VIA Mainboard User's Manual

VIA P4MA - L
VIA P4MA - VSL

P4MA-L does NOT include Voice Post/Smart Card/Memory Stick/Secure Digital functions as described in this User's Manual. This applies to all related pin headers, BIOS settings, and software applications. Voice Post and Smart media functions are only supported by P4MA-VSL.

Version 1.0 - March 29th, 2002

i

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

TRADEMARKS

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Award is a registered trademark of Award Software Inc.

NOTE

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord such a way that people cannot step on it. Do not place anything over the power cord.
8. Always Unplug the Power Cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening. Doing so could cause damage or electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
    * The power cord or plug is damaged
    * Liquid has penetrated into the equipment
    * The equipment has been exposed to moisture
    * The equipment does not work well or does not work according to the User's Manual.
    * The equipment has dropped or damaged
    * The equipment has been visably damaged
12. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDI-TIONED, STORAGE TEMPERATURE ABOVE 60^0 C (140^0F), IT MAY DAMAGE THE EQUIPMENT.

Box Contents

- 1 x VIA Mainboard
- 1 x User's manual
- 1 x Quick Installation Guide
- 1 x Floppy ribbon cable
- 1 x ATA-66/100/133 IDE ribbon cable
- 1 x 2 Port USB 1.1 Module
- 1 x Driver Utilities CD

Contents

Software Setup 4-1

1

Specifications

The VIA P4MA mainboard is based around the VIA ProSavageDDR P4M266 chipset, which brings support for high-performance DDR266 SDRAM to the Intel® Pentium® 4 platform. It is a high performance, cost-effective and energy efficient SMA chipset for the desktop PC. VIA's advanced V-Link controller brings optimal system efficiency by effectively doubling bandwidth between the chipset's north and south bridges. P4M266 integrates S3 Graphics' 128-bit ProSavage8 graphics accelerator into a single chip, providing ideal solution for the consumer and entry level professionals.

This chapter includes the following sections:

Mainboard Specifications

CPU
- Supports Intel® Pentium® 4/Northwood processors in the 478 pin package
- Supports 1.6GHz, 1.7GHz, 1.8GHz, 1.9GHz, 2GHz, 2.2GHz and upwards

Chipset
- VIA P4M266/VT8233A chipset
  - Supports Intel® Pentium® 4 processors with 400MHz (100MHz QDR) CPU Front Side Bus (FSB)
  - Integrated Savage8 AGP Graphics
  - External 4x AGP Bus
  - High Bandwidth V-Link Client controller
  - Integrated Hardware Sound Blaster/Direct Sound AC'97 audio
  - Ultra DMA 66/100/133 master mode PCI EIDE controller
  - ACPI 1.0B and APM 1.2 compliant

Main Memory
- 2 x 184-pin DDR DIMM slots
- Supports up to 2GB of DDR SDRAM (PC2100/PC1600)
- Supports 2.5v DDR266 SDRAM

Slots
- 1 x AGP (Accelerated Graphics Port) 4X slot
- 3 x PCI 2.2 32-bit PCI bus slots (supports 3.3v/5v PCI bus interface)
- 1 x CNR (Communication Network Riser) slot

Onboard IDE
- Integrated IDE controller provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 66/100/133 operation modes
- Can connect up to four IDE devices

Onboard Peripherals
- 1 x floppy port supports 1 x FDD
- 1 x serial ports (COM 1)

- 1 x DB-15 VGA out port
- 1 x SPP/EPP/ECP mode compliant parallel port.
- 2 x USB 1.1 ports (plus 1 pin-header for up to 2 additional connections)
- 1 x MIDI/Game port
- 1 x RJ-45 NIC port

Audio
- S/W VIA VT1612A AC'97 Codec

BIOS
- Award Plug & Play BIOS
- Desktop Management Interface (DMI) function which records your mainboard specifications

Dimension
- MicroATX Form Factor
- 24.5cm x 24cm

Mounting
- 6 mounting holes

Mainboard Layout

Top: Mouse

Bottom: Keyboard

Top: RJ45

Bottom: USB ports

Top:
Parallel port
Bottom:
COM 1/VGA out

AUX12V

Top: Game port
Bottom:
Line-Out
Line-In
Mic

CD_IN

SPDIF

CIR

BIOS

IR   **CNR**

OB_Codec **WOR**

WOL

CPUFAN

Socket 478

P4M266

ATXPWR

FDD

IDE 1

IDE 2

AGP Slot

PCI Slot 1

PCI Slot 2

PCI Slot 3

SD
MS

SCR

USB 3/4 **CLEAR_CMOS**

SYSFAN

F_PANEL2

F_PANEL
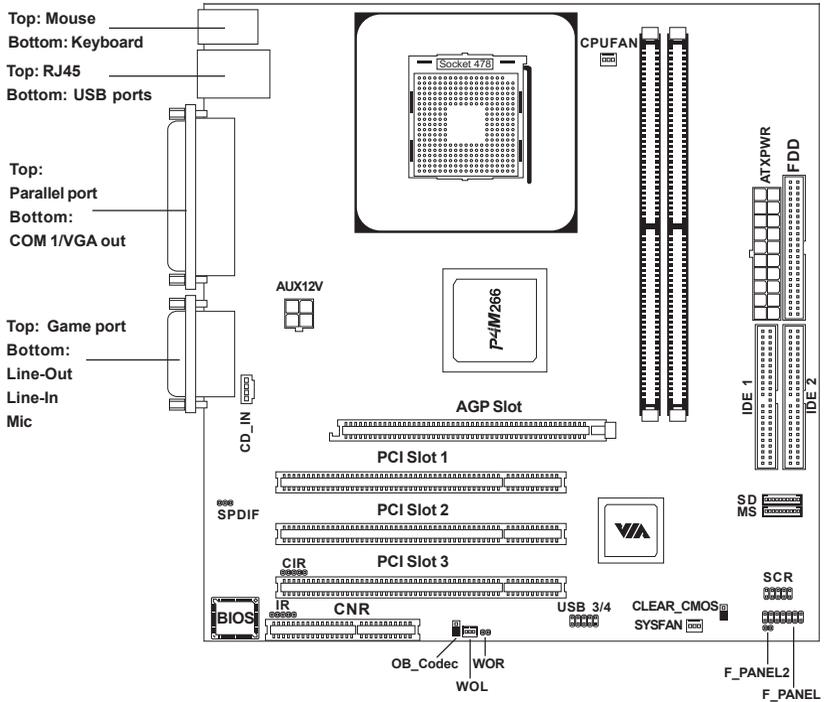
VIA P4MA - L & VIA P4MA - VSL Mainboard

Connectors Guide

Connectors	Function	Reference
ATXPWR	ATX 20-pin power connector	see p. 2-7
ATX12V	ATX 12V power connector	see p. 2-7
JMS1	Mouse connector	see p. 2-8
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LPT1	Parallel port connector	see p. 2-9
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RJ45 NIC Port	LAN port	see p. 2-10
VGA Out	VGA connector	see p. 2-10
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AGP Slot	Connecting to AGP card	see p. 2-21
PCI Slots	Connecting to PCI cards	see p. 2-21
CNR Slot	Connecting to CNR card	see p. 2-21

2

Installation

This chapter provides you with information about hardware setup procedures. While installing the mainboard, carefully hold the components and closely follow the installation procedures. Some components may be damaged if they are installed incorrectly.

It is recommended to use a grounded wrist strap before handling computer components. Static electricity can damage some components.

This chapter contains the following sections:

CPU Installation

The VIA P4MA mainboard supports the Intel® Pentium® 4 processor in the 478 pin package (PGA478). When installing the CPU, **ensure the CPU has a large-size heatsink and a cooling fan attached on the top to prevent overheating.** If the heatsink and cooling fan are not included with the CPU, contact your dealer to purchase and install them before turning on the computer.

CPU Installation

Open Lever

Sliding Plate
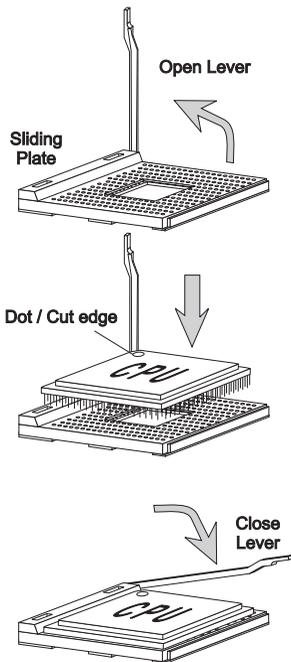
1. Pull the lever sideways away from the socket. Then raise the lever up to a 90-degree angle.

Dot / Cut edge

CPU

2. Look for the dot/cut edge. The dot/cut edge should point towards the lever pivot. The CPU will only fit in the correct orientation.

Close Lever

CPU

3. Hold the CPU down firmly, then close the lever shut to complete the installation.

STOP
WARNING! Overheating will cause serious damage to the CPU and system. Ensure the cooling fan and heatsink work properly to protect the CPU from overheating.

CPU Core Speed

If	CPU Clock	=	100MHz
	Core/Bus ratio	=	18
then	CPU core speed	=	CPU Clock x Core/Bus ratio
		=	100MHz x 18
		=	1.8GHz

STOP **WARNING!**

Overclocking
This mainboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal settings, before overclocking. Any attempt to operate beyond product specifications is not recommended. We do not guarantee the damages or risks caused by inadequate operation or operation beyond

CPU Fan Installation

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly important. To dissipate heat, you MUST attach the CPU cooling fan and heatsink on top of the CPU. Follow the instructions below to install the Heatsink/Fan:

1. Locate the CPU and its retention mechanism on the mainboard.

2. Position the heatsink and fan onto the retention mechanism.

Retention mechanism
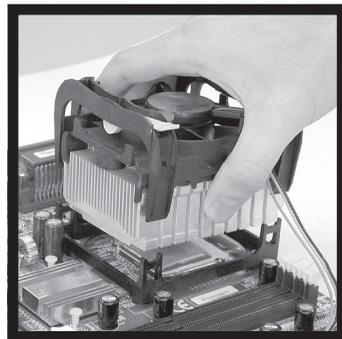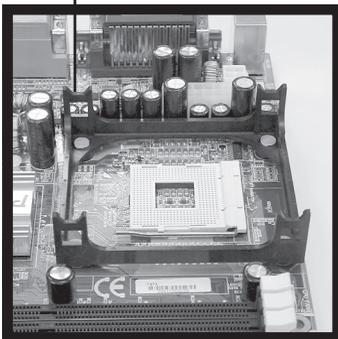
3. Mount the fan on top of the heatsink. Press down the fan firmly until its four clips become wedged in the holes of the retention mechanism.
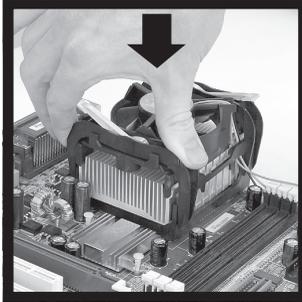
4. Press the two levers down to secure the fan. Each lever can be pressed down in only ONE direction.
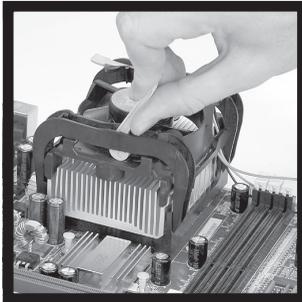
5. Connect the fan power cable from the mounted fan to the 3-pin fan power connector on the mainboard.
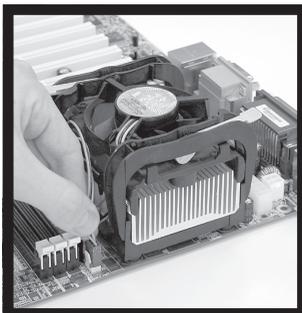
Memory Installation

The VIA P4MA mainboard provides 2 sockets for 184-pin, 2.5V DDR DIMM modules with 4 memory banks. To operate properly, at least one DIMM module must be installed.

You can install PC1600/PC2100 DDR SDRAM modules on the DDR DIMM slots (DDR 1~2).

DDR (Double Data Rate) SDRAM is similar to conventional SDRAM, but doubles the rate of transfer by transfering data twice per cycle. This is achieved by transfering data on both the rising and falling edges of the clock. Conventional SDRAM only uses the rising edge of the clock to transfer data. Therefore, conventional SDRAM is called SDR (Single Data Rate) SDRAM. DDR SDRAM uses 2.5 volts as opposed to 3.3 volts used in SDR SDRAM, and requires 184-pin DIMM modules rather than 168-pin DIMM modules used by SDR SDRAM. DDR SDRAM is also known as SDRAM-II, DDR DRAM and DSDRAM (Double-Speed DRAM). PC2100 running at 133MHz will produce 2.1GB/s memory bandwidth. High memory bandwidth makes DDR an ideal solution for high performance PC, workstations and servers.

DDR DIMM Slots
(DDR 1~2)
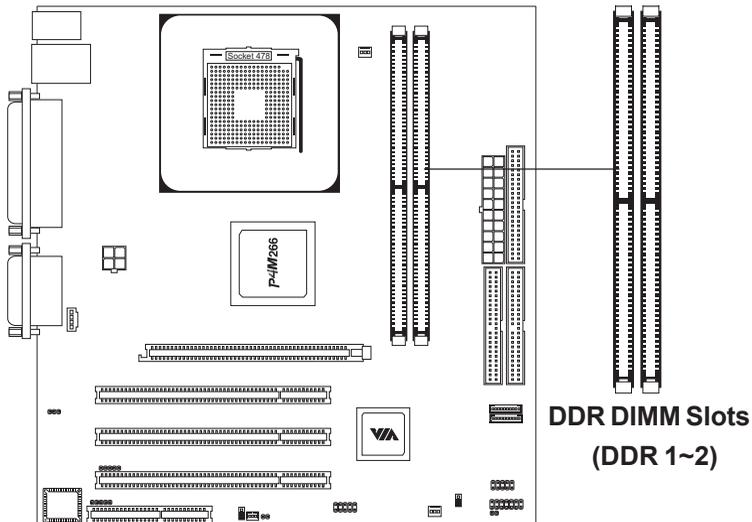
DDR Module Installation

You can install either single sided or double sided 184-pin DDR DIMM modules into the DDR DIMM slot, depending on your requirements. Differing from SDR DIMM, DDR DIMM modules have only one notch on the center of the module. The number of pins on either side of the breaks are also different. The memory modules will only fit if placed in the correct orientation.

You can install DDR SDRAM modules in any of the following combinations:

Slot	Memory Module	Total Memory
Slot 1 (Bank 0 & Bank 1)	64MB, 128MB, 256MB, 512MB, 1GB	64MB~1GB
Slot 2 (Bank 2 & Bank 3)	64MB, 128MB, 256MB, 512MB, 1GB	64MB~1GB
Maximum System Memory Supported		64MB~2GB

1. The DDR DIMM module has only one notch on the center.
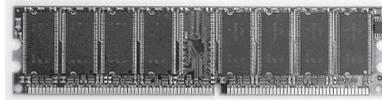
Notch

2. Insert the DDR module vertically into the DDR DIMM slot. Make sure the notch is correctly aligned.
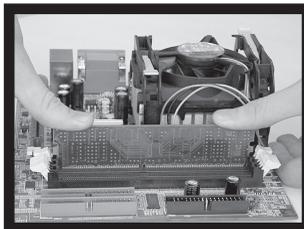
3. The plastic clips at sides of the DIMM slot will automatically close shut.

