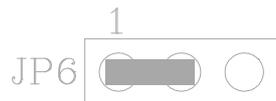# PAM-0052V

High Performance

Pentium PCI Mainboard

energy

EPA POLLUTION PREVENTER

WARNING

For the system to operate normally, please make sure JP6 of the mainboard is set as below. Refer to Fig. 3 in this manual for the location JP6.

If JP6 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.

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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

Preface

The motherboard is a 4-layer, 2/3 baby AT size high performance mainboard. It includes VIA VT82C598MVP (MVP3) system chipset, Winbond W83877F super I/O chip.

Features

Processor
- Intel Pentium/MMX, Cyrix 6x86L/6x86MX/M II and AMD K6/K6-2 CPU.
- The mainboard can run with following speeds:
  90, 100, 110, 120, 133, 150, 166, 200, 233, 250, 266, 300, 333, 350, 366, 380, 400 and 450MHz

Chipset
- VIA VT82C598MVP (VIA MVP3 System Controller)
- VIA VT82C586B (PCI ISA IDE Xcelerator)
- Winbond W83877F Super I/O Controller

Cache Size
- Built in 0/512KB 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) and Synchronous DRAM (SDRAM) can work together.
- Memory configurations from 8MB to 384MB are possible using combination of 1M*32 to 8M*32 module (32 bit no-parity 72-pin SIMM module) and 2M*64 to 16M*64 SDRAM DIMM module.

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 mouse and keyboard supported.
- IrDA supported.
- Dual standard USB (Universal Serial Bus) ports 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 17Mb/s. DMA mode transfer rate can be up to 22Mb/s.
- Ultra DMA Mode supported. Transfer rate can be up to 33Mb/s.
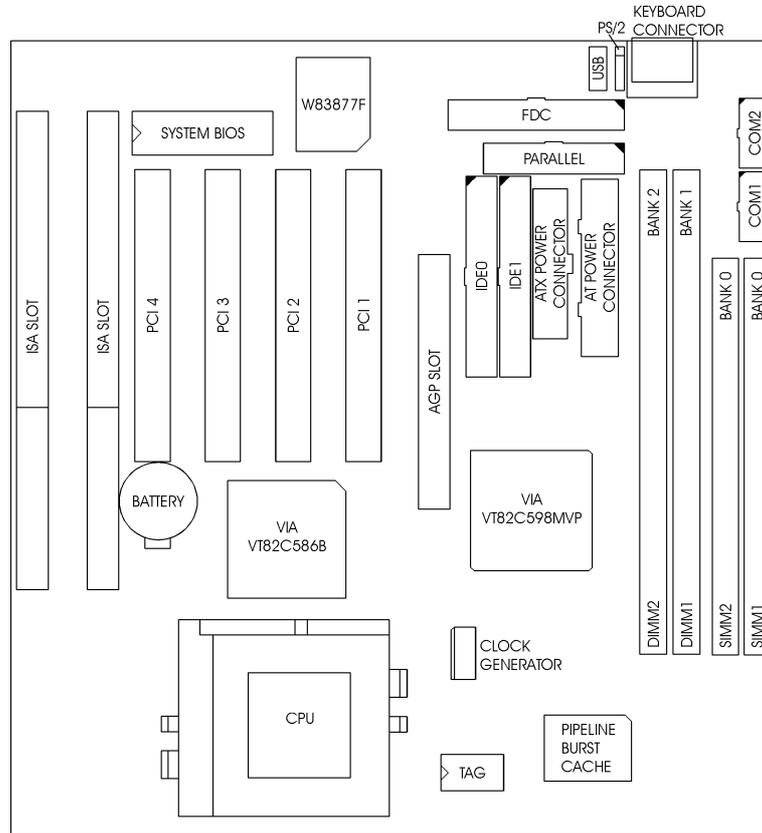
Fig. 1 Key Components of the Mainboard

System BIOS
- Award BIOS (128KB Flash EPROM).

Slots
- Four PCI slots
- Two ISA slots

Form Factor
- 2/3 Baby AT size (220mm x 230mm)

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, 16MB 60ns EDO SIMM, 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
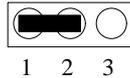
Pins 1 and 2 are shorted with a jumper cap.

1   2   3
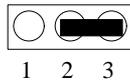
Pins 2 and 3 are shorted with a jumper cap.

