

PAM-0079V

High Performance
Pentium PCI Mainboard
User's Guide



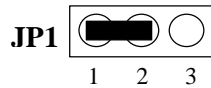
Edition 1.10
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P/N: 155100-8797



WARNING

For the system to operate normally, please make sure JP1 of the mainboard is set as below. Refer to Fig. 4 in this manual for the location JP1.



If JP1 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.

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CHAPTER 1

INTRODUCTION

Preface

The motherboard is a 4 layer, Micro ATX form factor high performance PCI/AGP mainboard. It includes VIA MVP3 system chipset, Winbond W83977EF Super I/O controller, Yamaha YMF715E Sound Chip.

Features

Processor

- Intel Pentium/MMX, Cyrix 6x86/6x86L/6x86MX/M II, AMD K5/K6/K6-2/K6-III and IDT C6 CPU
- The mainboard can run with following speeds:
90 ~ 450MHz

Chipset

- VIA VT82C598MVP (PCI/AGP System Controller)
- VIA VT82C586B (PCI Integrated Peripheral Controller)
- Winbond W83977EF (Super I/O Controller)
- Yamaha YMF715E (Audio Drive Sound Controller)

Main Memory

- Memory configurations up to 256MB SDRAM/EDO.
- DIMM socket for SDRAM (3.3V unbuffered).
- Support both Synchronous DRAM and Extended Data Output (EDO) Mode DRAM Modules.

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 supported.
- USB supported.

Accelerated Graphics Port (AGP) Interface

- A.G.P. specification compliant
- A.G.P. 66/133MHz devices supported

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, etc.
- PCI Master IDE controller supports PIO Mode 3 and 4 devices, I/O data transfer rate can be up to 16.6MB/s.
- Ultra DMA Mode supported. Transfer rate can be up to 33MB/s.

Chapter 1

Sound Controller (Optional)

- 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.

System BIOS

- Award BIOS (128KB Flash EPROM).

Slots

- One AGP slot
- Three PCI slots
- One ISA slots

Form Factor

- Micro ATX Form Factor Size (244mm x 195mm) 4 Layer

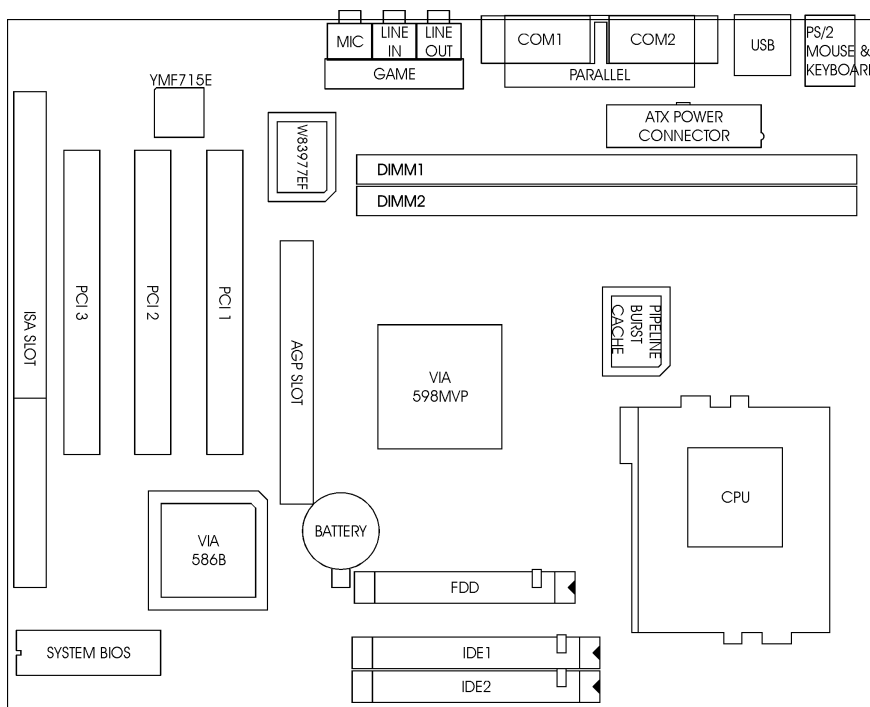


Fig. 1 Key Components of the Mainboard

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	

Power Specification

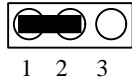
Configuration: 133MHz Intel P54C CPU, 32MB 60ns EDO DIMM, 512KB Cache, 3.5 inch floppy drive, 840MB Hard Disk, running at DOS prompt.

DC Voltage	Tolerance	Consumption (mA)
+5V	+/- 5%	860
+5V Standby	+/- 5%	0.5
+5V	+/- 5%	0
+12V	+/- 5%	200
-12V	+/- 5%	30

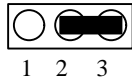
CHAPTER 2

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.

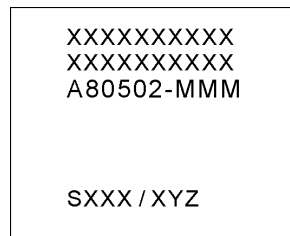


The jumper is open when the jumper cap is removed from jumper.

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.)

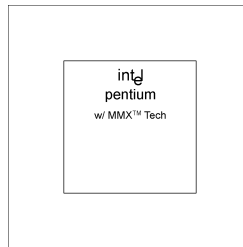


Fig. 2b CPU Description (Top Side)

2.2.3 AMD-K6 CPU

The AMD-K6 CPU family requires 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 requires 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.)

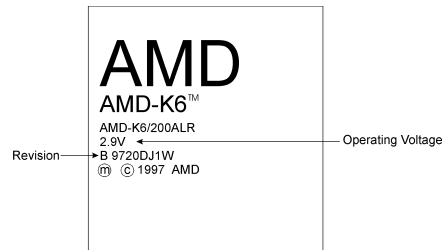


Fig. 2c CPU Description (Top Side)

Operating Voltage	I/O Voltage	Core Voltage
2.2V	3.3V	2.2V
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.)

