PRM-0080I VBX

High Performance

Pentium II PCI Mainboard

User's Guide

Edition 1.10
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EPA POLLUTION PREVENTER

WARNING

For the system to operate normally, please make sure J6 of the mainboard is set as below. Refer to Fig. 2 in this manual for the location J6.
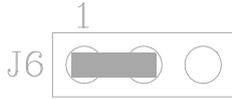
If J6 is shorted to 2-3, no CMOS data can be retained.

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.

CONTENTS

CHAPTER 1   INTRODUCTION

Preface

The motherboard is a 4 layer, ATX form factor high performance PCI/AGP mainboard. It includes VIA BX Plus chipset, Winbond W83977TF Super I/O controller.

Features

Processor
- Intel Pentium II and Celeron series.
- The mainboard can run with following speeds: 233-450MHz

Chipset
- VIA VT82C692 (PCI A.G.P. Controller)
- VIA VT82C596 (PCI ISA IDE Xcelerator)
- Winbond W83977TF (Super I/O Controller)
- Optional Winbond W83781D (System Voltage & Temperature Monitoring IC)

Main Memory
- Memory configurations up to 768MB SDRAM.
- DIMM socket for 3.3V SDRAM (PC/100 DIMM) or EDO (For 66MHz Front Size Bus CPU Only).
- ECC Function ensures data correction and integrity.

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.

System BIOS
- Award BIOS (256KB Flash EPROM).

Slots
- One AGP slot
- Four PCI slots
- Two ISA slots

Form Factor
- Full ATX Size (305mm x 180mm) 4 Layer
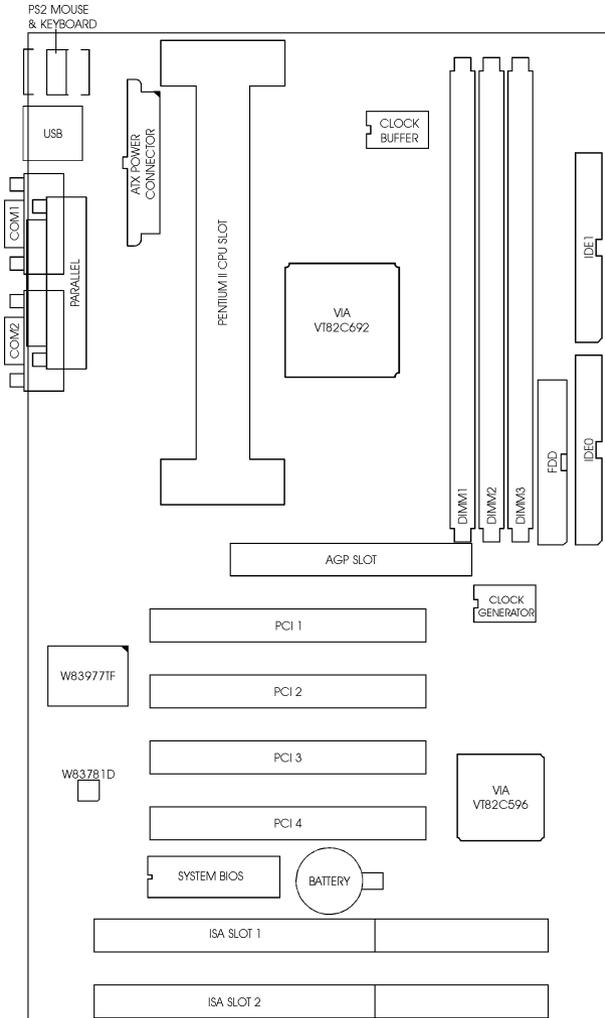
Fig. 1 Key Components of the Mainboard

CHAPTER 2   JUMPER SETTINGS

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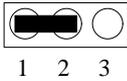
Pins 1 and 2 are shorted with a jumper cap.
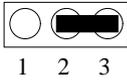
Pins 2 and 3 are shorted with a jumper cap.

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.

