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If you do not properly set the motherboard settings causing the motherboard to malfunction or fail, we cannot guarantee any responsibility.

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VA6 Motherboard User's Manual

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Chapter 1. Introduction of VA6 Features

1-1.Features of This Motherboard

This motherboard is designed for a new generation of CPUs. It supports the Intel SLOT1 structure (Pentium® II/III and Celeron™ processors), with up to 768 MB of memory, super I/O, and Green PC functions.

The VA6 uses the VIA Apollo Pro 133 chipset to make the evolutionary move from PC 100 to PC 133, increasing the speed of the system and memory buses from 100 MHz to 133 MHz.. Its' 133 MHz memory interface supports the wide range of PC 133 memory devices now on the market. Its 133MHz capable front-side bus delivers a clear upgrade path to the future generation of 133MHz processors .

The VA6 provides you expendability for the USB port. It can give you the maximum four USB ports to connect to USB peripherals. The additional two USB port plugs and cable KIT are an option. VA6 also has a built in AC '97 2.1 CODEC onboard. This CODEC has an integrated H/W Sound Blaster Pro® AC '97 digital audio controller that can give you the best sound quality and compatibility.

The VA6 has a built in Ultra ATA/66 function. This means that it can provides speedier HDD throughput that boosts overall system performance. Ultra ATA/66 is the new standard for IDE devices. It enhances existing Ultra ATA/33 technology by increasing both performance and data integrity. This new high-speed interface doubles the Ultra ATA/33 burst data transfer rate to 66.6 Mbytes/sec. The result is maximum disc performance using the current PCI local bus environment. Another benefit is, you can connect another four IDE devices in your system either Ultra ATA/33 IDE devices or Ultra ATA/66 IDE devices. You will have more flexibility to expand your computer system.

VA6 provides highly flexibility to users building Pentium® II/III and Celeron™ level systems. It provides the option of 66/100 or 100/133MHz CPU and memory bus combinations. You can choose the different combinations and don't need to upgrade many new components to change to this motherboard.

The VA6 has built-in hardware monitoring functions (you can refer to ***Appendix G*** for detailed information), they can monitor and protect your computer insuring a safe computing environment. The motherboard can provide high performance for servers and meets the requirements for desktop systems for multimedia in the future.

Sets You Free From the Y2K Threat

The potential threat of Year 2000 (Y2K) problems are making everyone very nervous. The Y2K issue applies to almost any device, firmware, or software that operates on or with year based dates. This problem is caused by a design flaw in the **R**eal **T**ime **C**lock (RTC) unit. The RTC only changes the last two digits of the year code, but not the century information. As a result, when it comes to 12:00 AM January 1, 2000 the RTC will switch from December 31 11:59 PM 1999 to 12:00 AM January 1 1900.

Y2K compliance deals with the date change over from 31 December 1999 to 1 January 2000, and with recording and reporting of all dates from the RTC including leap year dates. This motherboard is free from the Y2K problem because its BIOS are Y2K compliant.

Please Note

If the operating system or application software cannot handle Year 2000 dates, you will still be facing the Y2K threat because it is not a hardware problem that relates to the motherboard itself. According to Award BIOS, it is BIOS source code released after 31 May 1995 complies with all known Y2K issues; however, it may still fail the 2000.exe test. Award has modified its BIOS source code to accommodate the requirements of 2000.exe. Award BIOS source code issued later than 18 November 1996 passes the NTSL 2000.exe test program.

1-2. Specifications

1. CPU

- Supports Intel® Pentium® III 450 ~ 733 MHz processor cartridges based on 100 & 133 MHz FSB.
- Supports Intel® Pentium® II 233 ~ 450 MHz processor cartridges based on 66 & 100 MHz FSB.
- Supports Intel® Celeron™ 266 ~ 533MHz processors based on 66MHz FSB.
- Supports 66, 100 and 133MHz CPU external clock speeds
- Reserves support for future Intel® Pentium® III processors

2. Chipset

- VIA Apollo Pro 133 chipset (VT82C693A and VT82C686A)
- Supports Ultra DMA/33 and Ultra DMA/66 IDE protocol
- Supports Advanced Configuration and Power Management Interface (ACPI)
- Accelerated Graphics Port connector supports AGP 1x and 2x mode (Sideband) 3.3V device

3. Memory (System Memory)

- Three 168-pin DIMM sockets support SDRAM modules
- Supports up to 768MB MAX. (8, 16, 32, 64, 128, 256 MB SDRAM)
- Supports ECC

4. System BIOS

- CPU SOFT MENU™ II, can easily set the processor parameters
- Award Plug and Play BIOS supports APM and DMI
- Write-Protect Anti-Virus function by AWARD BIOS
- Year 2000 compliant

5. Multi I/O Functions

- Two Channels of Bus Master IDE Ports supporting up to four Ultra DMA 33/66 devices
- PS/2 keyboard and PS/2 mouse connectors
- One floppy port connector (up to 2.88MB)
- One parallel port connector (EPP/ECP)
- Two serial ports connectors
- Two USB connectors
- On board USB header for two expend USB channels
- Audio/Game connectors (Line-in, Line-out, MIC-in, and Game Port connectors)

6. Audio CODEC Features

- AC '97 2.1 compliant
- Integrated hardware Sound Blaster Pro® AC '97 digital audio controller

7. Miscellaneous

- ATX form factor
- One AGP slot, five PCI slots and two ISA slots
- Built-in Wake on LAN header
- Built-in IrDA TX/RX header
- Built-in Wake On Modem header
- Built-in SM bus header
- Hardware monitoring：Included fan speed, voltages, CPU (optional) and system environment temperature
- Board size: 305 * 190mm

- **Supports Wake On LAN, Modem, but your ATX power supply 5V standby power must be able to provide at least a 720mA current capacity. Otherwise, the functions may not work normally.**
- The 66MHz/100MHz/133MHz bus speeds are supported but not guaranteed due to the PCI and chipset specifications.
- Specifications and information contained in this manual are subject to change without notice.

Note

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1-3. Layout Diagram

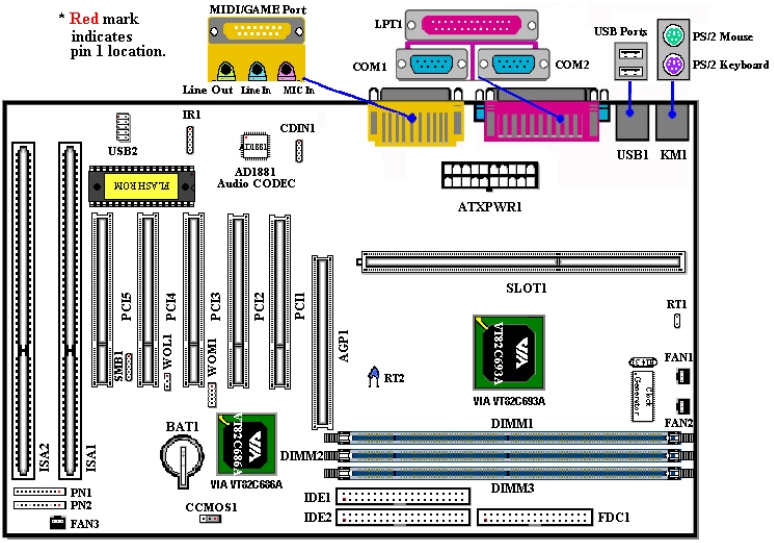


Figure 1-2. Motherboard component location

1-4. The System Block Diagram

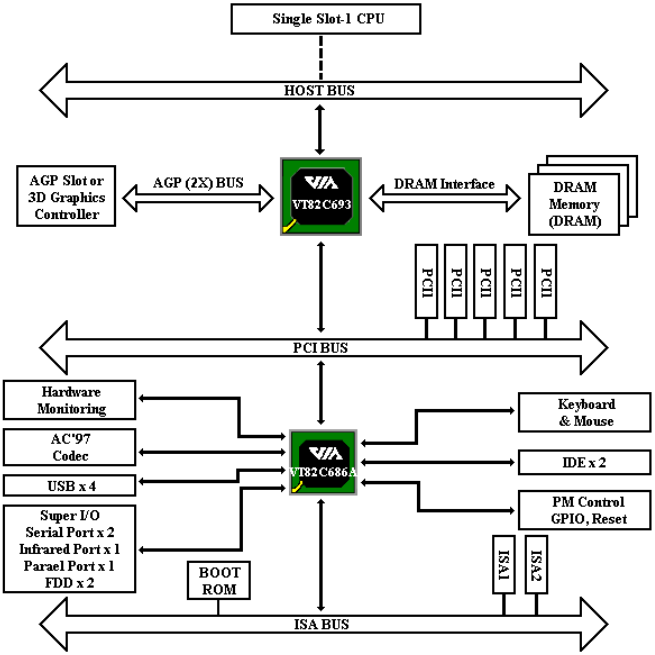


Figure 1-3. System diagram of the VIA Apollo Pro 133 chipset

Chapter 2. Installing the Motherboard

This VA6 motherboard not only provides all standard equipment for classic personal computers, but also provides great flexibility for meeting future upgrade demands. This chapter will introduce step by step all of the standard equipment and will also present, as completely as possible, future upgrade capabilities. This motherboard is able to support all Intel® Pentium® II/III processors and Intel® Celeron™ processors now on the market. (For details, see specifications in Chapter 1.)

This chapter is organized according the following features:

2-1 Installing the Motherboard to the Chassis
2-2 Installation of the Pentium® II/III, Celeron™ CPU
2-3 Installing System Memory
2-4 Connectors, Headers and Switches

Before Proceeding with the Installation

Before you install or unplug any connectors or add-on cards, please remember to turn the ATX power supply switch off (fully turn the +5V standby power off), or take the power cord off. Otherwise, you may cause the motherboard components or add-on cards to malfunction or be damaged.

User Friendly Instructions

Our objective is to enable the novice computer user to perform the installation by himself. We have attempted to write this document in a very clear, concise and descriptive manner to help overcome any obstacles you may face during installation. Please read our instructions carefully and follow them step-by-step.

2-1. Installing the Motherboard to the Chassis

Most computer chassis will have a base on which there will be many mounting holes that allows the motherboard to be securely attached and at the same time, prevents short circuits. There are two ways to attach the motherboard to the base of chassis:

- with studs
- or with spacers

Please refer to figure 2-1, which shows the studs and spacers. There may be several types, but all look like the figures below:

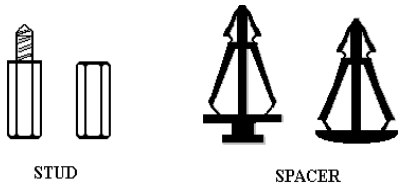


Figure 2-1. The outline of stub and spacer

In principle, the best way to attach the motherboard is with studs. Only if you are unable to do this should you attach the board with spacers. Take a careful look at the motherboard and you will see many mounting holes on it. Line these holes up with the mounting holes on the base. If the holes line up and there are screw holes this means you can attach the motherboard with studs. If the holes line up and there are only slots, this means you can only attach the motherboard with spacers. Take the tip of the spacers and insert them into the slots. After doing this to all the slots, you can slide the motherboard into position aligned with the slots. After the motherboard has been positioned, check to make sure everything is OK before putting the casing back on.

Figure 2-2 shows you the way to affix the motherboard using studs or spacers:

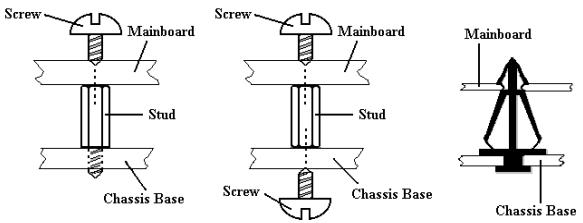


Figure 2-2. The way we fixed the motherboard

Note

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, don't worry, you can still attach the spacers to the mounting holes. Just cut the bottom portion of spacers (the spacer they may be a little hard to cut , so be careful with your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any the printed circuit wire or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

2-2. Installation of the Pentium® II/III, Celeron™ CPU

The installation method for the CPU is printed on the package of the retention mechanism that comes with the motherboard. You can refer to it while you install the CPU. This motherboard also supports the Celeron™ PPGA processor. If you want to install the Celeron™ PPGA processor, you have to use an additional adapter that allows you to use a Celeron™ PPGA processor in a slot 1 board. For this issue, you can use the Socket 370 to Slot 1 adapter.

Note:

- Installing a heat sink and cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and damage of your CPU.
- Please refer to your boxed processor installation or other documentation attached with your CPU for detailed installing instructions.

2-3. Installing System Memory

This motherboard provides three 168-pin DIMM sites for memory expansion. The DIMM sockets support 1Mx64 (8MB), 2Mx64 (16MB), 4Mx64 (32MB), 8Mx64 (64MB), 16Mx64 (128MB), and 32Mx64 (256MB) or double sided DIMM modules. Minimum memory size is 8MB and maximum memory size is 768MB SDRAM. There are three Memory module sockets on the system board. (Total six banks)

In order to create a memory array, certain rules must be followed. The following set of rules allows for optimum configurations.

- The memory array is 64 or 72 bits wide. (depending on with or without parity)
- Those modules can be populated in any order.
- Supports single and double density DIMMS.

Table 2-1. Valid Memory Configurations

Bank	Memory Module	Total Memory
Bank 0, 1 (DIMM1)	8MB, 16MB, 32MB, 64MB, 128MB, 256MB	8MB ~ 256MB
Bank 2, 3 (DIMM2)	8MB, 16MB, 32MB, 64MB, 128MB, 256MB	8MB ~ 256MB
Bank 4, 5 (DIMM3)	8MB, 16MB, 32MB, 64MB, 128MB, 256MB	8MB ~ 256MB
Total System Memory		8MB ~ 768MB

Generally, installing SDRAM modules to your motherboard is an easy thing to do. You can refer to figure 2-3 to see what a 168-pin PC100 & PC133 SDRAM module looks like.

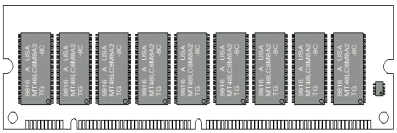


Figure 2-3 PC100/PC133/VCM Module and Component Mark

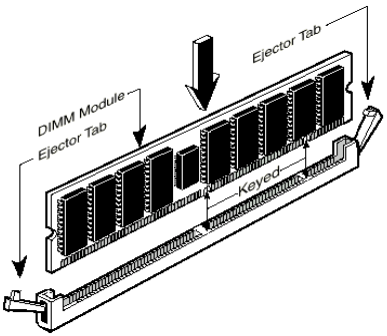


Figure 2-4. Memory module installation

Unlike installing SIMMs, DIMMs may be "snapped" directly into the socket. Note: Certain DIMM sockets have minor physical differences. If your module doesn't seem to fit, please do not force it into the socket as you may damaged your memory module or DIMM socket.

The following procedure will show you how to install a DIMM module into a DIMM socket.

Step 1. Before you install the memory module, please place the computer power switch in the ***off*** position and disconnect the AC power cord from your computer.

Step 2. Remove the computer's chassis cover.

Step 3. Before touching any electronic components, make sure you first touch an unpainted, grounded metal object to discharge any static electricity stored on your clothing or body.

Step 4. Locate your computer's 168-pin memory expansion DIMM socket.

Step 5. Insert the DIMM module into the expansion socket as shown in the illustration. Note how the module is keyed to the socket. You can refer to figure 2-4 for the details. ***This insures the DIMM module will be plugged into the socket in one way only***. Firmly press the DIMM module into the DIMM socket, making certain the module is completely seated in the DIMM socket.

Step 6. Once the DIMM module has been installed, the installation is complete and the computer's cover can be replaced. Or you can continue to install other devices and add-on cards that are mentioned in the following section.

Note

When you install a DIMM module fully into the DIMM socket, the eject tab should be locked into the DIMM module very firmly and fit into its indention on the both sides.

You are hard to make different from its outside look between PC100, PC133 SDRAM and VCM DRAM module, the only way you can identify them is to see the sticker on the RAM module. The sticker will show you the RAM module is which kind structure module.

2-4. Connectors, Headers and Switches

Inside the case of any computer several cables and plugs have to be connected. These cables and plugs are usually connected one-by-one to connectors located on the motherboard. You need to carefully pay attention to any connection orientation the cables may have and, if any, notice the position of the first pin of the connector. In the explanations that follow, we will describe the significance of the first pin.

We will show you all of the connectors, headers and switches here, and tell you how to connect them. Please pay attention and read the entire section for necessary information before attempting to finish all of the hardware installation inside the computer chassis.

Figure 2-5 shows you all of the connectors and headers that we'll discuss in the next section, you can use this diagram to visually locate each connector and header we describe.

All connectors, headers and switches mentioned here, will depend on your system configuration. Some features you may (or may not) have and need to connect or configure depending on the peripheral. If your system doesn't have such add-on cards or switches you can ignore some special feature connectors.

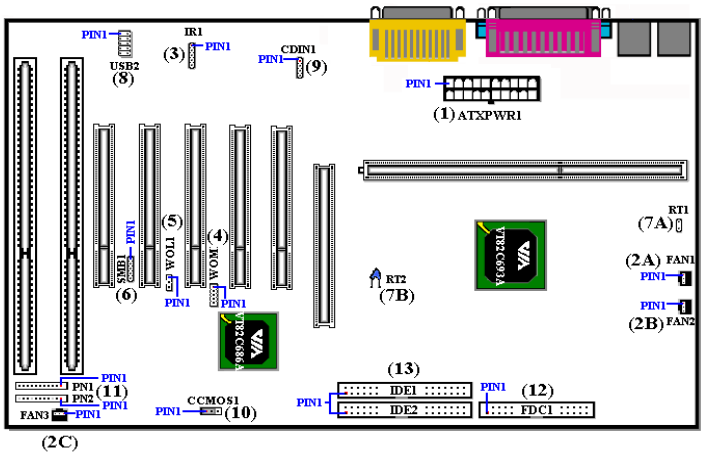


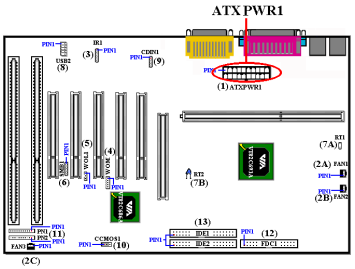
Figure 2-5. All Connectors and Headers for the VA6

First, Let's see the headers that VA6 uses, and what their functions are.

(1) ATXPWR1: ATX Power Input Connector

Caution

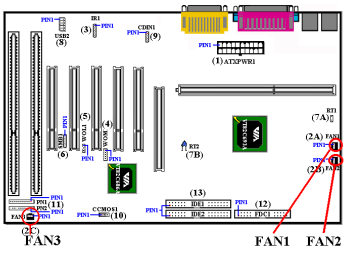
If the power supply connectors are not properly attached to the ATXPWR1 power supply, the power supply or add-on cards may be damaged.



Attach the connector from the power supply to the ATXPWR1 connector here. Remember you have to push the connector from the ATX power supply firmly to the end with the ATXPWR1 connector, insuring that you have a good connection.

