Main Board
User's Guide

P/N :9411310011
Code: 5IDM2.1

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100% POST-CONSUMER RECYCLED PAPER

Table of Contents

Chapter 1

Introduction

1-1 About this Manual

This manual is arranged to help you set up and run this Pentium main board as soon as possible.

Information is presented in three chapters: In this Introduction, we tell you what you should receive in your Pentium main board as well as provide information on the features and specifications of the product. The chapter enclosed with a diagram showing the layout of the Pentium main board.

Chapter 2, Main Board Setup, includes detailed information on how to install and configure your Pentium main board.

Chapter 3, Memory installation, describes the size and configuration of your system's on-board memory and external cache memory and gives instructions for installing the memory devices on the system board.

When the above steps have all been completed, you will been to adjust the BIOS setup by using the software utility which described in the Appendix.

1-2 How to identify the Pentium family CPU type?

As most of you are aware, the microprocessor is the heart and soul of any computer. The MPU is constantly being changed and improved. We provide On Board Voltage Regulator with multilevel voltage stage to meet variable CPU specification.

Top Markings:

B-Step (Heat spreader package) production units :

C-Step (Non-Heat spreader package) production units :

SS= Speed (MHz)

SX ZZZ=S-Spec. number

YYY= iCOMP index (610 for 75-MHz, 735 for 90 MHz and 815 for 100-MHz)

CPU	Version -Step	Power Voltage Version	S-spec. Number	Support Dual - Processor	Producti Schedule
P54C-75	B	STD	Q0-666 SX-961	Y	NOW
	C	STD	Q0-700 SX-969	Y	
P54C-90	B	STD	Q0-653 SX-957	Y	
		VR	Q0-654 SX-958	Y	
		VRE	Q0-655	Y	
	C	STD	Q0-699 SX-968	Y	
P54C-100	C	STD	Q0-697 SX-963	Y	
		VRE	Q0-698 SX-970	Y	
P54C-120	C	VRE	Q0-711 Q0-732 SX-086 SX-994	N	Q3 '95
	D			Y	Q4 '95
P54C-133	C	VRE	Q0-775 SK-103	N	Q3 '95
P54C-150	C	VRE		Y	Q4 '95

*** The Pentium CPUs solve FPU Fault begin B-step.**

* Due to diverse IC manufacture process, the Pentium CPUs have different power specifications, such as STD, VR and VRE version.
B Step-STD: 3.135 ~ 3.465V
B Step-VR : 3.3 ~ 3.465V
B/C Step-VRE: 3.45 ~ 3.6V
C Step-STD: 3.135 ~ 3.6V.

* It is no problem for this board that meet the next generation Pentium CPU (P54C-120/133/150/166) spec., but the Intel engineering samples of these CPUs haven't been released before we announced.

1-3 Why VRM & Socket7 is necessary ?

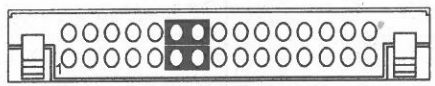
Intel has announced a Flexible Motherboard Architectune - a VRM and a CPU Socket7 are necessary.

Socket7 has a additional pin (differ from Socket5) to support Pentium OverDrive in the feature.

VRM (Voltage Regulator Module) is a power module to solve variable power voltage request, while regulator set on board can not support.

For example, The new higher frequency CPU (such as P54C-180 MHz) will require lower voltage to reduce power consumption. Therefore, a VRM (support 2.5V Vcc) is needed.

When Using regulator on board, please set VRM P6 & P7, P21 & P22 short.



1-4 Why EPP, ECP and 16550 ?

EPP (Enhanced Parallel Port) is an IEEE P1284 standard.
ECP (Extended Capabilities Parallel Port) is a protocol created by Microsoft and H.P
Both EPP and ECP are designed to provide a high performance, standard solution for connecting external devices such CD-ROM, HDD, Printer ... etc.
The high speed **UART 16550** (baud rate supported from 50 baud to 115.2K baud) was announced to collaborate high speed modem needed nowadays.

1-5 Main board Specifications

❒ **CPU**

- Support Intel Pentium™ Processor P54C-75/90/100 MHz CPUs
- Meet next generation Intel Pentium spec. (P54C-120/133/150/166)
- Support CPU ZIF Socket7 and VRM Socket, Regulator On Board with separate CPU core & I/O power plane.
- System Clock 50/60/66 MHz

❒ **Main Memory**

- 72-Pin SIMM Socket x 4 (4/8/16/32MB 32/36-bit 70-ns (or faster) SIMM Modules acceptable)
- Maximum 128MB on board
- Support EDO type DRAM

❒ **Cache Memory**

- 256KB/512KB (32Kx8, 64Kx8 DIP 3.3V and Mixed Mode SRAM)
- On board Pipe-lined Burst SRAM optional

❒ **I/O Slots**

- ISA bus 16-bit x 4
- PCI Bus x 4 (All are Master Mode).

❒ **Size**

- 220mm x 330mm, 4-layer PCB

❒ **BIOS**

- Award Pentium™ PCI BIOS With NCR PCI SCSI BIOS
- 1MBits Flash ROM is used

❒ **Chipset**

- Intel 82437FX/ 82438FX/ 82371FB

❒ **On Board Ultra I/O Optional**

- W83787F
- 1 floppy drive port
- 2 serial ports (16550 compatible)
- 1 printer port (SPP/EPP/ECP supported)

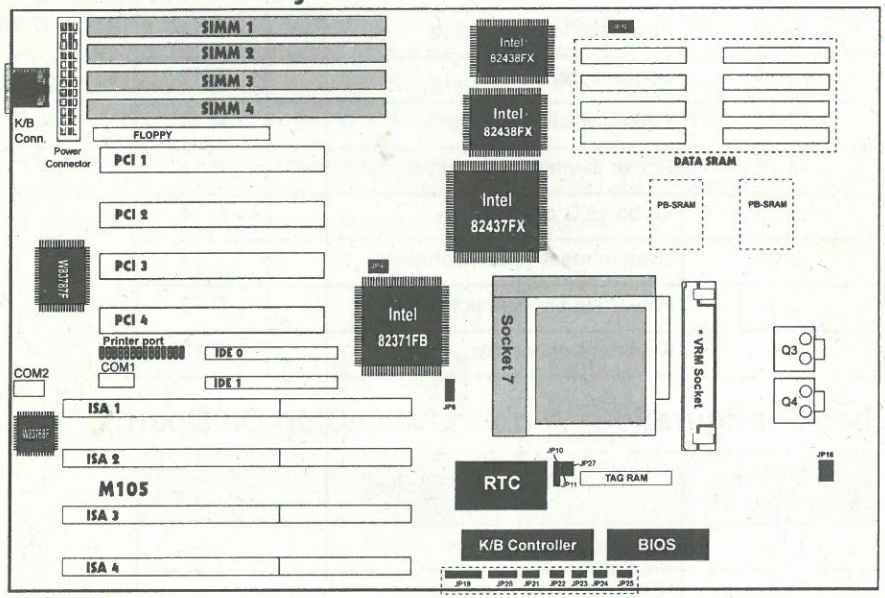
❒ **Green PC**

- Meet EPA Green PC standard : power consumption under 30W on the Doze, Standby or Inactive mode.

