This publication, including all photographs, illustrations and software, is protected under international copyright laws, with all rights reserved. Neither this manual, nor any of the material contained herein, may be reproduced without the express written consent of the manufacturer.

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Further, the manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

Trademarks

IBM, VGA, and PS/2 are registered trademarks of International Business Machines.
Intel, Pentium/II/III, MMX, and Celeron are registered trademarks of Intel Corporation.
Microsoft, MS-DOS and Windows 95/98/NT/2000 are registered trademarks of Microsoft Corporation.
Sound Blaster is a trademark of Creative Technology Ltd.
PC-cillin and ChipAwayVirus are trademarks of Trend Micro Inc.
Award is a trademark of Award Software Inc.
A3D is a registered trademark of Aureal Inc.
Gamut is a registered trademark of Formosoft International Inc.
SuperVoice is a registered trademark of Pacific Image Communications Inc.
MediaRing Talk is a registered trademark of MediaRing Inc.
3Deep is a registered trademark of E-Color Inc.
Other names used in this publication may be trademarks and are acknowledged.

II

Table of Contents

Chapter 1

Introduction

This mainboard has a **Socket-370** processor socket for an **Intel PPGA/FCPGA Celeron** or **FCPGA Pentium III** processor. You can install any one of these processors on the mainboard. The mainboard supports front-side bus speeds of **66MHz**, **100MHz** or **133MHz**.

This mainboard uses the **VIA VT133** chipset, and integrates a **3D Graphics Accelerator** and **Ultra DMA** 33/66/**100** (VT82C686B chip only) function. The mainboard has a built-in **AC97 Codec**, provides an **AMR** (Audio Modem Riser) slot to support Audio and Modem application. In addition, the mainboard has an extended set of **ATX I/O Ports** including PS/2 keyboard and mouse ports, two USB ports, a parallel port, a VGA port, a serial port, a game port and audio ports. An extra USB header gives you the option of connecting two more USB ports.

This mainboard has all the features you need to develop a powerful multimedia workstation. The board is **Micro ATX** size and has a power connector for an **ATX** power supply.

Key Features

The key features of this mainboard include:

Socket-370 Processor Support

- ♦ Supports **PPGA/FCPGA Celeron** and **FCPGA Pentium III** CPUs
- ♦ Supports 66MHz, 100MHz or 133MHz Front-Side Bus

All processors are a synchronous/asynchronous Host/DRAM Clock Scheme.

Memory Support

- ♦ Two DIMM slots for 168-pin SDRAM memory modules
- ♦ Support for 100/133 MHz memory bus
- ♦ Maximum installed memory is 2 x 512MB = 1GB

Expansion Slots

- ♦ One AMR slot for a special audio/modem riser card
- ♦ Three 32-bit PCI slots for PCI 2.2-compliant bus interface.
- ♦ One 8/16-bit ISA slot.

Onboard IDE channels

- ♦ Primary and Secondary PCI IDE channels
- ♦ Support for PIO modes, Bus Mastering and Ultra DMA 33/66/100 (optional VT82C686B) modes

Power Supply and Power Management

- ♦ ATX power supply connector
- ♦ ACPI and previous PMU support, suspend switch
- ♦ Supports Wake on LAN and Wake on Alarm

Built-in Graphics System

- ♦ Onboard **64-bit 2D/3D** graphic engine and Video Accelerator with advanced DVD video
- ♦ 2 to 8 MB frame buffer use system memory
- ♦ Supports high resolutions up to 1600x1200

2

AC97 Codec
♦ Compliant PC97 2.1 specification
♦ Supports 18-bit ADC (Analog Digital Converter) and DAC (Digital Analog Converter) as well as 18-bit stereo full-duplex codec

Onboard I/O Ports
♦ Provides PC99 Color Connectors for easy peripheral device connections
♦ Floppy disk drive connector with 1Mb/s transfer rate
♦ One serial ports with 16550-compatible fast UART
♦ One parallel port with ECP and EPP support
♦ Two USB ports, and optional two USB ports module
♦ Two PS/2 ports for keyboard and mouse
♦ One infrared port connector for optional module

Hardware Monitoring
♦ Built-in hardware monitoring for CPU & System temperatures, fan speeds and mainboard voltages

Onboard Flash ROM
♦ Automatic board configuration support Plug and Play of peripheral devices and expansion cards
♦ Built-in virus protection using **Trend's ChipAwayVirus** provides boot process virus protection.

Dimensions
♦ Micro ATX form factor (24.4cm x 19cm)

Package Contents

Your mainboard package ships with the following items:
- ❑ The mainboard
- ❑ This User's Guide
- ❑ 1 UDMA/66 IDE cable
- ❑ 1 Floppy disk drive cable
- ❑ Support software on CD-ROM disk

Optional Accessories

You can purchase the following optional accessories for this mainboard.
- ❑ Extended USB module

4

Static Electricity Precautions

Components on this mainboard can be damaged by static electricity. Take the following precautions when unpacking the mainboard and installing it in a system.

1. Keep the mainboard and other components in their original static-proof packaging until you are ready to install them.
2. During installation, wear a grounded wrist strap if possible. If you don't have a wrist strap, discharge static electricity by touching the bare metal of the system chassis.
3. Handle the mainboard carefully by the edges. Avoid touching the components unless it is absolutely necessary. During installation put the mainboard on top of the static-protection packaging it came in with the component side facing up.

Pre-Installation Inspection

1. Inspect the mainboard for damage to the components and connectors on the board.
2. If you suspect that the mainboard has been damaged, do not connect power to the system. Contact your mainboard vendor and report the damage.