Note: *Watch the pin position and the orientation*

(2A)/(2B)/(2C): FAN1, FAN2 & FAN3 header

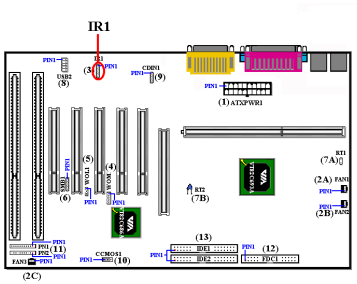


Attach the connector from the individual CPU fan to the header named FAN1, connector from the chassis fan to the header FAN3 and attach the connector from the power fan to FAN2 header.

You must attach the CPU fan to the processor, or your processor will work abnormally or may be damaged by overheating. Also, if you want the computer case's internal temperature to be kept steady and not too high, you had better connect the chassis fan to reach this goal.

Note: *Watch the pin position and the orientation*

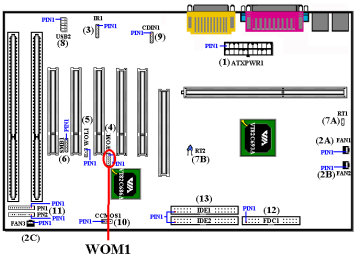
(3) IR1: IR Header (Infrared)



There is a specific orientation for pins 1 through 5, attach the connector from the IR KIT or IR device to the IR1 header (left row only). This motherboard supports standard IR transfer rates.

Note: *Watch the pin position and the orientation*

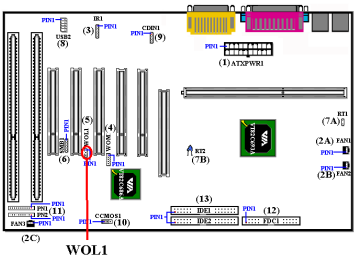
(4) WOM1: Wake On Modem Header



If you have an internal modem adapter that supports this feature, then you can connect the specific cable from the internal modem adapter to this header. This feature lets you wake up your computer via remote control through the modem.

Note: *Watch the pin position and the orientation*

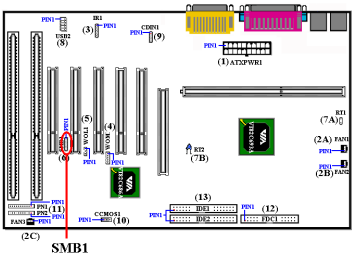
(5) WOL1: Wake on LAN Header



If you have a network adapter that supports this feature, then you can connect the specific cable from the network adapter to this header. This feature lets you wake up your computer via remote control through a local area network. You may need a specific utility to control the wake up event, like using the Intel® LDCM® utility or other similar utilities.

Note: *Watch the pin position and the orientation*

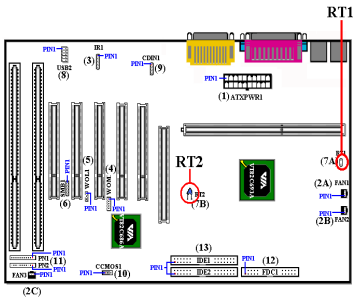
(6) SMB1: System Management Bus Connector



This connector is reserved for system management bus (SM bus). The SM bus is a specific implementation of an I^2C bus. I^2C is a multi-master bus, which means that multiple chips can be connected to the same bus and each one can act as a master by initiating a data transfer. If more than one master simultaneously tries to control the bus, an arbitration procedure decides which master gets priority.

Note: *Watch the pin position and the orientation*

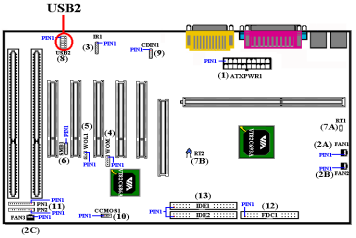
(7A)/(7B): RT1 header & RT2 Thermister:



The RT1 header is for you to connect an additional thermistor to detect the CPU temperature. You can attach one end of the two-threaded thermal cable that comes with the motherboard to RT1 header, then tape the other end of thermal cable on CPU's heat sink. Generally speaking, the location you tape the thermistor should be as near the CPU chipset as possible and avoid having it near the CPU fan.

The RT2 is a thermistor used to detect the system environmental temperature. It may also be called a system temperature detector.

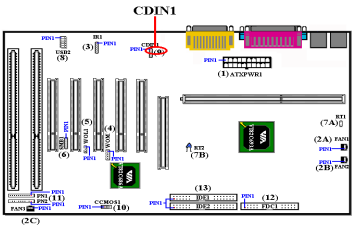
(8) USB2 Headers: Additional USB Plugs Header



This header is for connecting the additional USB ports plugs . You can use the special USB port expend cable (option), it can provides you additional two USB plugs, you can fix these USB plugs on the back panel.

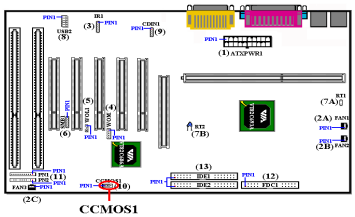
Pin number	Name or significance of signal
1	VCC0
2	Ground 1
3	Data +
4	Data1 -
5	Ground
6	Ground
7	Data -
8	Data1 +
9	Ground
10	VCC1

(9) CDIN1: Internal CD-ROM Drive Audio Cable Header



This header is for the internal CD-ROM drive audio cable connection use, and this header are used for specify type of CD audio cable connector. Please check your audio cable attached with the CD-ROM drive to see which type connector you have, then plug it to this header.

(10) CCMOS1: CMOS Discharge Jumper



Jumper CCMOS1 discharge CMOS memory. When you install the motherboard, make sure this jumper is set for normal operation (pin 1 and 2 shorted). See figure 2-6.

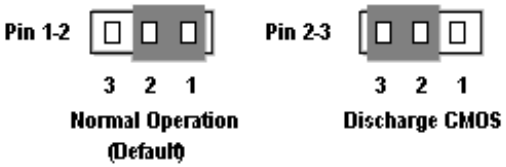
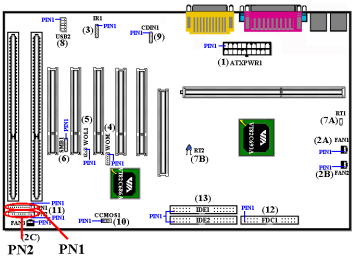


Figure 2-6. CCMOS1 jumper setting

Note

Before you clear the CMOS, you have to first turn the power off (including the +5V standby power). Otherwise, your system may work abnormally or malfunction.

(11) PN1 and PN2 Headers



PN1 and PN2 are for switches and indicators for the chassis's front panel, there are several functions that come from these two headers. You have to watch the pin position and the orientation, or you may cause system malfunctions. Figure 2-7 shows you the PN1 and PN2 functions of the pins.

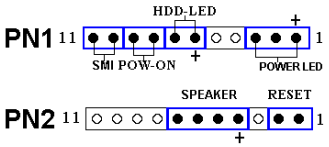
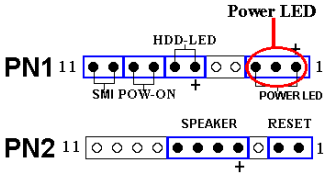


Figure 2-7. The definition of PN1 and PN2 pins

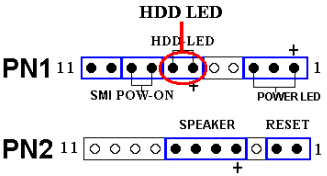
PN1 (Pin 1-2-3-4-5): Power LED Headers



There is a specific orientation for pins 1 through 3. Insert the three-threaded power LED cable to pins 1~3. Check to make sure the correct pins go to the correct connectors on the motherboard. If you install them in the wrong direction, the power LED light will not illuminate correctly.

Note: *Watch the power LED pin position and orientation.*

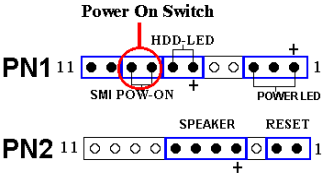
PN1 (Pin 6-7): HDD LED Header



Attach the cable from the case's front panel HDD LED to this header. If you install it in the wrong direction, the LED light will not illuminate correctly.

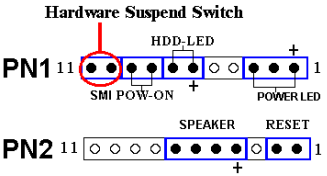
Note: *Watch the HDD LED pin position and the orientation.*

PN1 (Pin 8-9): Power on Switch Header



Attach the cable from the case's front panel power switch to this header.

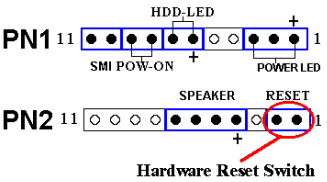
PN1 (Pin 10-11): Hardware Suspend Switch (SMI Switch) Header



Attach the cable from the case's front panel suspend switch (if there is one) to this header. Use this switch to enable/disable the power management function by hardware.

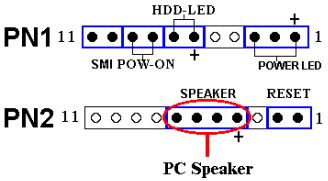
Note: *If you enable the ACPI function in the BIOS setup, this function will not work.*

PN2 (Pin 1-2): Hardware Reset Switch Header



Attach the cable from the case's front panel Reset switch to this header. Press and hold the reset button for at least one second to reset the system.

PN2 (Pin 4-5-6-7): Speaker Header



Attach the cable from the system speaker to this header.

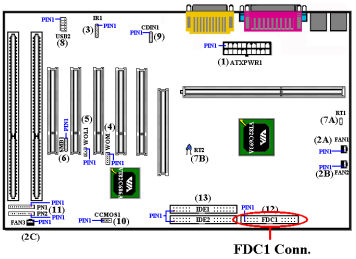
For the PN1 and PN2 pin's count-name list, please refer to table 2-2.

Table 2-2. PN1 and PN2 pin count name list

PIN Name		Significance of signal	PIN Name		Significance of signal
PN1	PIN 1	+5VDC	PN2	PIN 1	Ground
	PIN 2	No connection		PIN 2	Reset input
	PIN 3	Ground		PIN 3	No connection
	PIN 4	No connection		PIN 4	+5VDC
	PIN 5	No connection		PIN 5	Ground
	PIN6	LED power		PIN6	Ground
	PIN 7	HDD active		PIN 7	Speaker data
	PIN 8	Ground		PIN 8	No connection
	PIN 9	Power On/Off signal		PIN 9	No connection
	PIN 10	Ground		PIN 10	No connection
	PIN 11	Suspend signal		PIN 11	No connection

Let's now see the I/O connectors that VA6 uses, and what their functions are.

(12) FDC1 Connector



This 34-pin connector is called the "*floppy disk drive connector*". You can connect a 360K, 5.25", 1.2M, 5.25", 720K, 3.5'', 1.44M, 3.5" or 2.88M, 3.5" floppy disk drive, you can even connect a 3 Mode floppy disk drive (it's a 3 1/2" drive used in Japanese computer systems).

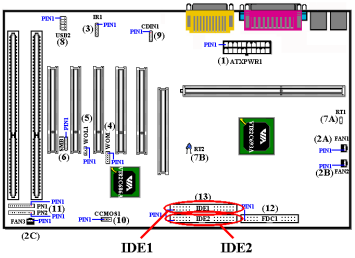
A floppy disk drive ribbon cable has 34

wires and two connectors to provide the connection of two floppy disk drives. After connecting the single end to the FDC1, connect the two connectors on the other end to the floppy disk drives. In general, people only install one floppy disk drive on their computer system.

Note

A red mark on a wire typically designates the location of pin 1. You need to align the wire pin 1 to the FDC1 connector pin 1, then insert the wire connector into the FDC1 connector.

(13) IDE1 and IDE2 Connectors



An IDE hard disk drive ribbon cable has 40 wires and two connectors to provide a connection for two IDE hard disk drives. After connecting the single end to the IDE1 (or IDE2), connect the two connectors on the other end to the IDE hard disk drives (or CD-ROM drive, LS-120, etc.).

Before you install a hard disk, there are some things you need to be aware of:

- "Primary" refers to the first connector on the motherboard, that is, the IDE1 connector on the motherboard.
- "Secondary" refers to the second connector on the motherboard, that is, the IDE2 connector on the motherboard.
- Two hard disks can be connected to each connector:

  The first HDD is referred to as the "Master", the second HDD is referred to as the "Slave".
- For performance issues, we strongly suggest you don't install a CD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance on this channel may drop. (how much depends on your CD-ROM drive performance)

Note

- The Master or Slave status of the hard disk drive is set on the hard disk itself. Please refer to the hard disk drive user's manual.
- A red mark on a wire typically designates the location of pin 1. You need to align the wire pin 1 to the FDC1 connector pin 1, then insert the wire connector into the FDC1 connector.

The VA6 supports the Ultra ATA/66 (Also known as Ultra DMA/66) specification. It enhances existing Ultra ATA/33 technology by increasing both performance and data integrity. This new high-speed interface doubles the Ultra ATA/33 burst data transfer rate to 66.6 Mbytes/sec. The result is maximum disc performance using the current PCI local bus environment. Figure 2-8 shows you the different between the Ultra ATA/33 and Ultra ATA/66 Conductor Cable.

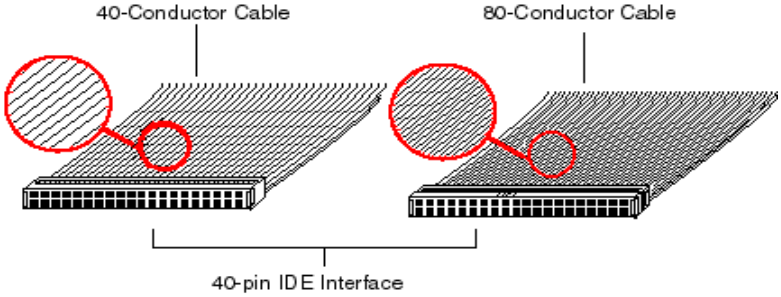


Figure 2-8. The difference between Ultra ATA/33 and Ultra ATA/66 Conductor Cables

Figure 2-9 shows you a photo of an Ultra ATA/66 Conductor Cable. An Ultra ATA/66-capable cable is a 40-pin, 80-conductor cable with a black connector on one end, a blue connector on the other end and a gray connector in the middle. In addition, line 34 on the cable should be notched or cut (this may be difficult to see).

Ultra ATA/66 is backwards compatible with all Ultra ATA/33 systems, but it will be limited in its transfer mode to the Ultra ATA/33 (Ultra DMA Mode 2 - 33 Mbytes/sec) or PIO Mode 4 (16.6 Mbytes/sec). Ultra ATA/66 hard drives are 100 percent backward compatible with both Ultra ATA/33 and DMA and with existing ATA (IDE) hard drives, CD-ROM drives, and host systems. The Ultra ATA/66 protocol and commands are designed to be compatible with existing ATA (IDE) devices and systems. Although a new 40-pin, 80-conductor cable is required for Ultra ATA/66, the chip set pin connector remains the same at 40. Hard drives that support Ultra ATA/66 also support Ultra ATA/33 and legacy ATA (IDE) specifications.

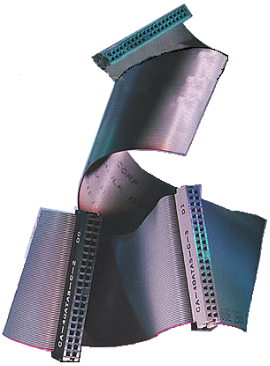


Figure 2-9. Photo of an Ultra ATA/66 Conductor Cable

There are four requirements for attaining Ultra ATA/66:

*The drive must support Ultra ATA/66.

*The motherboard and system BIOS (or an add-in controller) must support Ultra ATA/66.

*The operating system must support Direct Memory Access (DMA); Microsoft Windows 98 and Windows 95B (OSR2) support DMA.

*The cable must be an 80-pin conductor. The length should not exceed 18 inches. If all of the above requirements are met, you can enjoy the Ultra ATA/66 features of your computer system.

How to install the Ultra ATA/66 Cable Assembly:

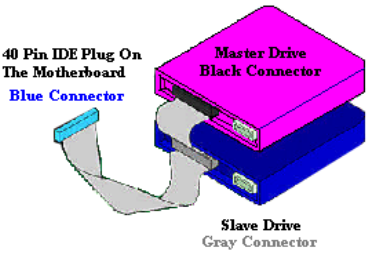


Figure 2-10. How to connect an ATA/66 Cable to the Motherboard

■ The **BLUE** connector **MUST** be plugged into the motherboard or your system will not work.

■ Each connector on the Ultra ATA/66 cable assembly has a small polarization tab centrally located on the body of the plastic. This fits into the matching slot on the mating plugs on the motherboard and the drives, thus assuring positive mating (pin #1 to pin #1)

■ The red line on the cable should be aligned with pin #1. On the drives this will result in the red line facing the power connector. Attach the BLUE connector to the appropriate 40 pin IDE plug on the motherboard.

■ Attach the BLACK connector to the mating plug on the master hard drive. Attach the GREY connector to the mating plug on the slave drive (secondary hard drive, CD ROM, or tape drive). Please refer figure 2-10.

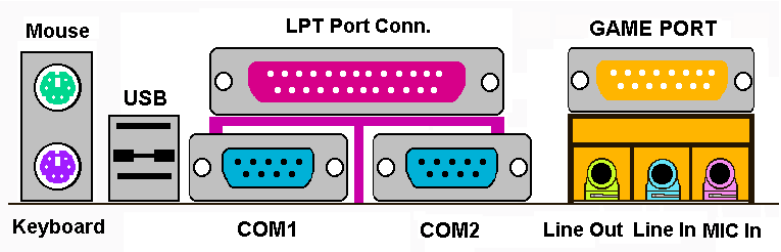
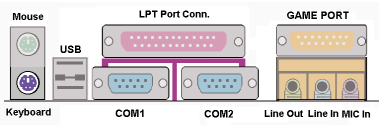


Figure 2-11. VA6 back panel connectors

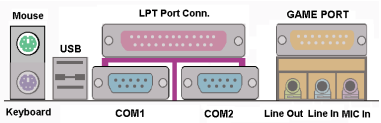
Figure 2-11 shows the VA6 back panel connectors, these connectors are for connection to outside devices to the motherboard. We will describe which devices will attach to these connectors below.

KM1 Lower: PS/2 Keyboard Connector



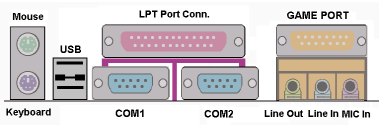
Attach a PS/2 keyboard connector to this 6-pin Din-connector. If you use an AT keyboard, you can go to a computer store to purchase an AT to ATX converter adapter, then you can connect your AT keyboard to this connector. We suggest you use a PS/2 keyboard for best compatibility.

KM1 Upper: PS/2 Mouse Connector



Attach a PS/2 mouse to this 6-pin Din-connector.

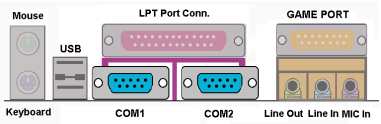
USB Port Connectors



This motherboard provides two USB ports. Attach the USB connector from the individual device to these connectors.

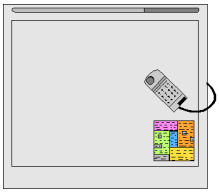
You can attach USB devices such as a, scanner, digital speakers, monitor, mouse, keyboard, hub, digital camera, joystick etc. to one of each USB connector. You must make sure your operating system supports this feature and you may need to install an additional driver for individual devices. In Please refer to your device user's manual for detailed information.