❒ **Fast IDE Interface**

- Supports PIO and Bus Master IDE Interface
- Supports up to Mode 4 Timings, Transfer Rates up to 22 MBytes/s
- 8 x 32-Bit Buffer for Bus Master IDE PCI Burst transfers

1-6 Main Board Layout



1-7 Jumper and Connector Ref. page

Jumper & Connector No.	Function	Ref. page
JP4,JP6	System clock setting jumper	P.11
JP10	Cache size setting jumper	P.15
JP11,JP27	CPU internal speed setting jumper	P.11
JP12	SRAM type slect jumper	P.15
JP16	CPU power voltage setting jumper	P.11
JP19	Keyboard lock connector	P.13
JP20	Speaker connector	P.13
JP21	Turbo switch connector	P.14
JP23	Power saving toggle switch connector	P.14
JP24	Turbo LED connector	P.14
JP25	System reset switch connector	P.13
J1	Power supply connector	P.12
J4	Keyboard connector	P.12

Other Configuration (Winbond MIO Chip On Board):

Jumper & Connector No.	Function
J5	Floppy drive connector
J7	RS232-2 (COM2) connector
J8	Printer port connector
J9	RS232-1 (COM1) connector
J10	Primary IDE connector
J11	Secondary IDE connector
JP22	Hard disk LED connector

Chapter 2

Main Board Setup

If your main board has already been installed by the dealer, you will still need to refer to this chapter in case you plan to make any changes or upgrade your system.

2-1 How to Set Jumper

Jumper switch is used to select between various operating modes. A jumper switch consists of two or three gold pins, which stretches out from the system board. By using the cap to cover two pins is to short those pins. If the cap is not placed on any pins at all, it indicates to leave the pins open.

This section will discuss the functions and settings for all of the user-configurable jumpers on the main board. Refer to the diagram below to find the location of the various jumpers on the main board.

Pins Cap Setting

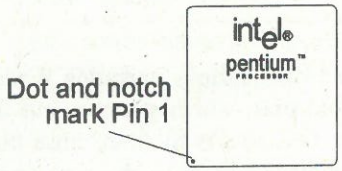
3 Pin Jumper

1-2: Pin 1 and Pin 2 short together

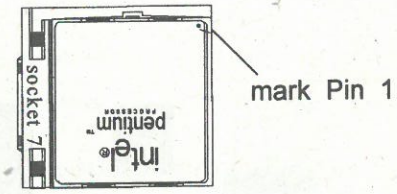
2-2 Installing a PGA type CPU in a ZIF Socket

The Intel Socket7, incorporated in the mainboard specifications, is specially designed for the Pentium processor. While inserting the Pentium processor onto Socket7, certain precautionary steps must be followed. The following diagram shows and explains the important things to note.

1. Locate the dot and notch at one of the processor's corners. These markings indicate Pin 1 of the processor.



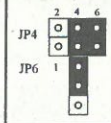
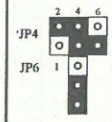
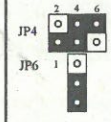
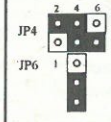
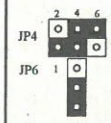
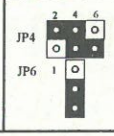
2. Insert the Pentium™ CPU in a similar fashion shown below.



2-3 Configuration the mainboard for different Pentium CPUs

The mainboard support Intel Pentium P54C-75/90/100/120 MHz and P54CQS-120 MHz CPUs. To install the CPU on this board, you must set **the system clock (JP4,JP6), CPU power voltage (JP16) and CPU internal speed (JP11,JP27)** to meet the CPU specification.

(more detail informations, please refer to chapter 1-2)

CPU Type	S-spec.	CPU Power Voltage (V)	Vcc JP16 *	System clk JP4,JP6 (MHz)		CPU Int. speed JP11,JP27**	
P54C-75	QO-666 SX-961	3.3		50		x1.5	
	QO-700 SX-969						
P54C-90	Q0-653 SX-957 QO-699 SX-968	3.3		60		x1.5	
	QO-654 SX-958	3.4					
	QO-655 SX-959	3.5					
P54C-100	QO-697 SX-963	3.5		66		x1.5	
	QO-698 SX-970						
P54C-120	QO-711 QO-732 SX-994 SK-086	3.5		60		x2	
P54C -133	(VRE)	3.5		66		x2	
P54C -150	(VRE)	3.5		60		x2.5	

**

CPU Internal speed	JP11	JP27
1.5 x system clock	O	O
2 x system clock	S	O
2.5 x system clock	S	S
3 x system clock	O	S

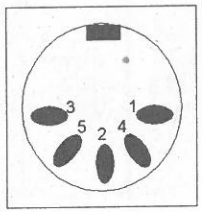
*

JP16	CPU Power Voltage
1-2 short	3.3V
3-4 short	3.4V
5-6 short	3.5V

2-4 Connectors and Jumpers Setting

Connectors are used to connect the system board to other parts of the system, including the power supply, the keyboard, and the various controllers on the front panel of the system case. When connecting connect-wires to the connectors, you should remember that some of them must be aligned in a specific way in order to have proper functions.

