

MVP7598

User's Manual Version B

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Chapter 1 Introduction

1

The mainboard is a high-performance mainboard based on the advanced PENTIUM™ microprocessor, the AGP, PCI Local Bus and the VIA APOLLO MVP3 chipset.

The mainboard offers a high degree of flexibility in configuration and is fully IBM PC compatible.

1-1 KeyFeatures

- VIA APOLLO MVP3 PCIset™ chipset
- Support either 75~350MHz PENTIUM™ CPUs with 321 pin socket 7.
- Support Pentium P55C, P54C
- Support Cyrix 6x86, 6x86L, 6x86MX, 6x86MII, AMD K5, K6 , K6-2 IBM, IDT CPUs.
- Support 3.3V SDRAM/EDO DRAM/Page Mode DRAM use 168-pin DIMM x 3.
- Supports Onboard Burst/Pipelined burst synchronous L2 Write Back cache. The Cache memory combination could be 256K/512K.
- 32-bits A.G.P. (Accelerated Graphics Port) slot x 1.
- 3 PCI Local Bus slots, and 3 x 16 bits ISA Bus slots.
- All 3 PCI slots support Master mode.
- System BIOS support 4 IDE harddisk drivers that don't need device driver for S/W application, the capacity each harddisk can large than 528MB up to 8.4GB.
- PCI Bus master IDE interface on board with two connectors support 4 IDE devices in 2 channel, the PCI IDE Controller supports PIO Mode 0 to Mode 4, Bus master IDE DMA Mode 2 and Ultra DMA 33MB/sec.
- On board super Multi-I/O chip that support 2 serial port with 16550 Fast UART compatible, 1 parallel port with EPP and ECP capabilities, and a floppy disk drive interface.
- On board support PS/2™ mouse Connector.

Chapter 1

- Support the Universal Serial Bus (U.S.B). (optional)
- Support Ir connector. (optional)
- System BIOS supports NCR810 SCSI BIOS firmware and Green feature function, Plug and Play Flash ROM.
- Use switching regulator to support CPU core voltage.
- Support Auto Stop CPU Fan in suspend mode.
- Support 3.3V, 5V and 12V 20-pins AT/ATX power connector.
- Board size : 220mm x 250 mm
- Hardware Monitor :
Support CPU/System FAN status monitoring and alarm, CPU voltage, system temperature monitoring.

1-2 Static Electricity Precautions

Static electricity can easily damage your mainboard.

Observing a few basic precautions can help you safeguard against damage that could result in expensive repairs. Follow the measures below to protect your equipment from static discharge:

- Keep the mainboard and other system components in their anti-static packaging until you are ready to install them.
- Touch a grounded surface before you remove any system component from its protective anti-static packaging. A grounded surface within easy reach is the expansion slot covers at the rear of the system case. or any other unpainted portion of the system chassis.
- During configuration and installation, touch a grounded surface frequently to discharge any static electric charge that may build up in your body. Another option is to wear a grounding wrist strap.
- When handling a mainboard or an adapter card, avoid touching its components. Handle the mainboard and adapter cards either by the edges or by the mounting bracket that attaches to the slot opening in the case.

Chapter 2

Hardware Configuration

Before you install the mainboard into the system chassis, you may find it convenient to first configure the mainboard hardware. This chapter describes how to set jumpers and install memory modules, and where to attach components.

2



2-1 Mainboard Component Locations

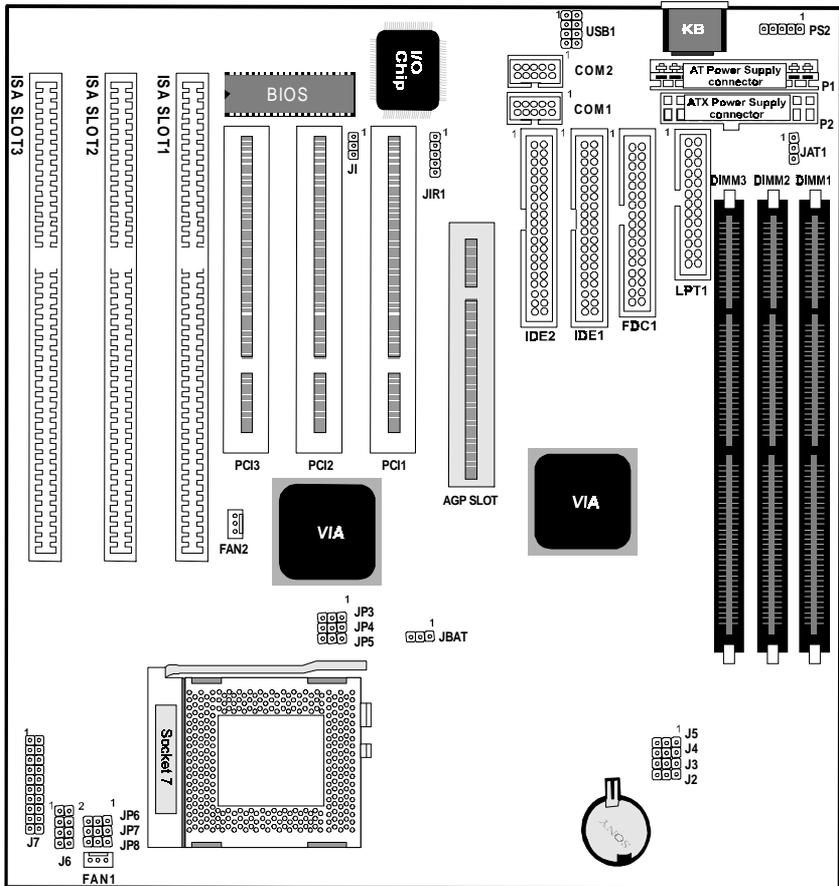


Figure 2-1 Mainboard Component Locations

2-2 Power Precautions

Before you begin configuration, make sure you are working with an unplugged mainboard. Many components are powered by low-voltage current, but there still may be a dangerous electric current coming from the leads and power supply. You should take the following precautions:

- Turn off the power supply, and unplug the power cord before you begin
- Unplug all cables that connect the mainboard to any external devices.

