

PAM-0066I

High Performance
Pentium PCI Mainboard
User's Guide



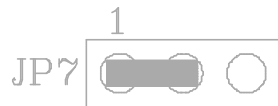
Edition 1.10
© 1997 DTK Computer, Inc.

P/N: 155100-8457



WARNING

For the system to operate normally, please make sure JP7 of the mainboard is set as below. Refer to Fig. 3 in this manual for the location JP7.



If JP7 is shorted to 2-3, no CMOS data can be retained.

CAUTION

The motherboard is an electrostatic sensitive device. Don't open or handle except at a static-free workstation.

POWER OFF

It needs to hold the power switch 4 seconds to turn off the power.

Windows, MS-DOS, and MS Word are trademarks of Microsoft Corporation.

Novell, Netware are trademarks of Novell, Inc.

PC, AT, PC-DOS, OS/2 and Presentation Manager are trademarks of IBM Corporation.

Pentium is registered trademark of Intel Corp.

UNIX is the trademark of AT&T.

All other brand and product names are trademarks or registered trademarks of their respective companies.

The information presented in this publication has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies, whereas, specification is subjected to change without notice.

CONTENTS

CHAPTER 1	INTRODUCTION	1
CHAPTER 2	JUMPER SETTINGS	5
2.1	JUMPERS PRESENTATION	5
2.2	CPU TYPE	5
2.2.1	INTEL PENTIUM CPU	5
2.2.2	INTEL PENTIUM w/ MMX? TECH (P55C) CPU	6
2.2.3	AMD-K6 CPU	6
2.2.4	AMD-K5 CPU	7
2.2.5	CYRIX 6x86 CPU	7
2.2.6	CYRIX 6x86L CPU	8
2.2.7	CYRIX 6x86MX CPU	8
2.3	GRAPHICAL DESCRIPTION OF JUMPER SETTINGS	9
2.4	CPU VOLTAGE	10
2.4.1	CPU VOLTAGE AUTO SELECTION	10
2.4.2	CPU VOLTAGE BIOS SELECTION	10
2.4.3	CPU VOLTAGE MANUAL SELECTION	11
2.5	CPU EXTERNAL (BUS) FREQUENCY SELECTION (SW1-6,7,8)	12
2.6	CPU TO BUS FREQUENCY RATION (SW1-3,4,5)	12
2.7	JP7 - CLEAR CMOS DATA	14
2.8	JP3 - VOLTAGE SELECTION FOR SYSTEM ROM	15
2.9	JP4 - ONBOARD AUDIO SELECT (OPTIONAL)	16
2.10	JP1 - ONBOARD VGA SELECT	16
2.11	JP8, 9 - POWER SUPPLY SELECTION	17
2.12	RESERVED JUMPERS	17
2.13	MEMORY CONFIGURATION	17
2.14	VIDEO MEMORY CONFIGURATION	19
CHAPTER 3	CONNECTOR CONFIGURATION	21
3.1	J1 - RESET SWITCH	22
3.2	J2 - SUSPEND SWITCH/POWER SWITCH	22
3.3	J3 - SUSPEND LED	22
3.4	J4 - SPEAKER CONNECTOR	22
3.5	J5 - HDD LED CONNECTOR	23
3.6	J6 - KEYLOCK CONNECTOR	23
3.7	J7, J8 - PRIMARY/SECONDARY IDE CONNECTOR	23
3.8	J9 - FLOPPY DRIVE CONNECTOR	23
3.9	J10 - WAVETABLE EXPANSION CONNECTOR	24
3.10	J11 - CD-ROM AUDIO CONNECTOR (SONY)	24
3.11	J12 - CD-ROM AUDIO CONNECTOR (MISUMI/PANASONIC)	24
3.12	J13,14 - AUDIO EXTENSION CARD GOI-660 CONNECTOR (OPTIONAL)	24
3.13	J15 - IrDA/FAST IR CONNECTOR	25

3.14	J27 - CPU FAN CONNECTOR	25
3.15	J28 - AT POWER CONNECTOR	26
3.16	J29 - ATX POWER CONNECTOR	26
3.17	J18 - FEATURE CONNECTOR	27
3.18	PS/2 KEYBOARD CONNECTOR	27
3.19	PS/2 MOUSE CONNECTOR	27
3.20	PARALLEL PORT CONNECTOR	27
3.21	SERIAL PORT COM1/COM2	27
3.22	VGA CONNECTOR	27
CHAPTER 4	AWARD BIOS SETUP GUIDE	29
4.1	AWARD BIOS SETUP	29
4.2	STANDARD CMOS SETUP	31
4.3	BIOS FEATURES SETUP	32
4.4	CHIPSET FEATURES SETUP	34
4.5	POWER MANAGEMENT SETUP MENU	37
4.6	PCI CONFIGURATION	39
4.7	INTEGRATED PERIPHERALS SETUP MENU	41
4.8	LOAD SETUP DEFAULTS MENU	43
4.9	SUPERVISOR PASSWORD	43
4.10	USER PASSWORD	43
4.11	IDE HDD AUTO DETECTION	44
4.12	SCSI HARD DISK INSTALLATION	44
4.13	SAVE & EXIT SETUP MENU	44
4.14	EXIT WITHOUT SAVING MENU	44
CHAPTER 5	SOFTWARE INSTALLATION	45
5.1	PCI IDE DRIVER INSTALLATION	45
5.2	PCI VGA DRIVER INSTALLATION	45
CHAPTER 6	AWARD ZERO-VOLT DATA-SUSPEND UTILITY	46
6.1	INTRODUCTION	46
6.2	PREPARATION	46
6.3	RUNNING THE PROGRAM	47
	6.3.1 INSTALLATION	47
	6.3.2 SAVING SESSION DATA	49
6.4	PROGRAM FUNCTIONS	50
	6.4.1 USAGE	50
	6.4.2 REFORMATTING THE STORAGE PARTITION	51
	6.4.3 DELETING THE STORAGE FILE OR PARTITION	51
CHAPTER 7	FLASH AND DMI UTILITY	52
7.1	AWARD FLASH UTILITY	52
7.2	DESKTOP MANAGEMENT INTERFACE (DMI) OVERVIEW	54
APPENDIX A	QUICK GUIDE	58

CHAPTER 1

INTRODUCTION

Preface

The motherboard is a LPX form factor high performance all in one mainboard. It is developed around the pentium microprocessor with 64 bit access to data transfer and MMX technology. It includes Intel 82430TX system chipset, S3 86C375 Virge/DX Integrated Graphics Accelerator, Winbond W83977F super I/O chip, Optional ESS 1869 Sound System.

Features

Processor

- ?? Intel Pentium/MMX, Cyrix 6x86/6x86L/6x86MX and AMD K5/K6 CPU.
- ?? The mainboard can run with following speeds:
90, 100, 110, 120, 133, 150, 166, 200, 233 and 266 MHz

Chipset

- ?? Intel 82439TX System Controller
- ?? Intel 82371AB PCI ISA IDE Xcelerator
- ?? S3 86C375 Virge/DX Integrated Graphics Accelerator
- ?? Winbond W83977F Super I/O Controller
- ?? ESS 1869 Audio-Drive Sound Controller (Optional)

Cache Size

- ?? Built in 512KB Synchronised Pipelined Burst Mode SRAM to achieve the high Pentium system performance.

Main Memory

- ?? Support Mixed Memory Technologies: Extend Data Output (EDO), Standard Page Mode (SPM) and Fast Page Mode (FPM) can work together.
- ?? Memory configurations from 8MB to 256MB are possible using combination of 1M*32 to 8*32 SIMM module (32 bit no-parity 72-pin SIMM module).

Graphics Controller

- ?? Built-in an enhanced 64-bit BITBLT graphics engine with VGA feature connector on board.
- ?? PCI 2.1 compliance, and PCI multimedia design Rev 1.0 support.
- ?? On board 2MB Video RAM, can be expanded to 4MB (GOI-66I Text Board).

Multi I/O

- ?? On board Multi-I/O supports two serial, one parallel ports and floppy drive controller.
- ?? Serial ports are 16550 Fast UART compatible.
- ?? Parallel port has EPP and ECP capabilities.
- ?? PS/2 keyboard and PS/2 mouse connector is provided.
- ?? IrDA or Fast IR is provided.

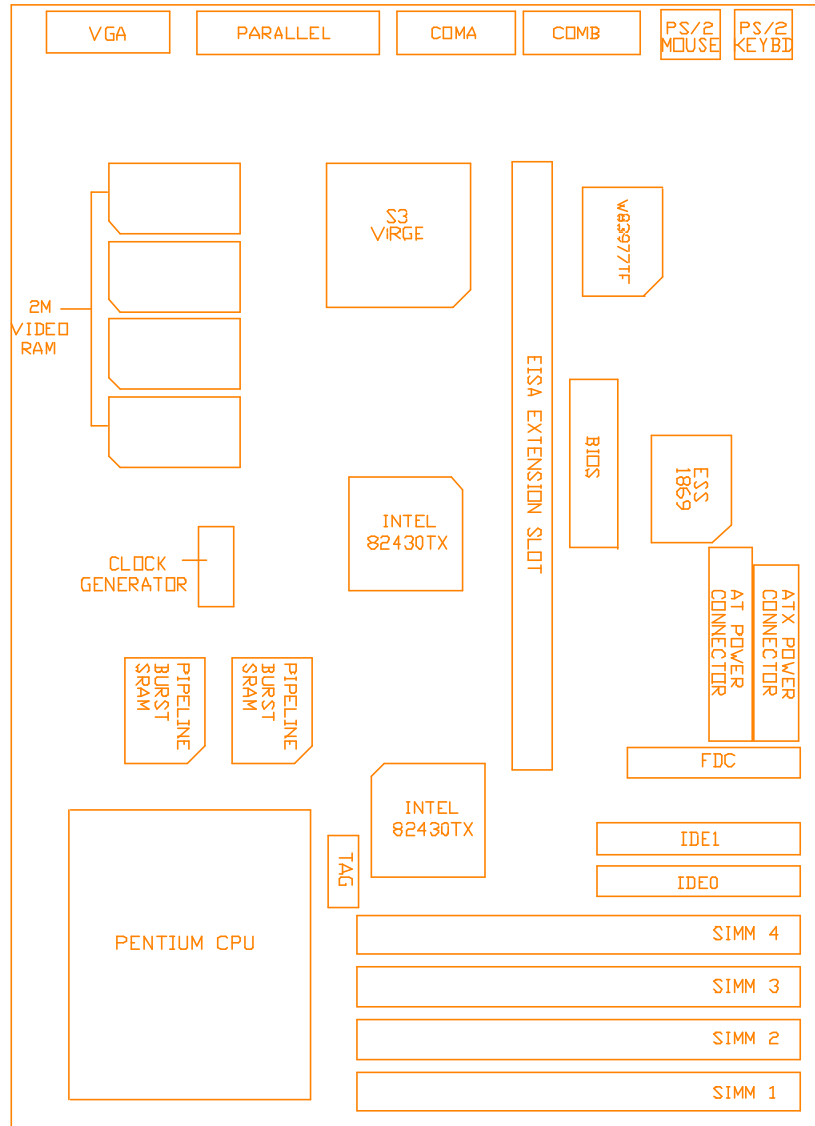


Fig. 1 Key Components of the Mainboard

PCI IDE

- ?? On board supports PCI Master IDE Controller, two connectors support up to four IDE devices such as HDD, CD ROM drive and Tape Back-up drives LS-120, etc.
- ?? PCI Master IDE controller supports PIO Mode 3 and 4 devices, I/O data transfer rate can be up to 17Mb/s.
- ?? Ultra DMA Mode supported. Transfer rate can be up to 33MB/s.