Keyboard Connector (J4)



Pin	Definition
1	Keyboard Clock
2	Keyboard Data
3	(None)
4	Gound
5	+5V DC

Keyboard Connector / Pin Definitions

Power Supply Connector (J1)

1	■	POWER GOOD	Orange
2	■	+5V	Red
3	■	+12V	Yellow
4	■	-12V	Blue
5	■	GROUND	Black
6	■	GROUND	Black
1	■	GROUND	Black
2	■	GROUND	Black
3	■	-5V	White
4	■	+5V	Red
5	■	+5V	Red
6	■	+5V	Red

The mainboard requires a power supply with at least 200 watts. While installing the board, the power supply connector is usually the last one to be connected. **Before connecting the power supply, make sure it is not connected to power source.** Most power supplies have two sets of six-wire connectors. Plug the dual connectors onto the board connector and make sure the black leads are in the center.

Keyboard Lock Connector (JP19)

When this connector is connected to the keylock on the front panel of the system case, the keylock can enable or disable the keyboard. It prevents other users from using the keyboard to communicate with your computer. It is important to lead the cable correctly for connecting the keylock to the main board.

Pin	Definition
1	+5V DC
2	No Connect
3	Ground
4	Keylock
5	Ground

Keyboard Lock Connector / Pin Definitions

System Reset Switch Connector (JP25)

This connector should be connected to the Reset switch on the front panel of the system case. The reset switch allows you to restart the system without turning the power off.

Pin	Definition
1	Reset
2	GND

Reset Switch Connector / Pin Definitions

Speaker Connector (JP20)

An external speaker mounted inside the case can be connected to the main board via this connector.

Pin	Definition
1	Speaker Signal
2	No Connect
3	GND
4	+5V DC

Speaker Connector / Pin Definitions

Power Saving Toggle Switch Connector (JP23)

Short : Force System into Suspend mode

If you have power saving control switch on the front Panel of the system case, you can trigger system into Suspend mode directly. Power saving switch makers the system slow down the CPU clock to zero Hz, reduce the power consumption of external cache and so on. The system will wake up while the keyboard or mouse be touched

Turbo LED connector (JP24)

+ 

The turbo LED connector is connected to a turbo LED on the front panel of the system case. If connected, the turbo LED will light on when the system is running at a high speed mode.

Turbo switch connector (JP21)

The hardware turbo switch connector is used to connect the board to a hardware turbo switch on the front panel of the system unity. If connected, the hardware turbo switch can be used to toggle the turbo at a high speed or a low speed mode.

 High speed (default)

 Low speed

Other high/low speed changed by keyboard, when low speed

CTRL-ALT- "-" : Set to low speed

CTRL-ALT- "+" : Set to high speed

Chapter 3

Memory Installation

This main board can operate from **8MB up to 128MB** of system memory installed on-board. There is also an external cache memory on the system board that may be installed from **0KB to 512MB** in size. This chapter describes the types of memory devices that should be used with the main board, and shows how to install the memory.

3-1 External Cache Memory Configuration

When you first install the cache memory on your system board or each time you upgrade or modify it, you will need to adjust the cache memory size setting for the system. The cache memory size for the system is set by adjusting JP10, JP17 and JP18.

Cache	JP10/JP17/JP	TAG RAM (U38)	DATA RAM (U26-33)
256K		8K x 8	32K x 8
512K		16K x 8 or 32K x 8	64K x 8

SRAM type select jumper (JP12)

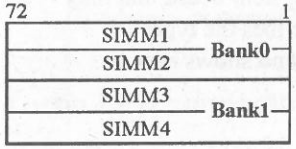
5V (Mix mode) SRAM : 

3.3V SRAM : 

* If you want to install the SRAM by yourself, please consult the mainboard dealer which can provide more detail information.

3-2 Main Memory Configuration

The DRAM memory system on board consists of bank0 and bank1, and the tltal memory size is 8 ~.128 MBytes. You must install 2 pcs DRAM modules (sane size, sane speed, either single or double side) for each bank at a time, and no difference which bank you install first.



Bank0	Bank1
S/S	—
S/S	S/S
S/S	D/S
—	S/S
D/S	—
D/S	S/S
D/S	D/S
—	D/S

* "S/S" - Single side
72-pin SIMM: 4 or 16MB
* "D/S" - Double side
72-pin SIMM: 8 or 32MB
* "---" - no use

Bank0	Bank1	Total Memory size
SIMM1 & 2	SIMM 3 & 4	
4MB x 2	None	8MB
8MB x 2	None	16MB
16MB x 2	None	32MB
32MB x 2	None	64MB
None	4MB x 2	8MB
None	8MB x 2	16MB
None	16MB x 2	32MB
None	32MB x 2	64MB
4MB x 2	4MB x 2	16MB
4MB x 2	8MB x 2	24MB
4MB x 2	16MB x 2	40MB
4MB x 2	32MB x 2	72MB
8MB x 2	4MB x 2	24MB
8MB x 2	8MB x 2	32MB
8MB x 2	16MB x 2	48MB
8MB x 2	32MB x 2	80MB
16MB x 2	4MB x 2	40MB
16MB x 2	8MB x 2	48MB
16MB x 2	16MB x 2	64MB
16MB x 2	32MB x 2	96MB
32MB x 2	4MB x 2	72MB
32MB x 2	8MB x 2	80MB
32MB x 2	16MB x 2	96MB
32MB x 2	32MB x 2	128MB

DRAM Specifications :

DRAM speed : 70-ns or faster for pentium 75 or 90MHz,
60-ns for pentium 100 MHz.

Parity : Either parity or non-parity.

Appendix I

Award BIOS Setup Program

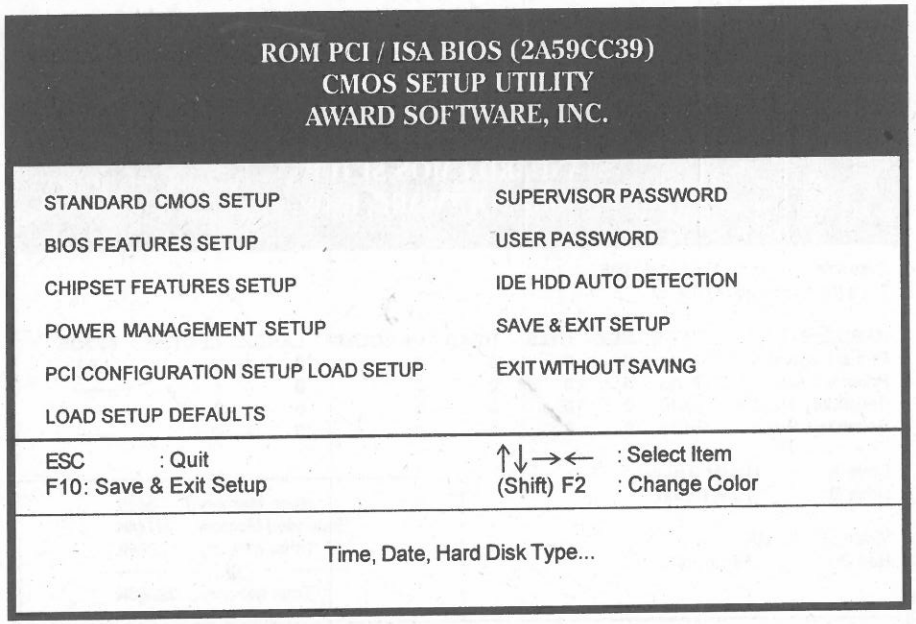


Figure A-1 Setup Program Initial Screen

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This content of information is stored in CMOS RAM so that it retained the Setup information when the power is turned off.

