USER'S MANUAL

PS-8070

**All-in-One Book-size PC
For Socket 478 System**

PS-8070 M0

PS-8070 All-in-One Book-size PC

OPERATION MANUAL

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ACKNOWLEDGEMENTS

CE NOTICE

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void your authority to operate such equipment.

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CHAPTER   3   SOFTWARE UTILITIES

CHAPTER   4   AWARD BIOS SETUP

INTRODUCTION

This chapter gives you the information for PS-8070. It also outlines the System specification.

Section includes:

● About This Manual

● System Specifications

● Safety precautions

Experienced users can skip to chapter 2 on page 2-1 for Quick Start.

1-1. ABOUT THIS MANUAL

Thank you for purchasing our PS-8070 P4 Book-size PC enhanced with VGA / Sound / LAN, which is fully PC / AT compatible. PS-8070 provides faster processing speed, greater expandability and can handle more task than before. This manual is designed to assist you how to install and set up the system. It contains four chapters. The user can apply 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 Hardware Configuration
This chapter outlines the component location and their functions. In the end of this chapter, you will learn how to set jumper and how to configure this card to meet your own needs.

Chapter 3 Software Utilities
This chapter contains helpful information for proper installations of the VGA utility, LAN utility, sound utility, and BIOS update. It also describes the Watchdog timer configuration.

Chapter 4 Award BIOS Setup
This chapter indicates you how to set up the BIOS configurations.

Appendix A System Assembly
This appendix contain exploded diagram of the system

Appendix B Riser Card
This Appendix introduces you the riser card included with our PS-8070 Book-sized PC package.

Appendix C Technical Summary
This section gives you the information about the Technical maps.

Appendix D Trouble Shooting
This section outlines the error messages and offers you the methods to solve the problems.

1-2. CASE ILLUSTRATION

System Front View
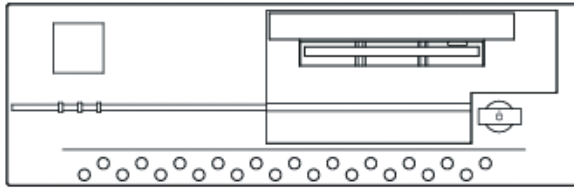
With FDD, CD-ROM & HDD Drive Bay
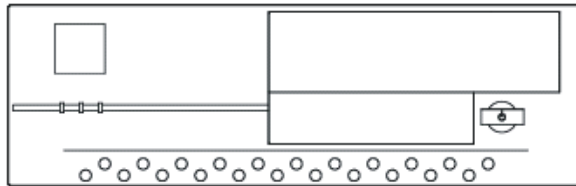
With HDD Only Drive Bay
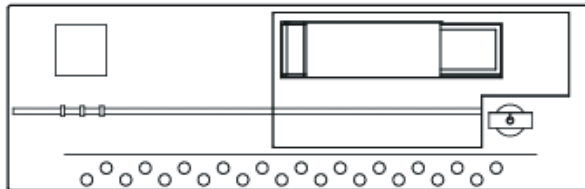
With HDD & removable HDD Drive Bay

System Rear View
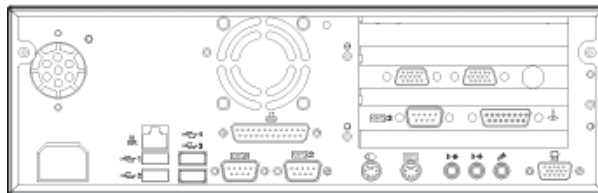
1-3. SYSTEM SPECIFICATION

● **CPU (mPGA 478) :**
Intel® Pentium® 4 in mPGA478 socket
Available at 1.4~2.6GHz
System bus frequency at 400MHz/533MHz
Auto detect voltage regulator

● **SYSTEM CHIPSET :**
Intel® 845GE/GV chipset

● **MEMORY :**
Supports up to 2GB DDR SDRAM.
Two 184-pin DDR 333/266 DIMM sockets on board

● **CACHE :**
Built-in CPU

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

● **BIOS :**
Phoenix-AwardBIOS™ for plug & play function
Memory size with 2 MB, with VGA BIOS

● **KEYBOARD/MOUSE CONNECTOR :**
Dual Mini DIN connector, selectable for Keyboard, PS/2 Mouse, or Y-Cable
One additional 5-pin External keyboard connector

● **UNIVERSAL SERIAL BUS :**
Universal Serial Bus Connector on board
Supports up to four USB 2.0 ports.
Optional 2 USB 2.0 pin-header on board.