Power Supply

The VIA P4MA mainboard requires an ATX power supply for powering the system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 20-Pin Power Connector: ATXPWR

This connector is for the ATX power supply. To connect to the ATX power supply, make sure the plugs of the power supply are inserted in the correct orientation and the pins are properly aligned. Then, push down the plugs firmly into the connector.
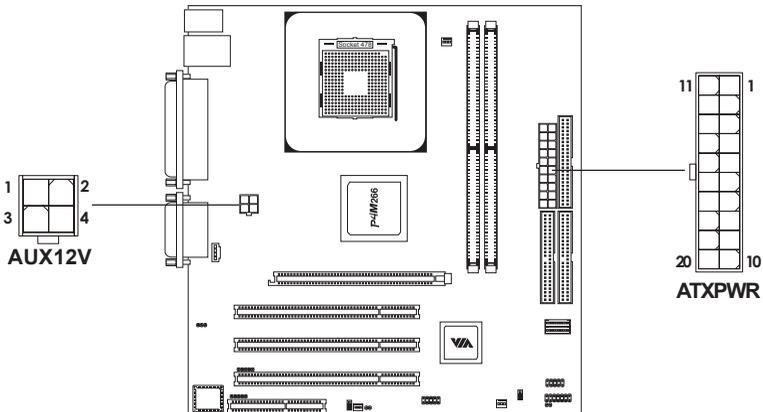
ATX 12V Power Connector: ATX12V

This 12V power connector is used to provide power to the CPU.

ATXPWR Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

ATX12V Pin

PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V

Back Panel

The Back Panel provides the following connectors:

Mouse   **RJ45**   **Parallel**   **MIDI/Game**

Keyboard **USB**   **COM 1**   **VGA out**   **L-out L-in MIC**
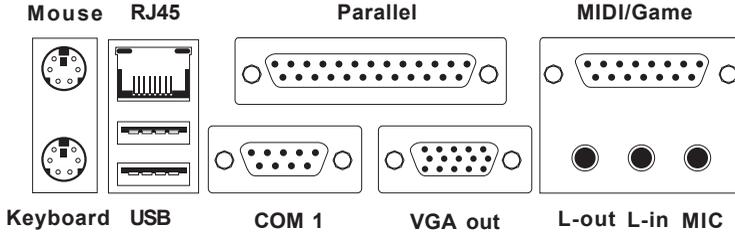
Mouse Connector: JMS1

The VIA P4MA mainboard provides a standard PS/2 mouse connector for attaching a PS/2 mouse. You can plug a PS/2 mouse directly into this connector. The connector location and pin assignments are as follows:

PS/2 Mouse (6-pin Female)

Keyboard Connector: JKB1

The mainboard provides a standard PS/2 keyboard connector for attaching a PS/2 keyboard. You can plug a PS/2 keyboard directly into this connector.
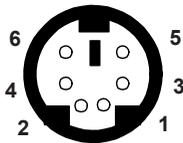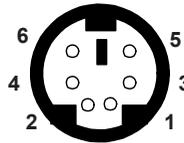
PS/2 Keyboard (6-pin Female)

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5.	Mouse Clock	Mouse clock
6.	NC	No connection

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5.	Keyboard Clock	Keyboard clock
6.	NC	No connection

USB Port Connectors

The VIA P4MA mainboard provides 2 USB ports (plus 1 pin-headers for up to 2 additional USB connections; see 2-17). USB-compatible devices can be plugged directly into these ports.

5 6 7 8

1 2 3 4
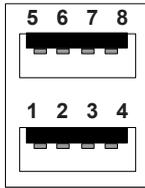
USB Ports

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data 0	Positive Data Channel 0
4	GND	Ground
5.	VCC	+5V
6.	-Data 1	Negative Data Channel 1
7.	+Data 1	Positive Data Channel 1
8.	GND	Ground

Parallel Port Connector: LPT1

The mainboard provides a 25-pin female connector for LPT (parallel port). A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) modes.

13   1

25   14
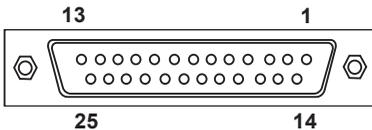
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	PE	Paper End
13	SELECT	Select
14	AUTO FEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground

Serial Port Connectors: COM 1

The mainboard offers one 9-pin male Serial Port connector (COM 1) . You can attach a serial mouse or other serial devices directly to this port.

Pin Definition

1 2 3 4 5

6 7 8 9
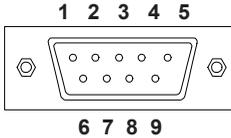
9-Pin Male DIN Connectors

PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready
5.	GND	Ground
6.	DSR	Data Set Ready
7.	RTS	Request To Send
8.	CTS	Clear To Send
9.	RI	Ring Indicate

MIDI/Game Connector

You can connect a joystick or game pad to this connector.
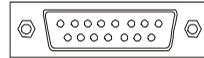
Audio Port Connectors

Line-Out is a connector for speakers or headphones. The **Line-In** connector can be used for an external CD player, tape player, or other audio devices. The **Mic-In** connector is for connecting microphones.

Line Out   Line In   MIC
1/8" Stereo Audio Connectors

RJ-45 NIC Port

The mainboard provides one standard RJ-45 port for connection to the Local Area Network (LAN). You can connect a network cable to the LAN port.
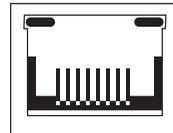
VGA Out

A DB-15 pin female connector that connects to a VGA monitor.
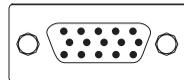
Connectors

The VIA P4MA mainboard provides pin-header connectors for FDD, IDE HDD, case, modem, LAN, USB Ports, IR module and the CPU/System FAN.

Floppy Disk Drive Connector: FDD

The standard floppy disk drive connector supports 360K, 720K, 1.2M, 1.44M, and 2.88M.

FDD
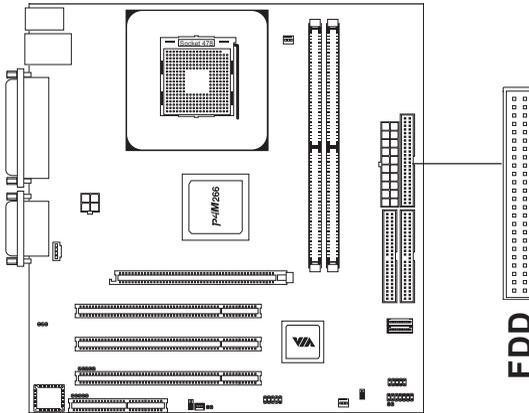
IrDA Infrared Module Connector: IR

This connector allows you to connect an IrDA Infrared module. You must configure the setting through the BIOS setup to activate the IR function.

Pin Definition

PIN	SIGNAL
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX

5   1

IR
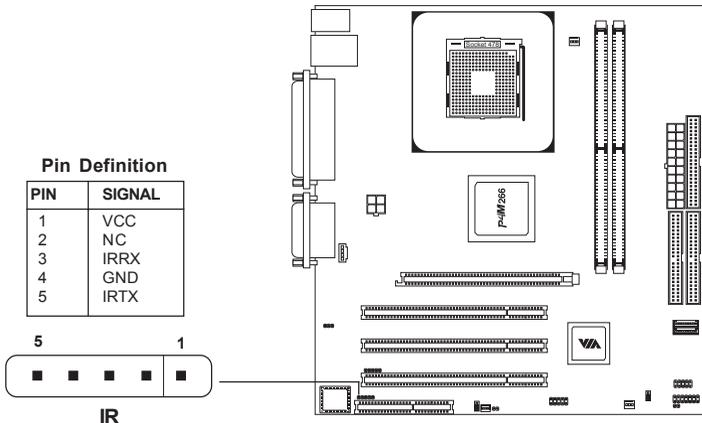
Consumer IR Connector: CIR

This connector allows you to connect a Consumer IR module. You must configure the setting through the BIOS setup to activate the IR function.

Pin Definition

PIN	SIGNAL
1	5VDUAL
2	NC
3	CIRRX
4	GND
5	NC

5   1

CIR
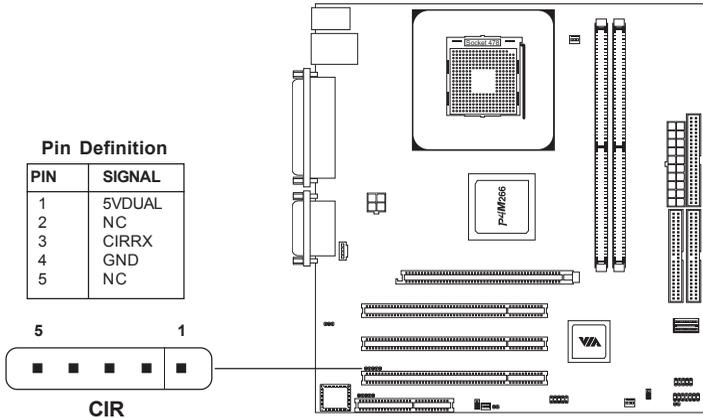
CD-In Connector: CD_IN

This connector is for the CD-ROM audio connector.

CD_IN

CD_R

CD_GND

CD_L
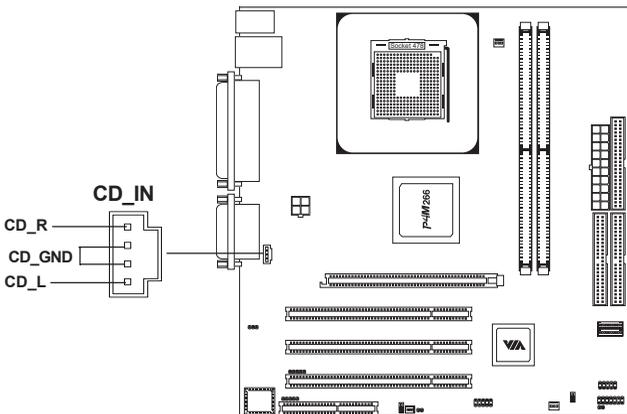
Hard Disk Connectors: IDE1 & IDE2

The VIA P4MA mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100/133 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA 33/66/100/133 functions. You can connect up to four hard disk drive, CD-ROM, LS-120 and other devices. These connectors utilize the provided IDE hard disk cable.
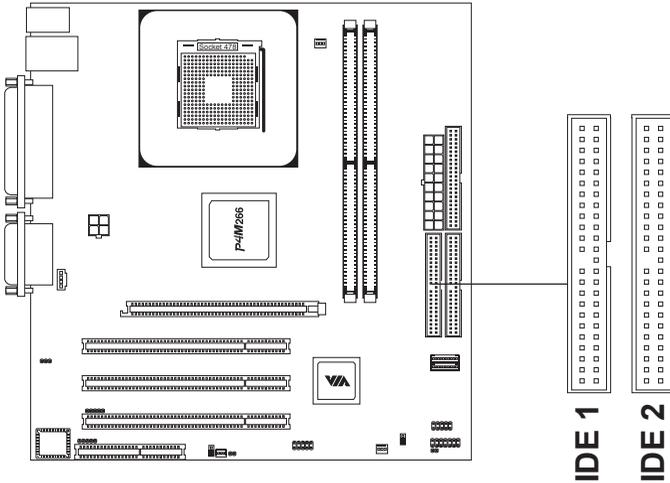
IDE1 (Primary IDE Connector)
The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure the second hard drive to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)
IDE2 can also connect a Master and a Slave drive.

> **TIP:** If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.

Fan Power Connectors: CPU/SYS FAN

The CPUFAN (CPU fan) and SYSFAN (system fan) run on +12V and maintain system cooling. When connecting the wire to the connectors, always be aware that the red wire is the **Positive** and should be connected to the +12V. The black wire is **Ground** and should be connected to GND. Both CPU and System fan connectors have sensors to detect fan speed, but the power fan does not have sensor.
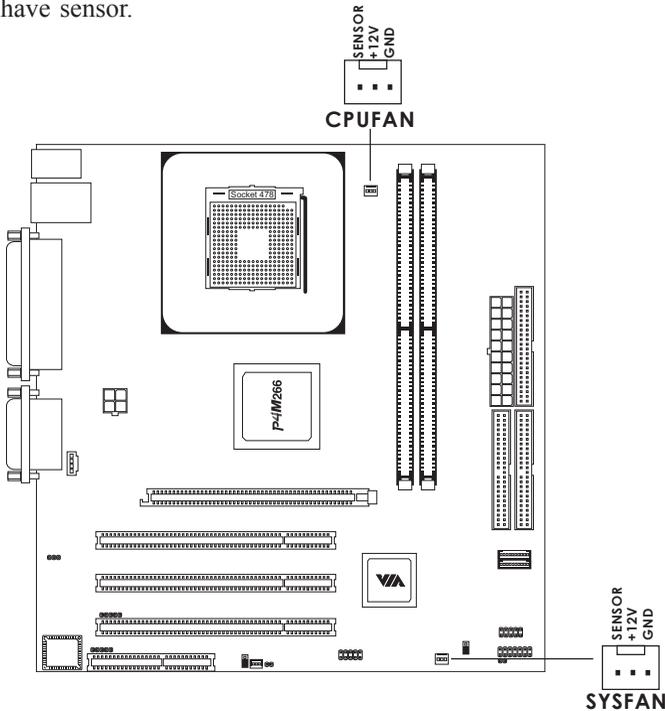
Note: Always consult the vendor for proper CPU cooling fan.

Case Connectors: F_PANEL/F_PANEL2

The connector block F_PANEL/F_PANEL2 connect to the Power Switch, Reset Switch, Power LED, HDD LED and SLED on the case.

F_Panel Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	5VDUAL	8	GND
2	+5V	9	SPEAK
3	5VDUAL	10	RST_SW
4	HD_LED	11	NC
5	PLED	12	GND
6	PW_BN	13	SPEAK
7	+SPEAK	14	NC
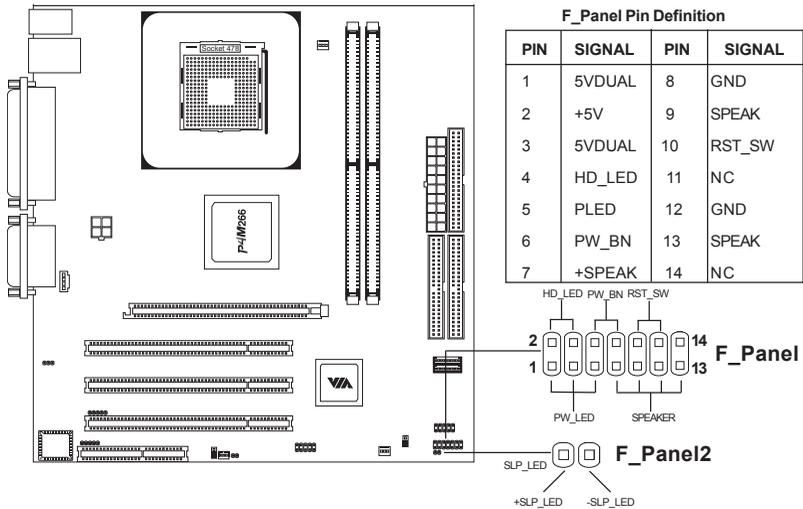
Power Button (PW_BN)

Connect to a 2-pin switch button. Pressing this button will turn the system power on or off.

Reset Switch (RST_SW)

The Reset Switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD is working. You can connect the Reset Switch from the system case to this pin.

Power LED (PW_LED)

The LED is lit when the system is power on. If the system is in S1 (POS - Power On Suspend) or S3 (STR - Suspend To RAM) state, the LED will blink.

HDD LED (HD_LED)

HDD LED shows the activity of a hard disk drive. Avoid turning the power off while HDD LED is lit. Connect the HDD LED from the system case to this pin.

Sleep LED (SLP_LED)

The SLED is lit when the system is in the S1 (POS - Power On Suspend) state.

Speaker (SPEAKER)

The speaker from the system case is connected to this pin.