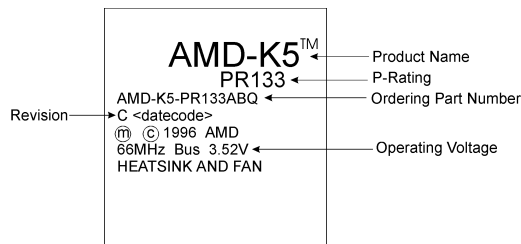


Fig. 2d CPU Description (Top Side)

2.2.5 CYRIX 6x86 CPU

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

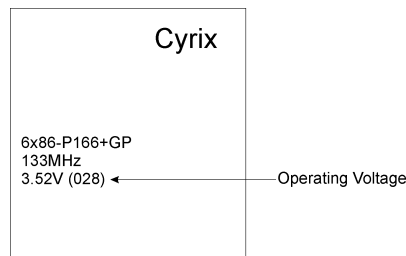
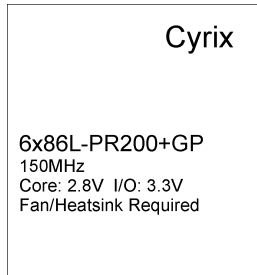


Fig. 2e CPU Description (Top Side)

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

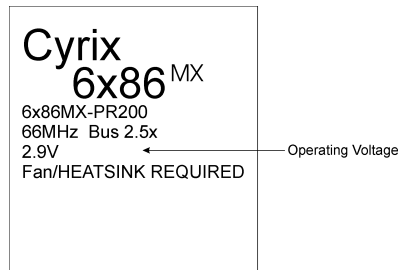
The Cyrix 6x86L has different I/O and core voltage. Please refer to the CPU marking.



**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

2.2.8 IDT WinCHIP C6 CPU

The IDT WinChip C6 CPU has different operating voltage. Please refer to the CPU marking to identify the operating voltage.



Fig. 2h CPU Description

2.3 GRAPHICAL DESCRIPTION OF JUMPER SETTINGS

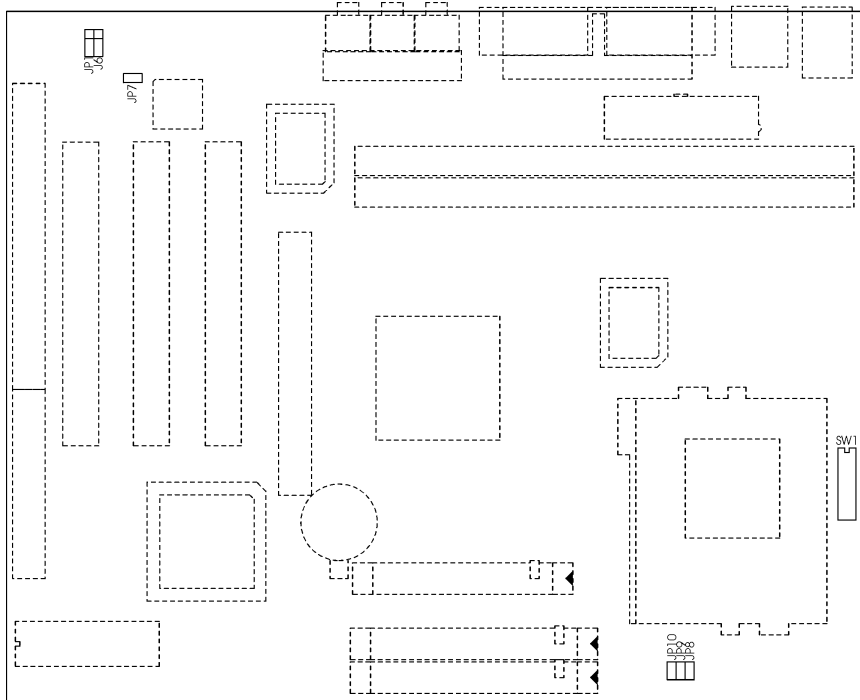


Fig. 3 Jumper Location of the mainboard

2.4 CPU VOLTAGE

(A) BIOS Setup

BIOS Auto detect or setup through BIOS. Different CPU requires different voltage. Please refer the following table.

Auto	BIOS Auto detect
2.2	2.2V AMD K6 and AMD-K6-2
2.4	AMD-K6-III; AMD-K6-2/450
2.8	Pentium MMX; Cyrix 6x86L
2.9	2.9V AMD K6; Cyrix 6x86MX/M II
3.2	3.2V AMD-K6/233
3.3	Intel Pentium, 3.3V IDT WinChip C6
3.52	Cyrix 6x86; AMD K5, 3.5V IDT WinChip C6

Table 1a

Note: If the BIOS doesn't show "CPU Core Voltage" item in Chipset Features Setup menu. You need setup the CPU Core Voltage by jumpers.

(B) Jumper Setup

The board also provides the hardware solution to select the CPU voltage.








Voltage	Jumper	Voltage	Jumper
2.2V	 JP10 JP9 JP8	3.2V	 JP10 JP9 JP8
2.4V	 JP10 JP9 JP8	3.3V	 JP10 JP9 JP8
2.8V	 JP10 JP9 JP8	3.5V	 JP10 JP9 JP8
2.9V	 JP10 JP9 JP8		

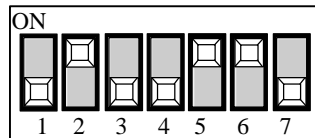
Table 1b

2.5 CPU EXTERNAL (BUS) FREQUENCY AND AGP FREQUENCY SELECTION (SW1-4,5,6)

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

2.6 CPU TO BUS FREQUENCY RATIO (SW1-1,2,3)

These switches set the frequency ratio 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 switches CPU External (Bus) Frequency Selection.



2.7 SDRAM FREQUENCY SELECTION (SW1-7)

This switch set the SDRAM frequency same as CPU External frequency or AGP frequency.

SW1-7 : ON SDRAM frequency = AGP frequency
SW1-7 : OFF SDRAM frequency = CPU External frequency