Serial Port COM1 & COM2 Port Connector



This motherboard provides two COM ports, you can connect an external modem, mouse or other devices that support this communication protocol to these connectors.

You can decide which external devices you want to connect to COM1 and COM2. Each COM port can only have one device connected at a time.

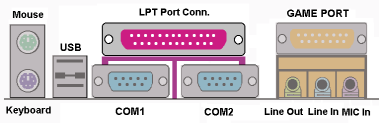


Digital Tablet

Digital Camera

External FAX/Modem

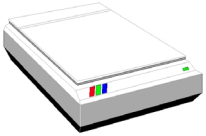
Parallel Port Connector



This parallel port is also called an "LPT" port, because it usually connects to the printer. You can connect other devices that support this communication protocol, like an EPP/ECP scanner, etc.

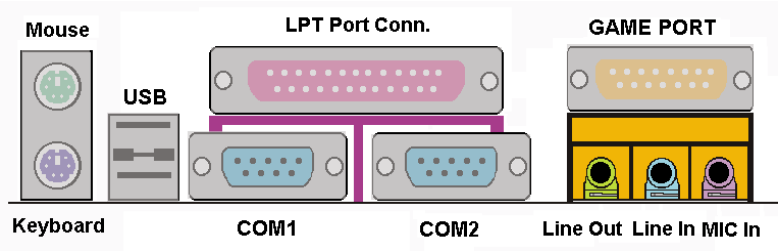
Laser Printer

Inkjet Printer

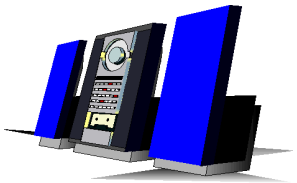


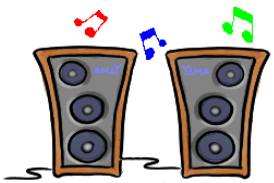
EPP/ECP Scanner

Line Out, Line In and Mic In Connector



Line Out connector: You can connect an external stereo speaker signal input plug to this connector, or you can connect the plug from here to the stereo audio equipment AUX signal input socket. Remember, the motherboard does not have a built in amplifier to drive the speaker. You must use a speaker that has a built in amplifier. Otherwise, you may not be able to hear any sound or only a small volume of sound from the speaker.





Line In Connector: You can connect the TV adapter audio output signal, or external audio sources, like a CD walkman, video camcorder, VHS recorder audio output signal plug to this connector. Your audio software can control the input level for the line-in signal.

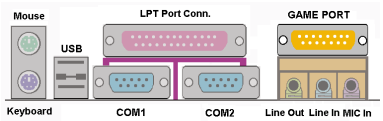
CD Player

CAM Recoder

VHS Recoder

Mic In Connector: You can connect the plug from the microphone to this connector. Do not connect other audio (or signal) sources to this connector.

MIDI/GAME Port Connector



You can connect your joystick, game pad, or other simulation hardware device DIN 15-pin plugs to this connector. Please refer to the further connection notes of the device's user's manual for further detailed information.

Note

This chapter contains many color drawing diagram and photos, we strongly recommend you to read this chapter use the PDF file we gave you that store in the CD-Title. It will provide you the better look and clearly color identify.

Chapter 3. Introducing the BIOS

The BIOS is a program located on a Flash Memory chip on the motherboard. This program will not be lost when you turn the computer off. This program is also referred to as the boot program. It is the only channel the hardware circuit has to communicate with the operating system. Its main function is to manage the setup of the motherboard and interface card parameters, including simple parameters such as time, date, hard disk drive, as well as more complex parameters such as hardware synchronization, device operating mode, **CPU SOFT MENU™ II** features and setup of CPU speed. The computer will operate normally, or will operate at its best, only if all of these parameters are correctly configured through the BIOS.

Don't change the parameters inside the BIOS unless you fully understand their meanings and consequences

The parameters inside the BIOS are used to setup the hardware synchronization or the device-operating mode. If the parameters are not correct, they will produce errors, the computer will crash, and sometimes you will even not be able to boot the computer after it has crashed. We recommend that you do not change the parameters inside the BIOS unless you are very familiar with them. If you are not able to boot your computer anymore, please refer to the section "Erase CMOS data" in Chapter 2.

When you start the computer, the BIOS program controls it. The BIOS first operates an auto-diagnostic test called POST (Power On Self Test) for all of the necessary hardware. It then configures the parameters of the hardware synchronization, and detects all of the hardware. Only when these tasks are completed does it give up control of the computer to the program to the next level, which is the operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in insuring that your system performs at its best. After the BIOS has achieved the auto-diagnostic and auto-detection operations, it will display the following message:

PRESS DEL TO ENTER SETUP

The message will be displayed for three to five seconds, if you press the **Del** key, you will access the BIOS Setup menu. At that moment, the BIOS will display the following message:

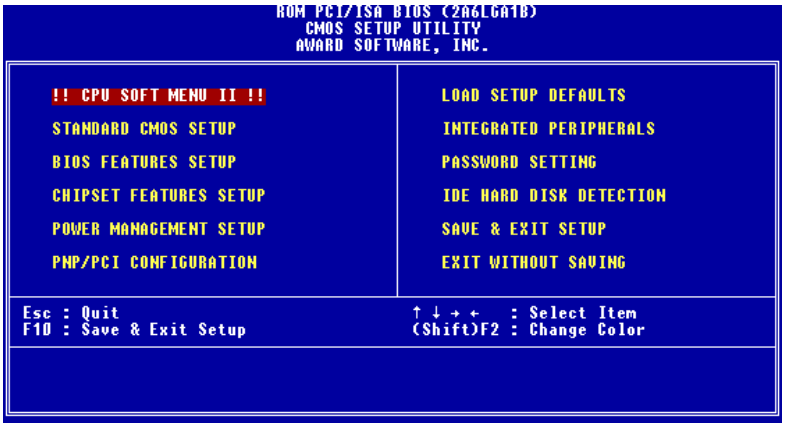


Figure 3-1. CMOS Setup Utility

In the BIOS Setup main menu of Figure 3-1, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press **Esc** to quit the BIOS Setup.
- Press ↑ ↓ ←→ (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- Press **F10** when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- Press Page Up/Page Down or +/- keys when you want to modify the BIOS parameters for the active option.

Computer Knowledge: CMOS Data

Maybe you have heard somebody saying that his or her CMOS DATA was lost. What is the CMOS? Is it important? The CMOS is the memory used to store the BIOS parameters that you have configured. This memory is passive. You can read its data, and you can also store data in it. But this memory has to be powered by a battery, in order to avoid any loss of its data when the computer is turned off. Since you may have to change the CMOS battery when it is out of power and if doing so, you will loose all CMOS data, therefore, we recommend that you write down all the parameters of your hardware, or to put a label with these parameters on your hard disk.

3-1. CPU Setup [SOFT MENU™ II]

The CPU can be setup through a programmable switch (**CPU SOFT MENU™ II**), that replaces the traditional manual hardware configuration. This feature allows the user to more easily complete the installation procedures. You can install the CPU without configuring any jumpers or switches. The CPU must be setup according its specifications.

In the first option, you can press <F1> at any time to display all the items that can be chosen for that option.

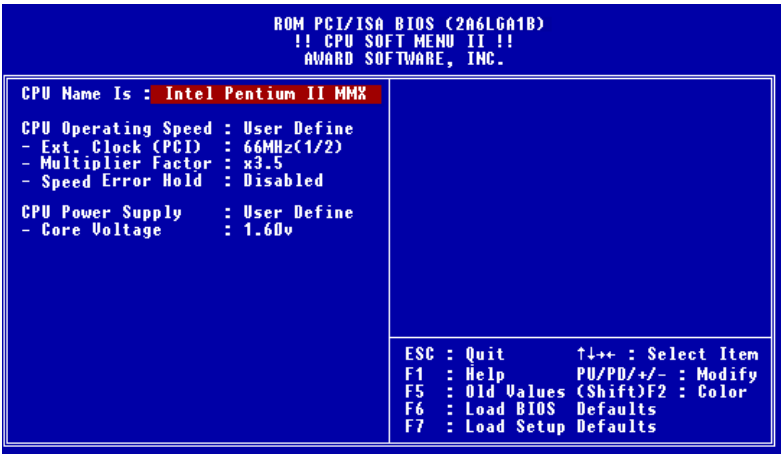


Figure 3-2. CPU SOFT MENU™ II

CPU Name Is:

- ➤ Intel Celeron MMX
- ➤ Intel Pentium II MMX
- ➤ Intel Pentium III MMX

CPU Operating Speed:

This option sets the CPU speed. In this field, the CPU speed is indicated like this: CPU speed = External clock * Multiplier factor, select the CPU speed according the type and the speed of your CPU. For Intel Pentium® II/III and Celeron™ MMX processors, you can choose the following settings:

➤233 (66) ➤266 (66) ➤300 (66) ➤300 (100) ➤333 (66)
➤350 (100) ➤366 (66) ➤400 (66) ➤400(100) ➤433 (66)
➤450 (100) ➤466 (66) ➤500 (66) ➤500 (100) ➤550 (100)
➤User Define

User defined external clock and multiplier factor:

➤ **User Defined**

Warning

The wrong settings of the multiplier and external clock in certain circumstances may cause CPU damage. Setting the working frequency higher than the PCI chipset or processor specs, may cause abnormal memory module functioning, system hangs, hard disk drive data lose, abnormal functioning of the VGA card, or abnormal functioning with other add-on cards. Using non-specification settings for your CPU is not the intention of this explanation. These should be used for engineering testing, not for normal applications.

If you use non-specification settings for normal operation, your system may not be stable, and may effect system reliability. Also, we do not guarantee the stability and compatibility for settings that are not within specification, and any damage of any elements on the motherboard or peripherals, is not our responsibility.

- *External Clock:*

➤66MHz (1/2) ➤100MHz (1/3) ➤75MHz (1/2)
➤83MHz(1/2) ➤112MHz (1/3) ➤103MHz (1/3)
➤124MHz (1/3) ➤133MHz (1/4) ➤150MHz (1/4)
➤140MHz (1/4) ➤105MHz (1/3) ➤110MHz (1/3)
➤115MHz (1/3) ➤120MHz (1/3)

Note

CPU bus speed above 66MHz/100MHz supported but not guaranteed due to the PCI and chipset specs.

- *Multiplier Factor:*

You can choose the following multiplier factors:

➤ 2.0 ➤ 2.5 ➤ 3.0 ➤ 3.5 ➤ 4.0 ➤ 4.5 ➤ 5.0 ➤ 5.5 ➤ 6.0
➤ 6.5 ➤ 7.0 ➤ 7.5 ➤ 8.0

However, differences will exist because of the various brands and types available.

Note

According to Celeron® PPGA MMX processor types, some Celeron® PPGA MMX processors will have the multiplier factor locked and the signal disabled. In this situation, there is no way to choose a higher multiplier factor.

- *Speed Error Hold:*
  The default setting is "Disabled". If you change the setting to "Enabled" when the CPU speed setting is wrong, the system will hold.

  Normally, we do not recommend that you use the "User Define" option to setup CPU speed and multiplier factors. This option is for setup of future CPUs whose specifications are still unknown. The specifications of all present CPUs are included in the default settings. Unless you are very familiar with all CPU parameters, it is very easy to make mistakes when you define the external clock and the multiplier factor by yourself.

Solution in case of booting problem due to invalid clock setup:

Normally, if the CPU clock setup is wrong, you will not be able to boot. In this case, turn the system off then on again. The CPU will automatically use its standard parameters to boot. You can then enter the BIOS Setup again and set up the CPU clock. If you can't enter the BIOS setup, you must try turning the system on a few times (3~4 times) or press "INSERT" key when turning on and the system will automatically use its standard parameters to boot. You can then enter BIOS SETUP again and set up the new parameters.

When you change your CPU:

This motherboard has been designed in such a way that you can turn the system on after having inserted a CPU in the socket without having to configure any jumpers or DIP switches. But if you change your CPU, normally you just have to turn off the power supply, change the CPU and then, set up the CPU parameters through **SOFT MENU™ II**. However, if the new CPU is slower than the old one (and is same brand and type), we offer you two methods to successfully complete the CPU change operation.

Method 1: Setup up the CPU for the lowest speed for its brand. Turn the power supply off and change the CPU. Then turn the system on again, and set up the CPU parameters through **SOFT MENU™ II**.

Method 2: Since you have to open the computer case when you change the CPU, it could be a good idea to use the CCMOS jumper to erase the parameters of the original CPU and to enter BIOS Setup to set up CPU parameters again.

Attention

After setting up the parameters and leaving the BIOS SETUP, and having verified that the system can be booted, do not press the Reset button or turn off the power supply. Otherwise the BIOS will not read correctly, the parameters will fail and you must enter **SOFT MENU™ II** again to set up the parameters all over again.

CPU Power Supply:

This option allows you to switch between CPU default and user-defined voltages.

➤**CPU Default:** The system will detect the CPU type and select the proper voltage automatically. When it is enabled, the option "**Core Voltage**" will show the current voltage setting that is defined by the CPU and this will not be changeable. We recommend using this CPU default setting and not changing it unless the current CPU type and voltage setting can not be detected or is not correct.

➤**User Define:** This option lets the user select the voltage manually. You can change values of the "**Core Voltage**" option lists by using the Page Up and Page Down keys.

3-2. Standard CMOS Setup Menu

This contains the basic configuration parameters of the BIOS. These parameters include the settings for date, hour, VGA card, FDD and HDD.

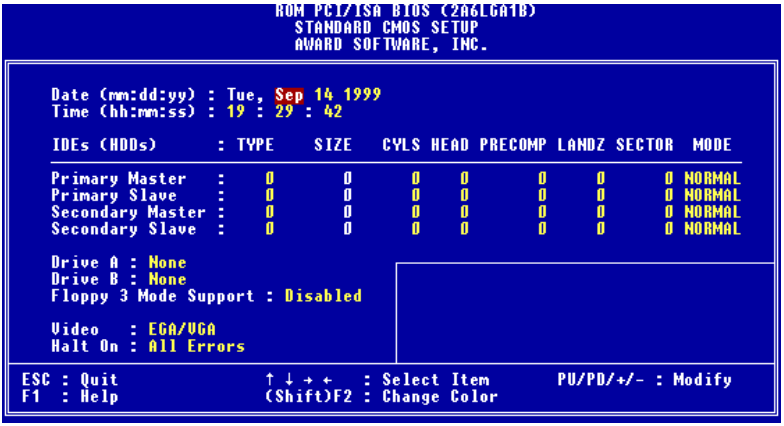


Figure 3-3. Standard CMOS Setup Menu

Date (mm:dd:yy):

You can set the date information in this item, month (mm), date (dd) and year (yy).

Time (hh:mm:ss):

You can set time information in this item, hour (hh), minute (mm) and second (ss).

Setup of the HDD operating mode [NORMAL, LBA, LARGE]

Since old operating systems were only able to support HDDs whose capacity was not bigger than 528MB, any hard disk with more than 528MB was unusable. AWARD BIOS features a solution to this problem: you can, according to your operating system, choose three operating modes: NORMAL, LBA or LARGE.

The HDD auto detection option in the Main Menu will automatically detect the parameters of your hard disk and the mode supported.

➤ **Normal mode:**

Standard normal mode supports hard disks of 528MB or less. This mode directly uses positions indicated by Cylinders (CYLS), Heads, and Sectors to access data.

➤ **LBA (Logical Block Addressing) mode:**

The earlier LBA mode can support HDDs capacity of up to 8.4GB, and this mode uses a different method to calculate the position of disk data to be accessed. It translates Cylinders (CYLS), Heads and Sectors into a logical address where data are located. The Cylinders, Heads, and Sectors displayed in this menu do not reflect the actual structure of the hard disk, they are just reference values used to calculate actual positions. Currently, all high capacity hard disks support this mode, that's why we recommend you use this mode. Currently, the BIOS can support the INT 13h extension function, enabling the LBA mode to support hard disk drive capacities exceeding 8.4GB.

➤ **LARGE Mode:**

When the number of cylinders (CYLs) of the hard disk exceeds 1024 and DOS is not able to support it, or if your operating system does not support LBA mode, you should select this mode.

Drive A:

If you have installed the floppy disk drive here, then you can select the type of floppy drive it can support. Six options are available: None➔360K, 5.25 in. ➔ 1.2M, 5.25in. ➔ 720K, 3.5 in. ➔ 1.44M, 3.5 in. ➔ 2.88M, 3.5 in. ➔ Back to None.

Drive B:

If you have installed the floppy disk drive here, then you can select the type of floppy drive it can support. Six options are available: None➔360K, 5.25 in. ➔ 1.2M, 5.25in. ➔ 720K, 3.5 in. ➔ 1.44M, 3.5 in. ➔ 2.88M, 3.5 in. ➔ Back to None.

Floppy 3 Mode Support:

3 Mode floppy disk drives (FDD) are 3 1/2" drives used in Japanese computer systems. If you need to access data stored in this kind of floppy, you must select this mode, and of course you must have a 3 Mode floppy drive.

Video:

You can select the VGA modes for your video adapter, four options are available: MONO ➔ EGA/VGA ➔ CGA 40 ➔ CGA 80 ➔ Back to MONO. The default setting is EGA/VGA.

Halt On:

You can select which type of error will cause the system to halt. Five options are available: All Errors ➔ No Errors ➔ All, But Keyboard ➔ All, But Diskette ➔ All, But Disk/Key ➔ Back to All Errors.

You can see your system memory list in the lower right box, it shows the *Base Memory*, *Extended Memory* and o*ther Memory* size configuration in your system.

3-3. BIOS Features Setup Menu

In each item, you can press <F1> at any time to display all the options for this item.

Attention

BIOS Features Setup Menu has already been set for maximum operation. If you do not really understand each of the options in this menu, we recommend you use default values.

Figure 3-4. BIOS Features Setup

Virus Warning:

This item can be set as Enable or Disable. The default is *Disabled.*

When this feature is enabled, if there is any attempt from a software or an application to access the boot sector or the partition table, the BIOS will warn you that a boot virus is attempting to access to the hard disk.

CPU Level 1 Cache:

This item is used to Enable or to Disable the CPU level 1 cache. When the cache is set at Disable, it is much slower, so the default setting for this item is Enable. Some old and very poorly written programs will make the computer malfunction or crash if the system speed is too high. In that case, you should Disable this feature. The default is *Enabled.*

CPU Level 2 Cache:

This item is used to enable or to disable the CPU level 2 cache. When the external cache is enabled, the system works faster. The default is *Enabled*.

CPU L2 Cache ECC Checking:

This item is used to enable or to disable the CPU level 2 cache ECC checking function. The default is *Enabled.*

Quick Power On Self Test:

After the computer has been powered on, the BIOS of the motherboard will run a series of tests in order to check the system and its peripherals. If the Quick power on self-test feature is Enable, the BIOS will simplify the test procedures in order to speed up the boot process. The default is *Enabled*.