Entering Setup: Power on the computer and press <**Del**> immediately will allow you to enter Setup program.

A-1 Standard CMOS Setup

Choose the **"STANDARD CMOS SETUP"** option from the **CMOS SETUP UTILITY** Menu (Figure A-2) and the below screen is displayed. This standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy disk drive, display and memory. When a field is highlighted, on-line help information is displayed in the left bottom of the Menu screen.

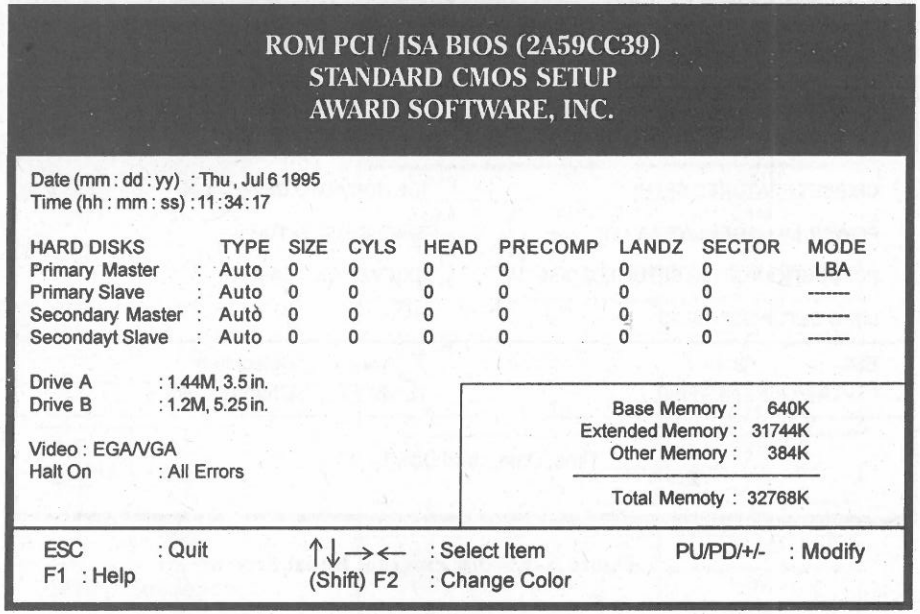


Figure A-2 Standard CMOS Setup Screen

Hard Disk Mode : to install hard disk (such as **MFM, ESDI or IDE**) to your system, **you need to have their specifications recorded here**. The SCSI drives operate using device drivers and are not supported directly by BIOS. For IDE hard drives, the BIOS provides three modes to support both normal IDE hard disks and also drives larger than 528MB:

Normal mode - for IDE drives smaller than 528MB.

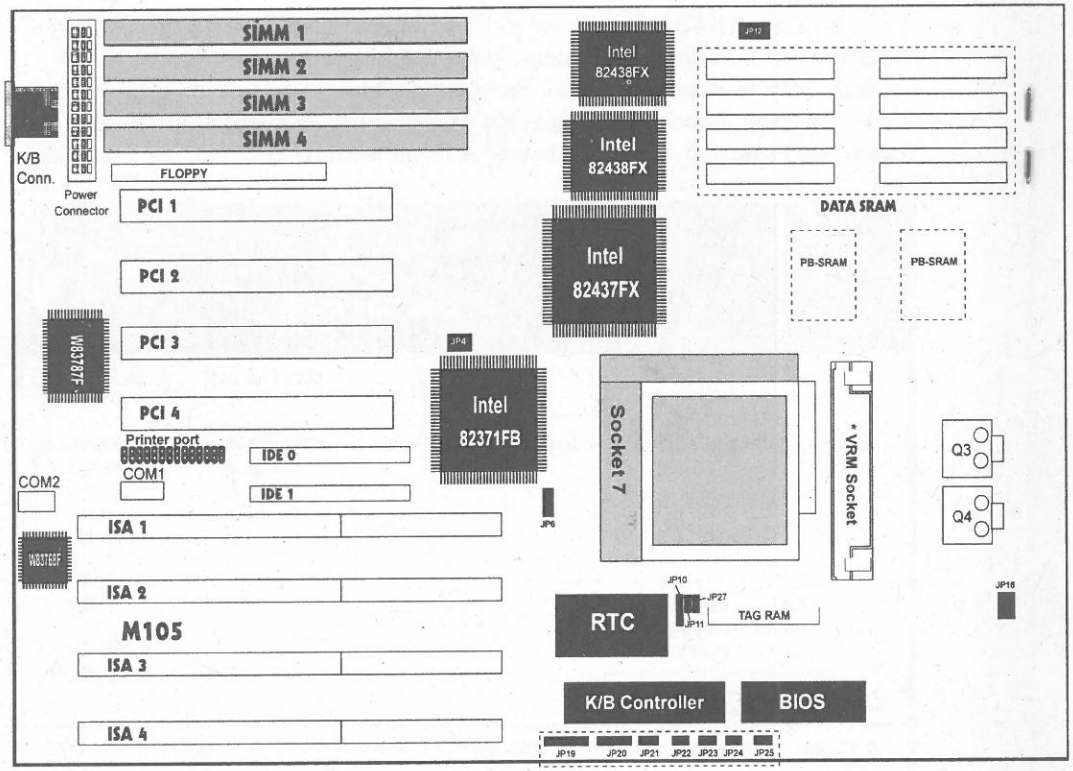
LBA mode - provide LBA (Large Block Addressing) function for mass capacity hard disk that larger than 528MB and up to 8.4GB (Giga Bytes).