● **DISK-ON-CHIPS SOCKET :**
One 32-pin socket supports up to 288MB disk-on-chip.

● **BUS SUPPORT :**
External AGP and PCI Bus

● **DISPLAY :**
Built in Intel 845GV, support CRT, DVO.

● **WATCHDOG :**
I / O port 0443H to Enable watchdog.
I / O port 0441H to Disable watchdog.
Watchdog function is selectable for Reset or NMI function.
Time-out timing select0 / 8 / sec +/- 4%, 16 / 24 / 32 / 40 / 48 / 56 / 64 / 72 /
80 / 88 / 96 / 104 / 112 / 120 sec +/- 25%.

● **IDE INTERFACE :**
Two IDE ports support up to four IDE devices.
Supports UDMA 33/66/100.

● **FLOPPY DISK DRIVER INTERFACE :**
Supports one slim,3.5" Floppy Disk Drives.

● **LAN INTERFACE :**
Intel® 82562EM PHY PCI Fast Ethernet
One RJ-45 Jack onboard
Supports 10BaseT/100BaseTX PCI Ethernet.
Supports Wake-on-LAN

● **SERIAL PORT :**
Two high speed 16550 Compatible UARTs with Send / Receive 16 Byte
FIFOs. COM1 for RS232; COM2 for RS232/422/485.
Programmable Baud Rate Generator
All COM Port contain 5V/12V power capability.

● **SOUND INTERFACE :**
Realtek AC '97 Codec, ALC201A.
Fully Compliant AC '97 Analog I/O Component
Interface: Line-In, Line-Out, Microphone, and CD Audio-In.

● **PARALLEL PORT :**
One port supports SPP / ECP / EPP Function.

● **HARDWARE MONITORING FUNCTION :**
   CPU Temperature and Cooling Fan.

● **IRDA PORT :**
   One 5-pin Infrared connector
   Supports IrDA v1.0 SIR protocol.

● **LED INDICATOR :**
   System power
   Hard Disk access
   LAN LED indicator

● **DMA CONTROLLER :**
   82C37 x 2

● **DMA CHANNELS :**
   7

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

● **INTERRUPT LEVELS :**
   15

● **OPERATING TEMPERATURE :**
   0 to 50°C (32°F to 113°F)

● **POWER SUPPLY :**
   200watts ATX power supply.
   Supports 115V ~ 230V auto detect power voltage.
   Supports 47 ~ 63 Hz.

● **DIMENSIONS :**
   CASE: 300 mm x 270 mm x 94mm   (11.8" x 10.6" x 3.7")
   MAIN BOARD: 235 mm x 235 mm   (9.25" x 9.25")

● **NET WEIGHT :**
   5 (kg) or 11 (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 115VAC-230VAC, otherwise the system may be damaged.

2. Environmental Conditions
   a. Place your PS-8070 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-8070 Book-sized 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-8070 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 +50°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-8070 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.

HARDWARE CONFIGURATION

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, COM4
COM1 RI & Voltage Selection ………………….	JP3 (1-5)
COM2 RI & Voltage Selection ………………….	JP3 (6-10)
RS232/422/485 (COM2) Selection	JP2
COM3 RI & Voltage Selection ………………….	JP1 (1-5)
COM4 RI & Voltage Selection ………………….	JP1 (6-10)
Solid State Disk Socket	SSD
SSD Memory Mapping Selection ………………..	JP6, JP8
Floppy Disk Drive Connector	FDD1
Hard Disk Drive Connector	IDE1, IDE2
Power Connector	PW1
ATX +12V Power Connector …………………….	CN1
Universal Serial Bus Connector …….…………...	USB1, USB2, USB3
LAN Connector ....…	LAN1
Mouse Connector ………………………………...	MS1
Keyboard Connector ……………………………...	KB1
Printer Connector ………………………………...	LPT1
Reset Connector ....…	J4 (18,20)
Power Button …………………………………….	J4 (13,15)
Power LED Connector …………………………...	J4 (1,3,5)
CMOS Clear Selection ……….…………………...	JP5
CPU Fan Connector ………………………………	FAN1
System Fan Connector …………………………...	FAN2
Hard Disk Drive LED Connector ………………..	J4 (12,14)
External Speaker Connector ……………………..	J4 (2,4,6,8)
Keylock Connector ….……….……....................	J4 (7,9)
EXTSMI Connector ………………………………	J4 (17,19)
Reset/NMI/Clear Watchdog Selection …………..	JP7
VGA Connector …………………………………...	VGA1
Sound Connector ………………………………..	Line-Out, Line-In
…………………………..…	Mic-In, CD-IN1
Infrared Connector ………………………………	IRDA
LAN LED Connector ……………………………..	J3
HDD LED/Power Connector ……………………..	J5
Mobile CPU Selection …………………………...	JP9
Gameport Connector ……………………………...	GAME1
Audio Connector ………………………………...	J2
Memory Installation …..	DIMM1, DIMM2
PCI Connector …………………………………..	PCI1
AGP Connector …………………………………...	AGP1
Reserved Pin ……………………………………...	J1