- Notes -

Chapter 2

Mainboard Installation

To install this mainboard in a system, follow the procedures in this chapter:

Identify the mainboard components
Install a CPU
Install one or more system memory modules
Verify that any jumpers or switches are set correctly
Install the mainboard in a system chassis (case)
Connect any extension brackets or cables to the mainboard connector headers
Install any other devices and make the appropriate connections to the mainboard connector headers.

Note:
1. **Before installing this mainboard, make sure the jumper BAT1 is set to Normal setting. See this chapter for information on locating BAT1 and the setting options.**
2. **Never connect power to the system during installation. Doing so may damage the mainboard.**

Mainboard Components

Use the diagram below to identify the major components on the mainboard.
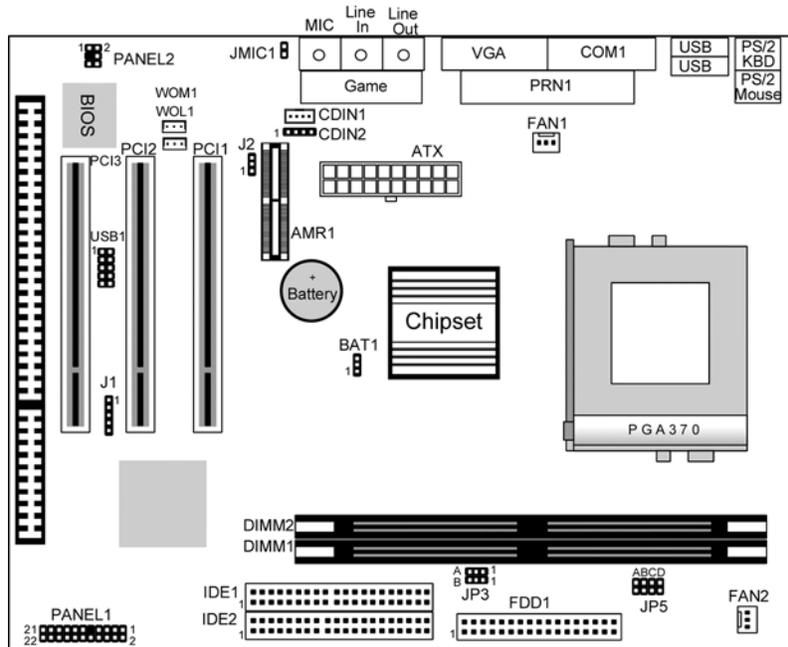
Note: Any jumpers on your mainboard that do not appear in this illustration are for testing only.

I/O Ports

The illustration below shows a side view of the built-in I/O ports on the mainboard.
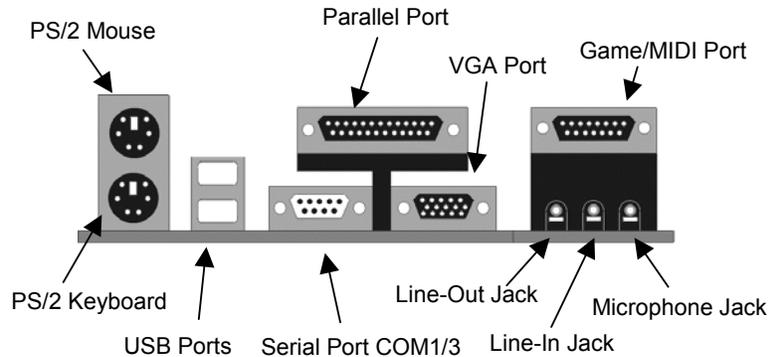
Install A CPU

This mainboard has a Socket-370 which supports PPGA/FCPGA Celeron and FCPGA Pentium III processors.
Do not try to install a Socket 7 processor in the Socket-370. A Socket 7 processor such as the Pentium-MMX, or the AMD K5/K6 does not fit in the Socket 370.
The following list notes the processors that are currently supported by this mainboard.
FCPGA Pentium III: 500~1130MHz, FSB: 100MHz, 133MHz
PPGA/FCPGA Celeron: 300~700MHz, FSB: 66 MHz

Installing a Socket-370 Processor
A processor installs into the ZIF (Zero Insertion Force) Socket-370 on the mainboard.

1. Locate the Socket-370 and FAN1. Pull the locking lever out slightly from the socket and raise it to the upright position.

9
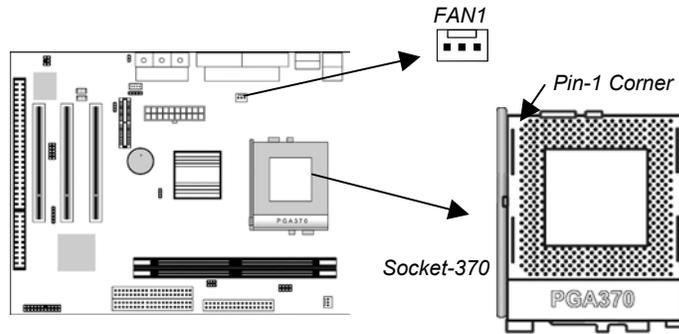
2. On the processor, identify the Pin-1 corner by its beveled edge.
3. On the Socket-370, identify the Pin-1 corner. The Pin-1 corner is at the top of the locking lever when it is locked.
4. Match the Pin-1 corners and insert the processor into the socket. No force is required and the processor should drop into place freely.
5. Swing the locking lever down and hook it under the catch on the side of the socket. This secures the CPU in the socket.
6. All processors should be installed with a combination heatsink/cooling fan, connect the cable from the fan to the CPU fan power connector FAN1.