Digital Audio Connector: SPDIF

The SPDIF output provides digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Please make sure the SPDIF module is CORRECTLY plugged onto the connector. Incorrect orientation may cause permanent damage to the module.
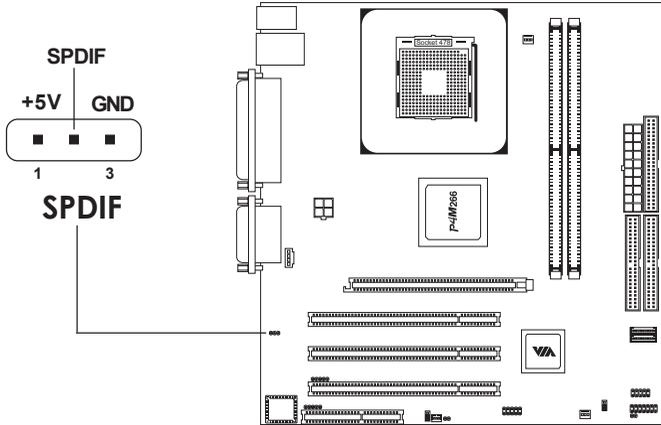
PC Smart Card Reader: SCR

This connector accommodates a Smart Card Reader that allows you to conveniently make transactions such as financial, health care, telephony, or traveling services through a Smart Card user interface software.

SCR Pin Definition

PIN	SIGNAL
1	VCC
2	GND
3	-SCPWCTL
4	-SCRST
5.	NC
6.	SCRWLED
7.	SCIO
8	NC
9	SCCLK
10	SCPSNT
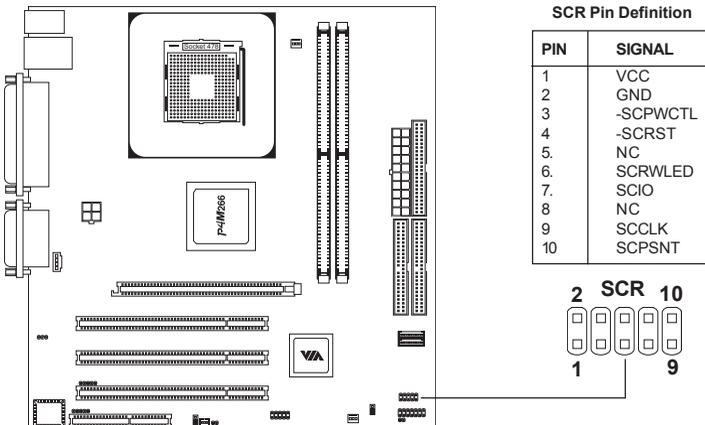
USB pin-header: USB3/4

The mainboard provides 1 front USB pin-header connector, allowing up to 2 additional USB ports. Please plug the USB 2-port module onto this pin-header.

USB 3/4 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	VCC	2	VCC
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	GND	8	GND
9	NC	10	GND
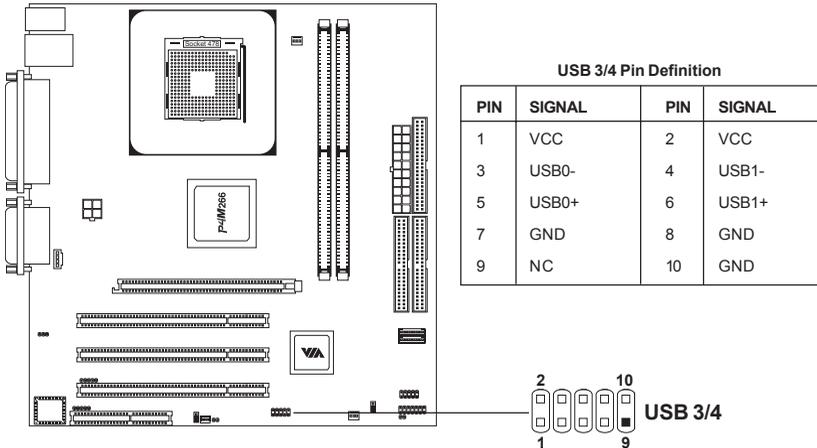
Wake-On LAN Connector: WOL

This connector allows you to connect a network card with the Wake-On LAN function. The connector will power up the system when a signal is received through the network card.
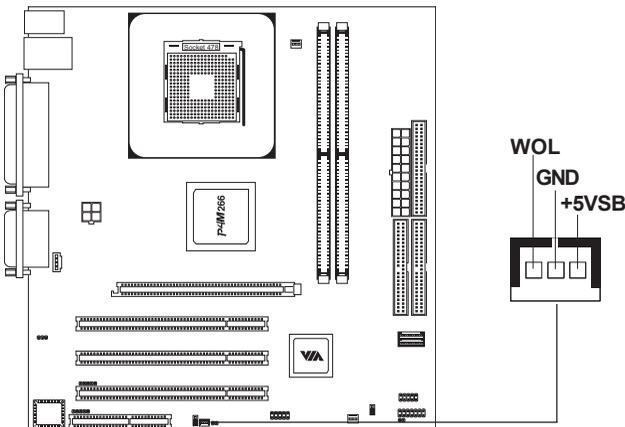
Wake-On Ring Connector: WOR

This connector allows you to connect a modem card with the Wake-On Ring function. The connector will power up the system when a signal is received through the modem card.
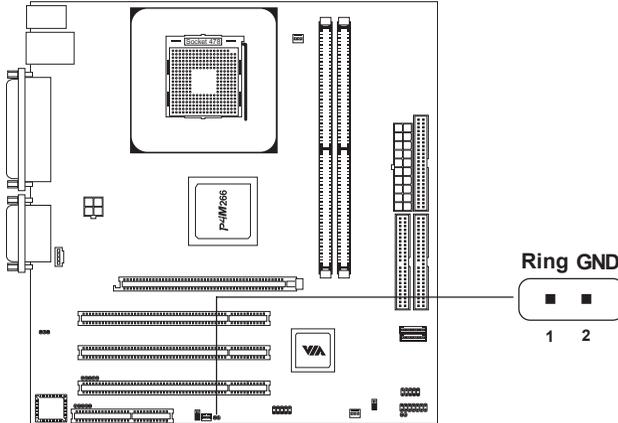
Secure Digital and Memory Stick Connectors: SD/MS

These connectors support non-volatile memory devices called Secure Digital (SD) memory card and Memory Stick (MS). A SD/MS reader needs to be purchased for these devices to work.

SD and MS Pin Definition

PIN	SD SIGNAL	MS SIGNAL
1	GND	GND
2	SD1	MS1
3	+3.3V	+3.3V
4	SD2	MS2
5.	SD3	MS3
6.	SD4	MS4
7.	SD5	MS5
8	SDCLK	MSCLK
9	-SDPWR	-MSPWCTL
10	SDLED	MSRWLED
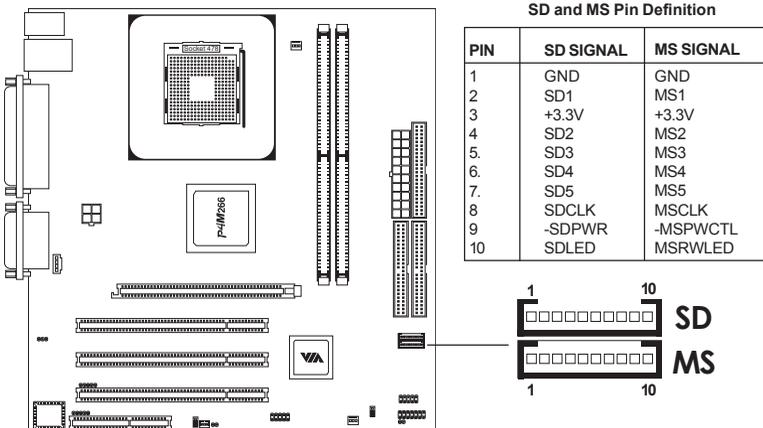
Jumpers

The VIA P4MA mainboard provides jumpers for setting the mainboard's functions. This section will explain how to change settings for your mainboard's functions through the use of the jumpers.

Clear CMOS Jumper: CLEAR_CMOS

The onboard CMOS RAM stores system configuration data and has an onboard battery power supply. The long-life battery has a lifetime of at least 5 years. If you want to clear the system configuration data from the CMOS RAM, use the CLEAR_CMOS (Clear CMOS jumper). Follow the instructions below to clear the data:

CLEAR_CMOS

Clear CMOS   **Keep CMOS**
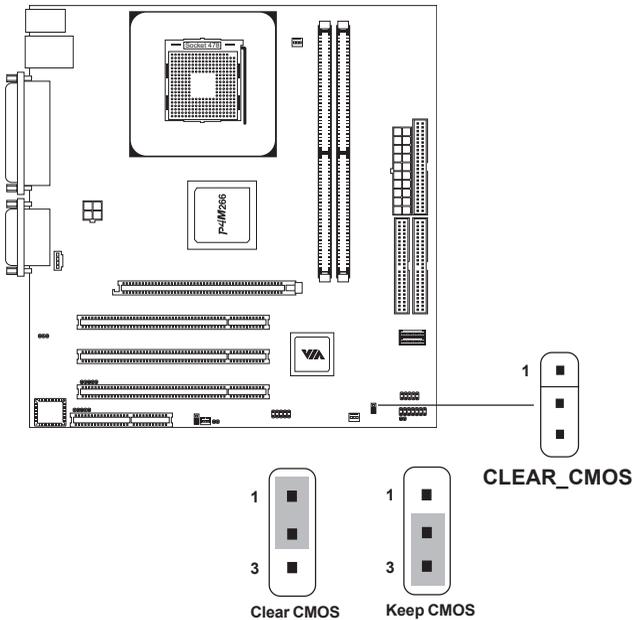
STOP
WARNING! You can clear the CMOS by shorting 1-2 pin while the system is off. Then return it to the 2-3 pin position. Avoid clearing the CMOS while the system is on; this will damage the mainboard.

Audio Codec Auto Detect Jumper: OB_CODEC

This jumper enables or disables the audio codec auto detect function. If a CNR card based audio codec is found, then the auto detect function will automatically disable the onboard audio codec to avoid conflict. If the auto detect function is disabled, then the mainboard will always disable the onboard audio codec.

OB_CODEC   **Auto Mode**   **Disabled**
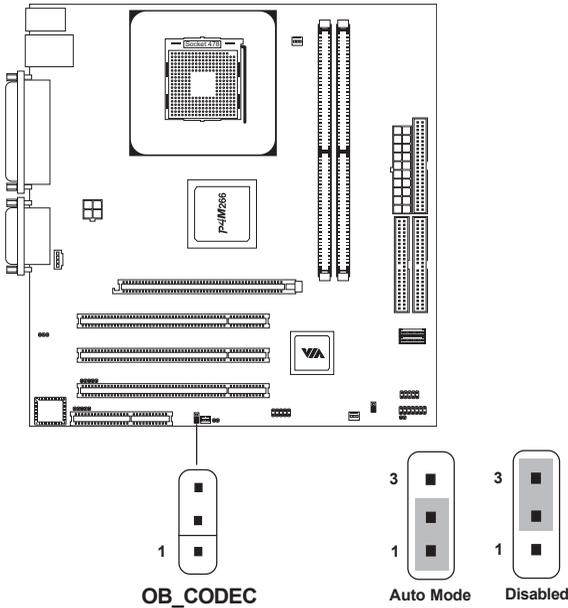
Slots

The mainboard provides three 32-bit Master PCI bus slots, one AGP4X slot and one CNR slot.
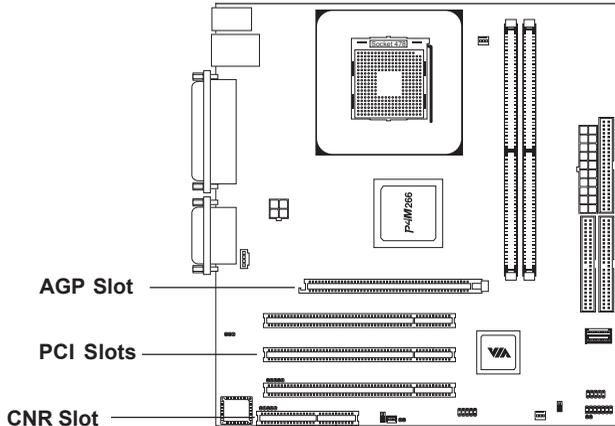
AGP (Accelerated Graphics Port) Slot

The AGP4X slot allows you to insert an AGP graphics card. AGP is an interface specification designed for the throughput demands of 3D graphics. It introduces a 66MHz, 32-bit channel for the graphics controller to directly access main memory and provides three levels of throughputs: 1x (266MB/s), 2x (533MB/s) and 4x (1.07GB/s).

PCI Slots

The three PCI slots allow you to insert expansion cards to meet your needs. When adding or removing PCI expansion cards, ensure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

CNR (Communication Network Riser) Slot

The CNR slot allows you to insert a CNR expansion card. CNR is a specially designed network, audio, or modem riser card for ATX family mainboards. Its main processing is done through software and is controlled by the mainboard's chipset.

PCI Interrupt Request Routing

IRQ allows devices to send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus INT A# ~ INT D# pins as follows:

	Order 1	Order 2	Order 3	Order 4
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#
ProSavage8	INT A#			
AGP Slot	INT A#	INT B#		
LAN RT8100BL	INT B#			

3

BIOS Setup

This chapter gives you detailed explaination of BIOS setup functions. It consists of the following topics:

Entering Setup

Power on the computer and press DEL straight away to enter the BIOS setup menu. If you missed the BIOS setup entry point, you may restart the system and try again.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the default CMOS value from Fail-Safe default table, only for Option Page Setup Menu
<F7>	Load Optimized defaults
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the BIOS setup menu, the Main Menu appears.

Main Menu

The main menu displays all BIOS setup categories. Use the control keys (↓↑) to select any item/sub-menu. Description of the selected/highlighted category is displayed at the bottom of the screen.

Sub-Menu

If you find a right pointer symbol (as shown in the right view) on the left of field, this means a sub-menu is available. The sub-menu contains additional options. You can use control keys (↓↑) to highlight the field and press <Enter> to enter the sub-menu. To return from the sub-menu press <Esc >.
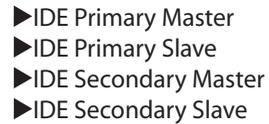
▶IDE Primary Master
▶IDE Primary Slave
▶IDE Secondary Master
▶IDE Secondary Slave

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu/sub-menu by pressing <F1>. The help screen displays the keys for use and navigate the BIOS setup. Press <Esc> to exit the help screen.

The Main Menu

The Main Menu contains twelve setup functions and two exit choices. Use arrow keys to select the items and press <Enter> to accept or enter the sub-menu.

```
        CMOS Setup Utility - Copyright (C) 1984-2001 Award Software

    ▸ Standard CMOS Features          ▸ Frequency/Voltage Control
    ▸ Advanced BIOS Features            Load Fail-Safe Defaults
    ▸ Advanced Chipset Features         Load Optimized Defaults
    ▸ Integrated Peripherals           Set Supervisor Password
    ▸ Power Management Setup            Set User Password
    ▸ PnP/PCI Configurations           Save & Exit Setup
    ▸ PC Health Status                 Exit Without Saving

    Esc : Quit     F9 : Menu in BIOS     ↑ ↓ → ←   : Select Item
    F10 : Save & Exit Setup

                    Time, Date, Hard Disk Type...
```

Standard CMOS Features
Use this menu to set basic system configurations.

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

Advanced Chipset Features
Use this menu to set chipset specific features and optimize system performance.

Integrated Peripherals
Use this menu to set onboard peripherals features.

Power Management Setup
Use this menu to set onboard power management functions.

PnP/PCI Configurations
Use this menu to set the PnP and PCI configurations.

PC Health Status
This menu shows the PC health status.

Frequency/Voltage Control
Use this menu to set the system frequency and voltage control.

