USER'S MANUAL

PS-8380 Series

All-in-One Book-size PC
For Socket 370 System

PS-8380 M9

PS-8380 All-in-One Book-size PC

OPERATION MANUAL

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INTRODUCTION

CHAPTER

1

This chapter gives you the information for PS-8380. It also outlines the System specifications.

Section includes:

- About This Manual
- Case Illustration
- System Specifications
- Safety precautions

1-1. ABOUT THIS MANUAL

Thank you for purchasing our PS-8380 Book-size PC. The PS-8380 is an updated system designed to be comparable with the highest performance of IBM AT personal computers. It provides faster processing speed, greater expandability, and can handle more tasks. This manual is designed to assist you on how to make the proper installation to set up the system. It contains five chapters. The user can use this manual for configuration according to the following chapters :

Chapter 1 Introduction

This chapter introduces you to the background of this manual, illustration of the case, and the specifications for this system. The final page of this chapter indicates some safety reminders on how to take care of your system.

Chapter 2 System Configuration

This chapter outlines the components' locations and their functions. In the end of this chapter, you will learn how to set jumper and how to configure the system for your own needs.

Chapter 3 Software Utilities

This chapter contains helpful information for proper installations of the VGA utilities, LAN utilities, Sound utilities and Flash BIOS update. It also describes the function of the Watchdog Timer.

Chapter 4 Green PC Function

This chapter explains the Green PC functions concisely.

Chapter 5 Award BIOS Setup

This chapter indicates on how to set up the BIOS configurations.

Appendix A Riser Card

This Appendix introduces you the riser card included with our PS-8380 Book-size PC package.

Appendix B Technical Summary

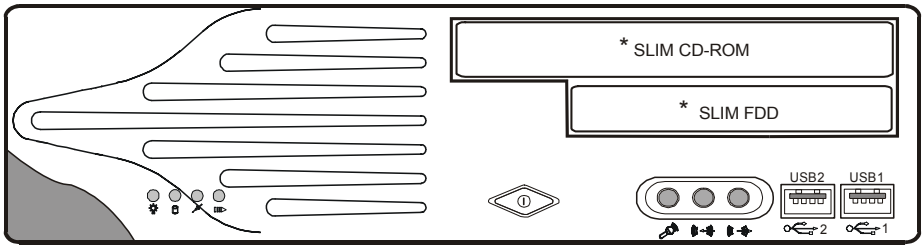
This section gives you the information about the Technical maps.

Appendix C Trouble Shooting

This section outlines the error messages and offers you the methods to solve the problems.

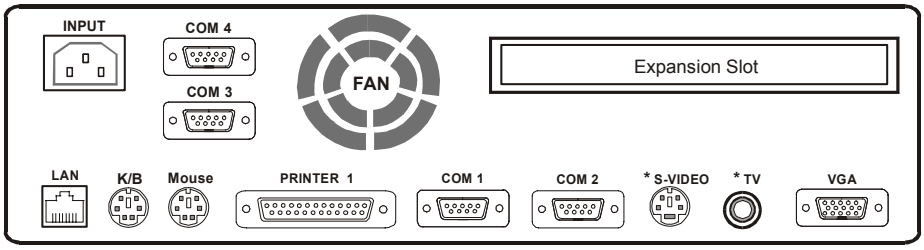
1-2. CASE ILLUSTRATION

Front View



* Slim CD-ROM and Slim FDD are optional

Rear View



* S-Video and TV are optional

1-3. SYSTEM SPECIFICATIONS

- **CPU PROCESSOR:**
  Intel® Celeron™ processor in 370-pin socket.
  566MHz ~ 1.3GHz.
  Intel® Pentium® *!!!* processor in 370-pin socket.
  500E/550E/600E/650/700/750/800/850MHz/1GHz/1.26GHz/1.4GHz.
  Auto detect voltage regulator.

- **MEMORY :**
  Up to 512MB SDRAM
  One 168pin DIMM sockets on board.

- **CACHE :**
  Built-in CPU(128/256KB Cache).

- **REAL-TIME CLOCK :**
  256-byte battery backed CMOS RAM
  Hardware implementation to indicate century rollover.

- **BIOS :**
  Award Flash BIOS for plug & play function.
  Easy update 512KB flash EEPROM.
  Supports Green Function.
  Supports S/IO Setup.

- **KEYBOARD CONNECTOR :**
  Mini DIN connector.
  Supports PC/AT Keyboard.

- **MOUSE CONNECTOR :**
  Mini DIN connector.
  Supports PS/2 Mouse.

- **SSD SOCKET :**
  Supports Disk-on-chip up to 576MB.
  Note: NOT AVAILABLE FOR PS-8385 and PS-8386

- **BUS SUPPORT :**

  Internal AGP for VGA
  Internal PCI for IDE, LAN, and Sound
  External PISA
  Note: ISA SLOT NOT AVAILABLE FOR PS-8386

- **DISPLAY :**

  Build-in GMCH, Support for CRT and PanelLink/TV-Out (optional).
  Support 2D/3D engine.
  Support a Dynamic Video Memory Technology (DVMT) which allows the entire 3D rendering process to take place in system memory.
  Onboard 15-pin connector, support for resolution on SVGA Monitor.
  Onboard 20-pin connector, support for PanelLink (optional).
  Onboard 3-pin for Composite Video Connector (optional).
  Onboard 4-pin for S-video (optional).

- **WATCHDOG :**

  I / O port 443H to Enable watchdog.
  I / O port 441H to Disable watchdog.
  Selectable for NMI or Reset function.
  Time-out timing select 0 / 8 / 16 / 24 / 32 / 40 / 48 / 56 / 64 / 72 / 80 / 88 / 96 / 104 / 112 / 120 sec +/- 25%.
  Note: NOT AVAILABLE FOR PS-8385 and PS-8386

- **IDE INTERFACE :**

  Two slim IDE port, support Ultra DMA-33.
  Supports up to two IDE device.

- **FLOPPY DISK DRIVE INTERFACE :**

  One 26-pin connector, support up to one 3.5” slim Floppy Disk Drive.

- **SERIAL PORT :**

  Four high speed 16550 Compatible UARTs with Send / Receive 16 Byte FIFOs. COM1/3/4 = RS-232; COM2 = RS232/422/485.
  MIDI Compatible.
  Programmable Baud Rate Generator.
  Note: COM3/COM4 NOT AVAILABLE FOR PS-8386

- **PARALLEL PORT :**
  One parallel port, support for SPP, ECP, EPP Function.
  Bi-directional parallel port.

- **LAN ADAPTER :**
  Intel® 82562EM PCI Fast Ethernet.
  Onboard RJ-45 jack, Support for 10/100 Base-T PCI BUS.
  Support Wake-On-LAN function.

- **USB CONNECTOR :**
  Two USB ports, support up to two USB device.

- **SOUND :**
  Realtek ALC201A (AC'97 Codec)
  Fully Compliant AC'97 Analog I/O Component
  16-Bit Stereo Full-Duplex Codec
  Four Analog Line-level Stereo Inputs for Connection.
  High Quality CD Input with Ground Sense
  Stereo Line-Level Output
  Interface: Line-In, Line-Out, Microphone, and CD Audio-In.

- **GREEN FUNCTION :**
  Software support by BIOS setup.

- **HARDWARE MONITORING FUNCTION :**
  Monitor CPU Voltage, CPU Temperature and Cooling Fan.

- **LED INDICATOR :**
  System power.
  Hard Disk access.
  LAN LED indicator.
  LAN Active.

- **DMA CONTROLLER :**
  82C37 x 2

- **DMA CHANNELS :**
  7

- **INTERRUPT CONTROLLERS :**
  82C59 x 2

- **INTERRUPT LEVELS :**
  15

- **OPERATING TEMPERATURE :**
  0 to 45°C. (32°F~113°F)

- **POWER SUPPLY :**
  100watts ATX power supply.
  Supports 100V ~ 240V auto detect power voltage.

- **DIMENSIONS :**
  CASE: 260 mm x 240 mm x 62mm (10.24" x 9.45" x 2.44')
  MAIN BOARD: 250 mm x 230 mm (9.84" x 9.05")

- **NET WEIGHT :**
  3.3 (kg) or 7.26 (lb).

1-4. SAFETY PRECAUTIONS

Following messages are safety reminders on how to protect your systems from damages. And thus, helps you lengthen the life cycle of the system.

1. **Check the Line Voltage**
   a. The operating voltage for the power supply should cover the range of 100VAC-260VAC, otherwise the system may be damaged.

2. **Environmental Conditions**
   a. Place your PS-8380 on a sturdy, level surface. Be sure to allow enough room on each side to have easy access.
   b. Avoid extremely hot or cold places to install your PS-8380 Book-size PC.

c. Avoid exposure to sunlight for a long period of time (for example in a closed car in summer time. Also avoid the system from any heating device.). Or do not use PS-8380 when it‘s been left outdoors in a cold winter day.
d. Bear in mind that the operating ambient temperature is from 0°C up to +45°C (32°F~113°F).
e. Avoid moving the system rapidly from a hot place to a cold place or vice versa because condensation may come from inside of the system.
f. Place PS-8380 against strong vibrations, which may cause hard disk failure.
g. Do not place the system too close to any radio active device. Radio-active device may cause interference.

3. Handling

a. Avoid putting heavy objects on top of the system.
b. Do not turn the system upside down. This may cause the floppy drive and hard drive to mal-function.
c. Do not remove the diskette from the Floppy drive while the light is still on. If you remove the diskette while the light is on, you may damage the information on the diskette.
d. Do not allow foreign objects to fall into this product.
e. If water or other liquid spills into this product, unplug the power cord immediately.

4. Good Care

a. When the outside of the case is stained, remove the stain with neutral washing agent with a dry cloth.
b. Never use strong agents such as benzene and thinner to clean the system.
c. If heavy stains are present, moisten a cloth with diluted neutral washing agent or with alcohol and then wipe thoroughly with a dry cloth.
d. If dust has been accumulated on the outside, remove it by using a special made vacuum cleaner for computers.

CAUTION: Danger of Explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

SYSTEM CONFIGURATION

CHAPTER

2

Helpful information that describes the jumper & connector settings, and component locations.

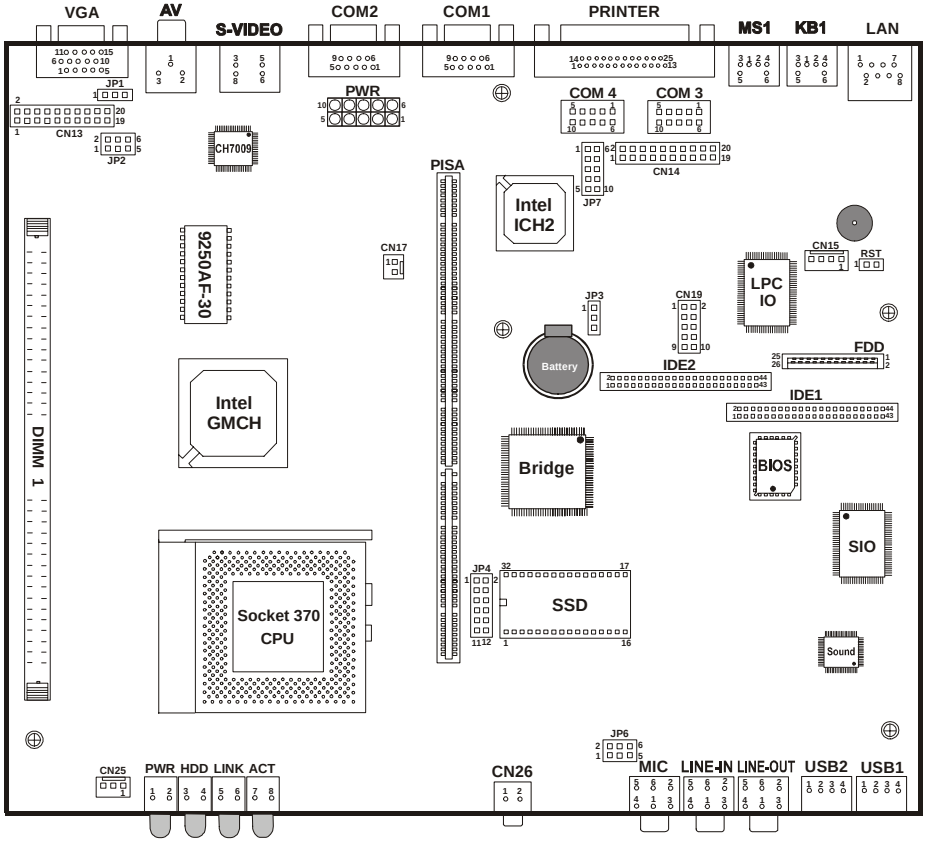
Section includes:

- Jumper & Connector Quick Reference Table
- Component Locations
- Configuration and Jumper settings
- Connector Pin Assignments

2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

COM Connector	COM1, COM2
.....	COM3, COM 4
RS232/422/485 (COM2) Selection	CN14
COM3 RI & Voltage Selection …….	JP7(1-5) [optional]
COM4 RI & Voltage Selection …….	JP7(6-10) [optional]
Keyboard Connector	KB1
PS/2 Mouse Connector .....…	MS1
VGA Connector .....…	VGA
S-Video Connector …….	S-VIDEO
Composite Video Connector ……..	AV
PanelLink Connector …….	CN13
LAN Connector .....…	LAN
Universal Serial Bus Connector	USB1, USB2
Reset Connector .....…	RST
LAN LED Indicator .....…	LINK, ACT
Power Button …….	CN26
CPU Fan Connector	CN25
CMOS Clear Selection ……..…….	JP3
Power LED Indicator …….....	PWR
Hard disk drive LED Indicator ….....	HDD
Microphone Connector .....…	MIC
Line-Out Connector .....…	LINE-OUT
Line-In Connector .....…….	LINE-IN
Power Connector	PWR
Floppy Disk Drive Connector	FDD
Hard Disk Drive Connector	IDE1, IDE2
Printer Connector .....…..	PRINTER
Solid State Disk Socket	SSD
SSD Memory Mapping Selection	JP4
CD-in Connector ...…….....…	CN15
Reset/NMI/Clear Watchdog ……...	JP6
Rear Panel Fan Connector …….	CN17
TV/DVI Out Selection ……	JP2 (1,3,5)
NTSC or PAL Selection …….	JP2 (2,4,6)
PCI/ISA Extension Bus Connector ……	PISA
TV-Out Address Selection …….	JP1
Reserved pin ……...	CN19

2-2. COMPONENT LOCATIONS



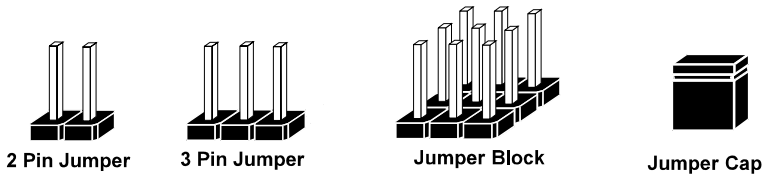
PS-8380 Connector, Jumper and Component locations

2-3. HOW TO SET THE JUMPERS

You can configure your board by setting the jumpers. Jumper is consists of two or three metal pins with a plastic base mounted on the card, and by using a small plastic "cap", Also known as the jumper cap (with a metal contact inside), you are able to connect the pins. So you can set-up your hardware configuration by "opening" or "closing" pins.

The jumper can be combined into sets that called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how this looks like.

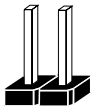
JUMPERS AND CAPS



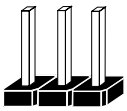
If a jumper has three pins for example, labelled PIN1, PIN2, and PIN3. You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams look and what they represent.

JUMPER DIAGRAMS

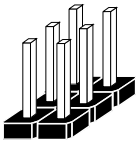
Jumper Cap looks like this



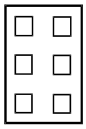
2 pin Jumper looks like this



3 pin Jumper looks like this

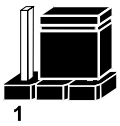


Jumper Block looks like this

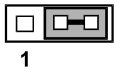


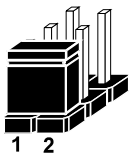
JUMPER SETTINGS

2 pin Jumper closed(enabled)
looks like this

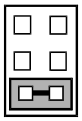


3 pin Jumper
2-3 pin closed(enabled)
looks like this





Jumper Block
1-2 pin closed(enabled)
looks like this

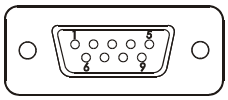


2-4. COM CONNECTOR

The system possesses four communication port connectors namely: COM1, COM2, COM3, and COM4. The pin assignments are as follows:

COM1 : COM1 Connector, DB9 male connector

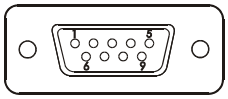
PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI



COM 1

COM2 : COM2 Connector, DB9 male connector

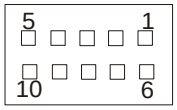
PIN	ASSIGNMENT		
	RS-232	**RS-422**	**RS-485**
1	DCD	TX-	TX-
2	RX	TX+	TX+
3	TX	RX+	RX+
4	DTR	RX-	RX-
5	GND	GND	GND
6	DSR	RTS-	NC
7	RTS	RTS+	NC
8	CTS	CTS+	NC
9	RI	CTS-	NC



COM 2

COM3 : COM3 Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	NC

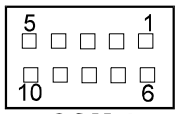


COM 3

Note: NOT AVAILABLE FOR PS-8386

COM4 : COM4 Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	NC

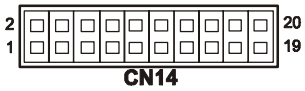
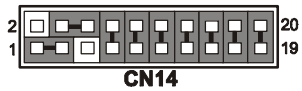


COM 4

Note: NOT AVAILABLE FOR PS-8386

2-5. RS232/422/485 (COM2) SELECTION

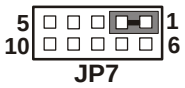
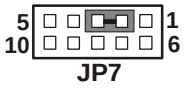
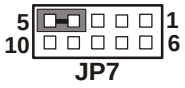
CN14 : RS-232/422/485 (COM2) Selection
COM1, COM3, and COM4 is fixed for RS-232 function only.
COM2 is selectable for RS-232, 422, 485 function.
The jumper settings are as follows :

COM 2 FUNCTION	JUMPER SETTINGS (pin closed)	JUMPER ILLUSTRATION
RS-232	Open	
RS-422	1-2, 5-6, 7-8, 9-10, 11-12, 13-14, 15-16 17-18, 19-20	
RS-485	1-3, 4-6, 7-8, 9-10, 11-12, 13-14, 15-16 17-18, 19-20	

*** Manufactory default --- RS-232.

2-6. COM3 RI & VOLTAGE SELECTION (Optional)

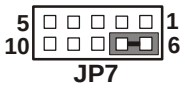
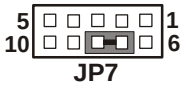
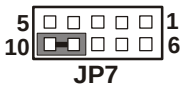
JP7 (1-5) : COM3 RI & Voltage Selection
The selections are as follows:

SELECTION	JUMPER SETTING (Pin Closed)	JUMPER ILLUSTRATION
+5V	1-2	
+12V	2-3	
RI	4-5	

***Manufacturing Default – RI.

2-7. COM4 RI & VOLTAGE SELECTION (Optional)

JP7 (6-10) : COM4 RI & Voltage Selection
The selections are as follows:

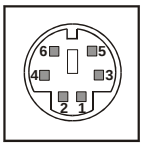
SELECTION	JUMPER SETTING (Pin Closed)	JUMPER ILLUSTRATION
+5V	6-7	
+12V	7-8	
RI	9-10	

***Manufacturing Default – RI.

2-8. KEYBOARD CONNECTOR

KB1 : PC/AT Keyboard Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	KBDATA
2	NC
3	GND
4	VCC
5	KBCLK
6	NC

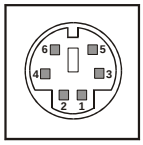


KB1

2-9. PS/2 MOUSE CONNECTOR

MS1 : PS/2 Mouse Connector
The pin assignments are as follows :

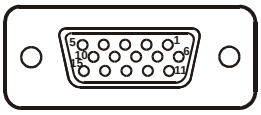
PIN	ASSIGNMENT
1	MS DATA
2	NC
3	GND
4	VCC
5	MSCLK
6	NC



MS1

2-10. VGA CONNECTOR

VGA : VGA Connector
The pin assignments are as follows:



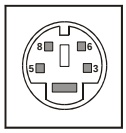
VGA

PIN	ASSIGNMENT
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	NC
13	HSYNC
14	VSYNC
15	NC

2-11. S-VIDEO CONNECTOR

S-VIDEO : S-Video Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
3	GROUND
5	GROUND
6	Y/G
8	C/R/V
9	CHASSIS
10	CHASSIS
11	CHASSIS

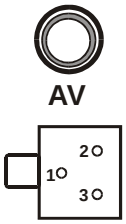


S-VIDEO

2-12. COMPOSITE VIDEO CONNECTOR

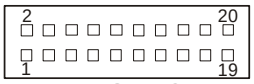
AV : Composite Video Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GROUND
2	CVBS/B/U
3	CVBS/B/U


AV

2-13. PANELLINK CONNECTOR

CN13 : PanelLink Connector
The pin assignments are as follows :



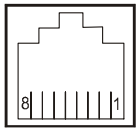
CN13

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	TX1+	11	TX2+
2	TX1-	12	TX2-
3	SHLD1	13	SHLD2
4	SHLDC	14	SHLD0
5	TXC+	15	TX0+
6	TXC-	16	TX0-
7	GND	17	RESERVED
8	+5V	18	HPD
9	RESERVED	19	DDC_DAT
10	RESERVED	20	DDC_CLK

2-14. LAN CONNECTOR

LAN: LAN Connector.
The pin assignment is as follows :

PIN	ASSIGNMENT
1	TX+
2	TX-
3	RX+
4	ISOLATED GND
5	ISOLATED GND
6	RX-
7	ISOLATED GND
8	ISOLATED GND



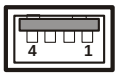
LAN

2-15. UNIVERSAL SERIAL BUS CONNECTOR

This board supports up to two USB port.

USB1 : Universal Serial Bus Connector
The pin assignment is as follows:

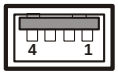
PIN	ASSIGNMENT
1	VCC
2	USBP0-
3	USBP0+
4	GND



USB1

USB2 : Universal Serial Bus Connector
The pin assignment is as follows:

PIN	ASSIGNMENT
1	VCC
2	USBP0-
3	USBP0+
4	GND



USB2

2-16. RESET CONNECTOR

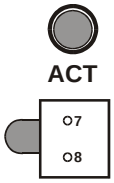
RST : Reset Connector.
The pin assignments are as follows :

PIN	ASSIGNMENT
1	RESET
2	GROUND

RST

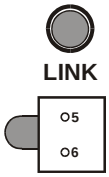
2-17. LAN LED INDICATOR

ACT: LAN LED Indicator
The pin assignment is as follows :



PIN	ASSIGNMENT
7	PULL HI
8	LED

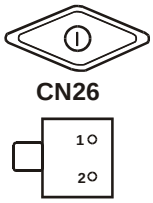
LINK: LAN LED Indicator
The pin assignment is as follows :



PIN	ASSIGNMENT
5	PULL HI
6	LED

2-18. POWER BUTTON

CN26 : ATX Power Button
The pin assignments are as follows:

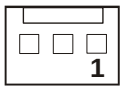


PIN	ASSIGNMENT
1	PANSWIN
2	GROUND

2-19. CPU FAN CONNECTOR

CN25: CPU Fan Connector.
The pin assignments are as follows :

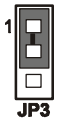
PIN	ASSIGNMENT
1	GROUND
2	+12V
3	FAN1IN



CN25

2-20. CMOS CLEAR SELECTION

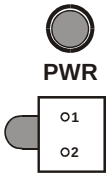
JP3 : CMOS Clear Selection
The selection are as follows :

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Normal	1-2	
Clear CMOS	2-3	

*** Manufacturing Default is set as Normal.

2-21. POWER LED INDICATOR

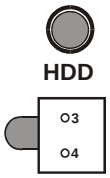
PWR : Power Led Connector
The pin assignments are as follows :



PIN	ASSIGNMENT
1	VCC
2	PWR LED

2-22. HARD DISK DRIVE LED CONNECTOR

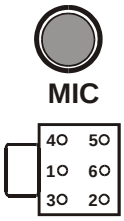
HDL : Hard disk drive LED Connector
The pin assignments are as follows :



PIN	ASSIGNMENT
1	VCC
2	IDE LED

2-23. MICROPHONE CONNECTOR

MIC : Microphone Connector
The pin assignments are as follows :

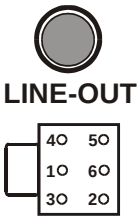


PIN	ASSIGNMENT
1	GND
2	MIC1
3	NC
4	NC
5	NC
6	NC

2-24. LINE-OUT CONNECTOR

LINE-OUT : Line-Out Connector
The pin assignments are as follows :

