

PRM-20I

High Performance
Socket370/Pentium II
AMR/PCI Mainboard
User's Guide



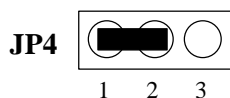
Edition 1.00
1999 DTK Computer, Inc.

P/N: 155100-8799



WARNING

For the system to operate normally, please make sure JP4 of the mainboard is set as below. Refer to Fig. 3 in this manual for the location JP4.



If JP4 is shorted to 1-2, no CMOS data can be retained.

CAUTION

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

POWER OFF

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

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CHAPTER 1

INTRODUCTION

Preface

The motherboard is a 4 layer, ATX form factor high performance Socket370 and Pentium II AMR/PCI mainboard. It includes Intel 810DC-100 (GMCH / ICH) system chipset, Winbond W83627HF Low Pin Count controller.

Features

Processor

- Intel Socket370 and Pentium II/III series.
- The mainboard can run with following speeds:
 - 300-500MHz for Socket370 CPU
 - 300-550MHz for Pentium II CPU

Chipset

- Intel 82810DC100 GMCH (Graphics and Memory Controller Hub)
- Intel 82801AA ICH (I/O Controller Hub)
- Winbond W83627HF (Low Pin Count I/O Controller)
- Creative ES1373 Audio chip Onboard (optional)
- Winbond W83628/W83629 (PCI-ISA Bridge)

Main Memory

- Memory configurations up to 512MB SDRAM.
- DIMM socket for SDRAM (3.3V unbuffered).
- Support both Synchronous DRAM Modules.
- ECC Function ensure data correction and integrity.

Low Pin Count I/O

- On board Low Pin Count I/O supports two serial, one parallel ports, one game port 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.

Built-in 3D Graphics Interface

- Graphics Supports up to 1280x768x24 bit 85hz with 4mb
- Ruining 66/133MHz Speed

Chapter 1

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 66MB/s.

System BIOS

- Award BIOS (4MB/8MB Firm Ware Hub).

Slots

- One AMR slot
- Five PCI slots (1 shared)
- One ISA slots(1 shared)

Form Factor

- ATX Size (305mm x 210mm) 4 Layer

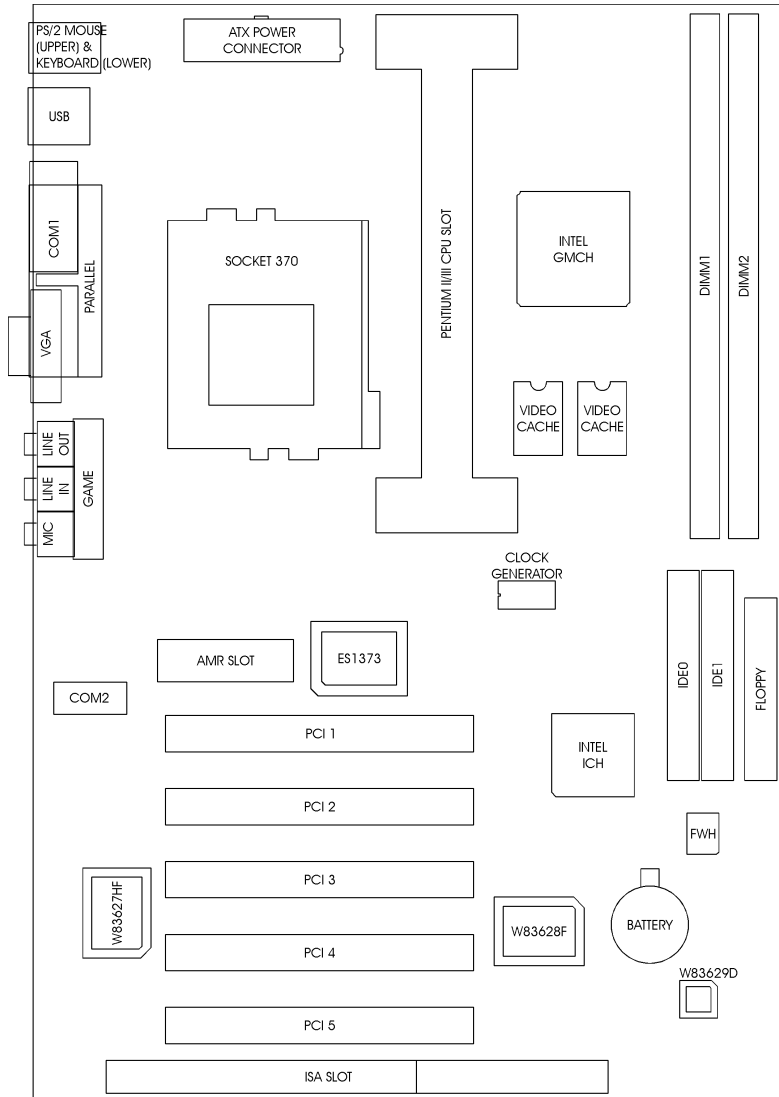
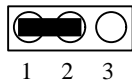