Load Fail-Safe Defaults
Use this menu to load the BIOS default settings for minimal and stable system operations.

Load Optimized Defaults
Use this menu to load BIOS default settings for optimal and high performance system operations.

Set Supervisor Password
Use this menu to set supervisor password.

Set User Password
Use this menu to set user password.

Save & Exit Setup
Save BIOS setting changes and exit setup.

Exit Without Saving
Abandon all BIOS setting changes and exit setup.

Standard CMOS Features

Use the arrow keys to highlight the item and use the <PgUp> or <PgDn> keys to select the value you desire for each item.

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

        Date (mm:dd:yy)          Thu, Feb 28 2002        Item Help
        Time (hh:mm:ss)          16 : 35 : 54
                                                   Menu Level    ►
      ► IDE Primary Master
      ► IDE Primary Slave                          Change the day, month,
      ► IDE Secondary Master                       year and century
      ► IDE Secondary Slave

        Drive A                  [1.44M, 3.5 in.]

        Halt On                  [All , But Keyboard]

        Base Memory                   640K
        Extended Memory             65472K
        Total Memory                 1024K




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

Date
The date format is <Day><Month><Date><Year>.

>   **Day** - day of the week, for example Friday. Read-only.
>   **Month** - the month from Jan to Dec.
>   **Date** - the date from 1 to 31.
>   **Year** - the year, range from 1999 to 2098.

Time
>   The time format is <Hour><Minute><Second>.

Drive A
Set the type of floppy drive installed. Available options are *None*, *360K, 5.25 in.*, *1.2M, 5.25 in.*, *720K*, 3.5 in., *1.44M, 3.5 in., 2.88M, 3.5 in.*

Halt On
Determine the system behaviour if an error is detected during bootup. Settings:

All Errors	System halts when any error is detected.
No Errors	System does not halt for any error.
All, But Keyboard	System halts for all errors (except keyboard error).
All, But Diskette	System halts for all errors (except diskette error).
All, But Disk/Key	System halts for all errors (except disk/keyboard error)

IDE Primary Master/Slave and Secondary Master/Slave

Press <Enter> to enter the sub-menu and the following screen appears:

```
        CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
                            IDE Primary Master
 ┌─────────────────────────────────────────────┬───────────────────────┐
 │  IDE HDD Auto-Detection    [Press Enter]     │      Item Help        │
 │                                              ├───────────────────────┤
 │  IDE Primary Master        [Auto]            │  Menu Level    ►►     │
 │  Access Mode               [Auto]            │                       │
 │                                              │  To auto-detect the   │
 │  Capacity                   20548 MB         │  HDD's size, head...on│
 │                                              │  this channel         │
 │  Cylinder                   39813            │                       │
 │  Head                          16            │                       │
 │  Precomp                    65535            │                       │
 │  Landing Zone               39812            │                       │
 │  Sector                        63            │                       │
 │                                              │                       │
 │  PIO Mode                  [Auto]            │                       │
 │  Ultra DMA Mode            [Auto]            │                       │
 │                                              │                       │
 │                                              │                       │
 │                                              │                       │
 └─────────────────────────────────────────────┴───────────────────────┘
  ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
     F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

The specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. Select Auto whenever possible. If you select Manual, make sure the information provided is from your hard disk vendor or system manufacturer.

IDE Primary Slave	The settings are None, Auto, Manual.
Access Mode	The settings are CHS, LBA, Large, Auto.
Capacity	The formatted size of the storage device.
Cylinder	Number of cylinders.
Head	Number of heads.
Precomp	Write precompensation.
Landing Zone	Cylinder location of the landing zone.
Sector	Number of sectors.
PIO Mode	The settings are Mode 0/1/2/3/4, Auto.
Ultra DMA Mode	The settings are Disabled and Auto.

Advanced BIOS Features

```
              Phoenix - AwardBIOS CMOS Setup Utility
                       Advanced BIOS Features
 ┌───────────────────────────────────────┬──────────────────────┐
 │ OnBoard Voice Warning      [Enabled]   │      Item Help       │
 │ Virus Warning              [Disabled]  │                      │
 │ CPU L2 Cache ECC Checking  [Enabled]   │ Menu Level    ►      │
 │ Quick Power On Self Test   [Enabled]   │                      │
 │ First Boot Device          [Floppy]    │                      │
 │ Second Boot Device         [HDD-0]     │                      │
 │ Third Boot Device          [LS120]     │                      │
 │ Boot Other Device          [Enabled]   │                      │
 │ Boot Up Floppy Seek        [Disabled]  │                      │
 │ Boot Up NumLock Status     [On]        │                      │
 │ Typematic Rate Setting     [Enabled]   │                      │
 │ Typematic Rate (Chars/Sec) [30]        │                      │
 │ Typematic Delay (Msec)     [250]       │                      │
 │ Security Option            [Setup]     │                      │
 │ Display Small Logo         [Disabled]  │                      │
 │                                        │                      │
 └───────────────────────────────────────┴──────────────────────┘
 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
     F5: Previous Values     F6: Fail-Safe Defaults    F7: Optimized Defaults
```

OnBoard Voice Warning
If the Onboard Voice Warning feature is enabled, the mainboard will give human voice warning though the speaker of any error during machine setup.
Examples: "VGA not installed", "Keyboard not installed", "Mouse not installed", "FDD not installed", "HDD not installed", "Memory not installed"...etc. Settings: *Disabled* and *Enabled*.

Virus Warning
Set the Virus Warning feature for IDE Hard Disk boot sector protection. If the function is enabled, any attempt to write data into this area will cause a beep and a warning message will be displayed. Settings: *Disabled* and *Enabled*.

CPU L2 Cache ECC Checking
Set the ECC (Error-Correcting Code) feature for Level 2 cache. Facilitates error detection/correction when data passes through Level 2 cache. Settings: *Enabled* and *Disabled*.

Quick Power On Self Test
Shorten Power On Self Test (POST) cycle and enable shorter bootup time. Allow BIOS to skip some check items during POST. Settings: *Enabled* and *Disabled*.

First/Second/Third Boot Device
Set the boot device sequence as BIOS attempts to load the disk operating system. The settings are:

Floppy	The system will boot from floppy drive.
LS120	The system will boot from LS-120 drive.
HDD-0	The system will boot from first HDD.
SCSI	The system will boot from SCSI.
CD-ROM	The system will boot from CD-ROM.
HDD-1	The system will boot from second HDD.
HDD-2	The system will boot from third HDD.
HDD-3	The system will boot from fourth HDD.
ZIP100	The system will boot from ATAPI ZIP drive.
LAN	The system will boot from network drive.
Disabled	Disable this sequence.

Boot Other Device
Enable the system to boot from other devices if the system fails to boot from the First/Second/Third boot device. Settings: *Enabled* and *Disabled*.

Boot Up Floppy Seek
Set floppy seek during POST, BIOS will determine whether the floppy is 40 or 80 tracks. Settings: *Enabled* and *Disabled*.

Boot Up NumLock Status
Set the NumLock status when the system is powered on. "On" will turn key pad into number keys, and "Off" will turn key pad into arrow keys. Settings: *On* and *Off*.

Typematic Rate Setting
Set the typematic rate and delay. Settings: *Enabled* and *Disabled*.

Typematic Rate (Chars/Sec)
When Typematic Rate Setting is enabled. This item allows you to set the rate (characters/second) at which the keys are accelerated. Settings: *6*, *8*, *10*, *12*, *15*, *20*, *24* and *30*.

Typematic Delay (Msec)
When Typematic Rate Setting is enabled. This item allows you to select the delay between when the key was first pressed and when the acceleration begins. Settings: *250*, *500*, *750* and *1000*.

Security Option
Specifies the type of BIOS password protection that is implemented. Settings are described below:

Option	Description
Setup	The password prompt appears only when end users try to run Setup.
System	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

Display Small Logo
Show small energy star logo during BIOS bootup process. Settings: *Enabled* and *Disabled*.

Advanced Chipset Features

The Advanced Chipset Features menu is used for optimizing the chipset functions.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                    Advanced Chipset Features
┌──────────────────────────────────────────┬─────────────────────┐
│ AGP Aperture Size       [128M]            │      Item Help      │
│ AGP Mode                [4X]              │                     │
│ AGP Driving Control     [Auto]            │ Menu Level    ►     │
│ AGP Driving Value        --               │                     │
│ CPU to PCI POST Write   [Enabled]         │                     │
│ VGA Share Memory Size   [32M]             │                     │
│ 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
```

Note: Change these settings only if you are familiar with the chipset.

AGP Aperture Size

This setting controls how much memory space can be allocated to AGP for display purposes. The aperture is a portion of the PCI memory address range dedicated to graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. Settings: *4MB, 8MB, 16MB, 32MB, 64MB, 128MB, and 256MB*.

AGP Driving Control

The setting is used to adjust AGP driving force. Selecting *Manual* allows you to type a AGP driving force in AGP Driving Value. It is strongly suggested to select *Auto* to avoid causing system errors. Settings: *Auto* and *Manual.*

CPU to PCI POST Write

When *Enabled*, CPU can write up to four words of data to the PCI write buffer before CPU must wait for PCI bus cycle to finish. If *Disabled*, CPU must wait after each write cycle until PCI bus signals that it is ready to receive more data. Settings: *Enabled* and *Disabled.*

VGA Share Memory Size
Set the VGA Share Memory Size. Settings: *8M, 16M* and *32M.*

FB Address Conversion
Set the Frame Buffer address conversion mechanism. This feature optimizes MA table for VGA frame buffer accesses according to DRAM page size in use. It is expected to improve VGA performance. Settings: *Enabled* and *Disabled.*

FB Page Close Prediction
Set the Frame Buffer Page Close Prediction function. This feature automatically closes those frame-buffer DRAM pages no longer needed. It is expected to improve DRAM related performance. Settings: *Enabled* and *Disabled.*

Integrated Peripherals

```
            Phoenix - AwardBIOS CMOS Setup Utility
                   Integrated Peripherals
  ┌─────────────────────────────────────────┬──────────────────────┐
  │ ▶ SuperIO Device          [Press Enter]  │      Item Help       │
  │                                          │                      │
  │   Onboard IDE Channel 1   [Enabled]      │  Menu Level    ▶     │
  │   Onboard IDE Channel 2   [Enabled]      │                      │
  │   IDE Prefetch Mode       [Enabled]      │                      │
  │                                          │                      │
  │   Display Card Priority   [AGP]          │                      │
  │   Onboard Lan Boot ROM    [Disabled]     │                      │
  │                                          │                      │
  │   AC97 Audio              [Auto]         │                      │
  │   MC97 Modem              [Auto]         │                      │
  │                                          │                      │
  │   USB Keyboard Support    [Disabled]     │                      │
  │                                          │                      │
  │                                          │                      │
  │                                          │                      │
  ├──────────────────────────────────────────┴──────────────────────┤
  │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
  │    F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults │
  └──────────────────────────────────────────────────────────────────┘
```

Onboard IDE Channel 1/2

The integrated peripheral controller contains an IDE interface with sup-
port for two IDE channels. Choose *Enabled* to activate each channel
separately. Settings: *Disabled, Enabled.*

IDE Prefetch Mode

This allows your hard disk controller to use the fast block mode to trans-
fer data to and from the hard disk drive. Block mode is also called block
transfer, multiple commands or multiple sector read/write. *Enabled* ena-
bles IDE controller to use block mode; *Disabled* allows the controller to
use standard mode.

Display Card Priority

This setting specifies which VGA card is your primary graphics adapter.
Settings: *PCI Slot* and *AGP*.

Onboard LAN Boot Rom

Decide whether to invoke the boot ROM of the onboard LAN Chip. Set-
tings: *Enabled* and *Disabled*.

AC97 Audio

Auto allows the mainboard to detect whether an audio device is used. If
the device is detected, the onboard VIA AC'97 (Audio Codec'97) con-

troller will be enabled; if not, it is disabled. Disable the controller if you want to use other controller cards to connect an audio device. Setting options: *Auto* and *Disabled*.

MC97 Modem
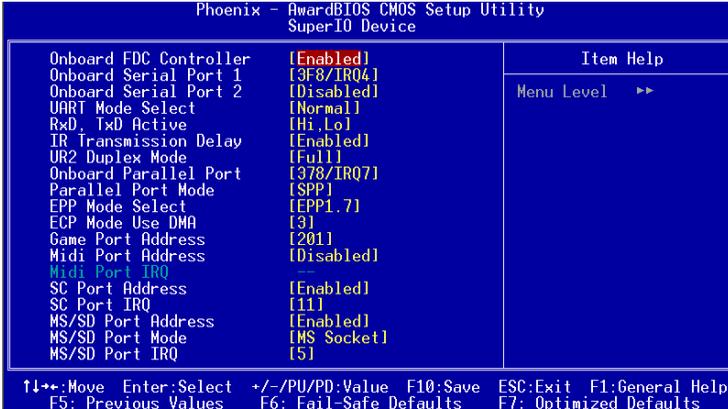*Auto* allows the mainboard to detect whether a modem is used. If a modem is used, the onboard VIA MC'97 (Modem Codec'97) controller will be enabled; if not, it is disabled. Disable the controller if you want to use other controller cards to connect to a modem. Settings: *Auto* and *Disabled*.

USB Keyboard Support
Enable USB Keyboard Support for DOS and Windows 95. Settings: *Enabled* and *Disabled*.

