VIA Mainboard User's Manual

VIA P4XB-MA

Harnessing the Power of DDR266 SDRAM
for the Intel® Pentium® 4 Processor

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December 5, 2001

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CE

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.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

VIA P4XB-M

FC **Tested to comply with FCC Standard**

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Safety Instructions

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 hence protects 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 in 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. Liquid can 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 has not work well or you can not get it work according to User's Manual.
    - The equipment has dropped and damaged
    - If the equipment has obvious sign of breakage
12. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60^0C (140^0F), IT MAY DAMAGE THE EQUIPMENT.

CAUTION: Explosion or serious damage may occur if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

Box Contents

- 1 x VIA Mainboard
- 1 x User’s manual
- 1 x Floppy ribbon cable
- 1 x ATA-66/100 Hard drive ribbon cable
- 1 x 2 Port USB Module
- 1 x Driver Utilities CD

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1

Specifications

The VIA P4XB-MA Micro ATX mainboard is a high performance mainboard based on VIA Apollo P4X266A chipset. The VIA Apollo P4X266A chipset brings support for high bandwidth DDR266 SDRAM to the Intel® Pentium® 4 processor platform, and utilizes advanced V-Link technology for optimal system efficiency. Designed for the latest 478-pin Pentium® 4 processors, the P4XB-MA offers the ideal platform for building powerful PCs and workstations.

This chapter includes the following topics:

Mainboard Specifications	1-2
Mainboard Layout	1-4

Mainboard Specifications

CPU

- Supports 478-pin Intel® Pentium® 4 Processors
- 400MHz Front Side Bus.
- Supports clock speeds from 1.5GHz to 2.0GHz.

Chipset

- VIA Apollo P4X266A chipset
  - 64bit DDR SDRAM memory interface (200/266MHz).
  - 32bit AGP interface (66MHz) for 4x/2x mode.
  - 8bit V-Link interface (66MHz) with peak bandwidth of 266MB/s.
  - Dual IDE interface supports ATA-66 and ATA-100 modes.

Main Memory

- Supports up to 2GB of DDR266 SDRAM (PC2100/PC1600).
- Supports four memory banks using two 184-pin DDR266 DIMM slots.
- 2.5v DDR266 SDRAM.

Slots

- One AGP (Accelerated Graphics Port) 4x slot.
- Three PCI 2.2 32-bit PCI expansion slots (supports 3.3v/5v PCI bus interface).
- One CNR (Communication Network Riser) slot.

On-Board IDE

- IDE controller on the south bridge of the VIA Apollo P4X266A chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 33/66/100 operation modes.
- Can connect up to four IDE devices.

On-Board Peripherals

- On-Board Peripherals include:
  - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
  - 2 serial ports (COM A + COM B).
  - 1 parallel port supports SPP/EPP/ECP mode.
  - Up to 4 USB connections (2 back panel ports & 2 Front pin-headers).
  - 1 IrDA connector for SIR/CIR/ASKIR/HPSIR.
  - 1 RJ-45 LAN port.

- 1 game (MIDI) port.
- 3 Audio jacks: line-out, line-in and mic-in.

Audio

- AC97 link controller integrated in VT8233.
- 2-channel RealTek ALC201A software audio codec .
  - Compliance with AC97 v2.2 spec.
  - Meets PC2001 audio performance requirement.

LAN

- RealTek RTL81000L 10/100 Base-T Fast Ethernet Controller.
  - Supports 10MB/s and 100MB/s auto-negotiation operation.
  - Compliance with PCI v2.2.
  - Compliance with PC99 standard.
  - Supports Wake-On-LAN and remote wake-up.
  - Supports ACPI power management.

BIOS

- Plug and Play Award BIOS

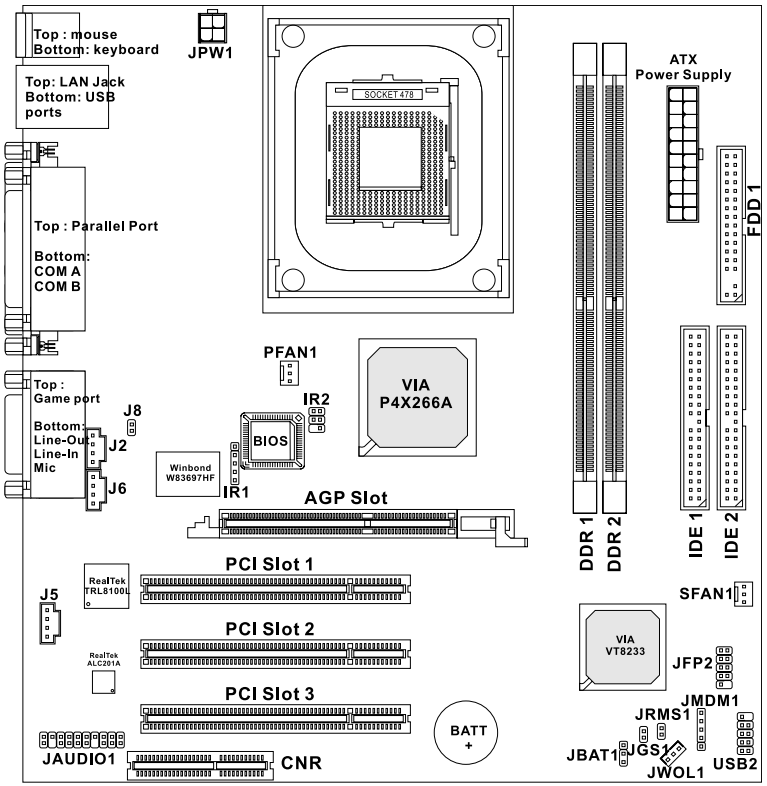
Dimension

- Micro-ATX Form Factor: 24.3cm x 23.1cm.

Mounting

- 6 standard mounting holes.

Mainboard Layout



VIA P4XB-MA MicroATX Mainboard

2

Installation

This chapter provides you with the information about hardware setup procedures. While installating, be careful in holding the components and follow the installation procedures. Some components can be damaged if they are installed incorrectly.

If possible, use a grounded wrist strap before handling computer components. Static electricity can damage the components.

This chapter contains the following topics:

Central Processing Unit (CPU)	2-2
Memory Installation	2-5
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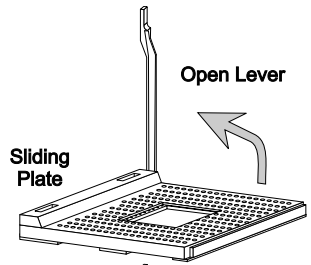
Slots	2-22

Central Processing Unit: CPU

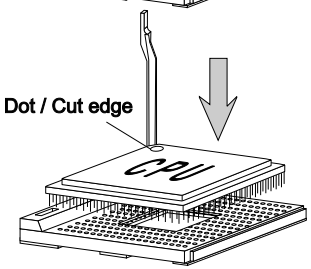
The VIA P4XB-MA mainboard supports the Intel® Pentium® 4 processor in the 478 pin package. When installing the CPU, **make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating.** If the heat sink and cooling fan are not included with the CPU, contact your dealer to purchase and install them before turning on the computer.

CPU Installation Procedures

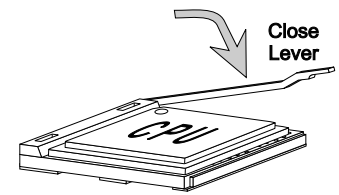
1. Pull the lever sideways away from the socket. Then raise the lever up to a 90-degree angle.



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.



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

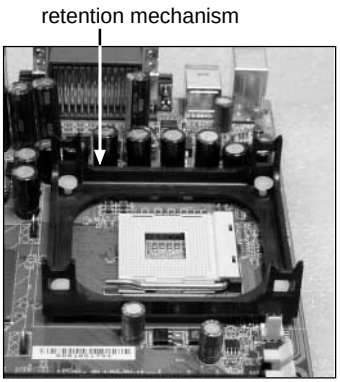


WARNING! *Overheating will seriously damage the CPU and system. Always make sure the cooling fan can work properly to protect the CPU from overheating.*

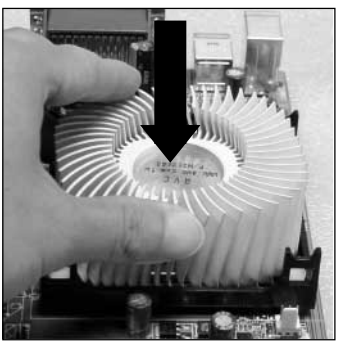
Installing the CPU Fan

To effectively dissipate heat generated by the CPU, you need to attach the CPU cooling fan and heatsink on top of the CPU. Follow the instructions below to install the Heatsink/Fan:

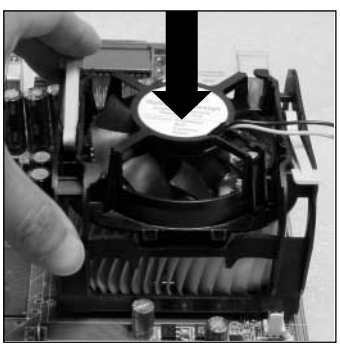
1. Locate the CPU and its retention mechanism on the motherboard.



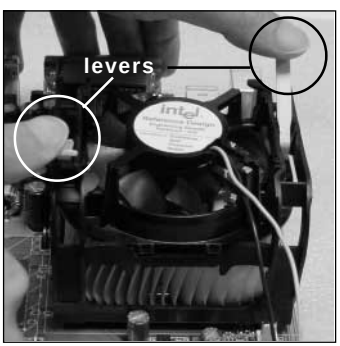
2. Position the heatsink onto the retention mechanism.



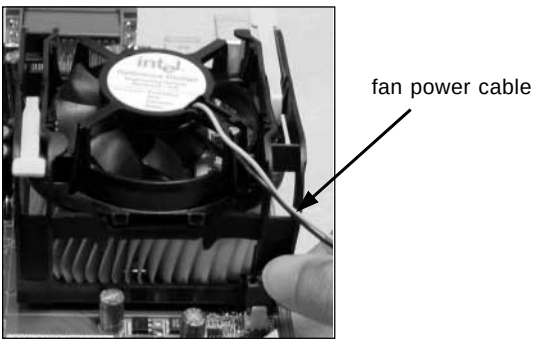
3. Mount the fan on top of the heatsink. Press down the fan until its four clips get wedged in the holes of the retention mechanism.