Fig. 1 Key Components of the Mainboard

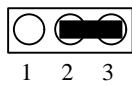
CHAPTER 2

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

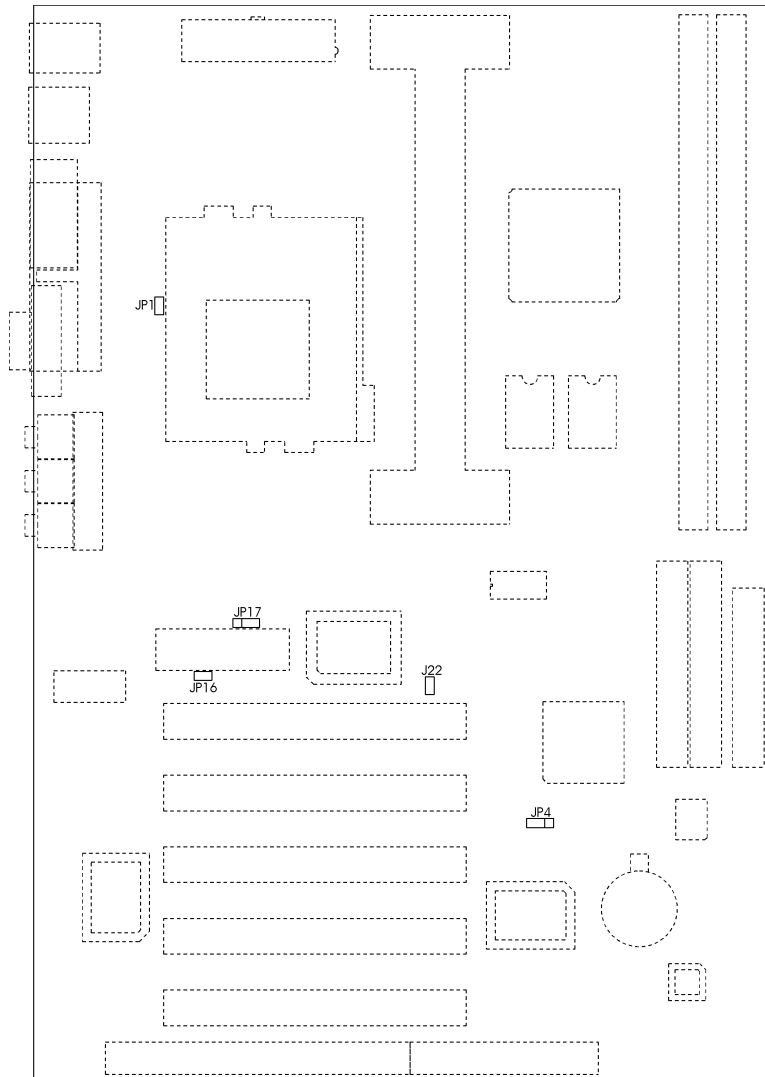


Fig. 2 Jumper Location of the mainboard

2.3 CPU SPEED

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

CPU Type	Freq.	Bus Freq.
Socket370/Pentium II	300MHz	66MHz
	333MHz	
Socket370	366MHz	
	400MHz	
	433MHz	
	466MHz	
Pentium II	350MHz	
	400MHz	
	450MHz	
Pentium III	450MHz	
	500MHz	
	550MHz	

Table 1

2.4 JP1 – CPU FRONT SIDE BUS FREQUENCY SETTING

JP1 is used to set the CPU Front Side Bus Frequency.



JP1	CPU Front Side Bus Freq.
	Always 66MHz
	Auto Detect according CPU installed

Table 2: CPU Front Side Bus Freq.

2.5 JP4 - CLEAR CMOS DATA

JP4 is used to clear the content of the CMOS Data in the RTC (build in PIIX4 chip).

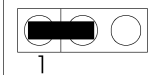

JP4	Description
 1	Normal
 1	Clear CMOS Data

Table 3: Clear CMOS Data

2.6 JP16 – AMR PRIMARY/SECONDARY SETTING


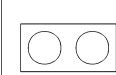
JP16	Description
	Primary
	Secondary

Table 4

2.7 JP17 – ONBOARD CODEC SETTING

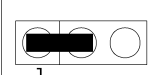
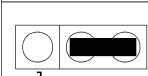
JP17	Description
 1	Enabled
 1	Disabled

Table 5

2.8 J22 – CONFIGURATION JUMPER FOR CPU SPEED PROTECTION

J22 is used to control the CPU speed setting in BIOS. Whether it can change or not.



J22	Description
	Selection
	Show Only

Table 6

2.9 MEMORY CONFIGURATION

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

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

Table 7

Chapter 2

The maximum memory size is up to 512MB (SDRAM/EDO). The size of each DIMM can be 8MB, 16MB, 32MB, 64MB or 128MB.

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.