1   2   3

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 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.)

intel
pentium
w/ MMX™ Tech
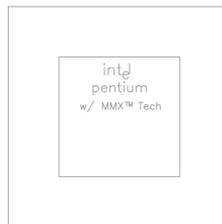
Fig. 2a CPU Description
(Top Side)

2.2.2   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.)

```
              AMD
         AMD-K6™
         AMD-K6/200ALR
         2.9V                    Operating  Voltage
Revision  B  9720DJ1W
         ⓜ  ©  1997  AMD
```
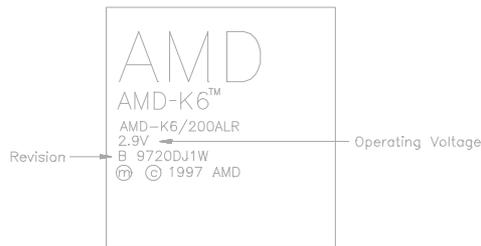
Fig. 2b CPU Description
(Top Side)

Operating Voltage	I/O Voltage	Core Voltage
2.2V	3.3V	2.2V
2.4V	3.3V	2.4V
2.9V	3.3V	2.9V
3.2V	3.3V	3.2V

2.2.3   CYRIX 6x86L CPU

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

```
              Cyrix



         6x86L-PR200+GP
         150MHz
         Core: 2.8V I/O: 3.3V
         Fan/Heatsink Required
```

Fig. 2c CPU Description
(Top Side)

2.2.4 CYRIX 6x86MX CPU

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

Fig. 2d 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
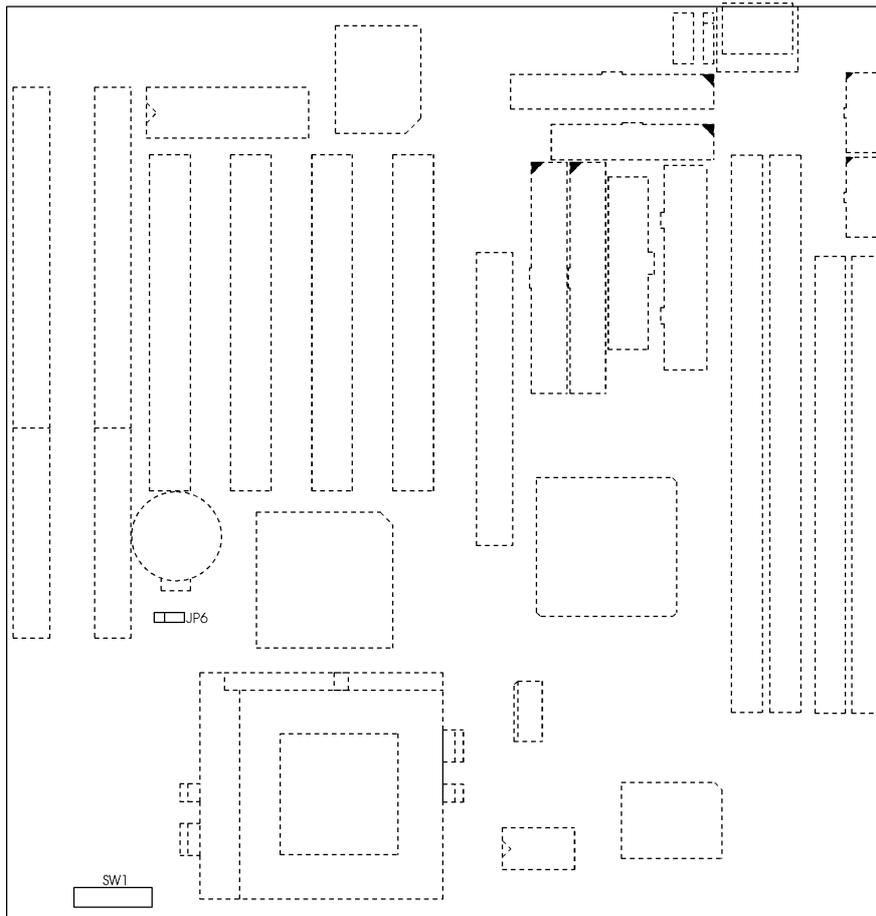
Fig. 3 Jumper Location of the mainboard

2.4   CPU VOLTAGE

The CPU Core Voltage can be selected by SW1-1,2,3.

CPU Voltage	SW1
3.3V (I/O)/2.2V (core) Dual Voltage CPU For 2.2V AMD-K6 and AMD-K6-2	
3.3V (I/O)/2.4V (core) Dual Voltage CPU For 2.4V AMD-K6-III	
3.3V (I/O)/2.8V (core) Dual Voltage CPU For P55C and Cyrix 6x86L	
3.3V (I/O)/2.9V (core) Dual Voltage CPU For 2.9V AMD-K6, Cyrix 6x86MX and Cyrix M II	
3.3V (I/O)/3.2V (core) Dual Voltage CPU For 3.2V AMD-K6/233	
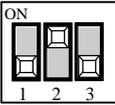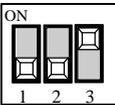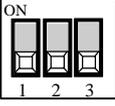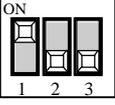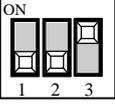
Table 1

2.5 CPU TO BUS FREQUENCY RATIO (SW1-4,5,6)

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 jumpers CPU External (Bus) Frequency Selection.