Install Memory

The mainboard has two DIMM sockets for system memory modules. You must install at least one memory module in order to use the mainboard.
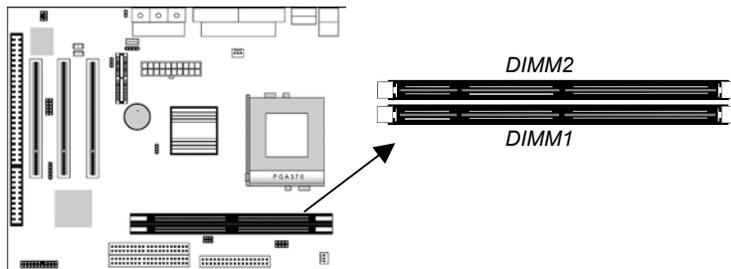
For this mainboard, you must use 168-pin, 3.3V unbuffered PC100 or PC133 SDRAM memory modules. You can install any size memory module from 32 MB to 512 MB, so the maximum memory size is 2 x 512 MB = 1 GB.

The edge connectors on the memory modules have cut outs, which coincide with spacers in the DIMM sockets so that memory modules can only be installed in the correct orientation.

To install a module, push the retaining latches at either end of the socket outwards. Position the memory module correctly and insert it into the DIMM socket. Press the module down into the socket so that the retaining latches rotate up and secure the module in place by fitting into notches on the edge of the module.

11

Setting Jumper Switches

Jumpers are sets of pins which can be connected together with jumper caps. The jumper caps change the way the mainboard operates by changing the electronic circuits on the mainboard. If a jumper cap connects two pins, we say the pins are SHORT. If a jumper cap is removed from two pins, the pins are OPEN.
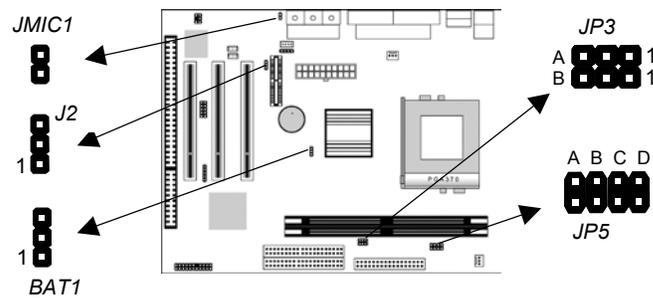
Jumper BAT1: Clear CMOS Memory

Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your mainboard from operating. To clear the CMOS memory, disconnect all the power cables from the mainboard and then move the jumper cap into the CLEAR setting for a few seconds.

Function	Jumper Setting
Normal Operation	Short Pins 1-2
Clear CMOS Memory	Short Pins 2-3

Jumper J2: Codec Selector

Use this jumper to select the onboard audio codec or Audio Modem Riser (AMR) slot.

Function	Jumper Setting
Primary codec onboard	Short Pins 1-2
Primary Codec on AMR slot	Short Pins 2-3

12

Jumper JP3: CPU Frequency Selectors

This jumper consists of two sets of 3-pin jumpers JP3-A and JP3-B.
Use the jumper to select the frequency for the installed CPU.

Frequency	66 MHz	100 MHz	105 MHz	133 MHz
JP3-A	2-3	2-3	1-2	1-2
JP3-B	2-3	1-2	2-3	1-2

Jumper JP5: CPU Multiplier Selectors

This jumper consists of four sets of 2-pin jumpers JP5-A, JP5-B,
JP5-C and JP5-D. Use the jumper to select the multiplier for the
installed CPU.

CPU Multiplier Selector: **JP5**							
Multiplier	2.0	2.5	3.0	3.5	4.0	4.5	5.0
JP5-A	short	short	short	short	open	open	open
JP5-B	short	short	open	open	short	short	open
JP5-C	short	open	short	open	short	open	short
JP5-D	short	short	short	short	short	short	short
CPU Multiplier Selector: **JP5**							
Multiplier	5.5	6.0	6.5	7.0	7.5	8.0	8.5+
JP5-A	open	short	short	short	short	open	open
JP5-B	open	short	short	open	open	short	open
JP5-C	open	short	open	short	open	short	open
JP5-D	short	open	open	open	open	open	open

*Note: The CPU speed is equal to the CPU Frequency x the
CPU Multiplier.*

Jumper JMIC1: Microphone-Out Selector

Use this jumper to select the Microphone-Out to the back-oriented
Microphone jack or the front-oriented Microphone header.

Function	Jumper Setting
Back-oriented MIC jack	Short Pins 1-2
Front-oriented MIC header	Open Pins 1-2

Install the Mainboard

Install the mainboard in a system chassis (case). The board is an ATX size mainboard with a twin-tier of I/O ports. Ensure that your case has an I/O cover plate that matches the ports on this mainboard.
Install the mainboard in a case. Follow the instructions provided by the case manufacturer using the hardware and internal mounting points on the chassis.
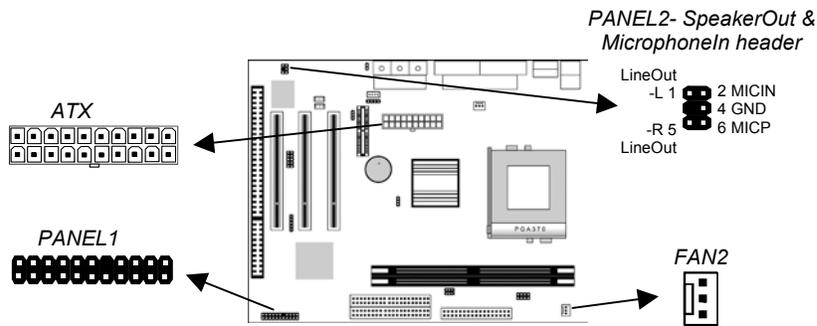
Connect the power connector from the power supply to the **ATX** connector on the mainboard.
If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **FAN2** fan power connector on the mainboard.
If there are a microphone-in jack and/or a speaker-out jack on the front pannel, connect the cables from the microphone-in and speaker-out jacks to the **PANEL2** header on the mainboard. Then set the jumper JMIC1 to *open* setting.
Connect the case switches and indicator LEDs to the **PANEL1** switch and LED connector header.