2-3 Jumper Settings

You can configure hardware options by setting jumper on the mainboard. See Figure 2-1 for jumper locations.

Set a jumper as follows:



- Short a jumper by placing the plastic jumper cap over two pins of the jumper.



- Open the pins of a jumper by removing the jumper cap.

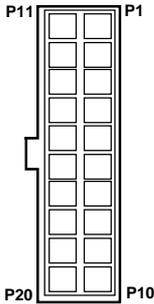
Note:

When you open the jumper, attach the plastic jumper cap to one of the pins so you won't lose it.



P2 ATX Power Supply Connector

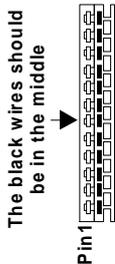
This connector connects to a ATX power supply, The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.



Pin	Description	Pin	Description
1	3.3V	2	3.3V
3	GND	4	5V
5	GND	6	5V
7	GND	8	PW-OK
9	5VSB	10	12V
11	3.3V	12	-12V
13	GND	14	PS-ON
15	GND	16	GND
17	GND	18	-5V
19	5V	20	5V

P1 AT Power Supply Connectors

The power supply connectors are two six-pin male header connectors. Plug the dual connectors from the power directly onto the board connectors. Most of power supply have two leads. Each lead has six wires. Two of which are black, orient the connectors, so the black wires are in the middle.



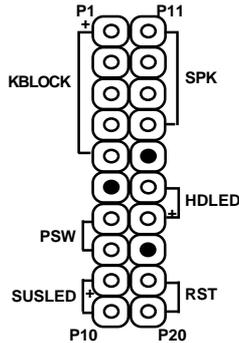
Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

JAT1 Power Select Connectors

You must choose the power supply type.



Pin	Description
1-2	AT Power (Default)
2-3	ATX Power

J7 KBLOCK, SPK, RST, HDLED, PSW, SUSLED, PWLED**SPK Speaker Connector**

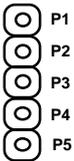
Attach the system speaker to connector SPK.



Pin	Description
11	DATA Out (+)
12	NC
13	Ground
14	+5V

KBLOCK Keylock + Power LED Connectors

KBLOCK is a keylock connector that enables and disables the keyboard and the Power-LED on the case.



Pin	Description
1	LED Output
2	NC
3	Ground
4	Keylock
5	GND

PSW Power Suspend Switch Connector

Attach the power suspend switch cable to this connector. Holding the power switch for more than 4 seconds will power off the system. Pushing the power button for less than 4 seconds the system is into sleep mode.



SUSLED Suspend Mode LED Connector

The connector connects to the case-mounted suspend LED, which lights when the system into a suspend mode or Green mode .

	Pin	Description
	9	5V
	10	Active Low

HDLED Hard Disk LED Connector

This will cause the LED to lighten when an IDE(HDD, CD-ROM)device is active.

	Pin	Description
	16	Active Low
	17	5V

RST Reset Switch Connector

The connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch.

	Setting	Description
	Open	Normal Mode
	Short	Reset System

USB1 Universal Serial Bus Connector(two 4-pin)

This connector supports two port USB Bus.

	Pin	Description	Pin	Description
	1	+5 VDC	5	+5VDC
	2	DATA -	6	DATA-
	3	DATA +	7	DATA+
	4	Ground	8	Ground

JBAT1 Battery & CMOS Clear Selector

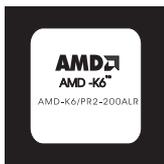
	Pin	Description
	1-2	Normal (Default)
	2-3	Clear CMOS

Intel/ AMD/Cyrix CPU Setting**Intel Pentium CPU**

Note :
Intel P54C Core &
I/O voltage : 3.3V or 3.5V

Intel CPU	Ratio	BUS Freq.
90MHz	1.5 x	60MHz
100MHz	1.5 x	66MHz
120MHz	2.0 x	60MHz
133MHz	2.0 x	66MHz
150MHz	2.5 x	60MHz
166MHz	2.5 x	66MHz (Default)
200MHz	3.0 x	66MHz
233MHz	3.5 x	66MHz

Intel P55C core voltage : 2.8V
& I/O voltage : 3.3V

AMD CPU

Note :
AMD K5-PRxxx
core & I/O voltage : 3.5V

AMD K5	Ratio	BUS Freq.
PR90	1.5 x	60MHz
PR100	1.5 x	66MHz
PR120	1.5 x	60MHz
PR133	1.5 x	66MHz

AMD K6-PRxxx
core voltage 2.9V
I/O voltage : 3.3V

AMD K6	Ratio	BUS Freq.
PR166	2.5 x	66MHz
PR200	3.0 x	66MHz
K6/233	3.5 x	60MHz
K6/266	4.0 x	66MHz
K6/300	4.5 x	66MHz
K6-2/300	4.5 x	66MHz
K6-3D/300	3.0 x	100MHz

AMD K6-PR233
core voltage 3.2V & 2.2V
I/O voltage : 3.3V

AMD K6-3D/300 AFR
core voltage: 2.2V
I/O voltage : 3.3V

AMD K6-3D/266
core voltage: 2.2V
I/O voltage : 3.3V

**Cyrix CPU****Note :**

Cyrix 6x86-PRxxx+GP
core & I/O voltage : 3.3V (016)