2.6 CPU EXTERNAL (BUS) FREQUENCY SELECTION (SW1-7,8,9,10)

These switches tell the clock generator what frequency to send to the CPU. The Bus clock times the Bus Ratio equals the CPU's Internal frequency.
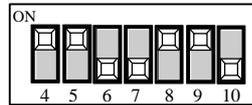
2.7 SDRAM FREQUENCY SELECTION (SW-10)

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

SW1-10 : ON   SDRAM frequency = AGP frequency
SW1-10 : OFF   SDRAM frequency = CPU External frequency

2.8   CPU SPEED

CPU Type	Freq.	Ratio	CPU Bus Freq.	Freq. Ratio Setting			Bus Freq. Setting		
				SW1-4	SW1-5	SW1-6	SW1-7	SW1-8	SW1-9
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-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-K6-2/366	366MHz	5.5x	66MHz	OFF	OFF	ON	OFF	ON	ON
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-333	250MHz	3.0x	83MHz	OFF	ON	OFF	OFF	ON	OFF
Cyrix M II-350	300MHz	3.0x	100MHz	OFF	ON	OFF	OFF	OFF	OFF
IBM 6x86MX-PR266	208MHz	2.5x	83MHz	ON	ON	OFF	OFF	ON	OFF

Table 2

☐ Reserve for future support

2.9   JP6 – CLEAR CMOS DATA

1.   Normal Mode

Fig. 4a

2.   Reset Content of RTC

Fig. 4b

2.10 MEMORY CONFIGURATION

The mainboard lets user upgrade system memory via SIMM or DIMM sockets on the mainboard. On board memory is located in three banks: Bank 0 – Bank 2. Two SIMM sockets (SIMM1, SIMM2) are provided for SPM, FPM and EDO RAM SIMM and two DIMM sockets (DIMM1, DIMM2) are available for the 3.3V unbuffered SDRAM and EDO DIMM.

Note: The type of SIMM1/SIMM2 must be same.
Only 3.3V unbuffered DIMM can be used.
Both single sided and double sided SIMM or DIMM can be supported.

Table 4 provides the typical memory configurations supported by the mainboard.

Bank 0 (SIMM1/2)	Bank 1 (DIMM1)	Bank 2 (DIMM2)
Installed	None	None
Installed	Installed	None
None	Installed	None
Installed	None	Installed
None	None	Installed
Installed	Installed	Installed
None	Installed	Installed

Table 3

The memory size of SIMM can be 8MB, 16MB, 32MB or 64MB. The memory of DIMM can be 8MB, 16MB, 32MB, 64MB or 128MB.

Important: When 100MHz DRAM speed is selected. SDRAM DIMMs with PC100 specification and Serial Presence Defect (SPD) data structure are required.
We highly don't recommend the mix combination of SIMMs and DIMMs, especially when 100MHz DRAM speed is selected.

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.
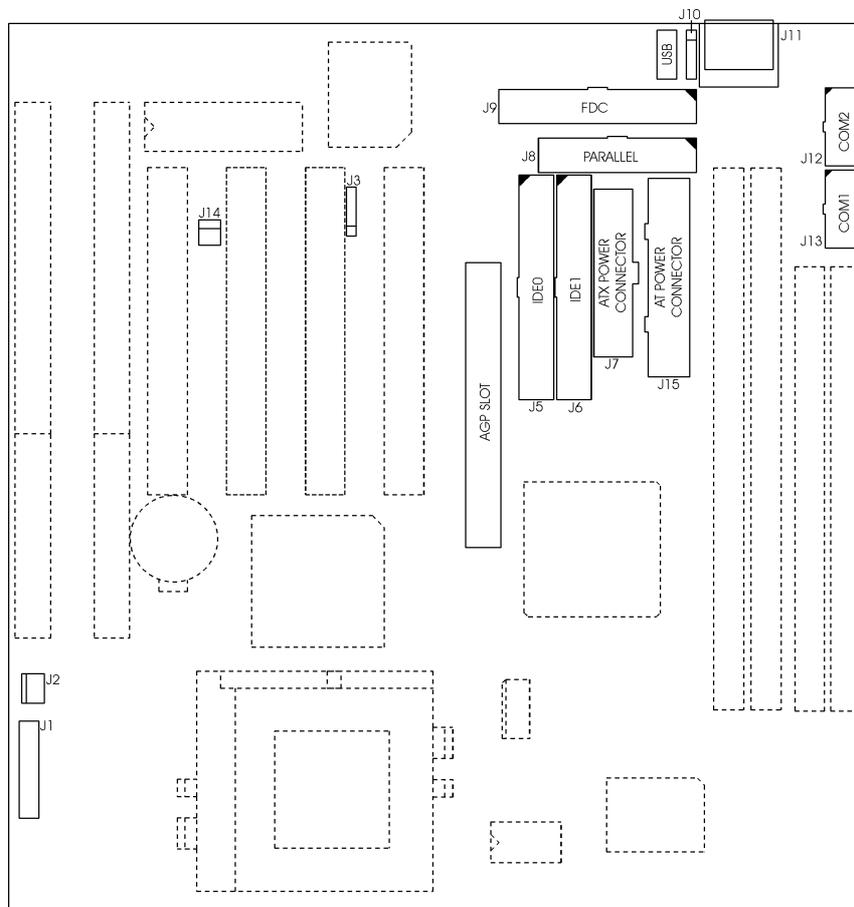
Fig. 5 Connector Location

