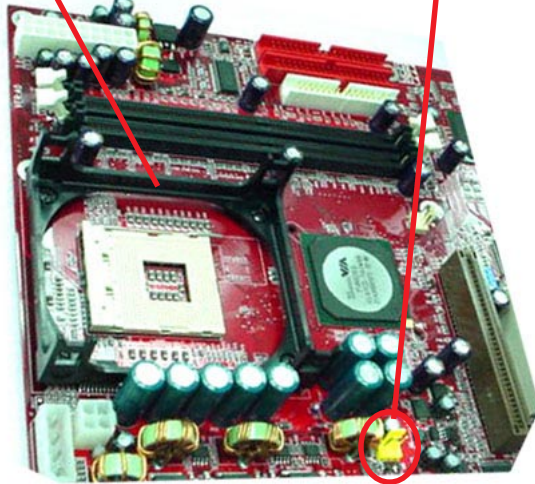
3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.



## 2-2 Pentium 4 CPU Fan Installation:

Pentium 4 Fanbase

CPU Fan Connector



Press down 4 latches to lock fan to fanbase



Connect Fan Connector to CPU FAN connector



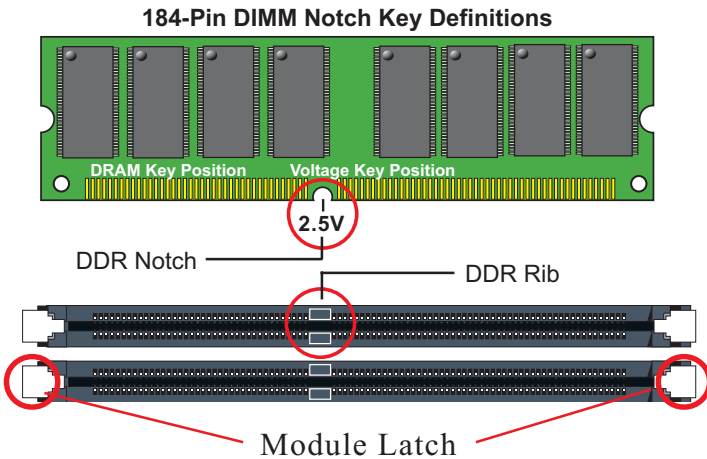
## 2-3 Memory Installation

How to tackle with the memory Modules:

- Make sure to unplug your Power Supplier before adding or removing memory module. Failure to do so may cause severe damage to both your mainboard and the memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM in a socket improperly will damage the memory module and slot.
- Make sure you have the right type of memory module for your mainboard.

### 2-3.1 To Install DDR SDRAM Module for this Mainboard :

- This mainboard only supports up to 2GB unbuffered DDR SDRAM, with 2 DDR DIMM slots on board. Do not insert other type of modules into these slots.
- DDR DIMM slot has 184-pins and one notch. Insert a DDR DRAM vertically into the 184-pin slot with the notch-to-rib matching. Press the Module down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the slot. If any one of the latches has not turned up completely, you should unplug the module and press it down a bit more firmly.

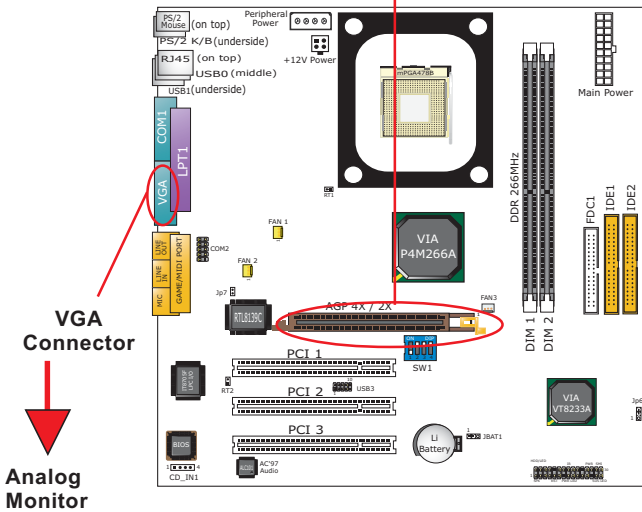
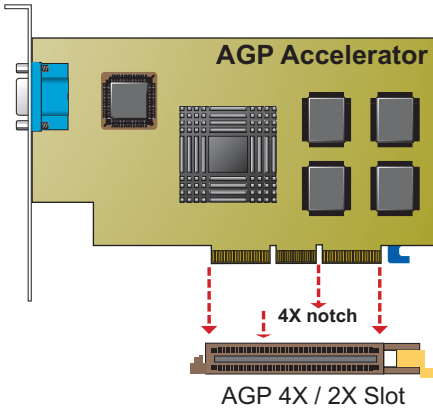


### 2-3.2 To Remove a DIMM:

Press down the holding latches on both sides of slot and the module will be released from the DIMM slot.

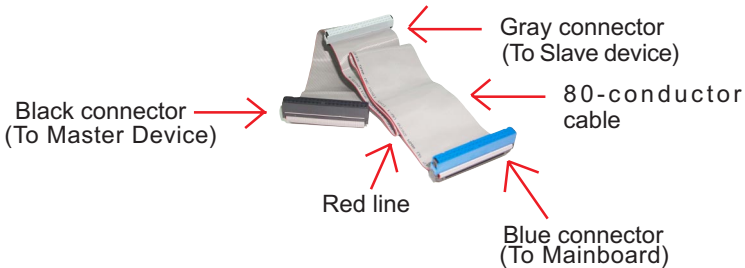
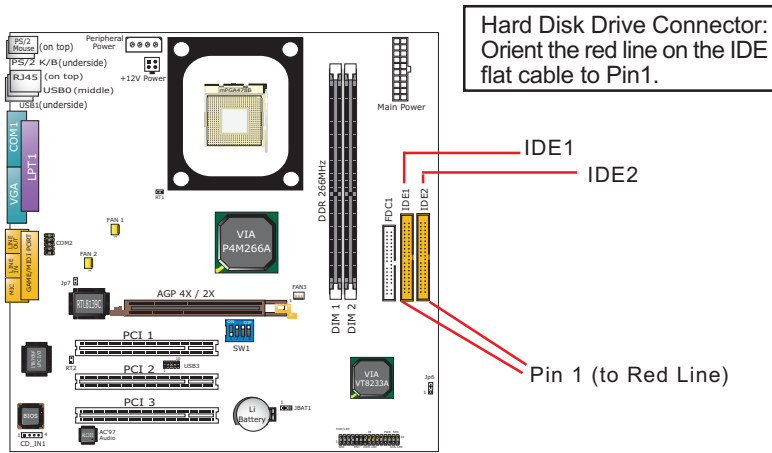
### 2-4 VGA connector and AGP slot Installation :

1. To install on-board VGA, please connect your monitor directly to VGA connector on board.
2. To install additional AGP card into AGP 4X slot on board, users can install either a 4X or 2X AGP card with its only card driver.



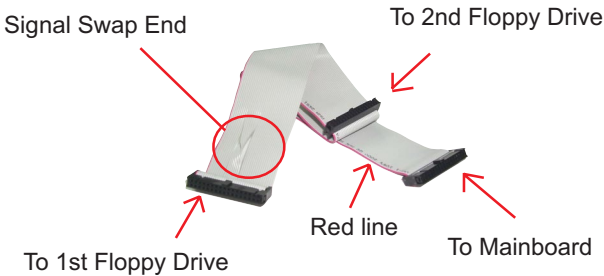
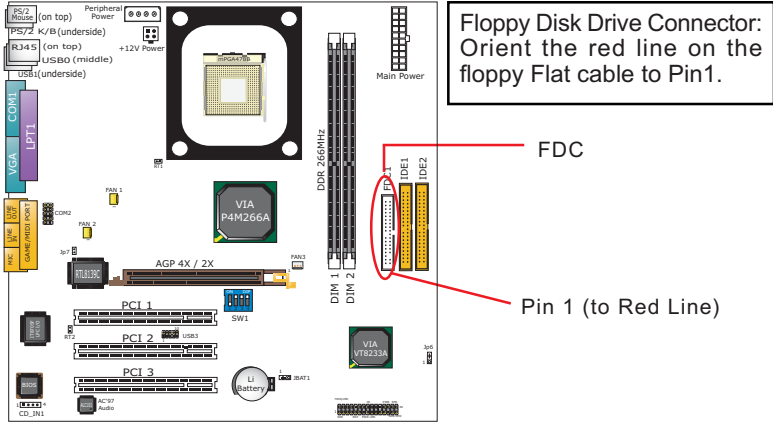
## 2-5 IDE / FDD Connector Installation

To install IDE Connector, you may connect the blue connector of IDE cable to the primary (IDE1) or secondary (IDE2) connector on board, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers correctly. Please refer to your hard disk documentation for the jumper settings.



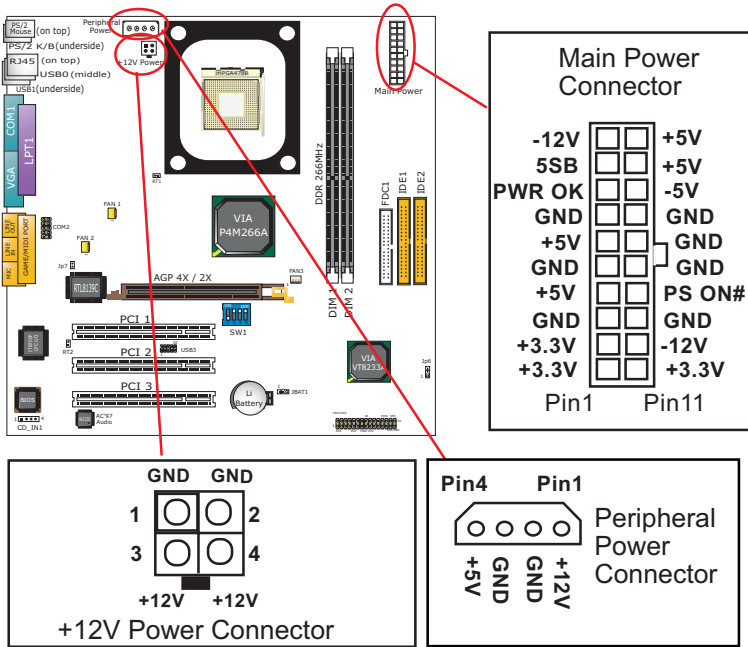
### IDE Flat Cable

To install FDC, you should connect the end of FDC cable with single connector to the board , and connect the other end with two connectors to the floppy drives.



**FDD Cable**

## 2-6 ATX V2.03 Power Supply Installation




ATX V2.03 power supplier is strongly recommended for mainboard running with 2GHz or higher CPU.

To set up Power Supply on this mainboard:


1. Connect the on-board Main Power Connector (20-pin) to the Main Power Connector (20-pin) of an ATX Power Supplier which can be either of the latest version 2.03 or of earlier ATX format.
2. If you use an ATX Power Supplier Version 2.03 or later, you can now connect the on-board square-shaped +12V Connector to the square-shaped +12V Connector of your ATX Power Supplier. In this case, it is not necessary for you to connect the on-board 4-pin Peripheral Power Connector to your Power Supply.
3. If you use an ATX Power Supplier of an older version than V2.03, you cannot find a square-shaped +12V Connector with your Power Supplier; you must then connect the on-board 4-pin Peripheral Power Connector to the 4-pin Peripheral Power Connector of your Power Supplier.