Cyrix 6x86PRxxx+GP
core & I/O voltage : 3.5V(028)

Cyrix 6x86L-PRxxx+GP
core voltage : 2.8V & I/O
voltage : 3.3V

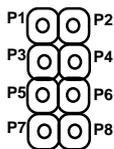
Cyrix 6x86MX-PRxxx+GP
core voltage : 2.9V & I/O
voltage : 3.3V

Cyrix 6x86MX-PR300+GP
core voltage : 2.7V & I/O
voltage : 3.3V

Cyrix 6x86L	Ratio	BUS Freq.
PR150+	2.0 x	60MHz
PR166+	2.0 x	66MHz
PR200+	2.0 x	75MHz

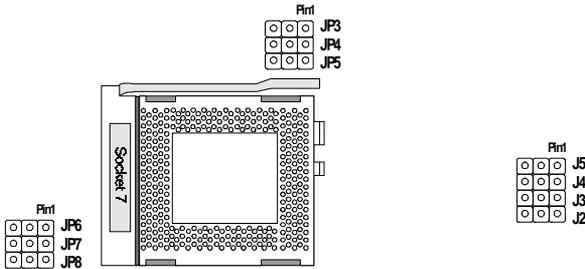
Cyrix M1	Ratio	BUS Freq.
PR150+120MHz	2.0 x	60MHz
PR166+133MHz	2.0 x	66MHz
PR200+150MHz	2.0 x	75MHz

Cyrix MX/MII CPU	Ratio	BUS Freq.
PR166	2.5 x	60MHz
PR200	2.5 x	66MHz
PR233	2.5 x	75MHz
PR233	3.0 x	66MHz
PR266	2.5 x	83MHz
PR300	3.5 x	66MHz
PR333	2.5 x	100MHz
PR333	3.0 x	83MHz
PR350	3.0 x	100MHz

J6 CPU Core Voltage Selectors

Voltage	Pin1-2	Pin 3-4	Pin 5-6	Pin 7-8
2.2V	Open	Short	Open	Open
2.7V	Short	Short	Short	Open
2.8V	Open	Open	Open	Short (Default)
2.9V	Short	Open	Open	Short
3.2V	Open	Open	Short	Short
3.3V	Short	Open	Short	Short
3.5V	Short	Short	Short	Short

JP6~JP8 CPU Frequency Ratio Selectors



Frq. Ratio	JP6	JP7	JP8
1.5/3.5	1-2	1-2	1-2
2.0	-	1-2	1-2
2.5	2-3	2-3	1-2 (Default)
3.0	1-2	2-3	1-2
4.0	2-3	1-2	2-3
4.5	2-3	2-3	2-3
5.0	1-2	2-3	2-3
5.5	1-2	1-2	2-3

J2~J5 / JP3~JP5 CPU Speed Selectors

CPU Speed	J2	J3	J4	J5	JP3	JP4	JP5
60 MHz	2-3	1-2	1-2	2-3	1-2	2-3	-
66 MHz (Default)	1-2	1-2	1-2	2-3	1-2	2-3	-
75 MHz	1-2	2-3	1-2	2-3	2-3	2-3	2-3
83 MHz	2-3	2-3	1-2	1-2	2-3	1-2	2-3
* 95 MHz	2-3	1-2	2-3	1-2	2-3	1-2	2-3
100 MHz	1-2	1-2	2-3	1-2	2-3	1-2	2-3
112 MHz	1-2	2-3	2-3	1-2	2-3	1-2	2-3
* 124 MHz	2-3	1-2	1-2	1-2	2-3	1-2	1-2

Note :

J5 (2-3), JP3 (1-2) : SDRAM runs AGP CLK
 J5 (1-2), JP3 (2-3) : SDRAM runs CPU CLK
 If CPU speed is setting 83-112MHz, must use SDRAM complies with PC100 specification. You are not using the SDRAM, must set J5 and JP3 to AGP CLK.
 * If CLK IC is W48S87-W127, you can use 95/124MHz CPU speed.

PS2 PS/2 Mouse Connector



PIN	Description
1	N.C.
2	+5VDC
3	Mouse CLK
4	Mouse Data
5	Ground

KB1 Keyboard Connector

Pin	Description
1	Keyboard Clock
2	Keyboard Data
3	N.C.
4	Ground
5	+5VDC

COM1, COM2 Serial Port Connectors(two 9-pin)

This connectors support serial mouse and modem..

LPT1 Parallel (Printer) Connector(25-pin)

This connector support printer or other parallel devices.

FDD1 Floppy Drive Connector(34-pin)

The connector supports floppy disk drive cable. Please orient the red stripe to Pin 1.

IDE1 Primary IDE Connector/IDE2 Secondary IDE Connector (Two 40-pin)

The connector supports IDE hard disk drive cable. Please orient the red stripe to Pin 1.

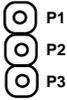
FAN1 CPU FAN POWER

The connector supports 12 Volt Cooling Fan .



Pin	Description
1	Ground
2	+12VDC *
3	FAN Speed Sensor

Note : * :Suspend mode will turn off

FAN2 System FAN POWER

Pin	Description
1	Ground
2	+12VDC
3	FAN Speed Sensor

JIR1 IR Connector

The connector supports wireless transmitter and infrared module . You must configure the setting for "UART 2 Mode :IrDA " in INTEGRATED PERIPHERALS



PIN	Description	PIN	Description
1	VCC	2	Option
3	IRRX2	4	Ground
5	IRTX2		

J1 Wake On LAN Connector

The connector connects to LAN card. LAN activity will power on the system.



Pin	Description
1	+5VSB
2	GAND
3	CTRL-Signal



2-4 Memory Installation

The mainboard lets you add up to 384MB of system memory via DIMM sockets on the mainboard. The mainboard supports the following memory configurations and DIMM socket consists of three 168-pin DIMM Module.