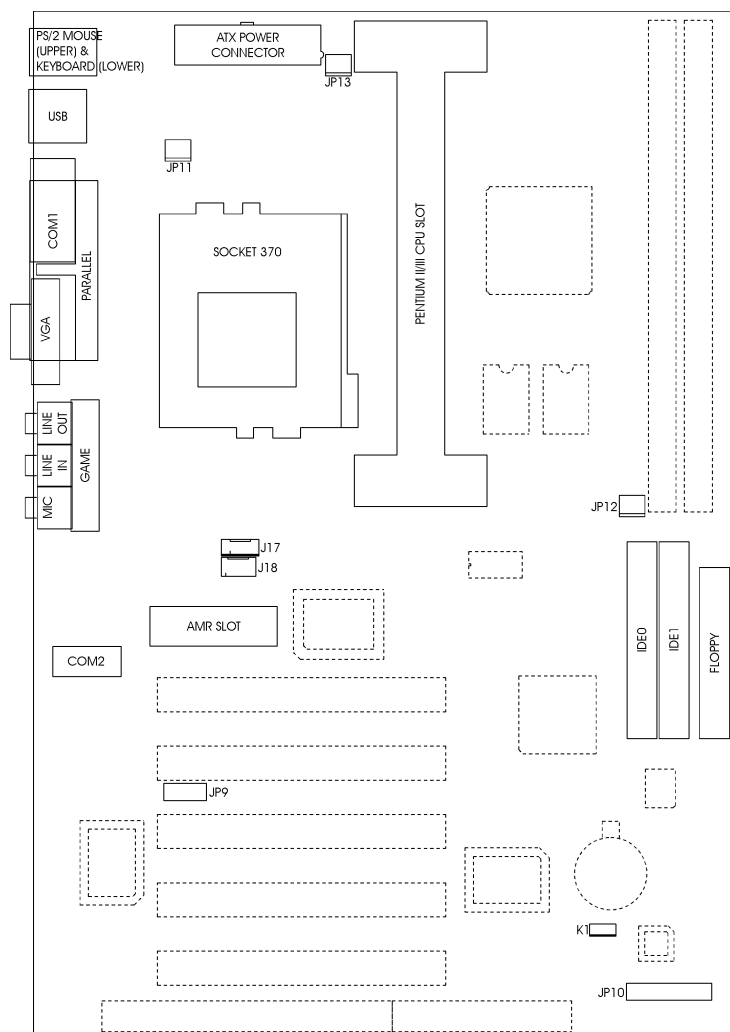


Fig 3 Connector Location

3.1 U1 – SOCKET370 FOR CELERON CPU

U1 is the Socket370 for Celeron CPU.

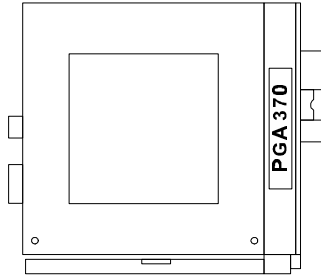


Fig. 4 Socket370 for Celeron CPU

3.2 K1 - WAKE ON LAN CONNECTOR

K1 is a 3-pin connector as interface of LAN card for wake up on LAN purpose.

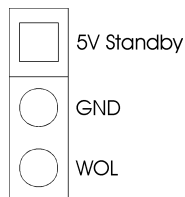


Fig. 5 Wake On LAN Connector

3.3 JP7, JP8 - 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 JP9 - IrDA CONNECTOR

JP9 is an IrDA connector that use UART2 as interface of IrDA Infrared and HP SIR.

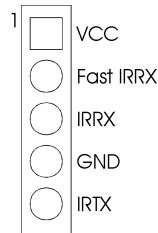


Fig. 6 IrDA Connector

3.5 JP10 – MULTIPLE FUNCTION JUMPER

JP10 is a front panel multi-function jumper includes speaker, reset, keylock, harddisk, LED, ATX power switch, ACPI (suspend) LED and power button (suspend switch). The pin definition is following figure.

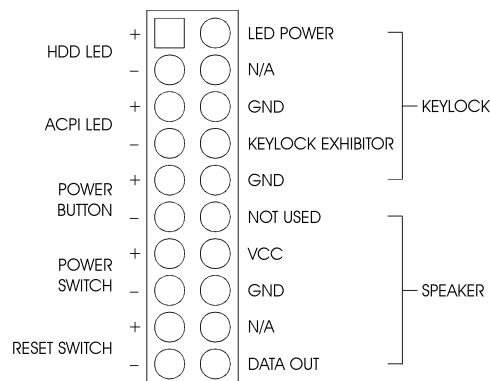


Fig. 7 Multiple Jumper Connector

3.6 JP11,JP12,JP13 - CPU FAN CONNECTOR

JP11, JP12, JP13 are three-pin connectors, which are used to connect with the CPU Fan Power cable.

3.7- J9 - SERIAL PORT COM2 CONNECTOR

This connector supports the provided serial port ribbon cable without mounting bracket.

3.8 J10 - 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.

3.9 J11 - ATX POWER SUPPLY CONNECTOR

J11 is a 2x10 pin male connector. Plug the power connector of the ATX power supply onto the connector.

