PRM-0081I E1

High Performance

Dual Pentium II

AGP/PCI Mainboard

User's Guide

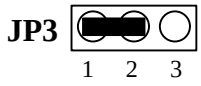
Edition 3.01

P/N: 155100-8812

EPA POLLUTION PREVENTER

WARNING

For the system to operate normally, please make sure JP3 of the mainboard is set as below. Refer to Fig. 2 in this manual for the location JP3.



If JP3 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 Dual Pentium II AGP/PCI mainboard. It includes Intel i82440BX system chipset, Winbond W83977TF Super I/O controller and SYMBIOS 53C895 Ultra2 SCSI controller.

Features

Processor

- Intel Dual Pentium II/Pentium III series.
- The mainboard can run with following speeds:
  350, 400, 450, 500, 550MHz or above

Chipset

- Intel i82443BX (PCI A.G.P. Controller)
- Intel 82371EB (PCI ISA IDE Xcelerator)
- Winbond W83977TF (Super I/O Controller)
- SYMBIOS SYM-53C895 (Ultra2 SCSI Controller)

Main Memory

- Memory configurations up to 1GB SDRAM.
- DIMM socket for SDRAM (3.3V unbuffered).
- Support both Synchronous DRAM and Extended Data Output (EDO) Mode DRAM Modules.
- 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.

PCI SCSI

- Synchronous: up to 80MB/sec Ultra 2 SCSI
  up to 40MB/sec Ultra SCSI
  up to 20MB/sec Fast SCSI
- DMA bus mastering for low overhead with 32-bit burst data transfers at PCI data transfer rates.
- Zero wait-state bus master data bursts.
- Up to 64 byte PCI burst size to maximize the PCI data transfer rate.
- Complies with PCI specification 2.1
- Supports 32-bit, 33MHz PCI bus.
- Functions as full 32-bit PCI DMA Bus Master

System BIOS

- Award BIOS (128KB Flash EPROM).

Slots

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

Form Factor

- Full ATX Size (305mm x 244mm) 4 Layer

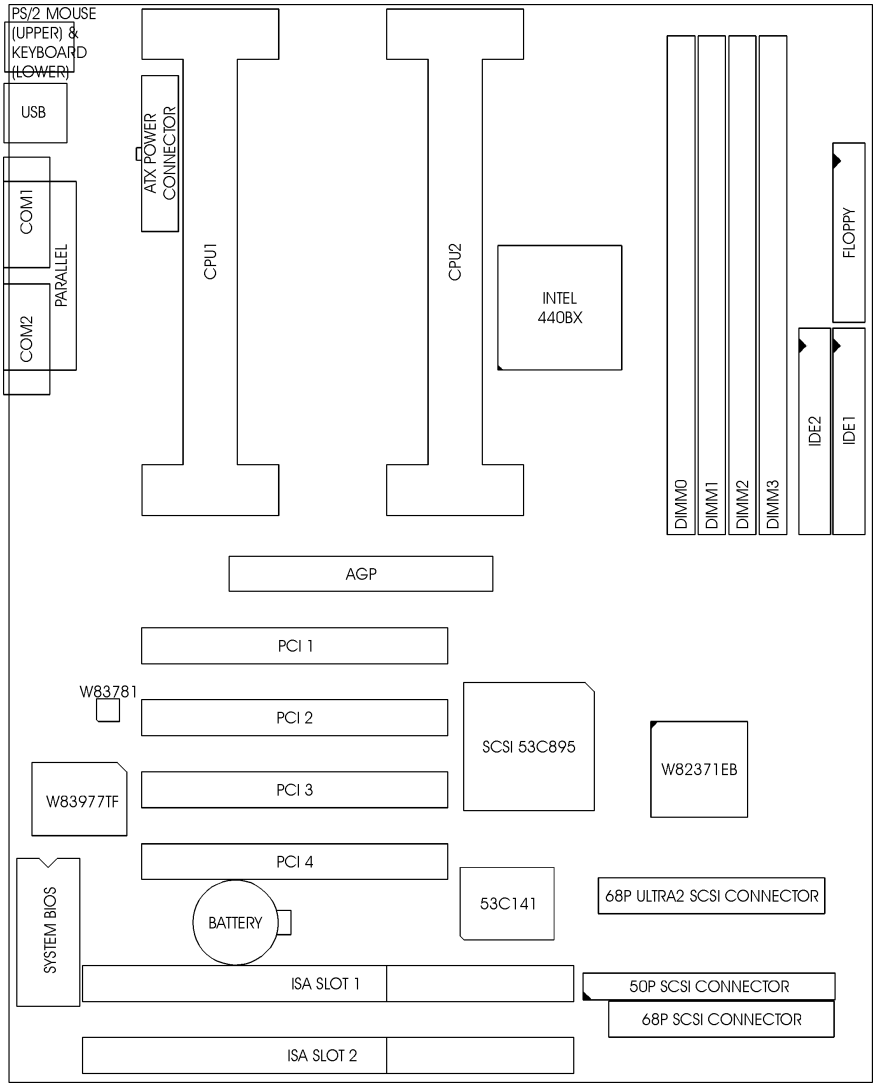
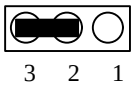


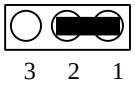
Fig. 1 Key Components of the Mainboard

CHAPTER 2 JUMPER SETTINGS

2.1 JUMPERS PRESENTATION



Pins 2 and 3 are shorted with a jumper cap.



