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5VGM

User's Manual

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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.

When the above steps have all been completed, you will be to adjust the BIOS setup by using the software utility which described in the Chapter 3.

1-2 Product Specifications :

CPU

- Support full series of Intel Pentium® Processors(P54C), up to 200MHz. . .
- Meet future Intel Pentium® Processors (P55C, P54CTB), Cyrix 6x86 and AMD K5 CPUs spec., up to 200MHz.
- System Clock 50/55/60/66 MHz.
- ZIF Socket 7
- ☒ The split power plane designs support future VRT (Voltage Reduction Technology) processors, such as Intel's P55C ,AMD's K5-AHQ parts.
- ☒ P55C is the first Intel processor to include MMX™ technology that add new instructions set to accelerate Multi-media and communication applications.

Main Memory

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

Cache Memory

- Support 0/256(32k*32x2)/512(64k*32x2)KB Pipelined Burst SRAM on board

I/O Slots

- 16-bit ISA Bus x 3
- 32-bit PCI Bus x 4 (All are Master Modes, PCI 2.1 compliant)

Size

- 220mm x 250mm, 4-layer PCB

BIOS

- Award System BIOS
- 1Mb Flash ROM
- Support PnP, APM & CD-ROM booting features (DMI in the future)
- Built in NCR SCSI BIOS

Chipset

- Intel 82430VX four chips PCIset

On Board Super I/O

- UMC 8663B I/O chip
- 1FD+2S+1P
- Meet EPP/ECP parallel port spec.
- 16550A compatible, high speed UART
- Support IrDA IR function, up to 115.2kbps

Two Enhanced-IDE Ports

- Support up to PIO Mode 4 Timing
- Bus Master capability to support Multi-task OS.

Dual Channel USB Ports

 Now under testing of compatibility with different peripherals.

Green PC

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

1-3 Product Contents

This product comes with the following components:

- Mainboard x 1
- 9-pin serial port & 25-pin parallel port ribbon cable with bracket x 1
(Figure 1-1)
- 25-pin serial port ribbon cable with bracket x 1 (Figure 1-2)
- 40-pin IDE connector ribbon cable x 1 (figure 1-4)
- 34-pin floppy disk drive ribbon cable x 1 (figure 1-3)
- User's Manual x 1
- Flash EPROM Utility & Bus Master IDE Drivers Diskette x 1