Boot Sequence:

When the computer boots up, it can load the operating system from the floppy drive A, hard drive, SCSI drive or CD-ROM. There are many options for the boot sequence:

➤A, C, SCSI (Default setting)
➤C, A, SCSI
➤C, CDROM, A
➤CDROM, C, A
➤D, A, SCSI
➤E, A, SCSI
➤F, A, SCSI
➤SCSI, A, C
➤SCSI, C, A
➤A, SCSI, C
➤LS/ZIP, C

Swap Floppy Drive:

This item can be set as Enabled or Disabled. The default is *Disabled.* When this feature is enabled, you don't need to open the computer case to swap the position of floppy disk drive connectors. Drive A can be set as drive B and drive B can be set as drive A.

Boot Up Floppy Seek:

When the computer boots up, the BIOS detects if the system has an FDD or not. When this item is enabled, if the BIOS detects no floppy drive, it will display a floppy disk drive error message. If this item is disabled, the BIOS will skip this test. The default is *Disabled.*

Boot Up NumLock Status:

➤ On: At boot up, the Numeric Keypad is in numeric mode. (Default setting)
➤ Off: At boot up, the Numeric Keypad is in cursor control mode.

IDE HDD Block Mode:

This item can be set as Enabled or Disabled.

Most of new hard disk drives (IDE drives) support multi-sector transfers. This feature speeds up hard disk drive access performance and reduces the time necessary to access data. When this item is enabled, the BIOS will automatically detect if your hard disk drive supports this feature or not, and will choose the right settings for you. (*The default is Enabled*)

Typematic Rate Setting:

This item allows you to adjust the keystroke repeat rate. When enabled, you can set the two keyboard typematic controls that follow (Typematic Rate and Typematic Rate Delay). If this item is disabled, the BIOS will use the default setting.

Typematic Rate (Chars/Sec):

When you press a key continuously, the keyboard will repeat the keystroke according to the rate you have set. (Unit: characters/second）

Typematic Rate Delay (Msec):

When you press a key continuously, if you exceed the delay you have set here, the keyboard will automatically repeat the keystroke according to a certain rate. (Unit: milliseconds)

Security Option:

This option can be set to *System* or to *Setup*.

After you have created a password through PASSWORD SETTING, this option will deny access to your system (System) or modification of computer setup (BIOS Setup) by unauthorized users.

➤**SYSTEM:** When you choose System, a password is required each time the computer boots up. If the correct password is not given, the system will not start.

➤**SETUP:** When you choose Setup, a password is required only when accessing the BIOS Setup. If you have not set a password in the PASSWORD SETTING option, this option is not available.

Notice

Don't forget your password. If you forget the password, you will have to open the computer case and clear all information in the CMOS before you can start up the system. But by doing this, you will have to reset all the options you had set up before.

PCI /VGA Palette Snoop:

This option allows the BIOS to preview VGA Status, and to modify the information delivered from the Feature Connector of the VGA card to the MPEG Card. This option can solve the display inversion to black after you have used the MPEG card.

OS Select For DRAM > 64MB:

When the system memory is bigger than 64MB, the communication method between the BIOS and the operating system will differ from one operating system to another. If you use OS/2, select OS2; if you choose another operating system, select Non-OS2.

Report No FDD For WIN 95:

When using Windows 95 without floppy drive, please set this item to Yes.

Delay IDE Initial (Sec):

This item is used to support some old model or special type of hard disks or CD-ROMs, since the BIOS may not detect those kinds of devices during system booting.

Processor Number Feature:

This feature can let the program read the data inside your processor. This feature only works with Intel® Pentium® III processors. When you install a Pentium® III processor into your motherboard, and when your system boots-up then this item will show up in BIOS.

Two items will be available: Enabled and Disabled. When you choose Enabled, the specific program can read your processor's serial number. When you choose Disabled it will not allow the program to read your processor's serial number. The default setting is *Disabled*.

Video BIOS Shadow:

This option is used to define whether the BIOS on the video card uses the shadow feature or not. You should set this option to Enabled, otherwise the display performance of the system will greatly decrease.

Shadowing address ranges:

This option allows you to decide if the ROM BIOS area of an interface card at a specific address uses the shadow feature or not. If you have no interface card using this memory block, don't enable this option.

You have six address ranges you can select:

C8000-CBFFF Shadow, CC000-CFFFF Shadow, D0000-D3FFF Shadow, D4000-D7FFF Shadow, D8000-DBFFF Shadow, DC000-DFFFF Shadow.

Computer Knowledge: SHADOW

What is the SHADOW? The BIOS of standard video or interface cards is stored in ROM, and it is often very slow. With the Shadow feature, the CPU reads the BIOS on the VGA card and copies it into RAM. When the CPU runs this BIOS, the operation is speeded up.

3-4. Chipset Features Setup Menu

The Chipset Features Setup Menu is used to modify the contents of the buffers in the chipset on the motherboard. Since the parameters of the buffers are closely related to hardware, if the setup is not correct or is false, the motherboard will become unstable or you will not be able to boot up. If you don't know the hardware very well, use default values (i.e. use the LOAD SETUP DEFAULTS option).

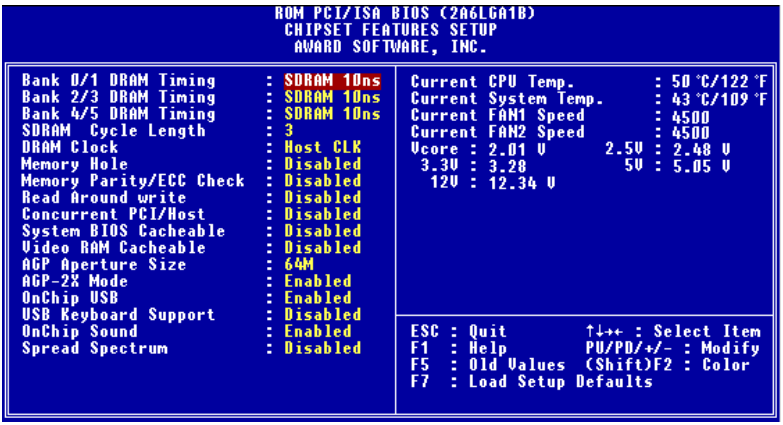


Figure 3-5. Chipset Features Setup

You can use the arrow keys to move between the items. Use **PgUP**, **PgDn**, + or **-** key to change the values. When you have finished setting up the chipset, press **ESC** to go back to the main menu.

Note

The parameters in this screen are for system designers, service personnel, and technically competent users only. Do not reset these values unless you understand the consequences of your changes.

Bank 0/1, 2/3, 4/5 DRAM Timing:

The DRAM timing of Bank 0/1, 2/3, 4/5 in this field is set by the motherboard manufacturer, depending on whether memory module preset. For end users, we do not suggest that you to change the setting. Except when you actually know what kind memory module you use.

The Choice: SDRAM 10ns ➔ SDRAM 8ns ➔ Normal ➔ Medium ➔ Fast ➔ Turbo ➔ Back to SDRAM 10ns. The default setting is *SDRAM 10ns*.

SDRAM Cycle Length:

Two options are available: 2 or 3. This option sets the CAS latency timing. of the DRAM system memory access cycle when SDRAM system memory is installed on the motherboard. The default setting is *3*.

DRAM Clock:

Two options are available: Host CLK or 66 MHz. The default setting is Host CLK. This option is used to set the working speed of SDRAM is same as CPU working frequency, or keep it at 66 MHz.

Memory Hole:

Two options are available: Disabled or 15M - 16M. The default setting is *Disabled*. This option is used to free up the memory block 15M-16M. Some special peripherals need to use a memory block located between 15M and 16M, and this memory block has a size of 1M. We recommend that you disable this option.

Read Around Write

Two options are available: Disabled or Enabled. The default setting is *Disabled*. This item is designed for DRAM optimization feature. If a memory read is addressed to a location whose latest write is being held in a buffer before being written to memory, the read is satisfied through the buffer contents, and the read is not sent to the DRAM

Concurrent PCI/Host

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When disable, CPU bus will be occupied during the entire PCI operation period.

System BIOS Cacheable:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When you select Enabled, you get faster system BIOS executing speed via the L2 cache.

Video RAM Cacheable:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When you select Enabled, you get faster video RAM executing speed via the L2 cache. You must check your VGA adapter manual to find out if any compatibility problems will occur.

AGP Aperture Size:

Six options are available: 16M ➔ 8M ➔ 4M ➔ 128M ➔ 64M ➔ 32M ➔ Back to 16M. The default setting is *64M*. This option specifies the amount of system memory that can be used by the AGP device. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for AGP information.

AGP-2X Mode:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. If you use the older AGP adapter that does not support AGP 2X mode, you need to set this item to Disabled.

OnChip USB:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This should be enabled if your system has a USB installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature. If you choose disable this item, the "USB Keyboard Support" item will disappear in *Chipset Features Setup* menu.

- **USB Keyboard Support:**

  Two options are available: Enabled and Disabled. The default setting is *Disabled.* If your system contains a USB keyboard, set it to *Enabled*.

OnChip Sound:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. Because this motherboard had built-in the Audio CODEC, so we set this item to Enabled. If you want to use the other sound card with this motherboard, you have to disable this item.

Spread Spectrum:

Three options are available: Disabled ➔ 0.25% ➔ 0.50%. The default setting is *Disabled*. For EMC (**E**lectro-**M**agnetic **C**ompatibility Test) testing, you may need to adjust these options for optimal results. We do not recommend you change the default, except for special reasons. Some values you select may cause system instability under some situations, please be careful.

Thermal, Fans Speed and Voltages Monitor:

These items list current states of CPU and system temperature as well as fan speed (CPU fan and chassis fan). The user can not change it.

The following items list the voltage states of the system power. Just like Thermal & Fan Monitor, it is unchangeable.

Note

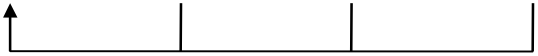
The hardware monitoring features for temperature, fans and voltages will occupy the I/O address from 294H to 297H. If you have a network adapter, sound card or other add-on cards that might use those I/O addresses, please adjust your add-on card I/O address, to avoid the use of those addresses.

There are small differences in the chipset feature setup according to different motherboard models, but this has no influence upon performance. Our default setup should be the best one.

3-5. Power Management Setup Menu

The difference between Green PCs and traditional computers is that Green PCs have a power management feature. With this feature, when the computer is powered on but inactive, the power consumption is reduced in order to save energy. When the computer operates normally, it is in Normal mode. In this mode, the Power Management Program will control the access to video, parallel ports, serial ports and drives, and the operating status of the keyboard, mouse and other device. These are referred to as Power Management Events. In cases where none of these events occur, the system enters the power saving mode. When one of the controlled events occurs, the system immediately returns to normal mode and operates at its maximum speed. Power saving modes can be divided into three modes according to their power consumption: Doze Mode, Standby Mode, and Suspend Mode. The four modes proceed in the following sequence:

Normal Mode ===> Doze Mode ===> Standby Mode ===> Suspend Mode



The system consumption is reduced according the following sequence:

Normal > Doze > Standby > Suspend

1. In the Main Menu, select "Power Management Setup" and press "Enter". The following screen is displayed:

```
                    ROM PCI/ISA BIOS (2A6LGA1B)
                    POWER MANAGEMENT SETUP
                    AWARD SOFTWARE, INC.

ACPI function      : Disabled          Primary INTR       : ON
Power Management   : User Define       IRQ3  (COM 2)      : Primary
PM Control by APM  : Yes                IRQ4  (COM 1)      : Primary
Video Off After    : Suspend            IRQ5  (LPT 2)      : Primary
Video Off Method   : V/H SYNC+Blank     IRQ6  (Floppy Disk): Primary
MODEM Use IRQ      : 3                  IRQ7  (LPT 1)      : Primary
PWR Button Override: Instant-Off        IRQ8  (RTC Alarm)  : Disabled
HDD Power Down     : Disable            IRQ9  (IRQ2 Redir) : Secondary
Doze Mode          : Disable            IRQ10 (Reserved)   : Secondary
Suspend Mode       : Disable            IRQ11 (Reserved)   : Secondary
        ** PM Events **                 IRQ12 (PS/2 Mouse) : Primary
VGA                : OFF                IRQ13 (Coprocessor): Primary
LPT & COM          : LPT/COM            IRQ14 (Hard Disk)  : Primary
HDD & FDD          : ON                 IRQ15 (Reserved)   : Disabled
PCI Master         : OFF
Wake Up On LAN/Ring: Disabled           ESC : Quit          ↑↓→← : Select Item
RTC Alarm Resume   : Disabled           F1  : Help          PU/PD/+/- : Modify
                                        F5  : Old Values    (Shift)F2 : Color
                                        F7  : Load Setup Defaults
```

Figure 3-6. Power Management Setup Menu

2. Use the arrow keys to go to the item you want to configure. To change the settings, use **PgUP**, **PgDn**, + or **-** key.

3. After you have configured the Power Management feature, press **Esc** to go back to the Main Menu.

We are now going to briefly explain the options in this menu:

ACPI Function (Advanced Configuration and Power Interface):

ACPI gives the operating system direct control over the power management and Plug and Play functions of a computer.

There are two options that can be selected, "Enabled" and "Disabled". You can select "Enabled" to enable ACPI functions. If you want ACPI functions to work normally, you should notice two things. One is your operating system must support ACPI, as of now only Microsoft® Windows® 98 supports these functions. The second thing is that all devices and add-on cards in your system, must fully support ACPI, both hardware and software (drivers). If you want to know if your devices or add-on cards support ACPI or not, please contact the device or add-on card manufacture for more information. If you want to know more about ACPI specifications, please go to the address below for more detailed information:

http://www.teleport.com/~acpi/acpihtml/home.htm

ACPI requires an ACPI-aware operating system. ACPI features include:

- Plug and Play (including bus and device enumeration) and APM functionality normally contained in the BIOS.
- Power management control of individual devices, add-in cards (some add-in cards may require an ACPI-aware driver), video displays, and hard disk drives.
- A Soft-off feature that enables the operating system to power off the computer.
- Support for multiple wake up events (see Table 3-5-1).
- Support for a front panel power and sleep mode switch. Table 3-5-2 describes the system states based on how long the power switch is pressed, depending on how ACPI is configured with an ACPI-aware operating system.

Note
If you enable the ACPI function in the BIOS setup, the SMI switch function will not work.

System States and Power States

Under ACPI, the operating system directs all system and device power state transitions. The operating system puts devices in and out of low-power states based on user preferences and knowledge of how devices are being used by applications. Devices that are not being used can be turned off. The operating system uses information from applications and user settings to put the system as a whole into a low-power state.

Table 3-5-1: Wake Up Device and Events

The table below describes which devices or specific events can wake the computer from specific states.

These device/events can wake up the computer……	**……from this state**
Power switch	Sleeping mode or power off mode
RTC alarm	Sleeping mode or power off mode
LAN	Sleeping mode or power off mode
Modem	Sleeping mode or power off mode
IR command	Sleeping mode
USB	Sleeping mode
PS/2 keyboard	Sleeping mode
PS/2 mouse	Sleeping mode
Sleep button	Sleeping mode

Table 3-5-2: Effect of Pressing the Power Switch

If the system is in this state……	**……and the power switch is pressed for**	**……the system enters this state**
Off	Less than four seconds	Power on
On	More than four seconds	Soft off/Suspend
On	Less than four seconds	Fail safe power off
Sleep	Less than four seconds	Wake up

Power Management:

Three options:

➤ User Define

User Define defines the delay for accessing the power modes.

➤ Min Saving

When these three saving modes are enabled, the system is set up for minimum power savings.

HDD Power Down = 15 Min
Doze = 1 hour
Suspend = 1 hour

➤ Max Saving

When these three saving modes are enabled, the system is set up for maximum power savings.

HDD Power Down = 1 Min
Doze = 1 minute
Suspend = 1 minute

PM Control by APM:

Power Management is completely controlled by the APM.

Two options are available: Yes or No. The default setting is *Yes*. APM stands for Advanced Power Management, it is a power management standard set by Microsoft®, Intel® and other major manufacturers.

Video Off After:

Select the saving mode in which the video is switched off.

➤ NA
The video will never be switched off in the "no power saving" mode.

➤ Suspend
The video will only be switched off in Suspend mode. (Default setting)

➤ Doze
The video will be switched off in all power saving modes.

Video Off Method:

Three video off methods are available: "Blank Screen", "V/H SYNC + Blank" and "DPMS Support". The default is "V/H SYNC + Blank".

If this setting does not shut off the screen, select “Blank Screen”. If your monitor and video card support DMPS standard, select “DPMS Support”.

Modem Use IRQ:

Eight items available: 3 ➔ 4➔ 5➔ 7 ➔ 9 ➔ 10 ➔ 11 ➔ NA ➔ Back to 3. The default setting is *3*. You can specify the IRQ for modem use.

Power Button Override:

Two items available: Instant-Off or Delay 4 Sec. The default setting is *Instant-Off*. It is activated when the user presses the power button for more than four seconds while the system is in the working state, then the system will transition to the soft-off (Power off by software). This is called the power button over-ride.

HDD Power Down:

Sixteen items available: Disable ➔ 1 Min ➔ 2 Min ➔3 Min ➔ 4 Min➔ 5 Min ➔ 6 Min ➔ 7 Min ➔ 8 Min ➔9 Min ➔ 10 Min ➔ 11 Min ➔ 12 Min ➔ 13 Min ➔ 14 Min ➔ 15 Min ➔ Back to Disable. The default setting is *Disable*.

If the system has not accessed data on the hard disk drive during the specified time period, the engine of the HDD will stop in order to save electricity. You can set 1 to 15 minutes or select Disable according to your use of the HDD.

Doze Mode:

Fifteen items are available: Disable ➔ 10 Sec ➔ 20 Sec ➔30 Sec ➔ 40 Sec➔ 1 Min ➔ 2 Min ➔ 4 Min ➔ 6 Min ➔8 Min ➔ 10 Min ➔ 20 Min ➔ 30 Min ➔ 40 Min ➔ 1 Hour ➔ Back to Disable. The default setting is *Disable*.

When the setting selected for "Power Management" is "User Define", you can define for this mode any delay from 1 minute to 1 hour. If no power management event occurs during this time period, meaning that the computer is inactive during this period, the system will enter the Doze power saving mode. If this mode is disabled, the system will enter the next mode in the sequence (suspend mode).

Suspend Mode:

Fifteen items are available: Disable ➔ 10 Sec ➔ 20 Sec ➔30 Sec ➔ 40 Sec➔ 1 Min ➔ 2 Min ➔ 4 Min ➔ 6 Min ➔8 Min ➔ 10 Min ➔ 20 Min ➔ 30 Min ➔ 40 Min ➔ 1 Hour ➔ Back to Disable. The default setting is *Disable*.

When the setting selected for "Power Management" is "User Define", you can define for this mode any delay from 1 minute to 1 hour. If no power management event occurs during this time period, meaning the computer is inactive during this period, the system will enter the Suspend power saving mode. The CPU stops working completely.

If this mode is disabled, the system will not enter the suspend mode.

PM Timer Events:

When one of the specified events occurs, the count down for entry into the power saving mode goes back to zero. Since the computer will enter a power saving mode only after a specified inactivity delay (time specific for Doze, Standby and Suspend modes) and after there has been no activity during this time period, any event will cause the computer to re-count the time elapsed. Resume events are operations or signals that cause the computer to resume time counting.