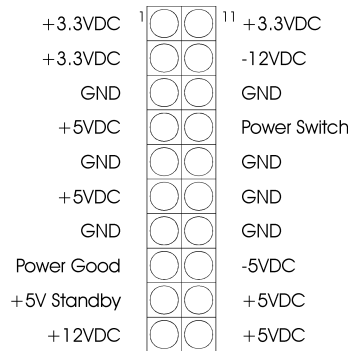


Fig. 8 ATX Power Supply Connector

3.10 J17 – CD-ROM AUDIO CONNECTOR (MISUMI/PANSONIC)

J17 is four-pin connector, which is used to connect with the Panasonic or Misumi CD-ROM audio output. The pin definition is as following:

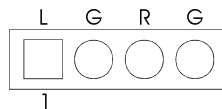


Fig. 9 CD-ROM Audio Connector

3.11 J18 – CD-ROM AUDIO CONNECTOR (SONY)

J18 is a four-pin connector, which is used to connect with the Sony CD-ROM audio output. This pin definition is as following:

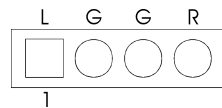


Fig. 10 CD-ROM Audio Connector

3.12 J20 - SLOT FOR PENTIUM II/III CPU

J20 is the slot for Pentium II or Pentium III CPU.

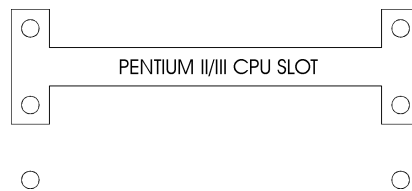


Fig. 11 Slot for Pentium II/III CPU

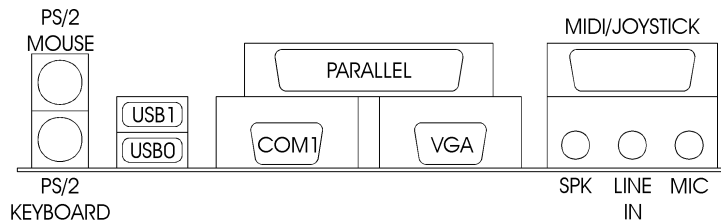


Fig. 12 I/O Connector

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 mouse cable into this connector.

3.15 UNIVERSAL SERIAL BUS PORTS 0 & 1

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

3.16 PARALLEL PORT CONNECTOR

This is a D-Type 25 pin female connector.

3.17 SERIAL PORT COM1

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

3.18 AUDIO PORT CONNECTOR

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

3.19 RETENTION MECHANISM KITS INSTALLATION GUIDE

Retention Mechanism Kits includes following components:

1. Retention mechanism Assembly

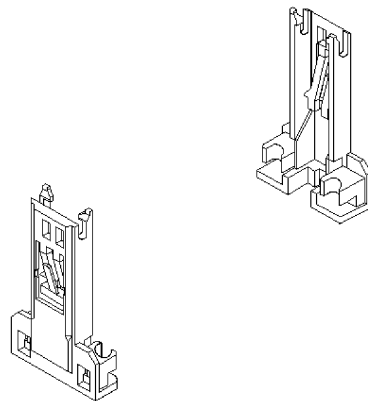


Fig. 13

Chapter 3

2. Retention Mechanism Attach Mount

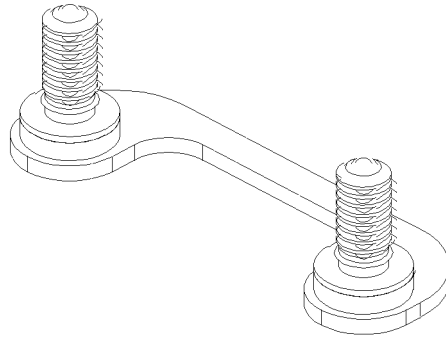


Fig. 14

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:

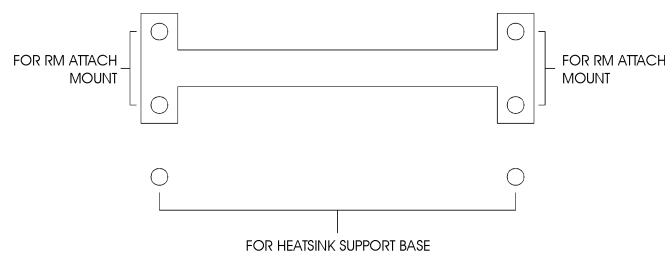


Fig. 15

Installation Guide

- 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

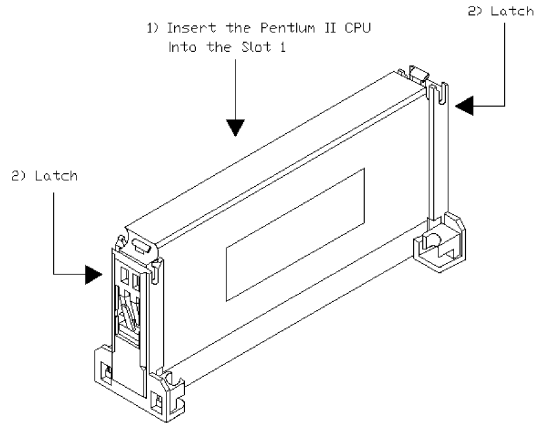


Fig. 16

3.20 OPTIONAL HEATSINK SUPPORT INSTALLATION GUIDE

Optional Heatsink Support includes following components:

1. Heatsink Top Support

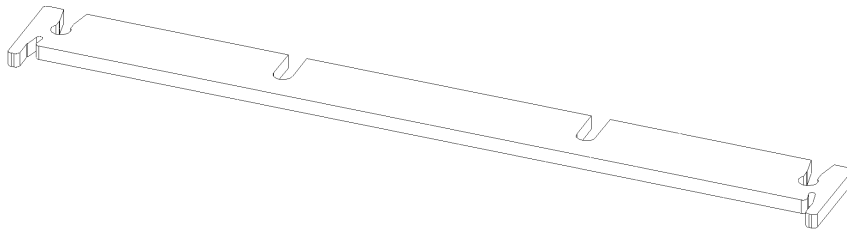


Fig. 17

Chapter 3

2. Heatsink Support Base

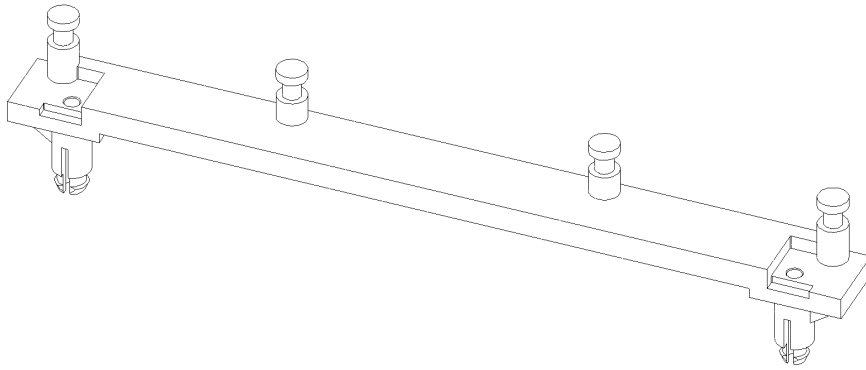


Fig. 18

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:

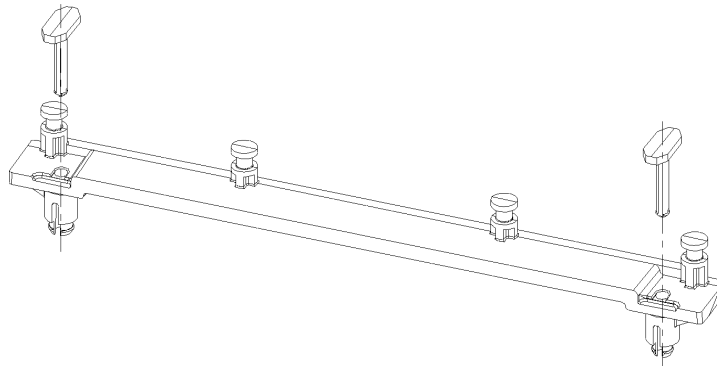


Fig. 19

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

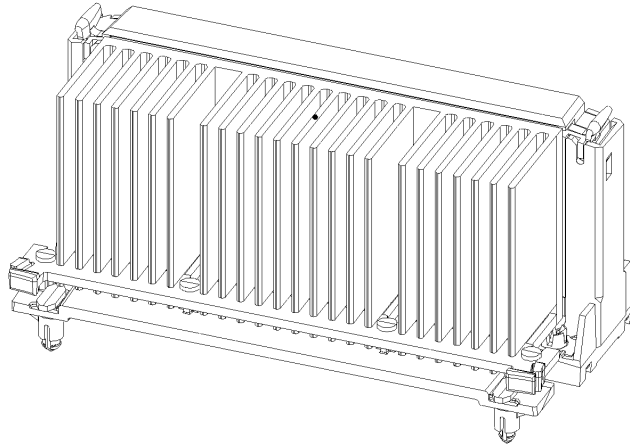


Fig. 20

CHAPTER 4

AWARD BIOS SETUP GUIDE

This following manual is specially provided for the BIOS supported system. After the configuration of the mainboard, and have assembled the components, user can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the system board is achieved through Basic Input-Output System (BIOS) programming. Use the BIOS setup program to tell the operating system what type of devices (such as disk drives) are connected to the system board.

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

4.1 AWARD BIOS SETUP

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

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

“Press DEL to enter SETUP”

Chapter 4

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

ROM PCI/ISA BIOS (6A69MD1C)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS FEATURES	LOAD FAIL-SAFE DEFAULTS
ADVANCED BIOS FEATURES	LOAD OPTIMIZED DEFAULTS
ADVANCED CHIPSET FEATURES	SET SUPERVISOR PASSWORD
INTERGRATED PERIPHERALS	SET USER PASSWORD
POWER MANAGEMENT SETUP	SAVE & EXIT SETUP
PNP/PCI CONFIGURATIONS	EXIT WITHOUT SAVING
FREQUENCY/VOLTAGE CONTROL	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Data, Hard Disk Type...	