Sound Controller

- ?? Compatible with all major PC sound standards, including Sound Blaster? Pro, MPU-401 and Windows Sound System? .
- ?? Plug-and-Play support for Audio, Joystick, FM Controller, MPU-401.
- ?? Wave Audio support sample rates from 4KHz to 44KHz.
- ?? Full-duplex monophonic mode, half-duplex stereo mode.
- ?? 3D stereo sound effect supported.
- ?? Optional wavetable connector is provided.

System BIOS

- ?? Award BIOS (128/256KB Flash EPROM).

Slots

- ?? One extension slot for dedicated extension card to provide ISA, and PCI interface.

LPX Form Factor

- ?? 200mm (W) x 248mm (L) 4 Layer

Environment

Working Specifications

Actual Field MTBF (hours)	104,515 hours
Preventive Maintenance	Not Required

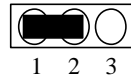
Environmental Limits

	Operating	Non-operating
Temperature	0 to 50 degree Celsius	-10 to 65 Degree Celsius
Relative Humidity (without condensation)	8 to 85%	5 to 95%
Altitude	10,000ft	40,000ft
Vibration	1,000Hz	
Electricity	4.75 ? 5.25V	

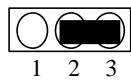
CHAPTER 2

JUMPER SETTINGS

2.1 JUMPERS PRESENTATION



Pins 1 and 2 are shorted with a jumper cap.



Pins 2 and 3 are shorted with a jumper cap.



The jumper is shorted when the jumper cap is placed over the two pins of the jumper.



The jumper is open when the jumper cap is removed from jumper.

2.2 CPU TYPE

2.2.1 INTEL PENTIUM CPU

The pentium processors have different operation voltage. In order to using the CPU Voltage correctly, the following is the marking for identify the CPU type.



**Fig. 2a CPU Description
(Bottom Side)**

Description :

X = Voltage Specification (S or V)

S = Standard Voltage (3.4V)

V = VRE 3.4 - 3.6V (3.5V)

Z = Dual Processing Support (S or U)

S = Support DP/MP/UP

U = Not tested to support DP

Y = Timing Specification (S or M)

S = Standard EDS timings

M = Min Valid Delay Spec.

2.2.2 INTEL PENTIUM w/ MMX? TECH (P55C) CPU

The Intel Pentium w/ MMX? Tech (P55C) CPU is offered with dual voltage supply - 2.8V for core and 3.3V (I/O) interface. The following is the marking for identify the CPU type. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)

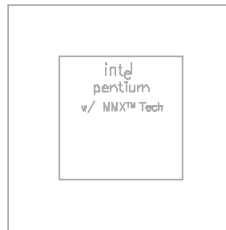


Fig. 2b CPU Description (Top Side)

2.2.3 AMD-K6 CPU

The AMD-K6 CPU family require dual voltage power for operation. The AMD-K6/166, 200 require a voltage of 2.9V core and 3.3V I/O. The AMD-K6/233 require a voltage of 3.2V core and 3.3V I/O. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)

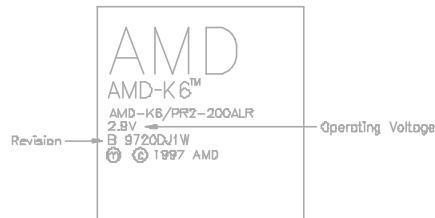
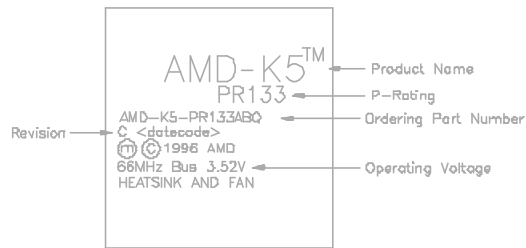


Fig. 2c CPU Description (Top Side)

Operating Voltage	I/O Voltage	Core Voltage
2.1V	3.3V	2.1V
2.9V	3.3V	2.9V
3.2V	3.3V	3.2V

2.2.4 AMD-K5 CPU

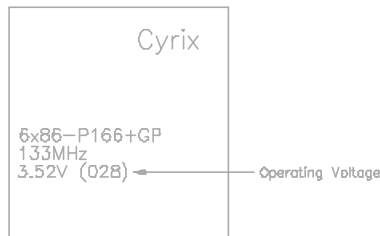
The AMD-K5 family CPU operates on different operation voltage depending on the CPU type. The operating voltage can be known through the marking on the surface of the CPU. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)



**Fig. 2d CPU Description
(Top Side)**

2.2.5 CYRIX 6x86 CPU

The Cyrix 6x86 has different nominal voltage depends on different lot. Please refer to the CPU marking.



**Fig. 2e CPU Description
(Top Side)**

Marketing	Recommended Nominal Voltage
3.3V or 3.52V	3.52V
028	3.52V
016	3.3V
Blank	3.52V

2.2.6 CYRIX 6x86L CPU

The Cyrix 6x86L has different I/O and core voltage. Please refer to the CPU marking.



**Fig. 2f CPU Description
(Top Side)**

2.2.7 CYRIX 6x86MX CPU

The Cyrix 6x86MX has different I/O and Core Voltage. Please refer to the CPU marking.



**Fig. 2g CPU Description
(Top Side)**

	I/O Voltage	Core Voltage
Cyrix 6x86MX	3.3V	2.9V
Cyrix 6x86L	3.3V	2.8V

2.3 GRAPHICAL DESCRIPTION OF JUMPER SETTINGS

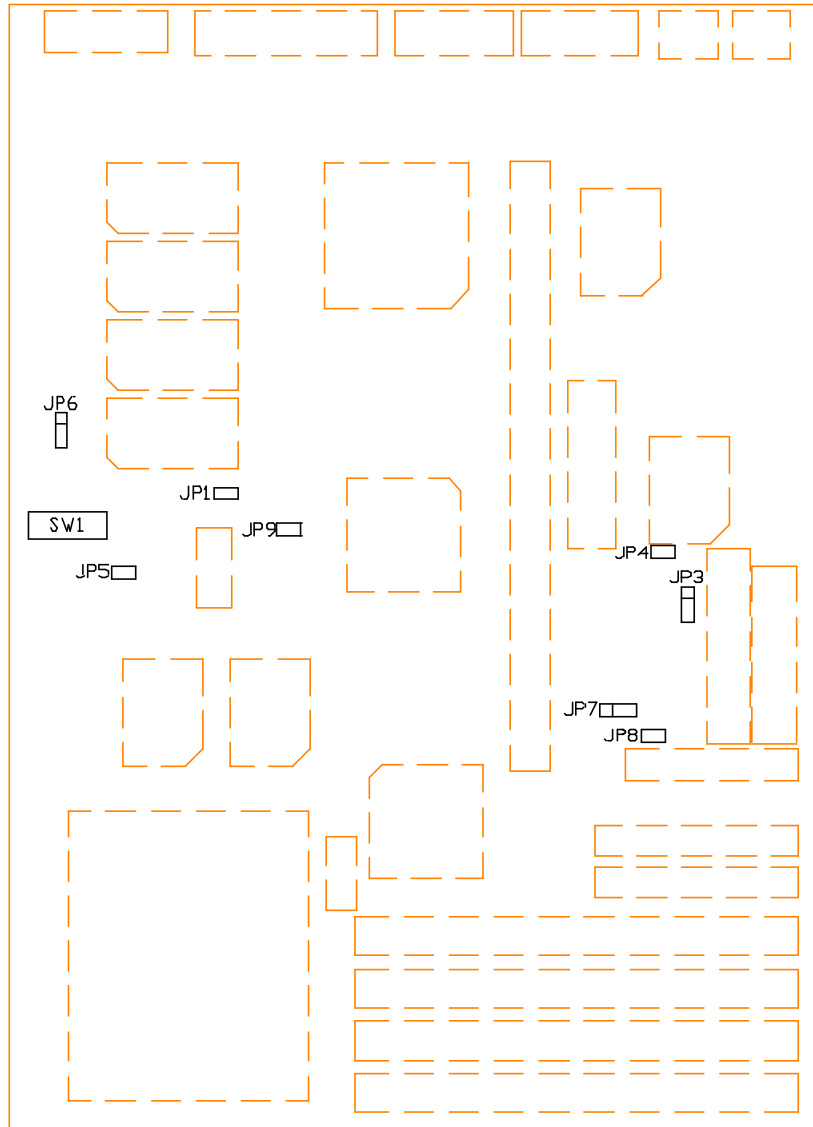


Fig. 3 Jumper Location of the mainboard

2.4 CPU VOLTAGE

2.4.1 CPU VOLTAGE AUTO SELECTION

The CPU voltage auto detection is developed on this motherboard. Set the SW1-1 and 2, JP5 at OFF position to enable the auto detection.

Note: SW1-1,2 and JP5 should be set at OFF and BIOS “CPU core voltage” as Auto.