See the illustration below for a guide to the header pin assignments.

Reset Switch
Pins 17-18

Power LED
Pins 2-4-6

Power Button
Pins 21-22

2
1

22
21

Speaker
Pins 1-3-5-7

HDD LED
Pins 15-16

Suspend LED
Pins 19-20
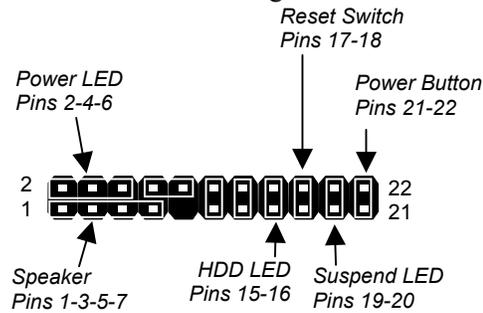
Optional Extension Brackets

For this mainboard, you can also obtain a USB module extension bracket. Install them by following the steps below.

Extended USB Module

This module bracket has two USB ports for more USB devices (USB port 3-4).

USB1 Header

VCC   GND
NC   UV+
UV-   UV-
UV+   NC
GND   VCC
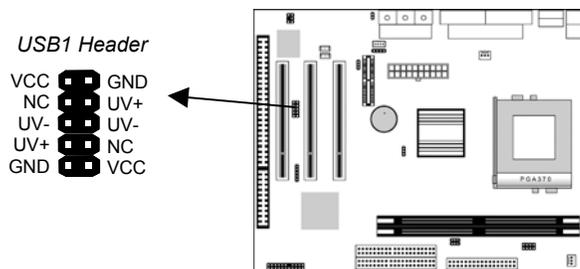
1. Locate the USB1 header on the mainboard.
2. Plug the bracket cable onto the header.
3. In the system chassis, remove a slot cover from one of the expansion slots and install the extension bracket in the opening. Use the screw that held the slot cover in place to secure the extension bracket to the chassis.

Install Other Devices

Install and connect any other devices in the system following the steps below.
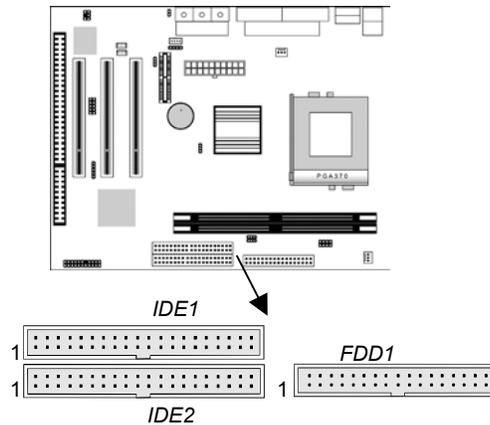
Floppy Disk Drive

The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.
Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive header **FDD1**.

IDE Devices

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.
The mainboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.
Install the device(s) and connect power from the system power supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the mainboard.
If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE

channel connector **IDE2** on the mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

Internal Sound Connections

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system. On the mainboard, locate the two 4-pin connectors CDIN1 and CDIN2. There are two kinds of connector because different brands of CD-ROM drive have different kinds of audio cable connectors. Connect the cable to the appropriate connector.
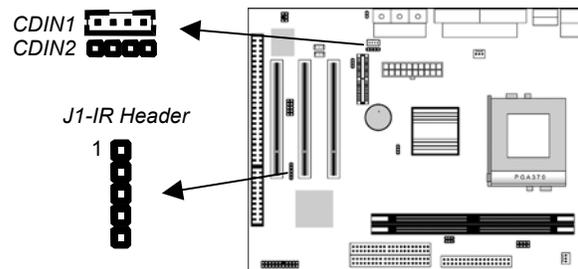
Infrared Port

You can connect an infrared port to the mainboard. You can purchase this option from third-party vendors.

1. Locate the infrared port IR header on the mainboard.
2. If you are adding an infrared port, connect the ribbon cable from the port to the header and then secure the port to an appropriate place in your system chassis.

Expansion Slots

This mainboard has three 32-bit PCI expansion slots, one AMR slot and one 8/16-bit ISA slot.
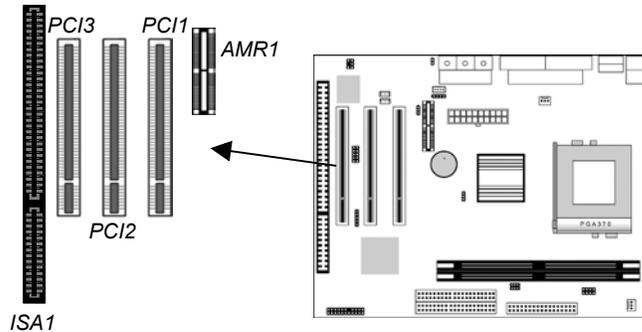
Follow the steps below to install a PCI/AMR/ISA expansion card.
1. Locate the AMR, PCI or ISA slots on the mainboard.
2. Remove the slot cover for this slot from the system chassis.
3. Insert the expansion card edge connector into the slot and press it firmly down into it so that it is fully inserted.
4. Secure the expansion card bracket to the system chassis using the screw that held the slot cover in place.