SuperIO Device

Press <Enter> to enter the sub-menu and the following screen appears:

```
              Phoenix - AwardBIOS CMOS Setup Utility
                         SuperIO Device
┌───────────────────────────────────────────┬─────────────────────┐
│ Onboard FDC Controller    [Enabled]        │      Item Help      │
│ Onboard Serial Port 1     [3F8/IRQ4]       │                     │
│ Onboard Serial Port 2     [Disabled]       │ Menu Level    ▶▶    │
│ UART Mode Select          [Normal]         │                     │
│ RxD, TxD Active           [Hi,Lo]          │                     │
│ IR Transmission Delay     [Enabled]        │                     │
│ UR2 Duplex Mode           [Full]           │                     │
│ Onboard Parallel Port     [378/IRQ7]       │                     │
│ Parallel Port Mode        [SPP]            │                     │
│ EPP Mode Select           [EPP1.7]         │                     │
│ ECP Mode Use DMA          [3]              │                     │
│ Game Port Address         [201]            │                     │
│ Midi Port Address         [Disabled]       │                     │
│ Midi Port IRQ             --               │                     │
│ SC Port Address           [Enabled]        │                     │
│ SC Port IRQ               [11]             │                     │
│ MS/SD Port Address        [Enabled]        │                     │
│ MS/SD Port Mode           [MS Socket]      │                     │
│ MS/SD Port IRQ            [5]              │                     │
├───────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←: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

Enable the onboard floppy controller. Select "Enabled" when you have installed a floppy disk drive. Settings: *Enabled* and *Disabled*.

Onboard Serial Port 1/2

Set the base I/O port address and IRQ for the onboard serial port A/serial port B. Selecting *Auto* allows BIOS to automatically determine the correct base I/O port address. Settings: *Disabled*, *3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4*, *2E8/IRQ3* and *Auto*.

UART Mode Select

The field specifies the operation mode for serial port "COM B". If the mode selected is not "Serial Port" then "COM B" will be disabled in order for other device to take effect. Settings are:

IrDA(Infrared):   IrDA-compliant Serial Infrared Port
ASKIR(Infrared):   Amplitude Shift Keyed Infrared Port
Normal: RS-232C Serial Port

RxD, TxD Active

Set the receiving and transmission as active high or active low. Settings: *"Hi Hi"*, *"Hi Lo", "Lo Hi"* and *"Lo Lo"*.

IR Transmission Delay
Set the delay mode of IR transmission/reception. Settings: *Enabled* and *Disabled*.

UR2 Duplex Mode
Set the operating mode of IR transmission/reception. Under Full Duplex mode, synchronous, bi-directional transmission/reception is allowed. Under Half Duplex mode, only asynchronous, bi-directional transmission/reception is allowed. Settings: *Full* and *Half*.

Onboard Parallel Port
This specifies the I/O port address and IRQ of the onboard parallel port. Settings: *378/IRQ7*, *278/IRQ5*, *3BC/IRQ7* and *Disabled*.

Parallel Port Mode
Set the parallel port mode. To operate the onboard parallel port as Standard Parallel Port, choose "SPP." To operate the onboard parallel port in the EPP mode, choose "EPP." By choosing "ECP", the onboard parallel port will operate in ECP mode. Choosing "ECP + EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. Settings are:
SPP : Standard Parallel Port
EPP : Enhanced Parallel Port
ECP : Extended Capability Port
ECP + EPP: Extended Capability Port + Enhanced Parallel Port

EPP Mode Select
Select the Enhance Parallel Port mode. Settings: *EPP1.9* and *EPP1.7*.

ECP Mode Use DMA
ECP utilises a DMA channel. This field is only available if Parallel Port Mode is set to "ECP". Select DMA channel for ECP use. Settings: *1* and *3*.

Game Port Address
Set I./O port address for onboard game port. Settings: *Disabled, 201* and *209*.

Midi Port Address
Set I./O port address for onboard midi port. Settings: *Disabled, 330, 300* and *290.*

Midi Port IRQ
Set an IRQ for the onboard midi port. This field is only available if midi port is not "Disabled". Settings: *5* and *10.*

SC Port Address
Enable or disable Smart Card reader. Settings: *Enabled* and *Disabled*.

SC Port IRQ
Display the current Smart Card Reader IRQ.

MS/SD Port Address
Enable or disable Memory Stick/Secure Digital reader. Settings: *Enabled* and *Disabled*.
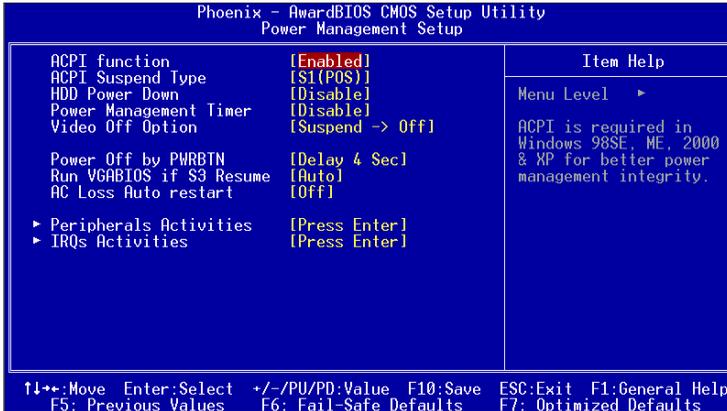
MS/SD Port Mode
Select to use Memory Stick or Secure Digital reader. Only one can function at the same time. Settings: *MS Socket* and *SD Socket*.

MS/SD Port IRQ
Display the current Memory Stick/Secure Digital IRQ.

Power Management Setup

The Power Management Setup menu configures the system to most effectively save energy while operating in a manner consistent with your own style of computer use.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                      Power Management Setup
 ┌─────────────────────────────────────────┬──────────────────────┐
 │ ACPI function            [Enabled]       │      Item Help        │
 │ ACPI Suspend Type        [S1(POS)]       ├──────────────────────┤
 │ HDD Power Down           [Disable]       │ Menu Level   ▶        │
 │ Power Management Timer   [Disable]       │                      │
 │ Video Off Option         [Suspend -> Off]│ ACPI is required in  │
 │                                          │ Windows 98SE, ME, 2000│
 │ Power Off by PWRBTN      [Delay 4 Sec]   │ & XP for better power │
 │ Run VGABIOS if S3 Resume [Auto]          │ management integrity. │
 │ AC Loss Auto restart     [Off]           │                      │
 │                                          │                      │
 │ ▶ Peripherals Activities [Press Enter]   │                      │
 │ ▶ IRQs Activities        [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
```

ACPI Function

Activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware (i.e. Windows 98/98SE/ME/2000/XP) select Enabled. Settings: *Enabled* and *Disabled*.

ACPI Suspend Type

Set the power saving mode for ACPI function. Settings are:
S1/POS - S1/Power On Suspend (POS) is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system context.
S3/STR - S3/Suspend To RAM (STR) is a power-down state. In this state, power is supplied only to essential components such as main memory and wakeup-capable devices. The system context is saved to main memory, and context is restored from the memory when a "wakeup" event occurs.
S1 & S3 - Depends on OS to select S1 or S3.

HDD Power Down

Set the time to power down HDD after hard disk inactivity. Settings: *Disable* and *1~15* Min.

Power Management Timer
Set the idle time before system enters power saving mode. ACPI OS such as Windows XP will override this option. Settings: *Disable* and *1/2/4/6/ 8/10/20/30/40* min and *1* hr.

Video Off Option
Select whether or not to turn off the screen when system enters power saving mode, ACPI OS such as Windows XP will override this option. Settings are:
Always On - The screen is always on even when system enters power saving mode.
Suspend -> Off - The screen is turned off when system enters power saving mode.

Power Off by PWRBTN
This field configures the power button function. Settings are:
Instant-Off - The power button functions as a normal power-on/-off button.
Delay 4 Sec - The system is turned off if power button is pressed for more than four seconds.

Run VGABIOS if S3 Resume
Select whether to run VGA BIOS if resumed from S3 state. This is only necessary for older VGA drivers, select Auto if in doubt. Settings: *Auto, Yes* and *No.*

AC Loss Auto restart
The field defines how the system will act after an AC power loss during system operation. Choose the system power state when AC power resumes. Settings are:
Off Keep the system in off state until power button is pressed.
On The system automatically restarts when AC power resumes.

Peripheral Activities

Press <Enter> to enter the sub-menu and the following screen appears:
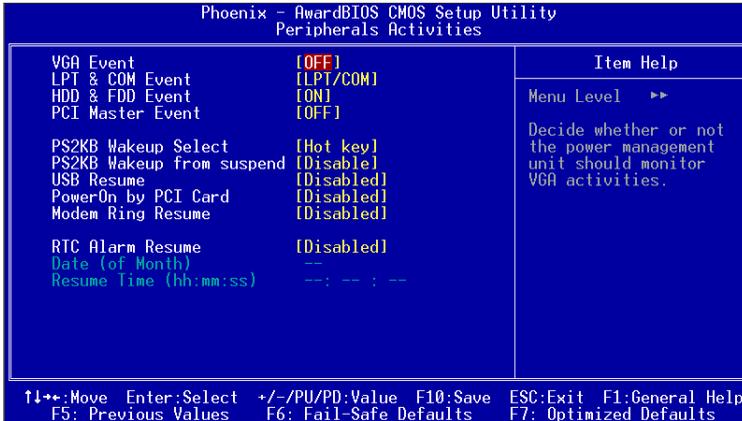
VGA Event

Decide whether or not the power management unit should monitor VGA activities. Settings: *Off* and *ON*.

LPT & COM Event

Decide whether or not the power management unit should monitor parallel port (LPT) and serial port (COM) activities. Settings: *None, LPT, COM* and *LPT/ COM.*

HDD & FDD Event

Decide whether or not the power management unit should monitor hard disks and floppy drives activities. Settings: *Off* and *On.*

PCI Master Event

Decide whether or not the power management unit should monitor PCI master activities. Settings: *Off* and *On.*

PS2KB Wakeup Select

When Select Password, Please press ENTER key to change Password, Max 8 characters. Settings: *Password* and *Hot key.*

PS2KB Wakeup from suspend

Select which "Hot-Key" is used to wake-up the system from power saving mode. Settings: *Disabled, Ctrl+F1, Ctrl+F2, Ctrl+F3, Ctrl+F4, Ctrl+F5, Ctrl+F6, Ctrl+F7, Ctrl+F8, Ctrl+F9, Ctrl+F10, Ctrl+F11, Ctrl+F12, Power, Wake* and *Any Key.*

USB Resume

Decide whether or not the USB devices can wake the system from suspend state. Settings: *Disabled* and *Enabled.*

PowerOn by PCI Card

Decide whether or not a PCI card can power up the system or resume it from suspend state. Such PCI cards include LAN, onboard USB ports, etc. Settings: *Disabled* and *Enabled.*

Modem Ring Resume

Decide whether or not Ring-In signals from Modem can wake up the system from suspend state. Settings: *Disabled* and *Enabled.*

RTC Alarm Resume

The field is used to enable or disable the feature of booting up the system on a scheduled time/date. Settings: *Disabled* and *Enabled.*
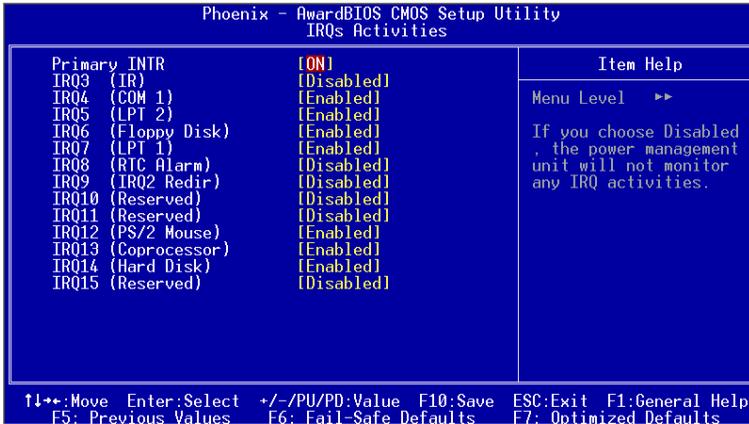
Date (of Month)

The field specifies the date for *RTC Alarm Resume*. Settings: 0~31.

Resume Time (hh:mm:ss)

The field specifies the time for *RTC Alarm Resume. F*ormat is <hour><minute><second>.

IRQs Activities

Press <Enter> to enter the sub-menu and the following screen appears:

```
          Phoenix - AwardBIOS CMOS Setup Utility
                      IRQs Activities
┌────────────────────────────────────────┬──────────────────────────┐
│  Primary INTR         [ON]             │       Item Help          │
│  IRQ3  (IR)           [Disabled]       ├──────────────────────────┤
│  IRQ4  (COM 1)        [Enabled]        │  Menu Level    ▶▶        │
│  IRQ5  (LPT 2)        [Enabled]        │                          │
│  IRQ6  (Floppy Disk)  [Enabled]        │  If you choose Disabled  │
│  IRQ7  (LPT 1)        [Enabled]        │  , the power management  │
│  IRQ8  (RTC Alarm)    [Disabled]       │  unit will not monitor   │
│  IRQ9  (IRQ2 Redir)   [Disabled]       │  any IRQ activities.     │
│  IRQ10 (Reserved)     [Disabled]       │                          │
│  IRQ11 (Reserved)     [Disabled]       │                          │
│  IRQ12 (PS/2 Mouse)   [Enabled]        │                          │
│  IRQ13 (Coprocessor)  [Enabled]        │                          │
│  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   │
└────────────────────────────────────────────────────────────────────┘
```

Primary INTR

Selecting *ON* will cause the system to wake up from power saving modes if activity is detected from any enabled IRQ channels. Settings: *OFF* and *ON*.
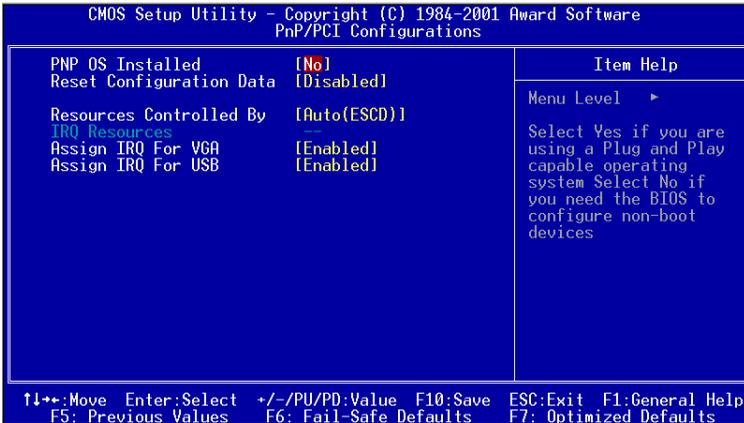
IRQ3~IRQ15

Enables or disables the monitoring of the specified IRQ line. If set to *Enabled*, the activity of the specified IRQ line will prevent the system from entering power saving modes or awaken it from power saving modes. Settings: *Disabled* and *Enabled*.

Note: IRQ (Interrupt Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it signals this by causing an IRQ to occur. After receiving the signal, when the operating system is ready, the system will interrupt itself and perform the service required by the IO device.

PNP/PCI Configurations

This section describes the BIOS configuration of the PCI bus system. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

```
      CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
                          PnP/PCI Configurations
  ┌────────────────────────────────────────────┬──────────────────────────┐
  │ PNP OS Installed            [No]            │        Item Help         │
  │ Reset Configuration Data    [Disabled]      ├──────────────────────────┤
  │                                             │ Menu Level    ▶          │
  │ Resources Controlled By     [Auto(ESCD)]    │                          │
  │ IRQ Resources               ---             │ Select Yes if you are    │
  │ Assign IRQ For VGA          [Enabled]       │ using a Plug and Play    │
  │ Assign IRQ For USB          [Enabled]       │ capable operating        │
  │                                             │ system Select No if      │
  │                                             │ you need the BIOS to     │
  │                                             │ configure non-boot       │
  │                                             │ devices                  │
  │                                             │                          │
  │                                             │                          │
  │                                             │                          │
  │                                             │                          │
  └────────────────────────────────────────────┴──────────────────────────┘
  ↑↓←→:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
       F5: Previous Values     F6: Fail-Safe Defaults    F7: Optimized Defaults
```
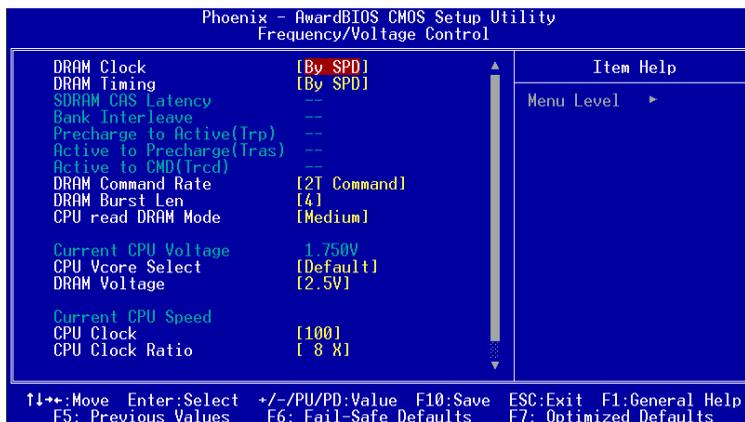
PNP OS Installed

When set to *Yes*, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). Other cards will be initialized by the PnP operating system like Windows® 95 or 98/98SE. When set to *No*, BIOS will initialize all the PnP cards. Set to *Yes* the operating system is Plug & Play capable. The settings: *No* and *Yes*.

Reset Configuration Data

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

Resource Controlled By

The BIOS can automatically configure all the boot and Plug and Play compatible devices. Choose "Auto(ESCD)" if unsure, the BIOS will automatically assign IRQ, DMA and memory base address fields. The settings: *Auto (ESCD)* and *Manual*.