➤ ***VGA:***

Two items available: On or Off. The default setting is *Off*. When set to On, any event occurring at a VGA port will awaken a system, which has been powered down.

➤ ***LPT & COM:***

Four items available: LPT/COM ➔ None ➔ LPT ➔ COM. The default setting is *LPT/COM*. When set to LPT/COM, any event occurring at a LPT (printer) /COM(serial) port will awaken a system which has been powered down.

➤ ***HDD & FDD:***

Two items available: On or Off. The default setting is *On*. When set to On, any event occurring at a hard disk drive or floppy drive port will awaken a system, which has been powered down.

➤ ***PCI Master:***

Two items available: On or Off. The default setting is *Off*. When set to On, any event occurring at PCI Master signal will awaken a system, which has been powered down.

➤ ***Wake Up On LAN/Ring:***

Two items available: Disabled or Enabled. The default setting is *Disabled*. When set to Enabled, any event occurring to the LAN/Modem Ring will awaken a system, which has been powered down.

➤ ***RTC Alarm Resume:***

Two items available: Disabled or Enabled. The default setting is *Disabled*. When *Enabled,* your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

– ***Date (of Month) / Timer (hh:mm:ss):***

You could set the date (of month) and timer (hh:mm:ss), any event occurring at will awaken a system, which has been powered down.

Primary INTR:

Two items available: On or Off. The default setting is *On*. When set to On, any event occurring at below list will awaken a system which has been powered down.

The following is a list of IRQ's, **I**nterrupt **R**e**Q**uests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.
As above, the choices are On and Off.

When set On, activity will neither prevent the system from going into a power management mode nor awaken it. Each item has three options: Primary ➔ Secondary ➔ Disabled.

➤ IRQ3 (COM 2): The default setting is *Primary*.
➤ IRQ4 (COM 1): The default setting is *Primary*.
➤ IRQ5 (LPT 2): The default setting is *Primary*.
➤ IRQ6 (Floppy Disk) : The default setting is *Primary*.
➤ IRQ7 (LPT 1): The default setting is *Primary*.
➤ IRQ8 (RTC Alarm): The default setting is *Disabled*.
➤ IRQ9 (IRQ2 Redir): The default setting is *Secondary*.
➤ IRQ10 (Reserved): The default setting is *Secondary.*
➤ IRQ11 (Reserved): The default setting is *Secondary*.
➤ IRQ12 (PS/ 2 Mouse): The default setting is *Primary*.
➤ IRQ13 (Coprocessor): The default setting is *Primary*.
➤ IRQ14 (Hard Disk): The default setting is *Primary*.
➤ IRQ15 (Reserved): The default setting is *Disabled*.

3-6. PNP/PCI Configuration

In this menu, you can change the INT# and IRQ of the PCI bus and other hardware settings.

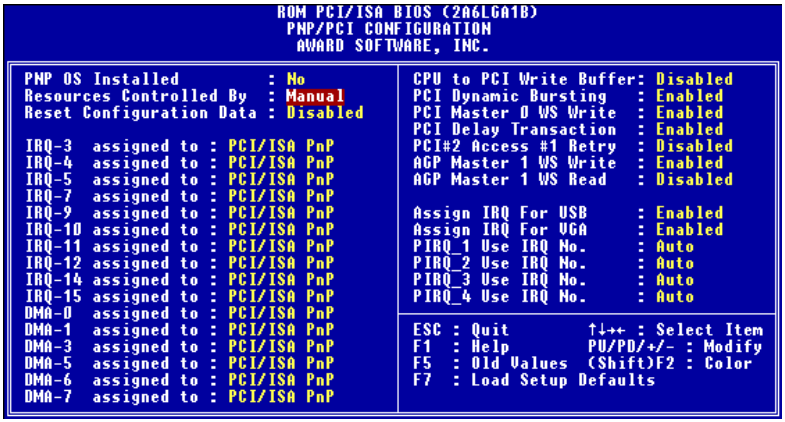


Figure 3-7. PNP/PCI Configuration Menu

PNP OS Installed:

Device resource assigned by PnP OS or BIOS.

Resources Controlled By:

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

Legacy ISA devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP devices compliant with the Plug and Play standard, whether designed for the PCI or ISA bus architecture.

Two options are available: Auto or Manual. The default setting is *Auto*. The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices. If you select Auto, all of the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them. But if you have trouble in assigning the interrupt resource automatically, you can select Manual to set which IRQ and DMA are assigned to PCI/ISA PnP or legacy ISA cards.

Reset Configuration Data:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. 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 cannot boot.

Computer Knowledge: ESCD (Extended System Configuration Data)

The ESCD contains the IRQ, DMA, I/O port, memory information of the system. This is a specification and a feature specific to the Plug & Play BIOS.

CPU to PCI Write Buffer:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When enabled, up to four words of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data. Because the CPU speed running faster than PCI bus, the CPU must wait as the PCI bus receives data before starting each write cycle.

PCI Dynamic Bursting:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. When Enabled, every write transaction goes to the write buffer. Burstable transactions then burst on the PCI bus and nonburstable transactions don't. Which means, when you set to disabled, if the write transaction is a burst transaction, the information go to the write buffer and burst transfers are perform on the PCI bus later. If the transaction is not a burst transaction, PCI write will occur immediately. (it will active after a write buffer flush)

PCI Master 0 WS Write:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. When *Enabled,* writes to the PCI bus are executed with zero wait states (immediately), when PCI bus is ready to receive data. If disabled , the system will wait one state before data is written to the PCI bus.

PCI Delay Transaction:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

PCI#2 Access #1 Retry:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. This item allows you enable/disable the PCI #2 Access #1 Retry. When you set the PCI#2 Access#1 to Enabled, the AGP bus will attempt to access the PCI bus at a limited time period before being disconnected. When you set it to Disabled, the AGP bus will try to access the PCI bus until it successfully accesses the PCI bus.

AGP Master 1 WS Write:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This implements a single delay when writing to the AGP Bus. When you set it to Disabled, two-wait states are used by the system, allowing for greater stability.

AGP Master 1 WS Read:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

Assigned IRQ For USB:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. If you need another IRQ to be freed up, you can choose to disable this item, and you can get an IRQ. But in some situations in Windows® 95 it may cause the USB port to malfunction or have other problems! Two options are available: Enable or Disable.

Assign IRQ For VGA :

Two options are available: Disabled or Enabled. The default setting is *Enabled*. Name the interrupt request (IRQ) line assigned to the USB/VGA/ACPI (if any) on your system. Activity of the selected IRQ always awakens the system.

You can assign an IRQ for the PCI VGA or *Disabled*.

PIRQ_1~PIRQ4:

Eleven options are available: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, 15. Default setting is *Auto.* This item allows the system to automatically specify the IRQ number for the device installed on PCI slots. Which means, the system can specify the fixed IRQ number for the device installed on the PCI slots (PCI slot 1 to PCI slot 5). This is a useful function when you want to fix the IRQ for a specific device.

For example, if you want to move your hard disk to another computer and don't want to re-install Windows® NT, then you can specify the IRQ for the device installed on the new computer to fit the original computer settings.

Note

If you specify the IRQ in this item, then you cannot specify the same IRQ to the ISA bus, otherwise, it will cause a hardware conflict.

This feature is for the operating system which will record and fix the PCI configuration status, if you want to change it.

For the relations between the hardware layout of PIRQ (the signals from the 810 chipset), INT# (means PCI slot IRQ signals) and devices, please refer to the table below:

Signals	PCI slot 1	PCI slot 2	PCI slot 3	PCI slot 4 PCI slot 5
PIRQ_1	INT A	INT B	INT C	INT D
PIRQ_2	INT B	INT C	INT D	INT A
PIRQ_3	INT C	INT D	INT A	INT B
PIRQ_4	INT D	INT A	INT B	INT C

- USB used INT D.
- Each PCI slot has four INT#s (INT A~INT D), and the AGP slot has two INT# (INTA and INT B).

3-7. Load Setup Defaults

Setup defaults are the settings that allow your system to operate at its highest performance. When you choose this option, the following message is displayed:

"Load Setup Defaults (Y/N)? N"

If you want to use BIOS Setup default values, press "Y", then <Enter> to complete the loading of the settings for best performance.

You should first load the best settings, then enter the CPU Soft Menu to set up CPU parameters, otherwise the BIOS will replace the set parameters with default parameters.

3-8. Integrated Peripherals

In this menu, you can change the onboard I/O device, I/O port address and other hardware settings.

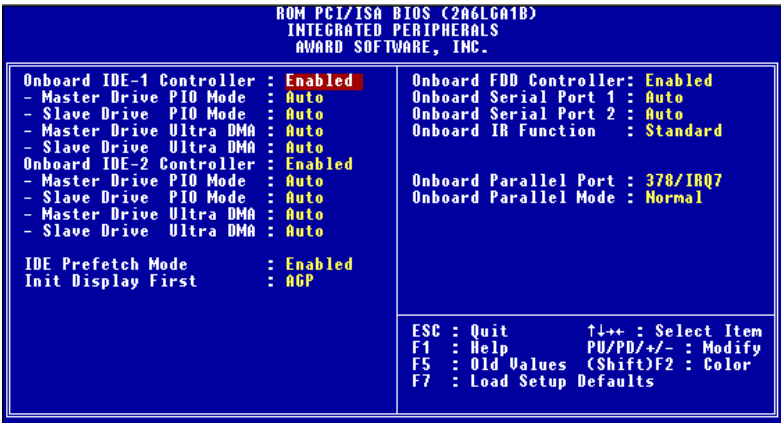


Figure 3-8A. Integrated Peripherals Menu Default Screen

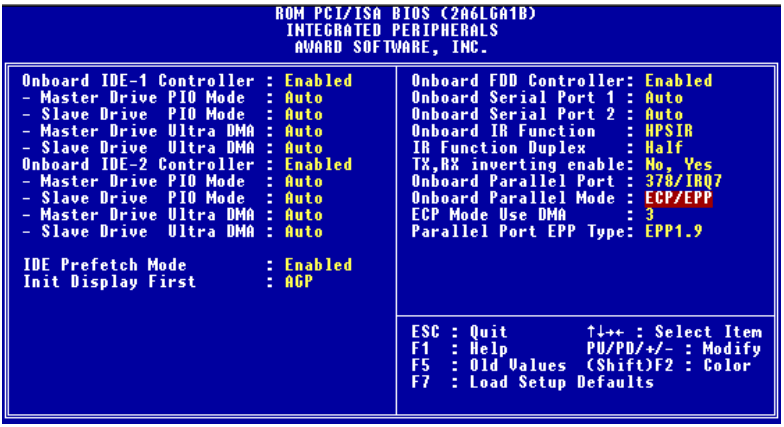


Figure 3-8B. Integrated Peripherals Menu Full Items Screen

Onboard IDE-1 Controller:

The onboard IDE 1 controller can be set as Enabled or Disabled.

- ***Master Drive PIO Mode:***

  ➤Auto: The BIOS can auto-detect the transfer mode of the IDE devices in order to set its data transfer rate. (Default)

  You can select the PIO mode from 0 to 4 of the IDE devices in order to set its data transfer rate.

- ***Slave Drive PIO Mode:***

  ➤Auto: The BIOS can auto-detect the transfer mode of the IDE devices in order to set its data transfer rate. (Default)

  You can select the PIO mode from 0 to 4 of the IDE devices in order to set its data transfer rate.

- ***Master Drive Ultra DMA:***

  Ultra DMA is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 66 MB/sec.

  ➤Auto: When you select *Auto*, the system automatically determines the optimal data transfer rate for each IDE device. (Default)

  ➤Disabled: If you encounter the problem of using Ultra DMA devices, you can try to *Disable* this item.

- Slave Drive Ultra DMA:

  ➤Auto: When you select *Auto*, the system automatically determines the optimal data transfer rate for each IDE device. (Default)

  ➤Disabled: If you encounter the problem of using Ultra DMA devices, you can try to *Disable* this item.

Onboard IDE-2 Controller:

The onboard IDE-2 controller can be set at Enabled or Disabled.

- ***Master Drive PIO Mode:***

  ➤Auto: The BIOS can auto-detect the transfer mode of the IDE devices in order to set its data transfer rate. (Default)

  You can select the PIO mode from 0 to 4 of the IDE devices in order to set its data transfer rate.

- ***Slave Drive PIO Mode:***

  ➤Auto: The BIOS can auto-detect the transfer mode of the IDE devices in order to set its data transfer rate. (Default)

  You can select the PIO mode from 0 to 4 of the IDE devices in order to set its data transfer rate.

- ***Master Drive Ultra DMA:***

  Ultra DMA is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 66 MB/sec.

  ➤Auto: When you select *Auto*, the system automatically determines the optimal data transfer rate for each IDE device. (Default)

  ➤Disabled: If you encounter a problem using Ultra DMA devices, you can try to *Disable* this item.

- ***Slave Drive Ultra DMA:***

  ➤Auto: When you select *Auto*, the system automatically determines the optimal data transfer rate for each IDE device. (Default)

  ➤Disabled: If you encounter the problem of using Ultra DMA devices, you can try to *Disable* this item.

PIO MODE 0~4 reflects the IDE device data transfer rate. The higher the MODE value is, the better is the IDE device data transfer rate. But it does not mean that you can select the highest MODE value just as you like, you first have to be sure that your IDE device supports this MODE, otherwise the hard disk will not be able to operate normally.

IDE Prefetch Mode:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. The onboard IDE drive interfaces supports IDE prefetching, for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to *Disabled* if the interface does not support prefetching.

Init Display First:

Two options are available: PCI Slot or AGP. The default setting is *AGP.* When you install more than one display cards, you can choose either a PCI display card (PCI Slot) or an AGP display card (AGP) to activate the display boot-up screen. If you only installed one display card, the BIOS will detect which slot (AGP or PCI) you installed it, in then everything will be take care of by the BIOS.

Onboard FDD Controller:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This is set to Enabled or Disabled the Onboard FDD Controller. If you add a higher performance controller, you will need to disable this feature.

Onboard Serial Port 1:

This item allows you to determine access onboard serial port 1 controller with which I/O address. Six options are available: Auto ➔ Disabled ➔ 3F8/IRQ4 ➔ 2F8/IRQ3 ➔ 3E8/IRQ4 ➔ 2E8/IRQ3 ➔ Back to Auto. The default setting is *Auto*.

Onboard Serial Port 2:

This item allows you to determine access onboard serial port 2 controller with which I/O address. Six options are available: Auto ➔ Disabled ➔ 3F8/IRQ4 ➔ 2F8/IRQ3 ➔ 3E8/IRQ4 ➔ 2E8/IRQ3 ➔ Back to Auto. The default setting is *Auto*.

If you choose “Disabled”, then item “Onboard IR Function” will disappear.

Onboard IR Function:

Three options are available: Standard ➔ HPSIR ➔ ASKIR (Amplitude Shift Keyed IR). The default setting is *Standard*.

When you select the item HPSIR or ASKIR, then the following two items will appear.

- **IR Function Duplex:** Two options are available: Half or Full. The default setting is *Half*.

  Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

- **TX, RX inverting enable:** Four options are available: No, Yes ➔ Yes, No ➔ Yes, Yes ➔ No, No.

  This item allows you to determine the active of RxD, TxD.

Onboard Parallel Port:

Four options are available: 378/IRQ7 ➔ 278/IRQ5 ➔ Disabled ➔ 3BC/IRQ7. The default setting is *378/IRQ7.* Select a logical LPT port name and matching address for the physical parallel(printer) port.

Parallel Port Mode:

Four options are available: Normal ➔ EPP ➔ ECP ➔ ECP/EPP. Default is *Normal* mode. Select an operating mode for the onboard parallel (printer) port. Normal (SPP, Standard Parallel Port), EPP (Extended Parallel Port), ECP (Extended Capabilities Port) or ECP plus EPP.

Select Normal unless you are certain your hardware and software both support EPP or ECP mode. According your select the following items will separate show up.

- **ECP Mode Use DMA:**

  When the mode selected for the onboard parallel port is ECP or ECP/EPP, the DMA channel selected can be Channel 1 or Channel 3.

- **Parallel Port EPP Type:**

  When the mode selected for the onboard parallel port is EPP or ECP/EPP, two EPP version options are available: EPP1.7 or EPP1.9.

3-9. Password Setting

This option allows you to set a password required to start the system (System) or to access to the BIOS (Setup).

After you have set a password through the PASSWORD SETTING option, you can enter the Security Option in the "BIOS Features Setup Menu" to select the security level in order to prevent any unauthorized access.

Password setting procedure:

When you choose the Password setting option, the following message is displayed:

"Enter Password:"

Type your password. When complete, press <Enter>. The following message is displayed:

"Confirm Password:"

Type your password again. When complete, press <Enter>. The password setting is completed.

Password clearing procedure:

When you select the Password setting option, the following message is displayed:

"Enter Password:"

Press <Enter>, the message "Password Disable" is displayed. Press a key. The password clearing procedure is completed.

Notice

Do not forget your password. If you forget it, you will have to open the computer case, clear the contents of the CMOS, and boot the system up again. By doing this, you must reset all your parameters.

3-10. IDE Hard Disk Detection

After you have installed the hard disk, in old systems, you had to know the hard disk specifications, such as the number of cylinders, heads and sectors, and to enter the relevant information into the hard disk information section. If the CMOS data was erased, and you had forgotten the hard disk specifications, it was a great problem. But now, you can use this option to auto detect the hard disk type and specifications, and the BIOS will automatically detect all the relevant information and place them in the Hard Disk data section of the ***Standard CMOS Setup Menu***. In order to allow you to use your hard disk.

3-11. Save & Exit Setup

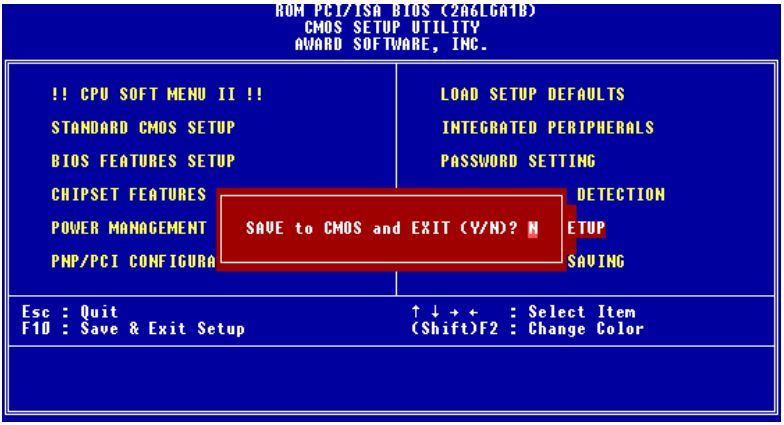


Figure 3-9. Save & Exit Setup

You can save all your selection to CMOS and exit BIOS to reboot your computer.