2.8 CPU SPEED

CPU Type	Freq.	Ratio	Bus Freq.	Freq. Ratio Setting			Bus Freq. Setting		
				SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6
Intel Pentium	90MHz	1.5x	60MHz	OFF	OFF	OFF	ON	ON	ON
Intel Pentium	100MHz	1.5x	66MHz	OFF	OFF	OFF	OFF	ON	ON
Intel Pentium	120MHz	2.0x	60MHz	ON	OFF	OFF	ON	ON	ON
Intel Pentium	133MHz	2.0x	66MHz	ON	OFF	OFF	OFF	ON	ON
Intel Pentium	150MHz	2.5x	60MHz	ON	ON	OFF	ON	ON	ON
Intel Pentium	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	ON
Intel Pentium	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	ON
Intel Pentium w/MMX	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	ON
Intel Pentium w/MMX	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	ON
Intel Pentium w/MMX	233MHz	3.5x	66MHz	OFF	OFF	OFF	OFF	ON	ON
AMD-K5-PR120	120MHz	2.0x	60MHz	ON	OFF	OFF	ON	ON	ON
AMD-K5-PR133	133MHz	2.0x	66MHz	ON	OFF	OFF	OFF	ON	ON
AMD-K5-PR166	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	ON
AMD-K6/166	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	ON
AMD-K6/200	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	ON
AMD-K6/233	233MHz	3.5x	66MHz	OFF	OFF	OFF	OFF	ON	ON
AMD-K6/266	266MHz	4.0x	66MHz	ON	OFF	ON	OFF	ON	ON
AMD-K6/300	300MHz	4.5x	66MHz	ON	ON	ON	OFF	ON	ON
AMD-K6-2/250	250MHz	2.5x	100MHz	ON	ON	OFF	OFF	OFF	OFF
AMD-K6-2/266	266MHz	4.0x	66MHz	ON	OFF	ON	OFF	ON	ON
AMD-K6-2/300	300MHz	3.0x	100MHz	OFF	ON	OFF	OFF	OFF	OFF
AMD-K6-2/333	333MHz	3.5x	95MHz	OFF	OFF	OFF	ON	OFF	OFF
AMD-K6-2/350	350MHz	3.5x	100MHz	OFF	OFF	OFF	OFF	OFF	OFF
AMD-K6-2/380	380MHz	4.0x	95MHz	ON	OFF	ON	ON	OFF	OFF
AMD-K6-2/400	400MHz	4.0x	100MHz	ON	OFF	ON	OFF	OFF	OFF
AMD-K6-2/450	450MHz	4.5x	100MHz	ON	ON	ON	OFF	OFF	OFF
AMD-K6-III/400	400MHz	4.0x	100MHz	ON	OFF	ON	OFF	OFF	OFF
AMD-K6-III/450	450MHz	4.5x	100MHz	ON	ON	ON	OFF	OFF	OFF
Cyrix 6x86L-PR150	120MHz	2.0x	60MHz	ON	OFF	OFF	ON	ON	ON
Cyrix 6x86L-PR166	133MHz	2.0x	66MHz	ON	OFF	OFF	OFF	ON	ON
Cyrix 6x86L-PR200	150MHz	2.0x	75MHz	ON	OFF	OFF	ON	ON	OFF
Cyrix 6x86MX-PR166	150MHz	2.5x	60MHz	ON	ON	OFF	ON	ON	ON
Cyrix 6x86MX-PR200	150MHz	2.0x	75MHz	ON	OFF	OFF	ON	ON	OFF
Cyrix 6x86MX-PR200	166MHz	2.5x	66MHz	ON	ON	OFF	OFF	ON	ON
Cyrix 6x86MX-PR233	188MHz	2.5x	75MHz	ON	ON	OFF	ON	ON	OFF
Cyrix 6x86MX-PR233	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	ON
Cyrix M II-300	225MHz	3.0x	75MHz	OFF	ON	OFF	ON	ON	OFF
Cyrix M II-300	233MHz	3.5x	66MHz	OFF	OFF	OFF	OFF	ON	ON
Cyrix M II-333	250MHz	2.5x	100MHz	ON	ON	OFF	OFF	OFF	OFF
Cyrix M II-350	300MHz	3.0x	100MHz	OFF	ON	OFF	OFF	OFF	OFF
IDT WinChip C6-180	180MHz	3.0x	60MHz	OFF	ON	OFF	ON	ON	ON
IDT WinChip C6-200	200MHz	3.0x	66MHz	OFF	ON	OFF	OFF	ON	ON
IBM 6x86MX-PR266	208MHz	2.5x	83MHz	ON	ON	OFF	OFF	ON	OFF

Table 2

2.9 JP1 - CLEAR CMOS DATA

JP1 is used to clear the content of the CMOS Data in the RTC (build in PIIX4 chip).

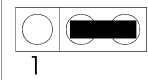
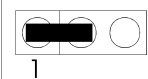
JP1	Description
	Clear CMOS Data
	Normal

Table 3: Clear CMOS Data

2.10 J6 – VOLTAGE SELECTION FOR SYSTEM ROM

J6 is used to select the operation voltage of the System ROM.

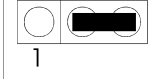
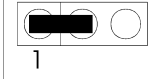
J6	Description
	5V Flash EPROM
	12V Flash EPROM

Table 4: Voltage Selection for System ROM

2.11 JP7 – ONBOARD AUDIO SELECT

JP7 is set to select the Onboard Audio enabled or disabled.

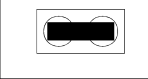
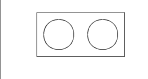
JP7	Description
	Enabled
	Disabled

Table 5: Onboard Audio Select

2.12 MEMORY CONFIGUARTION

The mainboard lets user upgrade system memory via DIMM sockets on the mainboard. On board memory is located in four banks: Bank 0 - 3. Two DIMM sockets are provided for EDO DRAM or Synchronous DRAM. Table 6 provides the typical memory configurations supported by the mainboard.

The maximum memory size is up to 256MB (SDRAM/EDO). The size of each DIMM can be 8MB, 16MB, 32MB, 64MB or 128MB.

Bank 0/1 (DIMM1)	Bank 2/3 (DIMM2)
Installed	None
None	Installed
Installed	Installed

Table 6

CHAPTER 3

CONNECTOR CONFIGURATION

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

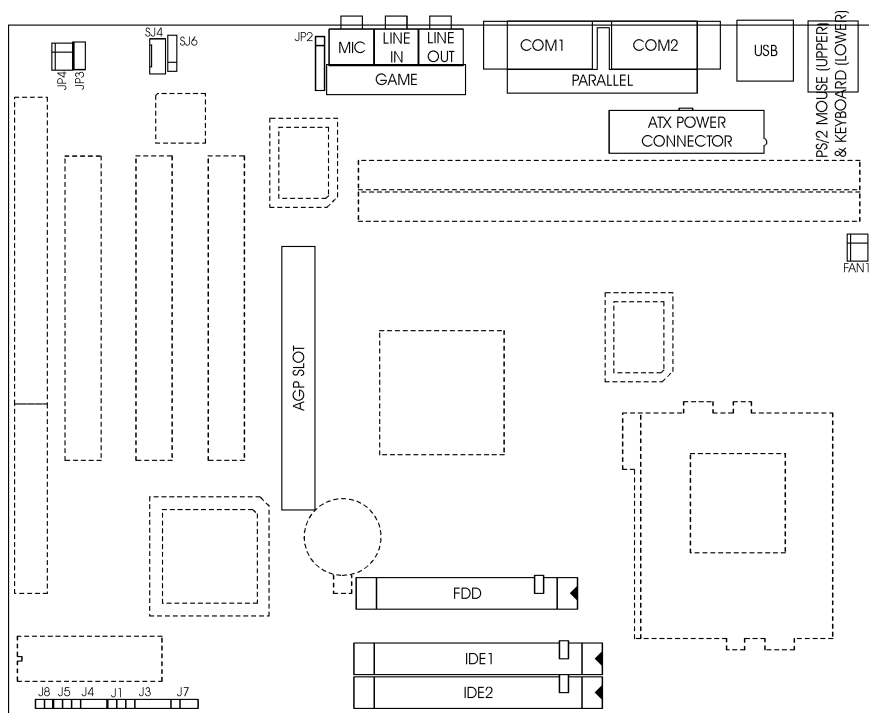


Fig. 4 Connector Location

3.1 J1 - POWER ON/OFF SWITCH

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

3.2 J3 – KEYLOCK CONNECTOR

Attach the power led cable to this connector. If the system is power on, the indicator lights.