Pins 1 and 2 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

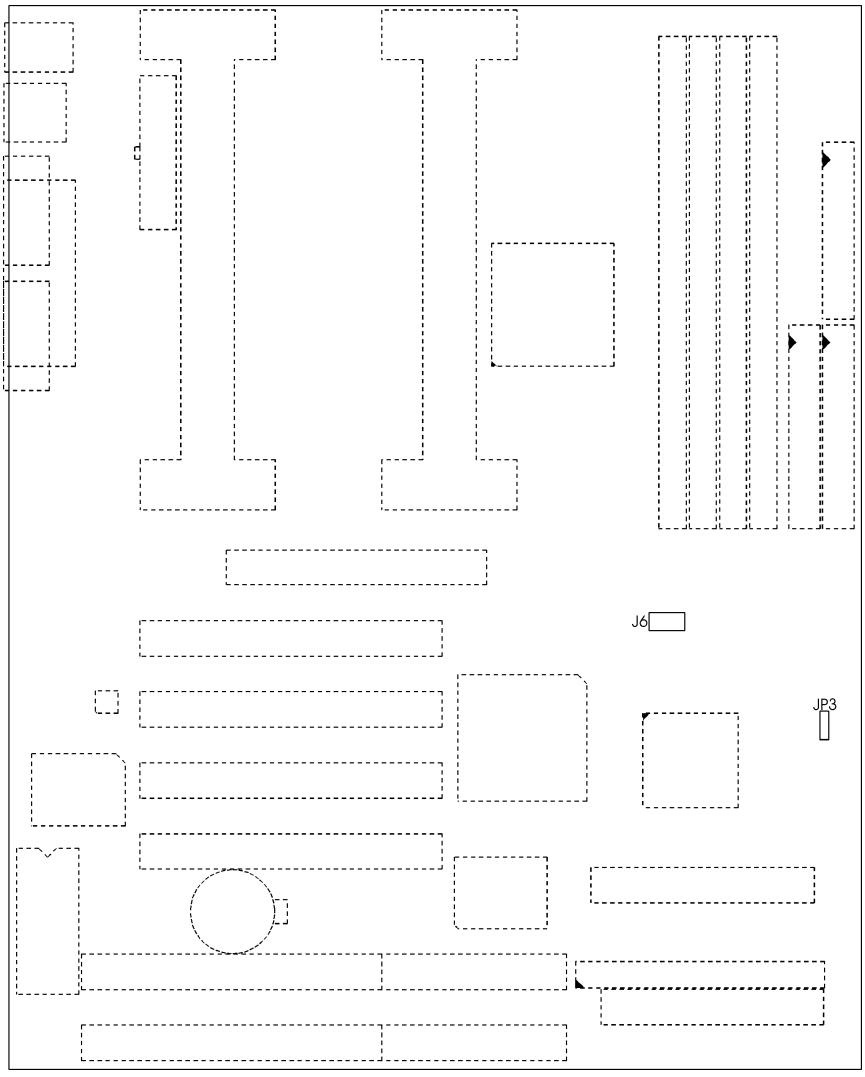


Fig. 2 Jumper Location of the mainboard

2.3 CPU SPEED

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

Ratio	Bus Freq.	Rating Setting	Ratio	Bus Freq.	Rating Setting
3.5x	66MHz or 100MHz	J6: 1 close 2 open 3 open 4 close	5.5x	66MHz or 100MHz	J6: 1 open 2 open 3 open 4 close
4.0x		J6: 1 open 2 close 3 close 4 close	6.0x		J6: 1 close 2 close 3 close 4 open
4.5x		J6: 1 open 2 close 3 open 4 close	6.5x		J6: 1 close 2 close 3 open 4 open
5.0x		J6: 1 open 2 open 3 close 4 close			

Table 1: Jumper Setting

2.4 JP3 - CLEAR CMOS DATA

JP3 is used to clear the content of the CMOS Data in the RTC (build in PIIX4 chip).

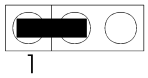
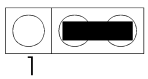
JP3	Description
	Normal
	Clear CMOS Data

Table 2: Clear CMOS Data

2.5 MEMORY CONFIGUARTION

The mainboard lets user upgrade system memory via DIMM sockets on the mainboard. On board memory is located in eight banks: Bank 0 - 7. Four DIMM sockets are provided for EDO DRAM or Synchronous DRAM. Table 3 provides the typical memory configurations supported by the mainboard.

Bank 0/1 (DIMM1)	Bank 2/3 (DIMM2)	Bank 4/5 (DIMM3)	Bank 6/7 (DIMM4)
Installed	None	None	None
None	Installed	None	None
None	None	Installed	None
None	None	None	Installed
Installed	Installed	None	None
Installed	None	Installed	None
Installed	None	None	Installed
None	Installed	Installed	None
None	Installed	None	Installed
None	None	Installed	Installed
Installed	Installed	Installed	None
Installed	Installed	None	Installed
Installed	None	Installed	Installed
None	Installed	Installed	Installed
Installed	Installed	Installed	Installed

Table 3

The maximum memory size is up to 1GB (SDRAM/EDO). 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.