Jumpers Convention

Different color of jumper caps (mini-jumpers) are used on the board to represent different usage of the jumpers:

Red: CPU Clock setting
Black: Other

2.2   GRAPHICAL DESCRIPTION OF JUMPER SETTINGS
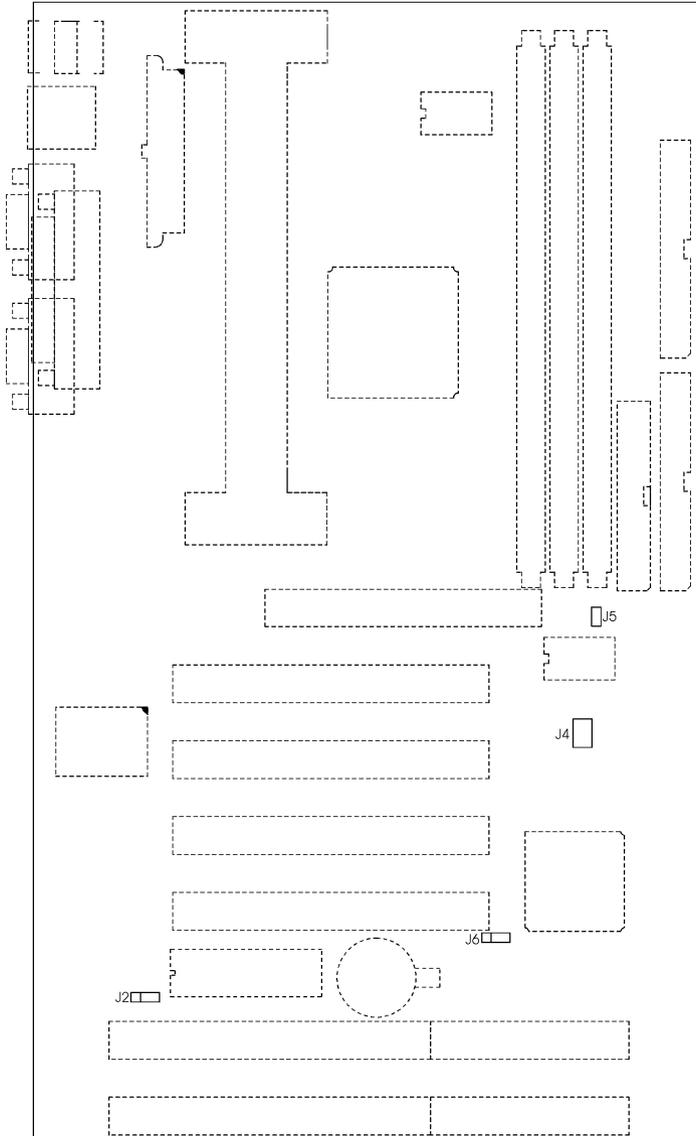
Fig. 2 Jumper Location of the mainboard

2.3   J4 - CPU CLOCK SPEED

The table below summaries the Pentium II Processor frequence and settings of each jumper of the motherboard.

CPU	Freq.	CPU Front Size Bus Freq.	Ratio	Rating Setting	
Pentium II	233MHz	66MHz	3.5x	J4:	1-2 open 3-4 open 5-6 close
	350MHz	100MHz			
Pentium II/ Celeron	266MHz	66MHz	4.0x	J4:	1-2 close 3-4 close 5-6 open
	400MHz	100MHz			
Pentium II/ Celeron	300MHz	66MHz	4.5x	J4:	1-2 open 3-4 close 5-6 open
	450MHz	100MHz			
Pentium II/ Celeron	333MHz	66MHz	5.0x	J4:	1-2 close 3-4 open 5-6 open
Celeron	366MHz	66MHz	5.5x	J4:	1-2 open 3-4 open 5-6 open

Table 1: Jumper Setting

▨ Reserve for future support

2.4   J5 – CPU FRONT SIZE BUS FREQUENCY SETTING

J5 is used to set the CPU Front Size Bus frequency.

J5	CPU Front Size Bus Freq.
▣	Auto Detect according CPU installed
◯ ◯	Always 100MHz

Table 2: CPU Front Size Bus Frequency Setting

2.5   J6 - CLEAR CMOS DATA

J6 is used to clear the content of the CMOS Data in the RTC (build in PIIX4E chip).
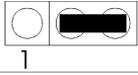
J6	Description
	Normal
	Clear CMOS Data

Table 3: Clear CMOS Data

2.6   J2 - VOLTAGE SELECTION FOR SYSTEM ROM

J2 is used to select the operation voltage of the system ROM.

J2	Description
	5V Flash EPROM
	12V Flash EPROM

Table 4: Voltage Selection for System ROM

2.7   **MEMORY CONFIGUARTION**

When 100MHz Front Size Bus Pentium II Processor is used. SDRAM DIMMs with PC/100 specification and Serial Presence Defect (SPD) data structure are required. For 66MHz Front Size Bus Pentium II Processor, SDRAM or EDO DIMM may be used. Don't use both SDRAM and EDO DIMM at the same time.