Jumper Setting Quck Reference

JP12: SRAM type slect jumper

5V (Mix mode) SRAM 

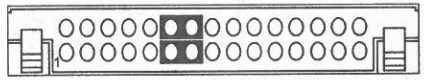
3.3V SRAM 

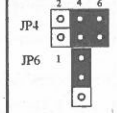
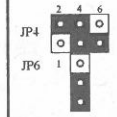
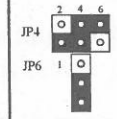
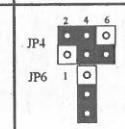
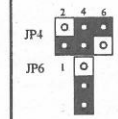
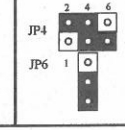


Cache	JP10/JP17/JP1	TAG RAM (U38)	DATA RAM (U26-33)
256K		8K x 8	32K x 8
512K		16K x 8 or 32K x 8	64K x 8

JP19: Keyboard lock connector
JP20: Speaker connector
JP21: Turbo switch connector
JP22: Hard disk LED connector
JP23: Green switch connector
JP24: Turbo LED connector
JP25: Reset switch connector
Q3/Q4: CPU Vcc Regulator

* VRM (Voltage Regulator Module) Socket
Using on board regulator set, please set VRM P6 & P7, P21 &P22 short



CPU	Power Voltage. version No.		Vcc JP16		System clk JP4,JP6		CPU Int. speed JP11,JP27**	
P54C-75	STD	QO-666 SX-961	3.3		50		x1.5	
		QO-700 SX-969						
P54C-90	STD	Q0-653 SX-957 QO-699 SX-968	3.3		60		x1.5	
	VR	QO-654 SX-958	3.4					
	VRE	QO-655 SX-959	3.5					
P54C-100	STD	QO-697 SX-963	3.5		66		x1.5	
	VRE	QO-698 SX-970						
P54C-120	STD/ VRE	QO-711 QO-732 SX-994 SK-086	3.5		60		x2	
P54C -133	STD/ VRE		3.5		66		x2	
P54C -150	STD/ VRE		3.5		60		x2.5	

** CPU Intermal Speed Setup

CPU Internal speed	JP11	JP27
1.5 x system clock	O	O
2 x system clock	S	O
2.5 x system clock	S	S
3 x system clock	O	S

***The power voltage version No. is on the top of CPU. If you cannot identify CPU type from above table, please contact your dealer.

Large mode - doesn't use LBA function for above mass capacity hard disk. Large mode is new specifications which may not be fully supported by all operation systems (MS-DOS is OK right now, but is uncommon.)

***Write Pre compensation** - The size of a sector gets progressively smaller as the track diameter diminishes. Yet each sector must still hold 512byte. Write pre compensation circuitry on the hard disk compensates for the physical difference in sector size by boosting the write current for sectors on inner track.

***Landing Zone** - The cylinder location where the heads will normally park when the system is shut down.

***Capacitor** = (Number of heads) x (Number of cylinders) x (Number of sectors per track) x (512 Bytes per sector)

A-2 BIOS Features Setup

By choosing the **"BIOS FEATURES SETUP"** option from the **CMOS SETUP UTILITY** Menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

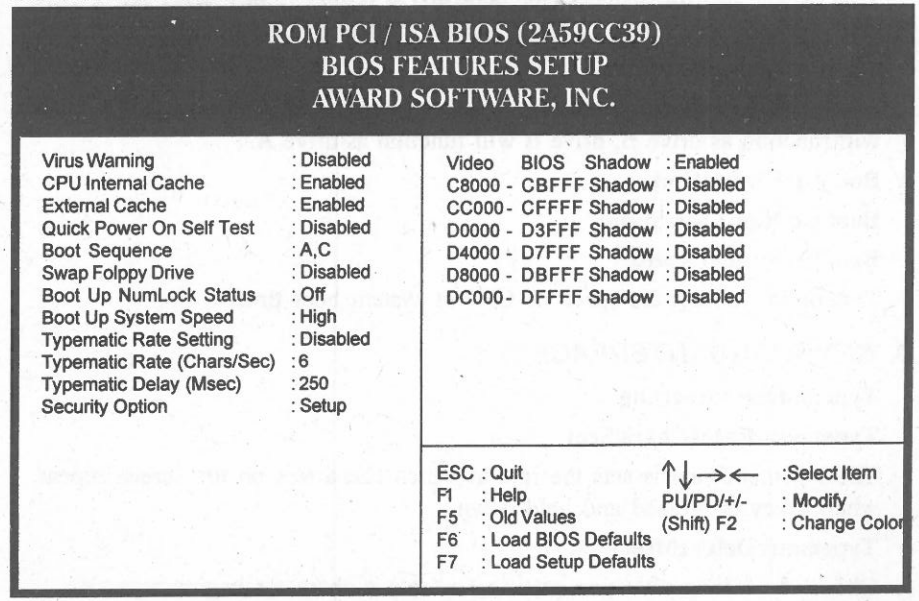


Figure A-3 BIOS Feature Setup Screen

A. VIRUS PROTECTION

Virus Warning:

When enabled, BIOS warns the user when any program attempts to write or format the boot sector and allows the user to intervene.

B. CACHE CONTROL

CPU Internal Cache

External Cache

C. BOOT UP FEATURES

After power on the system, BIOS will perform a series of device initializations and diagnostic tests.

Quick Power On Self Test

If it set to Enabled, BIOS will skip some check items during POST.

Boot Sequence

This option sets the sequence of boot drives (either floppy drive A: or hard disk drive C:) that BIOS attempts to boot from after POST completes.

Swap Floppy Drive

Enabled - The system will swap the floppy drive assignment so that drive A will function as drive B, drive B will function as drive A.

Boot Up Floppy Seek

Boot Up NumLock Status

Boot Up System Speed

This option selects the speed of CPU at system boot time.

D. KEYBOARD INTERFACE

Typematic Rate Setting

Typematic Rate (Chars/Sec)

The typematic rate is sets the rate at which characters on the screen repeat when a key is pressed and held down.

Typematic Delay (Msec)

Choose how long after you press a key that a charactor begins repeating.

E. PASSWORD CONTROL

Security Option

System: When entering wrong password, the system will not boot and deny to access the BIOS Setup.

Setup: When entering wrong password, the system can boot, but deny any access to the BIOS Setup.