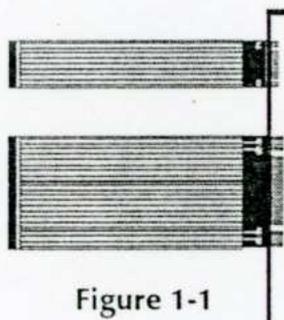


Figure 1-1

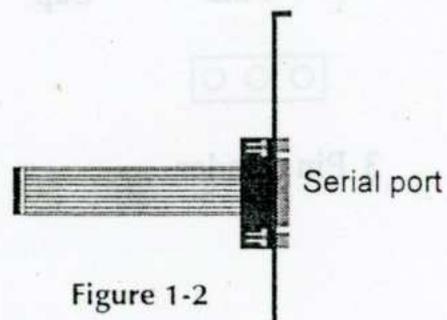


Figure 1-2

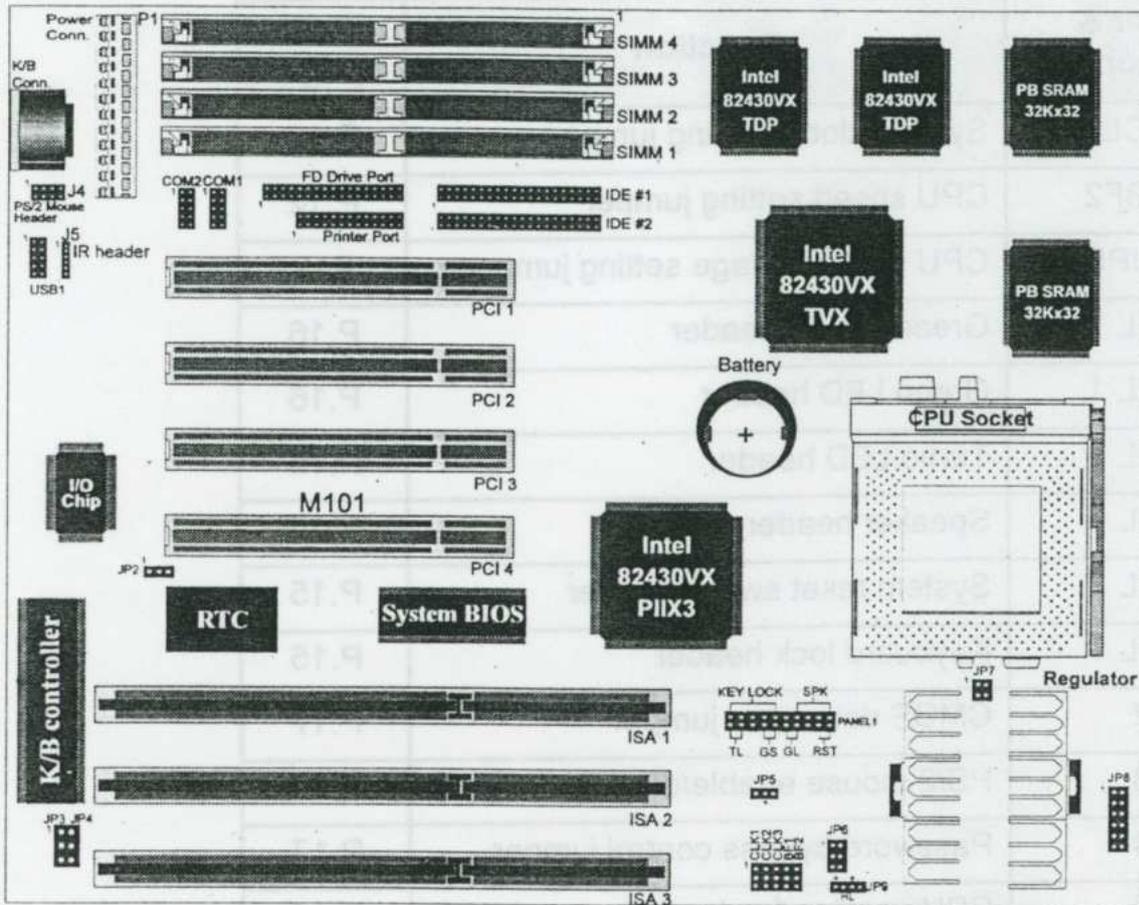


Figure 1-3



Figure 1-4

1-4 Main Board Layout



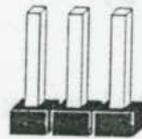
Jumper and Connector Ref. page

Jumper & Connector No.	Function	Ref. page
CLK1~CLK3	System clock Setting jumper	P.12
BF1~BF2	CPU speed setting jumper	P.12
JP6~JP8	CPU power voltage setting jumper	P.12
PANEL 1	Green switch header	P.16
PANEL 1	Green LED header	P.16
PANEL 1	Turbo LED header	P.15
PANEL 1	Speaker header	P.15
PANEL 1	System reset switch header	P.15
PANEL 1	Keyboard lock header	P.15
JP2	CMOS data clear jumper	P.17
JP3	PS/2 mouse enable/disable	P.15
JP4	Password bypass control jumper	P.17
JP5	CPU cooling fan header	P.16
JP9	Hard disk LED header	P.16
P1	Power supply connector	P.14
J1	Keyboard connector	P.14
J4	PS/2 mouse connector	P.15
J5	IR connector	P.16

1-5 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.

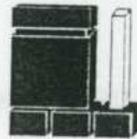
This section will discuss the functions and settings for all of the user-configurable jumpers on the main board. Refer to the diagram below to find the location of the various jumpers on the main board.



Pins



Cap



Setting



3 Pin header



1-2: Pin 1 and Pin 2
short together



Memo

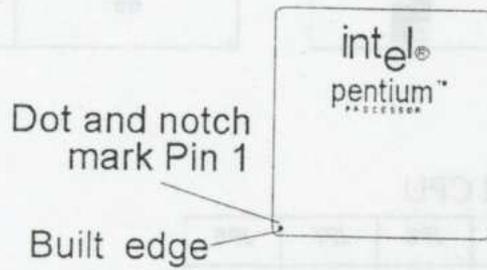
MEMO NO.	MEMO DATE	MEMO TITLE	MEMO CONTENTS	MEMO NO.	MEMO DATE	MEMO TITLE	MEMO CONTENTS
01	01/01	MEMO 01	MEMO 01	01	01/01	MEMO 01	MEMO 01
02	01/02	MEMO 02	MEMO 02	02	01/02	MEMO 02	MEMO 02
03	01/03	MEMO 03	MEMO 03	03	01/03	MEMO 03	MEMO 03
04	01/04	MEMO 04	MEMO 04	04	01/04	MEMO 04	MEMO 04
05	01/05	MEMO 05	MEMO 05	05	01/05	MEMO 05	MEMO 05
06	01/06	MEMO 06	MEMO 06	06	01/06	MEMO 06	MEMO 06
07	01/07	MEMO 07	MEMO 07	07	01/07	MEMO 07	MEMO 07
08	01/08	MEMO 08	MEMO 08	08	01/08	MEMO 08	MEMO 08
09	01/09	MEMO 09	MEMO 09	09	01/09	MEMO 09	MEMO 09
10	01/10	MEMO 10	MEMO 10	10	01/10	MEMO 10	MEMO 10
11	01/11	MEMO 11	MEMO 11	11	01/11	MEMO 11	MEMO 11
12	01/12	MEMO 12	MEMO 12	12	01/12	MEMO 12	MEMO 12
13	01/13	MEMO 13	MEMO 13	13	01/13	MEMO 13	MEMO 13
14	01/14	MEMO 14	MEMO 14	14	01/14	MEMO 14	MEMO 14
15	01/15	MEMO 15	MEMO 15	15	01/15	MEMO 15	MEMO 15
16	01/16	MEMO 16	MEMO 16	16	01/16	MEMO 16	MEMO 16
17	01/17	MEMO 17	MEMO 17	17	01/17	MEMO 17	MEMO 17
18	01/18	MEMO 18	MEMO 18	18	01/18	MEMO 18	MEMO 18
19	01/19	MEMO 19	MEMO 19	19	01/19	MEMO 19	MEMO 19
20	01/20	MEMO 20	MEMO 20	20	01/20	MEMO 20	MEMO 20
21	01/21	MEMO 21	MEMO 21	21	01/21	MEMO 21	MEMO 21
22	01/22	MEMO 22	MEMO 22	22	01/22	MEMO 22	MEMO 22
23	01/23	MEMO 23	MEMO 23	23	01/23	MEMO 23	MEMO 23
24	01/24	MEMO 24	MEMO 24	24	01/24	MEMO 24	MEMO 24
25	01/25	MEMO 25	MEMO 25	25	01/25	MEMO 25	MEMO 25
26	01/26	MEMO 26	MEMO 26	26	01/26	MEMO 26	MEMO 26
27	01/27	MEMO 27	MEMO 27	27	01/27	MEMO 27	MEMO 27
28	01/28	MEMO 28	MEMO 28	28	01/28	MEMO 28	MEMO 28
29	01/29	MEMO 29	MEMO 29	29	01/29	MEMO 29	MEMO 29
30	01/30	MEMO 30	MEMO 30	30	01/30	MEMO 30	MEMO 30
31	01/31	MEMO 31	MEMO 31	31	01/31	MEMO 31	MEMO 31

Mainboard Setup

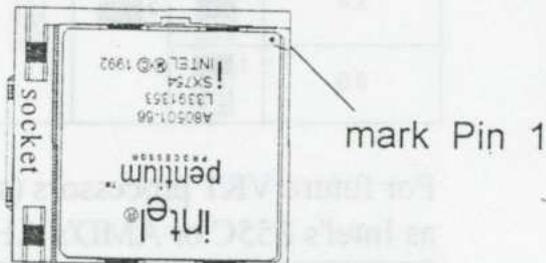
2-1 Installing a PGA type CPU in a ZIF Socket

The Intel Socket 7, incorporated in the mainboard specifications, is specially designed for the Pentium processor. While inserting the Pentium processor onto Socket 7, certain precautionary steps must be followed. The following diagrams of demostation and explanation are worth of your note.

1. To align, match the processor corner containing the blunt edge and the white dot to the socket corner with the distinctive pin arrangement.



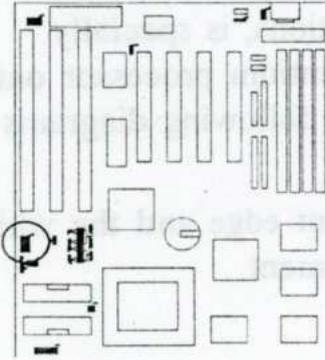
2. When the socket handle is up the processor should seat easily no force is necessary.