To enable the Error Checking and Correction (ECC) feature of the chipset. ECC DIMM has to be used and the "DRAM Data Integrity Mode" on BIOS Chipset Features Setup Menu has to be set to "ECC".

Three DIMM sockets are provided for the 3.3V SDRAM or EDO:
>   DIMM1 - used memory rows 0 and 1
>   DIMM2 - used memory rows 2 and 3
>   DIMM3 - used memory rows 4 and 5

Table 5 provides the typical memory configurations supported by the mainboard.

Rows 0/1 (DIMM1)	Rows 2/3 (DIMM2)	Rows 4/5 (DIMM3)
Installed	None	None
None	Installed	None
None	None	Installed
Installed	Installed	None
Installed	None	Installed
Installed	None	None
None	Installed	Installed
None	Installed	None
None	None	Installed
Installed	Installed	Installed

Table 5

The maximum memory size is up to 768MB. The size of each DIMM can be 8MB, 16MB, 32MB, 64MB, 128MB or 256MB.

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.
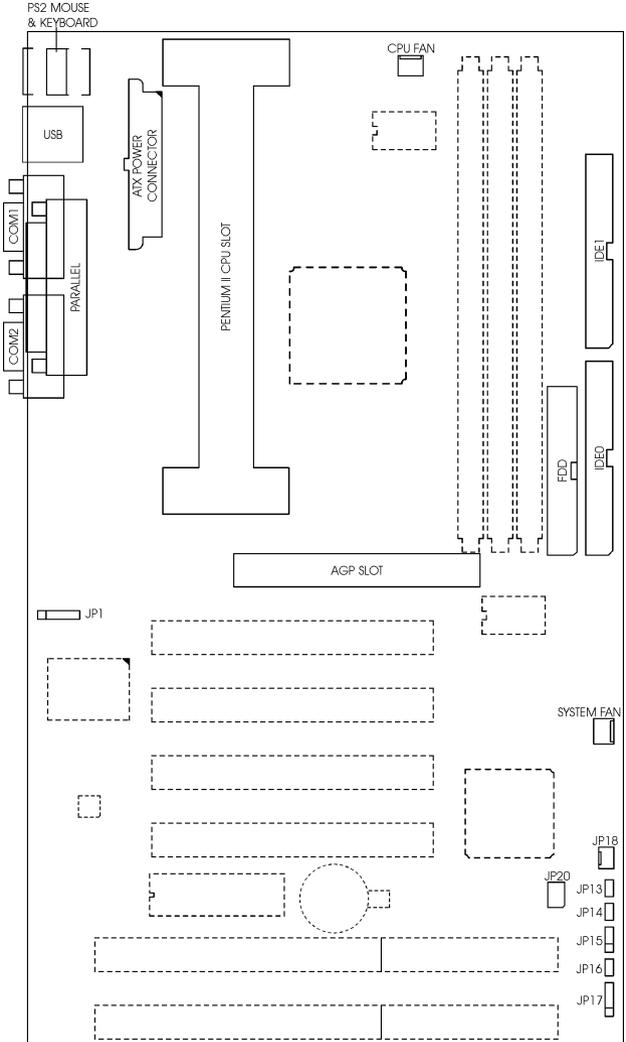
Fig 3 Connector Location

3.1   JP1 - IrDA CONNECTOR

JP1 is an IrDA connector that uses UART2 as interface of IrDA Infrared and HP SIR.

```
1 ☐ VCC
  ○ Not Used
  ○ IRRX
  ○ GND
  ○ IRTX
```