4. Press the two levers down to fasten 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 board.



CPU Core Speed Derivation Procedure

If	CPU Clock	=	100MHz
	Core/Bus ratio	=	14
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	100MHz x 14
		=	1.4GHz

STOP

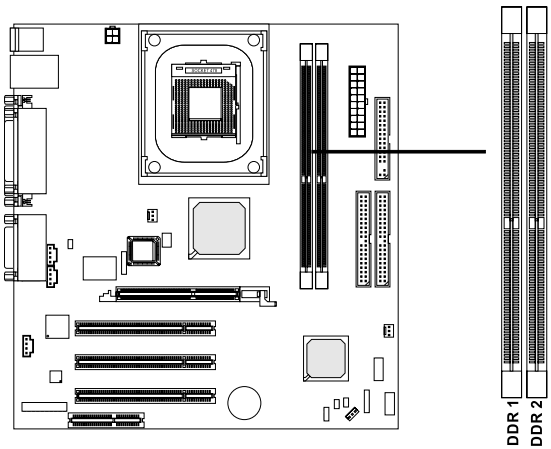
WARNING!

Overclocking

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

Memory Installation

The mainboard provides two 184-pin DDR DIMM (2.5V) with 4 memory banks. To operate properly, at least one DIMM module must be installed.



You can install two 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 by transfering data twice per cycle. It transfers data on both the rising and falling edges of the clock. Conventional SDRAM only uses the rising edge of the clock to transfer data.

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.

Two types of DDR are available at the time of writing: PC1600 & PC2100. PC1600 DDR SDRAM running at 100MHz will produce about 1.6GB/s memory bandwidth. PC2100 running at 133MHz will produce 2.1GB/s memory bandwidth.

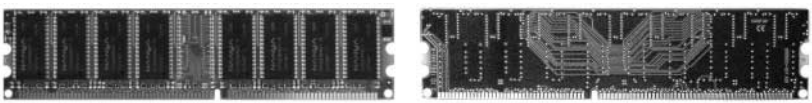
DDR Module Installation Procedures

You can install either single sided or double sided 184-pin DDR DIMM modules into DDR DIMM slots, depending on your requirements. As opposed to SDR DIMMs, DDR DIMMs have only one notch in the center of module. The modules will only fit if placed in the correct position.

You can install memory modules in any of the following combinations:

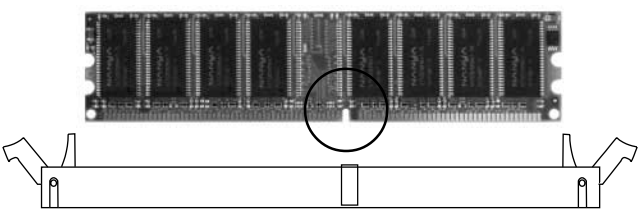
Socket	Memory Module	Total Memory
Slot 1 (Bank 0 & Bank 1)	32MB, 64MB, 128MB, 256MB, 512MB, 1GB	32MB~1GB
Slot 2 (Bank 2 & Bank 3)	32MB, 64MB, 128MB, 256MB, 512MB, 1GB	32MB~1GB
Maximum System Memory Supported		32MB~2GB

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



Front View **Rear View**

2. Insert the DDR module vertically into the DDR DIMM slot. Make sure the notch is in the right position.



Volt

3. The plastic clips at sides of the DIMM slot will automatically close.

Power Supply

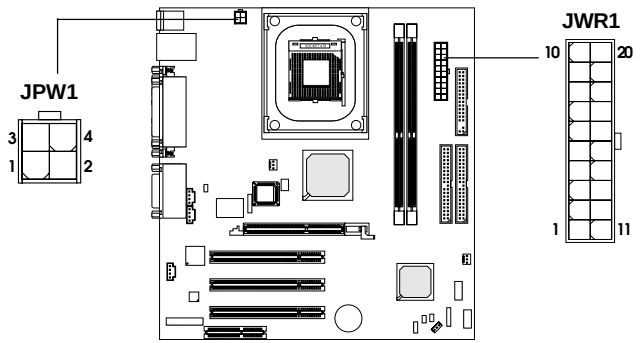
The P4XB-MA mainboard requires an ATX power supply for powering the system. Before inserting the power supply connector, always make sure that all components are installed correctly to ensure that no damage will be caused.

ATX 20-Pin Power Connector: JWR1

This connector is for the ATX power supply. To connect the ATX power supply, make sure the plugs of the power supply is inserted in the proper orientation and the pins are correctly aligned. Then, push down the power supply firmly into the connector. The power connector supports an **instant power on** function, which means the system will boot up immediately when the power supply connector is inserted on the board.

ATX 12V Power Connector: JPW1

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



JWR1 Pin Definition

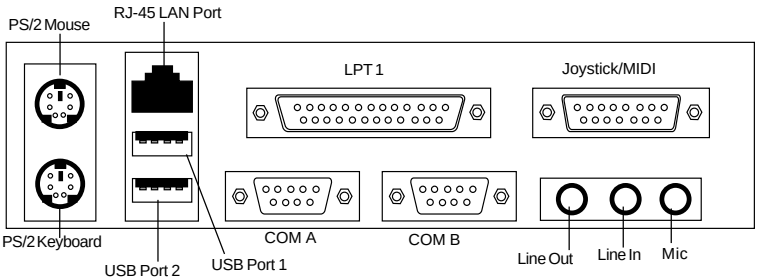
PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

JPW1 Pin Definition

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

Back Panel

The Back Panel of the VIA P4XB-MA mainboard provides the following connectors:



Mouse Connector: JKBMS1

The mainboard provides a standard PS/2 mouse mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse directly into this connector.

Keyboard Connector: JKBMS1

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a PS/2® keyboard. You can plug a PS/2® keyboard directly into this connector.

LAN Jack (RJ-45)

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

USB Connectors

The mainboard provides a UHCI (Universal Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug the USB device directly into ths connector.

Serial Port Connector: COM A & COM B

The mainboard offers two 9-pin male serial port connectors (COM A & COM B). You can attach a serial mouse or other serial devices directly to these ports.

Joystick/Midi Connectors

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

Audio Port Connectors

Line Out is a connector for Speakers or Headphones. *Line In* is used for an external CD player, tape player, or other audio devices. *Mic In* is a connector for microphones.

Parallel Port Connector: LPT1

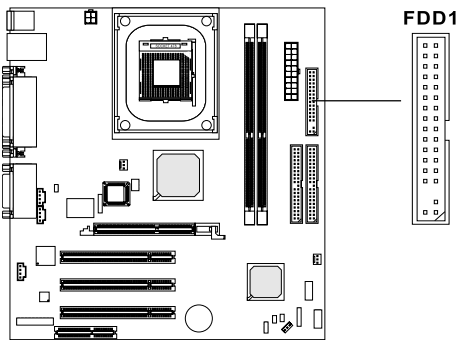
The mainboard provides a 25-pin female centronic connector for LPT. A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.

Connectors

The P4XB-MA mainboard provides connectors for FDD, IDE HDD, case, modem, LAN, USB Ports, IR module and CPU/System FAN.

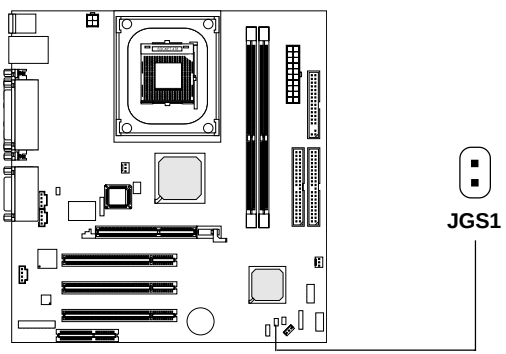
Floppy Disk Drive Connector: FDD1

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



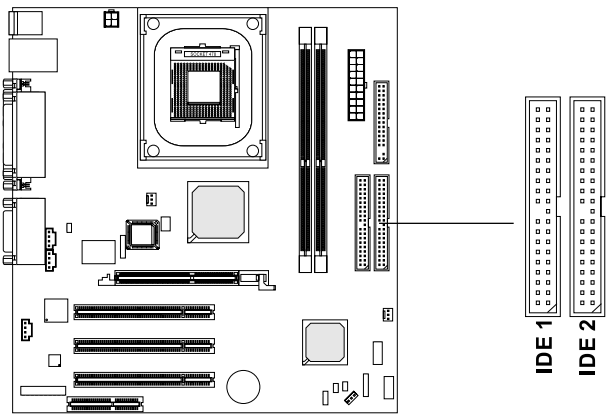
Power Saving Switch Connector: JGS1

This connector is for attaching a power saving switch. Pressing the switch once will enter the system into sleep/suspend state. Pressing any key will wake up the system.



Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66/100 functions. You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices. These connectors utilize the provided IDE hard disk cable.



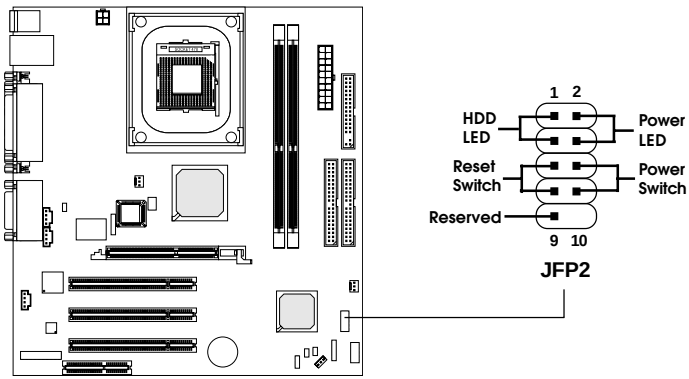
IDE1 (Primary IDE Connector)
The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure the second hard drive to Slave mode by setting the jumper accordingly.

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.*

Case Connector: JFP2

The case connector **JFP2** allows you to connect to the the Power Switch, Reset Switch, Power LED and HDD LED on the case.



JFP2 Pin Definition

Pin	Description	Pin	Description
1	*HDD_LED+	2	PWR_LED G
3	HDD_LED-	4	PWR_LED Y
5	RESET-	6	PWR_SW+
7	RESET+	8	PWR_SW-
9	RSVD_DNU	10	NC

* Hard disk LED pullup (330 ohm) to +5V

Power Switch

Connect to a 2-pin push button switch.