3.1   J1 – MULTIPLE FUNCTION JUMPER

J1 is a front panel multi-function jumper include speaker, reset, keylock, harddisk, LED, ATX power switch, ACPI (suspend) LED and power button (suspend switch). The pin definition is as following figure.
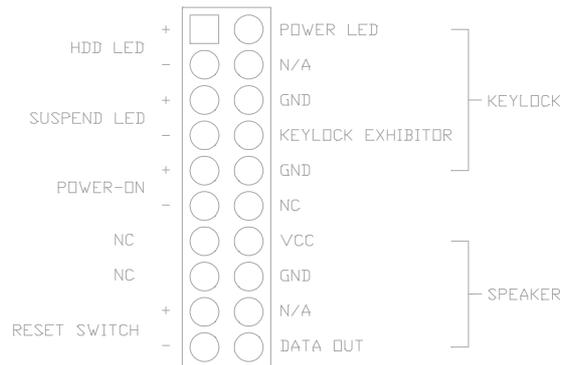
Fig. 6 Multiple Function Jumper

3.2   J2 – CPU FAN CONNECTION

J2 is a three pin connector, which is used to connect with the CPU FAN power cable.
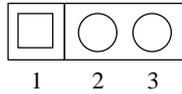
Fig. 7 CPU Fan Connector

3.3   J3 - IrDA/FAST IR CONNECTOR

J3 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:
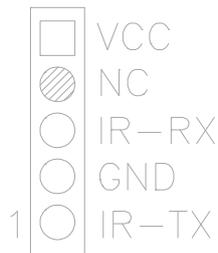
Fig. 8 IrDA/Fast IR Connector

3.4   J4 – UNIVERSAL SERIAL BUS PORTS 0 & 1

J4 is a 2x5 pin header for USB0 and USB1 connector, and it is also designed as the connector for the optional USB extension card.
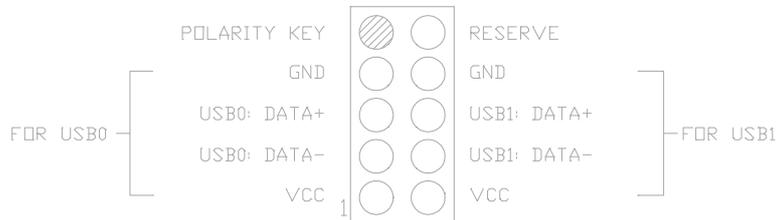
Fig. 9 USB Connector

3.5   J5, J6 - 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.

3.6   J7 - ATX POWER CONNECTOR

J7 is a 2x10 pin male connector. Plug the power connector of the ATX power supply onto the connector.

```
+3.3VDC  1 ◯◯ 11 +3.3VDC
+3.3VDC    ◯◯    -12VDC
    GND    ◯◯    GND
  +5VDC    ◯◯    Power Switch
    GND    ◯◯    GND
  +5VDC    ◯◯    GND
    GND    ◯◯    GND
Power Good ◯◯    -5VDC
+5V Standby ◯◯   +5VDC
 +12VDC    ◯◯    +5VDC
```
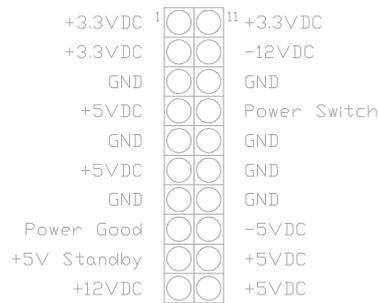
Fig. 10 ATX Power Connector

3.7   J8 – PARALLEL PORT CONNECTOR

J8 locates at the left of the two serial ports with pin 1 on the upper side.