## 2-7 Jumper and Switch Settings

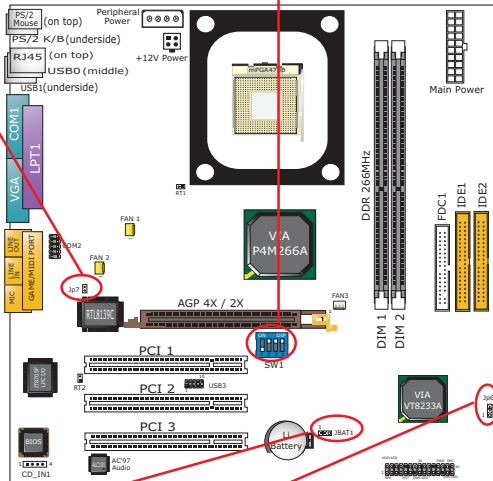
The following diagrams show the locations and settings of jumper blocks on the mainboard.

System Clock Adjustment		On  SW1 (Default) Off			
		1	2	3	4
CPU CLOCK (MHz)	S1	S2	S3	S4	
100 (default)	off	on	on	on	
103	off	on	off	on	
107	on	off	off	on	
110	off	off	off	on	
133	on	off	on	on	


**For 85MIV2-L only**  
**Jp7:**  
**Lan Controller Select**


 Open: (default)  
LAN Controller enabled



 Closed:  
Lan Controller Disabled



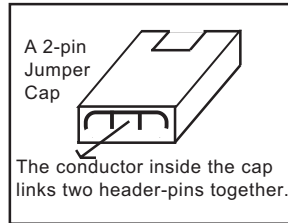
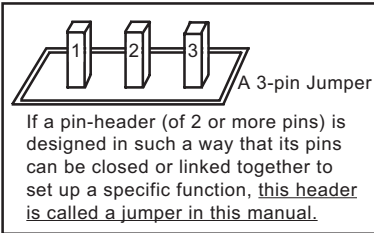
**JBAT1:**  
**Clear CMOS**

 1-2 closed:  
To Hold data  
(default)

 1-3 closed:  
To Clear CMOS

<b>Jp6:</b> <b>CPU Clock Select</b>	<b>SW1:</b> <b>Overclock setting to Boot System</b>
 2-3 closed (default) Default CPU clock 100 / 133MHz Selected →	Manually select 100/103/ 107/110 SW1 setting for 100MHz CPU; Manually select 133 SW1 setting for 133MHz CPU.
 1-2 closed 133MHz selected →	133MHz SW1 setting to boot system

**How to tackle the Jumpers:**



- A Jumper is usually but not necessarily given a “JpX” legend.
- In the Jumper setting diagram, the jumper pins covered with black marks stand for closed pins with jumper cap.





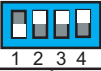
- Do not remove any jumper cap when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, the mainboard will be damaged.

**2-7.1 Jp6 and SW1: CPU Clock/Overclock Select**

Jp6 and SW1 are designed for CPU clock select and 100MHz CPU overclocking. With Jp6, users can choose the default CPU clock or an overclock to boot system. SW1 is designed to match and meet the setting of Jp6. Before setting Jp6 and SW1, users should read the CPU Identification and find out the default CPU clock on the CPU.

1. If Jp6 is set to 2-3 closed, the auto-detect mode will recognize the CPU clock automatically and send the signal to system chips. If a 100MHz CPU is used, SW1 should be set to default or 103/107/111 mode. If a 133MHz CPU is used, SW1 should be set to 133MHz mode to boot system.
2. If Jp6 is set to 1-2 closed, CPU is set to 133MHz. You must now set SW1 to 133MHz mode to boot system. If a 133MHz CPU is used on board, system should start without problem. If a 100MHz CPU is used, the overclocking may fail to boot up. In such case, you must clear CMOS and reset Jp6 and SW1 to default settings for booting system.

<b>Jp6:</b> CPU Clock Select →	<b>SW1:</b> Overclock setting to Boot System
 2-3 closed (default) Default CPU clock 100 / 133MHz Selected →	Manually select 100/103/ 107/110 SW1 setting for 100MHz CPU; Manually select 133 SW1 setting for 133MHz CPU.
 1-2 closed → 133MHz selected	133MHz SW1 setting to boot system

System Clock Adjustment	On Off	 1 2 3 4				SW1 (Default)
CPU CLOCK (MHz)	S1	S2	S3	S4		
100 (default)	off	on	on	on		
103	off	on	off	on		
107	on	off	off	on		
110	off	off	off	on		
133	on	off	on	on		

Further Notes on CPU Overclocking:

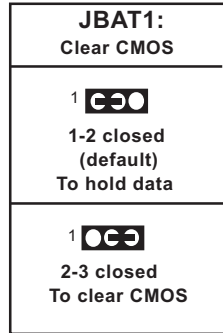
1. If you have successfully booted system, with or without CPU overclock, you still can try another CPU overclock in BIOS Setup. Please enter BIOS Setup, choose “Frequency/Voltage Control” menu, and take the “Use Linear” option of the “Use CPU Linear Frequency”. Then configure the “CPU Clock” item to raise your CPU clock.
2. CPU overclocking should take all components on board into account. If you fail in BIOS overclocking, you will not be able to restart system. In such case, Power off system and clear CMOS by JBAT1 and then restart your system. And remember to reconfigure whatever should be reconfigured.
3. If your system is already fixed in a cabinet or case, you may not like to take the trouble to clear CMOS. Then power on your system with the power button on the PC case and simultaneously press down the “Insert” key on the keyboard until you see the initial bootup screen appear. And remember you should also enter CMOS BIOS Setup instantly and choose “Load Optimized Defaults” to restore default BIOS .



### 2-7.2 JBAT1: Clear CMOS

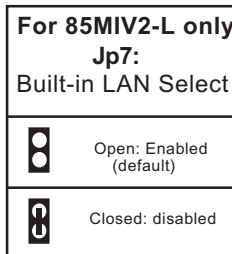
When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:

1. Power off system;
2. Set JBAT1 to Pin 2-3 closed.
3. After 2 or 3 seconds, return the JBAT1 setting to Pin1-2 closed.
4. CMOS data are restored to default. Remember never clear CMOS when system power is on.



### 2-7.3 Jp7: Built-in LAN Select (for 85MIV2-L only)

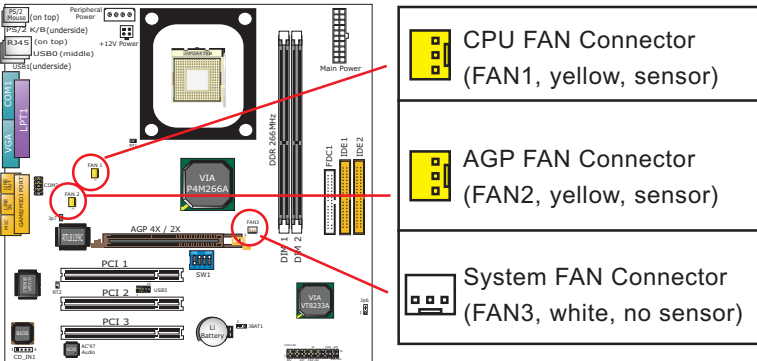
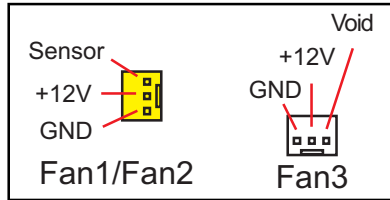
Jp7 is designed to enable the built-in LAN Controller function. With Jp7 open, the built-in LAN Controller is enabled, and you can use the on-board RJ45 channel, while you can also add another PCI LAN card for one more LAN channel. With Jp7 closed, the on-board RJ45 channel is disabled.



## 2-8 Other Connectors Configuration

This section lists out all connectors configurations for users' reference.

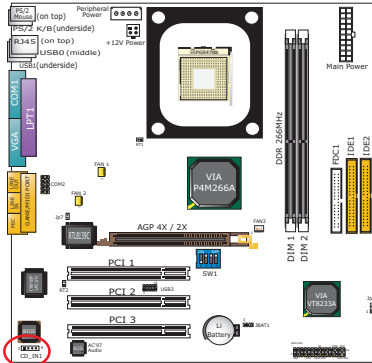
### 2-8.1 On Board FAN Connectors



Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. Sensor Fan Connector is yellow in color on board. When connecting the wire to any Fan Connector, user should make sure that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. A Hardware Monitor chipset is on board, with which user can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, user can read the fan speed from the "Hardware Monitor Status" in CMOS BIOS.

A running fan will send out 2 electric pulses per rotation of its fan blade. A Sensor Fan Connector will count the electric pulses and send the information to the System Hardware Monitor which in turn will work out the fan rotation speed and display it with the monitoring program.

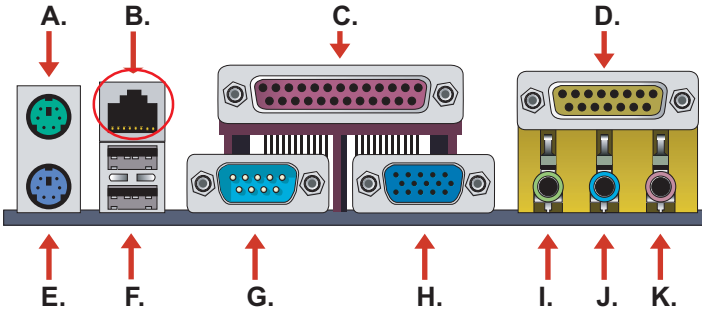
### 2-8.2 CD-ROM Audio Connector



CD-ROM Audio Pin Assignment

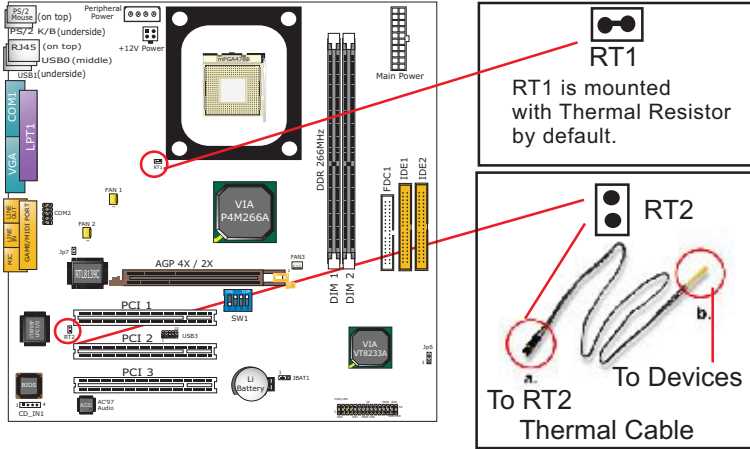
CDIN 1	Pin 1	Pin 2	Pin 3	Pin 4
	Left Channel	GND	GND	Right Channel