Fig. 21

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 (6A69MD1C)
STANDARD CMOS FEATURES
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed, May 21 1997 Time (hh:mm:ss) : 20 : 27 : 55		Item Help
		Menu Level
IDE Primary Master	Press Enter None	
IDE Primary Slave	Press Enter None	
IDE Secondary Master	Press Enter None	
IDE Secondary Slave	Press Enter None	
Drive A	1.44M , 3.5in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640k	
Extended Memory	194560k	
Total Memory	195584k	

Enter : Select ↑ ↓ → ← : Move PU/PD/+/- : Value Esc : Exit
F1 : Help F5 : Previous Values F6 : Fail -Safe Defaults F7 : Optimized Defaults

Fig. 22

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 ADVANCED BIOS FEATURES SETUP

ROM PCI/ISA BIOS (6A69MD1C)
 ADVANCED BIOS FEATURES
 AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Menu Level >
CPU Internal Cache	: Enabled	
External Cache	: Enabled	
CPU L2 Cache ECC Checking	: Enabled	
Quick Power On Self Test	: Disabled	Allows you to choose the VIRUS
First Boot Device	: Floppy	Warning feature for IDE Hard Disk
Second Boot Device	: HDD-0	Boot sector protection . If this function
Third Boot Device	: LS/ZIP	Is enabled and someone attempt to write
Boot Other Device	: Enabled	Data into this area , BIOS will show a
Swap Floppy Drive	: Disabled	warning message on screen and alarm
Boot Up Floppy Seek	: Disabled	beep
Boot Up Numlock Status	: Off	
Gate A20 Option	: Normal	
Typematic Rate Setting	: Disabled	
Typematic Rate (Chars/Sec)	: 6	
Typematic Delay (Msec)	: 250	
Security Option	: Setup	
OS Select For Dram > 64MB	: Non-OS	
Report No FDD For WIN 95	: No	

Enter : Select ↑ ↓ → ← : Move PU/PD/+/- : Value Esc : Exit
 F1 : Help F5 : Previous Values F6 : Fail -Safe Defaults F7 : Optimized Defaults

Fig. 23 Advanced BIOS Features Setup Defaults

A short description of the screen items follows:

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

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

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

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

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

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

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

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

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

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

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

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

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

OS Select For DRAM > 64MB: 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.

4.4 ADVANCED 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 (6A69MD1C)
 ADVANCED CHIPSET FEATURES SETUP
 AWARD SOFTWARE, INC.

SDRAM CAS Latency Time	: 3	Item Help
SDRAM Cycle Time Tras/Trc	: 6 / 8	
SDRAM RAS-to-CAS Delay	: 3	Menu Level
SDRAM RAS Pre-charge Time	: 3	
System BIOS Cacheable	: Disabled	
Video BIOS Cacheable	: Disabled	
Memory Hole At 15M-16M	: Disabled	
Delayed Transaction	: Enabled	
On Chip Video Window Size	: 64MB	
Local Memory Frequency	: 100Mhz	
Onboard Display Cache Setting		
CAS# Latency	: 3	
Paging Mode Control	: Close	
RAS-to-CAS Override	: by CAS#	
RAS# Timing	: Slow	
RAS# Precharge Timing	: Slow	

Enter : Select ↑ ↓ → ← : Move PU/PD/+/- : Value Esc : Exit
 F1 : Help F5 : Previous Values F6 : Fail -Safe Defaults F7 : Optimized Defaults

Fig. 24

A short description of the screen items follows:

SDRAM CAS Latency Time: Choose 3 or 2 for DIMM latency Time.

SDRAM Cycle Time Tras / Trc: Choose 6/8 or 5/7 according to the DRAM SIMM Module on the motherboard.

SDRAM RAS-to-CAS Delay: When SDRAM is refreshed, both rows and columns are address separately. This setting item select the delay cycles between the assertion of RAS# and CAS#.

SDRAM RAS Pre-charge Time: Choose 3 or 2 select Pre-charge time for RAS.

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.

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

SDRAM RAS-To-CAS Delay: When this option is slow, a delay time between the assertion of SDRAM RAS# and CAS#. The settings are Fast or Slow.

Current System Temp.: This item will show the temperature of the system board.

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.

Vcore/2.5(V)/3.4(V)/5.0(V)/12(V)/-12(V)/-5(V): These items show the different voltage of the system board.

4.5 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 (6A69MD1C)
 INTEGRATED PERIPHERALS
 AWARD SOFTWARE, INC.

On-Chip Primary PCI IDE	: Enabled	Item Help
On-Chip Secondary PCI IDE	: Enabled	
IDE Primary Master PIO	: Auto	Menu Level
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	
USB Controller	: Enabled	
USB Keyboard Support	: Disabled	
Init Display First	: PCI Slot	
AC97 Audio	: Enabled	
AC97 Modem	: Disabled	
IDE HDD Block Mode	: Enabled	
Onboard FDD Controller	: Enabled	
Onboard Serial Port 1	: 3F8/IRQ4	
Onboard Serial Port 2	: 2F8/IRQ3	
UART Mode Select	: IrDA	
RxD, TxD Active	: Hi, Hi	
IR Transmission delay	: Enabled	
Onboard Parallel Port	: 378 / IRQ7	
Parallel Port Mode	: SPP	
EPP Mode Select	: EPP1.7	
ECP Mode Use DMA	: 3	
Game Port Address	: Disabled	
Midi Port Address	: Disabled	
Midi Port IRQ	: 5	

Enter : Select ↑ ↓ → ← : Move PU/PD/+/- : Value Esc : Exit
 F1 : Help F5 : Previous Values F6 : Fail -Safe Defaults F7 : Optimized Defaults

Fig. 25

A short description of the screen items follows:

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.