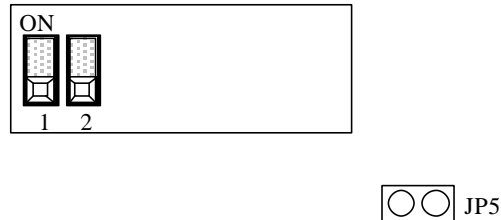


Fig. 4

2.4.2 CPU VOLTAGE BIOS SELECTION

The CPU Voltage can be selected through BIOS setup “CPU Core Voltage Selection”. It can be set as following table:

2.8	Intel MMX (P55C); 6x86L
2.9	AMD K6/166,200; 6x86MX
3.2	AMD K6/233, 266
3.3	Intel Pentium
3.52	6x86; AMD K5

Table 1

Note: SW1-1,2 and JP5 should be set at OFF(see Fig.4) when you select the voltage through BIOS.

2.4.3 CPU VOLTAGE MANUAL SELECTION

The CPU Core Voltage can be selected by SW1-1, 2 and JP5 when the BIOS "CPU Core Voltage" be set as Disabled.

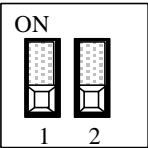

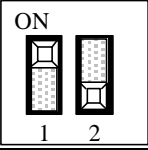

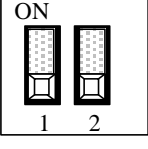

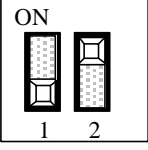

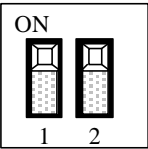

Voltage	SW1	JP5	CPU Type
2.8V			Intel Pentium w/MMX (P55C); 6x86L
2.9V			AMD K6/166,200; 6x86MX
3.2V			AMD K6/233, 266
3.3V			Intel Pentium (P54C)
3.5V			6x86; AMD K5

Table 2

2.5 CPU EXTERNAL (BUS) FREQUENCY SELECTION (SW1-6,7,8)

These switches tell the clock generator what frequency to send to the CPU. The Bus clock times the Bus Ration equals the CPU' s Internal frequency.

2.6 CPU TO BUS FREQUENCY RATION (SW1-3,4,5)

These jumpers set the frequency ration between the Internal frequency of the CPU and the External frequency (called the Bus clock) within the CPU. These must be set together with the above jumpers CPU External (Bus) Frequency Selection.

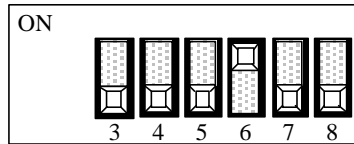


Fig 5

CPU Type	Freq.	Ration	Bus Freq.	Freq. Ration Setting			Bus Freq. Setting		
				SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
Intel Pentium	90MHz	1.5x	60MHz	OFF	OFF	OFF	ON	OFF	OFF
Intel Pentium	100MHz	1.5x	66MHz	OFF	OFF	OFF	OFF	ON	OFF
Intel Pentium	120MHz	2.0x	60MHz	ON	OFF	OFF	ON	OFF	OFF
Intel Pentium	133MHz	2.0x	66MHz	ON	OFF	OFF	OFF	ON	OFF
Intel Pentium	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	OFF
Intel Pentium	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	OFF
Intel Pentium w/MMX	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	OFF
Intel Pentium w/MMX	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	OFF
Intel Pentium w/MMX	233MHz	3.5x	66MHz	OFF	OFF	OFF	OFF	ON	OFF
Cyrix 6x86L-PR150	120MHz	2.0x	60MHz	ON	OFF	OFF	ON	OFF	OFF
Cyrix 6x86L-PR166	133MHz	2.0x	66MHz	ON	OFF	OFF	OFF	ON	OFF
Cyrix 6x86L-PR200	150MHz	2.0x	75MHz	ON	OFF	OFF	OFF	OFF	ON
Cyrix 6x86MX-PR166	150MHz	2.5x	60MHz	ON	OFF	OFF	ON	OFF	OFF
Cyrix 6x86MX-PR200	150MHz	2.0x	75MHz	ON	OFF	OFF	OFF	OFF	ON
AMD-K5-PR120	120MHz	2.0x	60MHz	ON	OFF	OFF	ON	OFF	OFF
AMD-K5-PR133	133MHz	2.0x	66MHz	ON	OFF	OFF	OFF	ON	OFF
AMD-K5-PR166	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	OFF
AMD-K6/166	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	OFF
AMD-K6/200	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	OFF
AMD-K6/233	233MHz	3.5x	66MHz	OFF	OFF	OFF	OFF	ON	OFF
AMD-K6/266	266MHz	4.0x	66MHz	ON	ON	ON	OFF	ON	OFF

Table 3

2.7 JP7 - CLEAR CMOS DATA

JP7 is used to clear the content of the CMOS Data in the RTC

1. Normal Mode

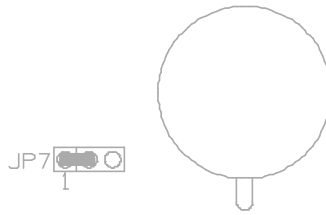


Fig. 6a

2. Reset Content of RTC

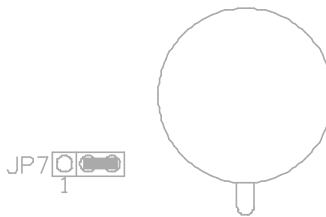


Fig. 6b

2.8 JP3 - VOLTAGE SELECTION FOR SYSTEM ROM

1. 5V Flash EPROM on System ROM



Fig. 7a

2. 12V Flash EPROM on System ROM



Fig. 7b

2.9 JP4 - ONBOARD AUDIO SELECT (OPTIONAL)

JP4 is used to set the onboard Audio enabled or disabled.



JP4	Description
	Enable
	Disable

Table 4 :Onboard Audio Select

2.10 JP1 - ONBOARD VGA SELECT

JP1 is used to set the onboard VGA enabled or disabled.



JP1	Description
	Enable
	Disable

Table 5 : Onboard VGA Select

2.11 JP8, 9 - POWER SUPPLY SELECTION





JP8	JP9	Type of P/S
		AT Power
		ATX Power

Table 6: Power Supply Selection

Note: You should set the 'Power Supply Type' (Section 4.4) correctly to match this jumper setting.

2.12 RESERVED JUMPERS

JP6 is reserved for CPU overheat alarm testing. Default setting is 2-3 closed.

2.13 MEMORY CONFIGURATION

The mainboard lets user upgrade system memory via SIMM sockets on the mainboard. On board memory is located in two banks: Bank 0 and Bank 1. Four SIMM sockets (SIMM1, SIMM2, SIMM3, SIMM4) are provided for SPM, FPM and EDO RAM SIMM.

Note: The type of SIMM1/SIMM2 must be same.
The type of SIMM3/SIMM4 must be same.

The total memory size is 8 - 256MB and of table 6 provide the typical memory configurations supported by the mainboard.

Bank 0 (SIMM1/2)	Bank 1 (SIMM3/4)
Installed	None
Installed	Installed
None	Installed

Table 7

The memory size of SIMM can be 4MB, 8MB, 16MB, 32MB or 64MB.

2.14 VIDEO MEMORY CONFIGURATION

2MB video memory is built in with EDO DRAM on U24, U25, U26, U27. User can upgrade the video memory to 4MB with special extension board. J19, J20 are used for video memory extension board (GOI-661) to upgrade the video memory from 2MB to 4MB.

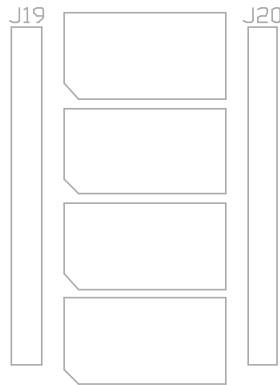


Fig. 8

GOI-661 Installation:

These are two male 2x25 pin header on the GOI-661. Insert the J1 to J20, J2 to J19.

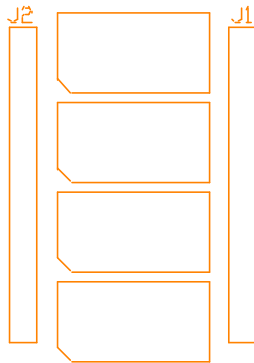


Fig. 9 GOI-661 Diagram

CHAPTER 3

CONNECTOR CONFIGURATION

Once the mainboard has been fastened into system case, the next step is to connect the internal cables and external cables. The mainboard connectors have varying numbers of pins and are the points of contact between the mainboard and other parts of the computer.

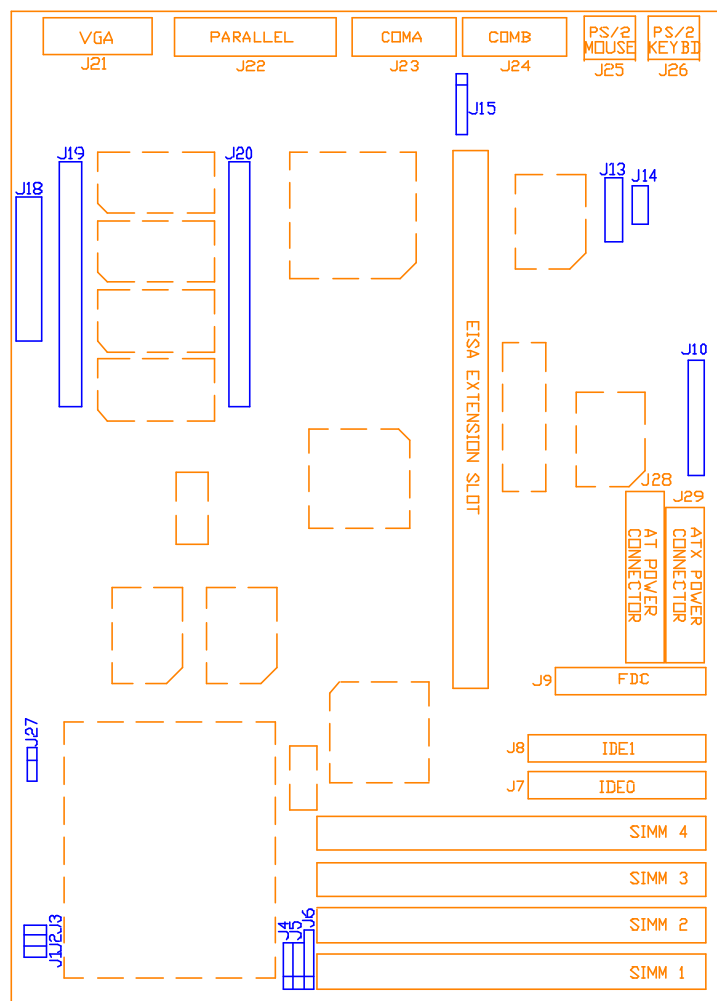


Fig. 10 Connector Location

3.1 J1 - RESET SWITCH

Attach the Reset Switch cable to this connector. The Reset Switch restarts the system.