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 – EXTENSION PS/2 MOUSE CONNECTOR

J10 is a five-pin connector with polarity key. It is connected with the PS/2 mouse connector cable to extend the PS/2 mouse connector to the rear of the system case.

```
1 ◯  VCC
  ◎  Polarity Key
  ◯  GND
  ◯  Mouse Clock
  ◯  Mouse Data
```

Fig. 11 Extension PS/2 Mouse Connector

3.10   J11 – KEYBOARD CONNECTOR

A standard five-pin female DIM keyboard connector is located at the rear of the keyboard. Plug the jack on the keyboard cable into this connector.
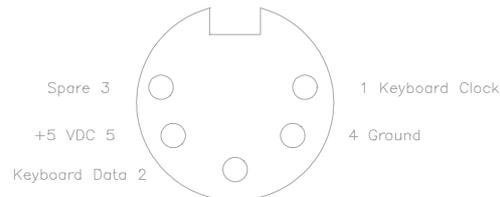
Fig. 12 Keyboard Connector

3.11   J12, J13 - SERIAL PORT COM1/COM2

These are D-Type 9 pin male connectors for pointing devices or other serial devices.

3.12   J14 – INTERNAL MODEM RING-IN CONNECTOR

J14 is a three pin connector which is used to connect the Internal Modem Card's Ring-in signal to the mainboard. Thus, the mainboard can be wake up from suspend mode through the Internal Modem Ring-in.

Fig. 13 Internal Modem Ring-in Connector

3.13 J15 - AT POWER CONNECTOR

The power supply connector has two six-pin male header connectors. Plug the dual connectors from the power directly onto the board 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 4: AT Power Connector

3.14 CN2 – PS/2 STYLE KEYBOARD CONNECTOR (OPTIONAL)

A PS/2 standard six-pin female DIM connector for a PS/2 keyboard.

2 Spare   1 Keyboard Clock
4Vcc   3 GND
6 Spare   5 Keyboard Data
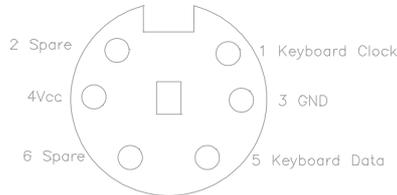
Fig. 14 Optional PS/2 Keyboard Connector

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"

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

```
                    ROM PCI/ISA BIOS (2A5LEG3B)
                       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. 15

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 (2A5LEG3B)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

```
Date (mm:dd:yy) : Mon, Jan 10 2000
Time (hh:mm:ss) : 19 : 1 : 14

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:      640K
Drive B : None                         Extended Memory:    64512K
                                           Other Memory:     384K
Video   : EGA/VGA
Halt On : All Errors                       Total Memory:    65536K

Esc : Quit            ↑↓→← : Select Item          PU/PD/+/- : Modify
F1  : Help            (Shift)F2 : Change Color
```

Fig. 16

Date(mm/dd/yy)	Type the current date.
Time(hh:mm:ss)	Type the current time.
Hard Disks	Choose from the standard hare 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 (2A5LEG3B)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Anti-Virus Protection	: Enabled	Video BIOS Shadow	: Enabled
Quick Power On Self Test	: Disabled	C8000-CBFFF Shadow	: Disabled
Boot Sequence	: A,C, SCSI	CC000-CFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	D4000-D7FFF Shadow	: Disabled
Boot Up Numlock Status	: On	D8000-DBFFF Shadow	: Disabled
Boot Up System Speed	: High	DC000-DFFFF Shadow	: Disabled
Gate A20 Option	: Normal		
Memory Parity/ECC Check	: Disabled		
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	
HDD S.M.A.R.T. Capability	: Enabled	F1: Help PU/PD/+/-: Modify	
Report No FDD For WIN 95	: No	F5: Old Values (Shift)F2: Color	
		F7: Load Setup Defaults	

Fig. 17 BIOS Setup Defaults

<u>**A short description of the screen items follows:**</u>

Anti-Virus Protection: Choose Enabled or Disabled.   Enabled to activate the Trend ChipAwayVirus (R) Anti-Virus program inside the BIOS.

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", "LS/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 Floppy Seek: Choose Enabled or Disabled. Disabled provides a fast boot and reduces the possibility of damage to the heads.

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: Normal. 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.

Memory Parity/ECC Check: Choose Enabled or Disabled. If memory modules with Parity of ECC is installed.

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 Non-OS/2 or OS/2. If the system memory is larger than 64MB and running OS/2, please select OS/2. However, if it use other operating system, please select Non-OS/2. 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 disk S.M.A.R.T. feature (Self-Monitoring, Analysis and Reporting Technology).

Report No FDD For WIN 95: Select Yes or No, value is No. If no floppy is connected, the BIOS will not report to Windows 95.

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

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 (2A5LEG3B)
                        CHIPSET FEATURES SETUP
                        AWARD SOFTWARE, INC.
┌─────────────────────────────────────────────────────────────────────────┐
│ Bank 0/1 DRAM Timing      : FP/EDO 70ns   OnChip USB           : Enabled  │
│ Bank 2/3 DRAM Timing      : SDRAM 10ns    USB Keyboard Support : Disabled │
│ Bank 4/5 DRAM Timing      : FP/EDO 70ns                                   │
│ DRAM Read Pipeline        : Enabled                                       │
│                                                                           │
│ Cache Rd+CPU Wt Pipeline  : Enabled                                       │
│ Cache Timing              : Fast                                          │
│ Video BIOS Cacheable      : Enabled                                       │
│ System BIOS Cacheable     : Enabled                                       │
│ Memory Hole At 15MB Addr. : Disabled                                      │
│ AGP Aperture Size         : 64M                                           │
│                                                                           │
│                                       ESC: Quit       ↑↓→←: Select Item   │
│                                       F1: Help        PU/PD/+/-: Modify   │
│                                       F5: Old Values   (Shift)F2: Color   │
│                                       F6: Load BIOS Defaults              │
│                                       F7: Load Setup Defaults             │
└─────────────────────────────────────────────────────────────────────────┘
```