Fig. 4 IrDA Connector

3.2   JP8 - ATX POWER SUPPLY 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
```
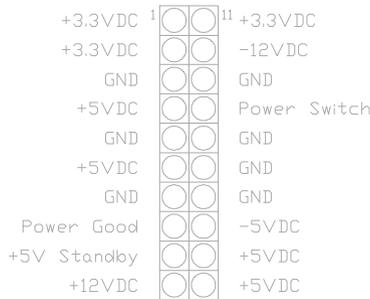
Fig. 5 ATX Power Supply Connector

3.3   JP10 - 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.

3.4   JP11, JP12 - 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.

3.5   JP13 - HDD LED

JP13 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. 6 HDD LED

3.6   JP14 - 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.

3.7   JP15 - POWER LED

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

Fig. 7 Power LED

3.8   JP16 - RESET

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

3.9   JP17 - SPEAKER

JP17 is a four pins connector, which is used to connect the system speaker.

Fig. 8 Speaker

3.10   JP18 – LAN WAKE UP CONNECTOR

JP18 is used to connect to the Network Card which support the LAN wake up feature.

Fig. 9 LAN Wake Up Connector

3.11   JP20 – SB LINK CONNECTOR

In order to migrate the legacy Sound Blaster compatible audio to the PCI bus, some Audio Card may incorporate a pair of PC/PCI request/grant sideband signals to interface to the PCI bus. This connector is provided for Creative PCI sound cards SB Link connection.
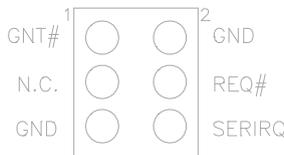
Fig. 10 SB Link Connector

3.12 CPU FAN, SYSTEM FAN - FAN CONNECTOR

These FAN connectors are used to connect with the CPU Fan or the Chassis Fan Power cable.
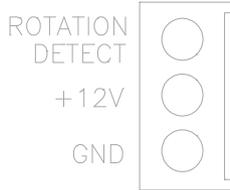
Fig. 11 FAN Connector
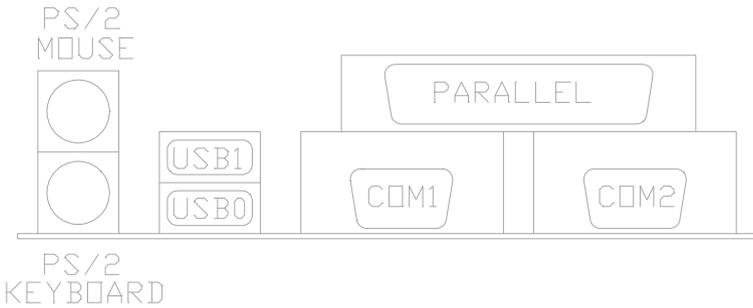
Fig. 12 I/O Connector

3.13 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.

3.14 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.

3.15   UNIVERSAL SERIAL BUS PORT 0 & 1

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

3.16   SERIAL PORT COM1 & COM2

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

3.17   PARALLEL PORT CONNECTOR

This is a D-Type 25 pin female connector.

3.18   RETENTION MECHANISM KITS INSTALLATION GUIDE

Retention Mechanism Kits includes following components:

1.   Retention mechanism Assembly
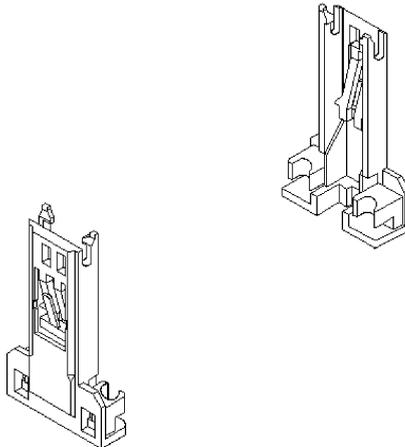
Fig. 13

2.   Retention Mechanism Attach Mount
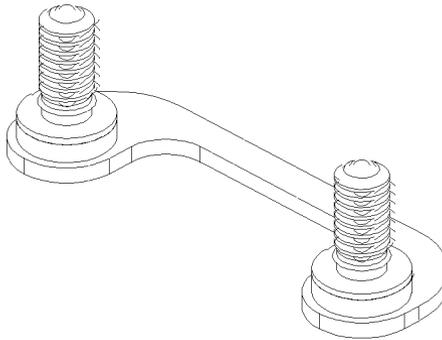
Fig. 14

3.   Before the installation of RM Kits find the six holes on the motherboard for RM installation. The hole position and usage is as following:
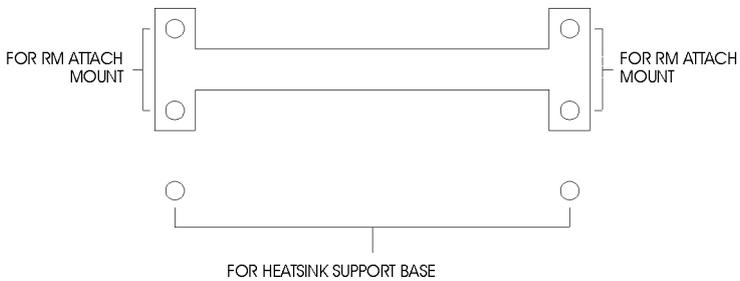