3.2 J2 - SUSPEND SWITCH/POWER SWITCH

Suspend Switch (Using AT Power Supply)

J2 is for suspend break switch setting. When J2 is trigger from OPEN to CLOSE and back to OPEN. The system would suspend immediately.

Power Switch (Using ATX Power Supply)

The power is turned on by short the power button once. It needs to hold the power button about 4 seconds to turn it off when it has not start to display.

3.3 J3 - SUSPEND LED

J3 can be connected to a suspend LED on front of the system case. If the system is in suspend mode, the indicator lights during the mode.

3.4 J4 - SPEAKER CONNECTOR

Following is the system speaker to connector J4.

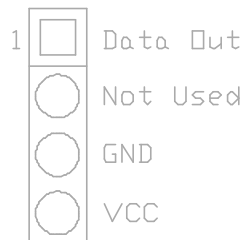


Fig. 11 Speaker Connector

3.5 J5 - HDD LED CONNECTOR

J5 is usually connected to a HDD LED on front of the system case. If the HDD is in operation, the indicator lights during operation.

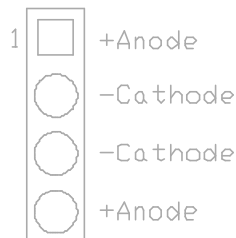


Fig. 12 HDD LED Connector

3.6 J6 - KEYLOCK CONNECTOR

J6 is a keylock connector that enables and disables the keyboard.

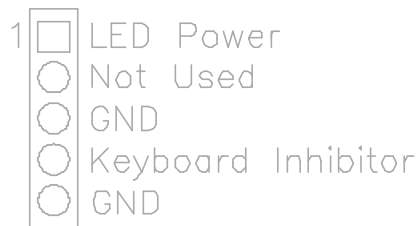


Fig. 13 Keylock Connector

3.7 J7, J8 - PRIMARY/SECONDARY IDE CONNECTOR

These connectors support the provided IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to your hard disk.

3.8 J9 - FLOPPY DRIVE CONNECTOR

This connector supports the floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drive.

3.9 J10 - WAVETABLE EXPANSION CONNECTOR

J10 is a 2x13 pin male connector, which is used to connect the hardware wavetable expansion card.

3.10 J11 - CD-ROM AUDIO CONNECTOR (SONY)

J11 is a four pin connector, which is used to connect with the Sony CD-ROM audio output. This pin definition is as following:



Fig. 14 CD-ROM Audio Connector

3.11 J12 - CD-ROM AUDIO CONNECTOR (MISUMI/PANASONIC)

J12 is four pin connector, which is used to connect with the Panasonic or Misumi CD-ROM audio output. The pin definition is as following:



Fig. 15 CD-ROM Audio Connector

3.12 J13,14 - AUDIO EXTENSION CARD GOI-660 CONNECTOR (OPTIONAL)

Use the 9-way cable to connect the J14 with J1 of GOI-660.
Use the 15-way cable to connect the J13 with J2 of GOI-660.

3.13 J15 - IrDA/FAST IR CONNECTOR

J15 is a five pin connector, which use the UART2 as interface for IrDA. You must also configure the setting through “UART2 Mode” is Integrated Peripheral Setup to select whether UART2 is used for COM2 or HPSIR/SKSIR. The pin definition is as following:



Fig. 16 IrDA/Fast IR Connector

3.14 J27 - CPU FAN CONNECTOR

J27 is a three pin connector, which is used to connect with the CPU Fan power cable.

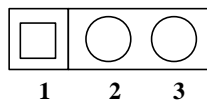


Fig. 17 CPU Fan Connector

3.15 J28 - AT POWER CONNECTOR

J28 is a 12 pin male connector. Plug the power connector of AT power supply onto the connector.

Pin	Description	Pin	Description
1	Power Good (Orange)	7	Ground (Black)
2	+5 VDC (Red)	8	Ground (Black)
3	+12 VDC (Yellow)	9	-5 VDC (White)
4	-12 VDC (Blue)	10	+5 VDC (Red)
5	Ground (Black)	11	+5 VDC (Red)
6	Ground (Black)	12	+5 VDC (Red)

Table 8 : AT Power Connector

3.16 J29 - ATX POWER CONNECTOR

J29 is a 2x10 pin male header connector. Plug the power connector of the ATX power supply onto the connector.

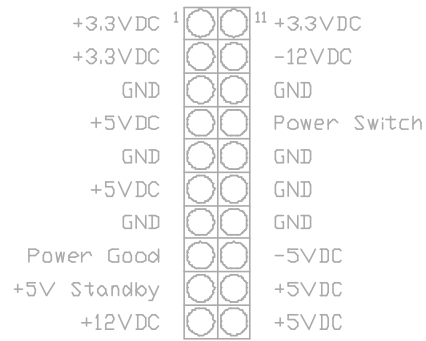


Fig. 18 ATX Power Connector

3.17 J18 - FEATURE CONNECTOR

This connector is the feature connector for VGA controller.



Fig. 19 Feature Connector

3.18 PS/2 KEYBOARD CONNECTOR

This connector is a six-pin female mini DIN connector using a PS/2 plug. If a standard AT size keyboard plugs, you may use the DIN to mini DIN adaptor.

3.19 PS/2 MOUSE CONNECTOR

This connector is a six-pin female mini DIN connector using a PS/2 plug. Plug the jack on the PS/2 keyboard cable into this connector.

3.20 PARALLEL PORT CONNECTOR

This is a D-Type 25 pin female connector.

3.21 SERIAL PORT COM1/COM2

This is a D-Type 9 pin male connector for pointing devices or other serial devices.

3.22 VGA CONNECTOR

This is a D-Type 15 pin male connector for monitor.

CHAPTER 4

AWARD BIOS SETUP GUIDE

This following manual is specially provided for the BIOS supported system. After the configuration of the mainboard, and have assembled the components, user 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. Use the BIOS setup program to tell the operating system what type of devices (such as disk drives) are connected to the system board.

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

4.1 AWARD BIOS SETUP

The setup program provided with the mainboard is the Award BIOS from Award Software, Inc. Enter the AWARD Setup program's Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic check, the following message appear:

"Press DEL to enter SETUP"

Chapter 4

2. Press the key to enter the AWARD BIOS setup program and the following screen appears:

ROM PCI/ISA BIOS (2A59IG3B)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
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, Data, Hard Disk Type...	

Fig. 20

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” to save change and reboot the system. Choosing “EXIT WITHOUT SAVING” to ignore all changes and exists the program.

4.2 STANDARD CMOS SETUP

ROM PCI/ISA BIOS (2A59IG3B)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed, May 21 1997	
Time (hh:mm:ss) : 20 : 27 : 55	
HARD DISKS	
TYPE	SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master :	Auto 0 0 0 0 0 0 AUTO
Primary Slave :	None 0 0 0 0 0 0 -----
Secondary Master :	None 0 0 0 0 0 0 -----
Secondary Slave :	None 0 0 0 0 0 0 -----
Drive A : 1.44M , 3.5in.	Base Memory: 0K
Drive B : None	Extended Memory: 0K
Video : EGA/VGA	Other Memory: 512K
Halt On : All Errors	Total Memory: 512K
Esc : Quit	? ? ? ? : Select Item
F1 : Help	(Shift)F2 : Change Color
	PU/PD/+/- : Modify

Fig. 21

Date(mm/dd/yy)	Type the current date.
Time(hh:mm:ss)	Type the current time.
Hard Disks	Choose from the standard hard disk types 1 to 45. Type 47 is user definable. Type Auto is for auto detect the hard disk type.
Drive A&B	Choose 360K, 5.25in.; 1.2M, 5.25in.; 720K, 3.5in.; 1.44M, 3.5in.; 2.88MB 3.5in. or None
Video	Choose EGA/VGA, CGA 40, CGA 80, or MONO,
Halt On	Choose All Errors; No Errors; All, But Keyboard; All, But Diskette or All, But Disk/Key

4.3 BIOS FEATURES SETUP

ROM PCI/ISA BIOS (2A59IG3B)
 BIOS FEATURES SETUP
 AWARD SOFTWARE, INC.

Virus Warning	: Enabled	Video BIOS Shadow	: Disabled
CPU Internal Cache	: Disabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Disabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Numlock Status	: Off	DC000-DFFFF Shadow	: Disabled
Boot Up System Speed	: Low		
Gate A20 Option	: Normal		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		
OS Select For DRAM > 64MB	: Non-OS2		
		ESC: Quit	? ? ? ? : Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

Fig. 22 BIOS Setup Defaults

A short description of the screen items follows:

Virus Warning: When enable, you received a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program.

CPU Internal Cache: Choose Enabled or Disabled. This option lets user choose whether to use CPU internal cache memory. The default is Enabled.

External Cache: Choose Enabled or Disabled. This option lets user choose whether to use secondary cache memory. The default is Enabled.

Quick Power On Self Test: Choose Enabled or Disabled. This option let the POST sequence runs longer for through tests.

Boot Sequence: With the default setting the BIOS first attempts to boot from drive A: and then, if unsuccessful, from hard disk C:. User can select other boot up sequence. Available sequences are “A,C”, “C,A”, “C,CDROM,A”, “CDROM,C,A”, “C only”, “LS120,C”.

Swap Floppy Drive: Choose Enabled or Disabled. This option lets end users to change the Drive A: or B: to others.

Boot Up NumLock Status: Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts numeric keypad in arrow key mode at boot-up.

Boot Up System Speed: Choose High or Low. Set the CPU timing at Boot Up, the default is high.

Gate A20 Option: Choose Fast (chipset handled) or Normal (keyboard handled). The gate A20 is a device used to address memory above 1Mbytes. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20.

Typematic Rate Setting: Choose Enabled or Disabled. Enabled will determines the typematic rate defined by following two options.

Typematic Rate (Chars/Sec): The number selected 6,8,10... indicates how fast the number of characters can response in one second.

Typematic Delay (Msec): The number selected indicates the time period between two identical keys appear.

Security Option: Choose Setup or System. If system is selected, the password should be set.