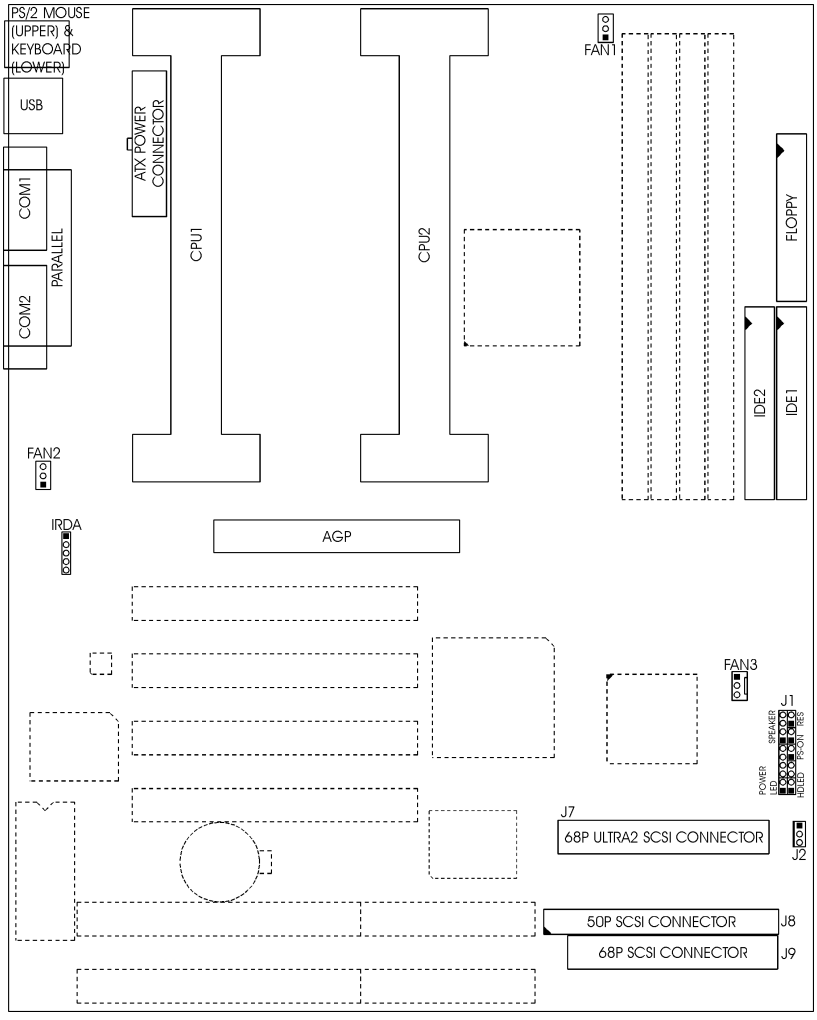


Fig 3 Connector Location

3.1 J1 – MULTIPLE FUNCTION JUMPER

J1 is a front panel multi-function jumper includes speaker, reset, harddisk LED, ATX power switch, Power On/Off, Power LED. The pin definition is as following figure.

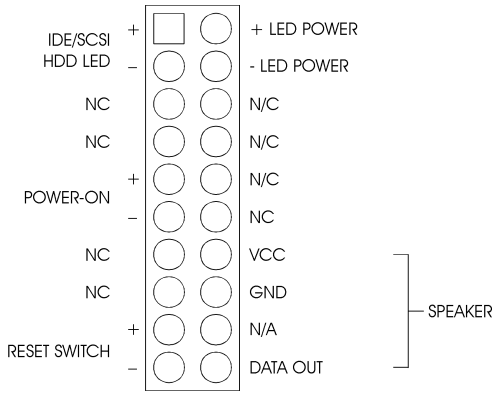


Fig. 4 Multiple Function Jumper

- RESET – RESET SWITCH CONNECTOR

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

- POWER – 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.

- IDE/SCSI HDD LED – IDE/SCSI HDD LED CONNECTOR

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

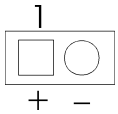


Fig. 5 IDE/SCSI HDD LED

- SPEAKER – SPEAKER CONNECTOR

Speaker is a four-pin connector, which is used to connect the system speaker.

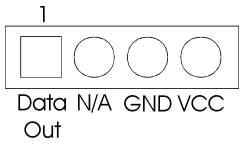


Fig. 6 Speaker

3.2 J2 - WAKE ON LAN CONNECTOR

J2 is a 3-pin connector as interface of LAN card for wake up on LAN purpose.

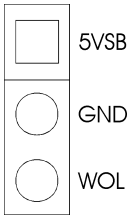


Fig. 7 Wake On LAN Connector

3.3 J3, J4 - 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.

3.4 J5 - 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.

3.5 J7 – ULTRA 2 SCSI CONNECTOR

J7 is a high-density 68-pin connector for a Ultra 2 SCSI device.

3.6 J8 - SCSI CONNECTOR

J8 is a 50-pin connector for a SCSI device.