### 2-8.3 Chassis Panel Connector



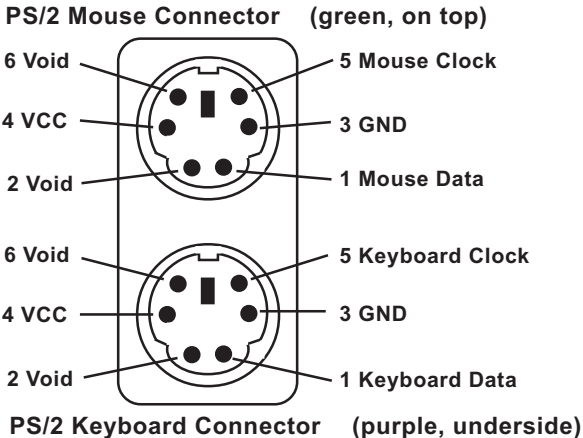
- A : PS/2 Mouse Port
- B : RJ45 LAN Port (For 85MIV2-L only)
- C : LPT1 Port
- D : Game/MIDI Port
- E : PS/2 Keyboard Port
- F : USB 1(underside) / USB0 (middle)
- G : COM1 Port
- H : VGA Connector
- I : Line/Spkr Out
- J : Line In
- K : Microphone Input

### 2-8.4 Thermal Resistor and Connector



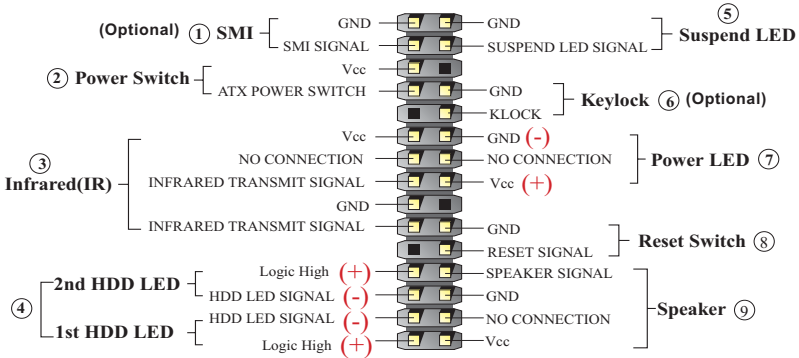
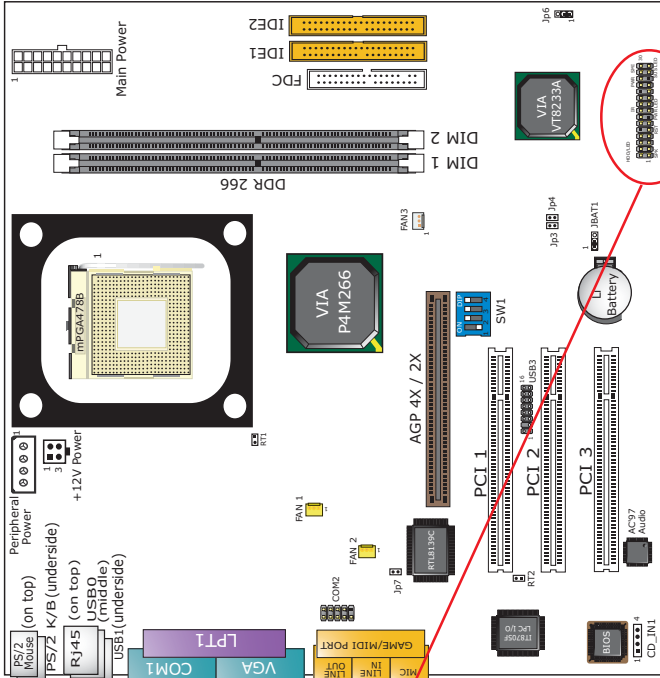
1. Resistor RT1: A thermal resistor is mounted by default to connector RT1 so as to detect the temperature of the CPU. What RT2 does is to transmit the thermal signal to BIOS or Hardware Monitor.
2. Connector RT2: A thermal cable is needed to connect RT2 to on-board devices such as HDD, Graphics card etc., so as to detect the temperature generated therein. Please connect the end (a) of the thermal cable to mainboard RT2 header, and tape another end (b) of thermal cable on to the device which you want to monitor. After you have finished the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware monitor utility.**

### 2-8.5 PS/2 Mouse And PS/2 Keyboard



### 2-8.6 Complex Header

This complex Header consists of 9 connectors providing various supports:



**(1) SMI Connector (Optional):**

Connection: Connected to the case-mounted Suspend Switch.

Function: Manually selecting DOS system into the Suspend Mode or “Green Mode” by System management interrupt.

**(2) Power Switch Connector:**

Connection: Connected to a momentary button or switch.

Function: Manually switching the system between “On” and “Soft Off”. Pressing the momentary button for more than 4 seconds will also turn the system off.

**(3) IR Connector (Infrared Connector):**

Connection: Connected to Connector IR on board.

Function: Supporting wireless transmitting and receiving module on board.

**(4) 1st HDD LED Connector/2nd HDD LED Connector:**

Connection: Connected to HDD LED.

Function: To supply power to HDD LED.

**(5) Suspend LED Connector:**

Connection: Connected to Suspend Indicator.

Function: To supply power to “Suspend Indicator”.

**(6) Keylock Connector (Optional):**

Connection: Connected to keyboard.

Function: To lock keyboard and disable keyboard function.

**(7) Power LED Connector:**

Connection: Connected to System Power LED.

Function: To supply power to “System Power LED”.

**(8) Reset Switch Connector:**

Connection: Connected to case-mounted “Reset Switch”.

Function: To supply power to “Reset Switch” and support system reboot function.

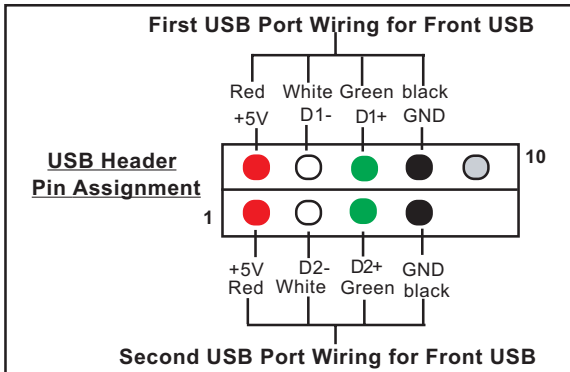
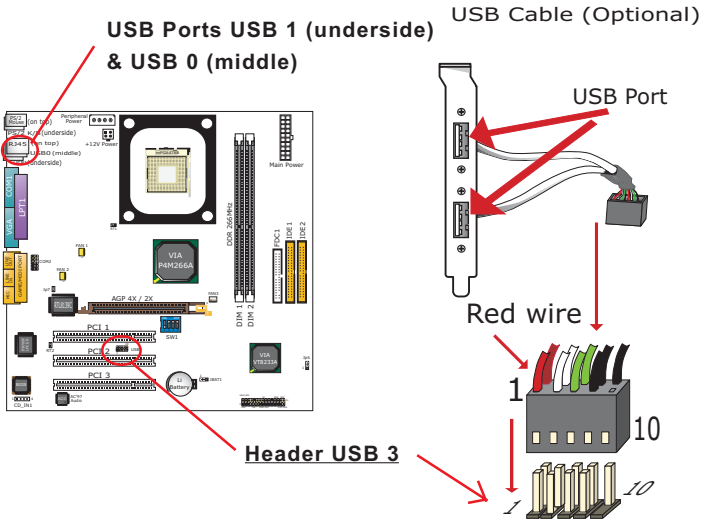
**(9) Speaker Connector:**

Connection: Connected to the case-mounted Speaker.

Function: To supply power to the case-mounted Speaker.

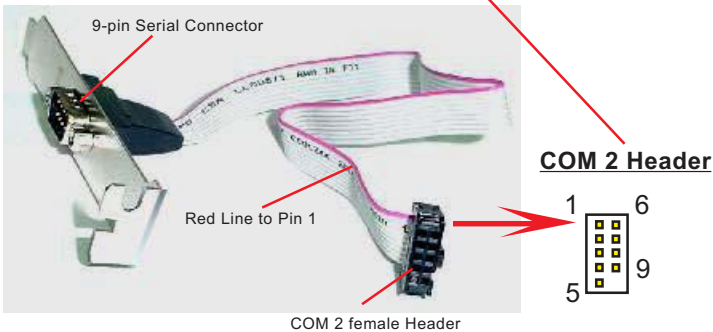
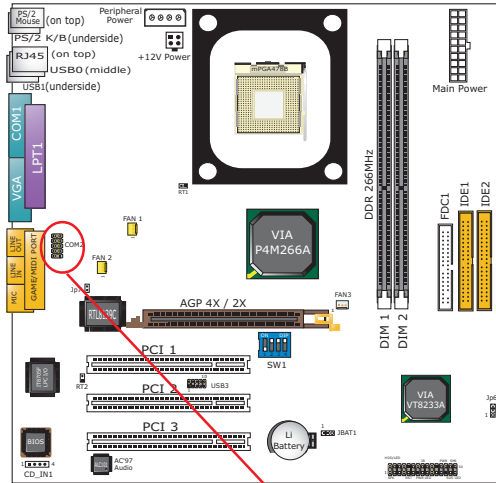
### 2-8.7 USB Ports and USB Header

- This mainboard provides two USB ports USB0 and USB1 on board supporting various USB devices. In addition, 1 USB header is added on board to provide two additional USB ports by using one additional USB Cable. This additional USB cable is available from your mainboard dealer or vender.
- When plugging the USB cable into Header USB 3, users must make sure the red wire is connected to Pin 1.



### 2-8.8 COM 2 Header for one Serial Port

COM 2 Header is built on board, which requires a serial COM 2 cable to provide a 9-pin serial connector for a serial device. One RS232 COM 2 Cable is enclosed in this mainboard package. When you insert COM 2 cable to COM 2 header, take notice that the red line of the cable must connect to Pin 1 of COM 2 header.



**COM 2 Cable (RS232) (optional)**

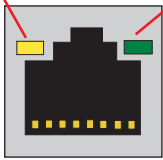


### 2-8.9 RJ45 Connector ( for 85MIV2-L only)

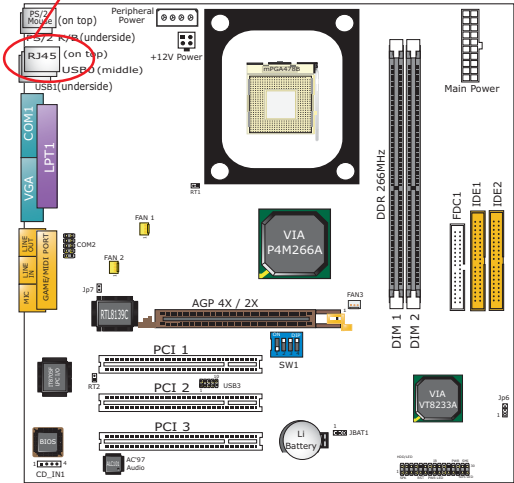
One RJ45 connector is on board for LAN connection which also support Wake On LAN function.

Yellow LED “On” to indicate Network hub is in connection with the system.

Green LED blinks to indicate that data transmission is undergoing in 10/100 Base T mode.



RJ45 Connector



## 2-9 IRQ Description

IRQ	Function Description	Priority
IRQ 0	System Timer	1
IRQ 1	Keyboard Controller	2
IRQ 2	Programmable Interrupt	N/A
IRQ 3	Serial Port (COM 2)	11
IRQ 4	Serial Port (COM 1)	12
IRQ 5	Free	13
IRQ 6	Floppy Disk Controller	14
IRQ 7	Parallel Port (LPT1)	15
IRQ 8	Real Time Clock (RTC)	3
IRQ 9	Free	4
IRQ 10	Free	5
IRQ 11	Free	6
IRQ 12	PS/2 Mouse Port	7
IRQ 13	Coprocessor	8
IRQ 14	Primary IDE Channel	9
IRQ 15	Secondary IDE Channel	10

- Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.
- The original ISA expansion card design, now referred to as “Legacy” ISA card, requires you to configure the card’s jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the **Control Panel** in **My Computer**, contains a **System** icon, which gives you a **Device Manager** tab. Double-Clicking on a specific hardware device gives you a **Resources** tab which shows the Interrupt number and address. Double-Clicking **Computers** to see all the interrupts and addresses for your system. Make sure that each ISA device should be assigned to one IRQ respectively. If ISA device share IRQ with any other device, your computer will easily get into trouble.