Fig. 15

Installation Guide

1.   Mount the two RM Attach Mounts onto the motherboard from bottom side. These mounts will be used to attach the RM Assembly.

2.   Put the RM Assembly on the Slot 1 and use the four screws to fix RM Assembly to the RM Attach Mount.

3.   Please refer to the diagram for the installation of Pentium II CPU
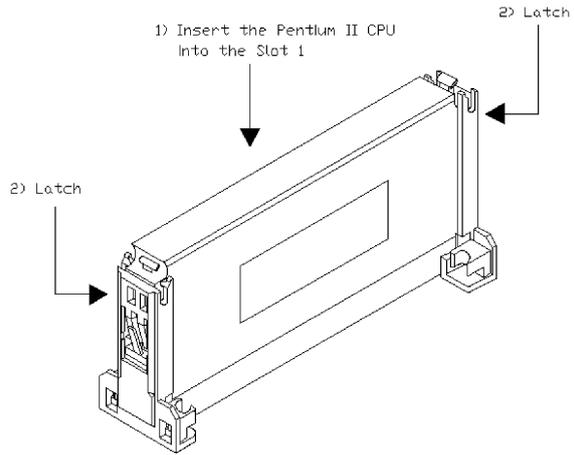
Fig. 16a

4.   Please refer to the diagram for the installation of Celeron CPU or Pentium II in SECC2 package.
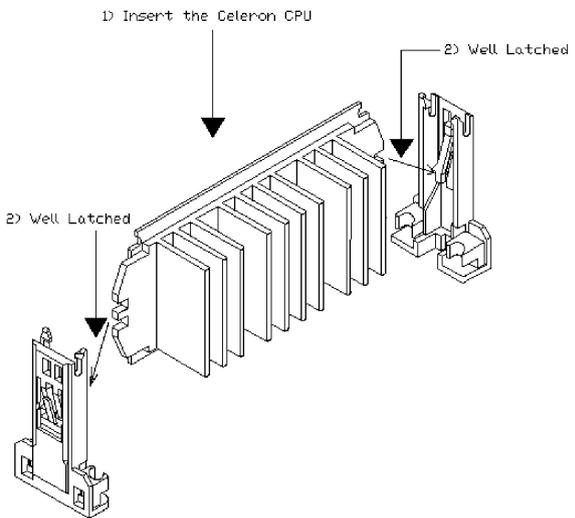
Fig. 16b

3.19 OPTIONAL HEATSINK SUPPORT INSTALLATION GUIDE

Optional Heatsink Support includes following components:

1. Heatsink Top Support (Optional)
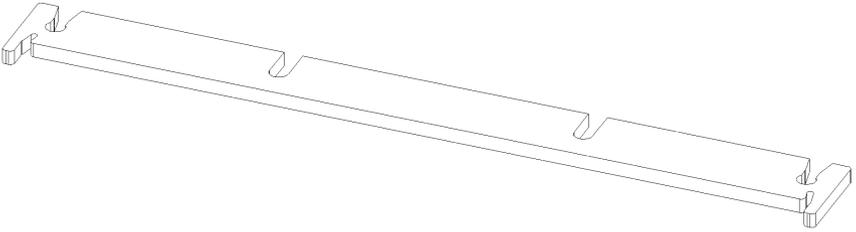
Fig. 17

2. Heatsink Support Base (Optional)
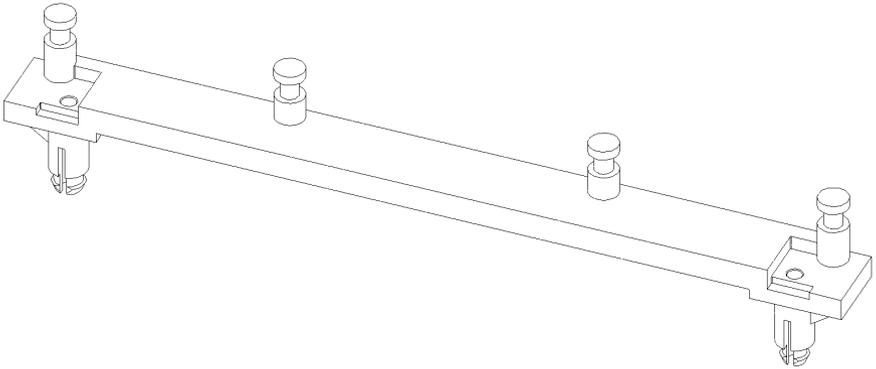
Fig. 18

Installation Guide

a)   Refer to Fig. 15, install the Heatsink Support Base onto the motherboard, insert the two plastic nail to the hole in the Heatsink Support Base as following diagram:
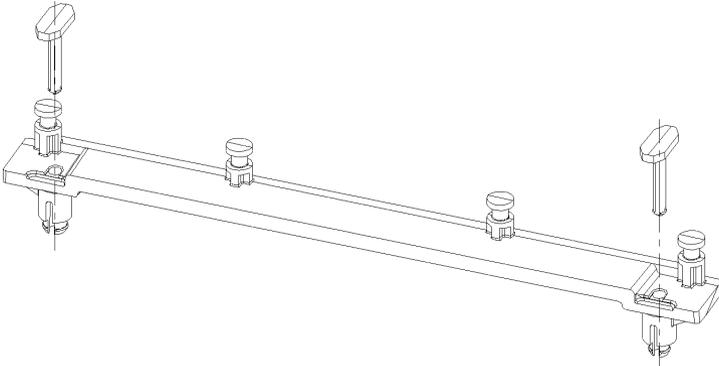
Fig. 19a

b)   Insert the Heatsink Top Support to the Pentium II Heatsink and the Heatsink Support Base as the following diagram:
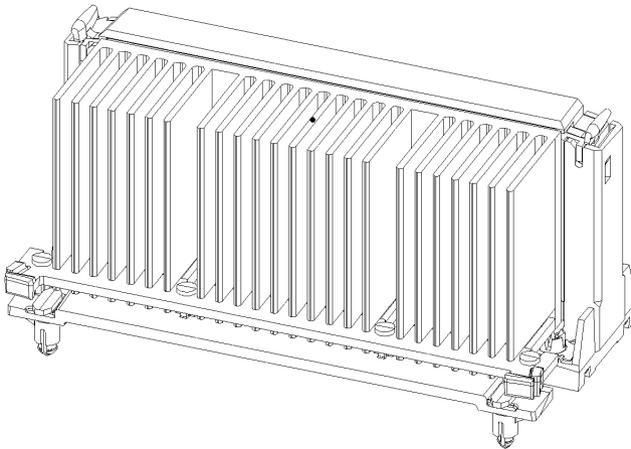
Fig. 19b

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 (2A6LGD19)
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. 20

3.   Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (see the following sections for more information).

4.   Press <ESC> at anytime to return to the Main Menu.

5.   In the Main Menu, choose "SAVE AND EXIT SETUP" to save change and reboot the system. Choosing "EXIT WITHOUT SAVING" to ignore all changes and exists the program.

4.2   STANDARD CMOS SETUP

ROM PCI/ISA BIOS (2A6LGD19)
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. 21

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 (2A6LGD19)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Anti-Virus Protection	: Enabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled		
Boot Up Numlock Status	: On		
Gate A20 Option	: Fast		
Memory Parity/ECC Check	: Enabled		
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	ESC: Quit	↑↓→←: Select Item
Report No FDD For Win95	: No	F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F6: Load BIOS Defaults	
		F7: Load Setup Defaults	

Fig. 22 BIOS Setup Defaults