AMR Slot

The AMR (Audio Modem Riser) slot is an industry standard slot that allows for the installation of a special audio/modem riser card. Different territories have different regulations regarding the specifications of a modem card. You can purchase an AMR card that is approved in your area and install it directly into the AMR slot.

Wake On Modem (WOM)

You can configure your system so that it powers down by software and can be resumed by alarms. If you have installed a fax/modem card, connect the fax/modem to the Wake On Modem header WOM1. You can then use the setup utility to program your computer to resume from a power saving mode whenever there is an incoming call to the fax/modem.

Wake On LAN (WOL)

If you have installed a LAN adapter expansion card, connect the card to the Wake On LAN connector **WOL1**. This allows incoming traffic to resume the system from a software power down. You need to enable this feature in the system setup utility.
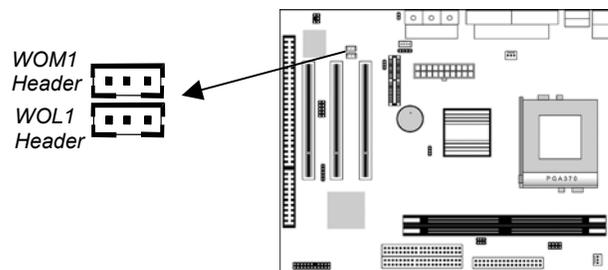
- Notes -

Chapter 3

BIOS Setup Utility

Introduction

The BIOS Setup Utility records settings and information about your computer such as the date and time, the kind of hardware installed, and various configuration settings. Your computer uses this information to initialize all the components when booting up and functions as the basis for coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop your computer from booting properly. If this happens, you can use the clear CMOS jumper to clear the CMOS memory used to store the configuration information, or you can hold down the **Page Up** key while you reboot your computer. Holding down the **Page Up** key also clears the setup information.

You can run the setup utility and manually make changes to the configuration. You might need to do this to configure some of the hardware that you install on or connect to the mainboard, such as the CPU, system memory, disk drives, etc.

`

Running the Setup Utility

Each time your computer starts, before the operating system loads, a message appears on the screen that prompts you to "*Press <DEL> to enter SETUP*". When you see this message, press the **Delete** key and the Main menu page of the Setup Utility appears on your monitor.

CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software

►**Standard CMOS Features**	►Hardware Monitor
►Advanced BIOS Features	Load BestPerf. Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Password
►Power Management Setup	Save & Exit Setup
►PnP/PCI Configurations	Exit Without Saving
Esc : Quit　　F9: Menu in BIOS F10 : Save & Exit Setup	↑ ↓ → ←　 : Select Item
Time, Date, Hard Disk Type . . .	

Listed below are explanations of the keys displayed at the bottom of the screens:

Key	Function
Esc	**Escape key:** Exits the current menu
← ↓ ↑ →	**Cursor keys:** Scroll through the items on a menu
+/–/PU/P D	**Plus, minus, Page Up and Page Down keys:** Modify the selected field's values
F10	**F10 key:** Saves the current configuration and exits setup
F1	**F1 key:** Displays a screen that explains all key functions
F5	**F5 key:** Loads previously saved values to CMOS
F6	**F6 key:** Loads a best performance configuration for the normal system.
F7	**F7 key:** Loads an optimum set of values for peak performance

Standard CMOS Features Page

Use this page to set basic information such as the date and time, the IDE devices, and the diskette drives.

```
CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                    Standard CMOS Features
```

Date (mm:dd:yy)	**Tue, Jan 9 2001**	**Item Help**
Time (hh:mm:ss)	**12 : 8 : 59**	
► **IDE Primary Master**	**Press Enter 4303 MB**	**Menu Level ►**
► **IDE Primary Slave**	**Press Enter None**	
► **IDE Secondary Master**	**Press Enter None**	**Change the day, month,**
► **IDE Secondary Slave**	**Press Enter None**	**year and century.**
Drive A	**1.44M, 3.5 in.**	
Drive B	**None**	
Video	**EGA/VGA**	
Halt On	**All , But Keyboard**	

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

Date & Time	Use these items to set the system date and time
IDE Devices	Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel. Press **Enter** to display the IDE sub-menu. Press **Esc** to close the IDE device sub-menu and return to the Standard CMOS Features page.
Floppy Drive A Floppy Drive B	Use these items to set the size and capacity of the floppy diskette drive(s) installed in the system.
Video	This item defines the video mode of the system. This mainboard has a built-in VGA graphics system; you must leave this item at the default value.
Halt On	This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.

23

Advanced BIOS Features Page

Use this page to set more advanced information about your system. Take some care with this page. Making changes can affect the operation of your computer.

CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
Advanced BIOS Features

		Item Help
Trend ChipAway Virus	Enabled	
CPU Internal Cache	Enabled	Menu Level ▶
External Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and alarm beep
Processor Number Feature	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	HDD-0	
Second Boot Device	Floppy	
Third Boot Device	CDROM	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	On	
Gate A20 Option	Normal	
Typematic Rate Setting	Disabled	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	

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

Trend ChipAway Virus	This mainboard has built-in virus protection in the firmware. Use this item to enable or disable the built-in virus protection.
CPU Internal Cache	All the processors that can be installed in this mainboard use internal (level 1) cache memory to improve performance. Leave this item at the default value *Enabled* for better performance.
External Cache	Most processors that can be installed in this system use external (L2) cache memory to improve performance. The exceptions are older SEPP Celeron CPUs running at 266 or 300 MHz. Enable this item for all but these two processors.
CPU L2 Cache ECC Checking	This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory. We recommend that you leave this item at the default value.