3.7 J9 - ULTRA WIDE SCSI CONNECTOR

J9 is a high-density 68-pin connector for a wide SCSI device.

3.8 J10 - ATX POWER SUPPLY CONNECTOR

J10 is a 2x10 pin male connector. Plug the power connector of the ATX power supply onto the connector.

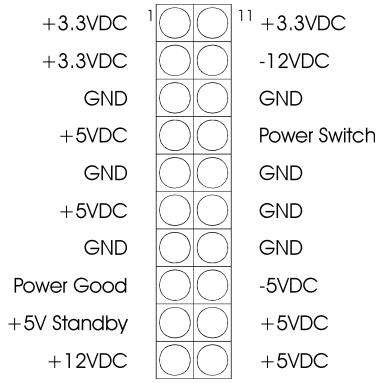


Fig. 8 ATX Power Supply Connector

3.9 J11 - IrDA CONNECTOR

J11 is an IrDA connector that uses UART2 as interface of IrDA Infrared and HP SIR.

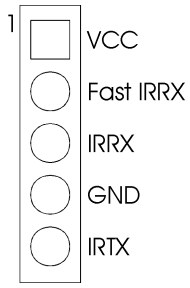


Fig. 9 IrDA Connector

3.10 CPU1, CPU2 - SLOT FOR PENTIUM II/III CPU

CPU1 and CPU2 are the slots for Pentium II or Pentium III CPU.

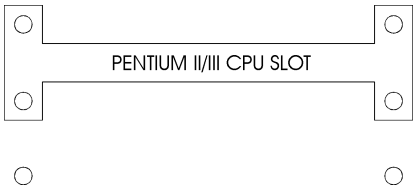


Fig. 10 Slot for Pentium CPU

3.11 FAN1,FAN2,FAN3 - CPU FAN CONNECTOR

FAN1 & FAN2 & FAN3 are three-pin connectors, which are used to connect with the CPU Fan Power cable.

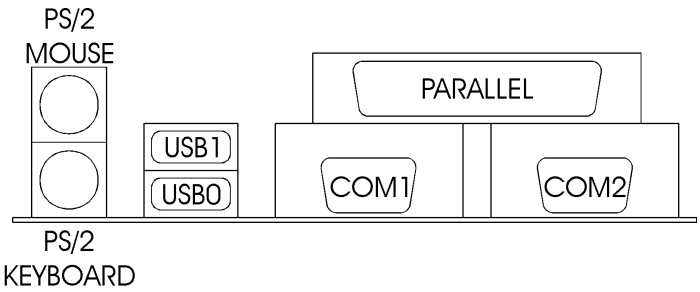


Fig. 11 I/O Connector

3.12 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.

3.13 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.

3.14 UNIVERSAL SERIAL BUS PORT 0 & 1

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

3.15 SERIAL PORT COM1 & COM2

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

3.16 PARALLEL PORT CONNECTOR

This is a D-Type 25 pin female connector.

3.17 RETENTION MECHANISM KITS INSTALLATION GUIDE

Retention Mechanism Kits includes following components:

1. Retention mechanism Assembly

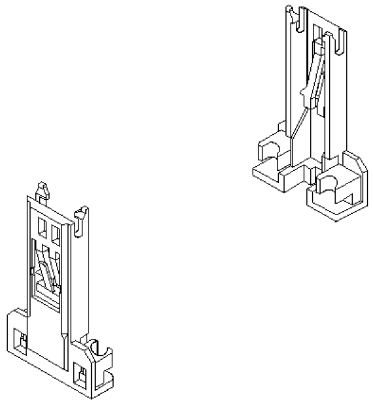


Fig. 12

2. Retention Mechanism Attach Mount

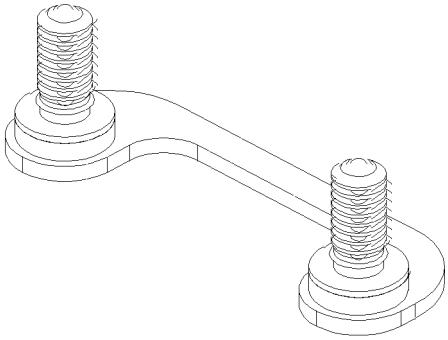


Fig. 13

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:

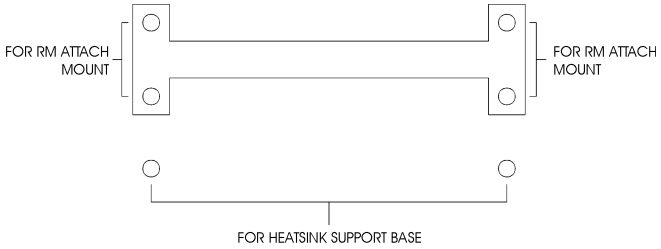


Fig. 14

Installation Guide

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

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

c) Please refer to the diagram for the installation of Pentium II CPU

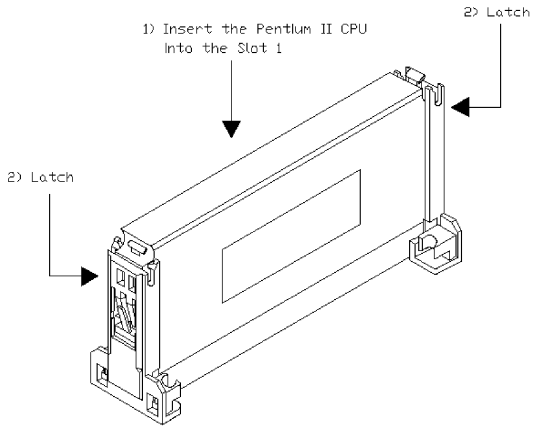


Fig. 15

3.18 OPTIONAL HEATSINK SUPPORT INSTALLATION GUIDE

Optional Heatsink Support includes following components:

1. Heatsink Top Support

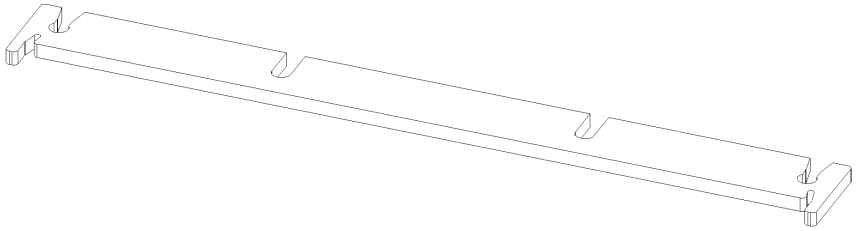


Fig. 16

2. Heatsink Support Base

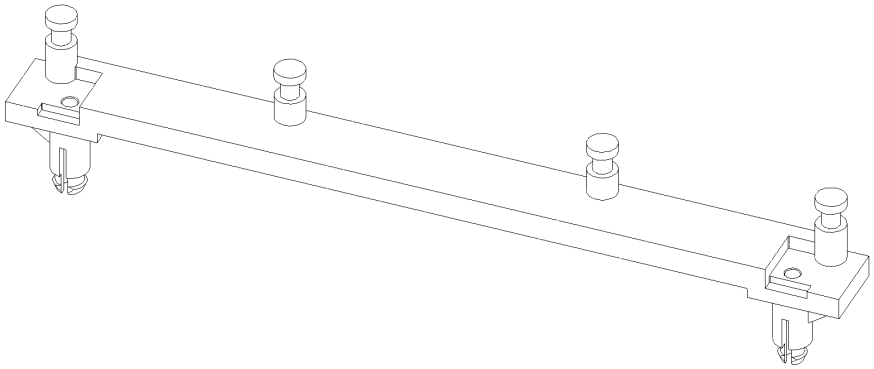


Fig. 17

Installation Guide

a) Refer to Fig. 14, install the Heatsink Support Base onto the motherboard, insert the two plastic nail to the hole in the Heatsink Support Base as following diagram:

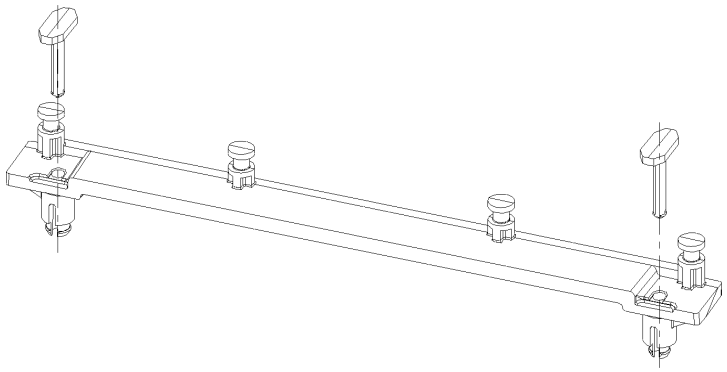


Fig. 18

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

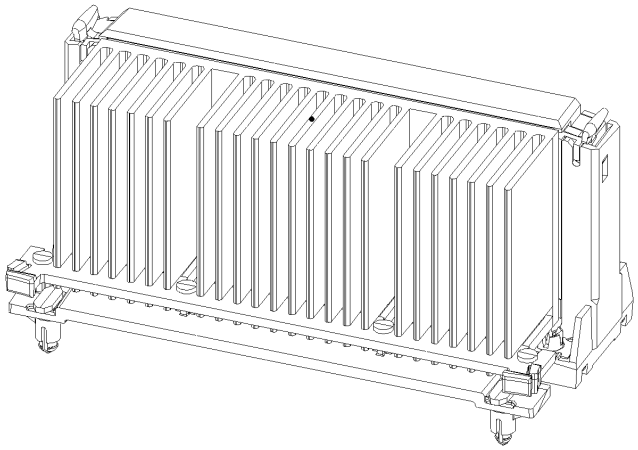


Fig. 19

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 (2A69KD1H)
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 (2A69KD1H)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed, May 21 1997
Time (hh:mm:ss) : 20 : 27 : 55

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :	Auto	0	0	0	0	0	0	AUTO
Primary Slave :	None	0	0	0	0	0	0	---------
Secondary Master :	None	0	0	0	0	0	0	---------
Secondary Slave :	None	0	0	0	0	0	0	---------