Reset Switch

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

The Power LED is lit while the system power is on. There are two types of LEDs you can connect from the system case to the pin:

2-pin single color power LED: The power LED is not able to change its color. Therefore, you can only choose *Blinking* in the BIOS utility for the power LED to indicate the suspend/sleep mode.

2-pin dual color power LED: The 2-pin power LED can change its color to indicate different system states. Therefore, you can select either *Blinking* or *Dual (color)* for the power LED to show the suspend/sleep mode.

- When you select *Blinking*:

LED Status	Description
Steady Green	The system is in the full-on mode.
Blinking	The system enters the suspend/sleep mode.

- When you select *Dual (color)*:

LED Status	Description
Steady Green	The system is in the full-on mode.
Steady Orange	The system enters the suspend/sleep mode.

HDDLED

The HDD LED shows the activity of a hard disk drive connected to the IDE1 or IDE2 connector. Avoid turning the power off while the HDD is working. You can connect the HDD LED from the system case to this pin.

CD-In Connector: J2

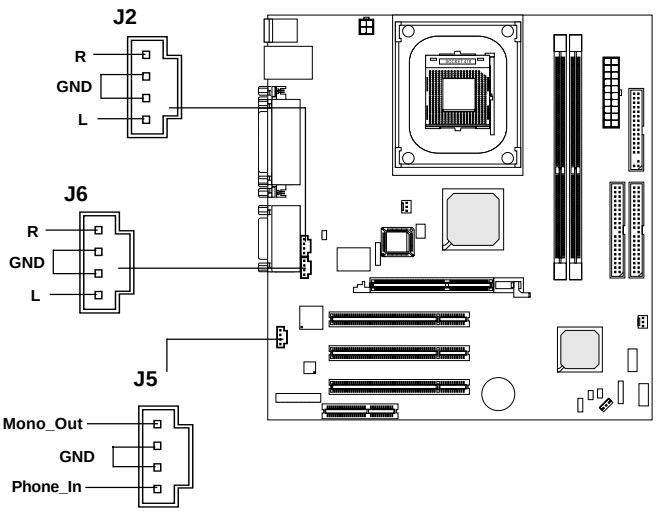
This connector is for the CD-ROM audio connector.

Aux Line-In Connector: J6

This connector is for a DVD add-on card with Line-in connector.

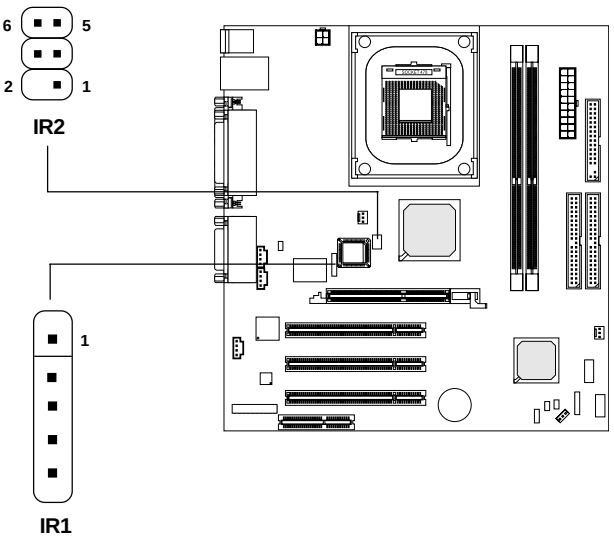
Modem-In Connector: J5

This connector is for a modem with internal audio connector.



IrDA Infrared Module Connectors: IR1 & IR2

These connectors allow you to connect to IrDA Infrared modules. You must configure the settings through the BIOS setup to use the IR function. The difference between IR1 & IR2 is that IR2 is compliant to the3 Intel Front Panel I/O Connectivity Design Guide.



IR1 Pin Definition

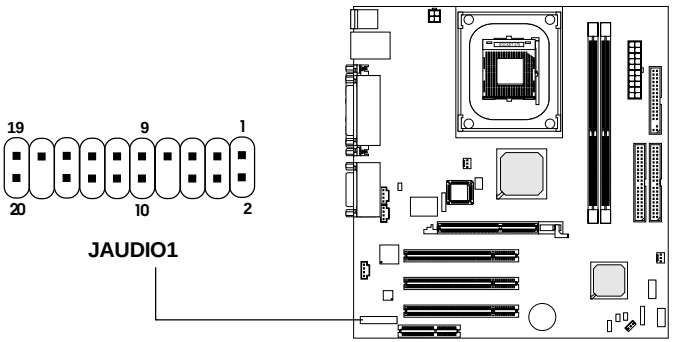
Pin	Signal
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX

IR2 Pin Definition

Pin	Signal
1	Not assigned
2	NC
3	VCC
4	GND
5	IRTX
6	IRRX

Front Panel Audio Connector: JAUDIO1

You can connect an optional audio connector to the Front Panel Audio pin-header. Pin numbers *1 to 10* of the audio pin header are compliant to the Intel Front Panel I/O Connectivity Design Guide.



JAUDIO1 Pin Definition (1~10)

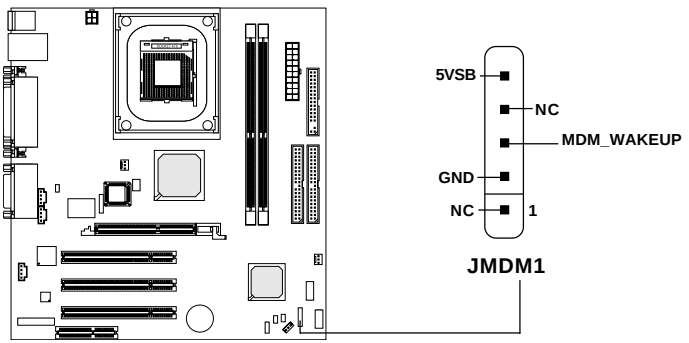
Pin	Signal	Description
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	AUD_MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5V used by Analog Audio Circuits
5	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal Return from Front Panel
7	HP_ON	RSVD for future use to control Headphone Amplifier
8	NC	No Connection
9	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal Return from Front Panel

JAUDIO1 Pin Definition (11~20)

Pin	Signal	Description
11	AUD_MIC	Front Panel Microphone input signal
12	AUD_GND	Ground used by Analog Audio Circuits
13	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
14	AUD_RET_R	Right Channel Audio signal Return from Front Panel
15	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
16	AUD_RET_L	Left Channel Audio signal Return from Front Panel
17	AUD_GND	Ground used by Analog Audio Circuits
18	NC	No Connection
19	LINE-IN-R	Line in Right
20	LINE-IN-L	Line in Left

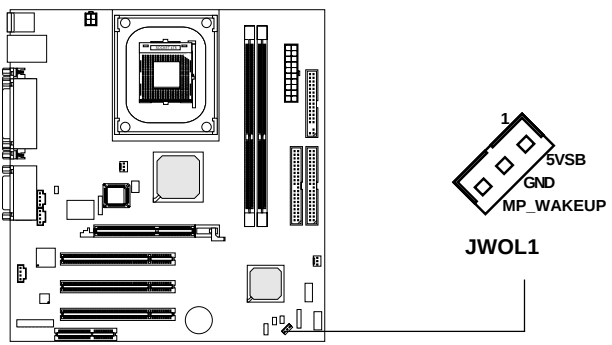
Wake On Ring Connector: JMDM1

This connector allows you to connect to 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.



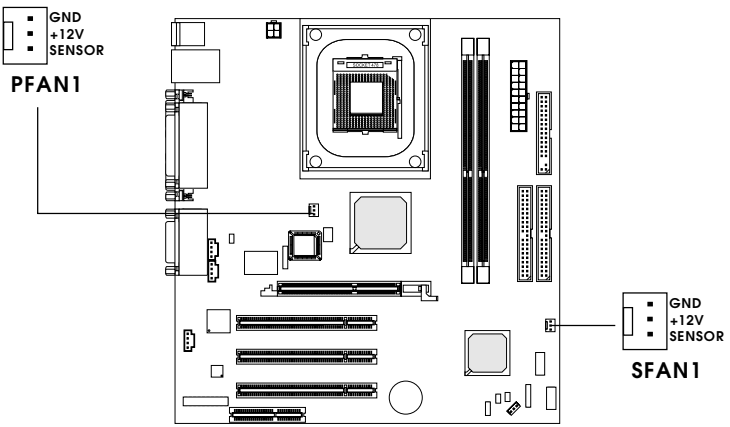
Wake On LAN Connector: JWOL1

This connector allows you to connect to a LAN card with Wake On LAN function. You can wake up the computer via remote control through a local area network (LAN).



Fan Power Connectors: PFAN1/SFAN1

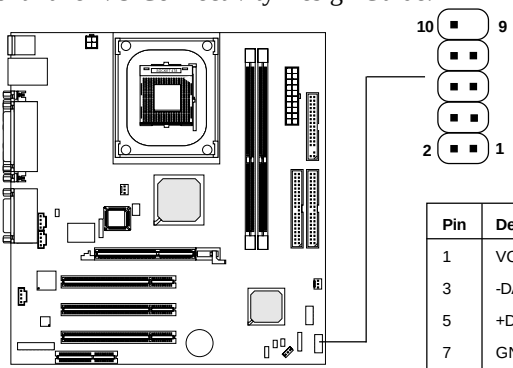
The PFAN1 (processor fan) & SFAN1 (system fan) connectors provide +12V power supply for the system cooling fan, via a three-pin connector. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.



NOTE: *Always consult the vendor for proper CPU cooling fan.*

USB Front Connector: USB2 (Intel spec)

The mainboard provides a front Universal Serial Bus (USB) connector for connecting additional USB devices. This USB2 connector is compliant to the Intel Front Panel I/O Connectivity Design Guide.

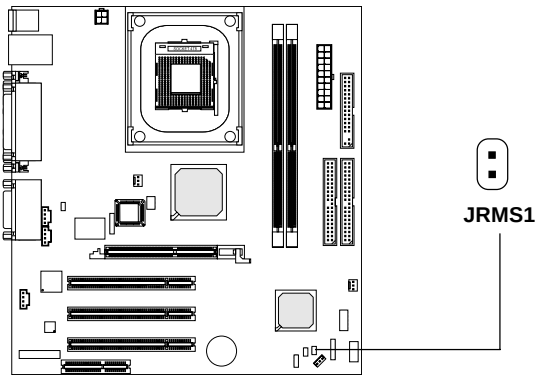


USB2 Pin Definition

Pin	Description	Pin	Description
1	VCC	2	VCC
3	-DATA3	4	-DATA2
5	+DATA3	6	+DATA2
7	GND	8	GND
9	NC	10	Overcurrent Signal

Remote Power On/Off Switch Connector: JRMS1

Connects to a 2-pin push button switch. When the system is off, pressing the button will turn the system on. When the system is on, pressing the button once will enter the system to the sleep/suspend state. If the button is pressed for more than four seconds, the system will be turned off. To change the setup, go to the BIOS Power Management Setup.