A short description of the screen items follows:

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

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", "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.

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.

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 Win95: Choose Yes or No. Yes will show a removable disk in Window 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.

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 (2A6LGD19)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing	: SDRAM 10ns	OnChip USB	: Enabled
Bank 2/3 DRAM Timing	: SDRAM 10ns	USB Keyboard	: Disabled
Bank 4/5 DRAM Timing	: SDRAM 10ns		
SDRAM Cycle Length	: 3		
Memory Hole At 15MB Addr.	: Disabled		
Video RAM Cacheable	: Disabled		
AGP Aperture Size	: 256M		
AGP-2X Mode	: Enabled		

ESC: Quit   ↑↓→←: Select Item
F1: Help   PU/PD/+/-: Modify
F5: Old Values   (Shift)F2: Color
F6: Load BIOS Defaults
F7: Load Setup Defaults

Fig. 23

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, SDRAM 10ns, SDRAM 8ns. It is set the DRAM Timing of the corresponding Memory Bank.

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

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.

Video RAM Cacheable: Choose Enabled or Disabled. "Enabled" allows video RAM to be cacheable.

AGP Aperture Size: Select the size of the Accelerated Graphic Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The available options are 4, 8, 16, 32, 64, 128 and 256MB.

AGP-2X Mode: Choose Enabled to support AGP-2X Mode.

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

USB Keyboard: 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 (2A6LGD19)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI Function	: Enabled	Primary INTR	: ON
Power Management	: User Define	IRQ3 (COM2)	: Primary
PM Control by APM	: Yes	IRQ4 (COM1)	: Primary
Video Off Option	: Suspend → Off	IRQ5 (LPT2)	: Primary
Video Off Method	: V/H SYNC+Blank	IRQ6 (Floppy Disk)	: Primary
MODEM Use IRQ	: 3	IRQ7 (LPT1)	: Primary
Soft-off by PWRBTN	: Delay 4 Sec.	IRQ8 (RTC Alarm)	: Disabled
PM Timers		IRQ9 (IRQ2 Redir)	: Secondary
HDD Power Down	: Disabled	IRQ10 (Reserved)	: Secondary
Suspend Mode	: Disabled	IRQ11 (Reserved)	: Secondary
PM Events		IRQ12 (PS/2 Mouse)	: Primary
VGA	: OFF	IRQ13 (Coprocessor)	: Primary
LPT & COM	: LPT/COM	IRQ14 (Hard Disk)	: Primary