Drive A : 1.44M , 3.5in.
Drive B : None
Floppy 3 Mode Support : Disabled

Video : EGA/VGA
Halt On : All Errors

Base Memory:	0K
Extended Memory:	0K
Other Memory:	512K
Total Memory:	512K

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

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

4.3 BIOS FEATURES SETUP

ROM PCI/ISA BIOS (2A69KD1H)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Anti-Virus Protection	: Enabled	Video BIOS Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	C8000-CBFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	CC000-CFFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D0000-D3FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D4000-D7FFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Numlock Status	: Off	DC000-DFFFF Shadow	: Disabled
Boot Up System Speed	: Normal		
Gate A20 Option	: Fast		
Security Option	: Setup		
Assign IRQ For VGA	: Disabled	ESC: Quit	↑ ↓ → ←: Select Item
MPS Version Control For OS	: 1.1	F1: Help	PU/PD/+/-: Modify
OS Select For DRAM > 64MB	: Non-OS2	F5: Old Values	(Shift)F2: Color
Report No FDD For Win95	: No	F7: Load Setup Defaults	

Fig. 22 BIOS Setup Defaults

A short description of the screen items follows:

Anti-Virus Protection: When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program. The default is Disabled.

CPU L2 Cache Checking: Choose Enabled or Disabled . This option check CPU L2 Cache.

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

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

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

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

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.

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

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

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

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

C8000-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 (2A69KD1H)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

DRAM Data Integrity Mode	: Non-ECC	Current CPUFAN1 Speed		: 4500RPM
System BIOS Cacheable	: Disabled	Current CPUFAN2 Speed		: 4800RPM
Video BIOS Cacheable	: Disabled	Current CPUFAN3 Speed		: 4800RPM
Video RAM Cacheable	: Disabled	Vcore	: 2.01V	2.5 (V) : 2.48V
8-Bit I/O Recover Time	: 3	3.3 (V)	: 3.32V	5.0 (V) : 5.05V
16-Bit I/O Recover Time	: 2	12 (V)	: 12.22V	-12 (V) : -12.37V
AGP Aperture Size (MB)	: 64	-5 (V)	: -5.07V	

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

Fig. 23

A short description of the screen items follows:

DRAM Data Integrity Mode: Choose ECC or Non-ECC.

System BIOS Cacheable: Choose Enabled or Disabled. "Enabled" allows system BIOS be cacheable.

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

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

8 Bit I/O Recovery Time: This option specifies the length of the delay (in SYSCLKs) inserted between consecutive 8 bit I/O operations. The settings are 1,2,3,4,5,6,7,8 or N/A. The default setting is 1.

16 Bit I/O Recovery Time: This option specifies the length of the delay (in SYSCLKs) inserted between consecutive 16 bit I/O operations. The settings are 1,2,3,4,5,6,7,8 or N/A. The default setting is 1.

Current CPUFAN1 Speed: This item will show the rotate speed per minute of the CPUFAN1.

Current CPUFAN2 Speed: This item will show the rotate speed per minute of the CPUFAN2.

Current CPUFAN3 Speed: This item will show the rotate speed per minute of the CPUFAN3.

Vcore/2.5(V)/3.3(V)/5.0(V)/12(V)/-12(V)/-5(V): These items show the different voltage of the system board.

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 (2A69KD1H)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI Function	: Enabled	** Reload Global Timer Events **	
Power Management	: Min Saving	IRQ [3-7,9-15], NMI	: Enabled
PM Control by APM	: Yes	Primary IDE 0	: Disabled
Video Off Method	: V/H SYNC + Blank	Primary IDE 1	: Disabled
Video off After	: Suspend	Secondary IDE 0	: Disabled
MODEM Use IRQ	: 3	Secondary IDE 1	: Disabled
Suspend Mode	: Disabled	Floppy Disk	: Disabled
HDD Power Down	: Disabled	Serial Port	: Enabled
VGA Active Monitor	: Enabled	Parallel Port	: Disabled
Soft-Off by PWR-BTTN	: Delay 4 sec.		
PWRON After PWR-Fail	: Former-Sts		
CPUFAN Off In Suspend	: Enabled		
Resume by Ring	: Enabled	ESC: Quit	↑ ↓ → ←: Select Item
Resume by Alarm	: Disabled	F1: Help	PU/PD/+/-: Modify
Date (of Month) Alarm	: 0	F5: Old Values	(Shift)F2: Color
Timer (hh:mm:ss) Alarm	: 0:0:0	F7: Load Setup Defaults	
Wake Up On LAN	: Enabled		
IRQ 8 Break Suspend	: Disabled		

Fig. 24

A short description of the screen items follows:

ACPI Function: Choose Enabled Can Support ACPI Function for windows 98.

Power Management: Available selection are "Disabled", "User Define", "Max Saving" and "Min Saving":
"Disabled" will disable all the power saving functions.
"User Define" makes the time period waiting for Suspend Mode to be programmed.
"Max Saving" will set the time period waiting for Suspend Mode to be 20 seconds.
"Min Saving" will set the time period waiting for Suspend Mode to be 40 minutes.

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

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

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

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

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

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

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

Soft-Off by PWR-BTTN: Available options are "Instant-Off" and "Delay 4 sec.". For "Instant-Off" option, the power of the system will be switched off at once when the power button is pressed for turn it off. For "Delay 4 sec." Option, the power of the system will be switched off with 4 seconds later after the power button is pressed.