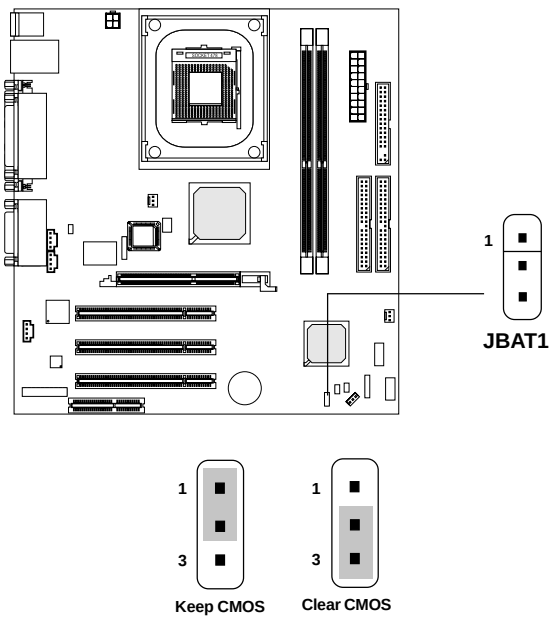


Jumpers

The mainboard provides one jumper for setting the computer's functions. This section will explain how to change your mainboard's function through the use of the jumper.

Clear CMOS Jumper: JBAT1

There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. That battery has long life time for at least 5 years. If you want to clear the system configuration, use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:

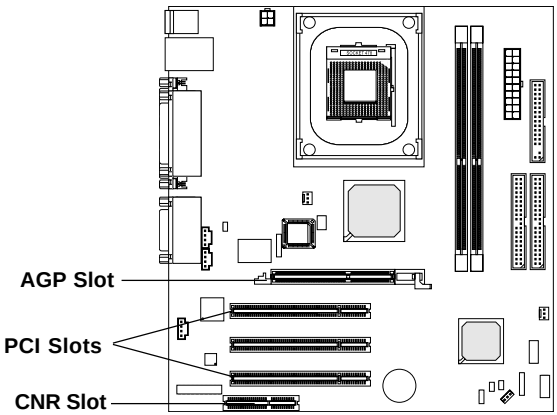


WARNING!

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

Slots

The mainboard provides three 32-bit Master PCI bus slots, one AGP slot and one CNR slot.



AGP (Accelerated Graphics Port) Slot

The AGP slot allows you to insert the 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 one level of throughput: 4x (1.07Gbps).

PCI Slots

Three PCI slots allow you to insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure 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)

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

PCI Interrupt Request Routing

The IRQ, abbreviation of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The "PCI & LAN" 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#
LAN	INT B#			

3

BIOS Setup

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Save & Exit Setup	3-35
Exit Without Saving	3-36

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

```
Press DEL to enter SETUP
```

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

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

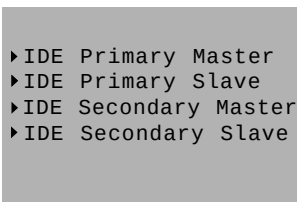
After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the control keys (↑↓) to select the item. The on-line description of the high-lighted setup function is displayed at the bottom of the screen.

Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu containing additional options can be launched from this field. You can use control keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press <Esc >.

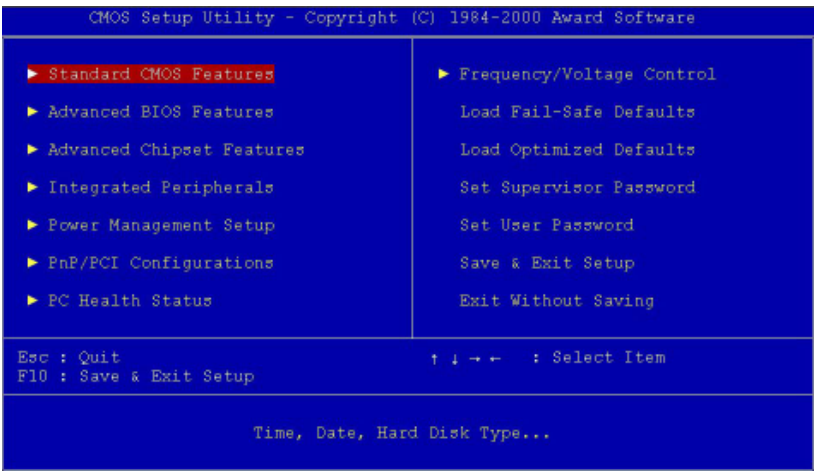


General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from twelve setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.



Standard CMOS Features
Use this Menu for 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 change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup
Use this menu to specify your settings for power management.

PnP/PCI Configurations
This entry appears if your system supports PnP/PCI.

PC Health Status
This entry shows your PC health status.

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

Load Fail-Safe Defaults
Use this menu to load factory default settings in the BIOS for stable system running

Load Optimized Defaults
Use this menu to load factory default settings into the BIOS for optimal and stable system operations.

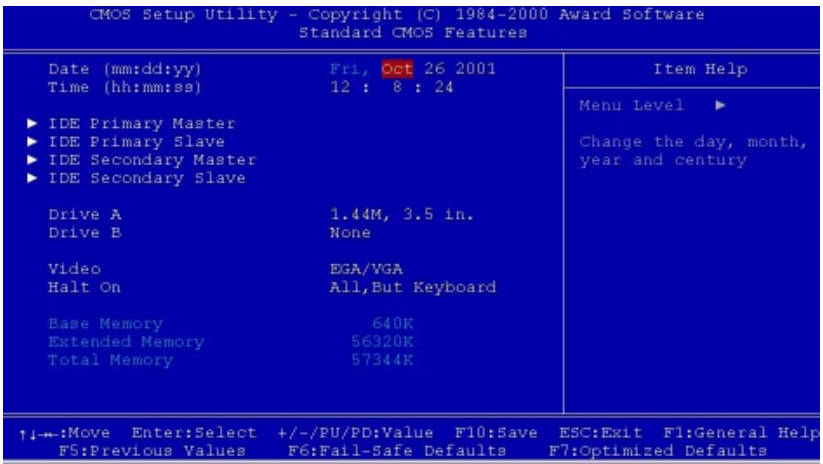
Supervisor/User Password
Use this menu to set User and Supervisor Passwords.

Save & Exit Setup
Save CMOS value changes to CMOS and exit setup.

Exit Without Saving
Abandon all CMOS value changes and exit setup.

Standard CMOS Features

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



Date

The date format is <day><month> <date> <year>.

day Day of the week, from Sun to Sat, determined by BIOS. Read-only.
month The month from Jan. through Dec.
date The date from 1 to 31 can be keyed by numeric function keys.
year The year, depends on the year of the BIOS

Time

The time format is <hour> <minute> <second>.

IDE Primary/Secondary Master/Slave

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. Note that 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. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the follow-

ing items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be “None”.
If the controller of HDD interface is CD-ROM, the selection shall be “None”.

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.

Drive A/B
This item allows you to set the type of floppy drives 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.*

Video
The setting controls the type of video adapter used for the primary monitor of the system. Available options are *EGA/VGA , CGA 40, CGA 80* and *Mono*.

Halt On
The setting determines whether the system will stop if an error is detected at boot. Available options are:

All Errors	The system stops when any error is detected.
No Errors	The system doesn’t stop for any detected error.
All, But Keyboard	The system doesn’t stop for a keyboard error.
All, But Diskette	The system doesn’t stop for a disk error.
All, But Disk/Key	The system doesn’t stop for either a disk or a keyboard error.

Advanced BIOS Features

Anti-Virus Protection
The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. If the function is enabled and any attempt to write data into this area is made, BIOS will display a warning message on screen and beep. Settings: *Disabled* and *Enabled*.

CPU L1 & L2 Cache
The item allows you to turn on or off CPU's internal (L1) and external (L2) cache. Settings: *Enabled* and *Disabled*.

CPU L2 Cache ECC Checking
This setting allows you to enable or disable the ECC (Error-Correcting Code) feature for error detection and correction when data passes through L2 cache memory. Setting options: *Enabled* and *Disabled*.

Quick Power On Self Test
The option speeds up Power On Self Test (POST) after you power on the computer. When setting the item to *Enabled*, BIOS will shorten or skip some check items during POST. Settings: *Enabled* and *Disabled*.

First/Second/Third Boot Device
The items allow you to set the sequence of boot devices where 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 the first HDD.
SCSI	The system will boot from the SCSI.
CDROM	The system will boot from the CD-ROM.
HDD-1	The system will boot from the second HDD.
HDD-2	The system will boot from the third HDD.
HDD-3	The system will boot from the fourth HDD.
ZIP	The system will boot from ATAPI ZIP drive.
LAN	The system will boot from the Network drive.
Disabled	Disable this sequence.

Boot Other Device
Setting the option to *Enabled* allows the system to try to boot from other device if the system fails to boot from the First/Second/Third boot device.

Swap Floppy Drive
Setting to *Enabled* will swap floppy drives A: and B:.

Boot Up Floppy Seek
Setting to *Enabled* will make BIOS seek floppy drive A: before booting the system. Settings: *Disabled* and *Enabled*.

Boot Up NumLock Status
This item is to set the NumLock status when the system is powered on. Setting to *On* will turn on the Num Lock key when the system is powered on. Setting to *Off* will allow end users to use the arrow keys on the numeric keypad. Settings: *On* and *Off*.

Gate A20 Option
This item is to set the Gate A20 status. A20 refers to the first 64KB of extended memory. When the default value *Fast* is selected, the Gate A20 is controlled by Port92 or chipset specific method resulting in faster system performance. When *Normal* is selected, A20 is controlled by a keyboard controller or chipset hardware.

Typematic Rate Setting
This item is used to enable or disable the typematic rate setting including Typematic Rate & Typematic Delay.