3-12. Quit Without Saving

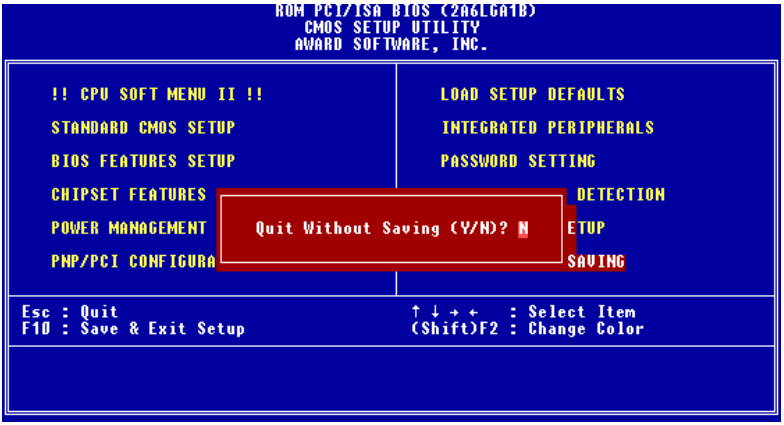


Figure 3-10. Exit Without Saving

You can exit and without saving all your selection to CMOS, then exit BIOS to reboot your computer

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Appendix A VIA Service Pack Drivers Installation for Windows® 98 SE

After you've installed Windows® 98, you need to install the VIA Service Pack drivers. We will tell you step by step in the following section how to do this.

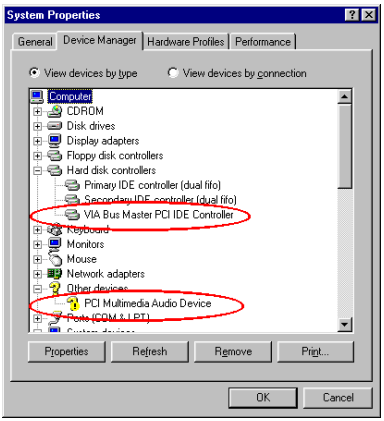
Note A-1

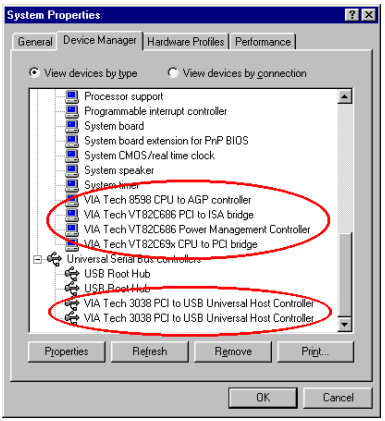
You have to install the VIA Service Pack drivers before you install the VGA and audio drivers. After installing Windows® the quality of your display will be poor because it will be set to 640*480 and 16 color. For the best screen capture quality, install the VGA drivers and set the desktop to 800*600 using True Color.

Note A-2

Details of the Windows® 98 SE operating system will not be mentioned in this manual. If you have any problems with Windows® 98 SE installation, operations and settings please refer to your Windows® 98 SE user's manual or other databases provided by Microsoft® Corporation.

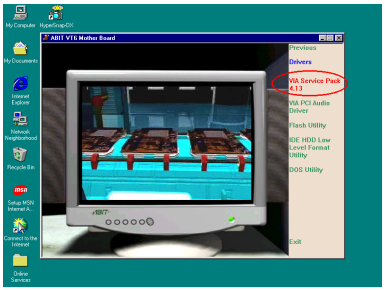
First, go to check the System Properties ➔ Device Manager. We will show you several places that identify the VIA chipset and controller. Some items will illicit questions . (We'll discussion the VIA PCI Audio drivers installation in next chapter.)



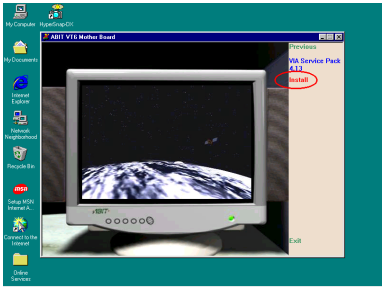


Exit the device manager and insert the VA6 CD-Title into your CD-ROM drive, it should execute the program automatically. If not, you can go to the CD location and execute the execution file at the main directory of this CD-Title. After it has been executed you will see the screen below. Move the cursor to the "Drivers" and click on it. This will take you to the next screen.

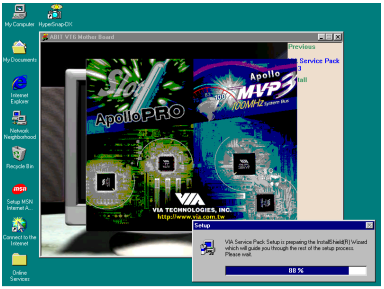
Move the cursor to "Drivers" and click on it. You will go to the next screen.



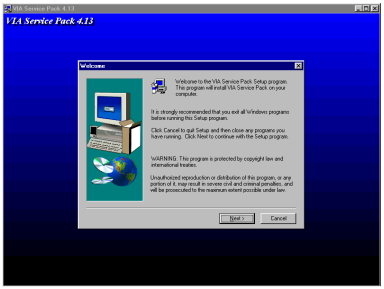
Move the cursor to "VIA Service Pack 4.13 " and click on it. Go to the next screen.



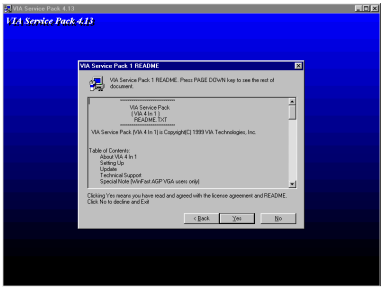
Move the cursor to "Install" and click on it. Go to the next screen.



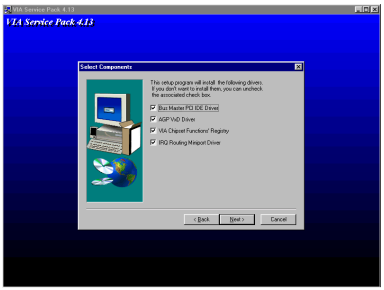
Now you will see the install shield loading.



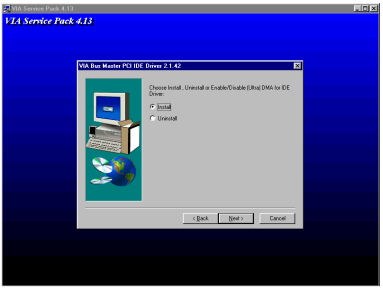
You will now see the welcome screen and its dialogue box. Click "Next" to go on.



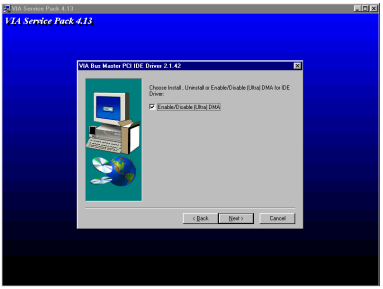
The service pack readme screen will appear. Click the "Yes" button to go on.



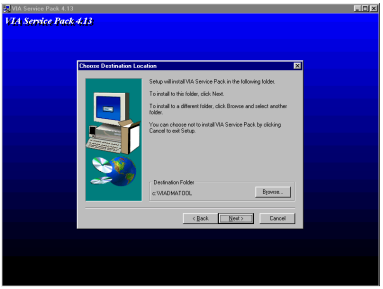
This setup program will install the four kinds of drivers. Please check which drivers you want to install . When you choose the items, please click the "Next" button to continue.



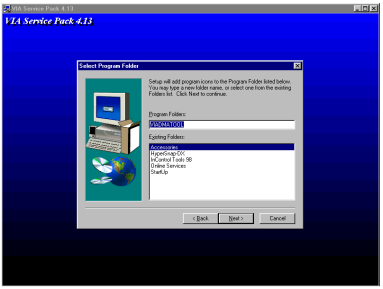
Choose the “Install” then click the “Next” button to go on.



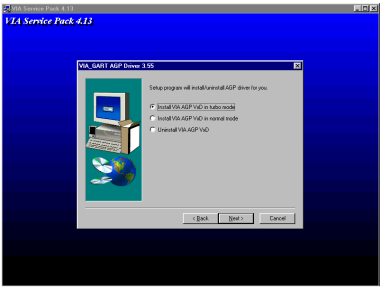
Choose install Ultra DMA then click “Next” button.



Now you can choose the folder for the destination location in which you want the drivers installed. We suggest you use the default folder as the destination location. After checking the folder click the "Next" button.



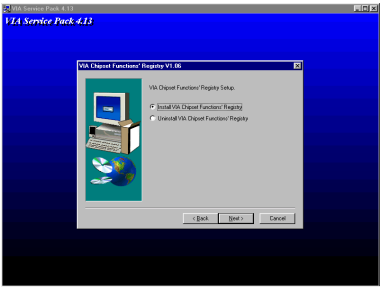
You can choose the name of the program folder. We suggest you use the default program folder name. After checking the program folder name then click the "Next" button.



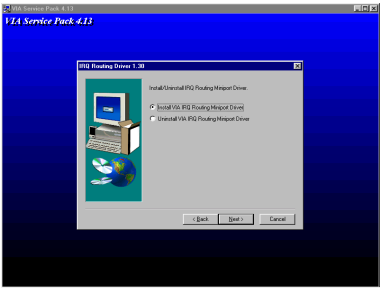
Choose the AGP VxD driver mode then click the "Next" button.

Note A-3: What is the difference between "Normal" & "Turbo" mode

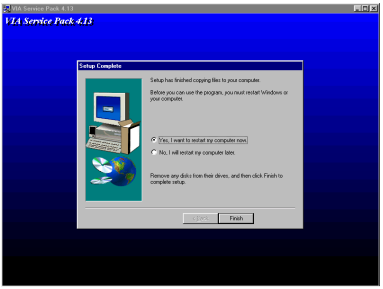
Installing in "turbo" mode will give your graphics card enhanced speed and performance while "normal" mode offers increased system stability.



Choose "Install VIA Chipset Functions' Registry", then click the "Next" button.



Choose "Install VIA IRQ Routing Miniport Driver", then click the "Next" button. Program will start to install all of the drivers you choose.



When the installation is complete, the installer will ask you to restart your computer. We suggest that you choose "Yes" then click the "Finish" button to restart your computer to finish the driver updates.

When your computer system restarts, will see Windows® 98 SE starts the update process and several new hardware devices will be found and updated. When restarting Windows® 98 SE, the CD-ROM drives will fail to be found in the updating process. If the prompt dialogue box asks you to put the Windows® 98 SE CD into the CD-ROM drive, just ignore this message and let it go to the next process.

Problem under Windows® 95 OSR2

If your operating system is Windows® 95 OSR2, install the VIA service pack 4.13 and Microsoft® usbsupp.exe for USB devices support. Then restart Windows and go to System Properties ➔ Device Manager. There will be question marks before "PCI Universal Serial Bus" and "VIA PCI to USB Universal Host Controller".

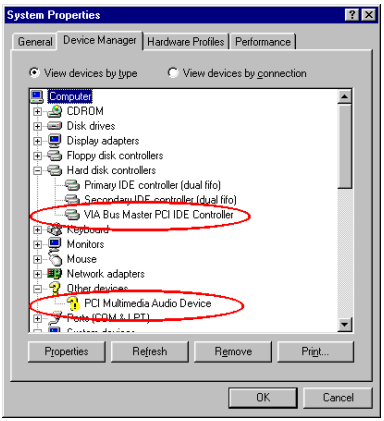
To make these question marks disappear, remove these items and then restart Windows. When Windows completes loading, these devices will have returned to normal and the question marks will be gone.

Appendix B Installing the VIA PCI Audio Driver for Windows® 98 SE

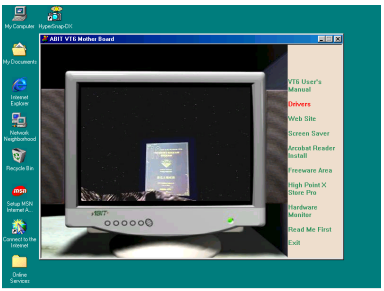
We will show you how to install the VIA PCI audio drivers for Windows® 98 SE operating system.

Note B-1

Details of the Windows® 98 SE operating system will not be mentioned in this manual. If you have any problems with Windows® 98 SE installation, operations and settings, please refer to your Windows® 98 SE user's manual or other databases provided by Microsoft® Corporation.



First check System Properties ➔ Device Manager ➔ Other Devices. Your system should now show " ? PCI Multimedia Audio Device".



Exit the Device Manager and insert the VA6 CD-Title into your CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file from the main directory of this CD-Title. Once executed, you will see the screen below.

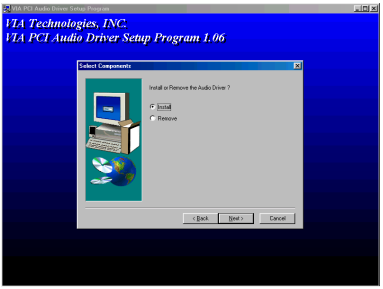
Move the cursor to "Drivers" and click on it. This will bring you to the to the next screen.

Move the cursor to "VIA PCI Audio Driver" and click on it. Go to the next screen.

Move the cursor to "Windows 95/98" and click on it. Go to the next screen.

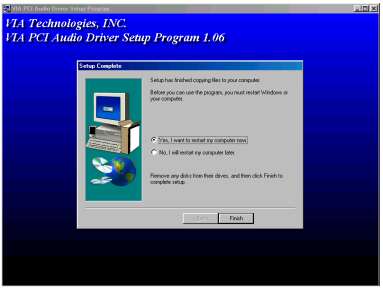
Now you will see the install shield loading.

You will now see the welcome screen and its dialogue box. Click "Next" to go on.

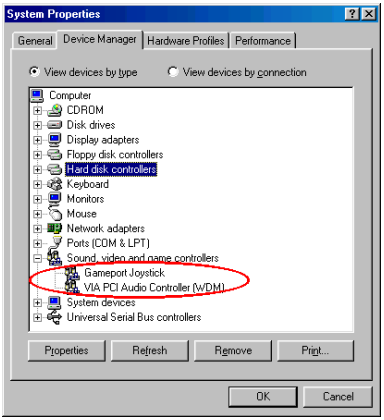


Choose “Install” then click the “Next” button to go on.

Program will start to install all drivers you choose.



When installation is complete, the installer will ask you to restart your computer. We suggest you choose “Yes” then click the "Finish" button to restart your computer to finish the drivers update.



When Windows restarts, it will ask you to put the Windows® 98 SE CD into the CD-ROM drive. Put the Windows® 98 SE CD into the drive and follow the instructions to proceed.

When the update is finished, go to "System Properties" to double check. You should find the " ? PCI Multimedia Audio Device" has disappeared, and “VIA PCI Audio Controller (WDM)” is there instead.

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Appendix C Installing the VIA Service Pack Drivers for the Windows® NT 4.0 Server / Workstation

In this section we will show you how to install the VIA Service Pack drives to your Windows® NT 4.0 Server/Workstation operating system. All screen shots are from the Windows® NT 4.0 server version. Before you install the VIA Service Pack drives, please install Windows® NT 4.0 Service Pack 5 (or latest version) first. Then you can install the VIA Service Pack drives.

Note C-1

Details of the Windows® NT 4.0 Server/Workstation operating system are not mentioned in this manual. If you have any problems with the settings, operating or installing Windows® NT 4.0 Server/Workstation, please refer to your Windows® NT 4.0 Server/Workstation user's manual or other databases provided by Microsoft® Corporation.

Note C-2

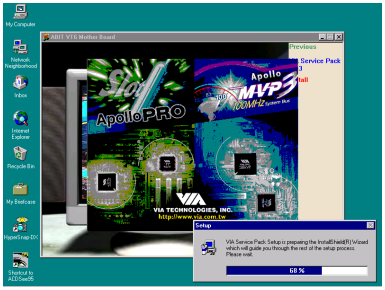
For Windows® NT 4.0 Server/Workstation operating system, you don't need to install the IDE-USB drivers. You have only to install the Windows® NT 4.0 Service Pack 5 (or latest version) first. Because Windows® NT 4.0 does not support AGP, you don't need to install AGP driver AG P requires support for Direct X instructions and Microsoft will only add this support into Windows® 2000. An AGP card is functional on Windows® NT 4.0 but only in 2D mode.

Insert the VA6 CD-Title into your CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file from the main directory of this CD-Title. After it is executed, you will see the screen to the left.

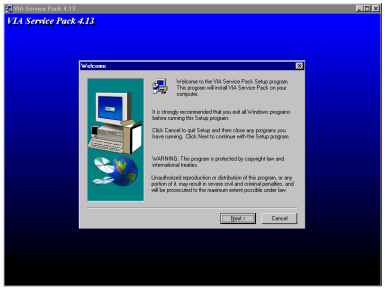
Move the cursor to "Drivers" and click on it. This will bring you to the next screen.

Move the cursor to "VIA Service Pack 4.13" and click on it. Go to the next screen.

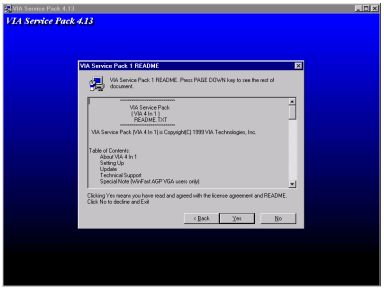
Move the cursor to "Install" and click on it. Go to the next screen.



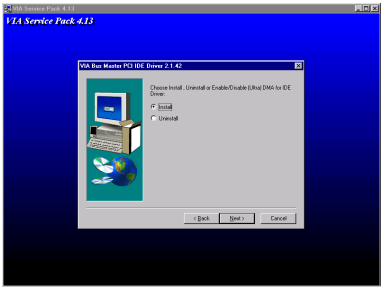
You will now see the install shield is loading.



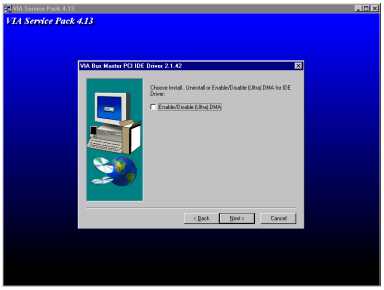
The "Welcome" screen and its dialogue box will appear. Click the "Next" button to go on..



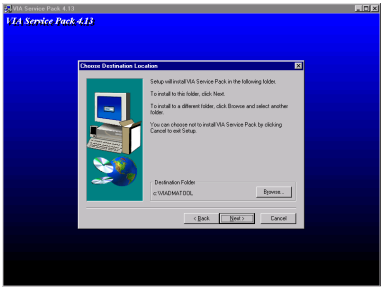
The readme screen will appear next. Click the "Yes" button to continue.



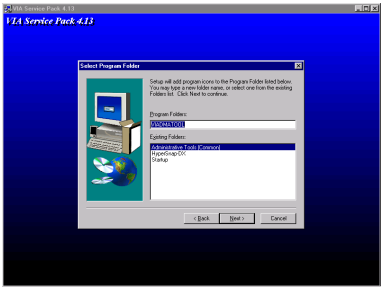
Choose “Install” then click the “Next” button to go on.



Do not choose install Ultra DMA then click “Next” button.

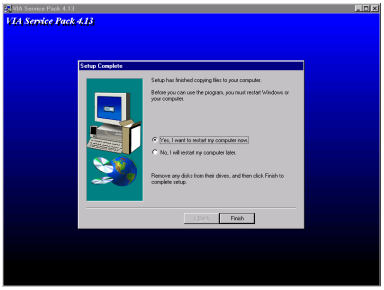


Now you can choose the folder for the destination location you want the drivers installed. We suggest you use the default folder as the destination location. After checking the folder click "Next" button.