2-2. COMPONENT LOCATIONS
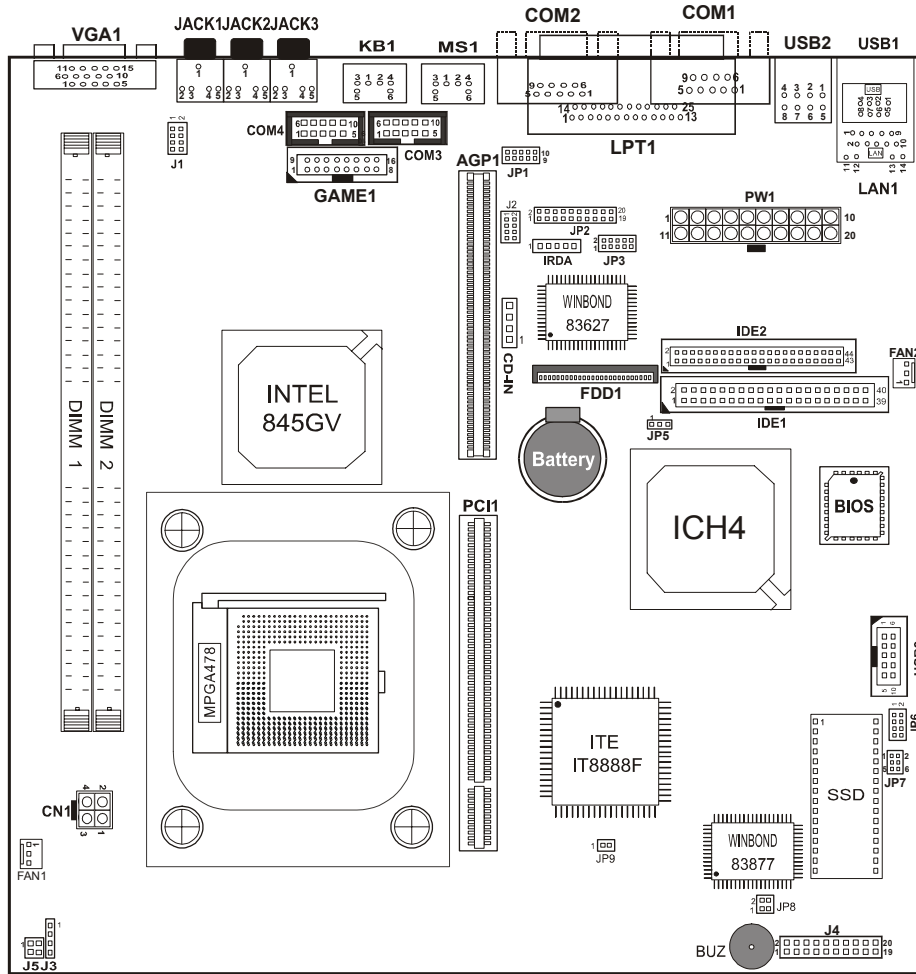
PS-8070 Connector, Jumper and Component locations

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

| 2 Pin Jumper | 3 Pin Jumper | Jumper Block | Jumper Cap |
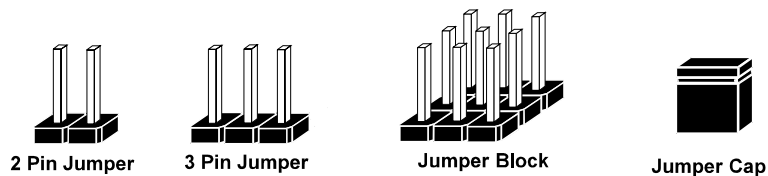
If a jumper has three pins for example, labelled PIN1, PIN2, and PIN3. You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams look and what they represent.