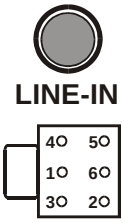
PIN	ASSIGNMENT
1	GND
2	AUDIO OUT LEFT
3	NC
4	NC
5	AUDIO OUT RIGHT
6	NC



2-25. LINE-IN CONNECTOR

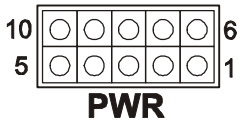
LINE-IN : Line-In Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	LINE-IN LEFT
3	NC
4	NC
5	LINE-IN RIGHT
6	NC



2-26. POWER CONNECTOR

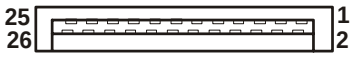
PWR : Power Connector
The pin assignments are as follows:



PIN	ASSIGNMENT
1	VCC
2	VCC
3	GROUND
4	GROUND
5	+12V
6	VCC SBY
7	VCC
8	GROUND
9	PS_ON
10	-12V

2-27. FLOPPY DISK DRIVE CONNECTOR

FDD : Floppy Disk Drive Connector
The pin assignments are as follows:

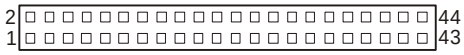


FDD

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	VCC	14	STEP
2	INDEX	15	GND
3	VCC	16	WDATA
4	DR0	17	GND
5	VCC	18	WGATE
6	DSKCHG	19	NC
7	NC	20	TRK0
8	NC	21	NC
9	NC	22	WRTPRTJ
10	MTR0	23	GND
11	NC	24	RDATA
12	FDIR	25	GND
13	RPM	26	HDSEL

2-28. HARD DISK DRIVE CONNECTOR

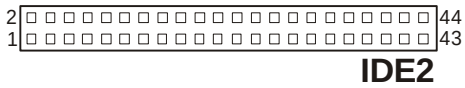
IDE1 : Hard Disk Drive Connector
The pin assignments are as follows:



IDE1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST#	23	P DIOW#
2	GND	24	GND
3	PDD7	25	P DIOR#
4	PDD8	26	GND
5	PDD6	27	PIORDY
6	PDD9	28	GND
7	PDD5	29	PDDACK#
8	PDD10	30	GND
9	PDD4	31	IRQ14
10	PDD11	32	NC
11	PDD3	33	PDA1
12	PDD12	34	P66DETECT
13	PDD2	35	PDA0
14	PDD13	36	PDA2
15	PDD1	37	PDCS#1
16	PDD14	38	PDCS#3
17	PDD0	39	IDEACTP#
18	PDD15	40	GND
19	GND	41	VCC
20	NC	42	VCC
21	PDREQ	43	GND
22	GND	44	GND

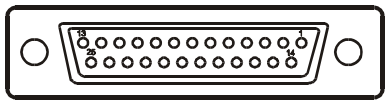
IDE2 : Hard Disk Drive Connector
The pin assignments are as follows:



PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST#	23	SDIOW#
2	GND	24	GND
3	SDD7	25	SDIOR#
4	SDD8	26	GND
5	SDD6	27	SIORDY
6	SDD9	28	GND
7	SDD5	29	SDDACK#
8	SDD10	30	GND
9	SDD4	31	IRQ14
10	SDD11	32	NC
11	SDD3	33	SDA1
12	SDD12	34	S66DETECT
13	SDD2	35	SDA0
14	SDD13	36	SDA2
15	SDD1	37	SDCS#1
16	SDD14	38	SDCS#3
17	SDD0	39	IDEACTS#
18	SDD15	40	GND
19	GND	41	VCC
20	NC	42	VCC
21	SDREQ	43	GND
22	GND	44	GND

2-29. PRINTER CONNECTOR

PRINTER : Printer Connector
The pin assignments are as follows :



PRINTER

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STB	14	AUTFE
2	P0	15	ERROR
3	P1	16	INIT
4	P2	17	SLCTIN
5	P3	18	GND
6	P4	19	GND
7	P5	20	GND
8	P6	21	GND
9	P7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

2-30. SOLID STATE DISK SOCKET

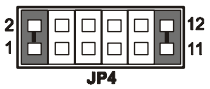
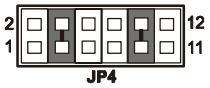
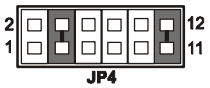
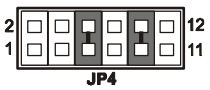
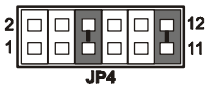
SSD : Solid State Disk Socket
The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	17	SD3
2	NC	18	SD4
3	NC	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE
7	SA5	23	SA10
8	SA4	24	OE
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	NC
13	SD0	29	NC
14	SD1	30	VCC
15	SD2	31	WE
16	GND	32	VCC

Note: NOT AVAILABLE FOR PS-8385 and PS-8386

2-31. SSD MEMORY MAPPING SELECTION

JP4 : SSD Memory Mapping Selection
A 32-pin SSD socket supports Disk-on-Chip up to 288MB. This PnP Flash ROM SSD can be install as one of user's hard disk drive.
The SSD Memory Mapping Selections are as follows:

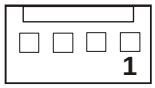
SSD Memory Map	JUMPER SETTINGS (pin closed)	JUMPER ILLUSTRATION
CC000h-CDFFFh	1-2 11-12	
D0000h-D1FFFh	3-4 9-10	
D4000h-D5FFFh	3-4 11-12	
D8000h-D9FFFh	5-6 9-10	
DC000h-DDFFFh	5-6 11-12	

*** Manufactory default --- CC000h-CDFFFh
Note: NOT AVAILABLE FOR PS-8385 and PS-8386

2-32. CD-IN CONNECTOR

CN15 : CD-IN Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	CD-IN LEFT
2	GROUND
3	CD-IN RIGHT
4	GROUND

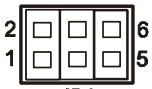


CN15

2-33. RESET / NMI / CLEAR WATCHDOG

JP6 (1-2) : For Reset
JP6 (3-4) : For NMI
JP6 (5-6) : For Clear Watchdog
The pin assignments are as follows:

PIN	ASSIGNMENT
1	WDGRST
2	WDGRSTJ
3	WDGNMI
4	IOCHKJ
5	CLRWDG
6	GND



JP6

2-34. REAR PANEL FAN CONNECTOR

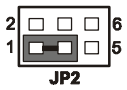
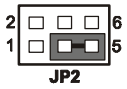
CN17 : Rear Panel Fan Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	+12V
2	GROUND

CN17

2-35. TV OR DVI SELECTION

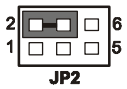
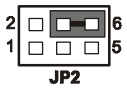
JP2 (1,3,5) : TV or DVI Selection
The selection are as follows :

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
DVI	1-3	
TV	3-5	

*** Manufacturing Default is set as TV.

2-36. NTSC OR PAL SELECTION

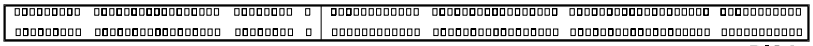
JP2 (2,4,6) : NTSC or PAL Selection
The selection are as follows :

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
PAL	2-4	
NTSC	4-6	

*** Manufacturing Default is set as NTSC.

2-37. PCI/ISA EXTENSION BUS CONNECTOR

PISA : PISA Extension Bus Connector.
The pin assignments are as follow:



PISA

PCI Bus:

PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
E1	I2CLK	F1	I2DAT	E26	GND	F26	GNT#3
E2	GND	F2	GND	E27	AD16	F27	AD17
E3	INTB#	F3	INTA#	E28	FRAME#	F28	IRDY#
E4	INTD#	F4	INTC#	E29	CBE#2	F29	DEVSEL#
E5	VCC	F5	VCC	E30	TRDY#	F30	LOCK#
E7	VCC	F7	V I/O	E31	STOP#	F31	PERR#
E8	PCIRST#	F8	PCICLK2	G1	GND	H1	SERR#
E9	GNT#0	F9	GND	G2	NC	H2	AD15
E10	REQ#0	F10	GNT#1	G3	CBE#1	H3	AD14
E11	GND	F11	GND	G4	PAR	H4	AD12
E12	PCICLK1	F12	REQ#1	G5	GND	H5	GND
E13	GND	F13	AD31	G7	GND	H7	M66EN
E14	AD30	F14	AD29	G8	AD13	H8	AD10
E15	REQ#2	F15	PCICLK3	G9	AD11	H9	AD8
E17	GNT#2	F17	PCICLK4	G10	AD9	H10	AD7
E18	AD28	F18	AD27	G11	CBE#0	H11	AD5
E19	AD26	F19	AD25	G12	AD6	H12	AD3
E20	AD24	F20	CBE#3	G13	AD4	H13	AD1
E21	AD22	F21	AD23	G14	AD2	H14	AD0
E22	AD20	F22	AD21	G16	VCC	H16	V I/O
E23	AD18	F23	AD19	G17	VCC	H17	VCC
E24	PWRGDIN	F24	REQ#3	G18	GND	H18	GND
				G19	GND	H19	GND

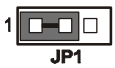
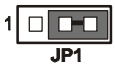
ISA Bus:

PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	/IOCHCHK	B1	GND	C1	/SBHE	D1	/MCS16
A2	SD7	B2	RSTDRV	C2	LA23	D2	/IOCS16
A3	SD6	B3	VCC	C3	LA22	D3	IRQ10
A4	SD5	B4	IRQ9	C4	LA21	D4	IRQ11
A5	SD4	B5	-5V	C5	LA20	D5	IRQ12
A6	SD3	B6	DRQ2	C6	LA19	D6	IRQ15
A7	SD2	B7	-12V	C7	LA18	D7	IRQ14
A8	SD1	B8	/0WS	C8	LA17	D8	/DACK0
A9	SD0	B9	+12V	C9	/MEMR	D9	DRQ0
A10	IOCHRDY	B10	GND	C10	/MEMW	D10	/DACK5
A11	AEN	B11	/SMEMW	C11	SD8	D11	DRQ5
A12	SA19	B12	/SMEMR	C12	SD9	D12	/DACK6
A13	SA18	B13	/IOW	C13	SD10	D13	DRQ6
A14	SA17	B14	/IOR	C14	SD11	D14	/DACK7
A15	SA16	B15	/DACK3	C15	SD12	D15	DRQ7
A16	SA15	B16	DRQ3	C16	SD13	D16	VCC
A17	SA14	B17	/DACK1	C17	SD14	D17	/MASTER
A18	SA13	B18	DRQ1	C18	SD15	D18	GND
A19	SA12	B19	/RFRSH				
A20	SA11	B20	SYSCLK				
A21	SA10	B21	IRQ7				
A22	SA9	B22	IRQ6				
A23	SA8	B23	IRQ5				
A24	SA7	B24	IRQ4				
A25	SA6	B25	IRQ3				
A26	SA5	B26	/DACK2				
A27	SA4	B27	T/C				
A28	SA3	B28	BALE				
A29	SA2	B29	VCC				
A30	SA1	B30	OSC				
A31	SA0	B31	GND				

Note: NOT AVAILABLE FOR PS-8386

2-38. TV-OUT ADDRESS SELECTION

JP1 : TV-Out (CH7009) Address Selection
The selections are as follows:

TV-OUT ADDRESS	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
OX76	1-2	
OX75	2-3	

SOFTWARE UTILITIES

CHAPTER

3

This chapter comprises the detailed information of VGA Driver, Sound driver, LAN driver, and Flash BIOS Update. It also describes how to install the Watchdog Timer Configuration.

Section includes:

- VGA Driver Utility
- Flash BIOS Update
- LAN Driver Utility
- Sound Driver Utility
- Watchdog Timer Configuration

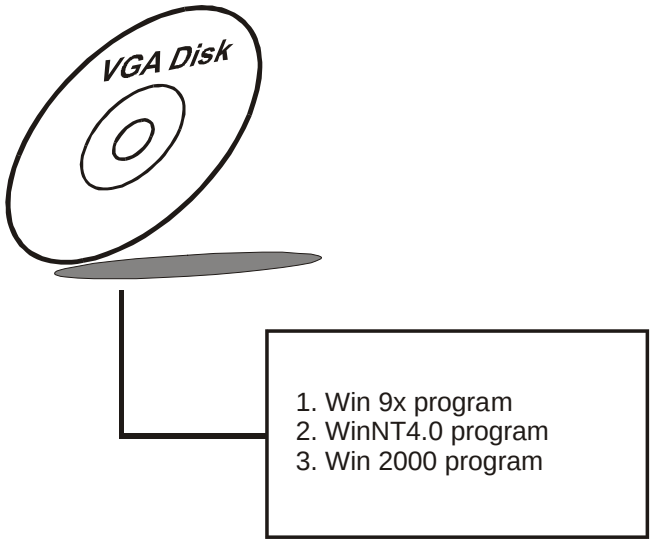
3-1. INTRODUCTION

Enclosed with our PS-8380 Book-size PC package, you will find a CD ROM disk containing all types of drivers we have. As a PS-8380 user, you will only need the some of files contained in the CD ROM disk, please take note of the following chart :

File name (Assume that CD ROM drive is D:)	**Purpose**
D:\VGA\	For VGA driver installation
D:\Flash\Awdflash.exe	For BIOS update
D:\LAN\82562EM\	For LAN Driver installation
D:\Sound\	For Sound driver installation
D:\Intel\Utility\setup.exe ****Install this software first*!	For Intel® Chipset Software Installation Utility Software Update 95/98/98SE/2K.