2-2 Different Pentium® class CPUs Installation

The mainboard supports Pentium class processors, up to 200MHz. If you install the CPU on this board, you must set the system clock (CLK1~CLK3), CPU power voltage (JP6~JP8) and CPU internal speed (BF1,BF2) to meet variable CPU specifications (Int CPU speed = speed rate x system clock).

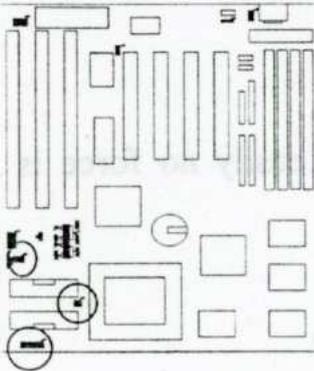
CPU Speed Configuration :



Speed rate	BF1, BF2
1.5	1
2	1
2.5	1
3	1

System clock(MHz)	CLK1~CLK3
50	1
55	1
60	1
66	1

CPU Power Voltage Configuration :



For normal CPU

Core=I/O vcc	JP6	JP7	JP8
3.3	1		1
3.4	1	1	
3.5	1	2	

For future VRT processors (such as Intel's P55C or AMD's AHQ)

Core Vcc		I/O Vcc		
V	JP7	JP8	V	JP6
2.5		3		
2.6		4		
2.8	1	5	3.3	1
2.9		6		

More integrated information as follow :

CPU-type		S-spce	Cpu Power Voltage				System dock		CPU Speed		
			Vcc	JP6	JP7	JP8	MHz	CLK1, CLK2, CLK3	Speed rate	BF1, BF2	
Intel	P54C-75		3.3	JP6 1			50	CLK1, CLK2, CLK3 1	x1.5	BF1 BF2 1	
	P54C-90	QO653 QO655 SZ978 SX957 SX959	3.3	JP6 1			60	CLK1, CLK2, CLK3 1	x1.5	BF1 BF2 1	
		QO654 SX958	3.4	JP6 1							
			3.5	JP6 1							
	P54C-120	QO708	3.3	JP6 1					x2	BF1 BF2 1	
	P54C-150		3.5	JP6 1					x2.5	BF1 BF2 1	
	P54C-180				JP7 1 2	JP8 1 2 3 4			x3	BF1 BF2 1	
	P54C-100	QO656	3.3	JP6 1			66	CLK1, CLK2, CLK3 1	x1.5	BF1 BF2 1	
		QO657	3.4	JP6 1							
	P54C-133		3.5	JP6 1					x2	BF1 BF2 1	
	P54C-166								x2.5	BF1 BF2 1	
	P54C-200								x3	BF1 BF2 1	
	Cyrrix	6x86-P120 ⁺ @100MHz	028	3.5	JP6 1			50	CLK1, CLK2, CLK3 1	x2	BF1 BF2 1
		6x86-P133 ⁺ @110MHz						55	CLK1, CLK2, CLK3 1		
6x86-P150 ⁺ @120MHz		60						CLK1, CLK2, CLK3 1			
6x86-P166 ⁺ @133MHz		66						CLK1, CLK2, CLK3 1			
AMD	K5-PR75	ABQ	3.5	JP6 1			50	CLK1, CLK2, CLK3 1	15	BF1 BF2 1	
	K5-PR90						60	CLK1, CLK2, CLK3 1			
	K5-PR100						66	CLK1, CLK2, CLK3 1			

2-3 Jumpers Setting

Connectors are used to link the system board with 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.

Power Supply Connector (P1)

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 200 watts at least. While installing the board, the power supply connector is usually the last one to be connected. **Before connecting the power supply, please make sure it is not connected to power source.**



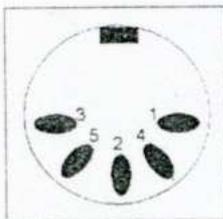
Most power supplies have two sets of six-wire connectors. Plug the dual connectors onto the board connector and make sure the black leads are in the center.



Power supply requirement :

Output voltage	Regulation tolerance
+5 Vdc	± 5%
-5 Vdc	± 10%
+12 Vdc	± 5%
-12 Vdc	± 10%

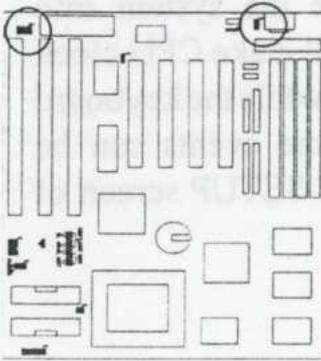
Keyboard Connector (J1)



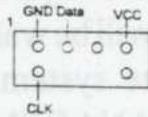
Pin	Definition
1	Keyboard Clock
2	Keyboard Data
3	(None)
4	Ground
5	+5V DC

Keyboard Connector / Pin Definitions

PS/2 Mouse Control



PS/2 Mouse Enable/Disable Header(JP3)



Short: PS/2 mouse enable (default)

Open : PS/2 mouse disable

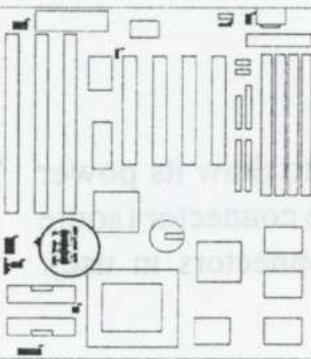
PS/2 Mouse Header(J4)

You can attach a PS/2 mouse adapter (an 8-pin mini-DIN connector) with bracket directly to this connector.



If a PS/2 mouse is used, you should assign IRQ12 to the PS/2 mouse. Otherwise, the IRQ12 will be available for other adapters(Disable PS/2 mouse function from BIOS & open the JP5).

Front Panel Header



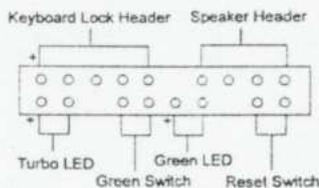
Keyboard Lock Header

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

Power Good LED

Speaker Header

Pin	Definition
1	Speaker Signal
2	GND
3	GND
4	+5V DC



Turbo LED Header

LED On : System running in power saving.

LED Off : System running in normal mode.