IRQ Resources

The items are adjustable only when *Resources Controlled By* is set to *Manual*. Press <Enter> and you will enter the sub-menu of the items.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                         IRQ Resources
   IRQ-3   assigned to      [PCI Device]           Item Help
   IRQ-4   assigned to      [PCI Device]
   IRQ-5   assigned to      [PCI Device]      Menu Level    ►►
   IRQ-7   assigned to      [PCI Device]
   IRQ-10  assigned to      [PCI Device]      Legacy ISA for devices
   IRQ-11  assigned to      [PCI Device]      compliant with the
   IRQ-12  assigned to      [PCI Device]      original PC AT bus
   IRQ-14  assigned to      [PCI Device]      specification, PCI/ISA
   IRQ-15  assigned to      [PCI Device]      PnP for devices
                                              compliant with the
                                              Plug and Play standard
                                              whether designed for
                                              PCI or ISA bus
                                              architecture



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

 IRQ Resources list IRQ 3/4/5/7/10/11/12/14/15 for users to set each IRQ a type depending on the type of device using the IRQ. Settings:

PCI Device　　　　　For Plug & Play compatible devices designed for PCI bus architecture.

Reserved　　　　　The IRQ will be reserved for further request.

Assign IRQ For VGA/USB

Assign IRQ for VGA and USB devices. Settings: *Disabled* and *Enabled*.

PC Health Status

This section shows the status of your CPU, fan, warning for overall system status.

```
          Phoenix - AwardBIOS CMOS Setup Utility
                   PC Health Status
┌─────────────────────────────────────────┬─────────────────────┐
│ CPU Warning Temperature    [Disabled]    │      Item Help      │
│ System Temperature         29°C/84°F     ├─────────────────────┤
│ CPU Temperature            38°C/101°F    │ Menu Level    ►     │
│ CPU FAN Speed              4500 RPM      │                     │
│ Chassis FAN Speed          2700 RPM      │                     │
│ Vcore(V)                   1.72 V        │                     │
│ 3.3Vin(V)                  3.36 V        │                     │
│ + 5 V                      5.05 V        │                     │
│ +12 V                      11.91 V       │                     │
│ -12 V                      -11.86 V      │                     │
│ VBAT(V)                    3.13 V        │                     │
│ 5VSB(V)                    5.13 V        │                     │
│   _                                      │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
├─────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│   F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults      │
└────────────────────────────────────────────────────────────────┘
```

System Temperature, CPU Temperature, CPU Fan Speed, Chasis Fan Speed, Vcore(V), 3.3Vin(V), +5V, +12V, -12V, VBat(V), 5VSB(V).
These items display the current status of all of the monitored hardware devices/components such as CPU voltages, temperatures and all fans' speeds.

CPU Warning Temperature
Set the CPU warning temperature, the mainboard will beep if the temperature limit is exceeded. The settings: *Disabled, 50C/122F, 53C/127F, 56C/133F, 60C/140F, 63C/145F, 66C/151F, 70C/158F.*

Frequency/Voltage Control

```
         Phoenix - AwardBIOS CMOS Setup Utility
                Frequency/Voltage Control
┌──────────────────────────────────────┬─────────────────────┐
│ DRAM Clock              [By SPD]      │     Item Help       │
│ DRAM Timing             [By SPD]      │                     │
│ SDRAM CAS Latency         --          │  Menu Level    ►    │
│ Bank Interleave           --          │                     │
│ Precharge to Active(Trp)  --          │                     │
│ Active to Precharge(Tras) --          │                     │
│ Active to CMD(Trcd)       --          │                     │
│ DRAM Command Rate       [2T Command]  │                     │
│ DRAM Burst Len          [4]           │                     │
│ CPU read DRAM Mode      [Medium]      │                     │
│                                       │                     │
│ Current CPU Voltage       1.750V      │                     │
│ CPU Vcore Select        [Default]     │                     │
│ DRAM Voltage            [2.5V]        │                     │
│                                       │                     │
│ Current CPU Speed                     │                     │
│ CPU Clock               [100]         │                     │
│ CPU Clock Ratio         [ 8 X]        │                     │
└──────────────────────────────────────┴─────────────────────┘
 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
    F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults
```

DRAM Clock

The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency. Settings: *By SPD, 100MHz* and *133MHz.*

DRAM Timing

This setting determines whether DRAM timing is configured by reading the contents of the SPD (Serial Presence Detect) EPROM on the DRAM module. Selecting Yes makes SDRAM Cycle Length and Bank Interleave automatically determined by BIOS according to the configurations on the SPD. Settings: *Manual* and *By SPD.*

SDRAM CAS Latency

Set the time between SDRAM read command and when the data actually becomes available. Settings: *2* and *2.5.*

Bank Interleave

Set the interleave mode of the SDRAM interface. Interleaving allows banks of SDRAM to alternate their refresh and access cycles. One bank will undergo its refresh cycle while another is being accessed. This improves performance of the SDRAM by masking the refresh time of each bank. Settings: *Disabled, 2 Bank* and *4 Bank.*

Precharge to Active (Trp)

Set the time from DRAM precharge to active state. Settings: *2T* and *3T.*

Active to Precharge (Tras)
Set the time from active back to precharge state. Settings: *5T* and *6T.*

Active to CMD (Trcd)
Set the time from active state to command state. Settings: *2T* and *3T.*

DRAM Command Rate
This setting controls the DRAM command rate. Selecting 1T allows DRAM signal controller to run at 1T (T=clock cycles) rate. Selecting 2T makes DRAM signal controller run at 2T rate. 1T is faster than 2T. Settings: *2T Command* and *1T Command*.

DRAM Burst Len
This setting allows you to set the size for DRAM Burst-Length. The bigger the size, the faster the system addresses memory. Settings: *4* and *8*.

CPU read DRAM Mode
This setting allows you to set the CPU read DRAM mode. Settings: *Slow, Fast* and *Medium.*

CPU Vcore Select
This setting allows you to adjust the CPU core voltage from 1.100V to 1.850V at 0.025 increments. Please note that it may be dangerous to adjust the Vcore over 10% of original CPU specification. Setting options: *Default, 1.100V to 1.850V*.

DRAM Voltage
This setting allows you to set the appropriate DRAM voltage. Setting options: *2.5V, 2.6V, 2.7V* and *2.8V*.

CPU Clock
This setting specifies the clock frequency of CPU host bus (FSB) and provides a method for end-users to overclock the processor accordingly. If the CPU clock is set over the tolerance limit of the CPU, the mainboard will show the following message "IMPROPER OVERCLOCKING SETTING, SYSTEM IS RESETTING CPU CLOCK TO DEFAULT. Please re-enter BIOS Setup and remember to save before quit!". This feature protects the CPU from damage due to overclocking.

CPU Clock Ratio
This setting controls the multiplier that is used to determine the internal clock speed of the processor relative to the external or motherboard clock speed.

Spread Spectrum
When the motherboard's clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problems, leave the setting at *Disabled* for optimal system stability and performance. But if you are plagued by EMI, setting to *Enabled* for EMI reduction. Remember to disable Spread Spectrum if you are overclocking because even a 0.25% jitter can introduce a temporary boost in clockspeed of 25MHz (with a 1GHz CPU) which may just cause your overclocked processor to lock up. Settings: *Disabled, -1.50%, -1.00%, -0.70%, -0.50%, +/-0.75%, +/-0.50%, +/-0.35%* and *+/-0.25%.*

Load Fail-Safe Defaults

This option on the main menu allows users to restore all the BIOS settings to the default Fail Safe values. These values are set by the mainboard manufacturer to provide the most stable system.

When you select Load-Fail Safe Defaults, a message as below appears:

```
        CMOS Setup Utility - Copyright (C) 1984-2001 Award Software

   ▶ Standard CMOS Features          ▶ Frequency/Voltage Control
   ▶ Advanced BIOS Features            Load Fail-Safe Defaults
   ▶ Advanced Chipset Features         Load Optimized Defaults
   ▶ Integrated Peripherals            Set Supervisor Password
   ▶ Power Management                                       word
   ▶ PnP/PCI Configura   Load Fail-Safe Defaults (Y/N)? Y   etup
   ▶ PC Health Status                                       Saving

   Esc : Quit      F9 : Menu in BIOS     ↑ ↓ → ←   : Select Item
   F10 : Save & Exit Setup

                       Load Fail-Safe Defaults
```

Pressing 'Y' loads the default BIOS values that provide a minimal and stable system configuration.

Load Optimized Defaults

This option on the main menu allows users to restore all the BIOS settings to the default Optimized values. The Optimized Defaults are the default values also set by the mainboard manufacturer for both optimized and stable performance of the mainboard.

When you select Load Optimized Defaults, a message as below appears:

```
        CMOS Setup Utility - Copyright (C) 1984-2001 Award Software

    ▶ Standard CMOS Features          ▶ Frequency/Voltage Control
    ▶ Advanced BIOS Features             Load Fail-Safe Defaults
    ▶ Advanced Chipset Features          Load Optimized Defaults
    ▶ Integrated Peripherals             Set Supervisor Password
    ▶ Power Management                                       word
    ▶ PnP/PCI Configura    Load Optimized Defaults (Y/N)? Y  etup
    ▶ PC Health Status                                    Saving

    Esc : Quit        F9 : Menu in BIOS     ↑ ↓ → ←   : Select Item
    F10 : Save & Exit Setup

                        Load Optimized Defaults
```

Pressing 'Y' loads the default values that are factory settings for optimal and stable system performance.

Set Supervisor/User Password

When you select this function, a message as below will appear on the screen:

```
       CMOS Setup Utility - Copyright (C) 1984-2001 Award Software

    ▸ Standard CMOS Features          ▸ Frequency/Voltage Control
    ▸ Advanced BIOS Features             Load Fail-Safe Defaults
    ▸ Advanced Chipset Features          Load Optimized Defaults
    ▸ Integrated Peripherals             Set Supervisor Password
    ▸ Power Management Setup             Set User Password
    ▸ PnP/PCI Configurati┌─────────────────────┐ t Setup
    ▸ PC Health Status    │ Enter Password:     │ ut Saving
                          └─────────────────────┘
   Esc : Quit      F9 : Menu in BIOS     ↑ ↓ → ←   : Select Item
   F10 : Save & Exit Setup

                        Change/Set/Disable Password
```

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously set password from CMOS memory. You will be prompted to confirm the password. Re-type the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming that the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

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

Additionally, when a password is enabled, you can also have BIOS to request a password each time the system is booted. This would prevent unauthorized use of your computer. The setting to determine when the password prompt is required is the Security Option of the Advanced BIOS Features menu. If the Security Option is set to *System*, the password is required both at boot and at entry to Setup. If set to *Setup*, password prompt only occurs when trying to enter Setup.

About Supervisor Password & User Password:
Supervisor password : Can enter and change the settings of the setup menus.
User password: Can only enter but do not have the right to change the settings of the setup menus.

Save & Exit Setup

When you want to quit the Setup menu, you can select this option to save the changes and quit. A message as below will appear on the screen:

```
        CMOS Setup Utility - Copyright (C) 1984-2001 Award Software

    ► Standard CMOS Features          ► Frequency/Voltage Control

    ► Advanced BIOS Features            Load Fail-Safe Defaults

    ► Advanced Chipset Features         Load Optimized Defaults

    ► Integrated Peripherals            Set Supervisor Password

    ► Power Management              word
                         ┌──────────────────────────────┐ etup
    ► PnP/PCI Configura   │ SAVE to CMOS and EXIT (Y/N)? Y│
                         └──────────────────────────────┘ Saving
    ► PC Health Status

    Esc : Quit        F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
    F10 : Save & Exit Setup

                          Save Data to CMOS
```

Typing "Y" will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.

Exit Without Saving

When you want to quit the Setup menu, you can select this option to abandon the changes. A message as below will appear on the screen:

```
CMOS Setup Utility - Copyright (C) 1984-2001 Award Software

  ▸ Standard CMOS Features        ▸ Frequency/Voltage Control
  ▸ Advanced BIOS Features          Load Fail-Safe Defaults
  ▸ Advanced Chipset Features       Load Optimized Defaults
  ▸ Integrated Peripherals          Set Supervisor Password
  ▸ Power Management          ┌─────────────────────┐word
  ▸ PnP/PCI Configura         │ Quit Without Saving (Y/N)? Y │etup
  ▸ PC Health Status          └─────────────────────┘Saving

Esc : Quit       F9 : Menu in BIOS      ↑ ↓ → ←  : Select Item
F10 : Save & Exit Setup

                    Abandon all Data
```

Typing "Y" will allow you to quit the Setup Utility without saving any changes to RTC CMOS.

Typing "N" will return to the Setup Utility.

4

Software Setup

This chapter gives you detailed instructions on setup of motherboard drivers and applications. It consists of the following topics:

Note: You must install VIA 4in1 chipset drivers first before installing other drivers like audio or VGA drivers. The applications will only function correctly if the necessary drivers are already installed.

VIA ProSavage8 P4M266 Chipset Drivers

The VIA P4M266 chipset is a high performance, cost-effective and energy efficient SMA chipset. Featuring a new super-pipelined 128-bit engine, P4M266 utilizes a single cycle architecture that provides high performance along with superior image quality.

Features

- Integrated Pentium 4 DDR VIA Northbridge and S3 Graphics ProSavage8 2D/3D AGP 4x Graphics Controller in a single chip.
- Combines with VIA VT8233A V-Link South Bridge for integrated Audio, ATA133 IDE, and 4 USB ports.
- Full featured Accelerated Graphics Port (AGP) Controller.

System Requirements

|	
Computer	Intel® Pentium® 4 processors
Monitor	VGA Support, minimum 640 x 480 resolution
Operating system	Windows® 95/98/98SE, Windows® NT3.51 or 4.0, Windows® ME, Windows® 2000, or Windows® XP
CD-ROM	Double speed or higher
Chipset	VIA ProSavage8 P4M266 chipset

4in1 chipset driver installation for Windows 98/98SE

1. Insert the supplied CD into the CD-ROM drive.
2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.
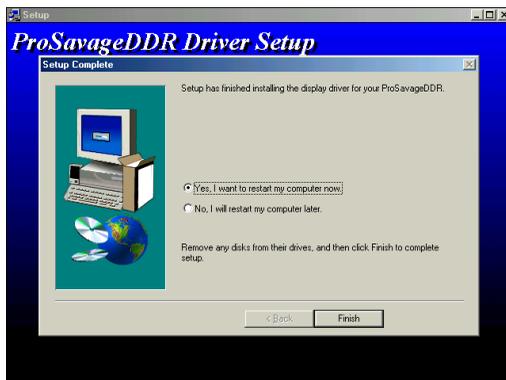3. On the setup screen click the **Install VIA 4in1 Driver** option to install the **VIA Service Pack 4**.
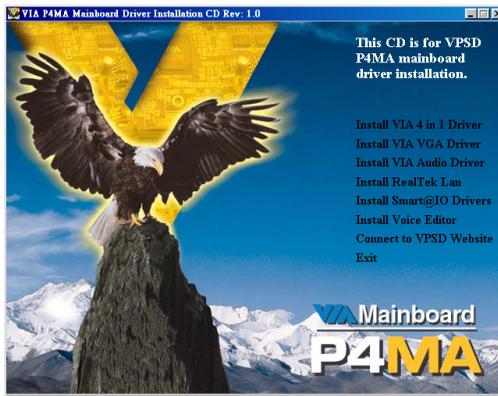
4. When the installation starts, click **Next** to view the **VIA Service Pack README**.
5. Click **Yes** to proceed.