3-2. VGA DRIVER UTILITY

The VGA interface is embedded with our PS-8380 system to support CRT display, Panel Link and TV-Out Encoder. The following illustration briefly shows you the content of VGA driver in D:\VGA\:



3-2-1. Installation of VGA Driver

(1) Start the computer (Win 9x/NT/2K).
(2) Insert the Utility Disk into the CD ROM drive or drive A/B.
(3) Double-click "D:\VGA\WIN9X_ME\WIN9XM67.EXE
(if D is not your CD ROM drive and substitute D with the right drive) in the text entry area and press OK.
(4) Click "Next" on the Welcome screen.
(5) Read the license agreement and click "Yes" to continue.
(6) The driver files will now be installed. When finished, choose the "Yes" to reboot option, and click "Finished" to restart your computer. The driver should now be loaded.

⌛ For more information on VGA driver installation, please refer to the readme.txt found on the sub-directory of the VGA driver utility.

3-3. FLASH BIOS UPDATE

3-3-1. System BIOS Update:

Users of PS-8380 can use the program "Awdflash.exe" contained in CD ROM for BIOS update. This is found in D:\flash\Awdflash.exe.

3-3-2. To update BIOS :

(1) Install "Awdflash.exe" from the CD ROM Disk into your system.
(2) Insert the new BIOS file you have obtained from PS-8380 vendor.
(3) Type the pathname to Awdflash.exe and execute the BIOS update with file S80xxxxx.bin
C:\UTIL\AWDFLASH\AWARDFLASH S80xxxxx.
(4) The screen will display the table below:

FLASH MEMORY WRITER v7.xx (C) Award Software 2000 All Rights Reserved
For i815-ITE8712-6A69RP69C-0 DATE : 10/09/00 Flash Type - INTEL E82802AD /3.3V File Name to Program : S80xxxxx.bin Checksum : XXXXX
Error Message : Do You Want To Save BIOS (Y/N)

If you want to save up the original BIOS, enter “Y ”and press < Enter > .
If you choose “N”, the following table will appear on screen.

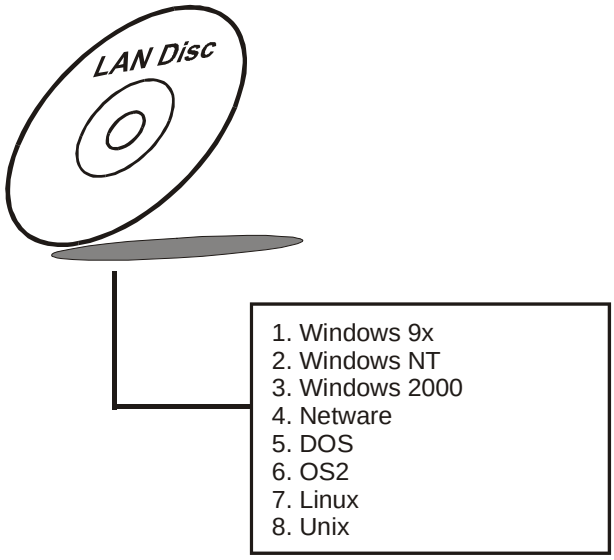
FLASH MEMORY WRITER v7.xx (C) Award Software 2000 All Rights Reserved
For i815-ITE8712-6A69RP69C-0 DATE : 10/09/00 Flash Type - INTEL E82802AD /3.3V File Name to Program : S80xxxxx.bin Checksum : XXXXX
Error Message : Are You Sure To Program (Y/N)

Select “Y”, and the BIOS will be renewed. When you are refreshing your BIOS, do not turn off or reset the system, or you will damage the BIOS. After you have completed all the programming, you will see the line: “Reset System or power off to accomplish update process!”. Please turn off or reset the system. Then the Flash BIOS is fully implemented.

3-4. LAN DRIVER UTILITY

3-4-1. Introduction

The PS-8380 Book-size PC is enhanced with LAN function that can support various network adapters. The following illustration briefly shows you the content of LAN driver in D:\LAN\82562EM :



3-4-2. Installation Procedure for Windows 9x

(1) Insert the LAN Driver disk into Drive A or CD ROM drive.
(2) In the “My computer”, select the “Control Panel” icon.
(3) In the “Control Panel” windows, select the “System” icon.
(4) The “System Properties” window will appear, select the “Device Manager” and look for the “Network Adapter – PCI Fast Ethernet Adapter”.
(5) Click “Properties” and then “PCI Fast Ethernet Adapter Properties”, choose the “Driver” icon.
(6) Click “Update Driver” icon, and follow the remaining instruction.

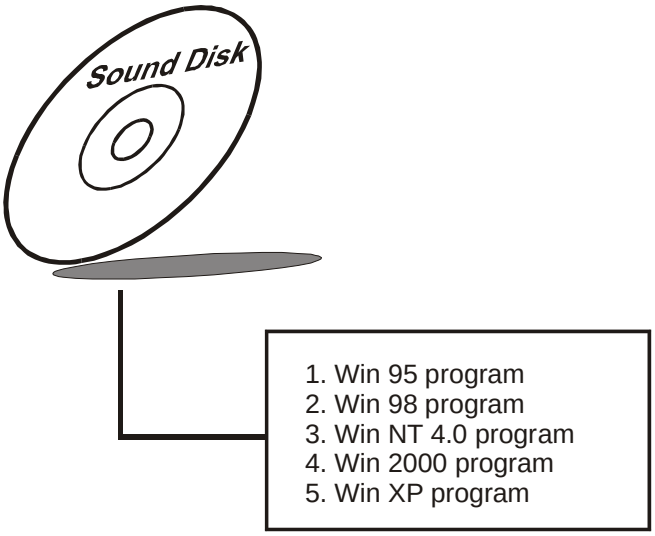
3-4-3. Installation Procedure for Windows NT

1. In the Main group to NT, select the “Control Panel” icon.
2. In the Control Panel window, choose the “Network” icon.
3. In the Network Settings dialog box, choose the “Add adapter” button. The Add Network Adapter dialog box appears.
4. In the list of network cards, select “<Other> requires disk from manufacturer”, and then press <Enter> button.
5. Insert the LAN Driver disk in Drive A or CDROM drive, and type D:\LAN, and then choose OK button.
6. Follow the remaining instruction, and re-boot your system to complete the installation process.

3-5. SOUND DRIVER UTILITY

3-5-1. Introduction

The Realtek ALC201A sound function enhanced in this system is fully compatible with Windows 95/98, Windows NT 4.0, Windows 2000, and Windows XP. Below, you will find the content of the Sound driver :



3-5-2. Installation Procedure for Windows 9x/NT/2000

(1) From the task bar, click on Start, and then Run.
(2) In the Run dialog box, type D:\Sound\path\setup, where "D:\Sound\path" refers to the full path to the source files.
(3) Click on the OK button or press the ENTER key.
(4) Click on the "Next" and OK prompts as they appear.
(5) Reboot the system to complete the driver installation.

3-6. WATCHDOG TIMER CONFIGURATION

This board has watchdog timer function for monitoring whether the system is still work or not after a period of time. The user can select watchdog timer to system reset or NMI (Non Maskable interrupt) depending on the jumper set in "Reset/NMI/Clear Watchdog" as described in chapter 2. This is defined at I/O port **443H**. When you want to enable the watchdog timer, please write I/O port **443H**, then the system will either reset itself or perform the NMI function. Likewise, when you want to disable the function, write I/O port **441H**, the system will run the command to stop the Watchdog function.

In PS-8380 watchdog function, You must write your program so when it writes I/O port address 443 for enable watchdog and write I/O port address 441 for disable watchdog. The timer's intervals have a tolerance of 25% so you should program an instruction that will refresh the timer about every second.

The following program shows you how to program the watch timer in your program.

Watchdog enable program:

```
MOV     AX, 000FH        (choose the values you need; start from 0)
MOV     DX, 0443H
OUT     DX, AX
```

Watchdog disable program:

```
MOV     AX, 000FH        (this value can be ignored)
MOV     DX, 0441H
OUT     DX, AX
```

The Watchdog Timer control table is as follows:

Level	Value	Time/sec	Level	Value	Time/sec
1	F	0	9	7	64
2	E	8	10	6	72
3	D	16	11	5	80
4	C	24	12	4	88
5	B	32	13	3	96
6	A	40	14	2	104
7	9	48	15	1	112
8	8	56	16	0	120

Note: NOT AVAILABLE FOR PS-8385 and PS-8386

GREEN PC FUNCTION

CHAPTER

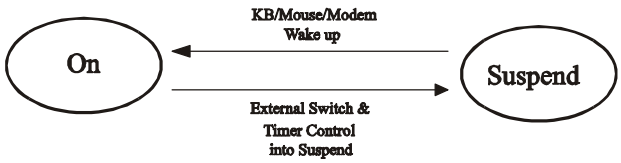
4

This chapter gives you the concise information for Green PC Function.

Section includes:

- Power Saving Block Diagram
- System SUSPEND Mode

4-1. POWER SAVING BLOCK DIAGRAM



Timer Control into Suspend

4-2. SYSTEM SUSPEND MODE

1. After timing-out, System enters suspend mode and CPU clock slows down to 0MHz.
2. Flash LED to indicate power saving status.
3. VGA monitor displays blank screen.
4. Fixed disk driver motor will be spin off.
5. Monitor activity according to the setting of Advanced Setup.
6. When system in Suspend mode, only those events set in the Power Management Setup can wake-up system.

AWARD BIOS SETUP

CHAPTER

5

This chapter shows how to set up the Award BIOS.

Section includes:

- Introduction
- Entering Setup
- The Standard CMOS Features
- The Advanced BIOS Features
- The Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PNP/PCI Configuration
- PC Health Status
- Frequency/Voltage Control
- Load Fail-Safe Defaults
- Load Optimized Defaults
- Password Setting
- Save and Exit Setup

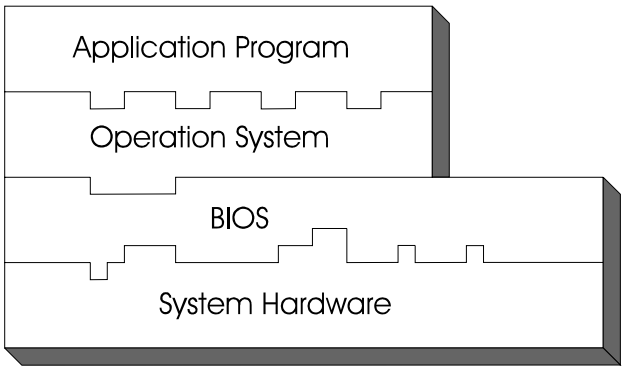
5-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The PS-8380 Book-size PC system is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of the BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

Your application programs (such as word processing, spreadsheets, and games) rely on an operating system such as DOS or OS/2 to manage such things as keyboard, monitor, disk drives, and memory.

The operating system relies on the BIOS (Basic Input and Output system), a program stored on a ROM (Read-only Memory) chip, to initialize and configure your computer's hardware. As the interface between the hardware and the operating system, the BIOS enables you to make basic changes to your system's hardware without having to write a new operating system.

The following diagram illustrates the interlocking relationships between the system hardware, BIOS, operating system, and application program:



5-2. ENTERING SETUP

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines and the following message will appear on the lower screen:

PRESS <DEL> TO ENTER SETUP, ESC TO SKIP MEMORY TEST

As long as this message is present on the screen you may press the <Del> key (the one that shares the decimal point at the bottom of the number keypad) to access the Setup program. In a moment, the main menu of the Award SETUP program will appear on the screen:

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software	
►Standard CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management Setup	Set User Password
►PnP/PCI Configurations	Save & Exit Setup
►PC Health Status	Exit Without Saving
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Time, Date, Hard Disk Type ….	

Setup program initial screen

You may use the cursor the up/down keys to highlight the individual menu items. As you highlight each item, a brief description of the highlighted selection will appear at the bottom of the screen.