You can choose the name of the program folder. We suggest you use the default program folder name. After checking the program folder name then click "Next" button.

Program will start to install drivers system need.



When installation is complete, the installer will ask you to restart your computer. We suggestion you choose “Yes” then click "Finish" button to restart your computer to finish the drivers updating.

Appendix D Installing the VIA PCI Audio Drivers for the Windows® NT 4.0 Server / Workstation

In this section we will show you how to install the VIA PCI audio drives to your Windows® NT 4.0 Server/Workstation operating system. All screen shots are from the Windows® NT 4.0 server version. Before you install the VIA PCI audio drivers, please install Windows® NT 4.0 Service Pack 5 (or the latest version) first. Then you can install the audio drivers.

Note D-1

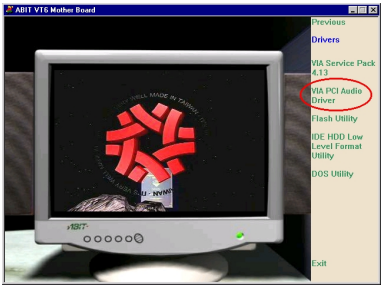
Details of the Windows® NT 4.0 Server/Workstation operating system are not mentioned in this manual. If you have any problems with the settings, operating or installing Windows® NT 4.0 Server/Workstation, please refer to your Windows® NT 4.0 Server/Workstation user's manual or other databases provided by Microsoft® Corporation.

Note D-2

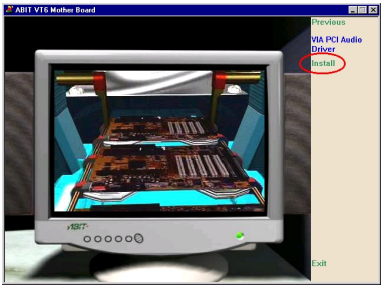
For Windows® NT 4.0 Server/Workstation operating system, you don't need to install the IDE-USB drivers. But you have to install the Windows® NT 4.0 Service Pack 5 (or latest version) first. Because Windows® NT 4.0 does not support AGP, you don't need install AGP driver AGP requires support for Direct X instructions and Microsoft will only add this support into Windows® 2000. An AGP card is functional on Windows® NT 4.0 but only in 2D mode.

Insert the VA6 CD-Title into your CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file from the main directory of this CD-Title. Once executed, you will see the screen below.

Move the cursor to "Drivers" and click on it. This will bring you to the to the next screen.

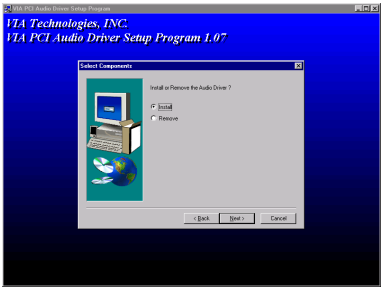


Move the cursor to "VIA PCI Audio Driver" and click on it. Go to the next screen.



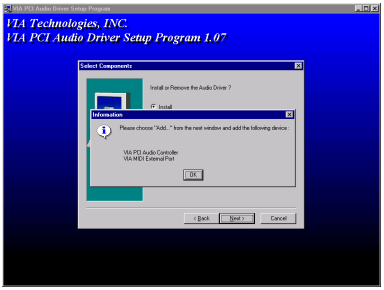
Move the cursor to "Install" and click on it. Go to the next screen.

You will now see the welcome screen and its dialogue box. Click "Next" to go on.

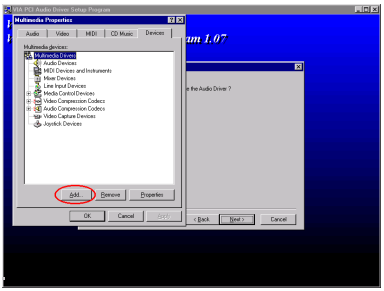


Choose “Install” then click the “Next” button to go on.

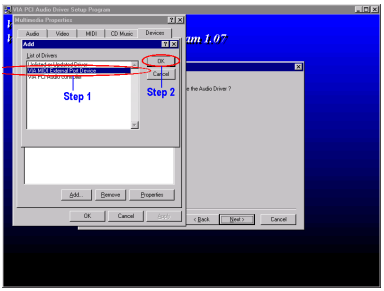
Program will start to install all drivers you choose.



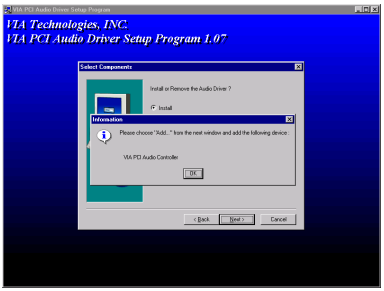
The dialogue box will show "Please choose "Add…" from…., please click "OK" button to go on.



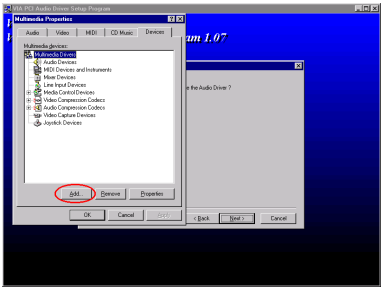
Choose "Add…" then go to next screen.



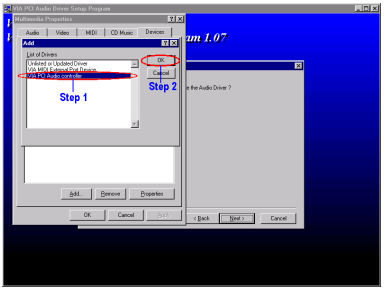
First, choose the "VIA MIDI External Device", then click "OK" button.



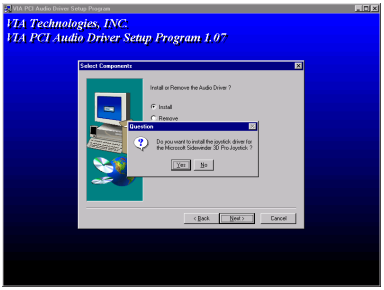
The dialogue box will show "Please choose "Add…" from…., this time will ask you to install the "VIA PCI Audio Controller". Please click "OK" button then go on.



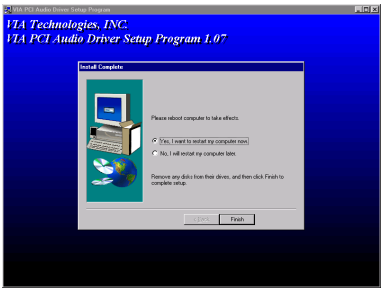
Choose “Add…” then go to next screen.



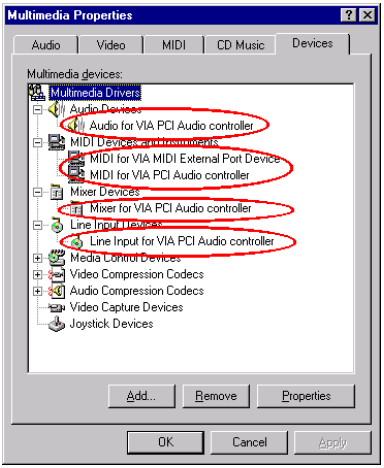
First, choose the “VIA PCI Audio Controller”, then click “OK” button.



Program will ask if you want to install the Microsoft sidewinder 3D pro joystick driver . If you have this kind of joystick click Yes, otherwise just click the No button to go on.



When installation is complete, the installer will ask you to restart your computer. We suggest that you choose “Yes” then click " the Finish" button to restart your computer to finish the driver update.



When Windows® NT restarts, check the "Multimedia Properties". You will see the VIA PCI Audio devices had been identify.

Note D-3

If you using the PCI bus mastering network adapter in your system under Windows® NT 4.0, insert the network adapter into any PCI slot except slot 3. Otherwise, a system conflict may occur.

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Appendix E BIOS Flashing User Instructions

When your motherboard needs to be upgraded with new features or some compatibility problems in the BIOS need to be fixed, you will need to use this BIOS flash utility. This utility provided by Award Software makes it easy to flash by yourself. However, please read all the information in this section before flashing.

Before you can flash the BIOS you need to go into the ***pure DOS environment*** by rebooting your system and going directly into DOS. Basically, there are two ways to flash your BIOS. One is to directly type the full line commands that are described in this section. The utility will then flash your BIOS. When you finish the flash operation, you will see the screen in Figure E-2 [Note E-1].

The other method is to just type *awdflash* (under Award flash BIOS utility directory) then press enter. The Flash Memory Writer V7.22 screen will appear. Please refer to Figure E-1 [Note E-1]. You need to type "NEWBIOS" (the file name or you can use another name if you choose) into the "File Name to Program", and then press enter.

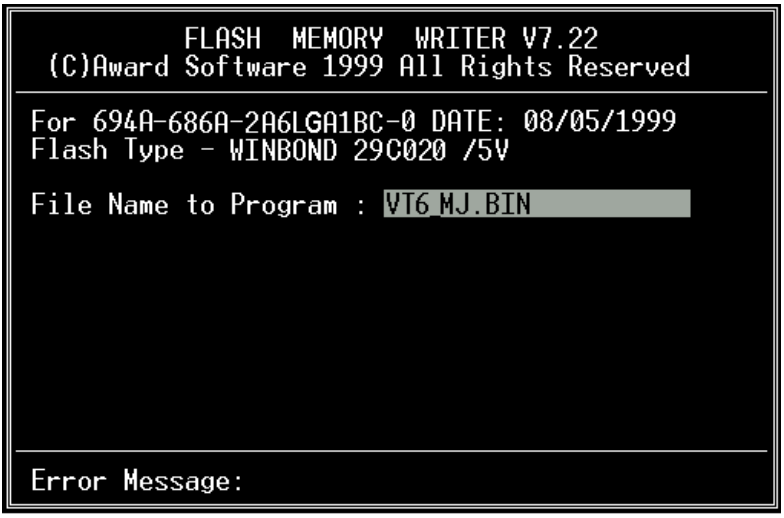


Figure E-1. Award Flash Memory Writer V7.22 Start Screen

When you have finished updating your BIOS, you will see the screen in Figure E-2. You then need to press the *F1* key to reset the system, or press the *F10* key to exit the writer.

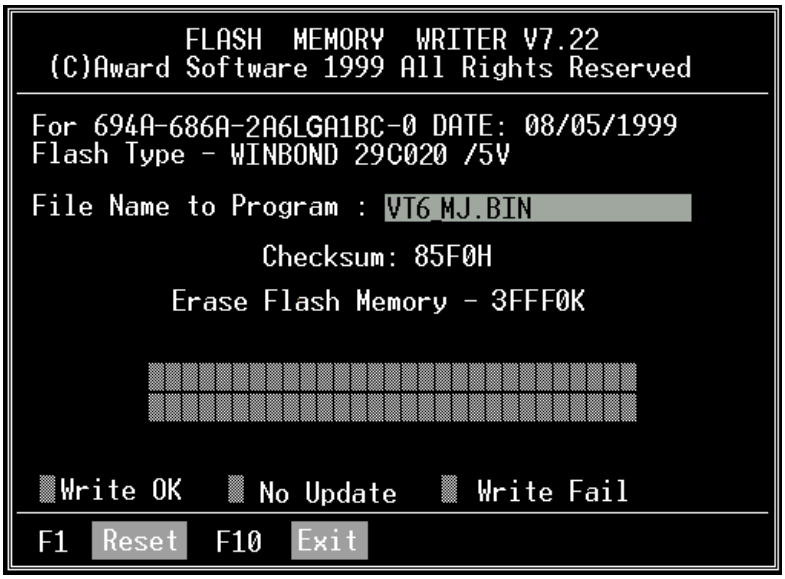


Figure E-2. Award Flash Memory Writer V7.22 Complete Screen

Figure E-3 shows you what commands you can use for the flash program. You need to go into the pure DOS environment and type *awdflash*. Figure E-3 will then appear.

```
Awdflash 7.22 (C)Award Software 1999 All Rights Reserved

Usage:  AWDFLASH [FileName1] [FileName2] [/<sw>[/<sw>...]]
     FileName1 : New BIOS Name For Flash Programming
     FileName2 : BIOS File For Backing-up the Original BIOS
 <Swtches>
   ?: Show Help Messages
  py: Program Flash Memory              pn: No Flash Programming
  sy: Backup Original BIOS To Disk File  sn: No Original BIOS Backup
  Sb: Skip BootBlock programming         sd: Save DMI data to file
  cp: Clear PnP(ESCD) Data After Programming
  cd: Clear DMI Data After Programming
  cc: Clear CMOS Data After Programming
   R: RESET System After Programming    cks: Show update Binfile checksum
Tiny: Occupy lesser memory
   E: Return to DOS When Programming is done
   F: Use Flash Routines in Original BIOS For Flash Programming
  LD: Destroy CMOS Checksum And No System Halt For First Reboot
      After Programming
cksXXXX: Compare Binfile CheckSum with XXXX

Example: AWDFLASH 2a59i000.bin /py/sn/cd/cp/cks2635
```

Figure E-3. Award Flash Memory Writer V7.22 Flash Commands Screen

Note E-1

The BIOS file name in the figure shown is only an example. You should check which .bin file is to be used with your motherboard. Don't flash with the wrong .bin file otherwise you may cause system malfunctions. Even the same model BIOS, according to their release dates and which problems have been fixed, have different .bin names. Please read the BIOS file description before you download it.

Example 1: To update the BIOS and create a backup of the current system BIOS execute this command:

AWDFLASH NEWBIOS /PY SAVEBIOS /SY

Example 2: To update the BIOS, create a backup of current system BIOS, and clear the CMOS, execute this command:

AWDFLASH NEWBIOS SAVEBIOS /CC

Example 3: To update the BIOS and clear PnP settings execute this command:

AWDFLASH NEWBIOS /SN /CP

Example 4: To make a backup of the current system BIOS execute the following command:

AWDFLASH NEWBIOS /PN SAVEBIOS

Note E-2

"NEWBIOS" indicates the file name for the new BIOS which can be downloaded from our web site (the user can choose a different file name in place of NEWBIOS). "SAVEBIOS" indicates the filename of the old system BIOS (the user can choose a different file name in place of SAVEBIOS).

Explanation of parameter names:
/CC: Clears CMOS data
/CP: Clears PnP data
/CD: Clears DMI data
/CKS: Compare Binfile Checksum

Remarks:

1. When executing AWDFLASH.EXE, do not run HIMEM.SYS and EMM386.EXE in the CONFIG.SYS.

2. Please take the following actions to solve problems caused by power shortages or other non-preventable malfunctions during BIOS updating that lead to update failures. First, it is strongly suggested that you format a disk that can boot your computer before you update your BIOS. If the above mentioned problem occurs during BIOS updating, you will be able to use this disk to automatically execute a BIOS update. The content of the disk should be as follows:
   (1) Startup system files (COMMAND.COM, MSDOS.SYS, IO.SYS...)
   (2) AWDFLSH.EXE
   (3) The NEWBIOS file which can be download from our web site.
   (4) AUTOEXEC.BAT, which has the following content:
   A:\AWDFLASH NEWBIOS /PY /SN /CC /CD
   For example, to update the WX6 BIOS version to MJ (WX6_MJ.BIN), you need to type:
   A:\AWDFLASH WX6_FZ.BIN /PY /SN /CC /CD /CKS

3. If you try to flash an incorrect version of a BIOS (i.e. for another motherboard) the following message will appear:

   "The program file's part number does not match with your system!"

Note E-3

Please do not use the Award flash memory writer version that earlier than Version 7.22 to flash your VA6 motherboard BIOS. Otherwise, it may cause flash fail or anticipate problems.

Appendix F Installing the HighPoint XStore Pro Utility

We provide a useful and powerful utility in our product package, ***HighPoint XStore Pro***. What does XStore do? The XStore Pro is a hard disk enhancement utility, which can improve system performance. The basic concept is to use a read-ahead caching algorithm to improve the hard disk performance. With a market trend in which most current system standard configurations are moving towards a 48 MByte memory size or beyond, HighPoint's XStore Pro provides higher system performance. XStore Pro is a new generation of XStore MMX Accelerator for Storage.

XStore Pro utilizes the bigger system memory size to enhance memory management by working with Windows® 95 and 98. XStore Pro optimizes higher system performance using read ahead caching after seeking, with large block sizes of hard disks. Best of all, XStore Pro supports several PCI Bus Master Controllers such as Intel, SiS, Ali, Via and others.

When you install XStore Pro, you can choose to install CD Xpress at the same time. Why do you need CD Xpress? We'll tell you more about it.

CD-ROM technology is growing fast, but its performance is still unacceptable compared to today's hard drives. The transfer rates of today's hard drives can exceed 18MB/sec with access times below 12ms. However, transfer rates for the fastest CD-ROM drives on the market are below 2MB/sec with access times over 100 ms.

CD Xpress was created to accelerate the accessing speed of the CD-ROM drive by utilizing the hard drive's high performance. CD Xpress reads and buffers data from the CD-ROM to an area in the hard drive. With CD Xpress, when you access CD-ROM data, you are actually accessing data from a swap file in the hard drive. This results in a tremendous increase in CD-ROM performance without penalties.

Before you install this utility, there are several things you need to know.

Important Note

1. You can only install one Bus Master Driver at a time in your system, or the drivers will conflict and cause system hangs. Please make sure you don't have any Bus Master Driver installed in your system before you install XStore Pro! You must remove all components of the previous Bus Master Driver before you install XStore Pro into your system. For example, you cannot install both the Intel® bus master driver and HighPoint XStore Pro in your system, otherwise it will cause system conflict when you install the second bus

master driver!

2. This Windows® 95/98 driver does not support CD-ROM Changers. If you have an ATAPI CD-ROM Changer installed in your system, please do not install this driver!

3. We have found that the Windows® 95 OSR2/Windows® 98 version would fail to load the driver on some systems using the Bus Master chipset after you install and restart the system. The following step could solve this problem if it happens:

   (1) Go to My Computer and double click Control Panel.

   (2) Double click System then go to Device Manger and View Devices by Type.

   (3) Go to hard disk controllers.

   (4) Double click PCI Bus Master IDE Controller (Ultra DMA supported). (There should be a yellow mark besides this item)

   (5) Click Resources and you should see a box near the bottom of the screen that says “Set Configuration Manually”.

   (6) Click on “Set Configuration Manually” and you will see a check next to “Use automatic setting”.

   (7) Uncheck the box and when the system asks you to reboot click “yes”.

   (8) After the system restarts the yellow mark should be gone

4. De-Installation:

   To uninstall XStore Pro from your system, run "Uninstall" from the HighPoint XStore Pro program group. This uninstall utility will: deactivate CD Xpress, if CD Xpress is active, remove the buffer space, and uninstall XStore Pro and CD Xpress from the system. After uninstalling XStore Pro, the hard disk will return to its original status. We suggest users to reboot the system after completing uninstall.