F. Shadow Memory

BIOS can copy adapter's ROM from address C0000h through DFFFFh to RAM for faster execution. Shadow setting are chipset specific and dependent on system hardware.

A-3 Chipset Features Setup

By choosing the **"CHIPSET FEATURES SETUP"** option from the **CMOS SETUP UTILITY** Menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

ROM PCI / ISA BIOS (2A59CC39)
CHIPSET FEATURE SETUP
AWARD SOFTWARE, INC.

DRAM RAS Precharge Time	:4	PCI Concurrency	:Enabled
DRAM R/W Leadoff Timing	:8/6	PCI Streaming	:Enabled
DRAM RAS To Cas Delay	:3	PCI Bursting	:Enabled
DRAM Read Burst Timing	:x4444	Onboard FDD Controller	:Enabled
DRAM Write Burst Timing	:x4444	Onboard Serial Port 1	:COM1
System BIOS Cacheable	:Disabled	Onboard Serial Port 2	:COM2
Video BIOS Cacheable	:Disabled	Onboard Parallel Port	:378H
8 Bit I/O Recovery Time	:3	Onboard Parallel Mode	:EPP/SPP
16 Bit I/O Recovery Time	:2	Serial Port 1 MIDI	:Disabled
Memory Hole At 15M-16M	:Disable	Serial Port 2 MIDI	:Disabled
IDE HDD Block Mode	:Enabled		
IDE Primary Master PIO	:Auto		
IDE Primary Slave PIO	:Auto		
IDE Secondary Master PIO	:Auto		
IDE Secondary Slave PIO	:Auto		
On-Chip Primary PCI IDE	:Enabled		
On-Chip Secondary PCIIDE	:Enabled		
PCI Slot IDE 2nd Channel	:Enabled		

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

Figure A-4 Chipset Features Setup Screen

Above all the entries on the screen are optional settings for this mainboard and you should not change them.

A. IDE HDD

IDE HDD Block Mode

Specifies the maximum number of sectors that can be transferred at a time.

A-4 Power Management Setup

This section provides informations of functioning the Green PC power management features. For enabling the power management function, please select **"POWER MANAGEMENT SETUP"** option from the **"CMOS SETUP UTILITY"** Menu.

ROM PCI / ISA BIOS (2A59CC39)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	:Disabled		IRQ7 (LPT 1)	:ON	
PM Control by APM	:Yes		IRQ8 (RTC Alarm)	:OFF	
Video Off Method	:V/H SYNC+Blank		IRQ9 (IRQ2 Redir)	:ON	
			IRQ10 (Reserved)	:ON	
Doze Mode	:Disable		IRQ11 (Reserved)	:ON	
Standby Mode	:Disable		IRQ12 (PS/2 Mouse)	:OFF	
Suspend Mode	:Disable		IRQ13 (Coprocessor)	:OFF	
HDD Power Down	:Disable		IRQ14 (Hard Disk)	:ON	
			IRQ15 (Reserved)	:ON	
IRQ3 (Wake-Up Event)	:ON				
IRQ4 (Wake-Up Event)	:ON				
IRQ8 (RTC Alarm)	:OFF				
IRQ12 (Wake-Up Event)	:ON				
Power Down Activities					
IRQ3 (COM 2)	:ON				
IRQ4 (COM 1)	:ON				
IRQ5 (LPT 2)	:ON				
IRQ6 (Floppy Disk)	:ON				

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

Figure A-5 Power Management Setup Screen

A. Selecting "Power Management" Mode:

Power Management

User Define - User can configure their own power management function

Disabled - Disable the power management features.

Min. Saving - All timers are in their min value.

Doze - 1hr, Standby - 1hr, Inactive - 1hr.

Max. Saving - all timers are in their max value.

Doze - 2min, Standby - 2min, Inactive - 2min.

PM Control by APM

Support the Intel and Microsoft INT 15h Advanced Power Management BIOS function which creates and interface to allow the OS to communicate with the SMM code. If APM is not installed, this option has no effect.

Video Off Method

Blank -BIOS will only blanks off the screen when disabling video.

V/H SYNC+Blank - BIOS will blanks off the screen and turn of V/H SYNC signals to turn off the V-SYNC and H-SYNC signals from VGA cards to monitor.

* If Green monitors detect the V/H-SYNC signals turned off, it cut the electron gun to save power consumption.

B. PM Time Setting

Doze Mode :

If System no any PM events happened and the Doze timer expires, system will enter CPU to Doze mode.

Standby Mode

If System run in Doze mode and the Standby timer expires, system will enter CPU to Standby mode (CPU speed = CPUCLK / 3 MHz) form Doze mode.

*The CPUCLK (external CPU clock) means system clock mentioned in this manual.

Suspend Mode

If there is no any activity continual and the Suspend is time-out, the system will stop the CPU clock (CPU speed = 0 MHz).

* Within Standby or Suspend, system may also turn off the video signal and power down the hard disk driver (depend on "HDD Power Down" setting).

HDD Power Down

When the HDD idle time has elapsed, the BIOS sends a command to the hard disk to enter sleep mode (turn of the motor). This function is only valid for IDE HDDs that support power saving function.

C. PM Events Mask Control

Individual IRQ wake up Event :

If an interrupt request is generated by a device using, it will wake up the system to normal mode. (support by any green modes)

Power Down Activities:

the system runs at Suspend mode:

If any event happened, the system will return to normal mode.

the system runs at Doze or Standby mode:

If any event happened, the timer will recounting from zero.