BANK	MEMORY MODULE
DIMM 1	8MB, 16MB, 32MB, 64MB, 128MB 168Pin DIMM (Single Side, Double Side)
DIMM 2	8MB, 16MB, 32MB, 64MB, 128MB 168Pin DIMM (Single Side, Double Side)
DIMM 2	8MB, 16MB, 32MB, 64MB, 128MB 168Pin DIMM (Single Side, Double Side)

Notes:

- 1. All DIMM module can use either single side or double side**
- 2. DIMM socket DRAM type Fast Page Mode(3.3V) or Extend Data Out (3.3V 64/72-bitEDO 50/60ns) or synchronous DRAM (SDRAM 8/10/12ns).**



3

Chapter 3
AWARD BIOS Setup

**This chapter explains how to
configure the mainboard's
BIOS setup program.**

After you have configured the mainboard, and have assembled the components, you can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the system board is achieved through Basic Input-Output System (BIOS) programming. You use the BIOS setup program to tell the operating system what types of devices are connected to your system board.

The system setup is also called CMOS setup. Normally, you need to run system setup if either the hardware is not identical with information contained in the CMOS RAM, or if the CMOS RAM has lost power.

3-1 Award BIOS Setup

Enter the Award Setup program's Main Menu as follows:

1. Turn on or reboot the system. The following message appears at the bottom of the screen:
"Press to enter setup, ESC to skip memory test"
2. Press the key to enter the Award BIOS setup program and the following screen appears:

ROM PCI/ISA BIOS CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑↓←→ : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time , Date , Hard Disk Type ...	

3. Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (See the following sections for more information.)
4. Press <ESC> at anytime to return to the Main Menu.
5. In the Main Menu, choose "SAVE AND EXIT SETUP" or <F10> to save your changes and reboot the system.
Choosing "EXIT WITHOUT SAVING" or <ESC> ignores your changes and exits the program.



3-2 Main Menu Options

The Main Menu options of the Award BIOS are as below.

STANDARD CMOS SETUP

Run the Standard CMOS Setup as follows.

1. Choose "STANDARD CMOS SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS							
STANDARD CMOS SETUP							
AWARD SOFTWARE, INC.							
Date (mm:dd:yy) : Fri, Jun 12 1998							
Time (hh:mm:ss) : 13 : 34 : 44							
HARDDISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR MODE
Primary Master:	Auto	0	0	0	0	0	0 Auto
Primary Slave:	Auto	0	0	0	0	0	0 Auto
Secondary Master:	Auto	0	0	0	0	0	0 Auto
Secondary Slave:	Auto	0	0	0	0	0	0 Auto
Drive A : 1.44M, 3.5 in				Base Memory : 640K			
Drive B : None				Extended Memory : 15360K			
Video : EGA/VGA				Other Memory : 384K			
Halt On : All, But Keyboard				Total Memory : 16384K			
Esc : Quit ↑↓→← : Select Item PU/PD/+/- : Modify							
F1 : Help (Shift)F2 : Change Color							

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys. Some fields let you enter numeric values directly.

Date (mm/dd/yy) Type the current date

Time (hh:mm:ss) Type the current time

Hard Disk Configurations

TYPE : Select from 1 to 45 to fill remaining fields with predefined values of disk drives. Select user to fill the remaining fields. Select auto to detect the HDD type automatically.

SIZE : The hard disk size. The unit is Mega Bytes.

CYLS : The Cylinder number of the hard disk.

HEAD : The read/write head number of hard disk.

PRECOMP : The cylinder number at which the disk drive changes the write timing.

LANDZ : Landing zone.

SECTOR : Number of sectors

Mode : Select auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large.



However, if your hard disk cylinder is more than 1024 and does not support the LBA function, set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

Drive A & B

Choose	360KB 5 1/4"	1.2MB 5 1/4"
	720KB 3 1/2"	1.44MB 3 1/2"
	Not installed	2.88MB 3 1/2"

Video

Choose	Monochrome	Color 40x25
	VGA/EGA	Color 80x25
	Not installed	

Halt On

Choose	All Errors (Default)	No Errors
	All, But Keyboard	All, But Diskette
	All, But Disk/Key	

Note :

You can select Auto under the TYPE and MODE fields. This will enable auto detection of your IDE drives during bootup.

3. After you have finished with the Standard CMOS Setup program, press the <ESC> key to return to the Main Menu.



BIOS FEATURES SETUP

Run the BIOS Features Setup as follows.

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS BIOS FEATURES SETUP AWARD SOFTWARE, INC.		
Virus Warning	: Disabled	Video BIOS Shadow : Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow : Disabled
External Cache	: Enabled	CC000-CFFFF Shadow : Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow : Disabled
Boot Sequence	: A, C, SCSI	D4000-D7FFF Shadow : Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow : Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow : Disabled
Boot Up NumLock Status	: On	
Gate A20 Option	: Fast	
Typematic Rate Setting	: Disabled	
Typematic Rate (Chars/Sec)	: 6	
Typematic Delay (Msec)	: 250	
Security Option	: Setup	
IDE second channel control	: Enabled	ESC : Quit ←→↑↓: Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help PU/PD/+/- : Modify
OS Select for DRAM >64MB	: Non-OS2	F5 : Old Values (Shift)F2 : Color
Report no FDD for Win98	: No	F7 : Load Setup Defaults

2. **Virus Warning**

Choose Enabled or Disabled. Enable this option and a SYSTEM WARNING MESSAGE appears when the system detects a virus.

CPU Internal Cache

Choose Enabled or Disabled. This option lets you enable the CPU's internal cache memory.

External Cache

Choose Enabled or Disabled. This option lets you enable the external cache memory. For better performance, make sure you always choose "Enabled."