PCI/VGA Palette Snoop: Select Disabled or Enabled. If Enabled the MPEG Card can synchronised with PCI/VGA.

OS Select For DRAM > 64MB: Select Disabled or Enabled. If the system memory is larger than 64MB and running OS/2, please enable this item. However, if it use other operating system, please disable this feature. Furthermore, if the system memory is less than 64MB, the BIOS will ignore this function.

Video BIOS Shadow: ROM Shadow copies Video BIOS code from slower ROM to faster RAM. Video BIOS can then execute from RAM.

C8000-CFFFF Shadow: If enabled and BIOS is present in this segment, then the BIOS is shadowed.

D0000-DFFFF Shadow: If enabled and BIOS is present in this segment, then the BIOS is shadowed.

4.4 CHIPSET FEATURES SETUP

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

Note: Change these Settings only if user is familiar with the Chipset.

ROM PCI/ISA BIOS (2A59IG3B)
 CHIPSET FEATURES SETUP
 AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	DRAM Refresh Rate	: Disabled
DRAM Timing	: 60ns	Power-Supply Type	: AT
DRAM Read Burst (EDO/FP)	: x222/x333	CPU Core Voltage	: Disabled
DRAM Write Burst Timing	: x222		
Fast EDO Lead Off	: Disabled		
DRAM Enhanced Paging	: Enabled		
Fast MA to RAS# Delay	: 2 Clks		
SDRAM (CAS Lat/RAS-to-CAS)	: 2/2		
SDRAM Speculative Read	: Disabled		
Memory Hole At 15M-16M	: Disabled		
PCI 2.1 Compliance	: Disabled		
		ESC: Quit	? ? ? ? : Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

Fig. 23

A short description of the screen items follows:

Auto Configuration: When Auto Configuration is Enabled, BIOS will sets the CPU Clock according to CPU speed. Otherwise, set it manually.

DRAM Timing: Choose 60ns or 70ns according to the DRAM SIMM Module on the motherboard.

DRAM Read Burst (EDO/FP): This sets the timing for burst mode reads from DRAM:

x444/x444	Read EDO and FP DRAM Timings are x-4-4-4.
x333/x444	Read EDO DRAM Timings are x-3-3-3, and FP DRAM' s are x-4-4-4.
x222/x333	Read EDO DRAM Timings are x-2-2-2, and FP DRAM' s are x-3-3-3.

Chapter 4

DRAM Write Burst Timing: This sets the timings for burst write to DRAM:

x444	Write DRAM timings are x-4-4-4
x333	Write DRAM timings are x-3-3-3
x222	Write DRAM timings are x-2-2-2

Fast EDO Lead Off: Select Enabled only for EDO DRAMs in either a synchronous cache or a cacheless system. It causes a 1-HCCK pull-in all read leadoff latencies for EDO DRAMs. Select Disabled if any of the DRAM rows are populated with FPM DRAMs.

SDRAM (CAS Lat/RAS-to-CAS): It is used to set the CAS# latency and the RAS to CAS delay for all SDRAM cycles.

SDRAM (CAS Lat/RAS-to-CAS)	CAS# latency	RAS to CAS delay
3/3	3 Clock	3 Clock
2/2	2 Clock	2 Clock
3/2	3 Clock	2 Clock

SDRAM Speculative Read: If Enabled, the CPU will issue predict commands to access the DRAM. If a miss occurs, the CPU will cancel this command. Some operating systems under certain situations have a problem utilizing this feature so it is normally Disabled.

Memory Hole At 15M-16M: Choose Enabled or Disabled. "Enabled" allows some linear VGA cards to run larger frame port, or it can be reserved for some operating system.

PCI 2.1 Compliance: Select Enabled to support compliance with PCI specification version 2.1. The chipset has an embedded 32-bit posted write-buffer to support delay transactions cycles.

DRAM Refresh Rate: Select the period required to refresh the DRAMs, according to DRAM specifications.

Power-Supply Type: Choose "AT" when you use AT power supply, "ATX" when you use ATX power supply.

CPU Core Voltage: This feature is implemented to simplify the jumper setting for end user. Set it at Auto, the motherboard can auto detect the core voltage of any CPU and switching power will generate the correct voltage to support the CPU. Use also can select the CPU core voltage through the BIOS. The option is 2.8, 2.9, 3.2, 3.3, 3.5. If this option is set at "Disabled", user should select the CPU core voltage by switch 1, 2 and JP5 (Refer to Section 2.4.3).

4.5 POWER MANAGEMENT SETUP MENU

The Power Management Setup option is used to change the values of the chipset registers for system power management functions.

ROM PCI/ISA BIOS (2A59IG3B)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Disabled	** Reload Global Timer Events **	
PM Control by APM	: Yes	IRQ [3-8, 9-15], NMI	: Enabled
Video Off Method	: V/H SYNC+Blank	Primary IDE 0	: Enabled
Video off After	: Standby	Primary IDE 1	: Enabled
MODEM Use IRQ	: 3	Secondary IDE 0	: Enabled
Suspend Mode	: Disabled	Secondary IDE 1	: Enabled
HDD Power Down	: Disabled	Floppy Disk	: Enabled
Suspend Mode Option	: PowerOn Suspend	Serial Port	: Enabled
Throttle Duty Cycle	: 62.5%	Parallel Port	: Enabled
ZZ Active in Suspend	: Disabled		
VGA Active Monitor	: Enabled		
Soft-Off by PWR-BTTN	: Delay 4 Sec.		
Resume by Ring	: Enabled		
IRQ 8 Break Suspend	: Disabled		
		ESC: Quit	? ? ? ? : Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

Fig. 24

A short description of the screen items follows:

Power Management: Available selection are “Disabled”, “User Define”, “Max Saving” and “Min Saving”:

“Disabled” will disable all the power saving functions.

“User Define” makes the time period waiting for Suspend Mode to be programmed.

“Max Saving” will set the time period waiting for Suspend Mode to be 20 seconds.

“Min Saving” will set the time period waiting for Suspend Mode to be 40 minutes.

PM Control by APM: Available options are “Yes” and “No”. To choose “Yes” to let the Power Management Function to be control by the MS APM software.

Chapter 4

Video Off Method: Choose V/H SYNC+Blank, DPMS or Blank Screen. This is monitor Power Saving Method. V/H SYNC+Blank means turn off Vertical, Horizontal scanning and blank the screen. Blank Screen will blank the display screen. DPMS (Display Power Management System) can allow the System BIOS control the Display Card to turn off the Display.

Video Off After: As the system moves from lesser to greater power-saving modes. Select the mode in which you want the monitor to blank. The available options are “Standby”, “Suspend”, “Doze” and “NA”.

MODEM Use IRQ: Available options are 3, 4, 5, 7, 9, 10, 11 and NA. It is used to choose the interrupt line that the Modem is used. “NA” means not available.

Suspend Mode: To set the time period waiting for Suspend Mode when the Power Management function is set to “User Define”.

HDD Power Down: To select the time period will turn the HDD off. Accessing the HDD again will take a few seconds for HDD to spin up for operation.

Suspend Mode Option: Available options are “PowerOn Suspend” and “Suspend to Disk”. For “PowerOn Suspend” option, the system will enter the suspend mode with the power supply still switching on. For “Suspend to Disk” option, the system will fully power off the system when it entering the suspend mode. With installing the Award Zero-Volt Data-Suspend Utility (**ZVHDD**), the system will resume back when the system power on again.

Throttle Duty Cycle: When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs. The options are 12.5%, 25%, 37.5%, 50%, 62.5% and 75%.

ZZ Active in Suspend: When Enabled, the ZZ signal is active during Suspend Mode.

VGA Active Monitor: When Enabled, any video activity restarts the global timer for Standby Mode.

Soft-Off by PWR-BTTN: Available options are “Instant-Off” and “Delay 4 sec.”. For “Instant-Off” option, the power of the system will be switched off at once when the power button is pressed for turn it off. For “Delay 4 sec.” option, the power of the system will be switched off with 4 second later after the power button is pressed. **For “Suspend to Disk” feature, this option should be set to “Delay 4 sec.” Option.**

Resume by Ring: When Enabled the external modem ring in can wake up the system. (ATX power supply required)

IRQ 8 Break Suspend: You can select Enabled or Disabled monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend Mode.

Reload Global Timer Event: When Enabled, an event occurring on each device listed below restarts the global time for Standby Mode:

IRQ[3-7,9-15], NMI
 Primary IDE 0
 Primary IDE 1
 Secondary IDE 0
 Secondary IDE 1
 Floppy Disk
 Serial Port
 Parallel Port

4.6 PCI CONFIGURATION

The PCI Configuration Setup option is used to configure the PCI add-on Cards on PCI Slots. Without proper setup the PCI Add-on Cards might not function properly.

ROM PCI/ISA BIOS (2A59IG3B)
 PCI CONFIGURATION
 AWARD SOFTWARE, INC.

PNP OS Installed	: No	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled By	: Manual	Primary IDE INT#	: A
Reset Configuration Data	: Disabled	Secondary IDE INT#	: A
IRQ-3 assigned to	: PCI/ISA PnP	Used MEM base addr	: C800
IRQ-4 assigned to	: PCI/ISA PnP	Used MEM Length	: 8K
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: PCI/ISA PnP		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP		
DMA-3 assigned to	: PCI/ISA PnP		
DMA-5 assigned to	: PCI/ISA PnP		
DMA-6 assigned to	: PCI/ISA PnP		
DMA-7 assigned to	: PCI/ISA PnP		
		ESC: Quit	? ? ? ? : Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F6: Load BIOS Defaults	
		F7: Load Setup Defaults	

Fig. 25

Note: Change these Settings only if user is familiar with the Chipset and all the PCI Add-on Cards functions.

Chapter 4

A short description of the screen items follows:

PNP OS Installed: Set this option to Yes if the operating system installed in the computer is Plug and Play-aware (e.g. Windows 95).

Resources Controlled By: The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them..

Reset Configuration Data: If enable this option, the BIOS will clear and reset the ESCD after hardware reset.

IRQ#/DMA# assigned to: These items will be shown only when “Resources Controlled By” option is set the “Manual”. The available options are “Legacy ISA” and “PCI/ISA PnP”. If the option is set to “Legacy ISA”, the BIOS will never assign the specified IRQ/DMA resource to PCI or ISA PnP Devices. If “PCI/ISA PnP” is chosen, the BIOS will make the specified IRQ/DMA have a chance to be assigned to the PCI or ISA PnP devices.