5-3. THE STANDARD CMOS FEATURES

Highlight the "STANDARD CMOS FEATURES" and press the <ENTER> key and the screen will display the following table:

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software Standard CMOS Features			
Date (mm:dd:yy)	Thu, Nov 9 2000		Item Help
Time (hh:mm:ss)	10 : 45 : 11		Menu Level ►
► IDE Primary Master	Press Enter	13022 MB	Change the day, month, year and century
► IDE Primary Slave	Press Enter	None	
► IDE Secondary Master	Press Enter	6800 MB	
► IDE Secondary Slave	Press Enter	None	
Drive A	1.44M, 3.5 in.		
Drive B	None		
Video	EGA/VGA		
Halt On	All, But Keyboard		
Base Memory	640K		
Extended Memory	63488K		
Total Memory	64512K		
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults			

CMOS Setup screen

In the above Setup Menu, use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Date:

< Month >, < Date > and <Year >. Ranges for each value are in the CMOS Setup Screen, and the week-day will skip automatically.

Time:

< Hour >, < Minute >, and < Second >. Use 24 hour clock format, i.e., for PM numbers, add 12 to the hour. For example: 4: 30 P.M. You should enter the time as 16:30:00.

IDE Primary Master / Slave:
IDE Secondary Master / Slave:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software IDE Primary Master		
IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level ►►
Access Mode	Auto	
Capacity	13022 MB	To auto-detect the HDD's size, head…on this channel
Cylinder	25232	
Head	16	
Precomp	65535	
Landing Zone	25231	
Sector	63	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Table 1 – IDE Primary Master sub menu

Descriptions on each item above are as follows:

1. IDE HDD Auto-detection
   Press the enter key to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
2. IDE Primary Master
   There are three available option on this category, namely: None, Auto, and Manual. By selecting "Manual", you can set the remaining fields on this screen, such as -
   a. Cylinder – Set the number of cylinders for this hard disk.
   b. Head – Set the number of read/write heads.
   c. Precomp - ***Warning!** Setting a value of 65535 means no HDD.
   d. Landing Zone
   e. Sector – Set the number of sector per track

3. Access Mode
   There are four available options for this item, namely: Normal, LBA, Large and Auto. Choose the access mode for this hard disk.
4. Capacity
   Disk Drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

DRIVE A AND DRIVE B:

Select the type of floppy disk drive installed in your system. The available options are 360KB 5.25in, 1.2KB 5.25in, 720KB 3.5in, 1.44MB 3.5in, 2.88MB 3.5in and None.

VIDEO:

This category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup. Available Options are as follows:

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode.
CGA 80	Color Graphics Adapter, power up in 80 column mode.
MONO	Monochrome adapter, includes high resolution monochrome adapters.

HALT ON:

This category allows user to choose whether the computer will stop if an error is detected during power up. Available options are “All errors”, “No errors”, “All, But keyboard”, “All, But Diskette”, and “All But Disk/Key”.

BASE MEMORY:

Displays the amount of conventional memory detected during boot up.

EXTENDED MEMORY:

Displays the amount of extended memory detected during boot up.

TOTAL MEMORY:

Displays the total memory available in the system.

HARD DISK ATTRIBUTES:

Type	Cylinders	Heads	V-P comp	LZone	Sect	Capacity
1	306	4	128	305	17	10
2	615	4	300	615	17	20
3	615	6	300	615	17	30
4	940	8	512	940	17	62
5	940	6	512	940	17	46
6	615	4	65535	615	17	20
7	642	8	256	511	17	30
8	733	5	65535	733	17	30
9	900	15	65535	901	17	112
10	820	3	65535	820	17	20
11	855	5	65535	855	17	35
12	855	7	65535	855	17	49
13	306	8	128	319	17	20
14	733	7	65535	733	17	42
15	000	0	0000	000	00	00
16	612	4	0000	663	17	20
17	977	5	300	977	17	40
18	977	7	65535	977	17	56
19	1024	7	512	1023	17	59
20	733	5	300	732	17	30
21	733	7	300	732	17	42
22	733	5	300	733	17	30
23	306	4	0000	336	17	10
24	977	5	65535	976	17	40
25	1024	9	65535	1023	17	76
26	1224	7	65535	1223	17	71
27	1224	11	65535	1223	17	111
28	1224	15	65535	1223	17	152
29	1024	8	65535	1023	17	68
30	1024	11	65535	1023	17	93
31	918	11	65535	1023	17	83
32	925	9	65535	926	17	69
33	1024	10	65535	1023	17	85
34	1024	12	65535	1023	17	102
35	1024	13	65535	1023	17	110
36	1024	14	65535	1023	17	119
37	1024	2	65535	1023	17	17
38	1024	16	65535	1023	17	136
39	918	15	65535	1023	17	114
40	820	6	65535	820	17	40
41	1024	5	65535	1023	17	42
42	1024	5	65535	1023	26	65
43	809	6	65535	852	17	40
44	809	6	65535	852	26	61
45	776	8	65335	775	33	100
47			AUTO			

Award Hard Disk Type Table

5-4. THE ADVANCED BIOS FEATURES

Choose the "ADVANCED BIOS FEATURES" in the main menu, the screen shown as below.

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software Advanced BIOS Features		
Virus Warning	Disabled	Item Help
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level ►
CPU L2 Cache ECC Checking	Enabled	
Processor Number Feature	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Second Boot Device	HDD-0	
Third Boot Device	LS120	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
X Typematic Rate (Chars/Sec)	6	
X Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select for DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T. Capability	Disabled	
Report No FDD for WIN 95	No	
Small Logo (EPA) Show	Disabled	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

BIOS Features Setup

The "BIOS FEATURES SETUP" allow you to configure your system for basic operation. The user can select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

A brief introduction of each setting in the BIOS FEATURES SETUP program is given below.

VIRUS WARNING :

This item allows you to choose the Virus Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

CPU INTERNAL CACHE/EXTERNAL CACHE :

These two categories speed up memory access. However, it depends on CPU/chipset design.

CPU L2 CACHE ECC CHECKING :

This item allows you to enable or disable CPU L2 Cache ECC checking.

QUICK POWER ON SELF TEST:

This item allows you to speed up Power On Self Test (POST) after power-up the computer. When enabled, the BIOS will shorten or skip some check items during POST.

FIRST/SECOND/THIRD OTHER BOOT DEVICE:

The BIOS attempt to load the operating system from the devices in the sequence selected in these items.

SWAP FLOOPY DRIVE:

This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

BOOT UP FLOPPY SEEK:

You may enable / disable this item to define whether the system will look for a floppy disk drive to boot at power-on, or proceed directly to the hard disk drive.

BOOT UP NUMLOCK STATUS:

Select power on state for NumLock.

GATE 20A OPTION:

This entry allows you to select how the gate A20 is handled. When Normal was set, a pin in the keyboard controller controls Gate A20. And when Fast was set, the chipset controls Gate A20.

TYPEMATIC RATE SETTING:

Enable this item if you wish to be able to configure the characteristics of your keyboard. Typematic refers to the way in which characters are entered repeatedly if a key is held down. For example, if you press and hold down the "A" key, the letter "a" will repeatedly appear on your screen on your screen until you release the key. When enabled, the typematic rate and typematic delay can be selected.

TYPEMATIC RATE (CHARS/SEC):

This item sets the number of times a second to repeat a key stroke when you hold the key down.

TYPEMATIC DELAY (MSEC):

The item sets the delay time after the key is held down before it begins to repeat the keystroke.

SECURITY OPTION:

This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

OS SELECT FOR DRAM >64MB :

Select the operating system that is running with greater than 64MB or RAM on the system. You may choose OS2 or Non-OS2.

REPORT NO FDD FOR WIN 95 :

This item allows you to select whether report no FDD for Win 95 or not.

5-5. ADVANCED CHIPSET FEATURES

Choose the "ADVANCED CHIPSET FEATURES" from the main menu, the screen shown as below.

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software
Advanced Chipset Features

SDRAM CAS Latency Time	Auto	Item Help
SDRAM Cycle Time Tras/Trc	Auto	
SDRAM RAS-to-CAS Delay	Auto	Menu Level ►
SDRAM RAS Precharge Time	Auto	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
CPU Latency Timer	Enabled	
Delayed Transaction	Enabled	
AGP Graphics Aperture Size	64MB	
System Memory Frequency	Auto	
On-Chip Video Window Size	64MB	
I/O Channel Check NMI	Disabled	

↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Chipset Features Setup

The parameters in the screen are for system designers, service personnel, and technically competent users only. Do not reset these values unless you understand the consequences of your changes.

SDRAM CAS LATENCY TIME:

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

SDRAM CYCLE TIME TRAS/TRC:

This item set the number of SCLKs for an access cycle.

SDRAM RAS-TO-CAS DELAY:

This item let you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

SDRAM RAS PRECHARGE TIME:

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

SYSTEM BIOS CACHEABLE:

This item allows you to enable caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

VIDEO BIOS CACHEABLE:

This item allows you to enable caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

MEMORY HOLE AT 15M-16M:

You may reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

CPU LATENCY TIMER:

When enabled, the CPU cycle will only be deferred after it has been held in a "Snoop Stall" for 31 clocks and another ADS# has arrived. When disabled, the CPU cycle will be deferred immediately after the GMCH receives another ADS#.

DELAY TRANSACTION:

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

AGP GRAPHICS APERTURE SIZE:

This allows you to adjust the graphics aperture size. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space.

SYSTEM MEMORY FREQUENCY:

You can use this item to select the operating frequency for the main system memory.

ON-CHIP VIDEO WINDOW SIZE:

Select the on-chip video window size for VGA drive use.

5-6. INTEGRATED PERIPHERALS

Choose "INTEGRATED PERIPHERALS" from the main setup menu, a display will be shown on screen as below:

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software
Integrated Peripherals

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	
USB Mouse Support	Disabled	
Init Display First	PCI Slot	
AC97 Audio	Auto	
IDE HDD Block Mode	Enabled	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
UR2 Duplex Mode	Half	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
ECP Mode Use DMA	3	
PWRON After PWR-Fail	Off	
Onboard Serial Port 3	3E8H	
Serial Port 3 Use IRQ	IRQ10	
Onboard Serial Port 4	2E8H	
Serial Port 4 Use IRQ	IRQ11	

↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

INTEGRATED PERIPHERALS

By moving the cursor to the desired selection and by pressing the <F1> key, the all options for the desired selection will be displayed for choice.

ON-CHIP PRIMARY/SECONDARY PCI IDE:

The Integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

IDE PRIMARY/SECONDARY MASTER/SLAVE PIO:

The four IDE PIO fields allow you to set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

IDE PRIMARY/SECONDARY MASTER/SLAVE UDMA:

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If you hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

USB CONTROLLER:

Select enabled if the system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

USB KEYBOARD SUPPORT:

Select enabled if the system contains a Universal Serial Bus (USB) controller and you have a USB Keyboard.

USB KEYBOARD SUPPORT:

Select enabled if the system contains a Universal Serial Bus (USB) controller and you have a USB Mouse.

INIT DISPLAY FIRST:

This item allows you to decide to active whether PCI Slot or on-chip VGA first. The choices are PCI Slot and Onboard.

AC97 AUDIO:

This item allows you to decide to enable/disable the chipset to support AC97 Audio/Modem.

IDE HDD BLOCK MODE:

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

ONBOARD FDC CONTROLLER:

Select Enabled if the system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled.

ONBOARD SERIAL PORT 1/PORT 2:

Select an address and corresponding interrupt for the first and second serial ports.

UART MODE SELECT:

Select an operating mode for the second serial port. The choices are IrDA, Normal and ASK IR.

UR2 DUPLEX MODE:

This item allows you to select the IR half/full duplex function.

ONBOARD PARALLEL PORT:

This item allows you to determine access onboard parallel port controller with which I/O address.

PARALLEL PORT MODE:

Select an operating mode for the onboard (printer) port. Select *Normal, Compatible or SPP* unless you are certain your hardware and software both support one of the other available modes.

ECP MODE USE DMA:

Select a DMA channel for the parallel port for use during ECP mode.

PWRON AFTER PWR-FAIL:

This item allows you to select if you want to power on the system after power failure.

5-7. POWER MANAGEMENT SETUP

Choose "POWER MANAGEMENT SETUP" option on the main menu, a display will be shown on screen as below :

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software
Power Management Setup

		Item Help
ACPI Function	Enabled	Menu Level ►
Power Management	User Define	
Video Off Method	DPMS	
Video Off In Suspend	Yes	
MODEM Use IRQ	NA	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Wake-Up by PCI card	Disabled	
Resume by Alarm	Disabled	
X Date(of Month) Alarm	0	
X Time(hh:mm:ss) Alarm	0 0 0	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT Port	Disabled	
PCI PIRQ[A-D]#	Disabled	

↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Power Management Setup

The Power Management Setup allows the user to configure the system to the most effectively save energy while operating in a manner consistent with your own style of computer use.

ACPI FUNCTION:

Users are allowed to enable or disable the Advanced Configuration and Power Management (ACPI).

POWER MANAGEMENT:

This item allows the user to select the type or degree of power saving and is directly related to HDD Power Down, Doze Mode and Suspend Mode. There are four available options: Disable, Min. Power Saving, Max. Power Saving, and User Define.