Changed Speed by keyboard

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

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

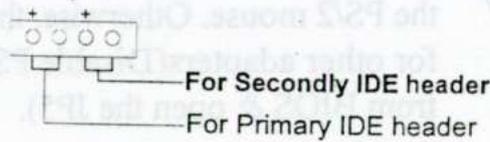
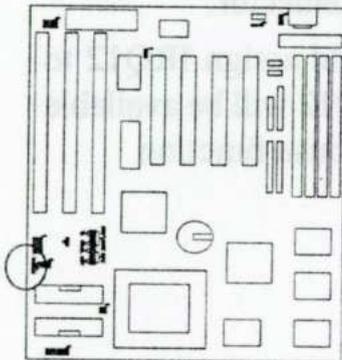


This mainboard has no hardware Turbo/De-turbo function. If you connect a case-mounted Turbo LED, the LED will light while the system is turned on.

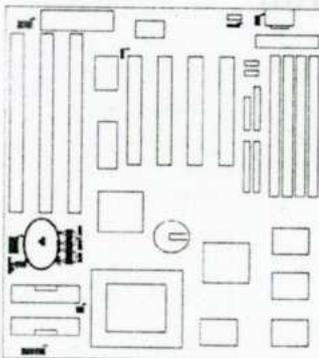
Green Switch / Green LED Header

This allows the user to manually place the system into suspend (green) mode where system will make CPU clock down to 0MHz. the system will be wake up while the keyboard or mouse be touched (The system resume events can be defined in the POWER MANAGEMENT SETUP screen of the BIOS)

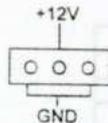
Hard Disk LED Header (JP9)



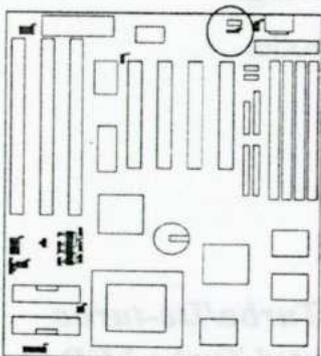
CPU Cooling Fan Header (JP5)



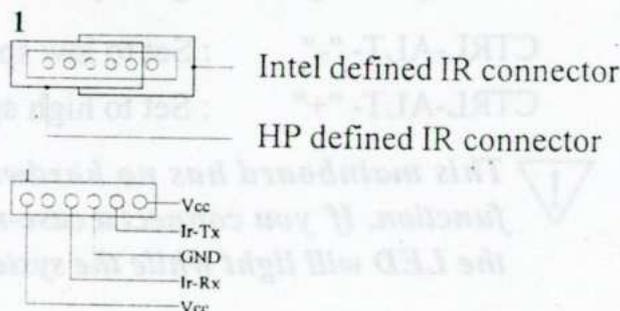
This adder connector would allow the fan to draw its power from the baseboard instead of the disk drive connector (some systems have all the disk drive power connectors in use).



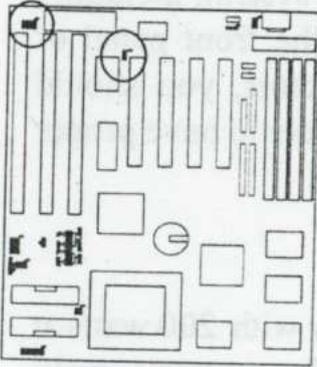
IR Connector (J5)



If you set the BIOS's item "Infra Red(IR) Function", to "HP SIR" or "ASK IR", the COM2 port will switch to support IR function.



CMOS Data Control



Clear CMOS Data Jumper (JP2)

This clears the user-defines information stored in the RTC chip (Real Time Clock) controller.

-  : Normal (default)
-  : Clear CMOS data

Password Bypass Control Jumper (JP4)

When you power on the system, that will go directly to system boot, no any attention on password checking. (This function will be useful while you forget the password)

-  : Normal (default)
-  : Bypass the password checking

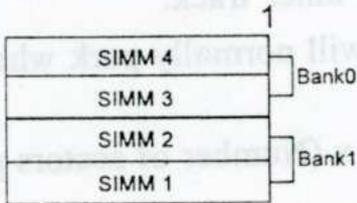
1	2
2	3
3	4
4	5

1	+5V DD
2	Ground
3	(Word)
4	Keyboard Data
5	Keyboard Clock
6	Pin



2-4 Main Memory Configuration

The DRAM memory system on board consists of bank0 and bank1, and the range memory size is 8 ~ 256 MBytes. You must install 2 pcs DRAM modules (same size, same speed, either single or double side) for each bank at a time, and no difference which bank you install first.



"S/S" - Single side
 "D/S" - Double side
 "----" - no use

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

DRAM Specifications :

DRAM type : FP(Fast Page) or EDO(Extended Data Output) DRAM

Module size : single-sided - 4/16 MBytes.

Double-sided - 8/32 MBytes.

DRAM speed : 70-ns or faster for system clock 50 or 60MHz,

60-ns for system clock 66MHz.

Parity : Either parity or non-parity.



64MB SIMM is still testing now.

Chapter 3

Award BIOS Setup Program

The system BIOS has built-in BIOS for (PCI NCR810 & Adapter AHA-7850). In case one of these PCI cards is installed. The system BOIS auto-scans the ROM address and installs the BIOS in the first available address.

To turn on (or reboot) the system and press the [DEL] key to enter the Award BIOS setup screen as following.