# Chapter 3 Software Setup

## Drivers, Utilities and Software Installation

Support CD:

This mainboard will be shipped with a Support CD which contains those necessary driver files, Application Softwares and some helpful utilities. It is a user-friendly, auto-run CD which will open itself up in a CD-ROM automatically.

Contents of Support CD:

For this mainboard, user will be able to find in the Support CD the following drivers and utilities:

1. VIA 4-in-1 Drivers
2. AC'97 Audio Driver
3. DirectX
4. Graphics Driver
5. Hardware Monitor Utility
6. LAN Driver (for 85MIV2-L only)

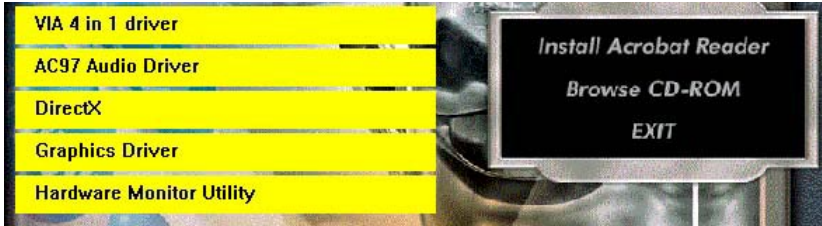
This chapter is devoted to describing the installations of all these essential drivers and utilities on Windows 9X, Windows ME, Windows 2000 and Windows XP. The installation procedures for all these operating systems are programed into an auto-run mode. What users have to do is read and follow the pop-up instructions. We therefore take the installation on Windows 98 as the general illustration hereby.

The priority of driver installation should also be noted. Users are recommended to take the following installation order:

- 3-1 To Open up the Support CD**
- 3-2 VIA 4-in-1 Driver Installation**
- 3-3 AC'97 Audio Driver Installation**
- 3-4 DirectX Installation**
- 3-5 Graphics Driver Installation**
- 3-6 Hardware Monitor Utility Installation**
- 3-7 LAN Driver Installation (for 85MIV2-L only)**

### 3-1 To Open up the Support CD:

1. Please put the Support CD enclosed in your mainboard package into the CD-ROM drive. In a few seconds, the Main Menu will automatically appear, displaying the contents to be installed for this series:

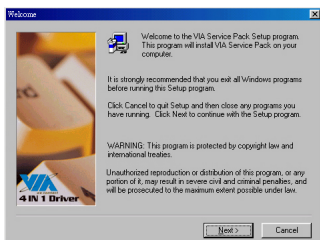


2. In case your system does not open the Support CD automatically, please click to the following path to enter the Main Installation Menu:  
D:\Autorun.exe (assuming that your CD-ROM Drive is Drive D)
3. Users are recommended to install all the drivers and utilities at a time, though they can be installed separately. Also, we should take "VIA 4-in-1 Driver" as first installation priority to optimize the VIA system.  
From next section, we provide detailed descriptions of all these installations with graphical illustrations.

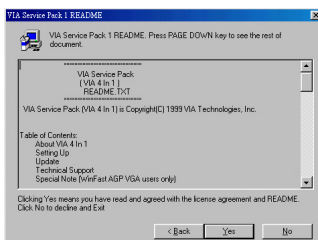
### 3-2 VIA 4-in-1 Driver Installation

1. Following the procedures of opening the Support CD, click to “VIA 4-in-1 Drivers” to proceed.

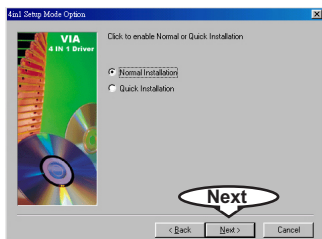
2. The VIA Service Pack InstallShield Wizard will pop up to guide you to the VIA Service pack installation. Click “Next” button to continue.



3. “VIA Service Pack README” screen will appear, please click the “Yes” button to agree with the Licence Agreement and continue.

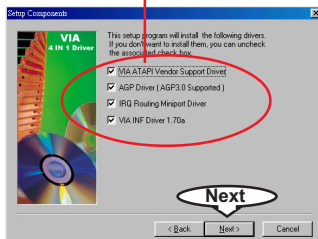


4. On the screen below, check “Normally Install” and click “Next” to continue. (If you check “Quickly Install”, you will skip the detailed procedures of the VIA 4-in-1 Setup.)

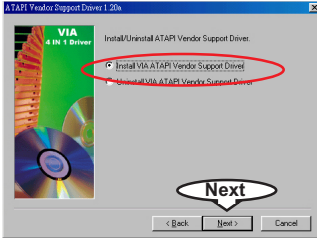


5. Select the checkbox as below and click “Next” to continue:

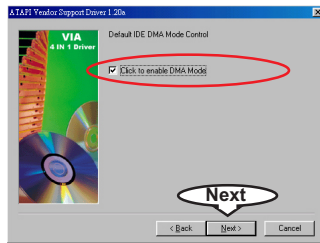
- VIA ATAPI Vendor Support Driver
- AGP Driver (AGP3.0 Supported)
- IRQ Routing Miniport Driver
- VIA INF Driver 1.70a



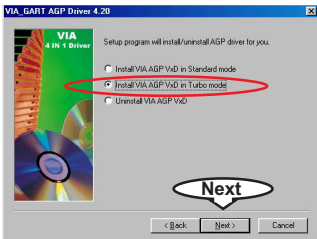
6. Select “Install VIA ATAPI Vendor Support Driver” checkbox, then click the “Next” button to continue.



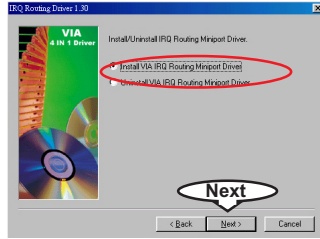
7. Click on “Click to enable DMA Mode” checkbox to enable DMA function, then click the “Next” button to continue.



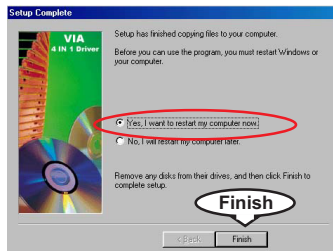
8. Select “Install VIA AGP VxD in Turbo mode” and press “Next” button to continue.



9. Select “Install VIA IRQ Routing Miniport Driver” checkbox, then click the “Next” button to continue.



10. After all these setup procedures have finished, you should restart your computer by clicking on “Finish” so as to put VIA 4-in-1 drivers into effect and proceed to the second driver installation.

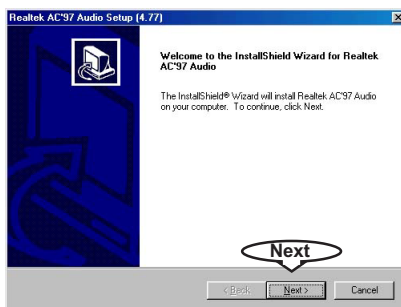


### 3-3 AC'97 Audio Driver Installation

1. Following the installation of VIA 4-in-1 drivers, you have to restart system so that your system can be reconfigured with VIA 4-in-1 drivers. When restarting procedures finish, please open the Support CD with your CD-ROM to enter the Main Installation Menu. Then click to “Install AC'97 Audio Driver”.

---

2. When the screen of “Welcome to the InstallShield Wizard for Realtek AC'97 Audio” appears, please press “Next” button to continue.



3. After all the setup procedures have completed, click to “Finish” button to exit the Installation program and restart your system.

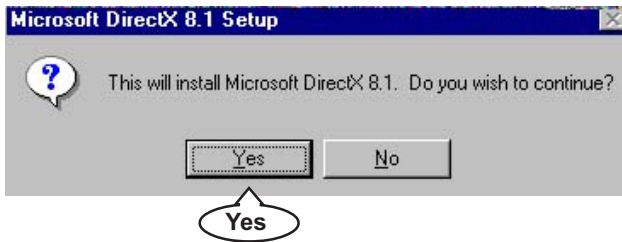


### 3-4 DirectX Installation

1. Following the installation of AC'97 Audio driver, you have to restart system so that your system can be reconfigured with the driver just installed. When restarting procedures finish, please open the Support CD with your CD-ROM to enter the Main Installation Menu. Then click to "Install DirectX". This utility will support a better graphic display of the built-in VGA interface.

---

2. When the screen of "Microsoft DirectX 8.X Setup" appears, please press "Yes" button to continue.



3. After all the setup procedures have completed, click to "OK" button to exit the Installation program and restart your system.



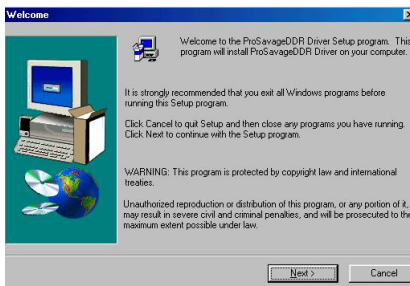


### 3-5 Graphics Driver Installation

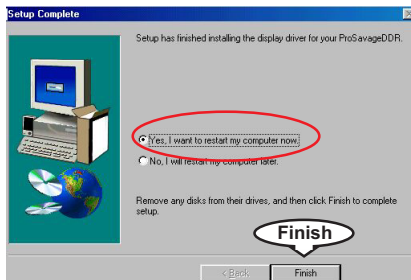
1. Following the installation of DirectX, you have to restart system so that your system can be reconfigured with the utility. When restarting procedures finish, please open the Support CD with your CD-ROM to enter the Main Installation Menu.

Then click to “Install Graphics Driver”. The Graphics Driver is specifically for on-board VGA.

2. When the screen of “ProSavageDDR Driver Setup Program “ appears, please press “Next” button to continue.



3. After all the setup procedures have completed, click to “Finish” button to exit the Installation program and re-start your system.



## 3-6 Hardware Monitor Utility Installation

### 3-6.1 Installation

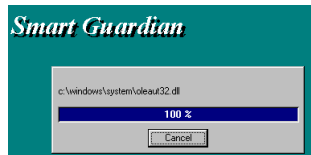
Hardware Monitor is built in chip IT8705F of this series. Its installation is programmed to a fully automated mode on Windows 9X/Me/NT4/2000/XP. User can follow the model installation below for its installation on various Windows System.

1. Following the procedures of opening the Support CD, click to “Hardware Monitor Utility” to proceed.
2. Instantly the “Smart Guardian Setup” screen appears to announce the setup of Hardware Monitor software “Smart Guardian”.

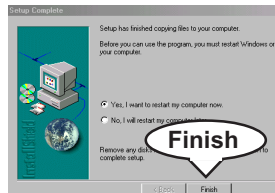
3. Next, the Setup Program will suggest to you the destination directory where the “Smart Guardian” will be installed. Select the Program folder and click “Next” to continue.