PCI IDE IRQ Map To: Choose PCI-AUTO, PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, ISA. The default setting is PCI-AUTO.

Primary/Secondary IDE INT#: Each PCI peripheral connection is capable of activating up to four interrupts: INT#A, INT#B, INT#C and INT#D. By default, a PCI connection is assigned INT#A. Assign INT#B has no meaning unless the peripheral device requires two interrupt services them just one.

Used MEM Base Addr/USE MEM Length: These items will be shown only when “Resources Controlled By” option is set to “Manual”. They are used to reserve the memory space for the memory installed on the ISA card in the specified memory segment (such as some network card). The available options for “User Mem Base Addr” are “N/A”, “C800”, “CC00”, “D000”, “D400”, “D800”, and “DC00”, which is used to select the base memory address of the ISA card used. With the “Used Memo Base Addr” is selected, the size of the memory installed on ISA card is chosen by “Used Mem Length”: “8K”, “16K”, “32K” or “64K”.

4.7 INTEGRATED PERIPHERALS SETUP MENU

The Integrated Peripherals setup option is need to change the values of the I/O chipset registers for I/O functions.

ROM PCI/ISA BIOS (2A59IG3B)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Disabled	IR Transmission delay	: IRQ3
IDE Primary Master PIO	: Auto	IR IRQ Select	: 0
IDE Primary Slave PIO	: Auto	Onboard Parallel Port	: 3BC/IRQ7
IDE Secondary Master PIO	: Auto	Parallel Port Mode	: ECP+EPP
IDE Secondary Slave PIO	: Auto	ECP Mode Use DMA	: 1
IDE Primary Master UDMA	: Disabled	EPP Mode Select	: EPP1.9
IDE Primary Slave UDMA	: Disabled		
IDE Secondary Master UDMA	: Disabled		
IDE Secondary Slave UDMA	: Disabled		
On-Chip Primary IDE	: Enabled		
On-Chip Secondary IDE	: Enabled		
USB Keyboard Support	: Disabled		
Onboard FDD Controller	: Disabled		
Onboard Serial Port 1	: Disabled		
Onboard Serial Port 2	: Disabled		
Onboard IR Controller	: Enabled		
IR Address Select	: 3F8H	ESC: Quit	? ? ? ? : Select Item
IR Mode	: IrDA	F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

Fig. 26

A short description of the screen items follows:

IDE HDD Block Mode: This allows your hard disk controller to use the fast block mode to transfer data to your hard disk drive.

IDE Primary Master PIO/IDE Primary Slave PIO/IDE Secondary Master PIO/IDE Secondary Slave PIO: Available selection are "Auto", "Mode 0", "Mode 1", "Mode 2", "Mode 3" and "Mode 4". To choose "Auto", the system BIOS will scan the IDE device and decide which mode of the device is . Otherwise the user should key in the mode of the device to the corresponding field.

Some harddisks cannot work properly with its corresponding timing, please set a slower timing.

Chapter 4

IDE Primary Master UDMA/IDE Primary Slave UDMA/IDE Secondary Master UDMA/IDE Secondary Slave UDMA: Available selection are “Auto” or “Disabled”. To choose “Auto”, the system BIOS will scan the IDE device and decide Ultra DMA supported or not.

On-Chip Primary/Secondary PCI IDE: This item is used to set the onboard IDE controller. The settings are Primary, Secondary, Both or Disabled. The default setting is Both.

USB Keyboard Support: Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

Onboard FDD Controller: Choose Enabled or Disabled. “Enabled” allows onboard Floppy Drive Controller to be functioned, otherwise the users should use other sources..

Onboard Serial Port 1: Choose Auto, Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4 and 2E8/IRQ3. While choosing proper I/O Address/IRQ, be sure not to cause Address conflict with other I/O devices. The default setting is 3F8/IRQ4.

Onboard Serial Port 2: Choose Auto, Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4 and 2E8/IRQ3. While choosing proper I/O Address/IRQ, be sure not to cause Address conflict with other I/O device. The default setting is 2F8/IRQ3.

Onboard IR Controller: Choose Enabled to enable the IrDA/ASKIR function.

IR Address Select: This option provide six different address for IR. The options are “3F8H”, “2F8H”, “3E8H”, “2E8H”, “3EH” and “2E0H”.

IR Mode: Choose ASKIR (Amplitude Shift Keyed Infrared Port) or IrDA for serial Interface.

IR IRQ Select: This option provides four IRQ line for the IR function. The options are IRQ3, IRQ4, IRQ10 and IRQ11.

Onboard Parallel Port: Choose None or with four different I/O Address and corresponding IRQx. While choosing proper I/O Address, be sure not to cause Address conflict with other I/O devices.

Parallel Port Mode: Choose SPP, EPP, ECP, ECP+EPP Mode. Make proper selection with the attached printer port device.

ECP Mode Use DMA: Choose “1” or “3” to select the DMA channel used for the ECP device. This item is shown if the **Onboard Parallel Mode** is chosen as “ECP” or “ECP/EPP” option.

ECP Mode Select: Choose “EPP1.7” or “EPP1.9”, which is used to configure the EPP using either EPP1.7 or 1.9 timing specification. This item is shown if the **Parallel Mode** is chosen as “EPP” or “ECP+EPP” option.

4.8 LOAD SETUP DEFAULTS MENU

This Main Menu item uses the default setup values. Use this option as a diagnostic aid if the system behaves erratically. Choose this item and the following message appears:

“Load SETUP Defaults (Y/N)? N”

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

4.9 SUPERVISOR PASSWORD

Two level of password is supported. Depending on the setting of the “Security Option” in the “BIOS FEATURES SETUP”, the system BIOS will ask for password every time booting up the System or entering BIOS Setup. With the supervisor password, both the system booting and BIOS setup changing is allowed.

This main menu item lets the user to set up the Supervisor Password.

Change the password as follows:

1. Choose “PASSWORD SETTING” in the Main Menu and press <Enter>. The following message appears:

“ENTER PASSWORD:”

2. Enter the Password and press <Enter>. The following message appears:

“CONFIRM PASSWORD:”

Important: Keep a safe record of the new password. If forget or lose the password, the only way to access the system is to disconnect the CMOS batteries and then re-enter the password.

4.10 USER PASSWORD

With the user password, only booting up the system is accepted, but changing the BIOS setup is not allowed.

4.11 IDE HDD AUTO DETECTION

When users can not find the Hard Disk information, it is very helpful to use this option.

1. Choose this item and press <Enter>.
2. After couple seconds, the screen will appear the Hard Disk information and following message:

“SELECT PRIMARY MASTER OPTION(N=SKIP): N”

3. Enter Y or N to confirm the acceptance then enter.
4. The process will repeat for Primary Slave, Secondary Master and Secondary Slave Hard Disks.

4.12 SCSI HARD DISK INSTALLATION

In Standard CMOS Setup Utility, select hard disk type to be “Not Installed”. In Advanced CMOS Setup Utility, Disable “Adapter ROM Shadow DC00”. On the SCSI Controller card, set the jumpers which configure the SCSI card BIOS segment address located at DC00 or DE00. Format the SCSI disk by the Formatter provided in the SCSI BIOS.

4.13 SAVE & EXIT SETUP MENU

When you select this function, the following message will appear at the centre of the screen to assist you to Save data to CMOS and Exit the Setup.

Save to CMOS and Exit (Y/N)?

4.14 EXIT WITHOUT SAVING MENU

When you select this function, the following message will appear at the centre of the screen to assist you to Abandon all Data and Exit Setup.

Quit Without Saving (Y/N)?

CHAPTER 5 SOFTWARE INSTALLATION

In order to let the system board to work efficiently, a series of drivers have to installed according to the operating system used. The drivers are distributed by diskettes. Please refer to the following section:

5.1 PCI IDE DRIVER INSTALLATION

Please refer to the **README.TXT** file in PCI IDE Driver Diskette for detail installation procedures to be used in various kind of operating system (DOS, Netware, Windows NT, OS/2, Windows 95, Windows 3.1).

5.2 PCI VGA DRIVER INSTALLATION

- (1) PCI VGA driver can support following operation system: Windows NT 3.5, 4.0, Windows 95, Windows 3.1.
- (2) Install the Windows NT driver as following:
 - a) In control panel, double click Display icon.
 - b) Click "Change Display Type"
 - c) Click "Change"
 - d) Click "Other...."
 - e) Type "A:\NT351" or "A:\NT40"
 - f) Click OK

CHAPTER 6

AWARD ZERO-VOLT DATA-SUSPEND UTILITY

6.1 INTRODUCTION

The zero-volt data-suspend utility, **ZVHDD.EXE**, stores all the information about your current operating session on your hard drive when you turn off your system, using just one Windows function to replace the sometimes tedious process of closing data files, applications, and the Windows environment. Next time you turn your system on, the complete session resumes, just as it was.

The saves session data includes all the programs and data files loaded into system memory during the session. For example, you may be running multiple applications, such as Microsoft Excel, WordPerfect, and CorelDraw, under Windows 95. Normally, to turn off your computer, you must close all open data files and applications and then exit Windows. When you want to resume work where you left off, you must boot the computer, wait for Windows to open, open your application(s), and load the data file(s) you were editing.

Think how quick and convenient it would be if you could issue just one command to end your current session. And how quick and convenient it would also be if your session resumed exactly where you left off next time you turned on the computer! The Award Zero-Volt Data-Suspend utility offers this convenience.

6.2 PREPARATION

1. In the **BIOS Power Management Setup Menu** set the **Suspend Mode Option** to **Suspend to Disk** option and **Soft-Off by PWR-BTTN** feature to **Delay 4 sec.**.
2. The Award zero-volt data-suspend utility runs under DOS, Windows 3.1, and Windows 95. However, **you should install the ZVHDD.EXE under DOS - before installing Windows 3.1 or Windows 95.**

6.3 RUNNING THE PROGRAM

6.3.1 INSTALLATION

There is no special installation program. You may run the program ZVHDD.EXE from your hard drive or from a diskette.

When you install ZVHDD, it creates either a binary file or a hard drive partition as you select, in which to store a saved session.