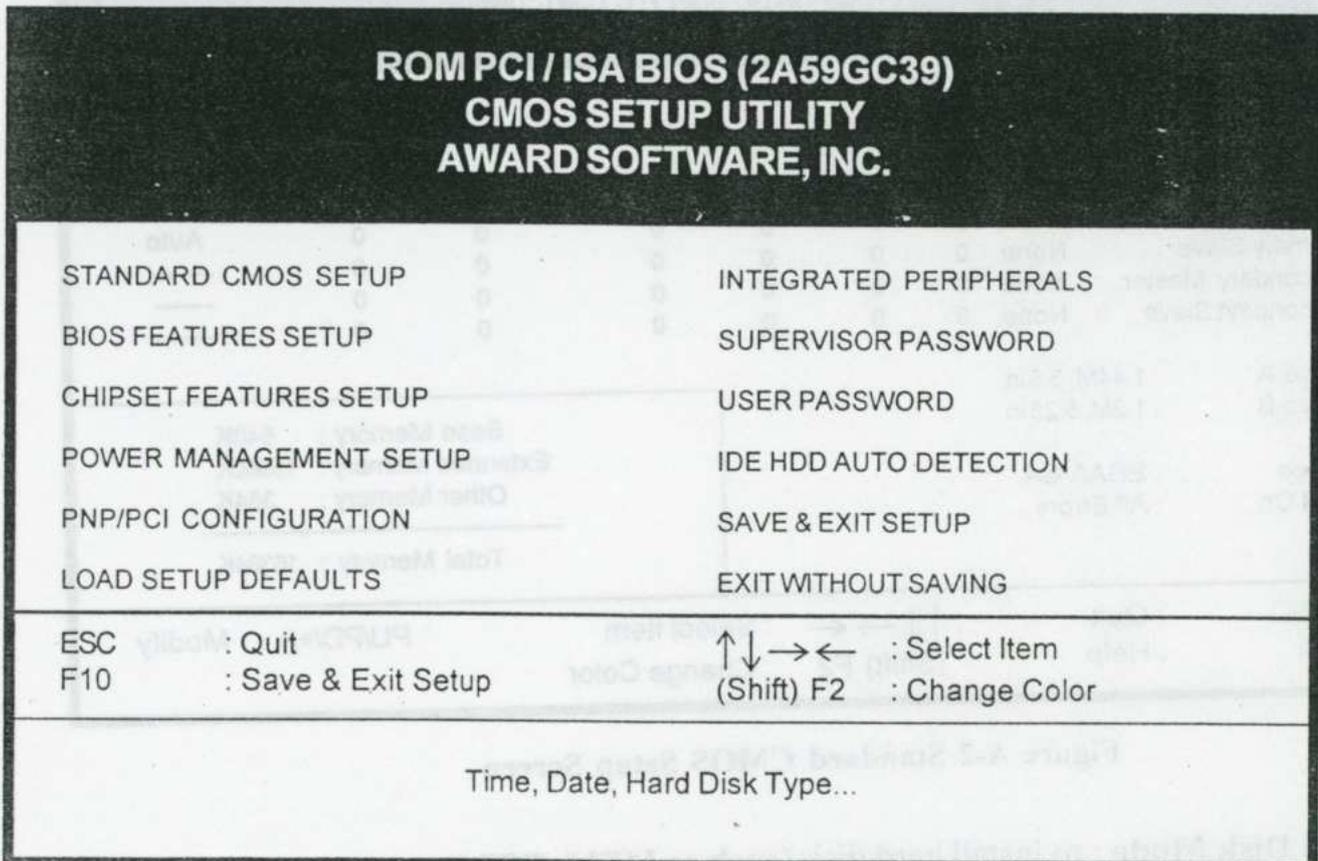


Figure A-1 Setup Program Initial Screen

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.

3-1 Standard CMOS Setup

To 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.

ROM PCI / ISA BIOS (2A59GC39)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm : dd : yy) : Fri, Oct 6 1995
 Time (hh : mm : ss) : 9:14:43

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, 3.5 in. Drive B : 1.2M, 5.25 in. Video : EGA/VGA Halt On : All Errors	Base Memory : 640K Extended Memory : 15360K Other Memory : 384K <hr style="width: 50%; margin: 5px auto;"/> Total Memory : 16384K
---	--

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

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).

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)

3-2 BIOS Features Setup

By choosing the "BIOSFEATURESETUP" option from the CMOSSETUPUTILITY Menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

ROM PCI / ISA BIOS (2A59GC39)	
BIOS FEATURES SETUP	
AWARD SOFTWARE, INC.	
Virus Warning	: Disabled
CPU Internal Cache	: Enabled
External Cache	: Enabled
Quick Power On Self Test	: Enabled
Boot Sequence	: A,C
Swap Floppy Drive	: Disabled
Boot Up Floppy Seek	: Enabled
Boot Up NumLock Status	: On
Boot Up System Speed	: High
Typematic Rate Setting	: Disabled
Typematic Rate (Chars/Sec)	: 6
Typematic Delay (Msec)	: 250
Security Option	: Setup
PCI/VGA Palette Snoop	: Disabled
OS Select For DRAM>64MB	: Non-OS2
Video BIOS Shadow	: Enabled
C8000 - CBFFF Shadow	: Disabled
CC000 - CFFFF Shadow	: Disabled
D0000 - D3FFF Shadow	: Disabled
D4000 - D7FFF Shadow	: Disabled
D8000 - DBFFF Shadow	: Disabled
DC000 - DFFFF Shadow	: Disabled
ESC	: Quit
F1	: Help
F5	: Old Values
F7	: Load Setup Defaults
↑ ↓ → ←	: Select Item
PU/PD/+/-	: Modify
(Shift) F2	: Change Color

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

These fields allow you to enable or disable the CPUs "Level 1" built-in cache and "Level 2" secondary 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.

- ✘ CD-ROM driver is becoming a standard device on computer systems, It has a large storage capacity advantage to store different operating system on it and will need boot-up of the system via CD-ROM. Now, we provides CD-ROM boot-up function that allows the user to select booting from A:, C: or CD-ROM. No matter if the CD-ROM is IDE or SCSI, the system will look for the first available bootable device for the operating system.

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

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. (360K type drive is 40 tracks and the 720K, 1.2M and 1.44M are 80 tracks)

Boot Up NumLock Status

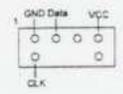
Define the keyboard as number keys or arrow keys.

Boot Up System Speed

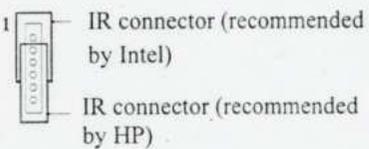
This option selects the speed of CPU at system boot time.

Jumper Setting Quick Reference

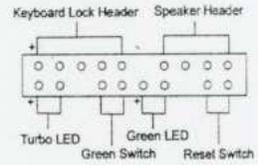
J4: PS/2 mouse connector



J5: IR connector



PANEL1:



JP2: CMOS clear data jumper
 1~2 short: Normal (default)
 2~3 short: Clear CMOS data