VIDEO OFF METHOD:

This category determines the manner in which the monitor is blanked.

V/H SYNC+BLANK	This selection will cause the system to turn off the vertical & horizontal synchronization ports and writes blanks to video buffer.
BLANK SCREEN	This selection only writes blanks to video buffer.
DPMS	Initial display power management signaling.

VIDEO OFF IN SUSPEND:

This field determines the manner in which the monitor is blanked.

MODEM USE IRQ:

This item enable you to name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

SUSPEND MODE:

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD POWER DOWN:

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

SOFT-OFF BY PWRBTN:

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has “hung”. The choices are Delay 4 Sec and Instant-Off.

WAKE-UP BY PCI CARD:

An input signal from PME on the PCI card awakens the system from a soft off state.

RESUME BY ALARM:

When enable, your can set the date and time at which the RTC (real time clock) alarms awakens the system from Suspend mode.

5-8. PNP/PCI CONFIGURATION

Choose "PNP/PCI CONFIGURATION" from the main menu, a display will be shown on screen as below:

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software PnP/PCI Configurations		
PNP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto(ESCD)	Menu Level ►
X IRQ Resources	Press Enter	
X DMA Resources	Press Enter	Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
PCI/VGA Palette Snoop	Disabled	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

PNP/PCI CONFIGURATION

This section describes how to configure PCI bus system. PCI, also known as Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components. This section covers technical items, which is strongly recommended for experienced users only.

PNP OS INSTALLED:

This item allows you to determine install PnP OS or not.

RESET CONFIGURATION DATA:

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system configuration has caused such a serious conflict that the operating system cannot boot.

RESOURCE CONTROLLED BY:

The Award Plug and Play Bios can automatically configure all of the booth and Plug and Play-compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95. By choosing "manual", you are allowed to configure the *IRQ Resources*, *DMA Resources* and *Memory Resources*. The choices are Auto (ESCD) and Manual.

IRQ RESOURCES:

You may assign each system interrupt a type, depending on the type of device using the interrupt.

DMA RESOURCES:

You may assign each system DMA a type, depending on the type of device using the DM Channel.

PCI/VGA PALETTE SNOOP:

Leave this field at disabled.

5-9. PC HEALTH STATUS

Choose "PC HEALTH STATUS" from the main menu, a display will be shown on screen as below:

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software PC Health Status		
Shutdown Temperature	Disabled	Item Help
Vcore Vtt +3.3V + 5 V +12V -12V 5VSB Voltage Battery CPU Temperature CPU Fan Speed		Menu Level ►
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

PC HEALTH STATUS

The setup menu allows you to select whether to choose between monitoring or ignoring the hardware monitoring function of your system.

SHUTDOWN TEMPERATURE:

User is allowed to set the temperature on which the system automatically shutdown when reaches or exceeds the temperature set.

5-10. FREQUENCY/VOLTAGE CONTROL

Choose "FREQUENCY/VOLTAGE CONTROL" from the main menu, a display will be shown on screen as below:

CMOS Setup Utility – Copyright (C) 1984-2000 Award Software Frequency/Voltage Control		
Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Enabled	
CPU Host/PCI Clock/PC133	Default	Menu Level ►
CPU Clock Ratio	X 8.5	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

FREQUENCY/VOLTAGE CONTROL

This setup menu allows you to specify your settings for frequency/voltage control.

AUTO DETECT DIMM/PCI CLK:

This item allows you to enable or disable auto detect DIMM/PCI Clock.

SPREAD SPECTRUM:

This item allows you to enable or disable the spread spectrum modulate.

CPU CLOCK RATIO:

This item allows you to select the CPU ratio.

5-11. LOAD FAIL-SAFE DEFAULTS

By pressing the <ENTER> key on this item, you get a confirmation dialog box with a message similar to the following:

Load Fail-Safe Defaults (Y/N) ? N

To use the BIOS default values, change the prompt to "Y" and press the <Enter > key. CMOS is loaded automatically when you power up the system.

5-12. LOAD OPTIMIZED DEFAULTS

When you press <Enter> on this category, you get a confirmation dialog box with a message similar to the following:

Load Optimized Defaults (Y/N) ? N

Pressing "Y" loads the default values that are factory setting for optimal performance system operations.

5-13. PASSWORD SETTING

User is allowed to set either supervisor or user password, or both of them. The difference is that the supervisor password can enter and change the options of the setup menus while the user password can enter only but do not have the authority to change the options of the setup menus.

TO SET A PASSWORD

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Enter Password:

Type the password up to eight characters in length, and press < Enter >. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press the < Enter > key. You may also press < Esc > to abort the selection and not enter a password.

🔔 User should bear in mind that when a password is set, you will be asked to enter the password everything you enter CMOS setup Menu.

TO DISABLE THE PASSWORD

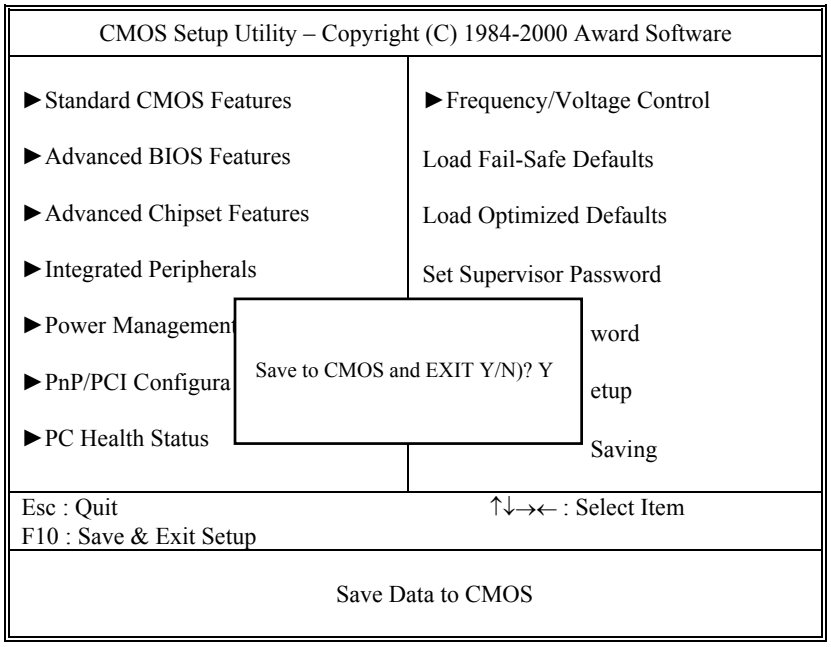
To disable the password, select this function (do not enter any key when you are prompt to enter a password), and press the <Enter> key and a message will appear at the center of the screen:

PASSWORD DISABLED!!! Press any key to continue...

Press the < Enter > key again and the password will be disabled. Once the password is disabled, you can enter Setup freely.

5-14. SAVE & EXIT SETUP

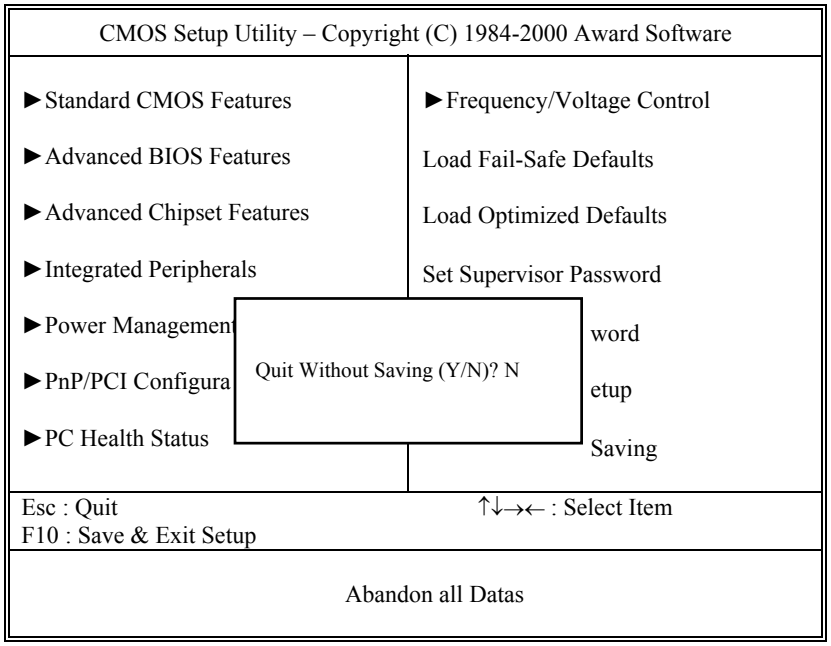
After you have completed adjusting all the settings as required, you must remember to save these setting into the CMOS RAM. To save the settings, select "SAVE & EXIT SETUP" and press <Enter>, a display will be shown as follows:



When you confirm that you wish to save the settings, your system will be automatically restarted and the changes you have made will be implemented. You may always call up the setup program at any time to adjust any of the individual items by pressing the <Del> key during boot up.

5-15. EXIT WITHOUT SAVING

If you wish to cancel any changes you have made, you may select the "EXIT WITHOUT SAVING" and the original setting stored in the CMOS will be retained. The screen will be shown as below:



APPENDIX

A

RISER CARD

This appendix explains the riser card and the respective pin assignments of the expansion slots found in the riser card.

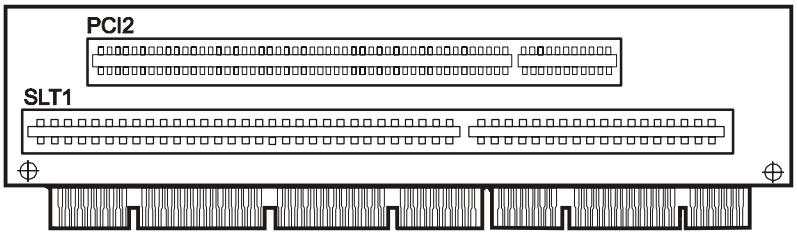
Section includes:

- ISA Slot Pin Assignment
- PCI Slot Pin Assignment

RISER CARD

You will find a PISA expansion slot on the middle of our system board as illustrated in chapter 2 (page 2-3). By using our Riser Card, which is included in the accessory packed of our PS-8380 Book-size PC, you can make expansion for any other ISA card and PCI card.

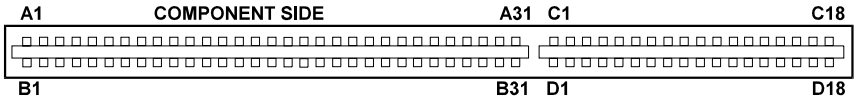
The Riser Card is consists of 1 ISA slot and 1 PCI slot. Below, you will find an illustration of the Riser card enclosed with our PS-8380:



The Riser Card has a total of 2 expansion slots, but user are only allowed to use one expansion slot, you may choose to the PCI or the ISA slot.