A-5 PCI CONFIGURATION SETUP

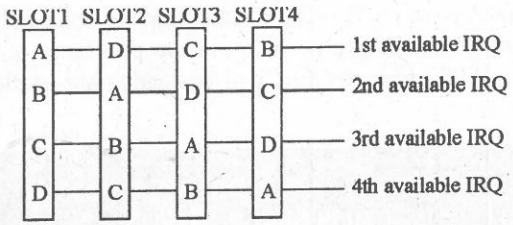
By choosing the **"PCI CONFIGURATION SETUP"** option from the **CMOS SETUP SCREEN** Menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

```
ROM PCI / ISA BIOS (2A59CC39)
PCI CONFIGURATION SETUP
AWARD SOFTWARE, INC.

PnP BIOS Auto-Config  : Disable
Slot 1 Using INT#     : AUTO
Slot 2 Using INT#     : AUTO
Slot 3 Using INT#     : AUTO
Slot 4 Using INT#     : AUTO
1st Available IRQ     : 5
2nd Available IRQ     : 9
3rd Available IRQ     :11
4th Available IRQ     :12
PCI IRQ Actived By    : Level
PCI IDE IRQ Map To    : ISA

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

Figure A-6 PCI & ONBOARD I/O Setup Screen

Note : *Please set all INT# to "AUTO" and all of PCI adapters should use INTA.*
BIOS will route each INTA to correspond IRQ automatically.

A. PCI's INT routing Setup



The PCI Local Bus specifies 4 INT (INT A ~ D) for each PCI slot. In this board, INT A of slot1, INT D of slot 2 and INT C of slot 3 are directed to same 1st available IRQ. Also, the 2nd, 3rd and 4th available IRQ are also shared by the INTx of different slots.

We recommend user set all INT x to "AUTO" and all of PCI adapter should use INT A. The BIOS will route each "available IRQ" to correspond real IRQ automatically.

PCI IRQ Actived By

If you install a level trigger PCI cards, please set PCI IRQ to activate by Level.

PCI IDE IRQ Map To

PCI-AUTO - The BIOS will scan PCI IDE devices which PCI slot is onto, and assign IRQ14 to primary IDE INT# , IRQ15 to secondary IDE INT#.

PCI-Slot x - The BIOS assign IRQ14 to primary IDE INT# and IRQ15 for secondary IDE INT# directly for the specified slot.

ISA - The BIOS will not assign any IRQs to IDE INT for some PCI IDE card which use a paddle card to connect ISA IRQ or using on board IDE controller.

A-6 Load Setup Defaults

"LOAD SETUP DEFAULTS" loads the default system values directly from **CMOS**. If the stored record created by the setup program becomes corrupted (and therefore unusable), these defaults will be loaded automatically when you turn the computer on.

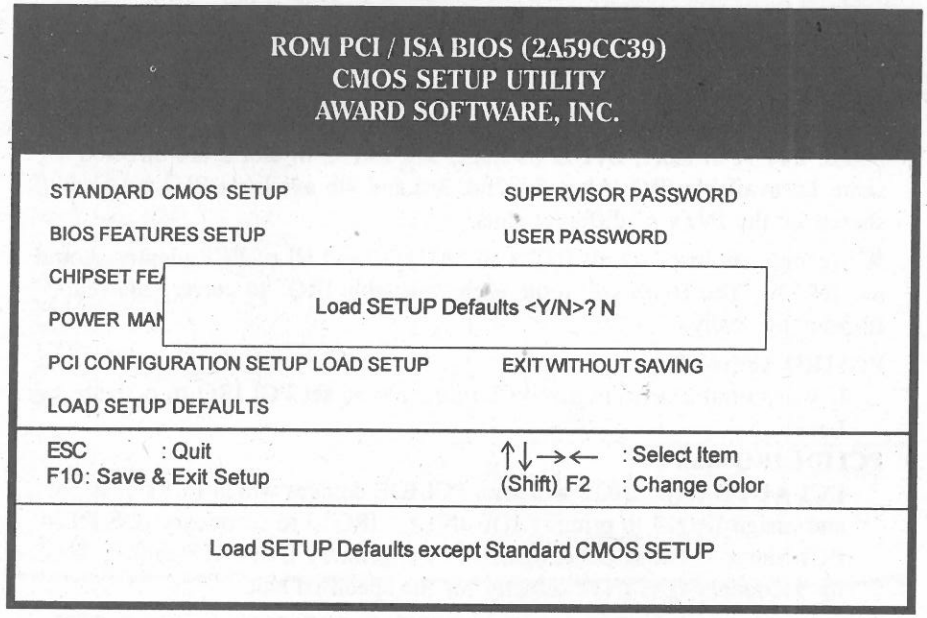
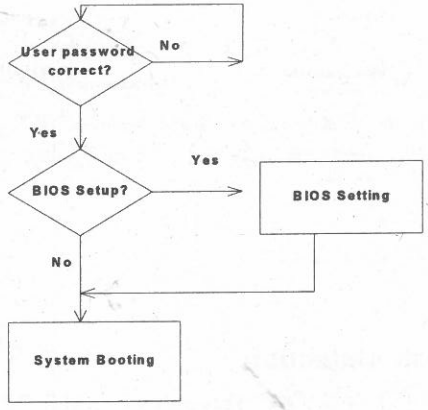


Figure A-7 Load Setup Defaults Screen

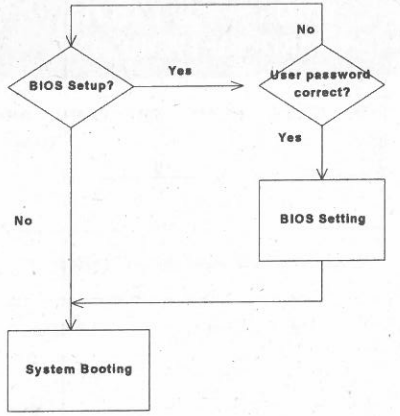