Quick Power On Self Test

Choose Enabled or Disabled. Enabled provides a fast POST and boot-up speed.

Boot Sequence

The default setting first to boot from drive C: You can reverse this sequence with "A:C:", will then drive A: boot directly.

**Swap Floppy Driver**

Choose Enabled or Disabled. When Enabled Floppy drives A & B are swapped under DOS.

Boot Up Floppy Seek

Choose "Enabled" or "Disabled". "Disabled" provides a fast boot and reduces the possibility of damage to the heads.

Boot Up Num Lock Status

Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.

Typematic Rate Setting

This determines the typematic rate.

Enabled : Enable typematic rate and typematic delay programming.

Disabled :Disable typematic rate and typematic delay programming.

The system BIOS will use default value of these 2 items and the default is controlled by keyboard.

Typematic Rate(Chars/Sec)

Choose the rate a character keeps repeating(6-30 Chars/Sec).

Typematic Delay (Msec)

Choose how long after you press a key that a character begins repeating.(250-1000)

Security Option

Choose Setup, or System. Use this feature to prevent unauthorized system boot-up or unauthorized use of BIOS Setup.

"**System**" - Each time the system boots the password prompt appears.

"**Setup**" - Password prompt only appears if you attempt to enter the Setup program.

PCI/VGA Palette Snoop

Some display cards that are nonstandard VGA such as graphics accelerators or MPEG Video Cards may not show colors properly. The setting Enabled should correct this problem. Otherwise leave this on the setup default setting of Disabled.



OS/2 Onboard Memory >64M

When using OS/2 operating systems with installed DRAM of greater than 64MB, you need to set this option to Enabled otherwise leave this on Disabled.

Video BIOS Shadow

Choose enabled(default) . let the VGA BIOS map to system RAM.

C8000-CBFFFF to DC000-DFFFF

These fields are used for shadowing others expansion card ROMs. If you install other expansion cards with ROMs on them, you will need to know which addresses the ROMs use to shadow them specifically. Shadowing a ROM reduces the memory available between 640KB and 1024KB by the amount used for this purpose.

3. After you have finished with the BIOS Features Setup program, press the <ESC> key and then follow screen instructions to save or disregard your settings.

CHIPSET FEATURES SETUP

The “CHIPSET FEATURES SETUP” is used to control the values of the chipset registers. These registers control most of the system options in the computer.

Run the Chipset Features Setup as follows:

1. Choose “CHIPSET FEATURES SETUP” from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.	
Bank 0/1 DRAM Timing : Normal	OnChip USB : Disabled
Bank 2/3 DRAM Timing : Normal	
Bank 4/5 DRAM Timing : Normal	
SDRAM Cycle Length : 3	CPU Warning Temperature : 70°C/158°F
	Current CPU Temperature :
DRAM Read Pipeline : Enabled	Current CPUFAN1 Speed :
Sustained 3T Write : Enabled	Current CPUFAN2 Speed :
Cache Rd+CPU Wt pipeline : Enabled	Current Vin(V) :
Cache Timing : Fast	
Video BIOS Cacheable : Disabled	
System BIOS Cacheable : Disabled	
Memory Hole At 15Mb Addr. : Disabled	
AGP-2X Mode : Enabled	
AGP Aperture Size : 64M	
	ESC : Quit ←→↑↓:Select Item
	F1 : Help PU/PD+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F7 : Load Setup Defaults

- The items are optimal setting for this mainboard, you should not change them unless you are familiar with the chipset.

POWER MANAGEMENT SETUP

The Power Management controls the mainboard'a "green" features that for the power saving Mode, Display turn off and HDD power down that together form the hardware power conservation scheme.

Run the Power Management Setup as follows:

- Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.			
Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM 2)	: Primary
Video Off Option	: Suspend->Off	IRQ4 (COM 1)	: Primary
Video off Method	: V/H SYNC+Blank	IRQ5 (LPT 2)	: Primary
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Primary
Soft-Off by PWRBIN	: Delay 4 Sec	IRQ7 (LPT 1)	: Primary
**PM Timer **		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
DMA/master	: OFF		
Modem/Wake On LAN	: Disabled	ESC : Quit	←→↑↓: Select Item
RTC Alarm Resume	: Disabled	F1 : Help	PU/PD+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F7 : Load Setup Defaults	

- A short description of the screen items follows:
"POWER MANAGEMENT" is the master control for the four power saving modes, doze,standby,suspend mode and HDD power down mode..

Power Management :User Define

Disabled : The system operates in NORMAL conditions (Non-GREEN), and the Power Management function is disabled.

Max.saving : This mode will maximize the power saving capability.

Min.saving : This mode will minimize the power saving capability.

User define : Allow user to define time out parameters to control power saving timing. Refer to item B shown below.



PM Control by APM

The option "No" allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting "Yes" will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into the power saving mode after all tasks are done.

Video off Option

This feature provides the selections of the video display power saving mode. The option "Suspend-> Off" allows the video display blanks if the system enters Suspend mode. The option "All modes-> Off" allows the video display banks if the system enters Doze mode or Suspend mode. The option "Always On " allows the video display to stay in standby mode even the system enters Doze or Suspend mode.

Video Off Method

The option "V/H SYNC+Blank" allows the BIOS to blank off screen display by turning off the V-Sync signals sent from add-on VGA card. "DPMS Supported" allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling Function.) "Blank Screen" allows the BIOS to blank screen display by turning off the red-green-blue signals.

MODEM use IRQ

When the system is in green function, modem wakes up the system through IRQ.