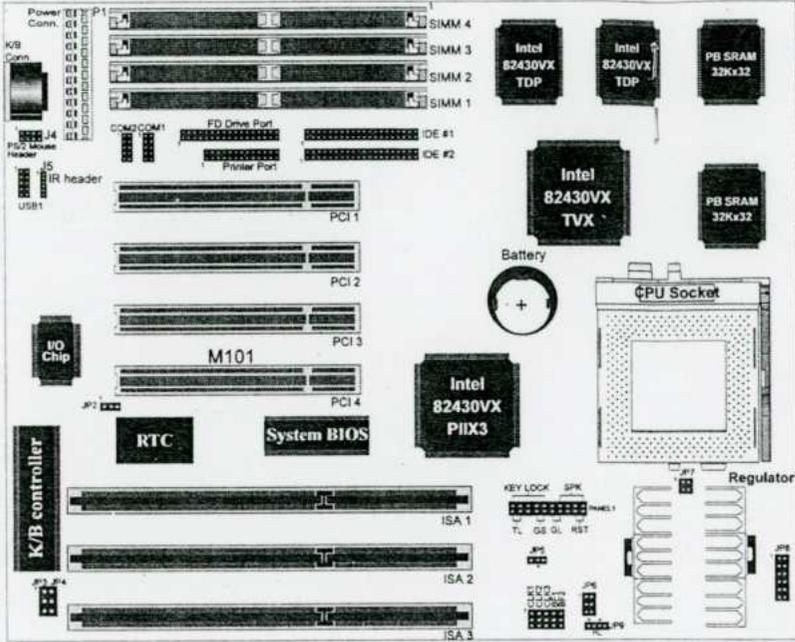
JP3: PS/2 Mouse Enable/Disable
 1~2 short: Normal (default)
 2~3 short: PS/2 mouse disable

JP4: Password bypass control jumper
 1~2 short: Normal (default)
 2~3 short: Password bypass

JP5: CPU cooling fan header

JP9: Hard disk LED header

Int. CPU Speed = Speed rate x System clock	BF1	BF2
75/90/100 = 1.5 x system clock	1~2	1~2
110/120/133 = 2 x system clock	2~3	1~2
150/166 = 2.5 x system clock	2~3	2~3
180/200 = 3 x system clock	1~2	2~3



For VRT (Voltage Reduction Technology) processor (such as Intel P55C), the split power plan (CPU's core voltage ≠ CPU's I/O voltage) design is required.

CPU Core Voltage		CPU I/O Voltage	
JP7	JP8	Core Vcc	I/O Vcc
1	3	2.5	3.3
1	4	2.7	
1	5	2.8	
1	6	2.9	
1	3	2.5	
1	4	2.7	

CPU-type	S-spc	Cpu Power Voltage			System clock		CPU Speed					
		Vcc	JP6	JP7	JP8	MHz	CLK1, CLK2, CLK3	Speed rate	BF1, BF2			
Intel	P54C-75	3.3	1			50	CLK1, CLK2, CLK3	x1.5	BF1 BF2			
	P54C-90	QO653 QO655 SZ978 SX957 SX959	3.3	1			60	CLK1, CLK2, CLK3	x1.5	BF1 BF2		
		QO654 SX958	3.4	1								
	P54C-120	QO708	3.3	1				x2	BF1 BF2			
	P54C-150		3.5	1				x2.5	BF1 BF2			
	P54C-180			2			x3	BF1 BF2				
	P54C-100	QO656	3.3	1			66	CLK1, CLK2, CLK3	x1.5	BF1 BF2		
		QO657	3.4	1								
		P54C-133	3.5	1							x2	BF1 BF2
		P54C-166		1							x2.5	BF1 BF2
P54C-200		1				x3					BF1 BF2	
Cyrix		6x86-P120 @100MHz	028	3.5	1						50	CLK1, CLK2, CLK3
	6x86-P133 @110MHz	55					CLK1, CLK2, CLK3					
	6x86-P150 @120MHz	60					CLK1, CLK2, CLK3					
	6x86-P166 @133MHz	66					CLK1, CLK2, CLK3					
AMD	K5-PR75	ABQ	3.5	1		50	CLK1, CLK2, CLK3	1.5	BF1 BF2			
	K5-PR90					60	CLK1, CLK2, CLK3					
	K5-PR100					66	CLK1, CLK2, CLK3					

D. KEYBOARD INTERFACE

Typematic Rate Setting

When enabled, you can set the two typematic controls listed next, default setting is "Disabled".

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. 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. PCI/VGA Palette Snoop

A system may have two display devices present in the system : a VGA-compatible interface and another graphics controller. In this case, both devices implement the color palette registers at the same I/O addresses. The configuration software must program one of the devices to actively act as the target, while the other device is programmed to quietly "snarf" the write data form the bus as it flies by on its way to the other device.

- ☒ Some non-standard VGA cards or MPEG video cards may not show colors properly, You can leave this setting to **Enable** that could correct this problem.

G. OS Select (For DRAM > 64MB)

If you system DRAM is large than 64MB and running OS/2, please select "OS/2" as the item value. If running other operating system, please set the item value to "Non-OS/2".

H. 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.

3-3 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 (2A59GC39)
CHIPSET FEATURE SETUP
AWARD SOFTWARE, INC.

AUTO Configuration : Enabled DRAM RAS# Precharge Time : 4 DRAM R/W Leadoff Timing : 6 Fast RAS To CAS Delay : 3 DRAM Read Burst (EDO/FP) : x222/x333 DRAM Write Burst Timing : x333 Fast MA to RAS# Delay CLK : 1 Fast EDO Path Select : Disabled Refresh RAS# Assertion : 5 Clks ISA Bus Clock : PCICLK/4 System BIOS Cacheable : Enabled Video BIOS Cacheable : Enabled 8 Bit I/O Recovery Time : 3 16 Bit I/O Recovery Time : 2 Memory Hole At 15M-16M : Disabled Peer Concurrency : Enabled	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"> ESC : Quit F1 : Help F5 : Old Values F7 : Load Setup Defaults </td> <td style="width: 10%; text-align: center; vertical-align: middle;"> ↑ ↓ → ← </td> <td style="width: 40%; vertical-align: top;"> : Select Item PU/PD/+/- : Modify (Shift) F2 : Change Color </td> </tr> </table>	ESC : Quit F1 : Help F5 : Old Values F7 : Load Setup Defaults	↑ ↓ → ←	: Select Item PU/PD/+/- : Modify (Shift) F2 : Change Color
ESC : Quit F1 : Help F5 : Old Values F7 : Load Setup Defaults	↑ ↓ → ←	: Select Item PU/PD/+/- : Modify (Shift) F2 : Change Color		

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. 8-bit I/O Recovery Time & 16-bit I/O recovery Time

This category is used to add additional recovery delay between CPU or PCI master 8-bit (or 16-bit) I/O cycles to the ISA Bus. The options are 1 to 8 and N/A.

B. IDE HDD Block Mode : Enabled/Disabled

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

C. Memory Hole at 15M-16M

Enabling this features reserves 15MB to 16MB memory address space to ISA expansion cards that specifically this setting.

This makes the memory from 15MB and up unavailable to the system.

Expansion cards can only access memory up to 16MB. The default is Disabled.