Fig. 18

A short description of the screen items follows:

Bank 0/1 DRAM Timing, Bank 2/3 DRAM Timing, Bank 4/5 DRAM Timing: Available options are Normal, Medium, Fast, Turbo, FP/EDO 70ns, FP/EDO 60ns. It is set the DRAM Timing of the corresponding Memory Bank.

DRAM Read Pipeline: You may select Enabled for this field when PBSRAMS are installed. Pipeling improves system performance.

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

Video BIOS Cacheable: When enabled, the Video BIOS cache will cause access to video BIOS addressed at C0000H to C7FFFH to be cached, if the cache controller is also enabled.

System BIOS Cacheable: As with caching the video BIOS above, enabling this selection allows accesses to the system BIOS ROM addressed at F0000H – FFFFFH to be cached, provided that the cache controller is enabled.

Memory Hole At 15MB Addr.: Choose Enabled or Disabled. Enabled allows some linear VGA Cards to run larger frame port, or it can be reserved or some operating system.

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, 256M.

OnChip USB: Choose Enabled or Disabled. Enabled allows the on board Universal Serial Bus (USB) Controller to be functioned.

USB Keyboard Support: This option only shown when OnChip USB Controller 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 (2A5LEG3B)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

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

Fig. 19

<u>**A short description of the screen items follows:**</u>

ACPI Function: To enabled feature for supporting the operating system with Advanced Configuration and Power Interface. (such as Windows 98)

Power Management: Available selection are "Disabled", "User Define", "Max Saving" and

"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 10 seconds.
"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 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 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. (ATX power supply required)

RTC Alarm Resume: To enabled the **RTC Alarm Resume** will wake up the system at the time set on the **Date (of Month)** and **Timer (hh:mm:ss)**. (ATX Power supply required)

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 (2A5LEG3B)
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
		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 Actived By	: Level
IRQ-11 assigned to	: PCI/ISA PnP	Assign IRQ For USB	: Enabled
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		
DMA-1 assigned to	: PCI/ISA PnP	ESC: Quit ↑↓→←: Select Item	
DMA-3 assigned to	: PCI/ISA PnP	F1: Help PU/PD/+/-: Modify	
DMA-5 assigned to	: PCI/ISA PnP	F5: Old Values (Shift)F2: Color	
DMA-6 assigned to	: PCI/ISA PnP	F6: Load BIOS Defaults	
DMA-7 assigned to	: PCI/ISA PnP	F7: Load Setup Defaults	

Fig. 20

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 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.

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 Peer Concurrency: Choose Enabled or Disabled. To enable this option will let the system active more than one PCI device at a time.

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: It is used to choose the IRQ that the USB is used.

Assign IRQ For VGA: It is used to choose the IRQ that the VGA is used.

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 (2A5LEG3B)
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		
IDE HDD Block Mode	: Enabled		
IDE Primary Master PIO	: Auto		
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
Init Display First	: PCI Slot		
Onboard FDD Controller	: Enabled	ESC: Quit ↑↓→←: Select Item	
Onboard Serial Port 1	: 3F8/IRQ4	F1: Help PU/PD/+/-: Modify	
Onboard Serial Port 2	: 2F8/IRQ3	F5: Old Values (Shift)F2: Color	
UART2 Mode	: Standard	F6: Load BIOS Defaults	
		F7: Load Setup Defaults	

Fig. 21

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/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.

UART2 Mode: Available selection are "Normal", "IrDA" and "ASKIR".

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 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)?

4.13 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   FLASH AND DMI UTILITY

5.1   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.