JUMPER DIAGRAMS

Jumper Cap looks like this
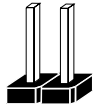
2 pin Jumper looks like this
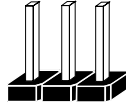
3 pin Jumper looks like this
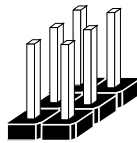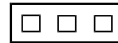
Jumper Block looks like this
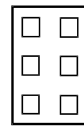
JUMPER SETTINGS

2 pin Jumper closed(enabled)
looks like this

1
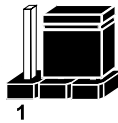
3 pin Jumper
2-3 pin closed(enabled)
looks like this

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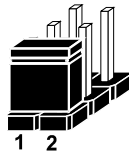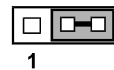
Jumper Block
1-2 pin closed(enabled)
looks like this

1 2
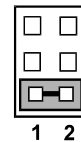
2-4. COM CONNECTOR

The system possesses four communication port connectors namely: COM1, COM2, COM3, and COM4. All COM port are designed fixed for RS-232 except COM2, which is selectable for RS-232/422/485.

COM1 : COM1 Connector, DB9 male 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 / +5V / +12V selectable
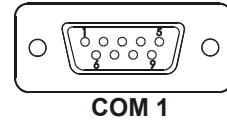
COM 1

COM2 : COM2 Connector, DB9 male connector
The pin assignments are as follows:

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 / +5V / +12V	CTS-	NC
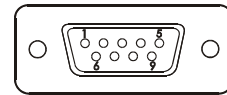
COM 2

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 / +5V / +12V selectable
10	NC
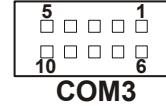
COM4 : COM4 Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI / +5V / +12V selectable
10	NC
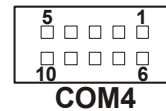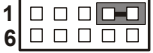
📖 All COM port's pin #9 is selectable for RI, +5V, & +12V. For more information, please refer to our "COM# RI & Voltage Selection".

2-5. COM1 RI & VOLTAGE SELECTION

JP3 (1-5): COM1 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

2-6. COM2 RI & VOLTAGE SELECTION

JP3 (6-10) : COM2 RI & Voltage Selection
The selections are as follows:

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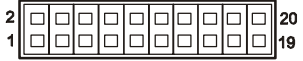
***Manufacturing Default - RI

2-7. RS232/422/485 (COM2) SELECTION

JP2 : RS-232/422/485 (COM2) Selection
COM2 is selectable for RS-232, 422, 485 function.
The jumper settings are as follows :
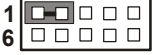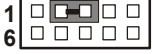
COM 2 Function	Jumper Settings (pin closed)	Jumper Illustration
RS-232	Open	
RS-422	1-2, 5-6, 7-8, 9-10 11-12, 13-14, 15-16 17-18, 19-20	
RS-485	1-3, 4-6, 7-8, 9-10 11-12, 13-14, 15-16 17-18, 19-20	

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

2-8. COM3 RI & VOLTAGE SELECTION

JP1 (1-5) : COM3 RI & Voltage Selection
The selections are as follows:
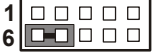
SELECTION	JUMPER SETTING (Pin Closed)	JUMPER ILLUSTRATION
+5V	1-2	
+12V	2-3	
RI	4-5	

***Manufacturing Default – RI.

2-9. COM4 RI & VOLTAGE SELECTION

JP1 (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.

2-10. SOLID STATE DISK SOCKET

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

```
32 □□□□□□□□□□□□□□□ 17
 □         SSD
1 □□□□□□□□□□□□□□□ 16
```
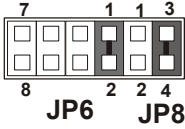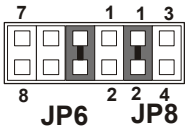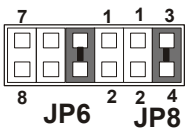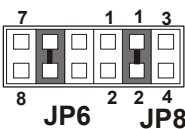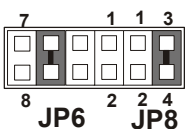
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	17	SD3
2	GND	18	SD4
3	GND	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE
7	SA5	23	SA10
8	SA4	24	OE
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	SA13
13	SD0	29	SA14
14	SD1	30	VCC
15	SD2	31	WE
16	GND	32	VCC