Typematic Rate (Chars/Sec)
After *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)
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
This specifies the type of BIOS password protection that is implemented. Settings are described below:

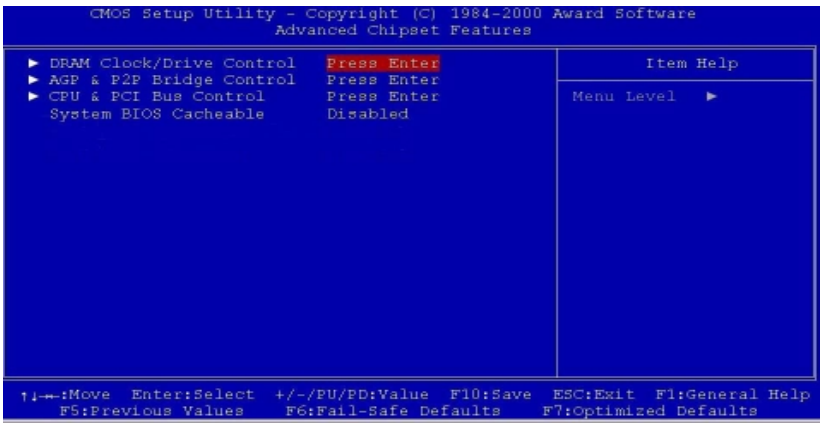
Option	Description
Setup	The password prompt appears only when end users try to run Setup.
System	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

OS Select For DRAM > 64MB
This allows you to run the OS/2® operating system with DRAM greater than 64MB. Setting options: Non-OS2, OS2.

Video BIOS Cacheable
Selecting Enabled allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result. Settings: *Enabled* and *Disabled*.

Advanced Chipset Features

The Advanced Chipset Features setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.



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

DRAM Clock/Drive Control

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

DRAM Timing by SPD

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. Setting options: *Yes, No*.

DRAM Frequency (MHz)
The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency. Available settings are:

Auto:	DRAM clock frequency is automatically determined.
HCLK:	The DRAM clock will be equal to the Host clock.
HCLK+33:	The DRAM clock will be equal to the Host clock plus 33MHz. For example, if the Host clock is 100MHz, the DRAM clock will 133MHz.

DRAM CAS Latency
The field controls the CAS latency, which determines the timing delay before SDRAM starts a read command after receiving it. Setting options: *2, 2.5, 3* (clock cycles), *Auto*. *2* increases system performance while *2.5* provides more stable system performance for DDR SDRAM.

Bank Interleave
This setting determines the bank interleave for the installed SDRAM. Setting options: *Disabled, Auto*.

Row Precharge
This setting allows you to select the number of DRAM clocks allocated for the Row Address Strobe (RAS#) signal to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost. The lower the timing numbers, the faster the memory performance. Setting options: *3T, 2T, Auto*.

RAS Pulse
This setting allows you to select the number of DRAM clock cycles allotted for the RAS pulse width, according to DRAM specifications.The lower the timing numbers, the faster the memory performance. Setting options: *6T, 5T, Auto*.

RAS to CAS

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The lower the timing numbers, the faster the memory performance. Setting options: *3T, 2T, Auto.*

Burst Length

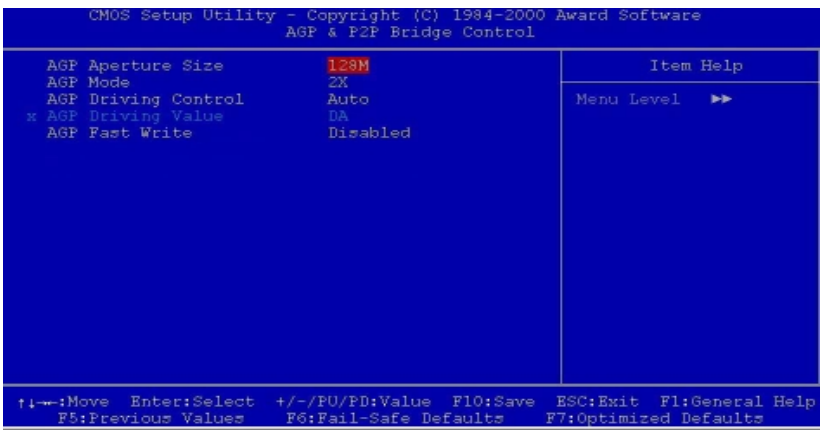
This setting allows you to set the size for Burst-Length for DRAM. The bigger the sizes, the faster the system addresses memory. Setting options: *4, 8, Auto.*

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*. Setting options: *2T, 1T.*

AGP & P2P Bridge Control

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



AGP Aperture Size

This setting controls just how much system RAM can be allocated to AGP for video 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. Setting options: *4MB, 8MB, 16MB, 32MB, 64MB, 128MB, and 256MB.*

AGP Driving Control

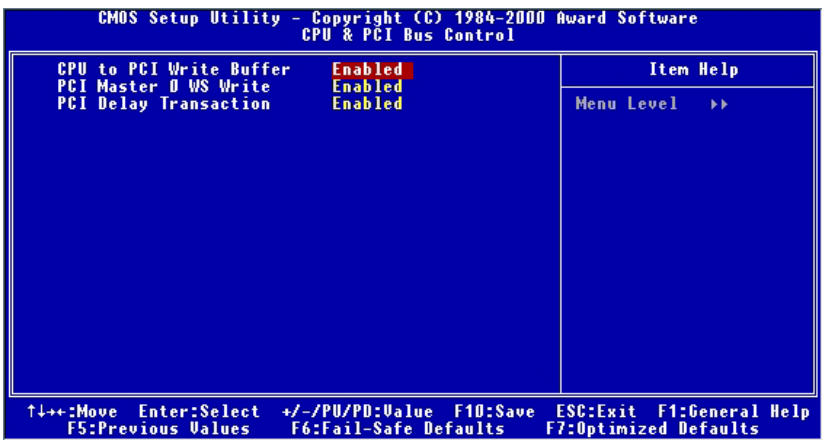
The setting is used to adjust AGP driving force. Selecting *Manual* allows you to type a AGP driving force in AGP Driving Value. It is strongly suggested to select *Auto* to avoid causing any system error. Setting options: *Auto, Manual.*

AGP Fast Write

This setting enables/disables the AGP Fast Write feature. The Fast Write technology allows CPU to write directly into the graphics card without passing anything through system memory and improves 4X speed accordingly. Select *Enabled* only when your AGP card supports the feature. Setting options: *Enabled, Disabled*.

CPU & PCI Bus Control

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



CPU to PCI Write Buffer

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

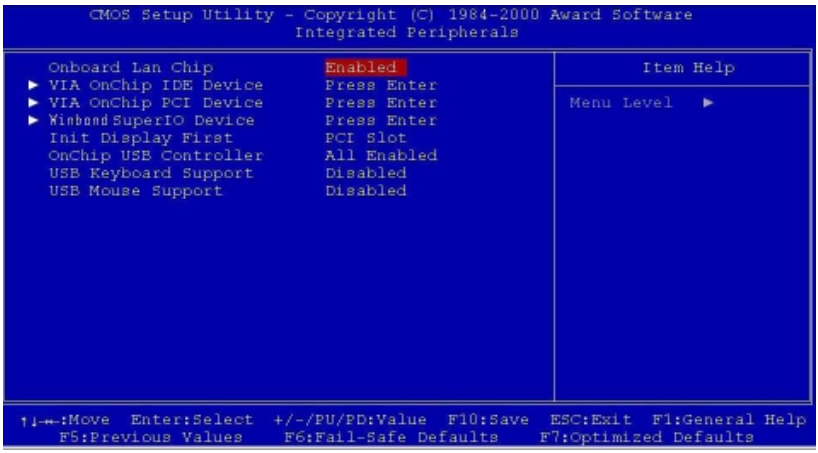
receive more data. Setting options: *Enabled, Disabled.*

PCI Master 0 WS Write
When *Enabled*, writes to the PCI bus are executed with zero wait state. Setting options: *Enabled, Disabled.*

PCI Delay Transaction
The chipset has an embedded 32-bit posted write buffer to support delay transaction cycles. Select *Enabled* to support compliance with PCI specification version 2.1. Setting options: *Enabled, Disabled.*

System BIOS Cacheable
Selecting enabled allows write through caching of the system BIOS ROM at F0000h to FFFFF except F8000 to F8FFF, resulting in better system BIOS performance.

Integrated Peripherals

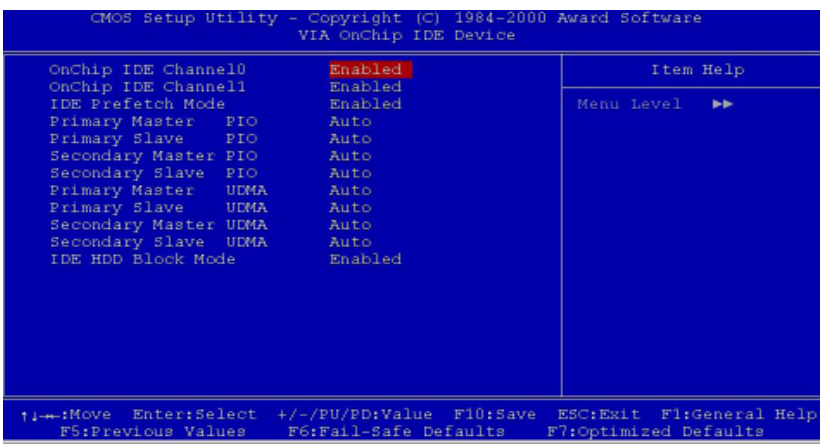


Onboard LAN Chip

This setting enables the onboard RTL8100L LAN chip. Setting options: Enabled, Disabled.