Note: *If you plan to store session data in a separate partition, create a bootable diskette and run ZVHDD from the bootable diskette, because partitioning the hard drive may destroy all existing data on the drive.*

To install the program, type the following at the DOS prompt.

```
ZVHDD/C /file /M:memory_size
OR
ZVHDD/C /partition/M:memory_size
```

where

/C	Creates a file or a disk partition for session data storage
/file	Specifies a storage file name SAVE2DSK.BIN. This is a hidden file.
/partition	Specifies a disk partition for storage of session data.

Note: *Creating a disk partition may cause loss of existing data on the hard drive. We recommend this method only for new systems with no data on the hard drive.*

/M:memory_size	Specifies a number from 1 to 256 to select the size in megabytes of the file or partition.
----------------	--

(I) **Creating a Storage File**

Here is an example of creating a storage file. The specified memory size, 8MB, is an example only.

1. At the DOS command line, type
ZVHDD/C /file /M:8 ?
2. A screen similar to this appears:

```
ZVHDD 1.31--Award EliteBIOS? v4.51GPM Zero-Volt Partition
Utility Copyright (c) Award Software Inc. 1996. All Rights Reserved.

The file c:\SAVE2DSK.BIN has been created.

The system will now be reset to allow the BIOS to recognize the
changes. If the system fails to reboot, please power off the power.

Press any key to reset the system.....
```

3. Press any key

(II) **Creating a Storage Partition on the Hard Disk**

Here is an example of creating a storage partition on the hard disk. The specified memory size, 8MB, is an example only.

1. At the DOS command line, type
ZVHDD/C /partition /M:8 ?
2. If you have adequate space on your hard drive, a screen similar to this appears:

```
ZVHDD 1.31--Award EliteBIOS? v4.51GPM Zero-Volt Partition
Utility Copyright (c) Award Software Inc. 1996. All Rights Reserved.

Formatting xxxxxxxxxxxx Bytes.

Press any key to reset the system.....
```

If you don't have adequate free space on your hard drive, a screen similar to this appears:

```
ZVHDD 1.31--Award EliteBIOS? v4.51GPM Zero-Volt Partition
Utility Copyright (c) Award Software Inc. 1996. All Rights Reserved.

Warning: Not enough free disk space exists to create the partition.

If you wish to make space for the partition, that will DESTROY ALL
the data on your hard disk!!

OK to proceed, Answer Yes / No?
```

3. Answer **Yes** to proceed with the disk partitioning. You will then have to install an operating system on your main partition.

6.3.2 SAVING SESSION DATA

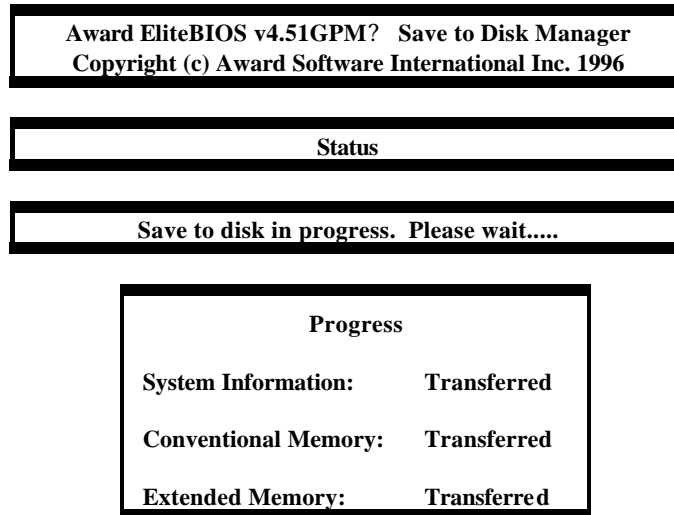
After you implement the suspend function in Setup and install a storage file or partition on the hard drive, you can save your session data at any time.

To save session data, just let the system entering to suspend mode:

- ?? press **Power** button on your computer.
- ?? you may let the system time-out according to the Power Management Setting on the BIOS Menu.
- ?? if you a Windows 95 user, just click the **Suspend** icon on Windows 95 Start Menu.

If your system has a built-in software power-off function, the system simply turns itself off.

In systems that do not have a built-in software power-off function, a screen similar to this appears:



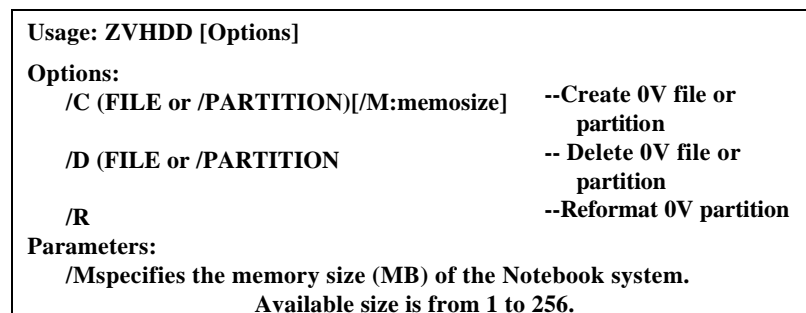
When all data is transferred, the system will be turned off.

When you restart your system, it first runs through the system initialization routine (POST), then returns to the session you were previously running.

6.4 PROGRAM FUNCTIONS

6.4.1 USAGE

You can view a ZVHDD parameters by typing: ZVHDD/? at the DOS prompt. A screen similar to this appears:



6.4.2 REFORMATTING THE STORAGE PARTITION

If you suspect the storage partition has become corrupted, you can reformat it with the command

ZVHDD /r

6.4.3 DELETING THE STORAGE FILE OR PARTITION

You can delete the storage file or partition with the /D switch.

1. At the DOS prompt, type

ZVHDD /D /file
OR
ZVHDD /D /partition ?

2. A screen similar to this appears:

**ZVHDD 1.31--Award EliteBIOS v4.51GPM? Zero-Volt Partition Utility
Copyright (c) Award Software Inc. 1996. All Rights Reserved.**

The file c:\SAVE2DSK.BIN has been deleted.

**The system will now be reset to allow the BIOS to recognize the changes.
If the system fails to reboot, please power off the power.**

Press any key to reset the system.....

3. Press any key.

CHAPTER 7 FLASH AND DMI UTILITY

7.1 AWARD FLASH UTILITY

This section will provide instructions to guide you through updating your old BIOS. The file name we use to program here is *test.bin*, and the file name to save old BIOS is *2A59F000.OLD*. Please note that those file names are not absolute. They are only examples to let you have a more clear understanding of the updating process.

How to Begin

1. Please type "*awdf*lash" and press the **ENTER** key to begin the updating process.
2. Once you enter, you will see a main menu displaying:

FLASH MEMORY WRITER V5.XX Copyright (C) 1996, Award Software, Inc.,	
For I430HX-2A59F000 Flash Type	DATE: 06/18/96
File Name to Program:	
Error Message:	

Fig. 27

3. Type the program name "*test.bin*", and then press the **ENTER** key.
4. At the bottom of the menu, you will be requested to answer:

"Do You Want to Save BIOS (Y/N)?"

If you do not wish to save the old BIOS:

5. Please type “N”, and then press the ENTER key.
6. Then you will be request to answer:

“Are You Sure to Program?”

7. Answer “N” if you do not want to program, and then it will exit.

To save the old BIOS:

8. Please respond “Y”, and then press the ENTER key.
9. Move the cursor to “File Name to Save:”
10. Type file name “**2A59F000.OLD**”, and then press the **ENTER**.
(Your old BIOS will be saved in the file name you create. In this case, the old BIOS is saved in the file name, 2A59F000.OLD).
11. Then you will be requested to answer:

“Are You Sure to Program (Y/N)?”

12. Type “Y” to begin programming, and press the **ENTER** key.
13. When the programming is finished, the showing message will appear:

“Programming Flash Memory - 1FF00 0K



Message: Please Power off or Reset System”

14. Once you see the showing message “**Power Off or Reset System**”, please re-start your system
15. When you power on the computer again, you will find your old BIOS has already been successfully updated.

Warning

Please note that Award Flash Utility cannot run under EMM386 or QEMM. Thus, when executing the command “**awdfash**”, and error message will appear:

“Error Message: Fail - Due to EMM386 or QEMM!”

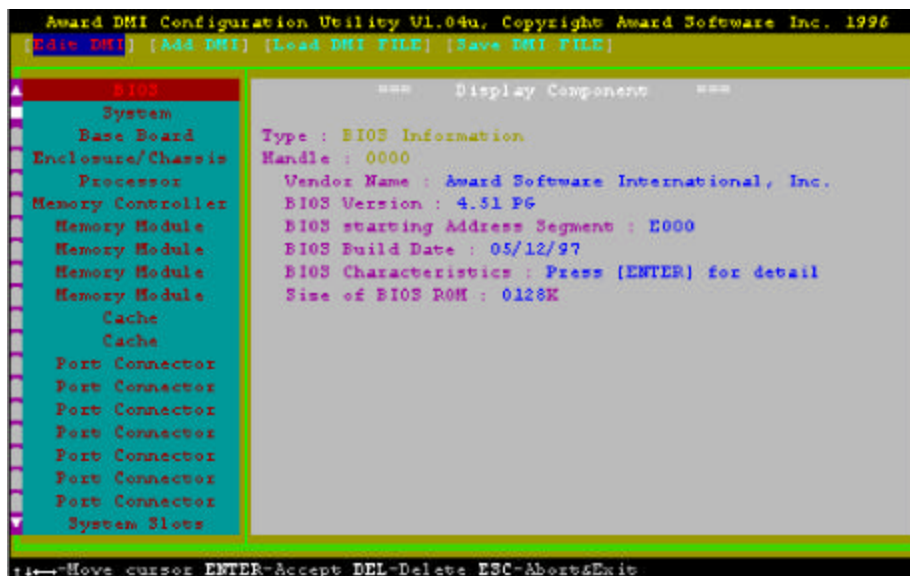
7.2 DESKTOP MANAGEMENT INTERFACE (DMI) OVERVIEW

This motherboard can support DMI within the BIOS level. DMI is able to auto-detect and record information pertinent to a computer's system such as the CPU type, CPU speed, and internal/external frequencies, and memory size. The onboard BIOS will detect as many system information as possible and store those collected information in a 4KB block in the motherboard's flash EPROM and allow the DMI to retrieve data from this database.

The DMI Configuration Utility (DMICFG.EXE) must be used in real mode in order for the program to run, the base memory must be at least 180K. Memory managers like HIMEM.SYS (required by windows) must not be installed. You can boot up from a system diskette without AUTOEXEC.BAT and CONFIG.SYS files, "REM" HIMEM.SYS in the CONFIG.SYS, or press <F5> during bootup to bypass your AUTOEXEC.BAT and CONFIG.SYS files.