3-4 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 (2A59GC39) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.		
Power Management	: Disabled	** Power Down & Resume Events** IRQ3 (COM 2) : ON IRQ4 (COM 1) : ON IRQ5 (LPT 2) : OFF IRQ6 (Floppy Disk) : OFF IRQ7 (LPT 1) : OFF IRQ8 (RTC Alarm) : OFF IRQ9 (IRQ2 Redir) : OFF IRQ10 (Reserved) : OFF IRQ11 (Reserved) : OFF IRQ12 (PS/2 Mouse) : ON IRQ13 (Coprocessor) : OFF IRQ14 (Hard Disk) : ON IRQ15 (Reserved) : OFF ESC : Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Change Color F7 : Load Setup Defaults
PM Control by APM	: Yes	
Video Off Method	: V/H SYNC+Blank	
MODEM Use IRQ	: 3	
Doze Mode	: Disable	
Standby Mode	: Disable	
Suspend Mode	: Disable	
HDD Power Down	: Disable	
** Wake Up Events In Doze & Standby **		
IRQ3 (Wake-Up Event)	: ON	
IRQ4 (Wake-Up Event)	: ON	
IRQ8 (Wake-Up Event)	: ON	
IRQ12 (Wake-Up Event)	: ON	

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, suspend- 1hr.

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

Doze - 1min, Standby - 1min, suspend- 1min.

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.

- ☒ APM(Advanced Power Management) should be installed to keep the time updated when the computer enters suspend mode activated by the BIOS Power Management. For DOS environments, you need to add DEVICE=C:\DOS\POWER.EXE. For Windows 3.1x and Windows 95, you need to install Windows using the APM feature.

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 off 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 cuts 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) from Doze mode.

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

Suspend Mode

If there is no any activity continued 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 off 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 using a device , 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.

3-5 PNP/PCI CONFIGURATION

ROM PCI / ISA BIOS (2A59GC39)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

Resources Controlled By : Manual Reset Configuration Data : Disabled	PCI IRQ Activated By : Level PCI IDE IRQ Map To : ISA
IRQ-3 assigned to : Legacy ISA IRQ-4 assigned to : Legacy ISA 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 DMA-1 assigned to : PCI/ISA PnP DMA-3 assigned to : PCI/ISA PnP DMA-5 assigned to : PCI/ISA PnP DMA-6 assigned to : PCI/ISA PnP DMA-7 assigned to : PCI/ISA PnP	ESC : Quit F1 : Help F5 : Old Values F7 : Load Setup Defaults

↑ ↓ → ← : Select Item
 PU/PD/+/- : Modify
 (Shift) F2 : Color

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

A. Resource Control

Manual : The system BIOS will not reference the ESCD for IRQ & DMA information. Instead, it will reference the items in the setup menu for assigning IRQ & DMA.

Auto : The system BIOS will reference the ESCD all legacy information.

- ⊗ All ISA non-PnP devices is legacy device that must fixed the resource (I/O, INT & DMA) by H/W jumpers.
- ⊗ ESCD(Extended System Configuration Data) provides a detailed format of the configuration data structures stored in flash memory. Each data structure defines the resources used by a device or a card in the system. This includes legacy and PCI/ISA PnP devices.

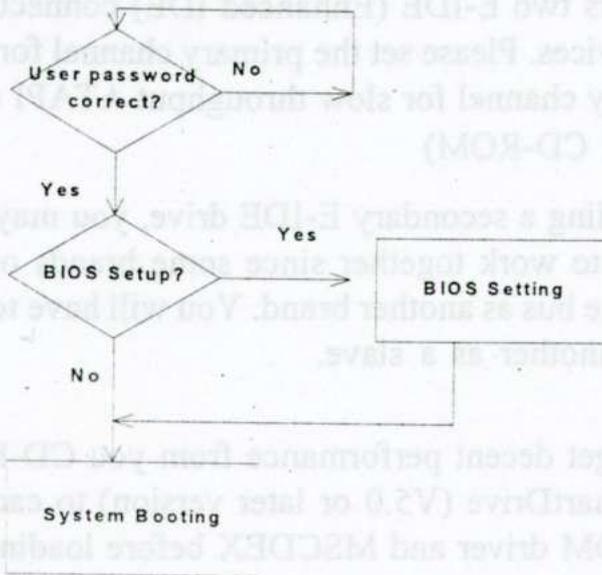
B. Reset Configuration Data

Enable : The system BIOS will clear/reset the ESCD during the POST.

 After clearing the ESCD, the BIOS will then change this item's value to "Disabled", otherwise, the ESCD data will become useless.

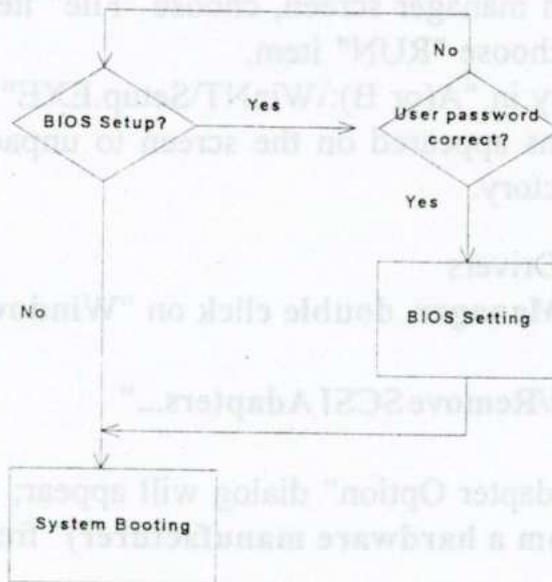
3-7 Supervisor Password & User Password Setting

A. Set "User password" Only

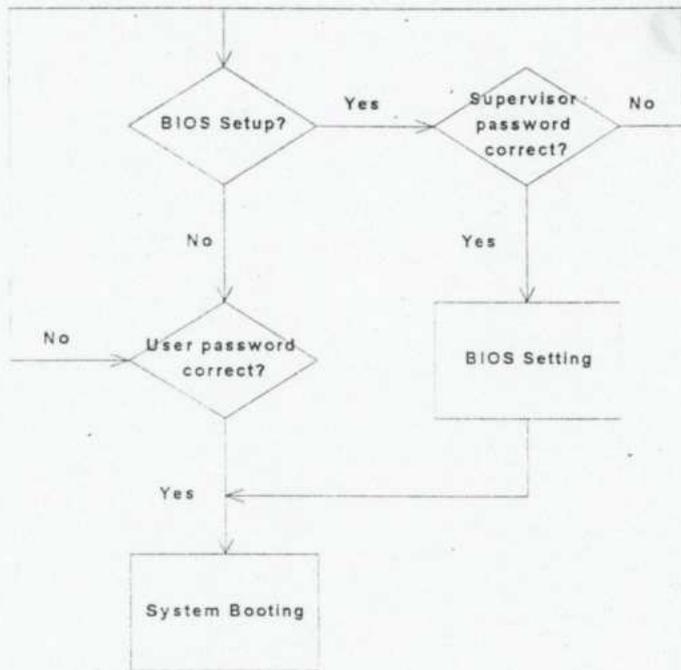


If "Security Option" (BIOS features setup select item) is set to "System"