Soft-Off by PWRBTN

When enabled, turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

HDD Power Down

Selecting Disabled "will turn off the hard disk drive (HDD) motor. Selecting "1 Min..15Min" allows you to define the HDD idle time before the HDD enters Power Saving Mode. The option "When Suspend" lets the BIOS turns the HDD motor off when the system is in Suspend mode.

The options "1Min..15Min" and "When Suspend" will not work concurrently. When HDD is in Power Saving Mode, any access to the HDD will wake the HDD up.

**Doze Mode**

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode.

VGA

Selecting "ON" will enable the power management timers when a "no activity" events is detected in the VGA. Selecting "OFF" to disable the PM timer even if a "no activity" event is detected.

LPT & COM

Selecting "LPT & COM" will enable the power management timers when a "no activity" event is detected in the LPT and COM ports. Selecting "LPT"("COM") will enable the power management timers when a "no activity" event is detected in the LPT (COM) ports. Selecting "NONE" to disable the PM timer even if a "no activity"event is detected.

HDD & FDD

Selecting "ON" will enable the power management timers when a "no activity" event is detected in the hard disk drive and floppy disk drive. Selecting "OFF" to disable the PM timer event if a "any activity" event is detected.

DMA/master

When the master is working, the system will not have SMI signal until the master is finished.

Modem/Wake On LAN

The system will resume active when the modem/LAN is ringing. You must make sure your network software and LAN card support such a function.

Enabled : Wake up the system from ring signal.

Disabled : (default) Ring signal can not wake up the system.

RTC Alarm Resume

When set to Enable ,you could set the date and timer, any event occurring at will awaken a system which has been powered down.



Primary INTR

When enabled, you can choose any IRQ#.

IRQ#

After the time interval which you set at in Suspend Mode Feature, the system advances from Doze Mode to Suspend Mode in which the CPU clock stops and the screen display is off. At this moment, if the IRQ activity which is defined as "Primary" occurs, the system goes back to Full-on Mode directly.

If the IRQ activity which is defined as "Secondary" takes place, the system enters another low power state, Dream Mode, in which the system will act as full-on Mode except that the screen display remains off until the corresponding IRQ handler finishes, then back to Suspend Mode.

For instance, if the system connects to a LAN and receives an interrupt from its file server, the system will enter the dreaming mode to execute the corresponding calling routine.

The options are : Primary, Secondary

The default values of IRQ3, 4, 5, 7, 9, 10, 11, 12, 14, 15 are : Primary

The default value of IRQ8 is : Secondary.

PNP/PCI SLOT CONFIGURATION

The "PNP/PCI SLOT CONFIGURATION" sets the system for use with PCI bus cards.

Run the PNP/PCI Slot Configuration program as follows.

1. Choose "PNP/PCI CONFIGURATION" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.	
PNP OS Installed	: No
Resources controlled by	: Auto
Reset configuration Data	: Disabled
AGPI I/O Device Node	: Enabled
	CPU to PCI Write Buffer : Enabled
	PCI Dynamic Bursting : Enabled
	PCI Master 0 WS Write : Enabled
	PCI Delay Transaction : Enabled
	PCI Master Read Prefetch : Enabled
	PCI#2 Access #1 Retry : Disabled
	AGP Master 1 WS Write : Enabled
	AGP Master 1 WS Read : Disabled
	PCI IRQ Activated By : Level
	Assign IRQ For USB : Disabled
	Assign IRQ For VGA : Enabled
ESC : Quit ←→↑↓: Select Item F1 : Help PU/PD+/- : Modify F5 : Old Values (Shift)F2 : Color F7 : Load Setup Defaults	



2. **PNP OS Installed**

If your operating system is a Plug-and-Play one, such as Windows NT, Windows 95, select Yes. The options are : No (Default), Yes.

Resource Controlled By

Manual : The field defines that the PNP Card's resource is controlled by manual. You can set which IRQ-X and DMA-X assigned to PCI/ISA PNP or Legacy ISA cards.

Auto : If your ISA card and PCI card are all PNP cards. To set this field Auto.
The BIOS will be assigned the interrupt resource automatically.

Reset Configuration Data

Disabled : Normal Setting

Enabled : If you had plugged some Legacy cards in the system and there were records into ESCD (Extended System Configuration Data). You can set this field to Enabled and to clear ESCD one time . When some Legacy cards were removed.

CPU to PCI Write Buffer

When enabled,allows data and address access to the internal buffer of 82C586 so the processor can be released from the waiting state.
The options are : Enabled (default), Disabled.

PCI Dynamic Bursting

When enabled,the PCI controller allows bursting PCI transfer if the consecutive PCI cycles come with the address falling in same 1KB space. This improves the PCI bus through put.

PCI Master 0 WS Write

When enabled, allows a zero-wait-state-cycle delay when the PCI master drive writes data to DRAM.

4. After you have finished with the PCI Slot Configuration program, press the <ESC> key and then follow screen instructions to save or disregard your settings.



LOAD SETUP DEFAULTS

This Main Menu item loads the default system values. These settings are recommended for optimum performance. If the CMOS is corrupted when enter BIOS setup utility you must load setup default again. Choose this item and the following message appears:

“Load SETUP Defaults (Y/N)? Y”

To use the Setup defaults, change the prompt to and press “Y” and press <Enter>.

INTEGRATED PERIPHERALS SETUP

The “INTEGRATED PERIPHERALS” is used to control the values of the I/O chipset registers. These registers control the mode of HDD type and I/O address port.