4. Instantly, Setup Program starts to copy files and install the software.

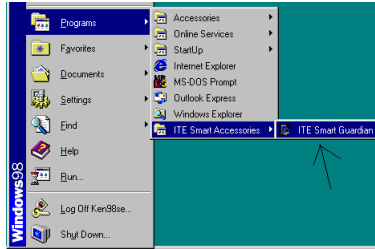


4. In one or two second, the “Setup complete” screen appears. Click “Finish” to restart your computer so that the Utility can be put into effect.

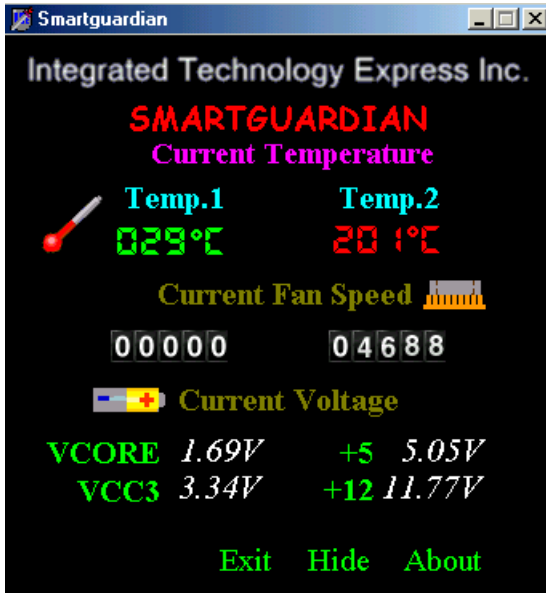


### 3-6.2 Verification

1. After restarting your computer, click “Start” and choose the path \Programs \ITE Smart Accessories\ITE Smart Guardian to open the main window of the Hardware Doctor.



2. Instantly, the Smartguardian Main Panel appears, telling you the CPU current temperature, CPU current Voltage and Current fan speed.

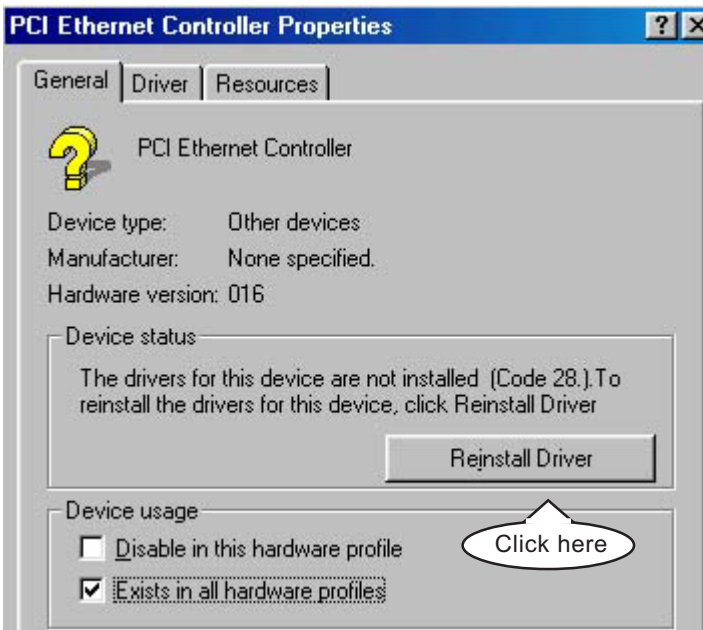


## 3-7 LAN Driver Installation

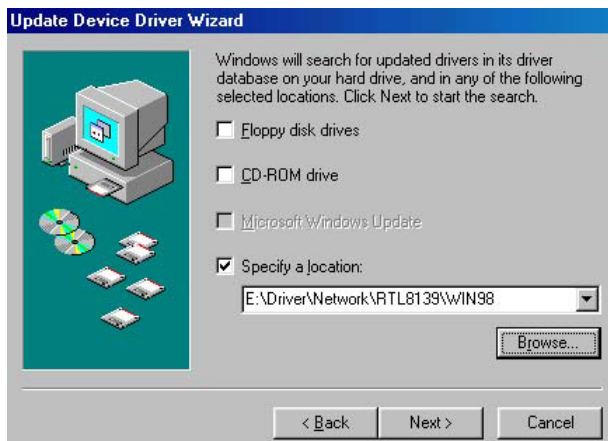
### 3-7-1. RTL8139C LAN driver on Windows 9X

The LAN driver contained in the Support CD is not included in the Autorun Menu. To install RTL8139C LAN driver on Windows 9X, please follow the steps shown below:

1. On the “Start” screen of your system, please click to the following path:  
My Computer\properties\Device manager
2. In the “Device manager” screen, you can see the item “ PCI Ethernet Controller” with a yellow question mark on its left side, which indicates that the LAN controller is already detected by system but the driver for this on-board RTL8139C Ethernet Controller is not installed yet. Please point to this item with your mouse and double click on it (or click the “Properties” button).
3. Instantly, the “PCI Ethernet Controller Properties” screen shows up. Please click the “General” bar to continue.
4. In the “General” screen, click “reinstall Driver” button to continue. Please note that the status of “Device Usage” should stay at “Exists in all hardware profiles”.



5. In the “Update device Driver Wizard” screen, click “Next” to continue until you see a dialog box asking you to “Specify a location” for the driver. You should **now** insert the Support CD into your CD-ROM.
6. As illustrated in the picture below, check the item “Specify a location” and click the “Browse” button to find out the correct path for the driver. Supposing your CD-ROM drive is Drive E, please type: E:\Driver\Network\RTL8139\Win98 into the blank bar. (If you are installing on Win 95OSR2, you should type W95OSR2 instead of Win98.) Then click the “Next” button to continue.



7. The Update Device Driver Wizard will then go on installing the driver, until the “Insert Disk” dialog box shows up. Please withdraw your Support CD and insert the Win 98 CD-ROM into the CD-ROM drive for updating system and click “OK” to continue.
8. The Update Device Driver Wizard will then proceed to update the system with the LAN driver. When the “Finish” screen shows up, click “Finish” to continue.
9. Final Dialog box will appear to remind you that you must restart your computer to finish updating the new hardware. Please click “Yes” to restart system and finish the LAN driver installation.

### 3-7-2. RTL8139C LAN driver on Windows NT4.0

1. When you newly install Win NT4, the Setup program will ask you whether your computer will participate on a network. Please check "Do not connect this computer to a network at this time" and continue with your installation. That means, you are going to install the LAN Adapter and driver after you have finished system installation. By this way, you will set up your LAN Adapter and driver more surely.
2. If you have now completed installation of Win NT4 in your computer, please boot your system and in the "Start" screen click the following path to install your computer networking:  
    \Start\Settings\Control Panel\Network (double click)
3. Instantly, a dialog box pops up, asking you, "Windows NT Networking is not installed. Do you want to install it now?" Please click "Yes" to continue.
4. The Network Setup Wizard will then proceed to guide you to the installation of LAN Adapter and Driver, until the "Select Network Adapter" screen pops up, on which you should click "Have Disk" to install the on-board RTL8139C LAN Controller.
5. Instantly, the "Insert Disk" dialog box pops up. You should **now** insert the Support CD into your CD-ROM drive, and then type to the white bar the correct path for the location of the LAN driver. Supposing your CD-ROM drive is drive D, please type the following path:  
    D:\Driver\Network\RTL8139\Winnt4 and click "OK" button to continue.
6. Instantly, the Setup program detects the "Realtek RTL8139(A/B/C/8130) PCI Fast Ethernet Adapter" and shows it on the "Select OEM Option" screen. Please click "OK" to continue.
7. The Setup program will then proceed to install the RTL8139 Adapter and then other networking components such as TCP/IP protocol.
8. During the setup process, if "Windows NT Setup" needs to copy some Windows files, you should then withdraw the Support CD and insert back the Win NT4 CD-ROM into your CD-ROM drive to continue.
9. After you have finished other networking components setup, you should restart your system to put all the new setups into effect.

10. To verify that the onboard RTL8139C Controller has been set up in system, please click “Start”, then “Control Panel”, then “Network”.
11. In the “Network” screen, click the “Adapter” bar. You can now see the “Realtek RTL8139(A/B/C/8130) PCI Fast Ethernet Adapter is already installed in system.

### **3-7-3. RTL8139C LAN driver on Win ME / 2000 / XP**

1. When you newly install Windows ME, Windows 2000 or Windows XP, the system will detect the LAN Controller on board and configure it automatically into system. Therefore, users need not bother to install the LAN controller into these operating systems.
2. To verify the existence of RTL8139C Controller and Driver, please enter the “Control Panel” of your system and click “Network” to open the “Configuration” screen. You can then see the “Realtek8139 (A/B/C) PCI Fast Ethernet Adapter” is already installed in the system.

# **Memo**



# Chapter 4 BIOS Setup

## THE BIOS

BIOS stands for Basic Input and Output System. It was once called ROM BIOS when it was stored in a Read-Only Memory(ROM) chip. Now manufacturers would like to store BIOS in EEPROM which means Electrically Erasable Programmable Memory. BIOS used in this series of mainboard is stored in EEPROM, and is the first program to run when you turn on your computer.

BIOS performs the following functions:

1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
2. Loading and running your operating system.
3. Helping your operating system and application programs manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

**This Chapter includes the following topics :**

**4-1 About BIOS Setup**

**4-2 To run BIOS Setup**

**4-3 About CMOS**

**4-4 The POST (Power On Self Test)**

**4-5 To upgrade BIOS**

**4-6 BIOS Setup**

## **4-1 About BIOS Setup**

BIOS setup is an interactive BIOS program that you need to run when:

1. Changing the hardware of your system. (For example: installing a new Hard Disk etc.)
2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or cache)

## **4-2 To Run BIOS Setup**

First access BIOS setup menu by pressing < DEL > key after "POST" is complete ( before OS is loaded ). BIOS will then display the following message:

Press "DEL" to enter "SETUP"

## **4-3 About CMOS**

CMOS is the memory maintained by a battery. CMOS is used to store the BIOS settings you have selected in BIOS Setup. CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks into CMOS for the settings you have selected and configures your computer accordingly. If the battery runs out of power, the CMOS data will be lost and POST will issue a "CMOS invalid" or "CMOS checksum invalid" message. If this happens, you have to replace the battery and do some proper settings in BIOS Setup.

## **4-4 The POST ( Power On Self Test )**

POST is an acronym for Power On Self Test. This program will test all things the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, a unique number which is sent to I/O port 080h before the routine is executed.

## 4-5 To Upgrade BIOS

- System BIOS is incorporated into a Flash memory component. Flash BIOS allows user to upgrade BIOS without the need to replace an EPROM component.
- The Upgrade Utility can be loaded on a floppy diskette to execute saving, verifying, and updating the system BIOS. The Upgrade Utility can also be run from a hard disk drive or a network drive.

### 4-5.1 Before Upgrading BIOS

- It is highly recommended that you save a copy of the original mainboard BIOS along with a Flash EPROM Programming utility (AWDFLASH.EXE) to a bootable floppy disk so that you can reinstall the BIOS when needed.

### 4-5.2 Upgrade Process

- Normally, to upgrade BIOS is unnecessary if the system is working fine. Users should only upgrade the BIOS when you experience incompatible problems or need to create new features.
- “AWDFLASH.EXE” is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the mainboard. This program only works in **DOS environment, the utility can not be executed in Win95/98, ME, NT, WINDOWS 2000 or Windows XP environment.**
- Please follow the steps below for upgrading the system BIOS:

Step 1. Please visit the board maker’s website, download the zip file of the latest BIOS and Award flash utility “AWDFLASH.EXE”. After unzipping, the BIOS file format will be \*.bin, of which “\*” stands for the specific BIOS file name.