PWRON After PWR-Fail: When Enabled, the BIOS will turn on the ATX power supply when the A/C Power recovered after the A/C main power failure. The default value is "Disabled".

CPUFAN Off In Suspend: If the option is set to Enabled, the CPUFAN will stop when system is in suspend mode.

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

Resume by Alarm/Date (of Month) Alarm/Timer (hh:mm:ss) Alarm: Toe enable the **Resume by Alarm** will wake up the system at the time set on the **Date (of Month) Alarm** and **Timer (hh:mm:ss) Alarm**.

Wake Up On LAN: When Enabled the wake up packet received by network card can wake up The system (ATX power supply required)

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

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

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

4.6 PCI CONFIGURATION

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

ROM PCI/ISA BIOS (2A69KD1H)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: No	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled By	: Manual	Primary IDE INT#	: A
Reset Configuration Data	: Disabled	Secondary IDE INT#	: B
IRQ-3 assigned to	: Legacy ISA	Used MEM base addr	: C800
IRQ-4 assigned to	: Legacy ISA	Used MEM Length	: 8K
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: PCI/ISA PnP		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP	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	F7: Load Setup Defaults	
DMA-6 assigned to	: PCI/ISA PnP		
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 (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

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

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

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

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

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

4.7 INTEGRATED PERIPHERALS SETUP MENU

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

ROM PCI/ISA BIOS (2A69KD1H)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	On Board FDC Controller	: Enabled
IDE Primary Master PIO	: Auto	On Board Serial Port 1	: 3F8/IRQ4
IDE Primary Slave PIO	: Auto	On Board Serial Port 2	: 2F8/IRQ3
IDE Secondary Master PIO	: Auto	UART Mode Select	: Normal
IDE Secondary Slave PIO	: Auto	RxD , TxD Active	: Hi,Lo
IDE Primary Master UDMA	: Auto	IR Transmittion delay	: Enabled
IDE Primary Slave UDMA	: Auto	On Board Parallel Port	: 378/IRQ7
IDE Secondary Master UDMA	: Auto	Parallel Port Mode	: ECP
IDE Secondary Slave UDMA	: Auto	ECP Mode Use DMA	: 3
On-Chip Primary IDE	: Enabled	EPP Mode Select	: EPP1.9
On-Chip Secondary IDE	: Enabled		
Onboard PCI SCSI Chip	: Enabled		
USB Keyboard Support	: Disabled		
Init AGP Display First	: AGP		
		ESC: Quit	↑ ↓ → ←: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values	(Shift)F2: Color
		F7: Load Setup Defaults	

Fig. 26

A short description of the screen items follows:

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

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

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

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

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

Onboard SCSI Chip: Select Enabled if your board contain a SCSI chip onboard.

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

Init AGP Display First: Enabled to let the system initialize the AGP display first prior to the other display adapter.

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 choose proper I/O Address/IRQ, be sure not to cause Address conflict with other I/O devices. The default setting is 2F8/IRQ3.

UART Mode Select: Choose Normal, ASKIR (Amplitude Shift Keyed Infrared Port) or IrDA 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.

IR Transmittion delay: Choose Enabled for IrDA transmit delay.

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, ECP, EPP and ECP+EPP. 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 for the EPP Mode.

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" "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.

How to Begin

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:

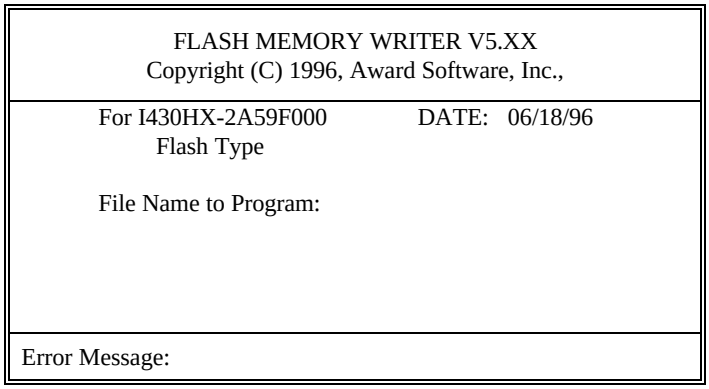


Fig. 27

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!"

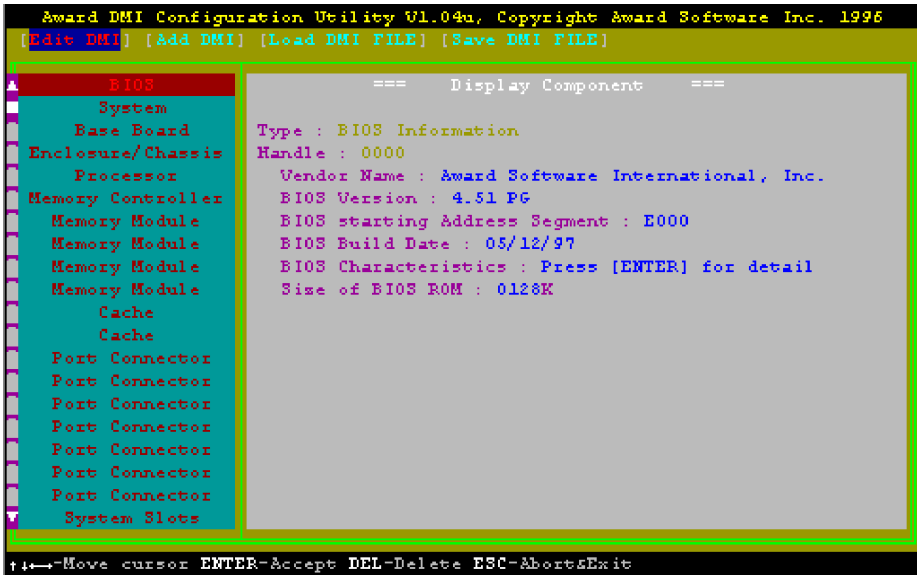
5.2 DESKTOP MANAGEMENT INTERFACE (DMI) OVERVIEW