24

Processor Number Feature	When enabled, the CPU will show its processor number (ID code).
Quick Power On Self Test	You can enable this item to shorten the power on testing (POST) and have your system start up a little faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.
1st/2nd/3rd Boot Device	Use these three items to select the priority and order of the devices that your system searches for an operating system at start-up time.
Boot Other Device	If you enable this item, the system will search all other possible locations for an operating system if it fails to find one in the devices specified under the first, second, and third boot devices.
Swap Floppy Drive	If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.
Boot Up Floppy Seek	If this item is enabled, it checks the geometry of the floppy disk drives at start-up time. You don't need to enable this item unless you have an old diskette drive with 360K capacity.
Boot Up NumLock Status	This item defines if the keyboard Num Lock key is active when your system is started.
Gate A20 Option	This item defines how the system handles legacy software that was written for an earlier generation of processors. Leave this item at the default value.
Typematic Rate Setting	If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.
Typematic Rate (Chars/Sec)/ Delay (Msec)	If the item Typematic Rate Setting is enabled, you can use these items to define how many characters per second are generated by a held-down key and how many milliseconds must elapse before a held-down key begins generating repeat characters.
Security Option	If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the Setup Utility.
OS Select For DRAM > 64 MB	This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default Non-OS2.

25

Video BIOS Shadow	When enabled this item copies the VGA BIOS into system DRAM.
C8000-CBFFF to DC000-DFFFF Shadow	When enabled, the ROM with the specified address is copied into system DRAM. It will also reduce the size of memory available to the system.

Advanced Chipset Features Page

This page sets some of the parameters of the mainboard components including the memory, and the system logic.

CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
Advanced Chipset Features

DRAM Timing By SPD	Disabled		**Item Help**
SDRAM Cycle Length	3		
Bank Interleave	Disabled		Menu Level ▶
DRAM Clock	Host CLK		
P2C/C2P Concurrency	Enabled		
System BIOS Cacheable	Enabled		
Video RAM Cacheable	Enabled		
Frame Buffer Size	8M		
AGP Aperture Size	64M		
OnChip USB	Enabled		
OnChip USB 2	Disabled		
USB Keyboard Support	Disabled		
OnChip Sound	Auto		
OnChip Modem	Auto		
PCI Master 0 WS Write	Enabled		
PCI#2 Access #1 Retry	Enabled		
AGP Master 1 WS Write	Disabled		
AGP Master 1 WS Read	Disabled		
Memory Parity/ECC Check	Disabled		

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

DRAM Timing By SPD	This item allows you to enable or disable the DRAM timing defined by the Serial Presence Detect electrical.
SDRAM Cycle Length	This field enables you to set the CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should have set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

Bank Interleave	This item allows you to enable or disable the Bank Interleave function with 2 banks or 4 banks.
DRAM Clock	Enables the user to select the DRAM Clock.
P2C/C2P Concurrency	When disabled, the CPU bus is occupied during the entire PCI operation period.
System BIOS Cacheable	When enabled, the System BIOS will be cached for faster execution.
Video RAM Cacheable	When enabled, the graphics card's local memory will be cached for faster execution. However, if any program writes to this memory area, a system error may result.
Frame Buffer Size	This option determines the frame buffer size shared from the main memory for use by the onboard VGA display.
AGP Aperture Size	This option determines the effective size of the AGP Graphic *Aperture*, where memory-mapped graphic data structures are located.
OnChip USB	This item allows you to enable the USB port, if you have installed a USB device on the system board.
OnChip USB 2	This item allows you to enable the USB 2 port, if you have installed more USB device on the system board.
USB Keyboard Support	Enables function when the USB keyboard is being used. Disabled (default) when an AT keyboard is used.
OnChip Sound	Disabling this function turns off the onboard audio chip.
OnChip Modem	This should be enabled if your system has a modem installed on the system board and you wish to use it.
PCI Master 0 WS Write	When enabled, writes to the PCI bus are executed with zero wait states.
PCI#2 Access #1 Retry	When enabled, the AGP Bus (PCI#1) access to PCI Bus (PCI#2) is executed with the error retry feature.
AGP Master 1 WS Write	This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.
AGP Master 1 WS Read	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.

Memory Parity/ECC Check	If this item is enabled it allows the system to use parity checking and ECC (Error Correcting Code) to catch errors in the system memory. Enabling this item might have an impact on overall system performance.

Integrated Peripherals Page

This page sets some of the parameters for peripheral devices connected to the system.

CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
Integrated Peripherals

			Item Help
On-Chip IDE Channel0		Enabled	
On-Chip IDE Channel1		Enabled	
IDE Prefetch Mode		Disabled	Menu Level ▶
Primary Master	PIO	Auto	
Primary Slave	PIO	Auto	
Secondary Master	PIO	Auto	
Secondary Slave	PIO	Auto	
Primary Master	UDMA	Auto	
Primary Slave	UDMA	Auto	
Secondary Master	UDMA	Auto	
Secondary Slave	UDMA	Auto	
Init Display First		PCI Slot	
Onboard FDD Controller		Enabled	
Onboard Serial Port 1		3F8/IRQ4	
Onboard IR Port		Disabled	
x UART 2 Mode		Standard	
x IR Function Duplex		Half	
x TX,RX inverting enable		No, Yes	
Onboard Parallel Port		378/IRQ7	

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

On-Chip IDE Channel 0,1	Use these items to enable or disable the PCI IDE channels that are integrated on the mainboard.
Primary/ Secondary Master/ Slave PIO	Each channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. You can choose Auto, to let the system auto detect which PIO mode is best, or you can install a PIO mode from 0-4.
Primary/ Secondary Master/ Slave UDMA	Each channel supports a master device and a slave device. This motherboard supports UltraDMA and provides faster access to IDE devices. If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver.