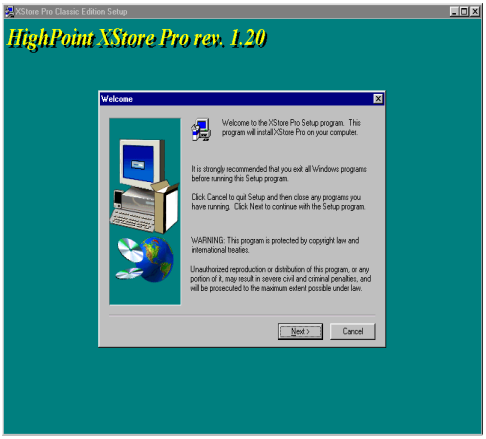
5. The ATAPI LS-120 device will be recognized as a removable device in retail Windows 95(4.00.95) and OSR1 Windows 95(4.00.95 A) after the XStore Pro driver is installed.

6. This driver might lock on certain motherboards. Please check HighPoint Technology first if you encounter problems.

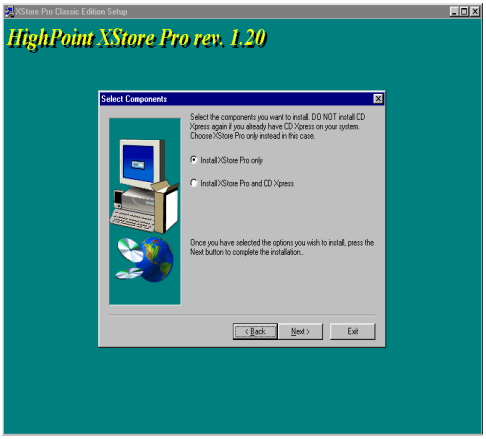
For more detailed information, please check the read me file stored in the *XStore Pro Program Group*. If you want to upgrade to a new driver version or want to know more about XStore Pro products, please go to the HighPoint Technologies Inc’s company WEB site, the URL is http://www.highpoint-tech.com/.

This CD-ROM (Or floppy diskette) has the HighPoint XStore Pro drivers. (Version 1.2) The

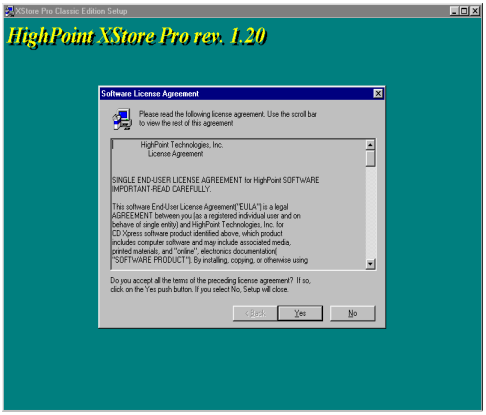
following procedure describes how to install the HighPoint XStore to your system. If you have a floppy diskette but not the CD-ROM, just insert the diskette and run the **Setup.exe** file to start installation.



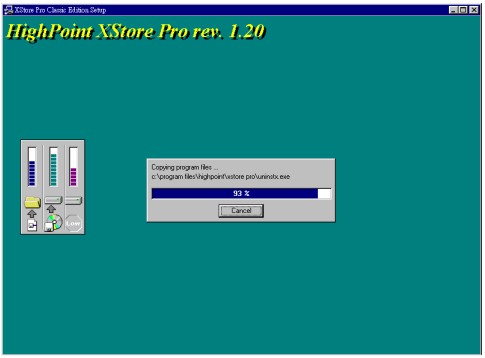
Step 1: In Windows® 95/98, place the CD-ROM into the computer. The main menu will show up. Click the **HighPoint XStore Pro Install** button, then you will see the XStore Pro installer is preparing the InstallShield® Wizard. When it is done, the *Welcome* screen will show up.



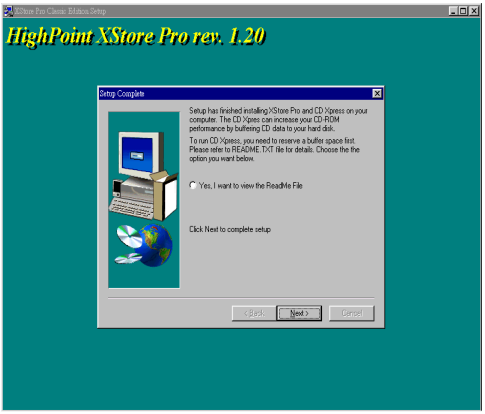
Step 2: Press the “Next” key, you will see the screen below. You then need to choose whether you want to install XStore Pro only, or if you want to install both XStore Pro and CD Xpress. Press the “Next” key to continue.



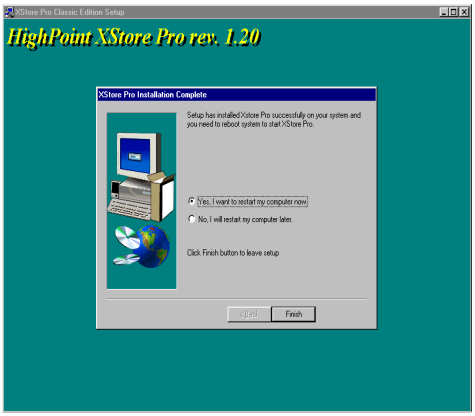
Step 3: Press the "Next" key, you will see the license screen.



Step 4: Press "Yes" to the continue screen below.



Step 5: When installation process is done, you will see the screen below. This screen will show up only when you install both XStore Pro and CD Xpress. If you want to see the ReadMe file, you can click on the circle.



Step 6: Choose the "Yes, I want to restart my computer now." button, then system will restart. Or you can choose the "No, I will restart my computer later.".

Note

You must restart your computer after you installed the XStore Pro utility. Otherwise, the software may not work properly.

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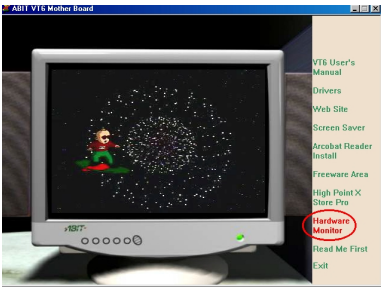
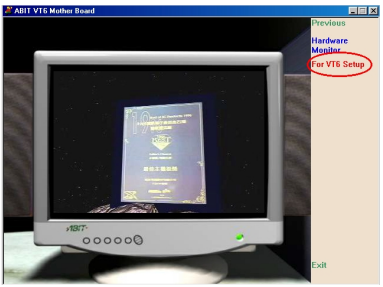
Appendix G Installing The VIA Hardware Monitor System

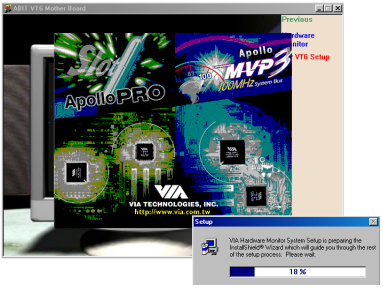
VIA Hardware Monitor System is a self-diagnostic system for PCs. It will protect PC hardware by monitoring several critical items including power supply voltages, CPU & system fan speeds, and CPU and system temperatures. These items are important for the operation of the system; errors may result in permanent damage to the PC. Once any item is out of its normal range, a warning message will pop up and remind the user to take proper measures.



The following description will tell you how to install the VIA Hardware Monitor System and use it. Insert the VA6 CD-Title into your CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file from the main directory of this CD-Title. After it is executed, you will see the screen left. Click "Hardware Monitor" button.



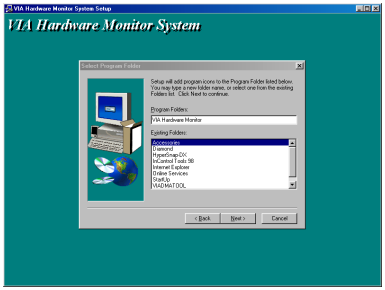
Click "For VA6 Setup" button to start install the VIA hardware monitor system utility.



You will see the install shell active.

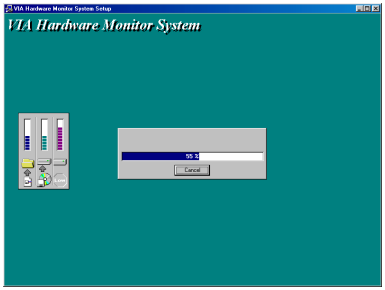
The "Welcome" screen and its dialogue box will appear. Click the "Next" button to go on.

Now you can choose the folder for the destination location you want to install the drivers. We suggest you use the default folder as the destination location. After checking the folder click "Next" button.

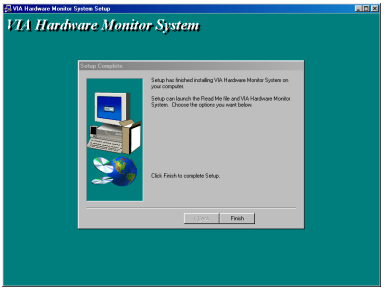


You can choose the name of the program folder. We suggest you use the default program folder name. After checking the program folder name then click "Next" button.

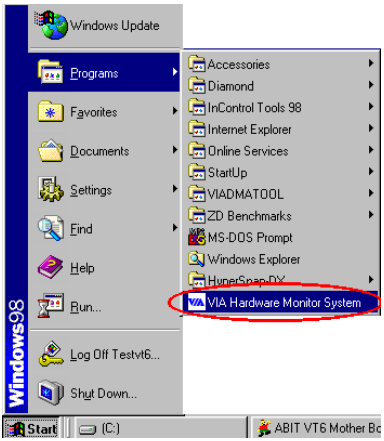
Program will start to install drivers system need.



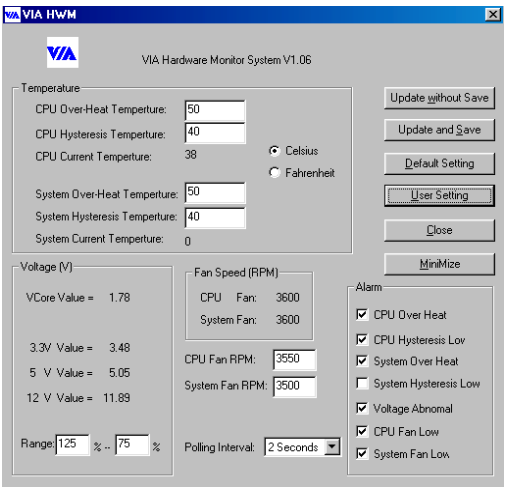
The installer will show the install progress percentage.



When installation is complete, the installer will ask you to click the Finish button to restart your computer. We suggestion you choose "Finish" button to restart your computer to finish the drivers updating.



You can call the program from Start toolbar, then choose Programs. You will see the item called "VIA Hardware Monitor System". Click it then you can see the screen below.



This screen show the VIA hardware monitor system screen. It shows the information about system temperature, voltages and fan speed. Some items can let you set the warning range; you can accordance your system to make optimize value setting.

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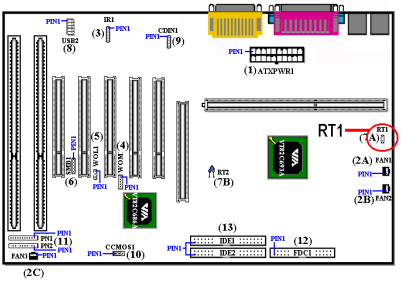
Appendix H Thermal Cable Installation (Optional)

You can buy a thermistor with cable (You can buy the thermistor at an electronics store, ask for a 10KΩ thermistor (NTC type) which should be OK. Please don't use too long of a lead wire for the thermistor), then connect it to RT1 header. This thermal cable is for you to detect the CPU temperature. You can attach one end of the two-threaded thermal cable (A) to the motherboard's RT1 header (see the figure below), then tape the other end of thermal cable (B) onto the CPU's heat sink. When you tape the thermal cable onto the CPU's heat sink, we suggest you tape it as near to the CPU chipset as possible and avoid having it near the CPU FAN.

After you have installed the thermal cable, you will see the detected temperature in the BIOS Setup and Winbond Hardware Doctor Utility.

The Thermal Cable



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Appendix I Troubleshooting (Need Assistance?)

If you have a problem during operation, in order to help our technical support personnel quickly determine the problem with your motherboard and give you the answers you need, before filling in the technical support form, eliminate any peripheral that is not related to the problem, and indicate it on the form . Fax this form to your dealer or to the company where you bought the hardware in order to benefit from our technical support. (You can refer to the examples given below)

Example 1: With a system including: motherboard (with CPU, DRAM, COAST...) HDD, CD-ROM, FDD, VGA CARD, MPEG CARD, SCSI CARD, SOUND CARD, etc. After the system is assembled, if you cannot boot up, check the key components of the system using the procedure described below. First remove all interface cards except the VGA card and try to reboot.

- If you still cannot boot up:

  Try installing another brand/model VGA card and see if the system will start. If it still does not start, note the VGA card model, motherboard model, Bios identification number, CPU on the technical support form (refer to main instructions), and describe the problem in the problem description space provided.

- If you can boot up:

  Insert the interface cards you have removed back into the system, one by one and try to start the system each time you insert a card, until the system will not start . Keep the VGA card and the interface card that caused the problem inserted on the motherboard, remove any other cards or peripheral, and start again. If you still cannot start, note the information related to both cards in the add-on Card space provided, and don't forget to indicate the motherboard model, version, BIOS identification number, CPU (refer to main instructions), and give a description of the problem.

Example 2: With a system including the motherboard (with CPU, DRAM, COAST...) HDD, CD-ROM, FDD, VGA CARD, LAN CARD, MPEG CARD, SCSI CARD, SOUND CARD, after assembly and after having installed the Sound Card

Driver, when you restart the system, when it runs the Sound Card Driver, it resets automatically. This problem may be due to the Sound Card Driver. During the Starting DOS… procedure, press SHIFT (BY-PASS) key, to skip CONFIG.SYS and AUTOEXEC.BAT; edit CONFIG.SYS with a text editor, and in function the line that loads the Sound Card Driver, add a remark REM, in order to disable the Sound Card Driver. See the example below.

CONFIG.SYS:
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE HIGHSCAN
DOS=HIGH, UMB
FILES=40
BUFFERS=36
REM DEVICEHIGH=C:\PLUGPLAY\DWCFGMG.SYS
LASTDRIVE=Z

Restart the system. If the system starts and does not reset, you can be sure that the problem is due to the Sound Card Driver. Write down the Sound Card model, motherboard model, BIOS identification number on the technical support file (refer to main instructions), and describe the problem in the space provided.

☺☺☺

Main instructions...

To fill in this "Technical Support Form", refer to the step-by-step instructions given below:

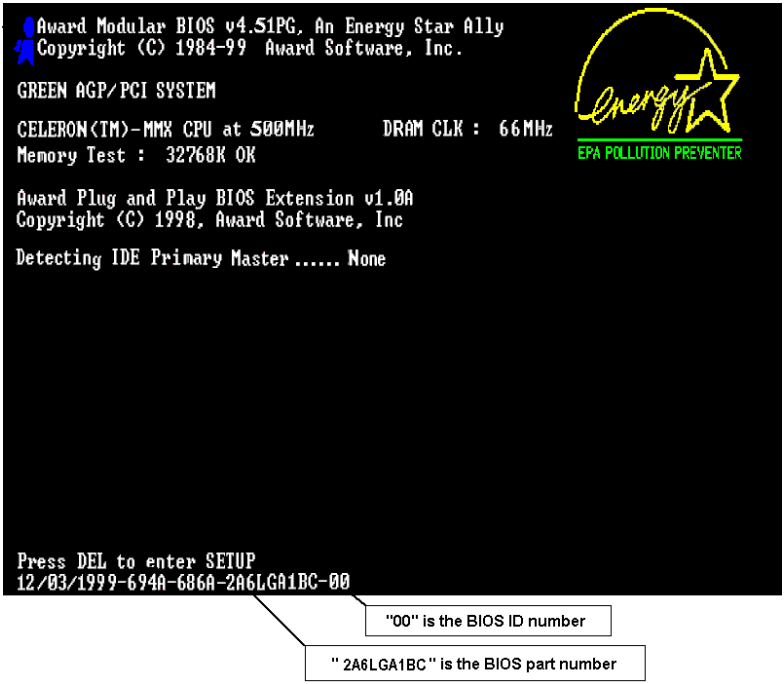
1*. MODEL: Note the model number given in your user's manual.

Example: VA6, BX6, BH6, etc…

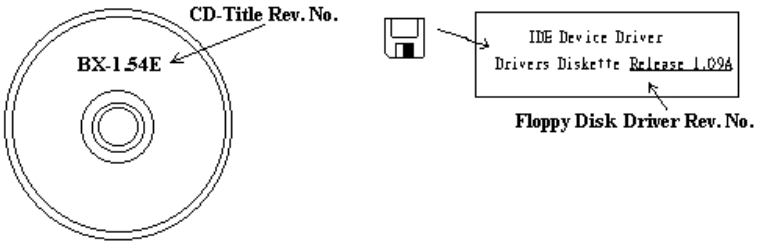
2*. Motherboard model number (REV): Note the motherboard model number labeled on the motherboard as "REV:*.**".

Example: REV: 1.01

3*. BIOS ID and Part Number: See next page example.



4. **DRIVER REV:** Note the driver version number indicated on the DEVICE DRIVER disk (if have) as "Release *.**". For example:



5*. OS/APPLICATION: Indicate the operating system and the applications your are running on the system.

Example: MS-DOS® 6.22, Windows® 95, Windows® NT....

6*. CPU: Indicate the brand and the speed (MHz) of your CPU.

Example: (A) In the "Brand" space, write "Intel", in the "Specifications" space, write " Pentium® II MMX 300MHz" ◦

7. HDD: Indicate the brand and specifications of your HDD(s), specify if the HDD is using ☐IDE1 or ☐IDE2. If you know the disk capacity, indicate it and check ("✓") "☐"; in case you give no indication, we will consider that your HDD is "☑IDE1" Master.

Example: In the "HDD" space, check the box, in the Brand space, write "Seagate", in the Specifications space, write "ST31621A (1.6GB)".

8. CD-ROM Drive: Indicate the brand and specifications of your CD-ROM drive. Specify if it uses ☐ IDE1 or ☐IDE2 ， and check ("✓") "☐"; in case you give no indication, we will consider that your CD-ROM is "☑IDE2" Master.

Example: In the "CD-ROM drive" space, check the box, in the Brand space, write "Mitsumi", in the Specifications space, write "FX-400D".

9. System Memory (DRAM): Indicate the brand and specifications (SIMM / DIMM) of your system memory. For example:

In the Brand space, write "Panasonic", in the Specifications space, write "SIMM-FP DRAM 4MB-06".

Or, in the Brand, write "NPNX", in the Specifications space, write "SIMM-EDO DRAM 8MB-06".

Or, in the Brand space, write "SEC", in the Specifications space, write "DIMM-S DRAM 8MB-G12".

10. ADD-ON CARD: Indicate which add-on cards you are *absolutely sure* are related to the problem.

If you cannot identify the problem's origin, indicate all the add-on cards inserted into your system.

Note
Items between the "*" are absolutely necessary.

🕮 Technical Support Form

Company name: ☎ Phone #:

☺ Contact: 🖷Fax #:

Model	*	BIOS ID #	*
Motherboard Model No.		DRIVER REV	
OS/Application	*		
Hardware name	Brand	Specifications	
CPU	*		
HDD ☐IDE1 ☐IDE2			
CD-ROM Drive ☐IDE1 ☐IDE2			
System Memory (DRAM)			
ADD-ON CARD			

✍

Problem Description:

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