Run the Integrated Peripherals as follows:

1. Choose “INTEGRATED PERIPHERALS” from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.		
Onchip IDE First Channel	: Eanbled	Parallel Port Mode : SPP
Onchip IDE Second Channel	: Enabled	
IDE Prefetch Mode	: Enabled	
IDE HDD Block Mode	: Enabled	
IDE Primary Master PIO	: Auto	
IDE Primary Slave PIO	: Auto	
IDE Secondary Master PIO	: Auto	
IDE Secondary Slave PIO	: Auto	
IDE Primary Master UDMA	: Auto	
IDE Primary Slave UDMA	: Auto	
IDE Secondary Master UDMA	: Auto	
IDE Secondary Slave UDMA	: Auto	
Init Display First	: PCI Slot	
Onboard FDC Controller	: Enabled	
Onboard Serial Port 1	: 3F8/IRQ4	
Onboard Serial Port 2	: 2F8/IRQ3	ESC : Quit ←→↑↓:Select Item
UART 2 Mode	: Standard	F1 : Help PU/PD/+/- : Modify
Onboard Parallel Port	: 378/IRQ7	F5 : Old Values (Shift)F2 : Color
		ESC : Quit ←→↑↓:Select Item

**Note:**

**If you don't use the Onboard IDE connector, than use On-card (PCI or ISA card) IDE connector, you will set Onboard Primary PCI IDE : Disabled and Onbard Secondary PCI IDE : Disabled from CHIPSETFEATURES SETUP UTILITY.
The Onboard PCI IDE cable should be equal to or less than 18 inches (45cm).**

OnChip IDE First Channel/OnChip IDE Second Channel

When enabled, allows you to use the onboard PCI IDE.

IDE HDD Block Mode: The default value is Enabled.

Enabled : Enabled IDE HDD Block Mode. The HDD transfer rate is better than Disable.

Disabled : Disable IDE HDD Block Mode.

IDE Primary Master PIO /IDE Primary Slave PIO

The default value is Auto.

Auto : BIOS will automatically detect the Onboard PCI IDE HDD Accessing mode.

Mode0-4 : Manually set the IDE Accessing mode.

IDE Secondary Master PIO /IDE Secondary Slave PIO

The default value is Auto.

Auto : BIOS will automatically detect the Onboard PCI IDE HDD Accessing mode.

Mode0-4 : Manually set the IDE Accessing mode.

IDE Primary Master UDMA/IDE Primary Slave UDMA

Allows you to select the first PCI IDE channel of the first master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

IDE Secondary Master UDMA/IDE Secondary Slave UDMA

Allows you to select the second PCI IDE channel of the secondary master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

Onboard FDD Controller

When enabled, the floppy diskette drive (FDD) controller is activated.

**Onboard Serial Port1/Onboard Serial Port2**

If the serial port uses the onboard I/O controller, you can modify your serial port parameter. If an I/O card needs to be installed, COM3 and COM4 ,may be needed.

The Onboard Serial Port1 options are : 3F8/IRQ4 (Default), 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3, Disabled

The Onboard Serial Port2 options are : 2F8/IRQ3 (Default), 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled

UART 2 Mode

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set at standard, if you use COM2 as the serial port as the serial port, instead as an IR port. The options are : HPSIR,ASKIR, Standard (default)

Onboard Parallel Port

Select from a given set of parameters if the parallel port uses the onboard I/O controller.

The options are : 278/IRQ5 , 3BC/IRQ7, 378/IRQ7(Default).

Onboard Parallel Mode

Allows you to connect with an advanced printer. Select SPP for standard parallel port (SPP) used on IBM PC/XT, PC/AT and bi-directional parallel port found on PS/2 system.

Select ECP Mode for Microsoft and HP Extended Capabilities Parallel Port. Select ECP+EPP Mode for both ECP and EPP Modes ports.

The options are SPP (Default), EPP+SPP Mode, ECP Mode, ECP+EPP Mode.

USER PASSWORD SETTING

This Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. The password cannot be longer than 8 characters.

If CMOS is corrupted or the option was not used, a default password stored in the ROM will be used. The screen will display the following message:

Enter Password :



IDE HDD AUTO DETECTION

1. If your system has an IDE hard drive, you can use this utility to detect its parameters and automatically enter them into the Standard CMOS Setup.
2. For IDE hard disk driver, the BIOS provides three modes to support both normal IDE hard disk and also drives larger than 528MB, a short description of three modes as follows:

ROM PCI/ISA BIOS STANDARD CMOS SETUP AWARD SOFTWARE, INC.							
HARDDISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR MODE
OPTION	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2	521	530	32	0	1059	63	LBA
1	521	1060	16	65535	1059	63	NORMAL
3	521	530	32	65535	1059	63	LARGE

Note : Some Oses (like SCO UNIX) must use "NORMAL" for installation
ESC : Skip

- a. Normal mode: For drives small than 528MB
 - b. Large Mode: For drives larger than 528MB that do not use LBA. There can only be used with MS-Dos operating system.
 - c. LBA mode: For drives larger than 528MB and up to 8.4GB that use logic block addressing mode. Normally we recommend to select LBA Mode if your HDD drivers large than 528MB.
3. This utility will auto detect as many as four IDE drivers.



SAVE & EXIT SETUP

After you have made changes under Setup, press "Esc" to return to the main menu. Move cursor to "Save and Exit Setup" or press "F10" and then press "Y" to change the CMOS Setup. If you did not change anything, press "Esc" again or move cursor to Exit Without Saving and press "Y" to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility.

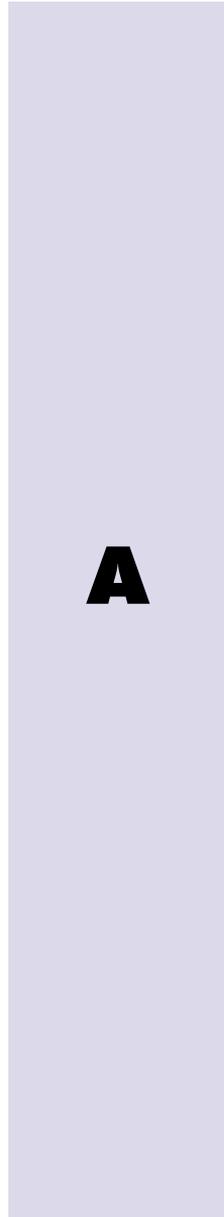
Save to CMOS and EXIT (Y/N)?