29

Init Display First	Use this item to define if your graphics adapter is installed in one of the PCI slots or select Onboard if you have a graphics system integrated on the mainboard.
Onboard FDD Controller	This option enables the onboard floppy disk drive controller.
Onboard Serial Port 1	This option is used to assign the I/O address for the onboard serial port.
Onboard IR Port	This option is used to assign the I/O address for the onboard IR port or disabled.
UART2 Mode	This field is available if the Onboard Serial Port 2 field is set to any option but "Disabled." UART Mode enables you to select the infrared communication protocol—Standard (default), HPSIR or ASKIR. HPSIR is Hewlett Packard's infrared communication protocol with a maximum baud rate up to 115.2 Kbps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6 Kbps.
IR Function Duplex	This field is available when UART 2 Mode is set to either ASKIR or HPSIR. This item determines the infrared (IR) function of the onboard infrared chip. Full-duplex means that you can transmit and send information simultaneously. Half duplex is the transmission of data in both directions, but only one direction at a time.
TX, RX inverting enable	Defines the voltage level for Infrared module RxD (receive) mode and TxD (transmit) mode. This setting has to match the requirements of the infrared module used in the system.
Onboard Parallel Port	This option is used to assign the I/O address for the onboard parallel port.
Onboard Parallel Mode	This feature enables you to set the data transfer protocol for your parallel port. Normal allows data output only. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bi-directional modes, allowing both data input and output. ECP and EPP modes are only supported with EPP and ECP aware peripherals.
ECP Mode Use DMA	When the onboard parallel port is set to ECP mode, the parallel port has the option to use DMA "3" or DMA "1."
Parallel Port EPP Type	This option sets the Enhanced Parallel Port (EPP) specification.

30

Onboard Legacy Audio	This option enables the onboard legacy audio function. When enabled the following items become available.
Sound Blaster	This feature is used to enable or disable a Sound Blaster card if installed.
SB I/O Base Address	This item lets you set the I/O base address for the Sound Blaster card.
SB IRQ Select	This item lets you set the Interrupt Request (IRQ) for the Sound Blaster card.
SB DMA Select	This item lets you select the Direct Memory Access (DMA) for the Sound Blaster card.
MPU-401, MPU-401 I/O Address	Use the two items to enable the MPU-401 function and set the I/O address for the game port.
Game Port (200-207H)	This item shows the I/O address for the game port.

Power Management Setup Page

This page sets some of the parameters for system power management operation.

```
              CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
                               Power Management Setup
```

		Item Help
ACPI Function	**Disabled**	
► **Power Management**	**Press Enter**	
PM Control by APM	**Yes**	**Menu Level** ►
Video Off Option	**Suspend --> Off**	
Video Off Method	**DPMS Support**	
MODEM Use IRQ	**3**	
Soft-Off by PWRBTN	**Delay 4 Sec**	
► **Wake Up Events**	**Press Enter**	

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

ACPI Function	Use this item to enable or disable the ACPI function.
Power Management	This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If this item is set to Min Saving, power-saving modes occur after a longer timeout. If the item is set to User Define, you can insert your own timeouts for the power-saving modes.
PM Control by APM	This field allows you to control the PC Monitor's power management features via Intel-Microsoft Advanced Power Management software. Once you have enabled the APM interface, some settings made in the BIOS Setup program may be overridden by APM.
Video Off Option	This option defines if the video is powered down when the system is put into suspend mode.

Video Off Method	This item defines how the video is powered down to save power.
MODEM Use IRQ	If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the mainboard Wake On Modem connector for this feature to work.
Soft-Off by PWRBTN	Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to "Delay 4 Sec." then you have to hold the power button down for four seconds to cause a software power down.
Wake Up Events	This item opens a submenu that enables you to set events that will resume the system from a power saving mode. Select Wake Up Events and press **Enter** to display the following items: VGA, LPT & COM, HDD & FDD, PCI Master, PowerOn by PCI Card, Wake Up On LAN/Ring, RTC Alarm Resume, Primary INTR, and IRQs Activity Monitoring.

PnP/PCI Configurations Page

This page sets some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
PnP/PCI Configurations

PNP OS Installed	**Yes**	**Item Help**
Reset Configuration Data	**Disabled**	
Resources Controlled by	**Auto(ESCD)**	**Menu Level** ►
x **IRQ Resources**	**Press Enter**	
x **DMA Resources**	**Press Enter**	**Default is Disabled.**
		Select Enabled to
PCI/VGA Palette Snoop	**Disabled**	**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 OS
		cannot boot.

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

PNP OS Installed	Setting this option to "Yes" allows the PnP OS (instead of BIOS) to assign the system resources such as IRQ and I/O address to the ISA PnP device.
Reset Configuration Data	If you enable this item and restart the system, any PnP configuration data stored in the BIOS setup is cleared from memory. New updated data is created.
Resources Controlled By	You should leave this item at the default Auto (ESCD). Under this setting, the system dynamically allocates resources to plug and play devices as they are required. If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the *IRQ Resources* and *Memory Resources* sub-menus.
	In the *IRQ Resources* sub-menu, if you change any of the IRQ assignations to Legacy ISA, then

	that Interrupt Request Line is reserved for a legacy ISA expansion card. Press **Esc** to close the IRQ Resources sub-menu.
PCI/VGA Palette Snoop	This item is designed to overcome some problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

Hardware Monitor Page

This page sets some of the parameters for the hardware monitoring function of this mainboard.

CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
Hardware Monitor

	Item Help
Current CPU Temp.	
Current System Temp.	
Current CPUFAN1 speed	**Menu Level ▶**
Current CPUFAN2 speed	
Vcore	
2.5V	
3.3V	
5V	
12V	

↑↓→←: Move   Enter : Select   +/-/PU/PD:Value: F10: Save
         ESC: Exit   F1:General Help   F5:Previous Values   F6:Fail-Safe
DefaultsF7:Optimized Defaults

System Component Characteristics	These fields provide you with information about the systems current operating status. You cannot make changes to these fields. The following information is displayed:
	CPU Temperature
	System Temperature
	CPU FAN (in RPMs)
	System FAN (in RPMs)
	Vcore (CPU Core voltage)
	2.5V (onboard 2.5 volt)
	3.3V (onboard 3.3 volt)
	5V (power supply's 5 volt)
	12V (power supply's 12 volt).

36

Load BestPerf. Defaults

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of best-performance default values. These defaults are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

Load Optimized Defaults

If you select this item and press **Enter**, a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of fail-safe default values. These default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

Set Password

If you highlight this item and press **Enter**, a dialog box appears which lets you enter a password. You can enter no more than eight letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is then required to access the Setup Utility or for that and at start-up, depending on the setting of the Password Check item in Advanced Setup.

Change or Remove the Password
Highlight this item, press Enter and type in the current password. At the next dialog box, type in the new password, or just press Enter to disable password protection.

Save & Exit Setup

Highlight this item and press **Enter** to save the changes that you have made in the Setup Utility configuration and exit the program.

When the Save and Exit dialog box appears, press **Y** to save and exit, or press **N** to exit without saving.

Exit Without Saving

Highlight this item and press **Enter** to discard any changes that you have made in the Setup Utility and exit the setup program. When the Exit Without Saving dialog box appears, press **Y** to discard changes and exit, or press **N** to return to the setup main menu.

Chapter 4

Software

About the Software

The software for this mainboard is supplied on a CD-ROM. The disk has some folders that can be used by many different mainboards, for example the **UTILITY** and **PERIPHERAL** folders. In addition, software that is specifically intended for one kind of mainboard is stored in a folder with the name of that mainboard. Software for this mainboard is stored in the **KOB PLE133 FSMX** folder.

Note: Never try to install software from a folder that is not specified for use with your mainboard

KOB PLE133 FSMX Folder

For this board, you can install software from the KOB PLE133FSMX folder:

Utility Folder

You can use the software in the following sub-folders:

- ❑ **AWDFLASH**: Software to erase and install new revisions of the system BIOS (CMOS)
- ❑ **PC-CILLIN:** Anti-virus software
- ❑ **WinDVD (optional):** Video player software.

Note: Some folders are subdivided into different operating systems such as DOS, Windows 95, and Windows NT. Always make sure that you are installing the correct software for the operating system on your computer. Some folders are also subdivided into different language versions, such as English, French, and German.

Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

Audio Folder

You can use the software from the Audio folder to install audio drivers for your operating system.

IDE Folder

You can use the software from the IDE folder to install IDE drivers for your operating system.

VGA Folder

You can use the software in this folder to install VGA driver for your operating system.

Utility Folder Installation Notes

Award Flash Memory Utility
This utility lets you erase the system BIOS stored on a Flash
Memory chip on the mainboard, and lets you copy an updated
BIOS to the chip. Take care how you use this program. If you erase
the current BIOS and fail to write a new BIOS, or write a new
BIOS that is incorrect, your system will malfunction.
For this mainboard, you must use the **AWD7XX.EXE** or
AWD8XX.EXE utility. To use the utility, you must be in real-
mode DOS (not the DOS box that is available in Windows
95/98/NT). If you are using WINDOWS 95/98, shut down your
computer and select the option Restart in DOS in the shut-down
dialog box. If you are running Windows NT, shut down your
computer and boot from a DOS diskette temporarily in order to run
the flash memory utility.

PC-cillin Software
The PC-cillin software program provides anti-virus protection for
your system. This program is available for Windows 2000/98/ME
and Windows NT. Be sure to check the readme.txt and install the
appropriate anti-virus software for your operating system.
We strongly recommend users to install this free anti-virus
software to protect your system against the various viruses that
may occur every day.

WinDVD (optional)
Go to the directory \UTILITY\WINDVD; then run SETUP.EXE to
install the application software. The WinDVD software is not free.
Before you install, you need to register and get the serial number
first.

Audio Folder Installation Notes

This folder has software and drivers for the AC97 Audio system
that is integrated on this mainboard. The AC97 Audio allows the

system to generate optimal sound effects. Drivers are provided for DOS, Linux, and Windows 2000/98/9x/ME/NT.

Windows Installation
Use the SETUP.EXE application in the \VIA\AC97AUDIO folder.

DOS Installation
Browse to the VIA\AC97AUDIO\DOS folder and run INSTALL.EXE.

Linux Installation
Refer to your operating system handbook for instructions on installing Linux drivers.

IDE Folder Installation Notes

This folder has software and drivers for the IDE that is integrated on this mainboard. Drivers are provided for Windows 2000/98 and Windows NT.

Windows 2000/98/NT Installation
Browse to the \VIA\IDE folder and run SETUP.EXE to install the IDE driver for your operating system.

VGA Folder Installation Notes

You can use the software in this folder to install VGA driver for your operating system. Drivers are provided for Windows 2000/98/ME and Windows NT. Check your OS first and browse the available folder for the SETUP.EXE application.

- For WIN2000 browse to the \VIA\8601VGA\WIN2K\SETUP.EXE
- For WIN98/ME browse to the \VIA\8601VGA\WIN98ME\SETUP.EXE
- For WIN NT 4.0 browse to the \VIA\8601VGA\WINNT4\SETUP.EXE