ISA SLOT PIN ASSIGNMENT

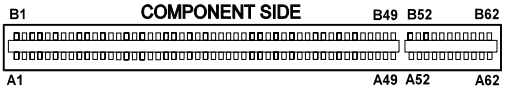
You will find three ISA expansion slot on the Riser Card packed with our PS-8380 Book-size PC. The ISA-slot is divided into two sets of pins: one consists of 62 pins; and the other consists of 36 pins. The pin assignments as follows :



A		B		C		D	
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	I/O CH CHK#	B1	GND	C1	SBHE	D1	MEMCS16#
A2	SD07	B2	RESET	C2	LA23	D2	I/OCS16#
A3	SD06	B3	VCC5	C3	LA22	D3	IRQ10
A4	SD05	B4	IRQ9	C4	LA21	D4	IRQ11
A5	SD04	B5	NC	C5	LA20	D5	IRQ12
A6	SD03	B6	DRQ2	C6	LA19	D6	IRQ15
A7	SD02	B7	VCC12-	C7	LA18	D7	IRQ14
A8	SD01	B8	OWS#	C8	LA17	D8	DACK0#
A9	SD00	B9	VCC12	C9	MEMR#	D9	DRQ0
A10	I/O CH RDY#	B10	GND	C10	MEMW#	D10	DACK5#
A11	AEN	B11	SMEMW#	C11	SD08	D11	DRQ5
A12	SA19	B12	SMEMR#	C12	SD09	D12	DACK6#
A13	SA18	B13	IOW#	C13	SD10	D13	DRQ6
A14	SA17	B14	IOR#	C14	SD11	D14	DACK7#
A15	SA16	B15	DACK3#	C15	SD12	D15	DRQ7
A16	SA15	B16	DRQ3#	C16	SD13	D16	VCC5
A17	SA14	B17	DACK1#	C17	SD14	D17	MASTER#
A18	SA13	B18	DRQ1#	C18	SD15	D18	GND
A19	SA12	B19	REFRESH#				
A20	SA11	B20	BCLK				
A21	SA10	B21	IRQ7				
A22	SA09	B22	IRQ6				
A23	SA08	B23	IRQ5				
A24	SA07	B24	IRQ4				
A25	SA06	B25	IRQ3				
A26	SA05	B26	DACK2#				
A27	SA04	B27	T/C				
A28	SA03	B28	BALE				
A29	SA02	B29	VCC5				
A30	SA01	B30	OSC14M				
A31	SA00	B31	GND				

PCI SLOT PIN ASSIGNMENT

Like ISA-slot, the PCI-slot is also divided into two sets of pins: one consists of 98 pins; and the other consists of 22 pins.
The pin assignments are as follows :



B		A		B		A	
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
B1	-12V	A1	TRST#	B31	NC	A31	AD18
B2	TCK	A2	+12V	B32	AD17	A32	AD16
B3	GND	A3	TMS	B33	C/BE2#	A33	NC
B4	NC	A4	TDI	B34	GND	A34	FRAME#
B5	+5V	A5	+5V	B35	IRDY#	A35	GND
B6	+5V	A6	INTA#	B36	NC	A36	TRDY#
B7	INTB#	A7	INTC#	B37	DEVSEL#	A37	GND
B8	INTD#	A8	+5V	B38	GND	A38	STOP#
B9	NC	A9	NC	B39	LOCK#	A39	NC
B10	NC	A10	+5V(I/O)	B40	PERR#	A40	SDONE
B11	NC	A11	NC	B41	+3.3V	A41	NC
B12	GND	A12	GND	B42	SERR#	A42	GND
B13	GND	A13	GND	B43	NC	A43	PAR
B14	RESERVED	A14	NC	B44	C/BE#1	A44	AD15
B15	GND	A15	RST#	B45	AD14	A45	NC
B16	CLKB	A16	+5V(I/O)	B46	GND	A46	AD13
B17	GND	A17	GNT	B47	AD12	A47	AD11
B18	REQ#	A18	GND	B48	AD10	A48	GND
B19	+5V(I/O)	A19	PME#	B49	GND	A49	AD9
B20	AD31	A20	AD30	B52	AD8	A52	C/BE#0
B21	AD29	A21	NC	B53	AD7	A53	NC
B22	GND	A22	AD28	B54	+3.3V	A54	AD6
B23	AD27	A23	AD26	B55	AD5	A55	AD4
B24	AD25	A24	GND	B56	AD3	A56	GND
B25	NC	A25	AD24	B57	GND	A57	AD2
B26	C/BE#3	A26	IDSEL	B58	AD01	A58	AD0
B27	AD23	A27	NC	B59	+5V(I/O)	A59	+5V(I/O)
B28	GND	A28	AD22	B60	ACK64#	A60	REQ64#
B29	AD21	A29	AD20	B61	+5V	A61	+5V
B30	AD19	A30	GND	B62	+5V	A62	+5V

TECHNICAL SUMMARY

APPENDIX

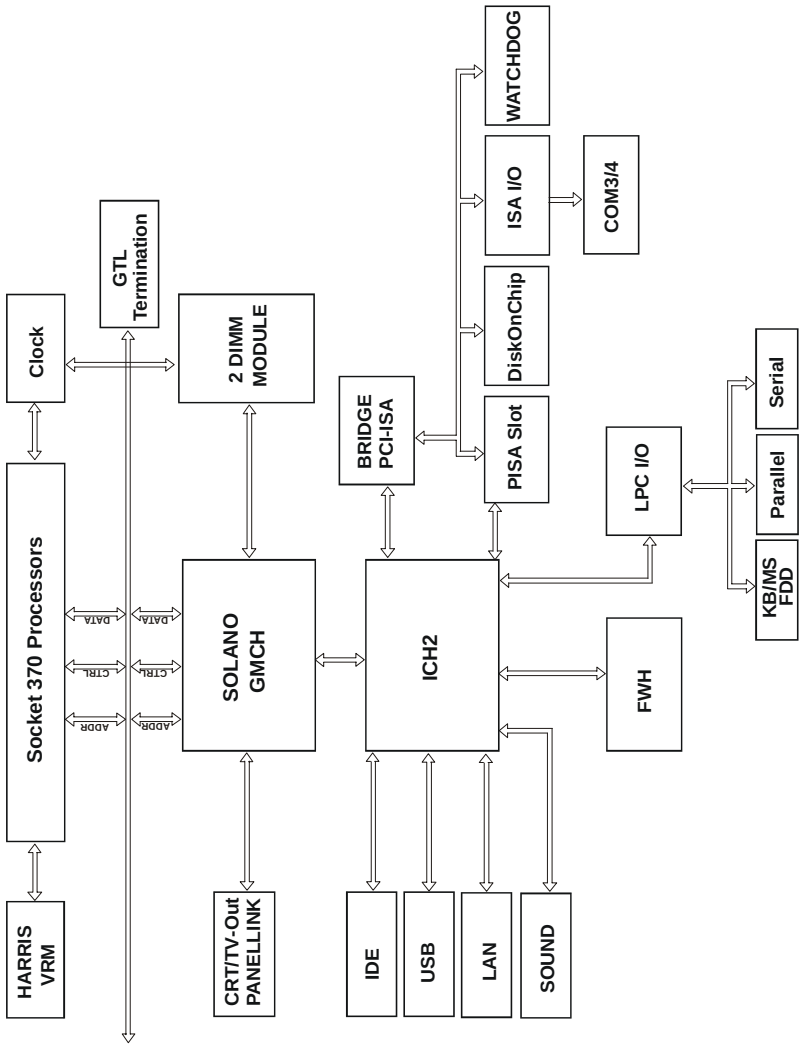
B

This section introduce you the maps concisely.

Section includes:

- Block Diagram
- Interrupt Map
- RTC (Standard) RAM Bank
- Timer & DMA Channels Map
- I / O & Memory Map

BLOCK DIAGRAM



INTERRUPT MAP

IRQ	ASSIGNMENT
0	System TIMER interrupt from TIMER-0
1	Keyboard output buffer full
2	Cascade for IRQ 8-15
3	Serial port 2
4	Serial port 1
5	Available
6	Floppy Disk adapter
7	Parallel port 1
8	RTC clock
9	Available
10	Serial 4
11	Serial 3
12	Available
13	Math coprocessor
14	IDE Controller
15	IDE Controller

RTC (STANDARD) RAM BANK

CODE	ASSIGNMENT
00h	Seconds
01h	Second alarm
02h	Minutes
03h	Minutes alarm
04h	Hours
05h	Hours alarm
06h	Day of week
07h	Day of month
08h	Month
09h	Year
0Ah	Status register A
0Bh	Status register B
0Ch	Status register C
0Dh	Status register D
0Eh-7Fh	114 Bytes of User RAM

TIMER & DMA CHANNELS MAP

Timer Channel Map :

Timer Channel	Assignment
0	System timer interrupt
1	DRAM Refresh request
2	Speaker tone generator

DMA Channel Map :

DMA Channel	Assignment
0	Available
1	Available / Parallel
2	Floppy Disk adapter
3	Available / Parallel
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

I/O & MEMORY MAP

Fixed I/O Ranges Decoded by ICH2 :

I/O Address	Read Target	Write Target	Internal Unit
00h-08h	DMA Controller	DMA Controller	DMA
09h-0Eh	Reserved	DMA Controller	DMA
0Fh	DMA Controller	DMA Controller	DMA
10h-18h	DMA Controller	DMA Controller	DMA
19h-1Eh	Reserved	DMA Controller	DMA
1Fh	DMA Controller	DMA Controller	DMA
20h-21h	Interrupt Controller	Interrupt Controller	Interrupt
24h-25h	Interrupt Controller	Interrupt Controller	Interrupt
28h-29h	Interrupt Controller	Interrupt Controller	Interrupt
2Ch-2Dh	Interrupt Controller	Interrupt Controller	Interrupt
2Eh-2Fh	LPC SIO	LPC SIO	Forwarder to LPC
30h-31h	Interrupt Controller	Interrupt Controller	Interrupt
34h-35h	Interrupt Controller	Interrupt Controller	Interrupt
38h-39h	Interrupt Controller	Interrupt Controller	Interrupt
3Ch-3Dh	Interrupt Controller	Interrupt Controller	Interrupt
40h-42h	Timer/Counter	Timer/Counter	PIT (8254)
43h	Reserved	Timer/Counter	PIT
4E-4F	LPC SIO	LPC SIO	Forwarder to LPC
50h-52h	Timer/Counter	Timer/Counter	PIT
53h	Reserved	Timer/Counter	PIT
60h	Microcontroller	Microcontroller	Forwarder to LPC
61h	NMI Controller	NMI Controller	Processor I/F
62h	Microcontroller	Microcontroller	Forwarder to LPC
63h	NMI Controller	NMI Controller	Processor I/F
64h	Microcontroller	Microcontroller	Forwarder to LPC
65h	NMI Controller	NMI Controller	Processor I/F
66h	Microcontroller	Microcontroller	Forwarder to LPC
67h	NMI Controller	NMI Controller	Processor I/F
70h	Reserved[5]	NMI & RTC controller	RTC
71h	RTC Controller	RTC Controller	RTC
72h	RTC Controller	NMI & RTC controller	RTC
73h	RTC Controller	RTC Controller	RTC
74h	RTC Controller	NMI & RTC controller	RTC
75h	RTC Controller	RTC Controller	RTC
76h	RTC Controller	NMI & RTC controller	RTC
77h	RTC Controller	RTC Controller	RTC

I/O Address	Read Target	Write Target	Internal Unit
80h	DMA Controller	DMA controller & LPC/PCI	DMA
81h-83h	DMA Controller	DMA Controller	DMA
84h-86h	DMA Controller	DMA Controller & LPC or PCI	DMA
87h	DMA Controller	DMA Controller	DMA
88h	DMA Controller	DMA Controller & LPC or PCI	DMA
89h-8Bh	DMA Controller	DMA Controller	DMA
8Ch-8Eh	DMA Controller	DMA Controller & LPC or PCI	DMA
08Fh	DMA Controller	DMA Controller	DMA
90h-91h	DMA Controller	DMA Controller	DMA
92h	Reset Generator	Reset Generator	Processor I/F
93h-9Fh	DMA Controller	DMA Controller	DMA
A0h-A1h	Interrupt Controller	Interrupt Controller	Interrupt
A4h-A5h	Interrupt Controller	Interrupt Controller	Interrupt
A8h-A9h	Interrupt Controller	Interrupt Controller	Interrupt
ACh-ADh	Interrupt Controller	Interrupt Controller	Interrupt
B0h-B1h	Interrupt Controller	Interrupt Controller	Interrupt
B2h-B3h	Power Management	Power Management	Power Management
B4h-B5h	Interrupt Controller	Interrupt Controller	Interrupt
B8h-B9h	Interrupt Controller	Interrupt Controller	Interrupt
BCh-BDh	Interrupt Controller	Interrupt Controller	Interrupt
C0h-D1h	DMA Controller	DMA Controller	DMA
D2h-DDh	Reserved	DMA Controller	DMA
DEh-DFh	DMA Controller	DMA Controller	DMA
F0h	See Note 3	FERR# /IGNNE#/ Interrupt Controller	Processor interface
170h-177h	IDE Controller[1]	IDE Controller[1]	Forwarded to IDE
1F0h-1F7h	IDE Controller[2]	IDE Controller[2]	Forwarded to IDE
376h	IDE Controller[1]	IDE Controller[1]	Forwarded to IDE
3F6h	IDE Controller[2]	IDE Controller[2]	Forwarded to IDE
4D0h-4D1h	Interrupt Controller	Interrupt Controller	Interrupt
CF9h	Reset Generator	Reset Generator	Processor interface

Notes:
1. Only if IDE Standard I/O space is enabled for Primary Drive. Otherwise, the target is PCI.
2. Only if IDE Standard I/O space is enabled for Secondary Drive. Otherwise, the target is PCI.
3. If POS_DEC_EN bit is enabled, reads from F0h will not be decoded by the ICH2. If POS_DEC_EN is not enabled, reads from F0h will forward to LPC.