6. The screen now will show two installation options. Select **Normally Install** to manually install every driver, else select **Quickly Install** to install the drivers automatically. Click **Next** to continue, for **Quickly Install** users please go to step 12.
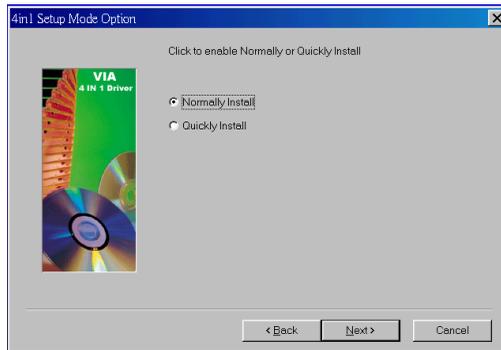
7. The screen will now show four drivers:

     VIA ATAPI Vendor Support Driver.
     AGP VxD Driver.
     IRQ Routing Miniport Driver.
     VIA INF Driver.

Please select all four drivers and click **Next** to continue.
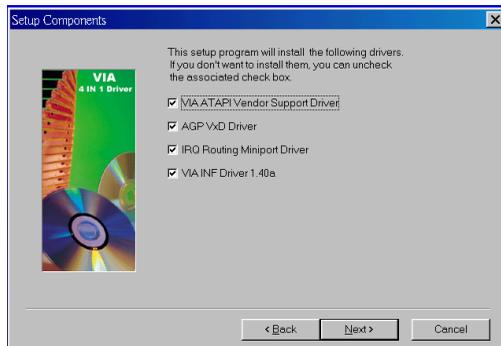
8. Select **Install VIA ATAPI Vendor Support Driver** and click **Next** to continue.
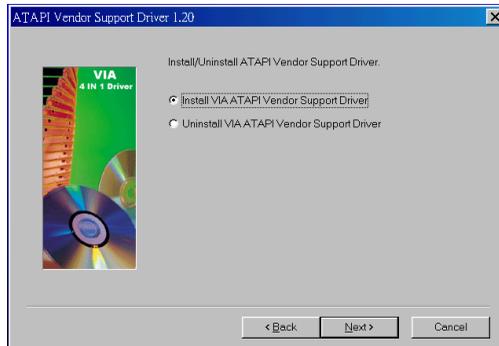
9. Select **Click to enable DMA Mode** option and click **Next** to continue.
10. Select **Install VIA AGP VxD in Turbo mode** and click **Next** to continue.
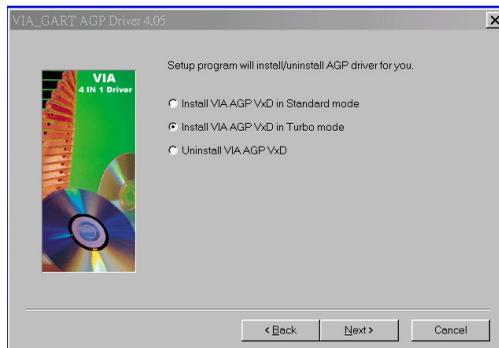
11. Select **Install VIA IRQ Routing Miniport Driver** and click **Next** to continue
12. After all chipset drivers are properly installed please select "**Yes, I want to restart my computer now.**" and click **Finish** to restart your computer and complete the installation.

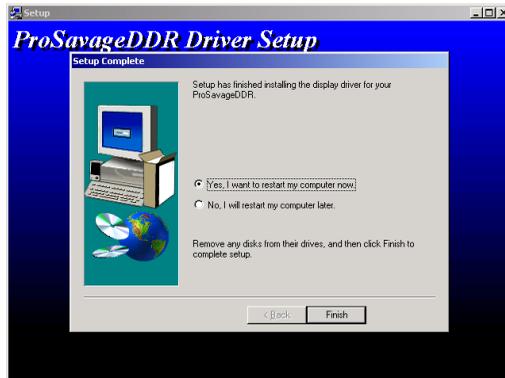## 4in1 chipset driver installation for Windows 2000

1. Insert the supplied CD into the CD-ROM drive.

2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.

3. On the setup screen click on the **Install VIA 4in1 Driver** option to install the **VIA Service Pack 4**.

4. When the installation starts, click **Next** to view the **VIA Service Pack README**.

5. Click **Yes** to proceed.

6. The screen now will show two installation options. Select **Normally Install** to manually install every driver, else select **Quickly Install** to install the drivers automatically. Click **Next** to continue, for **Quickly Install** users please go to step 10.

7. The screen now should show three drivers:

> **VIA PCI IDE Bus Driver.**
> **AGP VxD Driver.**
> **VIA INF Driver.**

Please select all three drivers and click on **Next** to continue.
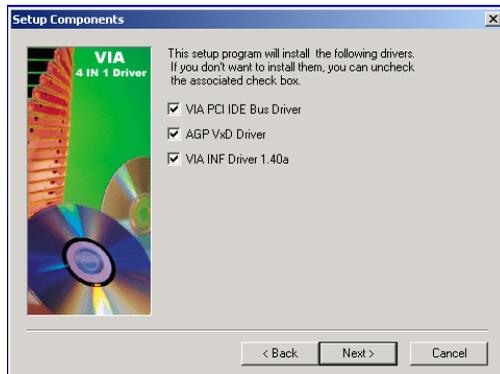
8. Select **Install VIA PCI IDE Bus Driver** and click **Next** to continue.
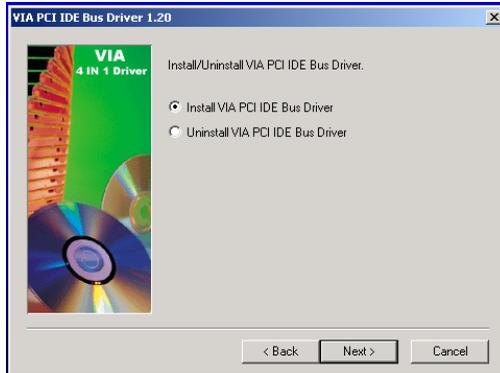
9. Select **Install AGP 4X/133 driver** and click **Next** to continue.

10. After all chipset drivers are properly installed please select "**Yes, I want to restart my computer now.**" and click **Finish** to restart your computer and complete the installation.

4in1 chipset driver installation for Windows XP

1. Insert the supplied CD into the CD-ROM drive.

2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.

3. On the setup screen click the **Install VIA 4in1 Driver** option to install the **VIA Service Pack 4**.

4. When the installation starts, click **Next** to view the **VIA Service Pack README**.

5. Click **Yes** to proceed.

6. The screen now will show two installation options. Select **Normally Install** to manually install every driver, else select **Quickly Install** to install the drivers automatically. Click **Next** to continue, for **Quickly Install** users please go to step 9.

7. The screen now should show two drivers:

    VIA PCI IDE Bus Driver
    VIA INF Driver

Please select the driver and click **Next** to continue.
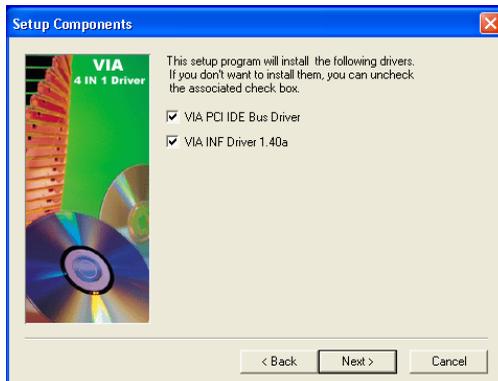
8. The screen now should show one driver: **Install VIA PCI IDE Bus Driver**. Please select the driver and click **Next** to continue.
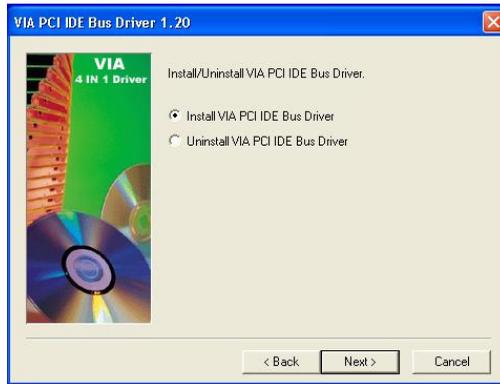
9. After all chipset drivers are properly installed please select "**Yes, I want to restart my computer now.**" and click on **Finish** to restart your computer and complete the installation.
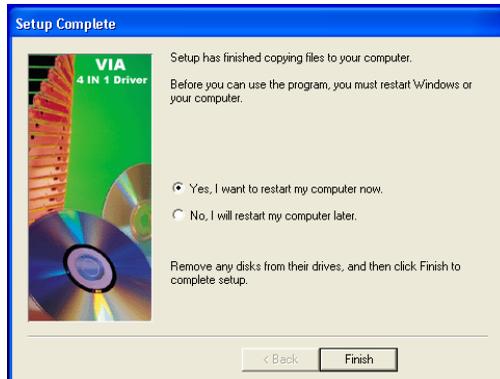
4in1 chipset driver installation for Windows ME

1. Insert the supplied CD into the CD-ROM drive.

2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.

3. On the setup screen click on the **Install VIA 4in1 Driver** option to install the **VIA Service Pack 4**.

4. When the installation starts, click **Next** to view the **VIA Service Pack README**.

5. Click **Yes** to proceed.

6. The screen now will show two installation options. Select **Normally Install** to manually install every driver, else select **Quickly Install** to install the drivers automatically. Click **Next** to continue, for **Quickly Install** users please go to step 11.

7. The screen now should show one driver:

     VIA ATAPI Vendor Support Driver.
     AGP VxD Driver.
     VIA INF Driver.

Please select all three drivers and click on **Next** to continue.

8. Select **Install VIA ATAPI Vendor Support Driver** and click **Next** to continue.

9. Select **Click to enable DMA Mode** option and click **Next** to continue.
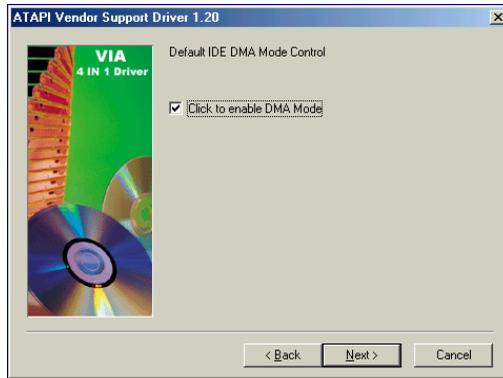
10. Select **Install VIA AGP VxD in Turbo mode** and click **Next** to continue.
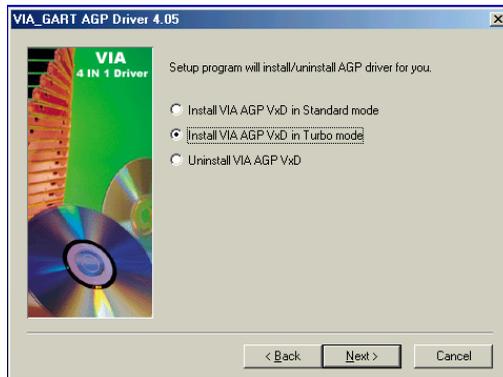
11. After all chipset drivers are properly installed please select "**Yes, I want to restart my computer now.**" and click on **Finish** to restart your computer and complete the installation.

VIA ProSavage8 P4M266 VGA Driver

VGA driver installation for Windows 98/98SE/ME

1. Insert the supplied CD into the CD-ROM drive.
2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.
3. On the setup screen click the **Intall VIA VGA Driver** option.
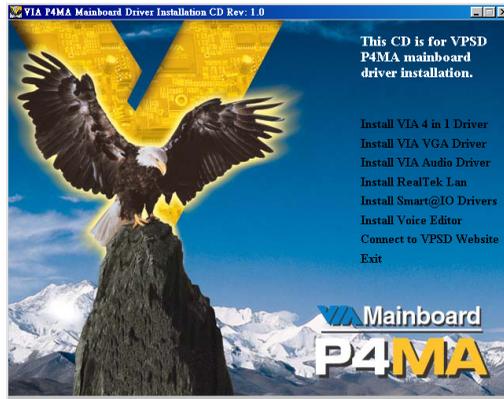
4. Under the "Welcome" dialog, click **Next.**
5. Under the "Start Copying Files" dialog, click **Next**.
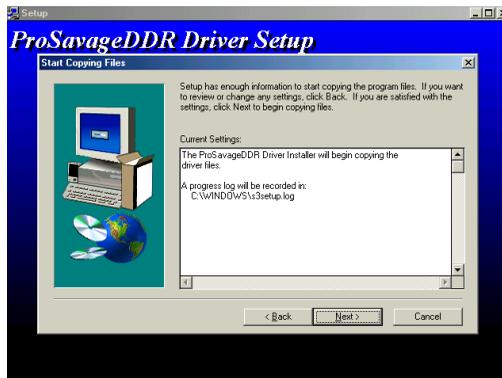
6. Wait for setup program to copy files into appropriate folder and update hardware information of computer automatically.

7. In the "Setup Complete" dialog, select the "Yes, I want to restart computer now." item, and click the "Finish" button then the computer will restart and the VGA driver installation process is completed.

VGA driver installation for Windows 2000

1. Insert the supplied CD into the CD-ROM drive.
2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.
3. On the setup screen click the **Install VIA VGA Driver** option to install.
4. Under the "Welcome" dialog, click **Next.**
5. Under the "Start Copying Files" dialog, click **Next**.
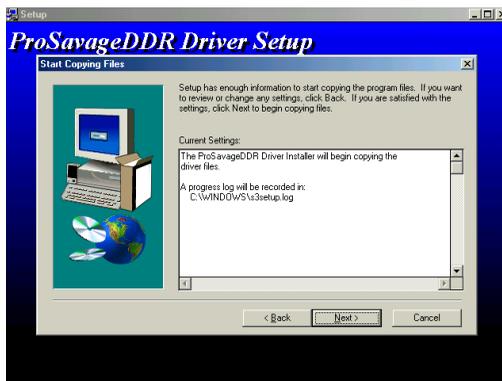
6. Wait for setup program to copy files into appropriate folder and update hardware information of computer automatically.

7. In the "Setup Complete" dialog, select the "Yes, I want to restart computer now." item, and click the "Finish" button then the computer will restart and the VGA driver installation process is completed.

VGA driver nstallation for Windows XP

1. Insert the supplied CD into the CD-ROM drive.

2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.

3. On the setup screen click on the **Install VIA VGA Driver** option to install.

4. Under the "Welcome" dialog, click **Next.**

5. Under the "Start Copying Files" dialog, click **Next**.

6. Wait for setup program to copy files into appropriate folder and update hardware information of computer automatically.

7. In the "Setup Complete" dialog, select the "Yes, I want to restart computer now." item, and click the "Finish" button then the computer will restart and the VGA driver installation process is completed.

VIA Audio Driver

Audio driver installation for Windows 98/98SE/ME/2000/XP

1. Insert the supplied CD into the CD-ROM drive.
2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.
3. On the setup screen click on the **Install VIA Audio Driver** to install VIA Audio Driver Setup Program.
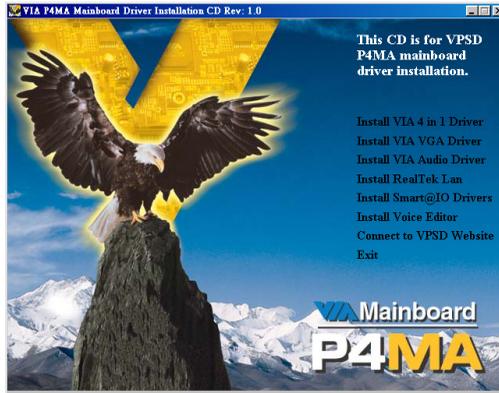
4. Select Install driver. Click **Next** to continue.

5. After the audio driver is installed, select "**Yes, I want to restart my computer now**". Click **Finish** to restart your computer (Windows ME only).