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

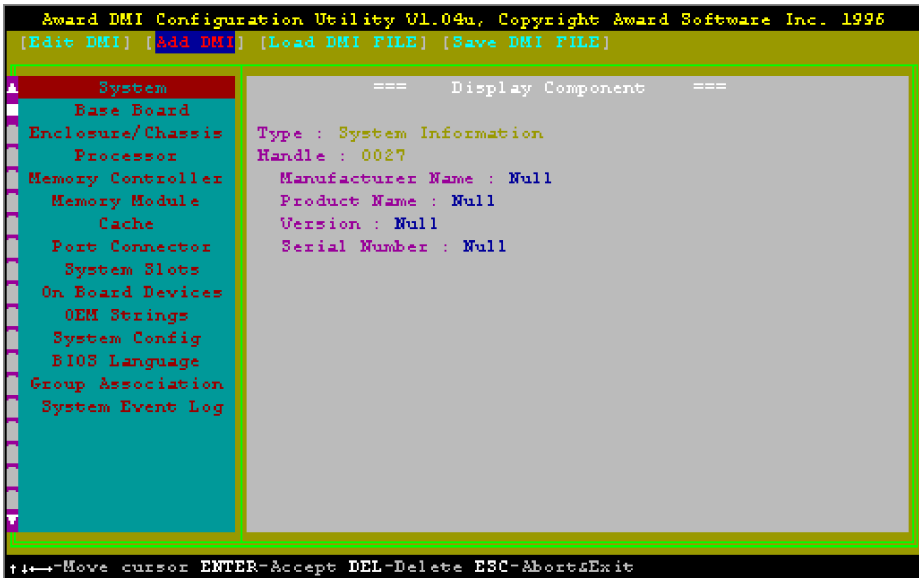
Edit DMI



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.

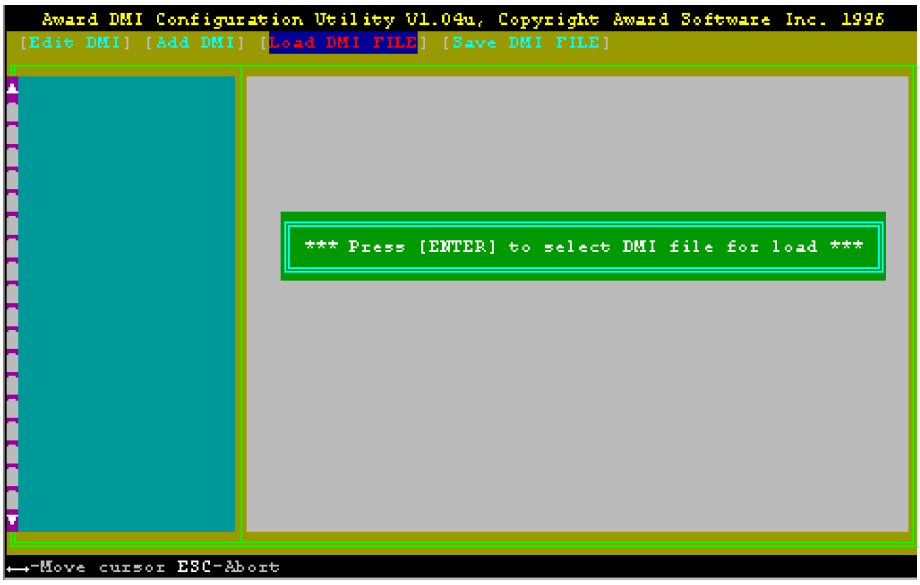
If the user has made changes, ESC will prompt you to answer Y or N. Enter Y to go back to the left-hand screen and save, enter N to go back to left-hand screen and not save. If editing has not been made, ESC will send you back to the left hand menu without any messages.

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	For Ratio 3.5x	J6: 1 close 2 open 3 open 4 close
	For Ratio 4.0x	J6: 1 open 2 close 3 close 4 close
	For Ratio 4.5x	J6: 1 open 2 close 3 open 4 close
	For Ratio 5.0x	J6: 1 open 2 open 3 close 4 close
	For Ratio 5.5x	J6: 1 open 2 open 3 open 4 close
	For Ratio 6.0x	J6: 1 close 2 close 3 close 4 open
	For Ratio 6.5x	J6: 1 close 2 close 3 open 4 open
Clear CMOS Data	Normal	JP3: 1-2 short
	Clear	JP3: 2-3 short