<u>How to Begin</u>

1.   Please type *"awdflash"* 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        DATE:  06/18/96      │
│       Flash Type                                  │
│                                                   │
│    File Name to Program:                          │
│                                                   │
│                                                   │
│                                                   │
├─────────────────────────────────────────────────┤
│ Error Message:                                    │
└─────────────────────────────────────────────────┘
```

Fig. 22

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)?"

<u>If you do not wish to save the old BIOS:</u>

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.

<u>To save the old BIOS:</u>

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
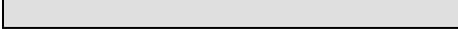
   Message: Please Power off or Reset System"

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 *"awdflash"*, and error message will appear:

   "Error Message: Fail - Due to EMM386 or QEMM!"

5.2 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.
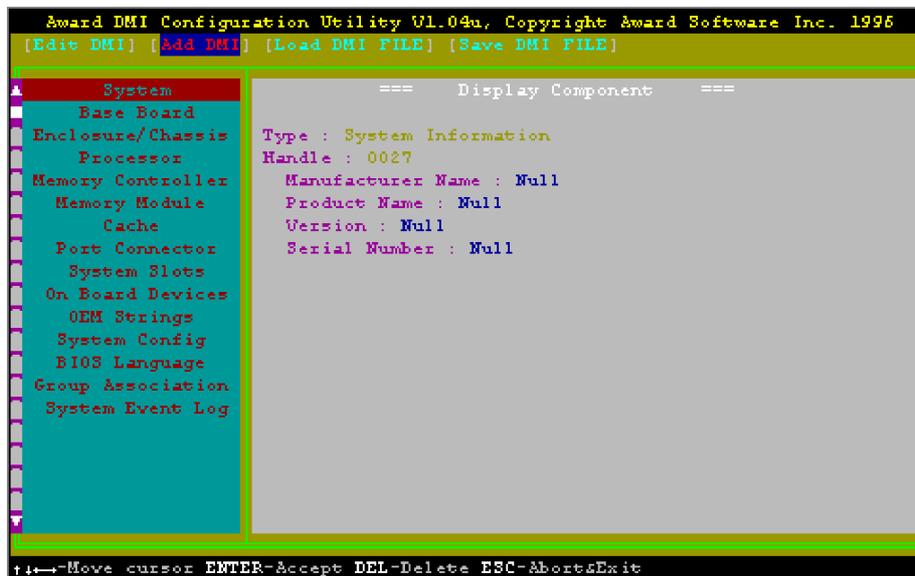
Using the DMI Configuration Utility

Edit DMI

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
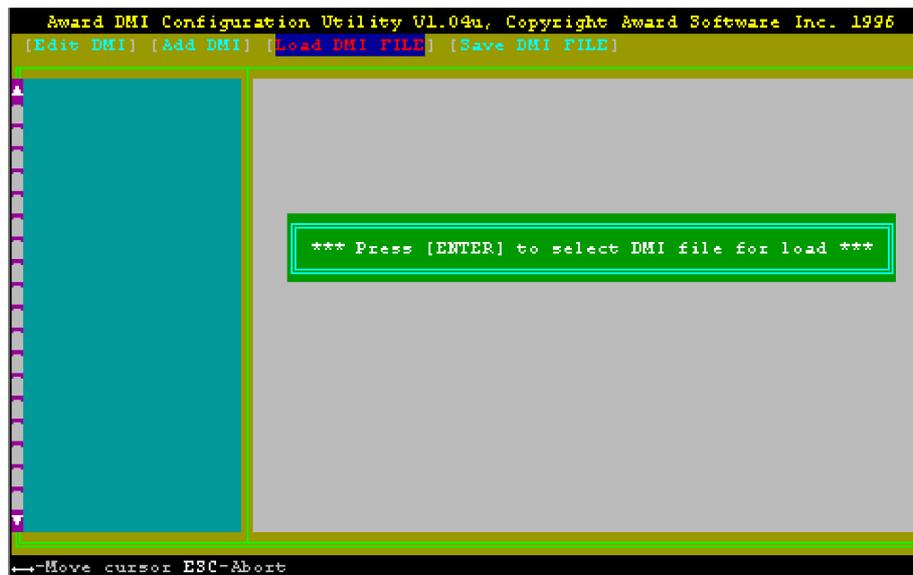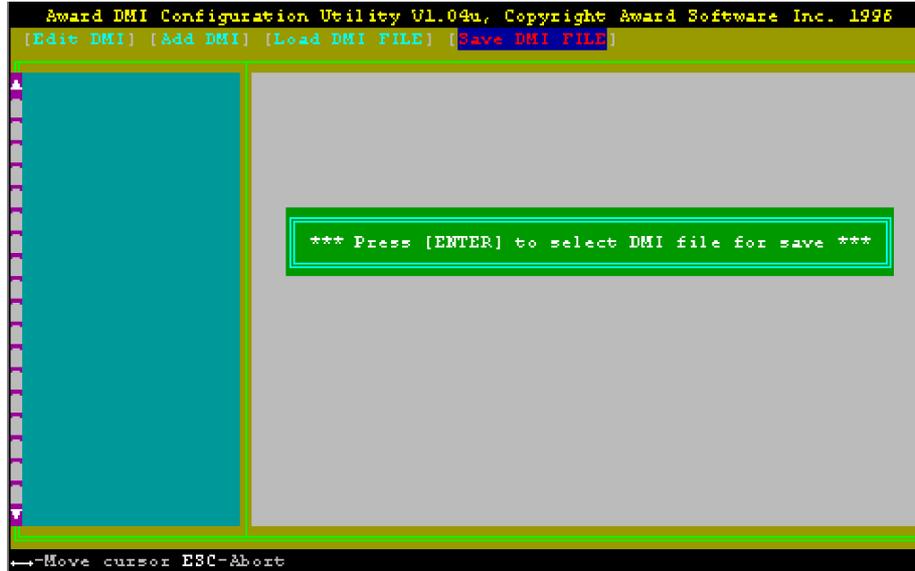

You can load the disk file to memory by entering a drive and path and file name here.

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 Voltage Selection	3.3V (I/O)/2.2V (core) Dual Voltage CPU For 2.2V AMD-K6 and AMD-K6-2	SW1-1: SW1-2: SW1-3:	OFF ON OFF
	3.3V (I/O)/2.4V (core) Dual Voltage CPU For 2.4V AMD-K6-III	SW1-1: SW1-2: SW1-3:	OFF OFF ON
	3.3V (I/O)/2.8V (core) Dual Voltage CPU For P55C and Cyrix 6x86L	SW1-1: SW1-2: SW1-3:	OFF OFF OFF
	3.3V (I/O)/2.9V (core) Dual Voltage CPU For 2.9V AMD-K6, Cyrix 6x86MX and Cyrix M II	SW1-1: SW1-2: SW1-3:	ON OFF OFF
	3.3V (I/O)/3.2V (core) Dual Voltage CPU For 3.2V AMD-K6/233	SW1-1: SW1-2: SW1-3:	OFF OFF ON
CPU Speed Selection	For 120MHz Cyrix 6x86L-PR150 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON OFF OFF ON ON ON
	For 133MHz Cyrix 6x86L-PR166 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON OFF OFF OFF ON ON