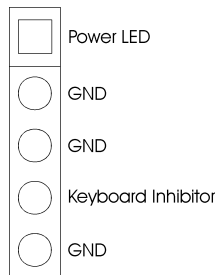


Fig. 5 Keylock Connector

3.3 J4 - SPEAKER

J4 is a four pins connector, which is used to connect the system speaker.

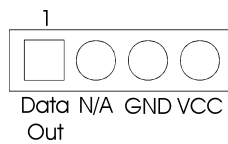


Fig. 6 Speaker

3.4 J5 - RESET

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

3.5 J7 – GREEN LED

J7 is connected to Green LED on front of system case. If the system enter suspend mode, the LED will blink during suspend mode.

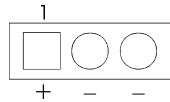


Fig. 7 Green LED

3.6 J8 - HDD LED

J8 is usually connected to a HDD LED on front of the system case. If the HDD is in operation, the indicator lights during operation.

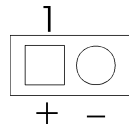


Fig. 8 HDD LED

3.7 JP2 - IrDA CONNECTOR

JP2 is an IrDA connector that use UART2 as interface of IrDA Infrared and ASKIR.

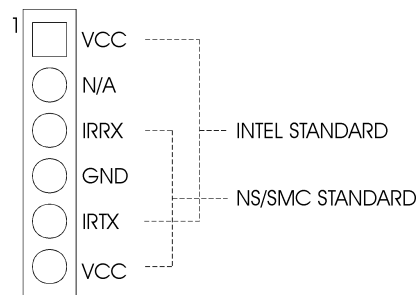


Fig. 9 IrDA Connector

3.8 JP3 – WAKE UP ON LAN

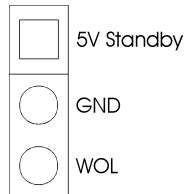


Fig. 10 Wake up On LAN

3.9 JP4 – INTERNAL MODEM RING UP

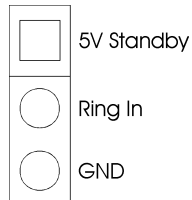


Fig. 11 Internal Modem Ring Up

3.10 SJ4 – CD-ROM AUDIO CONNECTOR (MITSUMI/PANASONIC)

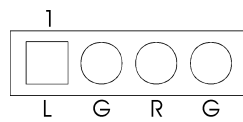


Fig. 12 CD-ROM Audio

3.11 SJ6 – CD-ROM AUDIO CONNECTOR (SONY)

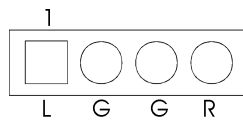


Fig. 13 CD-ROM Audio

3.12 CN5 - ATX POWER SUPPLY CONNECTOR

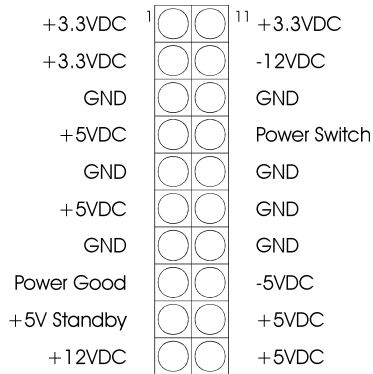


Fig. 14 ATX Power Supply Connector

3.13 FAN1 – CPU FAN CONNECTOR

FAN1 is a three-pin connector, which is used to connect with the CPU Fan Power cable.

3.14 IDE0, IDE1 – PRIMARY/SECONDARY IDE CONNECTORS

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 or other device.

3.15 FLOPPY - FLOPPY DRIVE CONTROLLER

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.

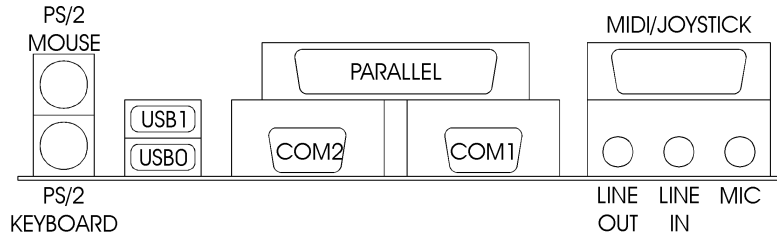


Fig. 15 I/O Connector

3.16 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.

3.17 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.

3.18 UNIVERSAL SERIAL BUS PORT 0 & 1

These connectors are two four pin female sockets which are available for connecting USB device.

3.19 SERIAL PORT COM1 & COM2

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

3.20 PARALLEL PORT CONNECTOR

This is a D-Type 25 pin female connector.

3.21 AUDIO PORT CONNECTOR

Three 1/8" female connectors used as line out, line in and microphones. **Line Out** can be connected directly to headphones or *powered speakers*. **Line In** allows tape players or other audio sources to be recorded by your computer or played through the line out. **MIC** allows microphones to be connected for inputting voice.

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”

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

ROM PCI/ISA BIOS (2A5LEG3D)
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 F10 : Save & Exit Setup	↑ ↓ → ← : Select Item (Shift)F2 : Change Color
Time, Data, Hard Disk Type...	

Fig. 16

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 (2A5LEG3D)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed, May 21 1997	
Time (hh:mm:ss) : 20 : 27 : 55	
<u>HARD DISKS</u> <u>TYPE</u> <u>SIZE</u> <u>CYLS</u> <u>HEAD</u> <u>PRECOMP</u> <u>LANDZ</u> <u>SECTOR</u> <u>MODE</u>	
Primary Master :	Auto 0 0 0 0 0 0 0 AUTO
Primary Slave :	None 0 0 0 0 0 0 0 -----
Secondary Master :	None 0 0 0 0 0 0 0 -----
Secondary Slave :	None 0 0 0 0 0 0 0 -----
Drive A : 1.44M , 3.5in.	Base Memory: 0K Extended Memory: 0K <u>Other Memory: 512K</u>
Drive B : None	
Floppy 3 Mode Support : Disabled	Total Memory: 512K
Video : EGA/VGA	
Halt On : All Errors	
Esc : Quit	↑ ↓ → ← : Select Item
F1 : Help	(Shift)F2 : Change Color
	PU/PD/+/- : Modify

Fig. 17

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
Floppy 3 Mode Support	Choose Enabled to allow floppy drive support 3 Mode.