Memory Decode Ranges From Processor Perspective :

Memory Range	Target	Dependency/Comments
0000 0000h-000D FFFFh 0010 0000-TOM (Top of Memory)	Main Memory	TOM registers in Host Controller
000E 0000h-000F FFFFh	FWH	Bit 7 in FWH Decode Enable Register is set
FEC0 0000h-FEC0 0100h	I/O APIC inside ICH2	
FFC0 0000h-FFC7 FFFFh FF80 0000h-FF87 FFFFh	FWH	Bit 0 in FWH Decode Enable Register
FFC8 0000h-FFCF FFFFh FF88 0000h-FF8F FFFFh	FWH	Bit 1 in FWH Decode Enable Register
FFD0 0000h-FFD7 FFFFh FF90 0000h-FF97 FFFFh	FWH	Bit 2 in FWH Decode Enable Register is set
FFD8 0000h-FFDF FFFFh FF98 0000h-FF9F FFFFh	FWH	Bit 3 in FWH Decode Enable Register is set
FFE0 0000h-FFE7 FFFFh FFA0 0000h-FFA7 FFFFh	FWH	Bit 4 in FWH Decode Enable Register is set
FFE8 0000h-FFEF FFFFh FFA8 0000h-FFAF FFFFh	FWH	Bit 5 in FWH Decode Enable Register is set
FFF0 0000h-FFF7 FFFFh FFB0 0000h-FFB7 FFFFh	FWH	Bit 6 in FWH Decode Enable Register is set
FFF8 0000h-FFFF FFFFh FFB8 0000h-FFBF FFFFh	FWH	Always Enabled. The top two 64K blocks of this range can be swapped as described in Section 6.4.1.
FF70 0000h-FF7F FFFFh FF30 0000h-FF3F FFFFh	FWH	Bit 3 in FWH Decode Enable 2 Register is set
FF60 0000h-FF6F FFFFh FF20 0000h-FF2F FFFFh	FWH	Bit 2 in FWH Decode Enable 2 Register is set
FF50 0000h-FF5F FFFFh FF10 0000h-FF1F FFFFh	FWH	Bit 1 in FWH Decode Enable 2 Register is set
FF40 0000h-FF4F FFFFh FF00 0000h-FF0F FFFFh	FWH	Bit 0 in FWH Decode Enable 2 Register is set
Anywhere in 4GB range	D110 LAN Controller	Enable via BAR in Device 29:Function 0 (D110 LAN Controller)
All Other	PCI	None

TROUBLE SHOOTING

APPENDIX

C

This section outlines the error messages that may occur when you operate the system. It also gives you the suggestions on solving the problems.

Section includes:

- Trouble Shooting for Error Messages
- Trouble Shooting for POST Code

TROUBLE SHOOTING FOR ERROR MESSAGES

The following information gives you the error messages and the trouble-shooting. Please adjust your systems according to the messages below. And make sure all the components and connectors are in proper position and firmly attached. If the errors still encountered, please contact with your distributor for maintenance.

POST BEEP :

Currently there are two kinds of beep codes in BIOS. One code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

CMOS BATTERY HAS FAILED :

This message informs you that the CMOS battery is no longer functional. The user should replace it.

CMOS CHECKSUM ERROR :

This message informs you that the CMOS is incorrect. This error may have caused by a weak battery. Check the battery and replace if necessary.

DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER :

No boot device was found. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press < Enter >. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also make sure the disk is formatted as a boot device. Then reboot the system.

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP :

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

DISPLAY SWITCH IS SET INCORRECTLY :

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT :

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

EISA CONFIGURATION CHECKSUM ERROR
PLEASE RUN EISA CONFIGURATION UTILITY :

The EISA non-violatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

EISA CONFIGURATION IS NOT COMPLETE
PLEASE RUN EISA CONFIGURATION UTILITY :

The slot configure information stored in the EISA non-volatile memory is incomplete.
Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE :

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER :

Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT :

Cannot find or initialize the floppy drive controller. Make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

INVALID EISA CONFIGURATION
PLEASE RUN EISA CONFIGURATION UTILITY :

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.
Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

KEYBOARD ERROR OR NO KEYBOARD PRESENT :

Cannot initialize the keyboard. Make sure that the keyboard is properly attached and no keys being pressed during the boot.
If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

MEMORY ADDRESS ERROR AT ... :

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY PARITY ERROR AT ... :

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY SIZE HAS CHANGED SINCE LAST BOOT :

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

MEMORY VERIFY ERROR AT ... :

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

OFFENDING ADDRESS NOT FOUND :

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

OFFENDING SEGMENT :

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

PRESS A KEY TO REBOOT :

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

PRESS F1 TO DISABLE NMI, F2 TO REBOOT :

When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM PARITY ERROR – CHECKING FOR SEGMENT :

Indicates a parity error in Random Access Memory.

Should be Empty But EISA Board Found
PLEASE RUN EISA CONFIGURATION UTILITY :

A valid board ID was found in a slot that was configured as having no board ID.
Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Should Have EISA Board But Not Found
PLEASE RUN EISA CONFIGURATION UTILITY :

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.
Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Slot Not Empty :

Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

SYSTEM HALTED, (CTRL-ALT-DEL) TO REBOOT :

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

Wrong Board in Slot
PLEASE RUN EISA CONFIGURATION UTILITY :

The board ID does not match the ID stored in the EISA non-volatile memory.
Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

FLOPPY DISK(S) FAIL (80) :

Unable to reset floppy subsystem.

FLOPPY DISK(S) FAIL (40) :

Floppy type dismatch.

Hard Disk(S) Fail (80) :

Hard Disk Drive reset failed.

Hard Disk(S) Fail (40) :

Hard Disk Drive controller diagnostics failed.

Hard Disk(S) Fail (20) :

Hard Disk Drive initialization error.

Hard Disk(S) Fail (10) :

Unable to recalibrate fixed disk.

Hard Disk(S) Fail (08) :

Sector Verify failed.

Keyboard is locked out – Unlock the key :

BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.

Keyboard error or no keyboard present :

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop :

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

BIOS ROM checksum error – System halted :

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail :

BIOS reports the memory test fail if the onboard memory is tested error.

TROUBLE SHOOTING FOR POST CODES

The lists below indicate you the post codes. Please follow the instruction to adjust your system. If the error still occurred, please contact with your distributor for maintenance.

CFh : Test CMOS R/W functionality.

C0h : Early chipset initialization
- Disable shadow RAM
- Disable L2 cache (socket 7 or below)
- Program basic chipset registers

C1h : Detect memory
- Auto-detection of DRAM size, type and ECC
- Auto-detection of L2 cache (socket 7 or below)

C3h : Expand compressed BIOS code to DRAM.

C5h : Call chipset hook to copy BIOS black to E000 & F000 shadow RAM.

0h1 : Expand the Xgroup codes locating in physical address 1000:0

02h : Reserved.

03h : Initial Superio_Early_Init switch.

04h : Reserved.

05h : 1. Blank out screen
2. Clear CMOS error flag

06h : Reserved

07h : 1. Clear 8042 interface
2. Initialize 8042 self-test

08h : 1. Test special keyboard controller for Winbond 977 series Super I/O Chips.
2. Enable keyboard interface.

09h : Reserved

0Ah : 1. Disable PS/2 mouse interface (optional)
2. Auto detect ports for keyboard & mouse followed by a port & interface swap (optional).
3. Reset keyboard for Winbond 977 series Super I/O chips.

0Bh : Reserved

0Ch : Reserved

0Dh : Reserved

0Eh : Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.

0Fh : Reserved

10h : Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD and DMI support.

11h : Reserved

12h : Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.

13h : Reserved

14h : Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.

15h : Reserved

16h : Initial Early_Init_Onboard_Generator switch.

17h : Reserved

18h : Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686).

19h : Reserved

1Ah : Reserved

1Bh : Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INIT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.

1Ch : Reserved

1Dh : Initial EARLY_PM_INIT switch

1Eh : Reserved

1Fh : Load keyboard matrix (notebook platform)

20h : Reserved

21h : HPM initialization (notebook platform)

22h : Reserved

23h :
1. Check validity of RTC value:
   e.g. a value of 5Ah is an invalid value for RTC minute.
2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead.
3. Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information.
4. Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots.
5. Early PCI initialization:
   -Enumerate PCI bus number
   -Assign memory & I/O resource
   -Search for a valid VGA device & VGA BIOS, and put it into C000:0.

24h : Reserved

25h : Reserved

26h : Reserved

27h : Initialize INT 09 buffer

28h : Reserved

29h :
1. Program CPU internal mtrr (P6 & PII) for 0-640K memory address.
2. Initialize the APIC for Pentium class CPU.
3. Program early chipset according to CMOS setup. Example: onboard IDE controller.
4. Measure CPU speed.
5. Invoke video BIOS.

2Ah : Reserved

2Bh : Reserved

2Ch : Reserved

2Dh :
1. Initialize multi-language
2. Put information on screen display, including Award title, CPU type, CPU speed …

2Eh : Reserved

2Fh : Reserved

30h : Reserved

31h : Reserved

32h : Reserved

33h : Reset keyboard except Winbond 977 series Super I/O chips.

34h : Reserved

35h : Reserved

36h : Reserved

37h : Reserved

38h : Reserved

39h : Reserved

3Ah : Reserved

3Bh : Reserved

3Ch : Test 8254

3Dh : Reserved

3Eh : Test 8259 interrupt mask bits for channel 1.

3Fh : Reserved

40h : Test 8259 interrupt mask bits for channel 2.

41h : Reserved

42h : Reserved

43h : Test 8259 functionality.

44h : Reserved

45h : Reserved

46h : Reserved

47h : Initialize EISA slot

48h : Reserved

49h : 1. Calculate total memory by testing the last double word of each 64K page.
2. Program writes allocation for AMD K5 CPU.

4Ah : Reserved

4Bh : Reserved

4Ch : Reserved

4Dh : Reserved

4Eh : 1. Program MTRR of M1 CPU
2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range.
3. Initialize the APIC for P6 class CPU.
4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.

4Fh : Reserved

50h : Initialize USB

51h : Reserved

52h : Test all memory (clear all extended memory to 0)

53h : Reserved

54h : Reserved

55h : Display number of processors (multi-processor platform)

56h : Reserved

57h : 1. Display PnP logo
2. Early ISA PnP initialization
-Assign CSN to every PnP device.

58h : Reserved

59h : Initialize the combined Trend Anti-Virus code.

5Ah : Reserved

5Bh : (Optional Feature)
Show message for entering AWDFLASH.EXE from FDD (optional)

5Ch : Reserved

5Dh : 1. Initialize Init_Onboard_Super_IO switch.
2. Initialize Init_Onboard_AUDIO switch.

5Eh : Reserved

5Fh : Reserved

60h : Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility

61h : Reserved

62h : Reserved

63h : Reserved

64h : Reserved

65h : Initialize PS/2 Mouse

66h : Reserved

67h : Prepare memory size information for function call:
INT 15h ax=E820h

68h : Reserved

69h : Turn on L2 cache.

6Ah : Reserved

6Bh : Program chipset registers according to items described in Setup and Auto-configuration table.

6Ch : Reserved

6Dh : 1. Assign resources to all ISA PnP devices.
2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO".

6Eh : Reserved

6Fh : 1. Initialize floppy controller.
2. Set up floppy related fields in 40:hardware.

70h : Reserved

71h : Reserved

72h : Reserved

73h : (Optional Feature)
Enter AWDFLASH.EXE if:
- AWDFLASH is found in floppy drive.
- ALT+F2 is pressed

74h : Reserved

75h : Detect & install all IDE devices: HDD, LS120, ZIP, CDROM…..

76h : Reserved

77h : Detect serial ports and parallel ports

78h : Reserved

79h : Reserved

7Ah : Detect and install co-processor

7Bh : Reserved

7Ch : Reserved

7Dh : Reserved

7Eh : Reserved

7Fh : 1. Switch back to text mode if full screen logo is supported.
-If errors occur, report errors and wait for keys
-If no errors occur or F1 key is pressed to continue:
*Clear EPA or customization logo.

80h : Reserved

81h : Reserved

82h : 1. Call chipset power management hook.
2. Recover the text fond used by EPA logo (not for full screen logo).
3. If password is set, ask for password.

83h : Save all data in stack back to CMOS.

84h : Initialize ISA PnP boot devices.

85h : 1. USB final initialization.
2. NET PC: Build SYSID structure.
3. Switch screen back to text mode.
4. Setup ACPI table at top of memory.
5. Invoke ISA adapter ROMs.
6. Assign IRQs to PCI devices.
7. Initialize APM.
8. Clear noise of IRQs.

86h : Reserved

87h : Reserved

88h : Reserved

89h : Reserved

90h : Reserved

91h : Reserved

92h : Reserved

93h : Read HDD boot sector information for Trend Anti-Virus code.

94h :
1. Enable l2 cache.
2. Program boot up speed.
3. Chipset final initialization.
4. Power management final initialization.
5. Clear screen and display summary table
6. Program K6 write allocation.
7. Program P6 class write combining.

95h :
1. Program daylight saving.
2. Update keyboard LED and typematic rate.

96h :
1. Build MP table.
2. Build and update ESCD.
3. Set CMOS century to 20h or 19h.
4. Load CMOS time into DOS timer tick.
5. Build MSIRQ routing table.

FFh : Boot attempt (INT 19h)

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