HDD & FDD	: OFF	IRQ15 (Reserved)	: Disabled
DMA/Master	: OFF		
Wake Up On LAN/Modem	: Disabled		
RTC Alarm Resume	: Disabled		
		ESC: Quit ↑↓→←: Select Item	
		F1: Help PU/PD/+/-: Modify	
		F5: Old Values (Shift)F2: Color	
		F6: Load BIOS Defaults	
		F7: Load Setup Defaults	

Fig. 24

<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 pressing the power button for 4 seconds.

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.

Wake Up On LAN/Modem: When Enabled, the external modem ring in or the wake up packet received by the Network Card, with wake up on LAN feature, can wake up the system. (ATX power supply required)

RTC Alarm Resume: To enable the **RTC Alarm Resume** will wake up the system at the time set 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 (2A6LGD19)
PNP/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
IRQ-3 assigned to	: PCI/ISA PnP	PCI Delay Transaction	: 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	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. 25

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 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 Enabled 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.

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 (2A6LGD19)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

OnChip IDE Channel0	: Enabled	Onboard Parallel Port	: 378/IRQ7
OnChip IDE Channel1	: Enabled	Parallel Port Mode	: ECP+EPP
IDE Prefetch Mode	: Enabled	ECP Mode Use DMA	: 3
IDE HDD Block Mode	: Enabled	EPP Mode Select	: EPP1.7
Primary Master PIO	: Auto		
Primary Slave PIO	: Auto		
Secondary Master PIO	: Auto		
Secondary Slave PIO	: Auto		
Primary Master UDMA	: Auto		
Primary Slave UDMA	: Auto		
Secondary Master UDMA	: Auto		
Secondary Slave UDMA	: Auto		
Init Display First	: PCI Slot		
Onboard 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	: IrDA	F5: Old Values (Shift)F2: Color	
RxD, TxD Active	: Hi, Lo	F6: Load BIOS Defaults	
IR Transmittion delay	: Enabled	F7: Load Setup Defaults	

Fig. 26

A short description of the screen items follows:

OnChip IDE Channel0/OnChip IDE Channel1: 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.

Primary Master PIO/Primary Slave PIO/Secondary Master PIO/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.

Primary Master UDMA/Primary Slave UDMA/Secondary Master UDMA/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 FDC 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.