EXIT WITHOUT SAVING

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications

Quit Without Saving (Y/N)?





Appendix
**Hardware Monitor Setup/
AGP Utility**

**This chapter explains how to
configure the mainboard's
hardware mointor setup
program and AGP utility.**



A-1 Installing Procedure for CD-ROM disc

Follow the measures below to install your mainboard:

Installing on Windows 95 (OSR2.0 or later)

1. Install USB supplyment.
2. ACPI Power Manager utility
3. Bus Master IDE Driver
4. AGP Bus Driver

Installing on Windows 98

1. ACPI Power Manager utility
2. Bus Master IDE Driver
3. AGP Bus Driver
4. PCI Miniport Driver

Installing on Windows NT (service pack 3)

(you can get it form <http://www.microsoft.com/ntserversupport/content/servicepacks/default.htm>)

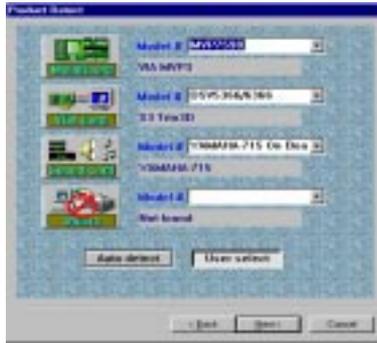
1. Bus Master IDE Driver

Note :

Before you setup any AGP VGA driver, please must install VIA all drivers first.

A-2 Installing the Utility

Insert the Installation CD disc. The Setup program window appears (If it does not appear, run d:\setup.exe).



Click "Mainboard" icon, window will appear a information Box :



- Click "AGP Bus Driver" :
 - Microsoft 95 /98 system not support the AGP controller by VIA APOLLO MVP3 chipset.
 - 1. Install Windows 95 OSR 2.1 or later version.
 - 2. VIA suggest using the latest Intel 740 VGA driver version 1.5 or later.



- Click "PCI Miniport Driver" :
If your system Microsoft 98, please follow under step the install IRQ routing 1.1 version:
 1. Install Windows 98 on your system.
 2. Install VIA IRQ routing miniport driver.

- Click "Bus Master IDE Driver"
This motherboard supports Bus Master PCI IDE , you need to install IDE driver.

- Click "Award Flash Utility" :
Updating your Mainboard's BIOS procedures (only when necessary):
 1. Create a directory from hard disk, copy the utility driver and files from disk or CD.

 2. Download an updated AWARD BIOS file from FTP, or internet (WWW) and save to the directory you created above.

 3. Type : [AWDFLASH] and then the <Enter> key.

 4. Type in the complete file name of the new BIOS, and then press the <Enter> key. The utility will be update the BIOS file .
(You can save the old BIOS or not, please follow the screen message)

 5. After updating the new BIOS file, Select F1 for reset your system or exit (F10).

 6. Turn on your computer and hold down the <Delete> key to enter BIOS setup. You must select "LOAD SETUP DEFAULTS" to affect the new BIOS setting, then you may set other item's from the Main Menu.

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



Appendix

- Click "ACPI Power Manager Utility" :
Microsoft 95 system not support the **Advanced Configuration and Power Management Interface (ACPI)** by VIA APOLLO MVP3 chipset.

1. Start Win95.

2. Check your Windows95 Device Manager, and remove the "PCI-Bridge"

- Click "System Monitor Program" :
After completing installation, you will find this utility in "StartUp" under "Programs" of Windows^R 95 / NT 4.0. Please refer to the "Readme" file for details on using the utility.

System Health Monitor Utility

System Health Monitor V1.18

Manufacture : Gateway Logic System Monitor

Polling: 4 Seconds

Temperature

CPU Over-Heat: 55 ° Celsius / 131 ° Fahrenheit

CPU Hysteresis: 14

CPU Temperature: 21

Voltage (V)

	High Limit	Low Limit	Current
3.3V Values	5.80	5.15	3.25
12V Values	17.50	16.00	12.18
5V Values	5.50	4.50	5.08
Wave Values	3.30	1.20	2.79

Fan (RPM)

	Low Limit	Current Speed
CPU Fan	1000	4137
System Fan	1000	4444

Buttons: Update Info Drive, Update and Save, User Setting, Default Setting, Quit

Options: Minimize when Started, Alarm when (CPU Over-Heat, 3.3V Abnormal, 12V Abnormal, 5V Abnormal, 5V Core Abnormal, CPU Fan Abnormal, System Fan Abnormal)

The system board comes with a System Health Monitor utility contained in the provided CD/diskette. This utility shows the current temperature of the processor, power voltages, and processor/chassis fan speed.



The utility also allows you to manually set the range of the processors temperature, power voltages, and processor/chassis fan speed. If the settings/values are over or under the set range, an error message will pop-up and an alarm will sound. There are three types of sound for the three different failure alarms (temperature, voltage and fan). Refer to the Chipset Features Setup (Chapter 3) section for details.

When you hear a failure alarm, you must power off your computer and check the following: processor fan/heatsink, chassis fan and power supply. We recommend that you use the “Default Setting” which is the ideal setting that would keep the system in good working condition.

Important:

Once this utility is installed, the system will ignore the settings in the “System Health Monitor” field of the Chipset Features Setup. If you are using Windows[®] 95 or Windows NT[®] 4.0, you may select between using the utility and the Chipset Features Setup. For other operating systems, you may only use the Chipset Features Setup.