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.

USB Controller: Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB Device.

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

Init Display First: Select Onboard or PCI SLOT first display.

AC97 Audio: Select Enabled if your system contains a AC97 Audio controller and you have a Software Audio for AC97.

AC97 Modem: Select Enabled if your system contains a AC97 Modem controller and you have a Software Modem for AC97.

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

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.

Lo, Lo". It is used to configure the logic level of Receive and Transmit signal in IrDA interface.

IR Transmission 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.

4.6 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 (6A69MD1C)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

		Item Help
ACPI Function	: Enabled	Menu Level
Power Management	: User Define	
Video Off Method	: DPMS	
Video off in Suspend	: Yes	
Suspend Type	: Stop Grant	
Modem Use IRQ	: 3	
Suspend Mode	: Disabled	
HDD Power Down	: Disabled	
Soft-Off by PWR-BTTN	: Instant-Off	
CPU Thermal-Throttling	: 62.5%	
Resume by Alarm	: Disabled	
Date (of Month) Alarm	: 0	
Time (hh:mm:ss) Alarm	: 0 0 0	
** Reload Global Timer Event **		
Primary IDE 0	: Disabled	
Primary IDE 1	: Disabled	
Secondary IDE 0	: Disabled	
Secondary IDE 1	: Disabled	

Enter : Select ↑ ↓ → ← : Move PU/PD/+/- : Value Esc : Exit
F1 : Help F5 : Previous Values F6 : Fail -Safe Defaults F7 : Optimized Defaults

Fig. 26

A short description of the screen items follows:

ACPI FUNCTION: Choose Enabled or Disabled.

Power Management: Available selection are “Disabled”, “User Define”, “Max Saving” and “Saving”:
“Disabled” will disable all the power saving functions.

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

“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.

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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”,

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.

HDD Down When Suspend: When Enabled, hard disk will be turn off if the system enter Suspend Mode.

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

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

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

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

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

4.7 PnP/PCI CONFIGURATION

The PnP/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 (6A69MD1C)
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		

Enter : Select ↑ ↓ → ← : Move PU/PD/+/- : Value Esc : Exit
F1 : Help F5 : Previous Values F6 : Fail -Safe Defaults F7 : Optimized Defaults

Fig. 27

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

Chapter 4

A short description of the screen items follows:

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

Resources Controlled By: The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play compatible 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 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”

4.8 FREQUENCY/VOLTAGE CONTROL

The Frequency/Voltage setup option is need to change the values of the CPU Ratio registers for ICH Chipset functions.

ROM PCI/ISA BIOS (6A69MD1C)
FREQUENCY/VOLTAGE CONTROL
AWARD SOFTWARE, INC.

Auto Detect DIMM / PCI CLK	: Enabled	Item Help
Spread Spectrum	: Disabled	Menu Level
CPU Host / PCI Clock	: Defaults	
CPU Ratio	: X 3.0	

Enter : Select ↑ ↓ → ← : Move PU/PD/+/- : Value Esc : Exit
F1 : Help F5 : Previous Values F6 : Fail -Safe Defaults F7 : Optimized Defaults

Fig. 28

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.

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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.

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 Transmission 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.

4.9 LOAD FAIL – SAFE DEFAULTS

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 Fail - Safe Defaults (Y/N)? N”

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

4.10 LOAD OPTIMIZED DEFAULTS

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 Optimized Defaults (Y/N)? N”

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

4.11 SET 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.

4.12 USER PASSWORD

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

4.13 SAVE & EXIT SETUP MENU

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

Save to CMOS and Exit (Y/N)?

4.14 EXIT WITHOUT SAVING MENU

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

Quit Without Saving (Y/N)?

CHAPTER 5

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

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

Fig. 29

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

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

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If you do not wish to save the old BIOS:

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

“Are You Sure to Program?”

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

To save the old BIOS:

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

“Are You Sure to Program (Y/N)?”

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

“Programming Flash Memory - 1FF00 0K



Message: Please Power off or Reset System”

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

Warning

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

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

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

```

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

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

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

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

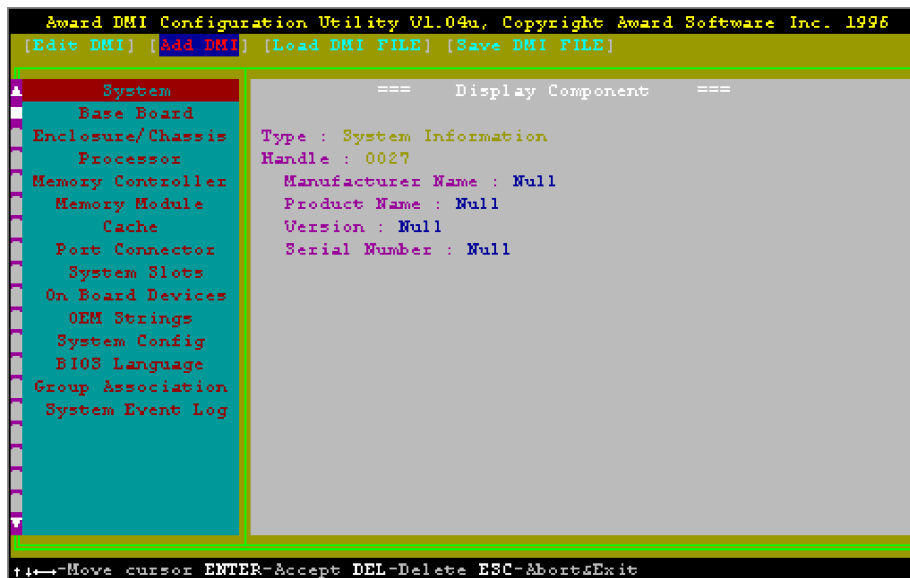
```