4.3 BIOS FEATURES SETUP

ROM PCI/ISA BIOS (2A5LEG3D)
 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,SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
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		
HDD S.M.A.R.T. capability	: Disabled		
Report No FDD For WIN 95	: No		
		ESC: Quit	↑ ↓ → ←: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

Fig. 18 BIOS Setup Defaults

A short description of the screen items follows:

Virus Warning: When enabled, you receive 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. The default is Disabled.

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,SCSI”, “C,A,SCSI”, “C,CDROM,A”, “CDROM,C,A”, “D,A,SCSI”, “E,A,SCSI”, “F,A,SCSI”, “SCSI,A,C”, “SCSI,C,A”, “C only”, “LS120/ZIP,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: 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: If the system memory is larger than 64MB and running OS/2, please select OS2. However, if it use other operating system, please select Non-OS2. Furthermore, if the system memory is less than 64MB, the BIOS will ignore this function.

HDD S.M.A.R.T. capability: Choose Enabled or Disabled. Enabled will support the hard driver S.M.A.R.T. feature (Self-Monitoring, Analysis and Reporting Technology).

Report No FDD For WIN 95: Choose Yes or No. Yes will show a removable disk in Windows 95 when the floppy drive is set as None.

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

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C8000-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 (2A5LEG3D)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Bank 0 DRAM Timing	: FP/EDO 70ns	Onchip USB	: Enabled
Bank 1 DRAM Timing	: FP/EDO 70ns	USB Keyboard Support	: Disabled
SDRAM Cycle Length	: 3		
DRAM Read Pipeline	: Disabled		
Cache Rd+ CPU W+ Pipeline	: Disabled		
Cache Timing	: Fast		
Video BIOS Cacheable	: Enabled		
System BIOS Cacheable	: Enabled		
Memory Hole At 15M-16M	: Disabled		
AGP Aperture Size	: 256M		
CPU Core Voltage	: Auto		
		ESC: Quit	↑ ↓ → ←: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

Fig. 19

A short description of the screen items follows:

Bank 0 DRAM Timing/Bank 1 DRAM Timing: Available options are Normal, Medium, Fast, Turbo for both SDRAM and EDO RAM. FP/EDO 70ns, FP/EDO 60ns options are for EDO RAM. SDRAM 10ns, SDRAM 8ns options are for SDRAM. It is set the DRAM Timing of the corresponding memory bank.

SDRAM Cycle Length: It is used to set SDRAM Timing. The default setting is 2 and it may be set to 3 for slower SDRAM.

DRAM Read Pipeline: You may select Enabled for this filed when PBSRAMs are installed. Pipeline improves system performance.

Cache Timing: This option is used to control the cache timing. The available options are Fast and Faster.

System/Video BIOS Cacheable: Choose Enabled or Disabled. Enabled allows system/video BIOS be cacheable.

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.

AGP Aperture Size: It is used to setup the maximum aperture size used by the AGP Graphic Card. The available options are 4M, 8M, 16M, 32M, 64M, 128M and 256M.

CPU Core Voltage: This option set the CPU core voltage according to the CPU installed onboard. You can select the option according to Table 1 in Section 2.4.

Onchip USB: Choose Enabled or Disabled. Enabled allows the onboard Universal Serial Bus (USB) controller to be functioned.

USB Keyboard Support: This option only shown when Onchip USB is Enabled. Choose Enabled or Disabled to support the USB keyboard.

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 (2A5LEG3D)
 POWER MANAGEMENT SETUP
 AWARD SOFTWARE, INC.

Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM2)	: Disabled
Video Off Option	: Suspend → Off	IRQ4 (COM1)	: Disabled
Video off Method	: V/H SYNC + Blank	IRQ5 (LPT2)	: Disabled
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Disabled
Soft-off by PWRBTN	: Delay 4 Sec.	IRQ7 (LPT1)	: Disabled
		IRQ8 (RTC Alarm)	: Disabled
		IRQ9 (IRQ2 Redir)	: Disabled
		IRQ10 (Reserved)	: Disabled
		IRQ11 (Reserved)	: Disabled
		IRQ12 (PS/2 Mouse)	: Disabled
		IRQ13 (Coprocesor)	: Disabled
		IRQ14 (Hard Disk)	: Disabled
		IRQ15 (Reserved)	: Disabled
		ESC: Quit	↑ ↓ → ←: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	
PM Timers			
HDD Power Down	: Disabled		
Suspend Mode	: Disabled		
PM Event			
VGA	: OFF		
LPT & COM	: None		
HDD & FDD	: OFF		
DMA/Master	: OFF		
Modem Ring Resume	: Disabled		
RTC Alarm Resume	: Enabled		
Date (of month)	: 1		
Timer (hh:mm:ss)	: 0:0:0		

Fig. 20

A short description of the screen items follows:

Power Management: Available selections 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 1 minute.

“Min Saving” will set the time period waiting for Suspend Mode to be 1 hour.

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.

Video Off Option: Choose the mode in which you want the monitor to blank. The options are “Always On”, “Suspend → Off”, “Susp, Stby → Off”, “All mode → Off”.

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.

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.

Soft-Off by PWRBTTN: 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 switch off with holding the power button for 4 second.

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

VGA/LPT&COM/HDD&FDD/DMA/Master: All of these functions are used to control the wake up event from the Suspend Mode. Once the function is enabled, the corresponded activity will trigger the system back to the Normal Mode from the Suspend Mode.

Modem Ring Resume: When Enabled the external modem ring in can wake up the system.

RTC Alarm Resume/Date (of month)/Time (hh:mm:ss): To enable the *RTC Alarm Resume* will wake up the system at the time on the Date (of Month) and Timer (hh:mm:ss).

Primary INTR: To turn on this feature will enable the system to monitor the IRQs for power management.

IRQ3 – IRQ15: When it is enabled, the system will monitor the activity of the corresponded system IRQ to turn on or off the power management functions.

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 (2A5LEG3D)
 PCI CONFIGURATION
 AWARD SOFTWARE, INC.