Realtek Network Driver

Network driver installation for Windows 98/98SE

1. Put the supplied CD in the CD ROM drive and right click the "My Computer" icon on the desktop. Move mouse pointer to "Properties" item and left click it.
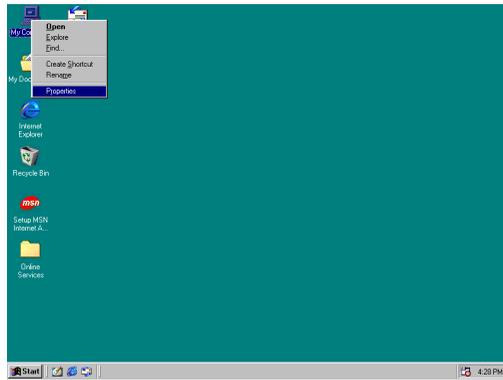
2. The "System Properties" window is poped. Select the "Device Manager" tab (left click the tab), then select the "PCI Ethernet Controller" and click the "Properties" button.
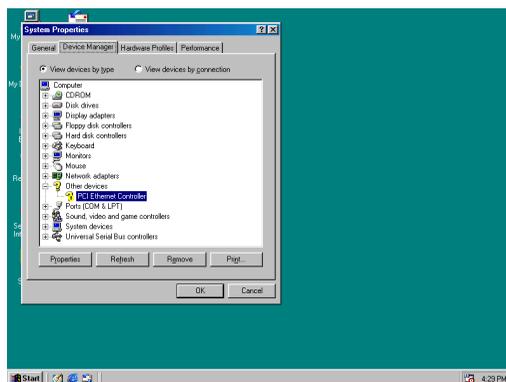
3. In the "PCI Ethernet Controller Properties" window, click the "Reinstall Driver" button.
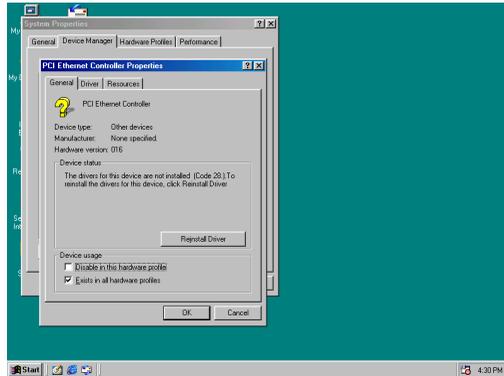
4. The "Update Device Driver Wizard" is invoked, then click the "Next" button.
5. Select "Display a list of all the drivers in a specific location, so you can select the driver you want" item and click the "Next" button.
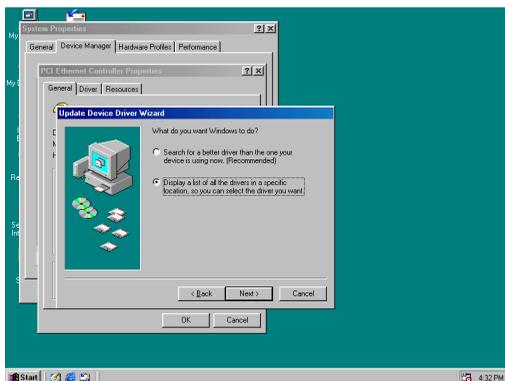
6. Select the "Network adapters" item in the list and click "Next" button.
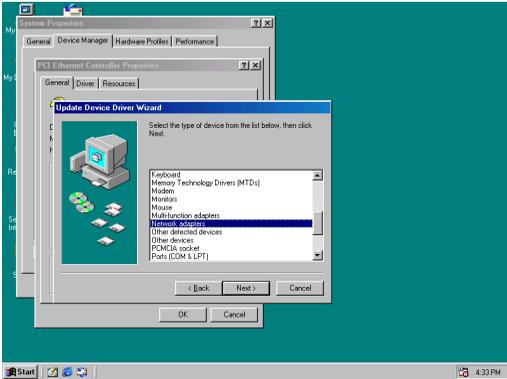
7. In the "Select Device" dialog, click "Have Disk…" button.
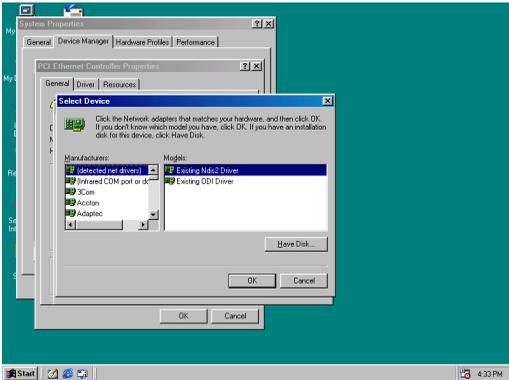
8. In the "Install From Disk" dialog, click the "Browse…" button.
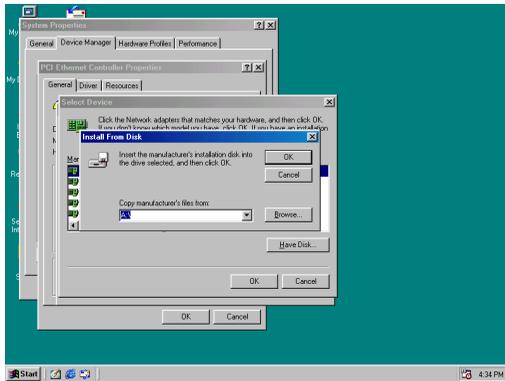
9. In the "Open" dialog, select the drive the Master CD in.
10. Select the "Lan" folder of the "Drivers".
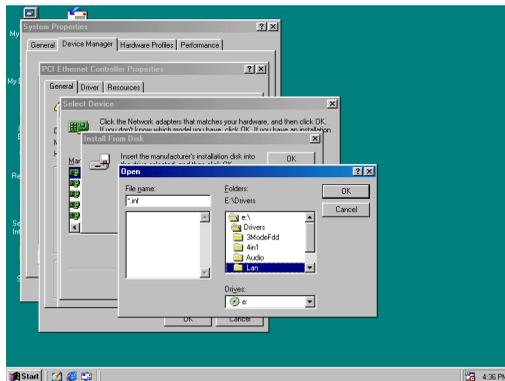
11. Select "win98" folder in the "Drivers\Lan" folder.
12. In the "Driver\Lan\WIN98" folder, select the "netrts5.inf"file and click the "OK" button.
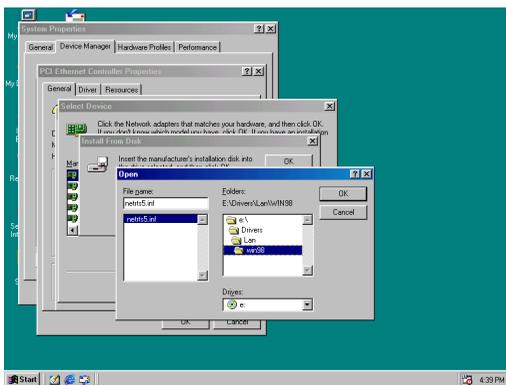
13. Click the "OK" button in the "Install From Disk" dialog.
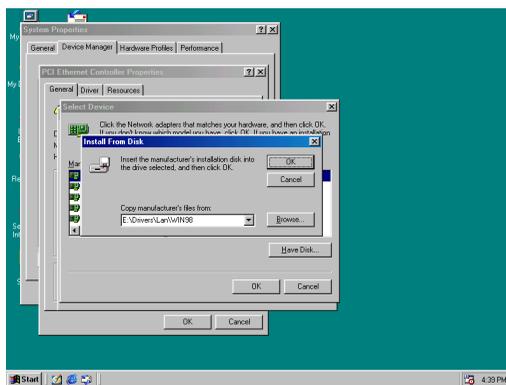
14. Select "Realtek RTL8139/810X Family PCI Fast Ethernet NIC" model in the "Select Device" Dialog, and click the "OK" button.
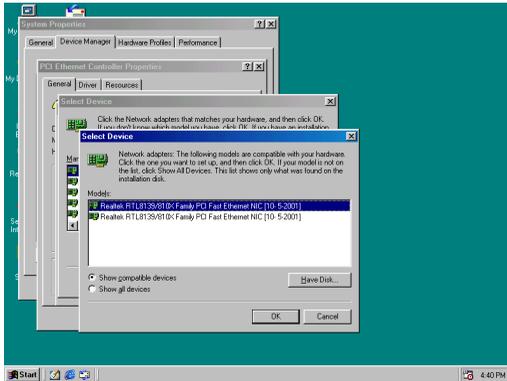
15. Click the "Next" button in the "Update Device Driver Wizard" dialog.
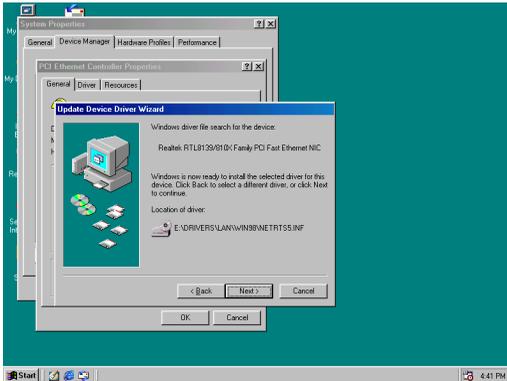
16. Then the "Update Device Driver Wizard" will copy appropriate files and update hardware configuration automatically.
17. Then click the "Finish" button of the "Update Device Driver Wizard" dialog.
18. Finally, the Windows will ask you to restart the computer, click the "Yes" button to restart it.

Network driver installation for Windows ME, Windows 2000, and Windows XP

1. Put the supplied CD into the CD ROM drive then in the first scene click the **Install RealTek Lan** item.
2. Click the "Next" button in the "InstallShield Wizard" dialog.
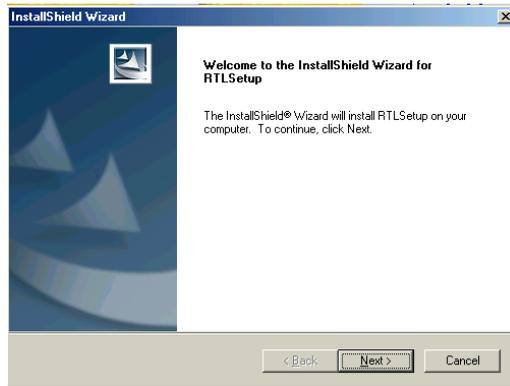
3. The "InstallShield Wizard" copies appropriate files into your system and updates hardware configuration.
4. Finally, select the "Yes, I want to restart my computer now." item, and click the "OK" button. (This screen only appears in ME only)

Winbond Smart@IO Drivers

Winbond Smart@IO drivers installation for Windows 98/98SE/ ME/2000/XP

1. Insert the supplied CD into the CD-ROM drive.
2. The CD should run automatically and the setup screen will appear. If not, please run the "setup.exe" within the CD manually.
3. On the setup screen click on the **Install Winbond Smart@IO Drivers** option.
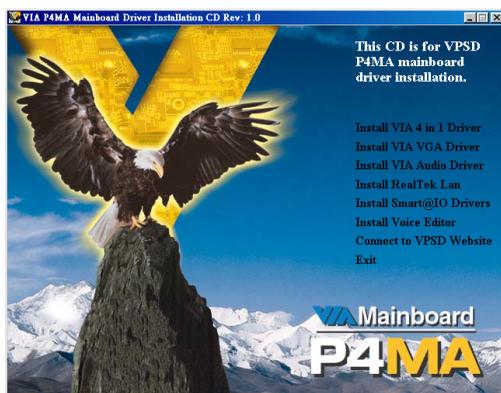
4. When the installation starts, click **Next** to install drivers.
5. The MS(Memory Stick) and SD(Secure Digital Card) are mutually exclusive in the BIOS setting. If the setting is set to "MS Socket" in the BIOS setup, the picture is as follows. Click **Next** to install drivers.
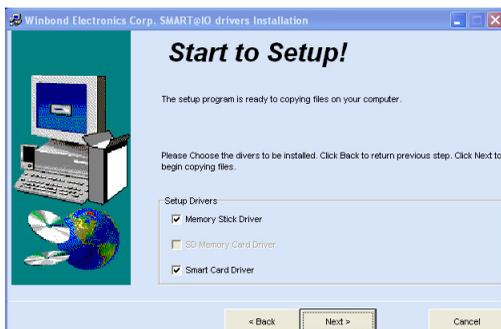
6. If the setting is set to "SD Socket" in the BIOS setup, the picture is as follows. Click **Next** to install drivers.
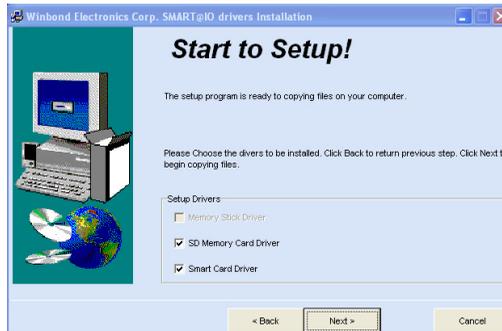
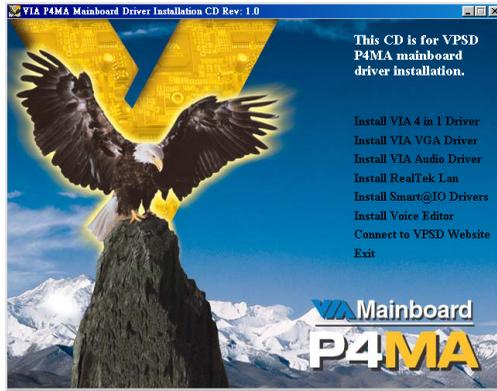

7. Click **Finish** to close the installation.

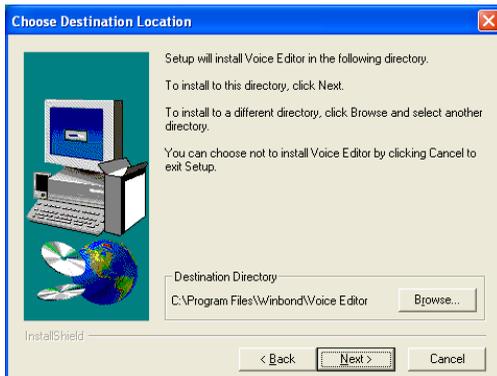8. To enable Smart@IO devices effective, restart immediately.
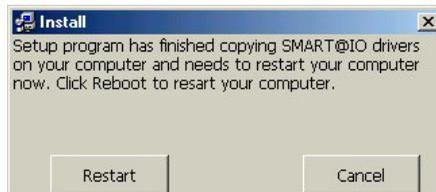
Winbond Voice Editor Utility

Winbond voice editor installation for Windows 98/98SE/ME/ 2000/XP

1. On the setup screen click the **Install Voice Editor** option.

2. When the installation starts, click **Next** to install software.
3. Click **Browse** to set the Voice Editor directory, and **Next** to continue.
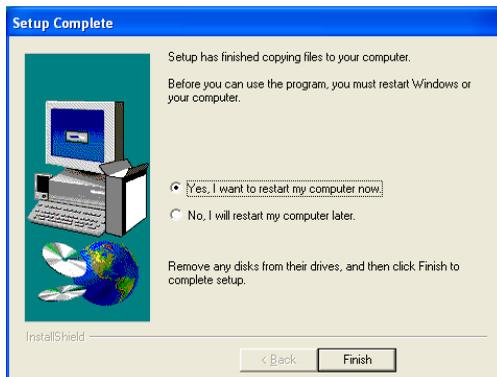
4. Type a new folder name, or select one from the Existing Folders list.

5. Click **Next** to copy files to the Voice Editor directory.

6. Setup has finished installing Voice Editor on your computer. Select **Yes** to restart the computer after setup, or **No** for restart later. Click **Finish** to complete setup.

7. After restart, launch Voice Editor from [**Start**]->[**Programs**]->[**Winbond Voice Editor**]->[**Voice Editor**]. Click the **Help** button on the tool bar of Voice Editor for information on its usage helpfile.