Step 2. Create a bootable diskette. Then copy the BIOS file and award flash utility “AWDFLASH.EXE” into the diskette.

Step 3. Insert the diskette into drive A, reboot your system and boot from the diskette.

Step 4. Type **awdflash \*.bin /sn/py/cc** and then press <Enter> to run BIOS upgrade program. (\*.bin depends on your mainboard model and version code. Instead of typing “\*”, you should type specific file name for your specific mainboard).

Step 5. Please press <F1> or <F10> to exit or reset your system.

Warning ! If the message “ **Write Fail** ” appears while Award “FLASH MEMORY WRITER” is verifying Flash memory, just repeat the process. Please DO NOT reset or turn off the system. If the award memory flash utility is not able to update the BIOS successfully, your system may not be able to boot up.

Step 6. You will need a message “CMOS checksum error-Default loaded” during booting the system. Press <Del> to run CMOS setup utility, then reload “LOAD SETUP DEFAULTS” or “**Load Optimized Defaults**” and save this change.

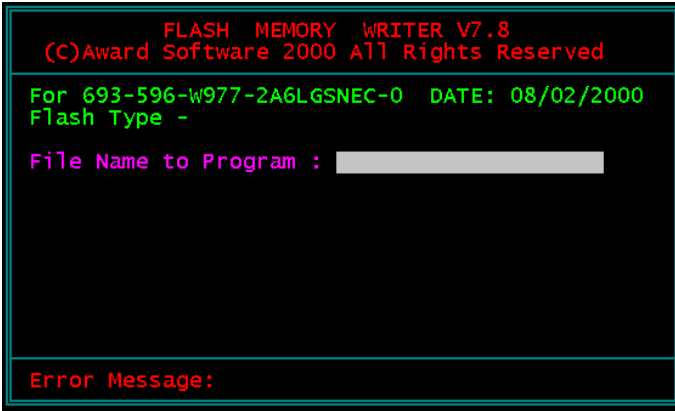
The parameters of AWDFLASH.EXE

/sn: No original BIOS backup

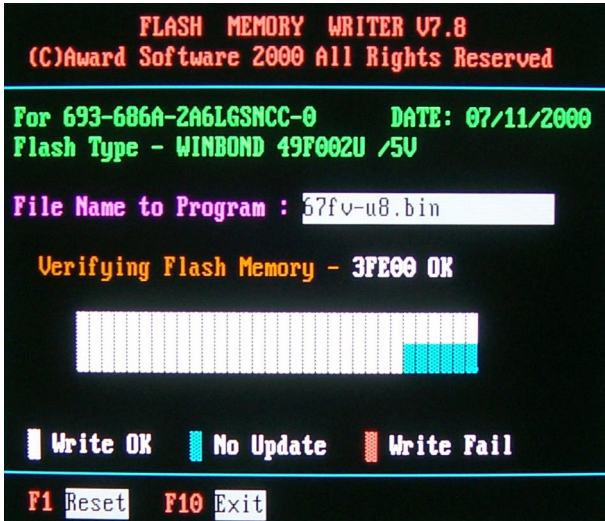
/py: Program flash memory

/cc: Clear CMOS data (and update data automatically) after programming

**NOTE:** Users can type AWDFLASH /? to get further details about the parameters. Incorrect usage of the parameter will damage the BIOS information, so we strongly recommend user to leave parameters alone unless you fully understand their function.



Award Flash Memory Writer Start Screen



Award Flash Memory Writer Complete Screen

## 4-6 BIOS SETUP --- CMOS Setup Utility

**Warning and Tips:** If changing CMOS Configuration causes difficulty in rebooting system, you can take the following measures:

1. At pressing the power button to reboot, press the “Insert” key at the same time. As soon as the screen displays the booting message, release the “Insert” key and press “Delete” key to enter CMOS Setup Utility . Then choose the “Load Optimized (Optimal) Defaults” menu to restore the default values for a new start. Or,
2. Open your machine cabinet and clear CMOS with jumper setting. Please refer to the Jumper Setting Section of this User manual.

### 4-6.1 CMOS Setup Utility

This mainboard comes with the AWARD BIOS from AWARD Software Inc. Enter the CMOS Setup Utility Main Menu by:

1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

**PRESS <DEL> TO ENTER SETUP**

2. Press <DEL> key and the main program screen will appear as follows.

**Phoenix - AwardBIOS CMOS Setup Utility**

<ul style="list-style-type: none"> <li>▶ Standard CMOS Features</li> <li>▶ Advanced BIOS Features</li> <li>▶ Advanced Chipset Features</li> <li>▶ Integrated Peripherals</li> <li>▶ Power Management Setup</li> <li>▶ PnP/PCI Configurations</li> <li>▶ SmartDoc Anti-Burn Shield</li> </ul>	<ul style="list-style-type: none"> <li>▶ Frequency/Voltage Control</li> <li>Load Optimized Defaults</li> <li>Set Supervisor Password</li> <li>Set User Password</li> <li>Save &amp; Exit Setup</li> <li>Exit Without Saving</li> </ul>
Esc: Quit F10: Save & Exit Setup	↑↓→← : Select Item
Change CPU Clock & Voltage	

3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC>.
5. In the Main Menu, “SAVE AND EXIT SETUP” saves your changes and reboots the system, and “EXIT WITHOUT SAVING” ignores your changes and exits the program.

## 4-6.2 Standard CMOS Setup

Standard CMOS Setup records some basic system hardware configuration and sets the system clock and error handling. You only need to modify the configuration values of this option if you want to change your system hardware configuration or when the data stored in the CMOS memory gets lost or damaged.

Run the Standard CMOS Setup as follows:

1. Choose “Standard CMOS Setup” from the Main Menu and a screen with a list of options will appear:

**Phoenix - AwardBIOS CMOS Setup Utility**  
**Standard CMOS Features**

Date (mm:dd:yy)	Wed, January 15 2003	Item Help
Time (hh:mm:ss)	2 : 33 : 11	Menu Level ▶
IDE Primary Master	WDC WD400BB-00DEA0	Change the day, month, year and centary
IDE Primary Slave	None	
IDE Secondary Master	None	
IDE Secondary Slave	None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	252928K	
Total Memory	253952K	

↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys.
3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

**Date (mm:dd:yy)** The BIOS determines the day of the week from the other date information. This field is for information only.  
 Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

**Time (hh:mm:ss)** The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to desired field. Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

**Primary / Secondary Master / Slave** This field records the specifications for all non-SCSI hard disk drives installed in your system. Refer to the respective documentation on how to install the drives.

Phoenix - AwardBIOS CMOS Setup Utility  
 IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master Access Mode	Auto Auto	Menu Level ►
Capacity	40022MB	To auto-detect the HDD's size, head... on this channel
Cylinder	19158	
Head	16	
Precomp	0	
Landing Zone	19157	
Sector	255	

↑ ↓ ← → :Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help  
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults



**Drive A / Drive B** Select this field to the type(s) of floppy disk drive(s) installed in your system. The choices are:  
360KB, 5.25 in.  
1.2MB, 5.25 in.  
720KB, 3.5 in.  
1.44MB, 3.5 in.  
2.88MB, 3.5 in.  
None

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

**Halt On** During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process.

**Base Memory** Typically 640KB. Also called conventional memory. The DOS operating system and conventional applications use this area.

**Extended Memory** Above the 1MB boundary. Early IBM personal computers could not use memory above 1MB, but current PCs and their software can use extended memory.

**Total Memory** This option shows system memory capacity.

### 4-6.3 Advanced BIOS Features

Advanced BIOS Features improves your system performance or sets up system features according to your preference.

Run the Advanced BIOS Features as follows:

1. Choose “Advanced BIOS Features” from the Main Menu and a screen with a list of options will appear:

**Phoenix - AwardBIOS CMOS Setup Utility  
Advanced BIOS Features**

Virus Warning	Disabled	Item Help
CPU L1 & L2 Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	Menu Level ►  Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	CDROM	
Boot Other Device	Enabled	
Swap Floppy Drive	Enabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Typematic Rate Setting	Disabled	
X Typematic Rate (Chars/Sec)	6	
X Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Video BIOS Shadow	Enabled	

↑↓↔: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F5>: Get the previous values. These values are the values with which the user starts the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

---

**Virus Warning** When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive.

You should then run an antivirus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

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

**CPU L1 & L2 Cache** Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type up contain internal cache memory (L1), and most, but not all, modern PCs have additional (external) cache memory (L2). When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for faster access by the CPU.

- CPU L2 Cache ECC Checking** When you select *Enabled*, it will speed up memory checking when the external cache contains ECC SRAMs.  
The choices: Enabled (default); Disabled
- Quick Power On Self Test** Select Enabled to reduce the amount of time required to run the power-on self-test (POST). A quick POST skips certain steps. We recommend that you normally enable quick POST.
- First/Second/Third/Other Boot Device** The BIOS attempts to load the operating system from the devices in the sequence selected in these items.  
The choices: Floppy; LS/ZIP; HDD; SCSI; CDROM; Disabled
- Swap Floppy Drive** When enabled, floppy drives A and B will be exchanging without any physical connection and modification on the cables.
- Boot Up Floppy Seek** When enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 270KB, 1.2MB, and 1.44MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to disabled to save time.
- Boot Up NumLock Status** Toggle between On or Off to control the state of the NumLock key when the system boots. If On, the numeric keypad is in numeric mode. If off, the numeric keypad is in cursor control mode.

**Typematic Rate Setting** When *Disabled*, the following two items (Typematic Rate and Typematic Delay) are irrelevant. Keystroke repeats at a rate determined by the keyboard controller in your system.

When *Enabled*, you can select a typematic rate and typematic delay.

**Typematic Rate (Chars / Sec)** When the typematic rate setting is enabled, you can select a typematic rate (the rate at which character repeats when you hold down a key) of 6, 8, 10, 12, 15, 20, 24, or 30 characters per second.

**Typematic Delay (Msec)** Choices: 250; 500; 750; 1000. This option sets the time interval for displaying the first and the second characters. If enabled, the time interval is optional.

**Security Option** If you have set a password, select whether the password is required every time the System boots, or only when you enter setup.  
The choices: system; setup

**OS Select For DRAM > 64MB** Select OS2 only if you are running OS/2 operating system with greater than 64MB of RAM on your system.

**Video BIOS Shadow** Performance will be improved by copying Video BIOS to Shadow RAM.

## 4-6.4 Advanced Chipset Features

Advanced Chipset Features is used to modify the values of chipset buffers. These buffers control the system options.

Run the Advanced Chipset Features as follows:

1. Choose "Advanced Chipset Features" from the Main Menu and a list of option will appear:

**Phoenix - AwardBIOS CMOS Setup Utility**  
**Advanced Chipset Features**

▶ DRAM Clock/Drive Control	Press Enter	Item Help
▶ AGP & P2P Bridge Control	Press Enter	
▶ CPU & PCI Bus Control	Press Enter	Menu Level ▶
Memory Hole	Disabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Delay Prior to Thermal	16 Min	
VGA Share Memory Size	8M	
FB Address Conversion	Enabled	
FB page Close Prediction	Enabled	

↑↓↔← : Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F5>: Get the previous values. These values are the values with which the user starts the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

### DRAM Clock/Drive Control

When this option is chosen, the following item appears for user's configuration.