UART Mode Select: Choose Standard, ASKIR (Amplitude Shift Keyed Infrared Port), IrDA 1.0 for serial Interface.

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 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.

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   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. 27

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

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

If you do not wish to save the old BIOS:

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

   "Are You Sure to Program?"

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

To save the old BIOS:

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

   "Are You Sure to Program (Y/N)?"

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

   "Programming Flash Memory - 1FF00 0K
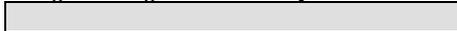
   Message: Please Power off or Reset System"

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

Warning

Please note that Award Flash Utility cannot run under EMM386 or QEMM.   Thus,
when executing the command *"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
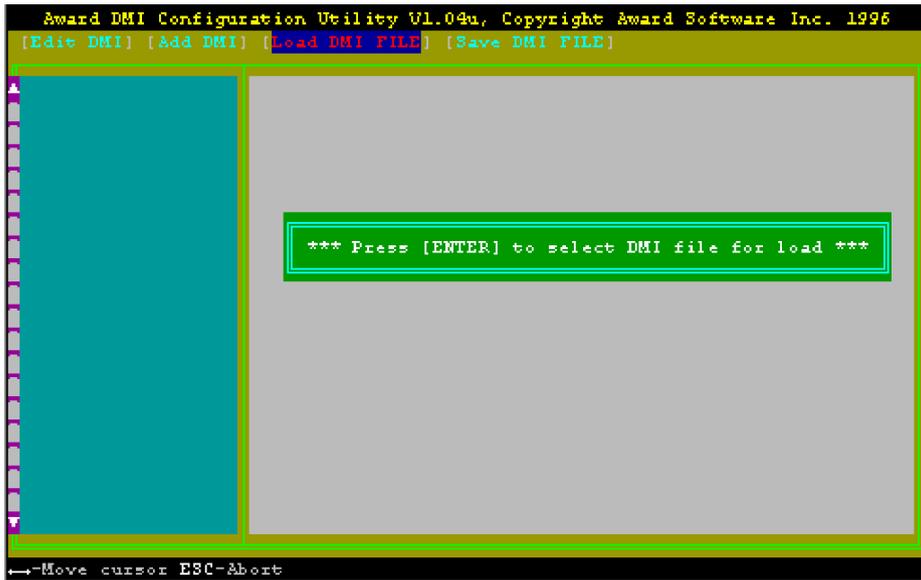
You can load the disk file to memory by entering a drive and path and file name here.

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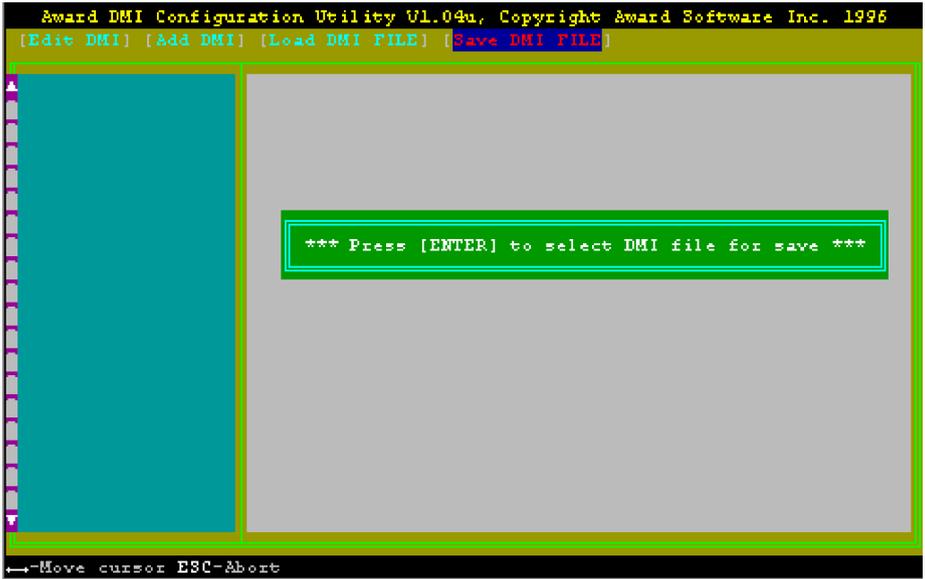
You can save the DMI (normally only saved to flash ROM) to a file by entering the drive and path here. If you want to cancel save, you may press ESC and a message "Bad File Name" appears here to show it was not saved.

APPENDIX A   QUICK GUIDE

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

Function		Jumper Settings	
CPU Speed Selection	Pentium II 233, 350MHz	J4:	1-2 open 3-4 open 5-6 close
	Pentium II/Celeron 266, 400MHz	J4:	1-2 close 3-4 close 5-6 open
	Pentium II/Celeron 300, 450MHz	J4:	1-2 open 3-4 close 5-6 open
	Pentium II/Celeron 333MHz	J4:	1-2 close 3-4 open 5-6 open
	Celeron 366MHz (for future support only)	J4:	1-2 open 3-4 open 5-6 open
CPU Clock Freq. Selection	Always 100MHz Front Bus Size	J5:	open
	66MHz or 100MHz - Auto Detected according the CPU installed	J5:	short
Clear CMOS Data	Normal	J6:	1-2 short
	Clear	J6:	2-3 short
System ROM Selection	5V Flash EPROM	J2:	1-2 short
	12V Flash EPROM	J2:	2-3 short