VIA OnChip IDE Device

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



OnChip IDE Channel 0/1
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Choose *Enabled* to activate each channel separately. Setting options: *Disabled, Enabled.*

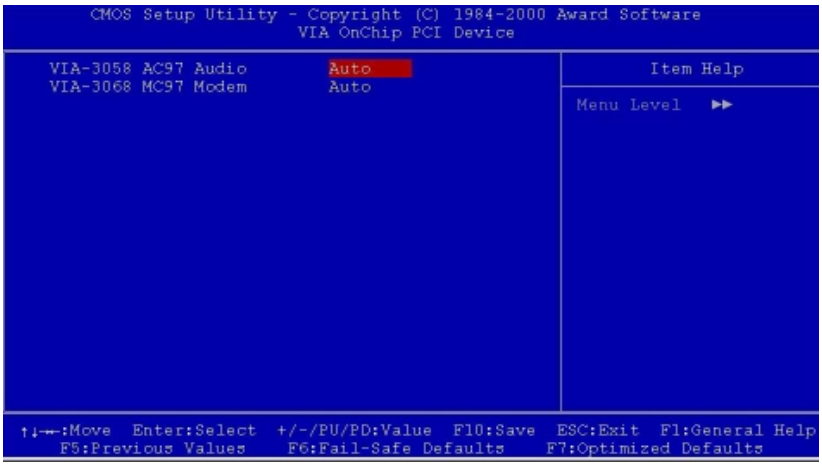
Primary/Secondary Master/Slave PIO
The four fields allow you to set a PIO (Programmed Input/Output) mode for each of the four IDE devices that the onboard IDE interface supports. *Modes 0~4* provide increased performance. In *Auto* mode, BIOS automatically determines the best mode for each IDE device.

Primary/Secondary Master/Slave UDMA
Ultra DMA implementation is possible only if your IDE device supports it and your operating environment contains a DMA driver. If both your hard drive and software support Ultra DMA 33, select *Auto* to enable BIOS support. Setting options: *Auto, Disabled.*

IDE HDD Block Mode
This setting allows your hard disk controller to use the fast block mode to transfer data to and from the hard disk drive. Block mode is also called Block Transfer, Multiple Commands or Multiple Sector Read/Write. Selecting enabled mode enables the IDE controller to use block mode; Disabled mode allows the controller to use standard mode.

VIA OnChip PCI Device

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



VIA-3058 AC97 Audio

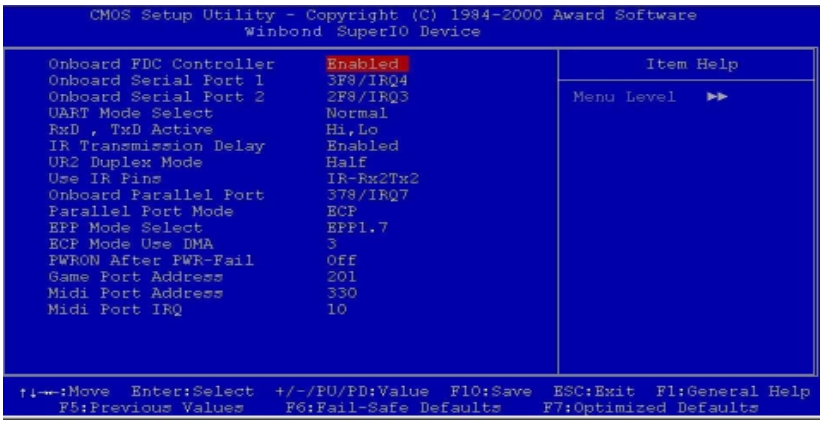
Auto allows the mainboard to detect whether an audio device is used. If the device is detected, the onboard VIA AC'97 (Audio Codec'97) controller will be enabled; if not, it is disabled. Disable the controller if you want to use other controller cards to connect an audio device. Setting options: *Auto, Disabled*.

VIA-3068 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. Setting options: *Auto,*

Winbond Super I/O Device

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



Onboard FDC Controller

This setting enables or disables the onboard Floppy controller. Select *Enabled* when you have installed a floppy disk drive and want to use it.

Onboard Serial Port 1/2

This setting specifies the base I/O port address and IRQ for the onboard Serial Port A / Serial Port B. Selecting Auto allows the 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 allows you to specify the operation mode for serial port "COM B". Settings are:

Normal: RS-232C Serial Port

IrDA: IrDA-compliant Serial Infrared Port

ASKIR: Amplitude Shift Keyed Infrared Port

RxD, TxD Active

This setting controls the receiving and transmitting speed of the IR pe-

ripheral in use. Setting options: *Hi/Hi, Hi/Lo, Lo/Hi, Lo/Lo*.

IR Transmission Delay
This setting determines whether the IR transmission rate will be delayed while converting to receiving mode. Setting options: *Disabled, Enabled*.

UR2 Duplex Mode
This setting controls the operating mode of IR transmission/reception. Setting options: *Full, Half*. Under Full Duplex mode, synchronous, bi-directional transmission/reception is allowed. Under Half Duplex mode, only asynchronous, bi-directional transmission/reception is allowed.

Use IR Pins
Please consult your IR peripheral documentation to select the correct setting of the TxD and RxD signals. Setting options: *RxD2/TxD2, IR-Rx2Tx2*.

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
SPP : Standard Parallel Port
EPP : Enhanced Parallel Port
ECP : Extended Capability Port
ECP + EPP: Extended Capability Port + Enhanced Parallel Port

SPP/EPP/ECP/ECP+EPP
To operate the onboard parallel port as Standard Parallel Port only, choose "SPP." To operate the onboard parallel port in the EPP mode simultaneously, choose "EPP." By choosing "ECP", the onboard parallel port will operate in ECP mode only. Choosing "ECP + EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously.

EPP Mode Select
The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "EPP Mode Select." At this time either

EPP 1.7 spec or EPP 1.9 spec can be selected.

ECP Mode Use DMA
The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: "ECP Mode Use DMA." At this time, the user can choose between DMA channel 3 or 1.

PWRON After PWR-Fail
This setting specifies whether your system will reboot after a power failure or interrupts occurs. Available settins are:

Off	Leaves the computer in the power off state.
On	Reboots the computer.
Former-Sts	Restores the system to the status before power failure or interrupt occurs.

Game Port Address/Midi Port Address
This setting disables or assigns an address for the onboard game/midi port.

Midi Port IRQ
This setting specifies an IRQ for the onboard midi port.

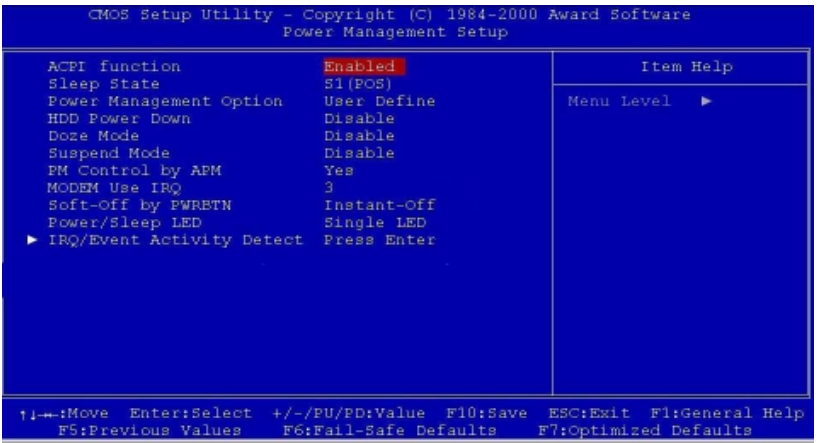
Init Display First
This setting specifies which VGA card is your primary graphics adaptor. Available options: *PCI Slot, AGP*.

Onchip USB Controller
This setting allows you to activate the onchip USB controller. Available settings: *All Disabled, All enabled, 1 USB Port, 2 USB Port.*

USB Keyboard/Mouse Support
Set to enabled if you need to use a USB keyboard/mouse and the Operating System does not support or have any USB drivers installed, such as DOS or SCO Unix. Available settings: *Disabled, Enabled.*

Power Management Setup

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



ACPI Function

This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, such as Windows 98SE/2000/ME, select *Enabled*. Settings: *Enabled* and *Disabled*.

Sleep State

This item specifies the power saving modes for ACPI function. Options are:

S1/POS	The S1 sleep mode is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system context.
S3/STR	The S3 sleep mode is a power-down state in which power is supplied only to essential components such as main memory and wake-capable devices and all system contextis saved to main memory. The information stored inmemory will be used to restore the PC to the previous state when an “wake up” event occurs.
S1 & S3	Supports both S1 and S3 sleep modes.

Power Management Option
This item is used to select the degree (or type) of power saving and is related to these modes: Suspend Mode and HDD Power Down. There are three options for power management:

Min Saving	Minimum Power Management. Suspend Mode = 1 Hour, and HDD Power Down = 15 Min.
Max Saving	Maximum Power Management. Suspend Mode = 1 Min, and HDD Power Down = 1 Min.
User Define	Allows end users to configure each mode separately.

HDD Power Down
If HDD activity is not detected for the length of time specified in this field, the hard disk drive will be powered down while all other devices remain active. Settings are *Disable* and *1* through *15* Min.

Doze Mode
After the selected period of system inactivity, the CPU clock runs at slower speed while all other devices still operate at full speed. Settings are *Disable, 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min* and *1 Hour*.

Suspend Mode
After the selected period of system inactivity, all devices except the CPU shut off. Settings are *Disabled, 1 Min, 2 Min, 4 Min, 8 Min, 12 Min, 20 Min, 30 Min, 40 Min* and *1 Hour*.

PM Control by APM
Setting to *Yes* will activate an Advanced Power Management (APM) device to enhance Max Saving mode and stop CPU internal clock. Setting options: *Yes, No*.

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

Soft-Off by PWRBTN
This feature allows users to configure the power button function. Settings are:

Instant-Off	The power button functions as a normal power-on/-off button.

Delay 4 Sec. When you press the power button, the computer enters the suspend/sleep mode, but if the button is pressed for more than four seconds, the computer is turned off.

Power/Sleep LED

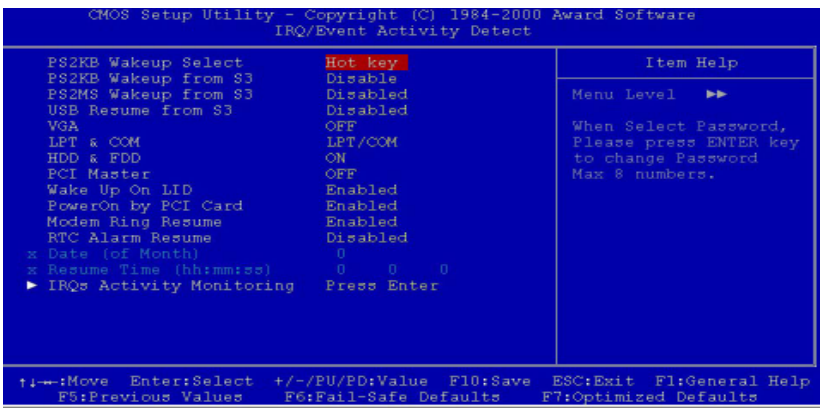
This setting determines how Power LED on the case indicates the sleep state. Settings are:

Single LED The Power LED blinks to indicate the sleep state.