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

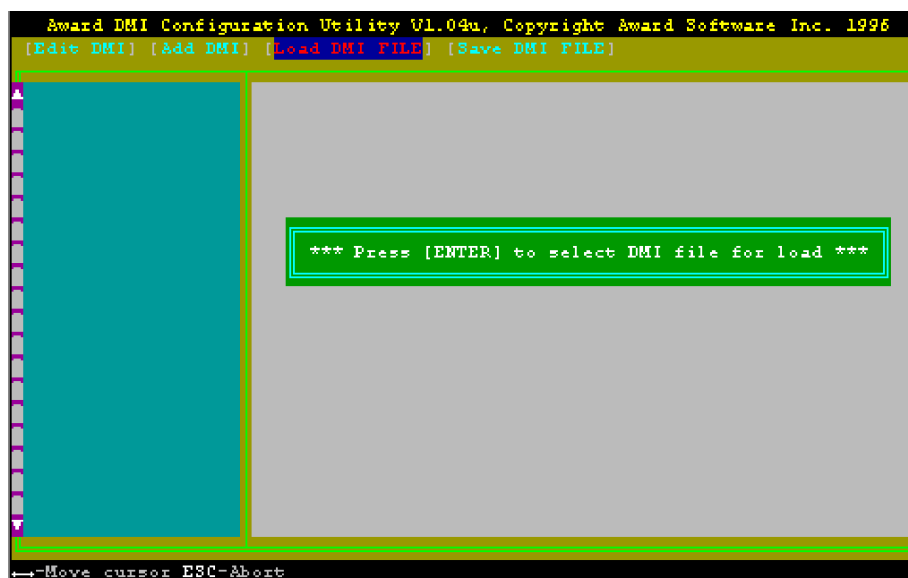
If the user has made changes, ESC will prompt you to answer Y or N. Enter Y to go back to the left-hand screen and save, enter N to go back to left-hand screen and not save. If editing has not been made, ESC will send you back to the left hand menu without any messages.

Add DMI



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

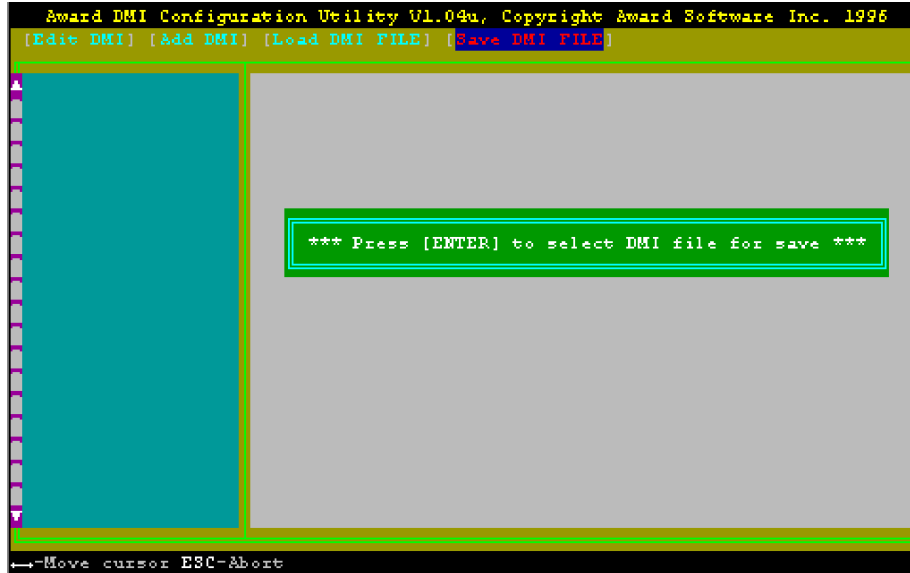
Load DMI File



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

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Save DMI File



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

APPENDIX A

QUICK GUIDE

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

Function		Jumper Settings	
CPU Front Side Bus Freq.	Always 66MHz Front Side Bus	JP1:	short
	66MHz or 100MHz – Auto Detected according the CPU installed	JP1:	open
Clear CMOS Data	Normal	JP4:	1-2 short
	Clear	JP4:	2-3 short
AMR Primary/Secondary Setting	Primary	JP16:	short
	Secondary	JP16:	open
Onboard Codec Setting	Enabled	JP17:	1-2 short
	Disabled	JP17:	2-3 short
Configuration Jumper for CPU Speed Protection	Selection	J22:	short
	Show Only	J22:	open