If "Security Optional" is set to "Setup"



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





Memo



Appendix I

Bus Master / PIO IDE Drivers Quick Installation



This board offers two E-IDE (Enhanced IDE) connectors, each of which can take two devices. Please set the primary channel for E-IDE hard disks and set the secondary channel for slow throughput ATAPI compliant peripherals. (such as ATAPI CD-ROM)



If you are installing a secondary E-IDE drive, you may have difficulty getting the two drivers to work together since some brands of E-IDE drivers won't work on the same bus as another brand. You will have to designate one driver as master and another as a slave.



If you want to get decent performance from your CD-ROM drive. You'll need to load SmartDrive (V5.0 or later version) to cache your CD. Please load the CD-ROM driver and MSCDEX before loading SmartDrive so the CD-ROM can cache.

1. Windows NT3.5

- 1) Unpack & copy drivers into C:\PIIXIDE
 1. Boot up Windows NT.
 2. Insert the "Bus Master IDE Drivers Diskette" into drive A(or B).
 3. In Windows program manager screen, choose "File" item.
 4. In "File Item List", choose "RUN" item.
 5. In "Run" screen, key in "A(or B):\WinNT\Setup.EXE" and <Return>
 6. Follows the directions appeared on the screen to unpack the drivers files into C:\PIIXIDE directory.
- 2) Install the Bus Master Drivers
 1. From the **Program Manager**, double click on "Windows NT Setup" in the Main group.
 2. Select "Options/Add/Remove SCSI Adapters..."
 3. Click on Add.
 4. The "Select SCSI Adapter Option" dialog will appear; select "Other (Requires a disk from a hardware manufacturer)" from the "Adapter:" list box.
 5. Next, the "Insert Diskette" dialog box will appear and type in "C:\PIIXIDE" and click "OK".
 6. Next, the "Select OEM Option" dialog box will appear; select "PIIX Bus Mastering IDE Driver" and click "OK"

7. Next, the "Select SCSI Adapter Option" dialog box will appear; **click** on the "**Install**" button in the dialog box.
8. Next, the "Windows NT Setup" screen will appear prompting for the path of the installation files, type in "C:\PIIXIDE" and click on "**Continue**" button. If installation is successful, the "SCSI Adapter Setup" dialog box will reappear, and "PIIX Bus Mastering IDE Driver " will be listed. That means the driver is installed.
9. **Reboot** your system to load the driver.
After installation, the PIIXIDE.SYS file is stored in the C:\<Win NT directory>\System32\Drivers directory.

2. Windows 95

The installation procedures described here were based on the Windows 95 Final Beta Release version.

- 1) Insert the floppy disk containing the driver file into drive A(or B).
 - 2) Run the installation utility in drive A(or B).
 1. Double click the "My Computer" icon on the Desktop screen.
 2. Double click the drive A(or B) icon.
 3. Run the INSTALL.EXE applet in drive A (or B):\Win95
 4. Follow the advise showed on the screen to complete the installation.
 - 3) When system prompted to reboot Windows95, select "Yes".
 - 4) Restart Windows95 will detect Intel 82371SB PCI IDE Controllers and install the primary and secondary Bus Master IDE Drivers by sequence.
 - 5) Restart Windows95 again.
- ✎ The IDEATAPI.MPD driver will be installed and used as long as the PIIXIDE interface is enabled. After installation, the IDEATAPI.MPD file is stored in the C:\<Windows 95 directory>\System\IOSubSys directory. The IDEATAPI.INF information on the install floppy is integrated into the Windows 95 device database for automatic support of the PIIX Bus Master IDE driver and is stored in the C:\<Windows 95 directory>\INF directory as one of the file named OEM<x>.INF (name varies with system).

3. OS/2 2.0 and WARP 3.X

- 1) **Run** the install utility (INSTALL.EXE) in drive A(or B):\OS2
INSTALL.EXE will copies PIIXIDE.ADD from the source directory (A (or B):\OS2) to the target directory and changes the CONFIG.SYS file to install it.
 - 2) **Reboot the system.**
- ☒ For more information (like parameter settings, driver de-installation, Supported Devices...etc.), please refer to the README.TXT file on the diskette.



Memo

For more information (like parameter settings, driver de-installation, supported Devices, etc.), please refer to the README.TXT file on the disks.

Appendix II

Update your system BIOS

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



Please remove (or remark) any installed Memory Management Utility (such as EMM386.EXE, QEMM.EXE...,etc.) in the CONFIG.SYS files, before running this utility.

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

FLASH MEMORY WRITER V5.2C	
Copyright (C) 1993, Award Software, Inc.	
For 82430HX-2A59CC31	03/22/95
FlashType-STT28EE010&28EE011 /5V	
File Name to Program:	
Error Message:	

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

FLASH MEMORY WRITER V5.2C	
Copyright (C) 1993, Award Software, Inc.	
For 82430HX-2A59CC31	03/22/95
FlashType-STT28EE010&28EE011 /5V	
File Name to Program 5VGM.BIN	
Error Message: Do You Want To Save BIOS (Y/N)	

Appendix III

On Board I/O Address & IRQ Maps

System Resouce	IRQ	I/O Address
1. Timer	IRQ0	040~043
2. Keyboard	IRQ1	060~064
3. Programable INT Controller	IRQ2	0020~0021, 00A0~00A1
4. COM2(B)	IRQ3	2F8~2FF
5. COM1(A)	IRQ4	3F8~3FF
6. Floppy	IRQ6	3F0~3F7
7. LPT1	IRQ7	378~37F
8. Real Time Clock	IRQ8	070~071
9. PS/2 Mouse	IRQ12	
10.Math coprocessor	IRQ13	0F0~0FF
11.IDE 1	IRQ14	1F0~1F7
12.IDE 2	IRQ15	170~177

✎ IRQ 5, 9, 10 and 11 will be available for other interface card.



P / N : 9411570010
Code : 5VGM0.1