PNP OS Installed	: Yes	CPU to PCI Write Buffer	: Enabled
Resources Controlled By	: Manual	PCI Dynamic Bursting	: Enabled
Reset Configuration Data	: Disabled	PCI Master 0 WS Write	: Enabled
ACPI I/O Device Mode	: Disabled	PCI Delay Transaction	: Enabled
IRQ-3 assigned to	: PCI/ISA PnP	PCI Master Read Prefetch	: Enabled
IRQ-4 assigned to	: PCI/ISA PnP	PCI #2 Access #1 Retry	: Disabled
IRQ-5 assigned to	: PCI/ISA PnP	AGP Master 1 WS Write	: Enabled
IRQ-7 assigned to	: PCI/ISA PnP	AGP Master 1 WS Read	: Disabled
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP	PCI IRQ Activated By	: Level
IRQ-11 assigned to	: PCI/ISA PnP	Assign IRQ For USB	: Disabled
IRQ-12 assigned to	: PCI/ISA PnP	Assign IRQ For VGA	: Enabled
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP	ESC: Quit	↑ ↓ → ←: Select Item
DMA-1 assigned to	: PCI/ISA PnP	F1: Help	PU/PD/+/-: Modify
DMA-3 assigned to	: PCI/ISA PnP	F5: Old Values	(Shift)F2: Color
DMA-5 assigned to	: PCI/ISA PnP	F6: Load BIOS Defaults	
DMA-6 assigned to	: PCI/ISA PnP	F7: Load Setup Defaults	
DMA-7 assigned to	: PCI/ISA PnP		

Fig. 21

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

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 device. If you select Auto, all the interrupt (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.

CPU to PCI Write Buffer: It is used to enable or disable the CPU to PCI Write Buffer.

PCI Dynamic Bursting: It is used to enable or disable the PCI dynamic bursting cycles.

PCI Master 0 WS Write: Choose enable to let the PCI Master using 0 wait state in write cycle.

PCI Delay Transaction: Select Enabled to use the write buffer for the delay transaction cycles. It is selected to support the compliance of PCI Specification Version 2.1.

PCI Master Read Prefetch: It is used to enable or disable the PCI master read prefetch cycle.

AGP Master 1 WS Write/AGP Master 1 WS Read: These items are used to enable or disable the AGP master device 1 wait state Write and Read cycle correspondingly.

PCI IRQ Active By: Choose Level or Edge. The default setting is Level.

Assign IRQ For USB: Choose Enabled or Disabled. Enabled will assign an IRQ to USB controller.

Assign IRQ For VGA: Choose Enabled or Disabled. Enabled will assign an IRQ to Graphic Controller.

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 (2A5LEG3D)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

OnChip IDE First Channel	: Enabled	Onboard Parallel Port	: 378/IRQ7
OnChip IDE Second Channel	: Enabled	Parallel Port Mode	: SPP
IDE Prefetch Mode	: Enabled	ECP Mode Use DMA	: 3
IDE HDD Block Mode	: Enabled	EPP Mode Select	: EPP1.7
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	: AGP		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4	ESC: Quit	↑ ↓ → ←: Select Item
Onboard Serial Port 2	: 2F8/IRQ3	F1: Help	PU/PD/+/-: Modify
UART Mode Select	: Standard	F5: Old Values	(Shift)F2: Color
RxD, TxD Active	: Hi, Lo	F7: Load Setup Defaults	
IR Transmission delay	: Enabled		

Fig. 22

A short description of the screen items follows:

OnChip IDE First Channel/OnChip IDE Second Channel: These items are used to enable or disable the onboard IDE Channel.

IDE Prefetch Mode: Choose Enabled to set the onboard IDE controller to access the IDE device with faster Prefetch Mode.

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.

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.

Init Display First: To select priority of initialization the PCI display card or the AGP display card.

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/IRQ2, 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/IRQ2, 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 2F8/IRQ3.

UART Mode Select: Available selection are “Normal”, “IrDA” and “ASKIR”.

RxD, TxD Active: The available options are “Hi, Hi”, “Hi, Lo”, “Lo, Hi” and “Lo, Lo”. It is used to configure the logic level of Receive and Transmit signal in IrDA interface.

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 Normal, SPP, ECP, ECP+EPP(1.9) and ECP+EPP(1.7) 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.

EPP 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 install according to the operating system used. The drivers may be delivered via CD-ROM or floppy diskettes. The device driver installation procedures from CD-ROM and floppy diskettes are similar. The only difference is the path of the driver location. Please refer to the following section for the installation procedures for floppy diskettes. For CD-ROM installation, please refer to the README.TXT file on the Root Directory of the CD-ROM.

5.1 VIA BUS MASTER PCI IDE DRIVIVER FOR WINDOWS 95

- a) Under Windows 95, insert the CD title into the CD-ROM drive (say D:)
- b) Click *Start* on the taskbar in Windows 95
- c) Click *Run* on the menu bar in Windows 95
- d) Type *D:\79VE0\drivers\idemas~2\setup.exe* (D: being the letter of CD-ROM drive)
- e) Follow the on screen instructions to complete the installation. Restart Windows 95 to let the drivers take function.

5.2 AGP VxD SETUP PROGRAM

- a) Under Windows 95, insert CD title into the CD-ROM drive (say D:)
- b) Click *Start* on the taskbar in Windows 95
- c) Click *Run* on the menu bar in Windows 95
- d) Type *D:\79VE0\drivers\agpvxd\setup.exe* (D: being the letter of CD-ROM drive)
- e) Follow the on screen instructions to complete the installation. Restart Windows 95 to let the drivers take function.

5.3 VIA PCI MINIPORT DRIVER SETUP PROGRAM

- a) Under Windows 95, insert CD title into the CD-ROM drive (say D:)
- b) Click *Start* on the taskbar in Windows 95
- c) Click *Run* on the menu bar in Windows 95
- d) Type *D:\79VE0\drivers\586xirq\setup.exe* (D: being the letter of CD-ROM drive)
- e) Follow the on screen instructions to complete the installation. Restart Windows 95 to let the drivers take function.

5.4 VIA POWER MANAGEMENT CONTROLLER SETUP PROGRAM

- a) Under Windows 95, insert CD title into the CD-ROM drive (say D:)
- b) Click *Start* on the taskbar in Windows 95
- c) Click *Run* on the menu bar in Windows 95
- d) Type *D:\79VE0\drivers\Acpi\setup.exe* (D: being the letter of CD-ROM drive)
- e) Follow the on screen instructions to complete the installation. Restart Windows 95 to let the drivers take function.