Using the DMI Configuration Utility

Edit DMI

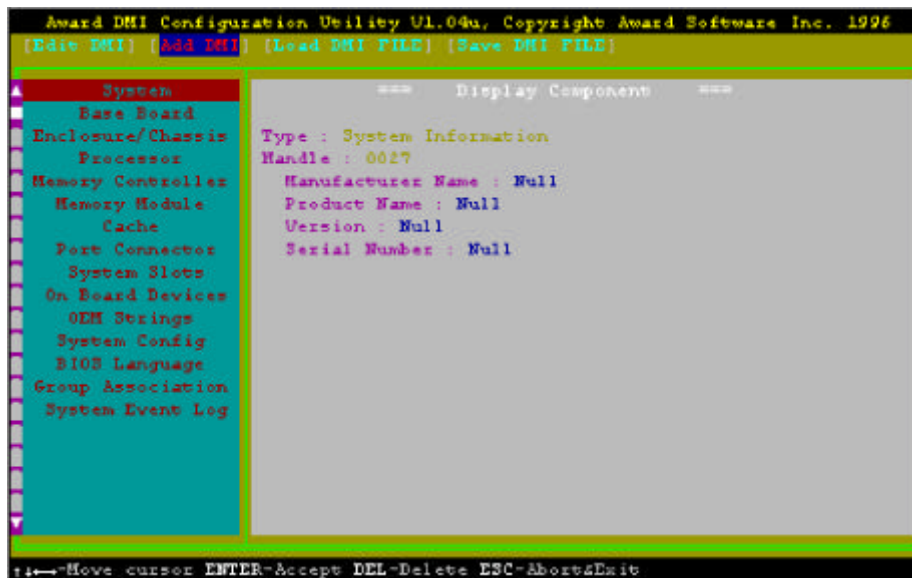


Flash and DMI Utility

Use the ? ? (left-right) cursors to move the top menu items and the ?? (up-down) cursor to move between the left hand menu items. The bottom of the screen will show the available keys for each screen. Press enter at the menu item to enter the right hand screen for editing. "Edit component" appears on top. The reversed color field is the current cursor position and the blue text are available for editing. The orange text shows auto-detected information and are not available for editing. The blue text "Press [ENTER] for detail" contains a second pop-up menu is available, use the + - (plus-minus) keys to change the settings. Enter to exit and save, ESC to exit and not save.

If the user has made changes, ESC will prompt you to answer Y or N. Enter Y to go back to the left-hand screen and save, enter N to go back to left-hand screen and not save. If editing has not been made, ESC will send you back to the left hand menu without any messages.

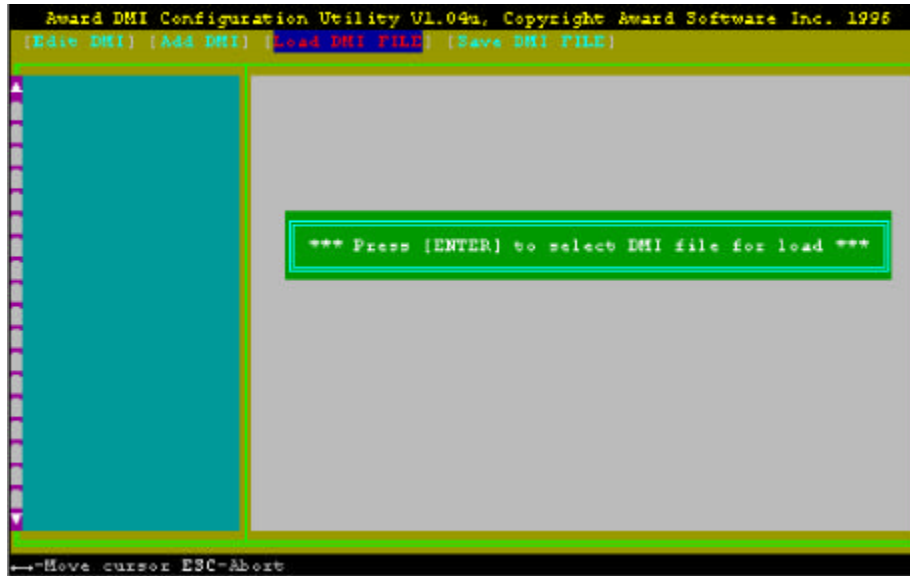
Add DMI



This DMI Configuration Utility also allows the system integrator or end user to add additional information into the DMI database such as serial numbers, housing configurations, and vendor information. Those information not detected by the motherboard BIOS and has to be manually entered through the DMI Configuration Utility and updated into the DMI database.

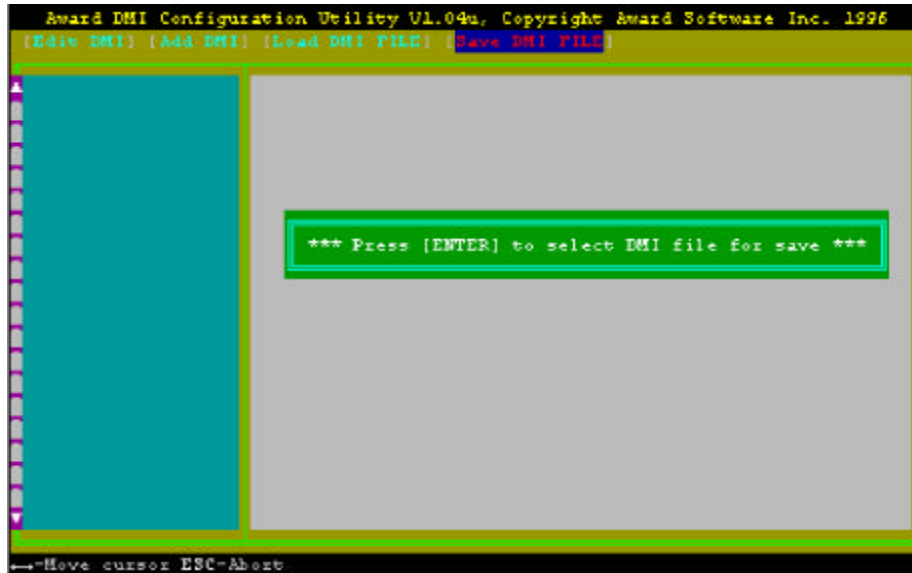
Chapter 6

Load DMI File



You can load the disk file to memory by entering a drive and path and file name here.

Save DMI File



You can save the DMI (normally only saved to flash ROM) to a file by entering the drive and path here. If you want to cancel save, you may press ESC and a message “Bad File Name” appears here to show it was not saved.

APPENDIX A QUICK GUIDE

The table below summarizes the functions and settings of each jumper of the motherboard.

Function		Jumper Settings		
CPU Voltage Selection	BIOS CPU Core Voltage" set at "Auto" for all CPU	SW1-1,2: JP5:	OFF OPEN	
	BIOS CPU Core Voltage set at "2.8/2.9/3.2/3.3/3.5V" for all CPU	SW1-1,2: JP5:	OFF OPEN	
	BIOS disable	Intel Pentium w/MMX, Cyrix 6x86L	SW1-1,2: JP5:	OFF CLOSE
		AMD K6/166, 200, 6x86MX	SW1-1: SW1-2: JP5:	ON OFF CLOSE
		AMD K6/233, 266	SW1-1,2: JP5:	OFF OPEN
		Intel Pentium (P54C)	SW1-1: SW1-2: JP5:	OFF ON OPEN
Cyrix 6x86, AMD K5	SW1-1,2: JP5:	ON CLOSE		
CPU Speed Selection	For 90MHz Intel Pentium, AMD-K5-PR90 and AMD-K5-PR120 CPU	SW1-3,4: SW1-5: SW1-6: SW1-7,8:	OFF OFF ON OFF	
	For 100MHz and 233MHz Intel Pentium, AMD-K6/233, AMD-K5-PR100 and AMD-K5-PR150 CPU	SW1-3,4: SW1-5,6: SW1-7: SW1-8:	OFF OFF ON OFF	
	For 110MHz Cyrix 6x86-P133+ CPU	SW1-3: SW1-4: SW1-5,6: SW1-7,8:	ON OFF OFF OFF	
	For 120MHz Intel Pentium and Cyrix 6x86-P150+ CPU	SW1-3: SW1-4,5: SW1-6: SW1-7,8:	ON OFF ON OFF	
	For 133MHz Intel Pentium, AMD-K5-PR133 (REV C) and Cyrix 6x86L-P166+ CPU	SW1-3: SW1-4: SW1-5,6: SW1-7,8:	ON OFF OFF OFF	
To be continued...				

Function		Jumper Settings	
CPU Speed Selection	For 150MHz Intel Pentium and Cyrix 6x86MX-PR166 CPU	SW1-3,4:	ON
		SW1-5:	OFF
		SW1-6:	ON
		SW1-7,8:	OFF
	For 150MHz Cyrix 6x86L/MX-PR200+ CPU (for future support only)	SW1-3:	ON
	SW1-4,5:	OFF	
	SW1-6,7:	OFF	
	SW1-8:	ON	
For 166MHz Intel Pentium, AMD-K6/166 and AMD-K5-PR166 CPU	SW1-3,4:	ON	
	SW1-5,6:	OFF	
	SW1-7:	ON	
	SW1-8:	OFF	
For 200MHz Intel Pentium and AMD-K6/200 CPU	SW1-3:	OFF	
	SW1-4:	ON	
	SW1-5,6:	OFF	
	SW1-7:	ON	
	SW1-8:	OFF	
For AMD-K6/266 CPU	SW1-3,4:	ON	
	SW1-5:	ON	
	SW1-6:	OFF	
	SW1-7:	ON	
	SW1-8:	OFF	
On board VGA Chip Selection	Enabled	JP1:	short
	Disabled	JP1:	open
Clear RTC CMOS Data	Normal	JP7:	1-2 short
	Clear	JP7:	2-3 short
System ROM Selection	5V Flash EPROM	JP3:	2-3 short
	12V Flash EPROM	JP3:	1-2 short
Power Supply Selection	AT Power	JP8:	short
		JP9:	open
	ATX Power	JP8:	open
		JP9:	short
On board Sound Chip Selection (optional)	Enabled	JP4:	short
	Disabled	JP4:	open

Appendix A