**Phoenix - AwardBIOS CMOS Setup Utility**  
**DRAM Clock/Drive Control**

Current FSB Frequency	133MHz	Item Help
Current DRAM Frequency	133 MHz	
DRAM Clock	By SPD	
DRAM Timing	Manual	
X SDRAM CAS Latency	2	
X Bank Interleave	Disabled	
X Precharge to Active (Trp)	3T	
X Active to Precharge (Tras)	6T	
X Active to CMD (Trcd)	3T	
X DRAM Command Rate	2T Command	
X DRAM Burst Len	4	
CPU read DRAM Mode	Medium	

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

**\*Current FSB / DRAM Frequency** This item is to show the current FSB / SDRAM Frequency.

**\*DRAM Clock** This item allows you to set the DRAM clock. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.  
 Choices: By SPD; 100MHz; 133MHz

**\* DRAM Timing** this item allows you to set the DRAM Timing SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.  
 Choices: By SPD; Manual  
 When Manual" is chosen, the following 6 subitems will reveal themselves for setting.

- \* **SDRAM CAS Latency** The choices: 2; 2.5.
    - \* **Bank Interleave** The choices: Disabled; 2 Bank; 4 Bank
  - \* **Precharge to Active (Trp)** The choices: 2T; 3T
  - \* **Active to Precharge (Tras)** The choices: 5T; 6T
  - \* **Active to CMD (Trcd)** The choices: 2T; 3T
    - \* **DRAM Command Rate** The choices: 1T Command; 2T Command.
- 

\***DRAM Burst Len** Allows you to set the number of DRAM Burst Len.  
The choices: 4; 8

\***CPU Read DRAM Mode** Allows you to set CPU read DRAM mode.  
The choices: Slow; Medium; Fast



### AGP & P2P Bridge Control

When this option is chosen, the following item appears for user's configuration.

**Phoenix - AwardBIOS CMOS Setup Utility**  
**AGP & P2P Bridge Control**

AGP Aperture Size            64M AGP Mode                        4X AGP Driving Control        Auto X AGP Driving Value        DA AGP Fast Write                Disabled AGP master 1 WS Write    Disabled AGP Master 1 WS Read     Disabled	Item Help
--	-----------

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
                   F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

**\* AGP Aperture Size** Series of options are available: 4, 8, 16, 32, 64, 128 or 256 MB. Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will automatically report the starting address of this buffer to the O.S. The default setting is 64MB.

**\* AGP Mode** This item allows you to select AGP Mode. The choices: 1X; 2X; 4X

**\* AGP Driving Control** This item allows you to adjust the AGP driving force. Choose Manual to key in a AGP Driving Value in the next selection. This field is recommended to set in Auto for avoiding any error in your system. The choices: Manual; Auto

**\* AGP Driving Value** This item allows you to adjust the AGP driving value. The choices: Min=0000 ~ Max=00FF

\* **AGP Fast Write** This item will enable the AGP model into fast write mode. If your graphics card does not support this function, please do not enable this function.

\* **AGP Master 1 write** Leave this field at default.

\* **AGP Master 1 read** Leave this field at default.

### CPU & PCI Bus Control

When this option is chosen, the following item appears for user's configuration.

**Phoenix - AwardBIOS CMOS Setup Utility**  
**CPU & PCI Bus Control**

CPU to PCI Write Buffer            Enabled PCI Master 0 WS Write            Enabled	Item Help

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

\* **CPU to PCI Write Buffer** When this field is Enabled, writes from the CPU to the PCI bus are buffered, to compensate for the speed differences between the CPU and the PCI bus. When Disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.  
The choices: Enabled; Disabled

**\* PCI Master 0 WS Write** When Enabled, writes to the PCI bus are executed with zero wait states.  
The choices: Enabled, Disabled

---

**Memory Hole** In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB.  
The choices: 15M-16M; Disabled

**System BIOS Cacheable** Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance.

**Video RAM Cacheable** Selecting Enabled allows caching of the video memory (RAM) at A0000h-AFFFFh, resulting in better video performance. However, check your AGP manual to find out if any compatibility problem exists.

**Delay Prior to Thermal** This item is to set the delay time before the function of CPU Therm-Throttling is to be executed.  
Choices: 4min.; 8min.; 16min. (default); 32min.

**VGA Share Memory Size** This item is to specify the system memory to be allocated for Video memory.  
Choices: 8M (default); Disabled.

**FB Address Conversion** This item is to enable / disable (default) the address conversion function of the video memory Frame block.

**FB Page Close Prediction** This item is to enable / disable (default) the prediction function of the video Frame block page.

---

### 4-6.5 Integrated Peripherals

Integrated Peripherals option allows you to get some information inside your system when it is working.

Run the Integrated Peripherals as follows:

1. Choose “Integrated peripherals” from the Main Menu and a list of options will appear:

**Phoenix - AwardBIOS CMOS Setup Utility**  
**Integrated Peripherals**

		Item Help
▶ VIA OnChip IDE Device	Press Enter	
▶ VIA OnChip PCI Device	Press Enter	
▶ Super IO Device	Press Enter	
Init Display First	AGP	
OnChip USB Controller	All Enabled	
USB Keyboard Support	Disabled	
IDE HDD Block Mode	Enabled	

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<F5>: Get the previous values. These values are the values with which the user starts the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

## VIA Onchip IDE Device

When this option is chosen, the following item appears for user's configuration.

**Phoenix - AwardBIOS CMOS Setup Utility**  
**VIA OnChip IDE Device**

		Item Help
Onchip IDE Channel 0	Enabled	
Onchip IDE Channel 1	Enabled	
IDE Prefetch Mode	Enabled	
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	

↑↓→← : Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

\* **On-Chip IDE channel** The chipset contains a PCI IDE interface with support from two IDE channels. Select Enabled to activate the first and/or the second IDE interface. Select Disabled to inactivate an interface if you install a primary and/or second add-on IDE interface.

The choices: Enabled; Disabled

\* **IDE Prefetch Mode** The on-board IDE drive supports IDE perfecting for faster drive accesses. If the IDE device doesn't support perfecting, set this field to Disabled.

The choices: Enabled; Disabled

**\* Primary** Choose Auto or Mode 0~4. The BIOS will detect the  
**Master / Slave PIO** HDD mode type automatically when you choose  
**Secondary** Auto. You need to set to a lower mode than Auto  
**Master / Slave PIO** when your hard disk becomes unstable.  
 The choices: Auto; Mode 0; Mode 1; Mode 2; Mode  
 3; Mode 4

**\* Primary** Ultra DMA33/66/100/133 implementation is possible  
**Master / Slave UDMA** only if your IDE hard drive supports it, if the operat-  
**Secondary** ing environment includes a DMA drive, and if your  
**Master / Slave UDMA** system software supports Ultra DMA33/66/100/133.  
 Select "Auto" to enable BIOS support.  
 The choices: Auto; Disabled

### VIA Onchip PCI Device

When this option is chosen, the following item appears for user's configuration.

**Phoenix - AwardBIOS CMOS Setup Utility**  
**VIA OnChip PCI Device**

VIA-3058 AC97 Audio	Auto	Item Help
VIA-3043 Onchip LAN (Optional)	Enabled	
Onboard LAN Boot ROM (Optional)	Disabled	

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

**\* VIA-3058 AC'97 Audio** Select "Disabled" to use the on-chip audio capability of your system. Most of the field do not appear when this field is "Disabled", for user who wants to use add-on sound card, this item must be disabled.

### VIA Super IO Device

When this option is chosen, the following item appears for user's configuration.

**Phoenix - AwardBIOS CMOS Setup Utility**  
**Super IO Device**

		Item Help
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	Auto	
Onboard Serial Port 2	Auto	
UART Mode Select	Normal	
X UR2 Duplex Mode	Half	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
X ECP Mode Use DMA	3	
Game Port Address	201	
MIDI Port Address	330	
MIDI Port IRQ	10	

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

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

The choices: Enabled; Disabled

\* **Onboard Serial Port 1 / Port 2** Select a logical COM port name and matching address for the first and second serial ports. Select an address and corresponding interrupt for the first and second serial ports.

Choices: Disabled; Auto;  
3F8/IRQ4;  
2F8/IRQ3;  
3E8/IRQ4;  
2E8/IRQ3

- \* UART Mode Select** The second serial port on your system may offer a variety of infrared port modes. Click here for a description of various modes. (Click your browser's Back button, or your right mouse button, to return to this page.)  
The choices: Normal; IrDA; ASKIR; SCR
  - \* UR2 Duplex Mode** This item allows you to select the IR half / full duplex function.  
The choices: Half; Full
  - \* Onboard Parallel Port** This item allows you to determine onboard parallel port controller I/O address setting.  
The choices: 378H/IRQ7; 278H/IRQ5; 3BC/IRQ7; Disabled
  - \* Parallel Port Mode** Select an operating mode for the on-board parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes.  
Choices: SPP; EPP; ECP; ECP+EPP
  - \* ECP Mode Use DMA** Select a DMA channel for the port when you choose ECP or ECP+EPP mode for the Parallel Port Mode.  
Choices: 1; 3
  - \* Game Port Address** This item allows you to select the Game Port Address.  
The choices: Disabled, 201, 209
  - \* MIDI Port Address** Select a DMA channel for the parallel port for use during ECP mode.  
The choices: Disabled, 330, 300
  - \* MIDI Port IRQ** This item allows you to select the MIDI Port IRQ.  
The choices: 5, 10
-



**Init Display First** Initialize the AGP video display before initializing any other display device on the system. Thus the AGP display becomes the primary display.

**OnChip USB Controller** Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

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

**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 choices: Enabled; Disabled

---

### 4-6.6 Power Management Setup

Power Management Setup allows you to set the system’s power saving functions.

Run the Power Management Setup as follows:

1. Choose “Power Management Setup” from the Main Menu and a list of options will appear:

**Phoenix - AwardBIOS CMOS Setup Utility**  
**Power Management Setup**

		Item Help
ACPI function	Enabled	
ACPI Suspend Type	S1(POS)	
Power Management Option	User Define	
HDD Power Down	Disable	
Suspend Mode	Disable	
Video Off Option	Suspend -> Off	
Video Off Method	V/H SYNC+Blank	
Modem Use IRQ	3	
Soft-off by PwrBtn	Instant-off	
PwrOn After Pwr-fail	On	
▶ IRQ/Event Activity Detect	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

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<F5>: Get the previous values. These values are the values with which the user starts the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

**ACPI Function** Select Enabled only if your computer's operating system supports the Advanced Configuration and Power Interface (ACPI) specification. Currently, Windows NT 5.0 supports ACPI.

**ACPI Suspend Type** This item allows you to select the ACPI Suspend type. You can select S3(STR) for Suspending To RAM if your system supports this mode. Or you can select S1(POS) for Power On Suspend under ACPI mode.

**Power Management Option** This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes. This table describes each power management mode:

<b>Max Saving</b>	Maximum power savings. Only Available for SL CPUs. Inactivity period is 1 minute in each mode.
<b>User Define</b>	Set each mode in dividually. Select time-out periods in the section for each mode stated below.
<b>Min Saving</b>	Minimum power savings. Inactivity period is 1 hour in each mode (except the hard drive).