Dual LED The Power LED changes its color to indicate the sleep state.

IRQ/Event Activity Detect

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



PS2KB Wakeup Select, PS2KB Wakeup from S3, PS2MS Wakeup from S3, USB Resume from S3, VGA, LPT & COM, HDD & FDD, PCI Master, Wake Up On LID, PowerOn by PCI Card, Modem Ring Resume

These fields specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

RTC Alarm Resume

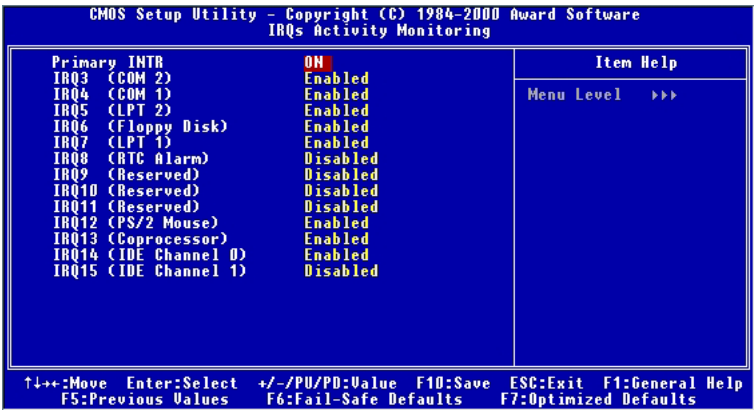
The field is used to enable or disable the feature of booting up the system on a scheduled time/date.

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 Activity Monitoring

PRESS ENTER TO ENTER THE SUB-MENU AND THE FOLLOWING SCREEN APPEARS:



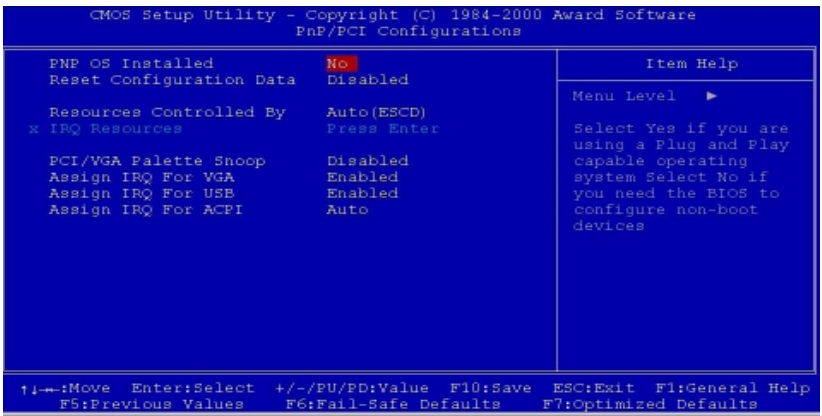
Primary INTR
Selecting *ON* will cause the system to wake up from power saving modes if activity is detected from any enabled IRQ channels.

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.

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 I/O devic*e.

PNP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.



PNP OS Installed

When set to *Yes*, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows® 95 or 98. When set to *No*, BIOS will initialize all the PnP cards. So, select *Yes* if the operating system is Plug & Play aware.

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 are: *Enabled* and *Disabled*.

Resource Controlled By

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

system such as Windows 95/98. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a " ▸ "). The settings are: *Auto (ESCD), 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. IRQ Resources list IRQ 3/4/5/7/9/10/11/12/14/15 for users to set each IRQ a type depending on the type of device using the IRQ. Settings are:

PCI Device	For Plug & Play compatible devices designed for PCI bus architecture.
Reserved	The IRQ will be reserved for further request.

PCI/VGA Palette Snoop
When set to *Enabled*, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). For example, if there are two VGA devices in the computer (one PCI and one ISA) and the:

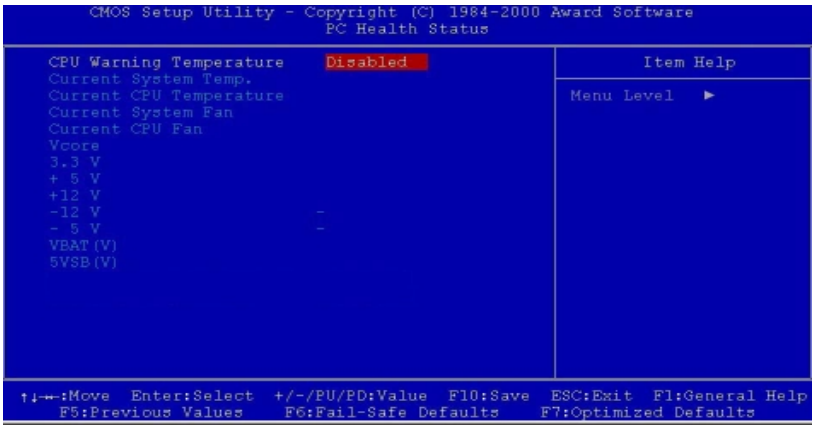
VGA Palette Snoop Bit Setting	Action
Disabled	Data read or written by the CPU is only directed to the PCI VGA device's palette registers.
Enabled	Data read or written by the CPU is directed to both the PCI VGA device's palette registers and the ISA VGA device's palette registers, permitting the palette registers of both VGA devices to be identical.

The setting must be set to *Enabled* if any ISA bus adapter in the system requires VGA palette snooping.

Assign IRQ For VGA/USB/ACPI
The settings specify IRQ for each of the hardware components. *Auto* allows BIOS to determine the IRQ automatically.

PC Health Status

This section displays the settings for monitoring the status of your CPU, fans, and overall system status.



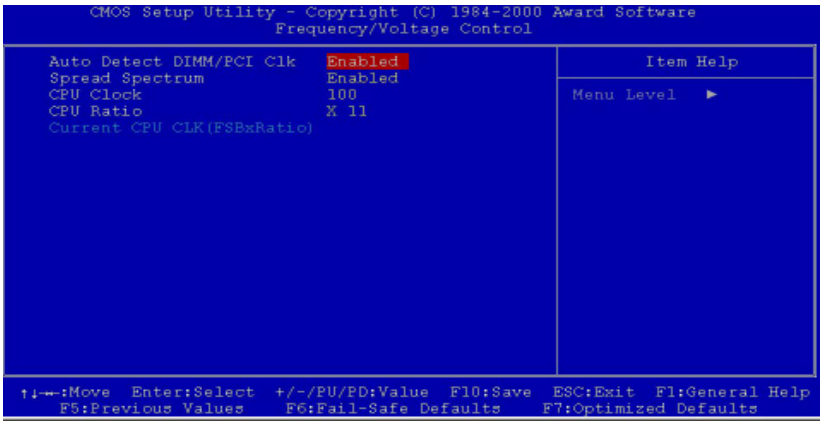
CPU Warning Temperature

If the CPU temperature reaches the upper limit preset in this setting, the warning mechanism will be activated. This helps you to prevent the CPU overheat problem.

Current System, CPU Temperature/Current System, CPU Fan/Vcore/3.3V/ +5V/+12V/-12V/-5V/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.

Frequency/Voltage Control



Auto Detect DIMM/PCI Clk

To reduce the occurrence of electromagnetic interference (EMI), the BIOS detects the presence or absence of components in DIMM and PCI slots and turns off system clock generator pulses to empty slots. The settings are: *Enabled, Disabled*.

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 problem, 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.

CPU Clock

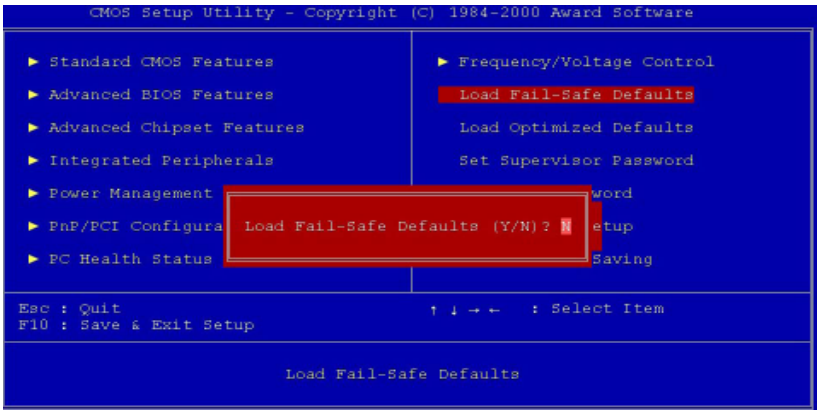
This setting specifies the clock frequency of CPU host bus (FSB) and provides a method for end-users to overclock the processor accordingly.

CPU 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.

Load Fail-Safe Defaults

This option allows users to restore all the BIOS settings to the default Fail-Safe values. The Fail-Safe default settings are the settings set by the mainboard manufacturer for stable running of the mainboard.

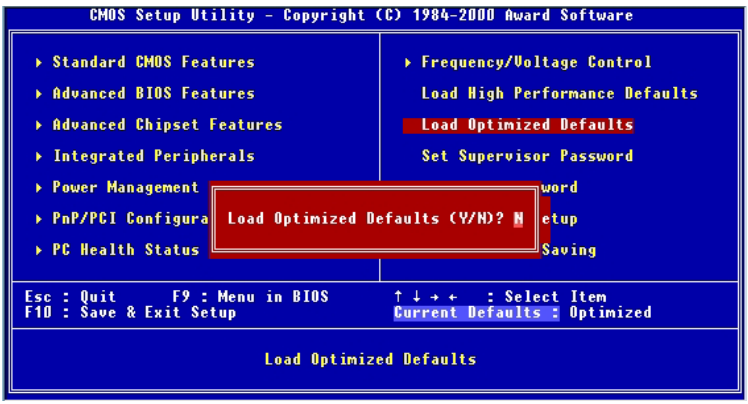


Pressing 'Y' loads the default Fail-Safe settings for stable system performance.

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.