	For 150MHz Cyrix 6x86MX-PR166, using 60MHz CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON ON OFF ON ON ON
	For 150MHz Cyrix 6x86L/MX-PR200, using 75MHz CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON OFF OFF ON ON OFF
To be continued…			

Function		Jumper Settings	
CPU Speed Selection	For 166MHz Intel Pentium, AMD-K6/166 and Cyrix 6x86MX-PR200, using 66MHz CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON ON OFF OFF ON ON
	For 188MHz Cyrix 6x86MX-PR233 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON ON OFF ON ON OFF
	For 200MHz Intel Pentium; AMD-K6/200 and Cyrix 6x86MX-PR233 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	OFF ON OFF OFF ON ON
	For 208MHz IBM 6x86MX-PR266 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON ON OFF OFF ON OFF
	For 233MHz Intel Pentium, AMD-K6/233 and Cyrix M II-300 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	OFF OFF OFF OFF ON ON
	For 250MHz AMD-K6-2/250 and Cyrix M II-333, using 100MHz CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON ON OFF OFF OFF OFF
	For 250MHz Cyrix M II-250, using 83MHz CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	OFF ON OFF OFF ON OFF
To be continued…			

Function		Jumper Settings	
CPU Speed Selection	For 300MHz AMD-K6/300 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON ON ON OFF ON ON
	For 300MHz AMD-K6-2/300 and Cyrix M II-350 (for future support only) CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	OFF ON OFF OFF OFF OFF
	For 333MHz AMD-K6-2/333 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	OFF OFF OFF ON OFF OFF
	For 350MHz AMD-K6-2/350 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	OFF OFF OFF OFF OFF OFF
	For 366MHz AMD-K6-2/366 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	OFF OFF ON OFF ON ON
	For 380MHz AMD-K6-2/380 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON OFF ON ON OFF OFF
	For 400MHz AMD-K6-2/400 and AMD-K6-III/400 CPU	SW1-4 SW1-5 SW1-6 SW1-7 SW1-8 SW1-9	ON OFF ON OFF OFF OFF
To be continued…			

Function		Jumper Settings
CPU Speed Selection	For 450MHz AMD-K6-2/450 and AMD-K6-III/450 CPU	SW1-4 ON SW1-5 ON SW1-6 ON SW1-7 OFF SW1-8 OFF SW1-9 OFF
Clear CMOS Data	Normal	JP6: 1-2 short
	Reset Content of RTC	JP6: 2-3 short