**HDD Power Down** When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

**Suspend Mode** After the selected period of system inactivity, the chipset enters a hardware suspend mode, stopping the CPU clock and possibly causing other system devices to enter power management modes. When the Power management Option is "User Define", the choices of this item are: Disabled; 1 min; 2 min; 4 min; 8 min; 10 min; 20 min; 40 min; 1 hour

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

<b>Always On</b>	Monitor will remain on during power saving modes.
<b>Suspend --&gt; Off</b>	Monitor blanked when the systems enter the Suspend Mode.

**Video Off Method** This determines the manner by which the monitor is blanked.

<b>V/H SYNC+Blank</b>	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
<b>Blank Screen</b>	This option only writes blanks to the video buffer.
<b>DPMS Support</b>	Select this option if your monitor supports the Display Power Management Singaling (DPMS) standard of the Video Electronics Standards to select video power management values.

**MODEM Use IRQ** Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.  
The choices: 3; 4; 5; 7; 9; 10; 11; NA.

**Soft-Off by PWRBTN** When Enabled, turning the system off by pressing the on/off button places the system in a very low-power-usage state.

**PWRON After PWR-Fail** This item is to set the mode to power on when power resumes after power fails.  
Choices: Off ; On(default); Former Sts



- \* **PowerOn by PCI Card** This item allows system wake up by PCI Device.
  
  - \* **Modem Ring Resume** An input signal on the serial Ring Indicator (RI) Line (in other words, an incoming call on the modem) Awakens the system from a soft off state.
  
  - \* **RTC Alarm Resume** When Enabled, you can set the data and time at which the RTC (Real Time Clock) alarm awakens the system from suspend mode.  
The choices: Disabled (default); Enabled
  
  - \* **Date (of Month)** Set a certain date when RTC Alarm Resume option is Enabled to awaken the system. This option is concurrent with Resume Time option.
  
  - \* **Resume Time (hh: mm:ss)** Set a certain time when RTC Alarm Resume option is Enabled to awaken the system. This option is concurrent with Date option.
-

**\* IRQ Activity Monitoring**

When this option is chosen, the following item appears for user's configuration.

**Phoenix - AwardBIOS CMOS Setup Utility**  
**IRQ/Event Activity Monitoring**

		Item Help
Primary INTR	On	
IRQ3 (COM2)	Disabled	
IRQ4 (COM1)	Enabled	
IRQ5 (LPT 2)	Enabled	
IRQ6 (Floppy Drive)	Enabled	
IRQ7 (LPT 1)	Enabled	
IRQ8 (RTC Alarm)	Disabled	
IRQ9 (IRQ2 Redir)	Disabled	
IRQ10 (Reserved)	Disabled	
IRQ11 (Reserved)	Disabled	
IRQ12 (PS/2 Mouse)	Enabled	
IRQ13 (Coprocessor)	Disabled	
IRQ14 (Hard Disk)	Enabled	
IRQ15 (Reserved)	Disabled	

↑↓←→: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

**IRQ Activity Monitoring** - 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 set On, activity will neither prevent the system from going into a power management mode nor awaken it.

## 4-6.7 PNP / PCI Configuration

PNP/PCI Configuration allows you to modify the system's power saving functions.

Run the PNP/PCI Configuration as follows:

1. Choose "PNP/PCI Configuration" from the Main Menu and a screen with a list of options will appear:

**Phoenix - AwardBIOS CMOS Setup Utility**  
**PnP PCI Configurations**

PNP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled by X IRQ Resources	Auto(ESCD) Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ for VGA	Enabled	
Assign IRQ for USB	Enabled	
PCI Slot1 IRQ Assigned	Auto	
PCI Slot2 IRQ Assigned	Auto	
PCI Slot3 IRQ Assigned	Auto	

↑↓←→: Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F5>: Get the previous values. These values are the values with which the user starts the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.



**PNP OS Installed** Select Yes if the system operating environment is Plug-and-Play aware (e.g., Windows95).

**NOTE:** BIOS will automatically disable all PnP resources except the boot device card when you select Yes on Non-PnP operating system.

**Reset Configuration Data** Normally, you leave this Disabled. Select Enabled to reset Extended System Configuration Data (ESCD), when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

**Resource Controlled By** The Plug and Play Award BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select *Auto*, all the interrupt request (IRQ) and DMA assignment fields will not appear, as the BIOS automatically assigns them. If you select *Manual*, the IRQ Resources item will appear for your configuration (see below).

**IRQ RESOURCES** Press Enter. Please refer to the list below:

**Phoenix - AwardBIOS CMOS Setup Utility**  
**IRQ Resources**

	Item Help
IRQ-3 assigned to	PCI Device
IRQ-4 assigned to	PCI Device
IRQ-5 assigned to	PCI Device
IRQ-7 assigned to	PCI Device
IRQ-9 assigned to	PCI Device
IRQ-10 assigned to	PCI Device
IRQ-11 assigned to	PCI Device
IRQ-12 assigned to	PCI Device
IRQ-14 assigned to	PCI Device
IRQ-15 assigned to	PCI Device

↑↓→← : Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

**PCI/VGA Palette Snoop** This option allows the BIOS to preview VGA status, and to modify the information delivered from the feature Connector of the VGA card to MPEG card. This option can solve the display inversion to black after you have used MPEG card.

**Assign IRQ for VGA** Select *Enabled* if you system has a VGA controller and you have one or more VGA devices connected. If you are not using your system's VGA controller, select *Disabled* to free the IRQ resource.

**Assign IRQ for USB** Select *Enabled* if you system has a USB controller and you have one or more USB devices connected. If you are not using your system's USB controller, select *Disabled* to free the IRQ resource.

**PCI Slot1/2/3 IRQ Assigned** This item is to set the IRQ for PCI Slot1/2/3. Default is "Auto".  
Choices: Auto (default); 3;4;5;7;9;10;11;12;14;15

### 4-6.8 SmartDoc Anti-burn Shield (PC Health status)

This section helps you to get more information about your system including CPU temperature, FAN speed and voltage. It is recommended that you contact your mainboard supplier to get proper values about the setting of the CPU temperature.

Run the “SmartDoc Anti-burn Shield” as follows:

1. Choose “SmartDoc Anti-burn Shield” from the Main Menu and a screen with a list of options will appear:

**Phoenix - AwardBIOS CMOS Setup Utility  
PC Health Status**

	Item Help
CPU Vcore 0	1.67V
DDR DIMM 1	2.50V
3.3V 2	3.30V
+5V 3	5.02V
+12V 4	11.75V
-12V 5	-11.74V
-5V 6	-5.25V
5VSB 7	5.05V
Voltage Battery	3.12V
Temperature 1	55°C
Temperature 2	29°C
Fan 1 Speed	0 RPM
Fan 2 Speed	4678 RPM

↑↓←→: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys.

<F1>: “Help” gives options available for each item.

<F5>: Get the previous values. These values are the values with which the user starts the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

**CPU Vcore** Shows CPU core actual voltage value.

**DDR DIMM** Shows DDR DIMM actual voltage value.

**3.3V, +5V, +12V, -12V, -5V, 5VSB** Shows actual voltage value of all these default voltage value on board.

**Voltage Battery** Shows voltage value of the battery on board.

**Temperature 1/2** Shows current system and CPU temperatures.

**FAN 1/2 Speed** These fields display the current speed of the CPU / System fan.

### 4-6.9 Frequency/Voltage Control

Run the “Frequency/Voltage Control” as following:

1. Choose “Frequency/Voltage Control” from the Main Menu and a screen with a list of options will appear:

**Phoenix - AwardBIOS CMOS Setup Utility**  
**Frequency/Voltage Control**

CPU Clock Ratio            10 X Auto Detect PCI/DIMM Clk   Enabled Spread Spectrum            Disabled X CPU Clock                 100MHz Use CPU Linear Freq        Default	Item Help
--	-----------

↑↓><: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    Esc: Exit    F1: General Help  
                   F5: Previous Values                    F6: Fail-Safe Defaults                    F7: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys.

<F1>: “Help” gives options available for each item.

<F5>: Get the previous values. These values are the values with which the user starts the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

**Auto Detect DIMM/PCI CLK** To reduce the occurrence of electromagnetic interference (EMI), the BIOS detects the presence or absence of components in DIMM and PCI slots and turns off system clock generator pulses to empty slots.

**Spread Spectrum** When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device.

**CPU Clock** This items allows users to adjust CPU frequency by Linear Mode(in 1 unit Stepping) only.

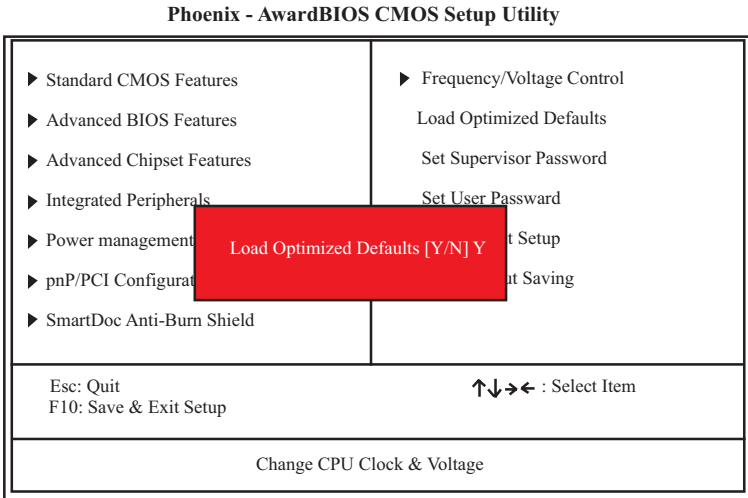
**Use CPU Linear Freq** This item is to set the mode to adjust the CPU Clock by BIOS.  
Choices: Default; Use Linear

---

### 4-6.10 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 "**



"Y" is for "Yes", and "N" is for "No".

Pressing "Y" loads the BIOS Optimized default values to restore the BIOS to its original status.

## 4-6.11 SET SUPERVISOR / USER PASSWORD

These two options allow you to set your system passwords. Normally, the supervisor has a higher priority to change the CMOS setup option than the users. The way to set up the passwords for both Supervisor and Users are as follows:

1. Choose "Change Password" in the Main Menu and press <Enter>. Then following message appears:

**"Enter Password : "**

2. The first time you run this option, enter your password up to 8 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears prompting you to confirm the password:

**"Confirm Password : "**

4. Enter the same password "exactly" the same as you have just typed to confirm the password and press <Enter>.
5. Move the cursor to Save & Exit Setup to save the password.
6. If you need to delete the password entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you have entered before.
7. Move the cursor to Save & Exit Setup to save the option you have just configured; otherwise the old password will still be there the next time you turn your system on.
8. Press <Enter> to exit to the Main Menu.

**NOTE:** If you forget or lose the password, the only way to access the system is to clear the CMOS RAM. All setup informations will be lost and you need to run the BIOS setup program again.



#### 4-6.12 SAVE & EXIT SETUP

SAVE & EXIT SETUP allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and the following message appears:

```
"SAVE to CMOS and EXIT (Y/N) ? Y "
```

"Y" is for "Yes", and "N" is for "No".

Press <Enter> key to save the configuration changes.

#### 4-6.13 EXIT WITHOUT SAVING

EXIT WITHOUT SAVING option allows you to exit the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and the following message appears:

```
"Quit Without Saving (Y/N) ? N "
```

"Y" is for "Yes", and "N" is for "No".

You may change the prompt to "Y" and press <Enter> key to leave this option .

# **Memo**