A-7 Supervisor Password & User Password Setting

A. Set "User password" Only

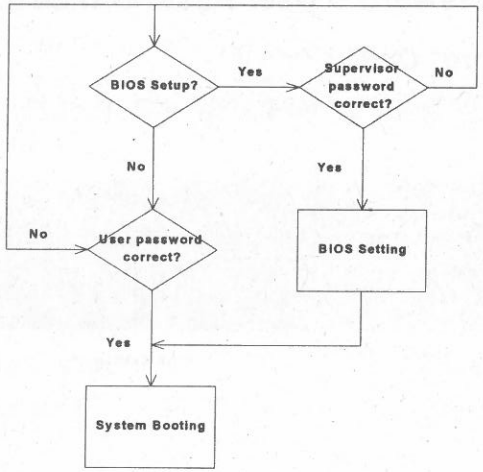
. If "Security Option" (BIOS features setup select item) is set to "System"



If "Security Optional" is set to "Setup"



B. Set both "Supervisor password" and "User password"



A-8 IDE HDD Auto Detection

"IDE HDD AUTO DETECTION" This utility can AUTO DETECT IDE HARD DISK TYPE. If you do not know the HARD DISK TYPE.

ROM PCI / ISA BIOS (2A59CC39)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	:	853	827	32	0	1653	63	LBA
Primary Slave	:	0	0	0	0	0	0	NORMAL
Secondary Master	:	0	0	0	0	0	0	NORMAL
Secondary Slave	:							

Select Secondary Slave Option (N=Skip) : Y

OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
1(Y)	0	0	0	0	0	0	NORMAL

ESC: Skip

Figure A-8 IDE HDD Auto Detection Screen

A-9 Save and Exit Setup

"SAVE & EXIT SETUP". If you select this and press the [Enter] key, the values entered in the setup utilities will be recorded in the CMOS memory of the chip set. The microprocessor will check this whenever you turn on your system, and compare this to what it finds as it checks the system. This record is required for the system operation.

A-10 Exit Without Saving

"EXIT WITHOUT SAVING". Selecting this option and pressing the [Enter] key let you exit the Setup program without recording any new values or changing old ones.

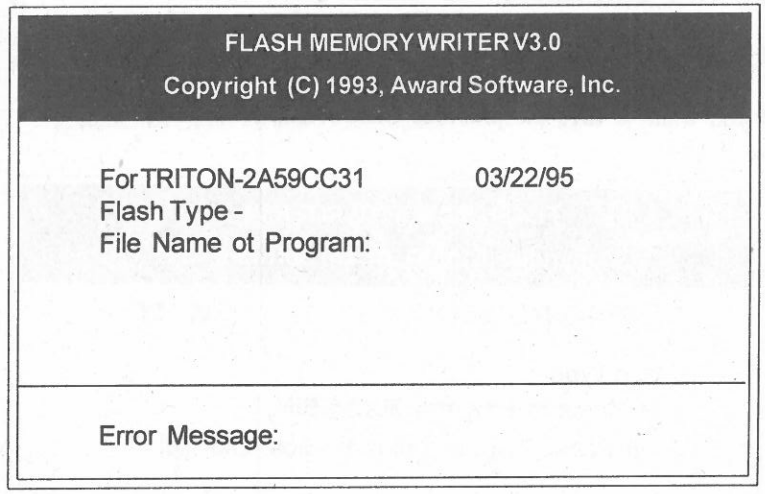
Memo

Appendix II

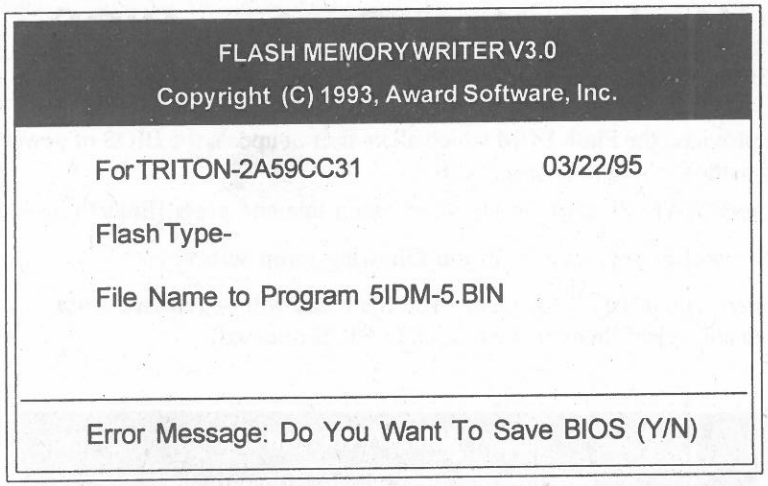
Update Your System BIOS

System provided the Flash ROM which allow user ot update the BIOS of newer version without changing components.

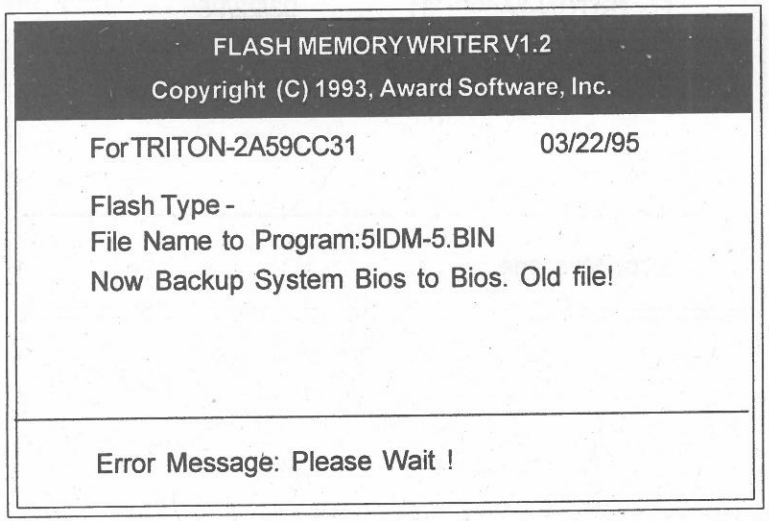
1. Type "AWD FLASH" at DOS command line and press [Enter] key.
2. You will be presented with the following setup screen.
3. Please key in BIOS file name (The file name will be released from your dealer when there is new up-date BIOS released).



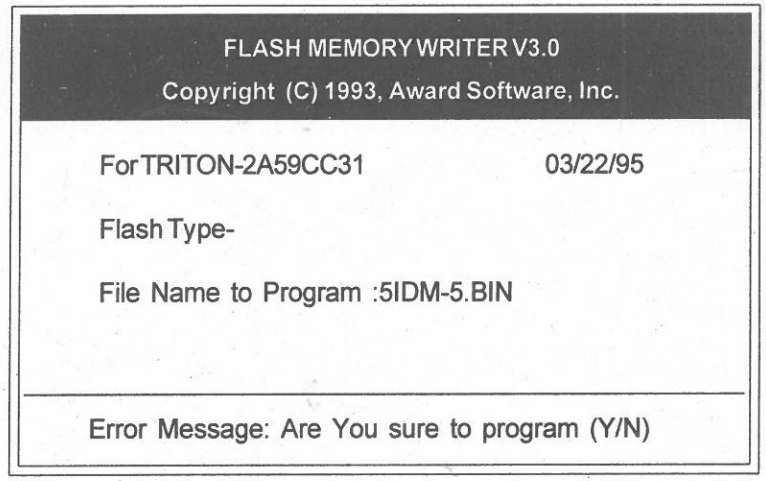
4. If you don't want to save the previous CMOS data to the diskette , please key in [N] .



If you want to save the previous CMOS data to the diskette, please key in [Y].



5. Enter the new BIOS file name and tupe [Y], then you will start program.



6. The system will auto Restart.

Memo