5.5 SOUND DRIVER INSTALLATION

(I) Windows 95/Windows 98

For a newly installed Win95 system:

- a) Upon boot up, the system will detect the “Yamaha OPL3-SAx Sound System”
- b) Windows 95 will prompt for the driver diskette, then insert the CD title into the CD-ROM driver (say D:)
- c) When Windows 95 ask for driver, browse for driver *D:\79VE0\drivers\sound\win9x* directory (D: being the letter of CD-ROM drive)
- d) For the GamePort joy-stick setting, use the default driver provided from Windows 95 CD
- e) Insert the required Windows 95 distribution disk and click *OK*
- f) After the installation is completed, Windows 95 should be restarted to let the drivers take function

(II) **Windows NT**

- a) Under Windows NT, insert CD title into the CD-ROM drive (say D:)
- b) Click *Start* on the taskbar in Windows NT
- c) Click *Control Panel of Settings*
- d) Double click *Multimedia* icon
- e) Click *Device of Multimedia Properties*
- f) Select **Audio Devices** and then click *Add*
- g) Select **Unlisted or Updated Driver** and then click *OK*
- h) Type *D:\79VE0\drivers\sound\winnt\general* (D: being the letter of CD-ROM drive) and then click *OK*
- i) Select the right OPL3-SA sound system and follow the on screen instructions to complete the installation
- j) Restart the system

5.6 THE YSTATION APPLICATION FOR WINDOWS 95/WINDOWS 98

- a) Under Windows 95/Windows 98, insert CD title into the CD-ROM drive (say D:)
- b) Click *Start* on the taskbar in Windows 95
- c) Click *Run* on the menu bar in Windows 95
- d) Type *D:\79VE0\utility\ystation\setup.exe* (D: being the letter of CD-ROM drive)
- e) Follow the on screen instructions to complete the installation

CHAPTER 6

FLASH AND DMI UTILITY

6.1 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 flash*” 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. 23

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)?”

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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 “*awdf*lash”, and error message will appear:

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

6.2 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

```

Award DMI Configuration Utility V1.04a, Copyright Award Software Inc. 1995
[Edit DMI] [Add DMI] [Load DMI FILE] [Save DMI FILE]

  BIOS
  System
  Base Board
  Enclosure/Chassis
  Processor
  Memory Controller
  Memory Module
  Memory Module
  Memory Module
  Memory Module
  Cache
  Cache
  Port Connector
  Port Connector
  Port Connector
  Port Connector
  Port Connector
  Port Connector
  Port Connector
  System Slots

==== Display Component ====
Type : BIOS Information
Handle : 0000
Vendor Name : Award Software International, Inc.
BIOS Version : 4.51 PG
BIOS starting Address Segment : E000
BIOS Build Date : 05/12/97
BIOS Characteristics : Press [ENTER] for detail
Size of BIOS ROM : 0128K

↑↓←→-Move cursor ENTER-Accept DEL-Delete ESC-Abort&Exit

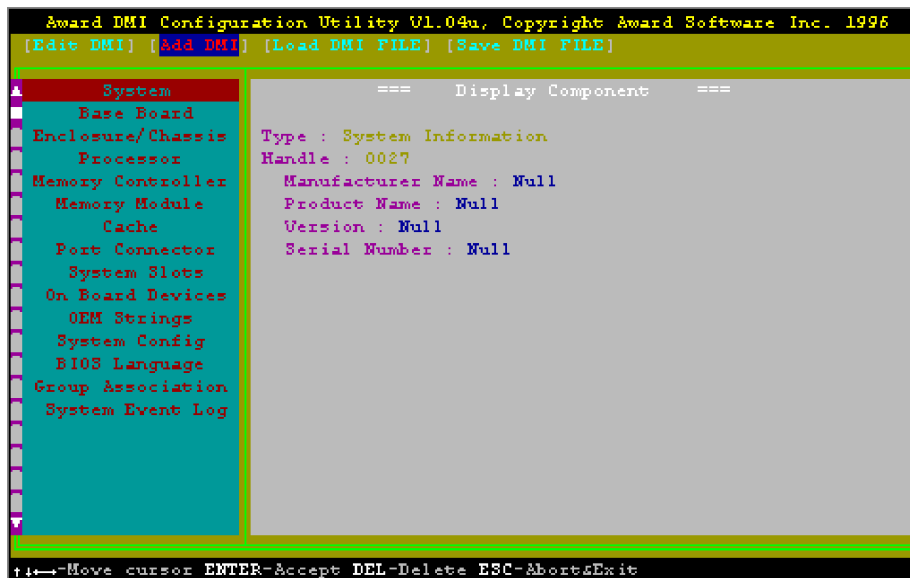
```

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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.

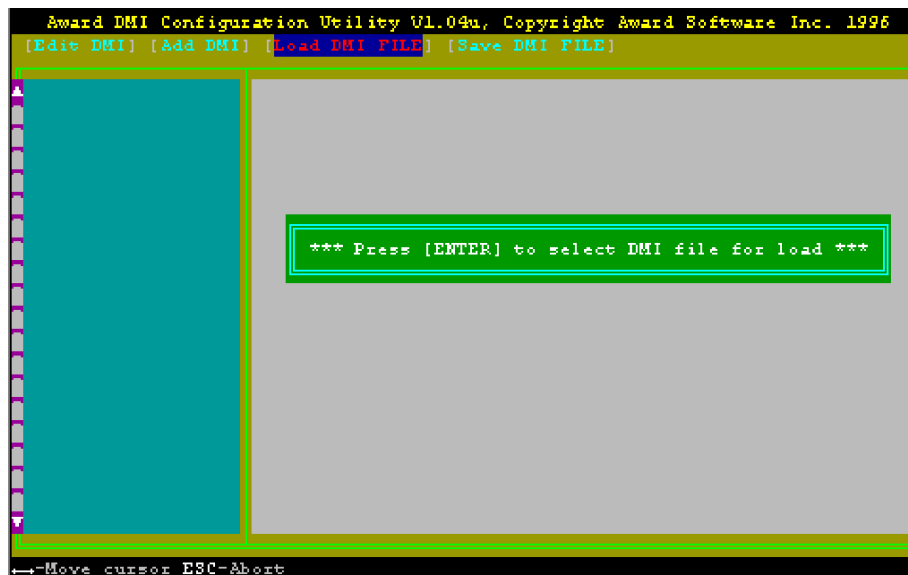
If the user has made changes, ESC will prompt you to answer Y or N. Enter Y to go back to the left-hand screen and save, enter N to go back to left-hand screen and not save. If editing has not been made, ESC will send you back to the left hand menu without any messages.

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.