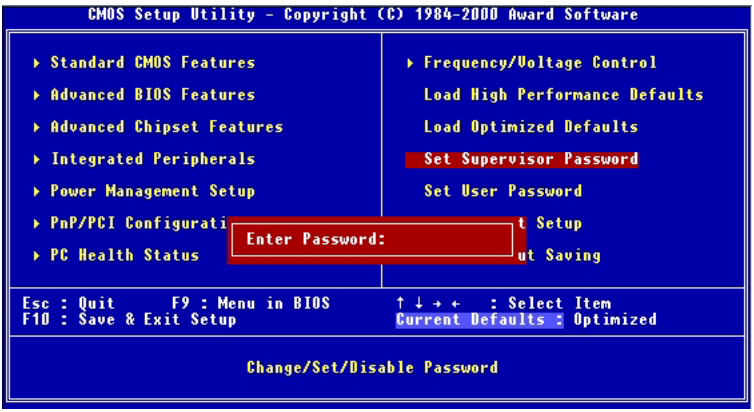
When you select Load Optimized Defaults, a message as below appears:



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:



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 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

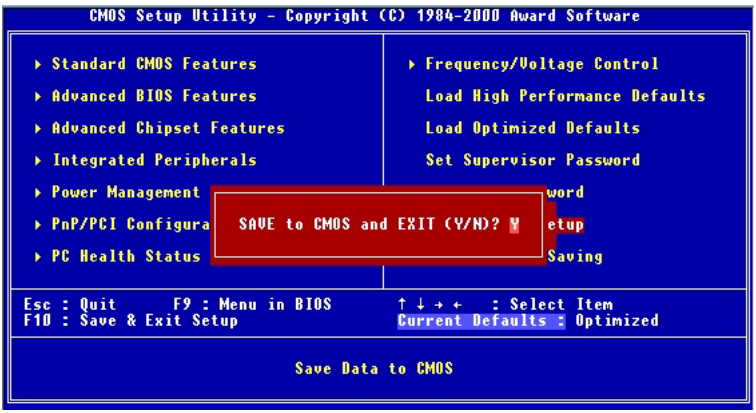
entry to Setup. If set to *Setup*, password prompt only occurs when trying to enter Setup.

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:

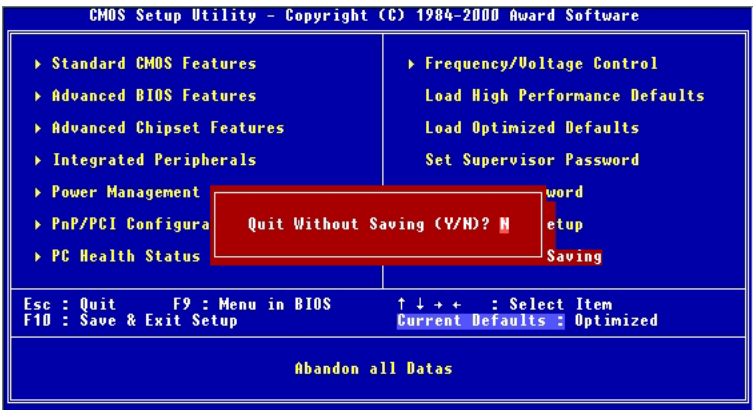


Typing “Y” will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.

Typing “N” will return to the Setup Utility.

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:



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

Driver Setup

This chapter gives you detailed instructions on installation & setup of VIA chipset & Realtek ALC201A audio drivers. It consists of the following topics:

VIA Apollo P4X266A Chipset Drivers	4-2
Realtek ALC201A Audio Driver	4-7

Note: You must install VIA chipset drivers first before installing other drivers like audio or VGA drivers.

VIA Apollo P4X266A Chipset Drivers

The VIA P4X266A chipset provides superior performance between the CPU, DRAM, V-Link bus and AGP 8x graphics controller bus with pipelined, burst and concurrent operation. With a highly integrated PCI/LPC controller, its internal bus structure is based on 66MHz PCI bus that provides 2x bandwidth compared to previous generation PCI/ISA bridge chips.

Features

- Integrated Ultra DMA 33/66/100 master mode PCI EIDE controller.
- Full featured Accelerated Graphics Port (AGP) controller
  - Supports 533MHz 8x and 266MHz 4x transfer modes for AD and SBA signaling.
  - Pseudo-synchronous with the host CPU bus with optimal skew control.
  - Windows 95 OSR-2 VXD and integrated Windows 98/NT5 miniport driver support.

System Requirements

Computer	Intel® Pentium® 4 processors
Monitor	VGA Support, minimum 640 x 480 resolution
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT3.51 or 4.0, or OS/2®, Windows® 2000, or Windows® ME
CD-ROM	Double speed or higher
Chipset	VIA Apollo P4X266A chipset

Driver Installation for Windows® 98SE

1. Insert the supplied CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **VIA Chipset Drivers** and the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show a **VIA Service Pack 1 README** dialog box.
5. Click **Next** and the screen will show four drivers: **VIA ATAPI Vendor Support Driver**, **AGP VxD Driver**, **IRQ Routing Miniport Driver** and **VIA INF Driver 1.XX**. Select all four drivers and click on **Next**.
6. The setup program will request you to choose **Install VIA ATAPI Vendor Support Driver**. Select **Install** and click **Next** to continue.
7. Select **Click to enable DMA Mode** and click **Next** to continue.
8. The setup program will request you to choose **Install VIA AGP VxD in Turbo mode**, **Install VIA AGP VxD in normal mode** or **Uninstall VIA AGP VxD**. Select **Install VIA AGP VxD in turbo mode** and click on **Next**.
9. Select **Install VIA IRQ Routing Miniport Driver** and click on **Next**.
10. The setup program will request you to choose whether to restart the computer or not. Please select "Yes, I want to restart my computer now" and click **Finish**. The computer will restart and complete the VIA Chipset Drivers installation.

Driver Installation for Windows® 2000

Note: *Before installing VIA chipset driver, you should installing Windows 2000 Service Pack2 or the latest version.*

1. Insert the supplied CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **Via Chipset Drivers** and the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show a **VIA Service Pack 1 README** dialog box.
5. Click **Yes** and the screen will show three drivers: **VIA PCI IDE Bus Driver (Windows 2000)**, **AGP VxD Driver** and **VIA INF Driver 1.XX**. Select all and click **Next** to proceed.
6. The screen will show a **VIA PCI IDE Bus Driver** dialog box. Select **Install** and then click on **Next**.
7. The screen will show a **VIA AGP Driver 4.XX** dialog box. Select **Install AGP 4X/133 driver** and click **Next**.
8. The setup program will request you to choose whether to restart the computer or not. Please select "Yes, I want to restart my computer now" and click **Finish**. The computer will restart and finish the VIA Chipset Drivers installation.

One Touch Setup:
In Windows® 2000, you probably will see the ***One Touch Setup*** *button appear on the setup screen. Choosing the button will help you install more than one driver into the system without going through the installation process step by step and save a lot of time. After clicking on One Touch Setup, a window will show up listing what drivers will be installed. Install other drivers not included by One Touch Setup manually if any.*

Driver Installation for Windows® ME

1. Insert the supplied CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **Via Chipset Drivers** and the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show a **VIA Service Pack 1 README** dialog box.
5. Click **Yes** and the screen will show three drivers: **VIA PCI IDE Bus Driver (Windows 2000)**, **AGP VxD Driver** and **VIA INF Driver 1.XX**. Select all and click **Next** to proceed.
6. The screen will show a **VIA PCI IDE Bus Driver** dialog box. Select **Install** and then click on **Next**.
7. The screen will show a **VIA AGP Driver 4.XX** dialog box. Select **Install AGP 4X/133 driver** and click **Next**.
8. The setup program will request you to choose whether to restart the computer or not. Please select "Yes, I want to restart my computer now" and click **Finish**. The computer will restart and finish the VIA Chipset Drivers installation.

One Touch Setup:
In Windows® ME, you probably will see the ***One Touch Setup*** *button appear on the setup screen. Choosing the button will help you install more than one driver into the system without going through the installation process step by step and save a lot of time. After clicking on One Touch Setup, a window will show up listing what drivers will be installed. Install other drivers not included by One Touch Setup manually if any.*

Driver Installation for Windows® NT4.0

NOTE: *Install Windows® NT4.0 Service Pack 6 or above before installing the VIA drivers into Windows® NT.*

1. Insert the provided CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **VIA Chipset Drivers** and the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show the **VIA Service Pack 1 README** dialog box.
5. Click **Yes** to proceed and then select **Install** to enable (Ultra) DMA for IDE Driver.
6. The **Choose Destination Location** dialog box appears. Click **Next**.
7. The **Select Program Folder** dialog box appears. Click **Next**.
8. Click on "Yes, I want to restart my computer" and then click **Finish** to restart your computer and complete installation.

Realtek ALC201A Audio Driver

The ALC201A is an 18-bit, full duplex AC'97 2.2 compatible stereo audio CODEC designed for PC multimedia systems, including host/soft audio and AMR/ CNR based designs. ALC201A AC'97 CODEC incorporates proprietary converter technology to achieve high SNR greater than 90 dB. In addition, it supports multiple CODEC extension with independent variable sampling rate and built-in 3D effects. It also provides two pairs of stereo outputs with independent volume controls, a mono output, and multiple stereo and mono inputs, along with flexible mixing, gain and mute functions to provide a completely integrated audio solution for PCs.

Features

- AC'97 2.2 Compatible & WHQL Compliant
- High Performance Converter Technology
- 18-bit Stereo Full-Duplex CODEC with Independent Variable Sampling Rate
- Four Analog Line-Level Stereo Inputs for Connection from LINE, CD, VIDEO and AUX
- Two Analog Line-Level Stereo Inputs for Speakerphone and PC BEEP
- Two MIC Inputs w/ Software Selectable
- High Quality Differential CD Input
- True Stereo Line Level Outputs
- EAPD (External Amplifier Power Down) Control
- 3D Stereo Enhancement
- Multi-CODEC Extension
- SNR Greater Than 95 dB
- Line Output with 50mW/20ohm Driving Capability
- Headphone Jack-Detection to Mute LINE Output
- MC'97 Chain-In Allows for Multi-Channel Application
- Supports SPDIF-Out, Fully Compliant to AC'97 Specification Rev. 2.2
- Power Management Support
- Power Supply (Digital 3.3V/ Analog 5V)
- Meets Microsoft PC99 & WLP 2.0 Audio Requirements

48-Pin LQFP Package

Driver Installation for Windows® 98/ME/2000/NT4.0

1. Insert the provided CD_ROM disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **ADVANCED Sound Drivers** and follow the on-screen instructions to complete the installation.
4. After completion of the installation, please restart Windows system for new driver installation. The system will install the device drivers automatically.