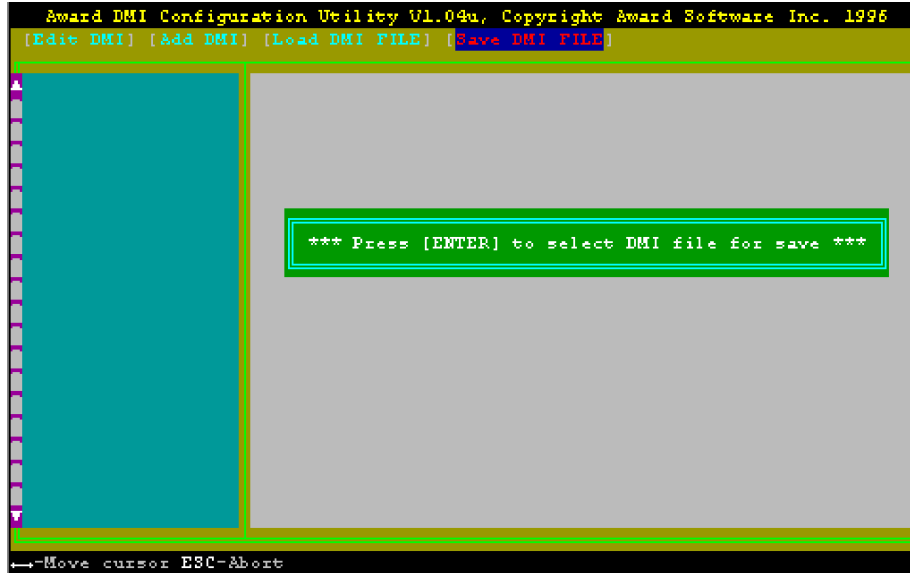
Load DMI File



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

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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 summaries the functions and settings of each jumper of the motherboard.

	Function	Jumper Settings
CPU Speed Selection	For 90MHz Intel Pentium CPU	SW1-1: OFF SW1-2: OFF SW1-3: OFF SW1-4: ON SW1-5: ON SW1-6: ON
	For 100MHz and 233MHz Intel Pentium, AMD-K6/233 and Cyrix M II-300, using 66MHz CPU	SW1-1: OFF SW1-2: OFF SW1-3: OFF SW1-4: OFF SW1-5: ON SW1-6: ON
	For 120MHz Intel Pentium, AMD-K5-PR120 and Cyrix 6x86L-PR150 CPU	SW1-1: ON SW1-2: OFF SW1-3: OFF SW1-4: ON SW1-5: ON SW1-6: ON
	For 133MHz Intel Pentium, AMD-K5-PR133 (REV C) and Cyrix 6x86L-PR166 CPU	SW1-1: ON SW1-2: OFF SW1-3: OFF SW1-4: OFF SW1-5: ON SW1-6: ON
	For 150MHz Intel Pentium and Cyrix 6x86MX-PR166 CPU	SW1-1: ON SW1-2: ON SW1-3: OFF SW1-4: ON SW1-5: ON SW1-6: ON
	For 150MHz Cyrix 6x86L/MX-PR200 CPU	SW1-1: ON SW1-2: OFF SW1-3: OFF SW1-4: ON SW1-5: ON SW1-6: OFF
To be continued...		

Appendix A

	Function	Jumper Settings
CPU Speed Selection	For 166MHz Intel Pentium, AMD-K6/166, AMD-K5-PR166 and Cyrix 6x86MX-PR200, using 66MHz CPU	SW1-1: ON SW1-2: ON SW1-3: OFF SW1-4: OFF SW1-5: ON SW1-6: ON
	For 180MHz IDT WinChip C6-180 CPU	SW1-1: OFF SW1-2: ON SW1-3: OFF SW1-4: ON SW1-5: ON SW1-6: ON
	For 188MHz Cyrix 6x86MX-PR233 CPU	SW1-1: ON SW1-2: ON SW1-3: OFF SW1-4: ON SW1-5: ON SW1-6: OFF
	For 200MHz Intel Pentium, AMD-K6/200, Cyrix 6x86MX-PR233 and IDT WinChip C6-200 CPU	SW1-1: OFF SW1-2: ON SW1-3: OFF SW1-4: OFF SW1-5: ON SW1-6: ON
	For 208MHz IBM 6x86MX-PR266 CPU	SW1-1: ON SW1-2: ON SW1-3: OFF SW1-4: OFF SW1-5: ON SW1-6: OFF
	For 225MHz Cyrix M II-300, using 75MHz CPU	SW1-1: OFF SW1-2: ON SW1-3: OFF SW1-4: ON SW1-5: ON SW1-6: OFF
	For 250MHz AMD-K6/250 and Cyrix M II-333 CPU	SW1-1: ON SW1-2: ON SW1-3: OFF SW1-4: OFF SW1-5: OFF SW1-6: OFF
To be continued...		

	Function	Jumper Settings
CPU Speed Selection	For 266MHz AMD-K6/266 and AMD-K6-2/266 CPU	SW1-1: ON SW1-2: OFF SW1-3: ON SW1-4: OFF SW1-5: ON SW1-6: ON
	For 300MHz AMD-K6/300 CPU	SW1-1: ON SW1-2: ON SW1-3: ON SW1-4: OFF SW1-5: ON SW1-6: ON
	For 300MHz AMD-K6-2/300 and Cyrix M II-350 CPU	SW1-1: OFF SW1-2: ON SW1-3: OFF SW1-4: OFF SW1-5: OFF SW1-6: OFF
	For 333MHz AMD-K6-2/333 CPU	SW1-1: OFF SW1-2: OFF SW1-3: OFF SW1-4: ON SW1-5: OFF SW1-6: OFF
	For 350MHz AMD-K6-2/350 CPU	SW1-1: OFF SW1-2: OFF SW1-3: OFF SW1-4: OFF SW1-5: OFF SW1-6: OFF
	For 380MHz AMD-K6-2/380 CPU	SW1-1: ON SW1-2: OFF SW1-3: ON SW1-4: ON SW1-5: OFF SW1-6: OFF
	For 400MHz AMD-K6-2/400 and AMD-K6-III/400 CPU	SW1-1: ON SW1-2: OFF SW1-3: ON SW1-4: OFF SW1-5: OFF SW1-6: OFF
	To be continued...	

Appendix A

Function		Jumper Settings
CPU Speed Selection	For 450MHz AMD-K6-2/450 and AMD-K6-III/450 CPU	SW1-1: ON SW1-2: ON SW1-3: ON SW1-4: OFF SW1-5: OFF SW1-6: OFF
Clear CMOS Data	Normal	JP1: 1-2 short
	Clear	JP1: 2-3 short
Voltage For System ROM	12V Flash ROM	J6: 1-2 short
	5V Flash ROM	J6: 2-3 short
Onboard Audio	Disabled	JP7: open
	Enabled	JP7: short