2-11. SSD MEMORY MAPPING SELECTION

JP6, JP8 : SSD Memory Mapping Selections
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 SETTING (pin closed)		JUMPER ILLUSTRATION
	JP6	**JP8**	
CC000h-CDFFFh	1-2	3-4	
D0000h-D1FFFh	3-4	1-2	
D4000h-D5FFFh	3-4	3-4	
D8000h-D9FFFh	5-6	1-2	
DC000h-DDFFFh	5-6	3-4	

*** Manufactory default --- CC000h--CDFFFh.

2-12. FLOPPY DISK DRIVE CONNECTOR

FDD1 : Floppy Disk Drive Connector
The pin assignments are as follows:

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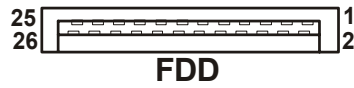
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	VCC	14	STEP
2	INDEX	15	GND
3	VCC	16	WDATA
4	DR0	17	GND
5	VCC	18	WGATE
6	DSKCHG	19	NC
7	NC	20	TRK0
8	NC	21	NC
9	NC	22	WRTPRTJ
10	MTR0	23	GND
11	NC	24	RDATA
12	FDIR	25	GND
13	RPM	26	HDSEL

2-13. HARD DISK DRIVE CONNECTOR

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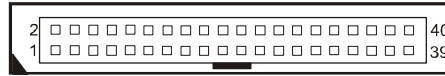
IDE1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	GND	20	PDD16
21	PDREQ	22	NC
23	PDIOW	24	GND
25	PDIOR	26	GND
27	PIORDY	28	PULL LOW
29	PDDACK	30	GND
31	IRQ14	32	NC
33	PDA1	34	P66DETECT
35	PDA0	36	PDA2
37	PDCS#1	38	PDCS#3
39	IDEACTP	40	GND

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

IDE2
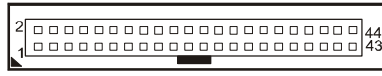
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST#	2	GND
3	SDD7	4	SDD8
5	SDD6	6	SDD9
7	SDD5	8	SDD10
9	SDD4	10	SDD11
11	SDD3	12	SDD12
13	SDD2	14	SDD13
15	SDD1	16	SDD14
17	SDD0	18	SDD15
19	GND	20	NC
21	SDREQ	22	GND
23	SDIOW	24	GND
25	SDIOR	26	GND
27	SIORDY	28	PULL LOW
29	SDDACK	30	GND
31	IRQ15	32	NC
33	SDA1	34	S66DETECT
35	SDA0	36	SDA2
37	SDCS#1	38	SDCS#3
39	IDEACTS#	40	GND
41	VCC	42	VCC
43	GND	44	NC

2-14. POWER CONNECTOR

PW1 : Power Connector
The pin assignments are as follows:

PW1

```
   1 ┌─┬─┬─┬─┬─┬─┬─┬─┬─┬─┐ 10
     │○│○│○│○│○│○│○│○│○│○│
  11 │○│○│○│○│○│○│○│○│○│○│ 20
     └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
```
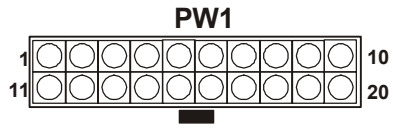
PIN	ASSIGNMENT
1	3.3V
2	3.3V
3	GROUND
4	5V
5	GND
6	5V
7	GND
8	NC
9	5VSB
10	12V
11	3.3V
12	-12V
13	GND
14	PSON
15	GND
16	GND
17	GND
18	-5V
19	5V
20	5V

2-15. ATX +12V POWER CONNECTOR

CN1 : ATX +12V Power Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	GND
3	+12V
4	+12V

CN1
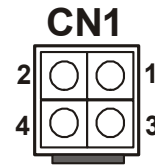
2-16. UNIVERSAL SERIAL BUS CONNECTOR

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

PIN	ASSIGNMENT
1	VCC
2	USBP0N
3	USBP0P
4	GND
5	VCC
6	USBP1N
7	USBP1P
8	GND

USB1
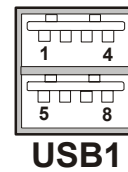
USB2 : Universal Serial Bus Connector
The pin assignment is as follows:

PIN	ASSIGNMENT
1	VCC
2	USBP2N
3	USBP2P
4	GND
5	VCC
6	USBP3N
7	USBP3P
8	GND
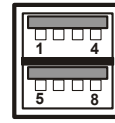
USB3 : Universal Serial Bus Connector
The pin assignment is as follows:

PIN	ASSIGNMENT
1	VCC
2	USBP4N
3	USBP4P
4	GND
5	VCC
6	USBP5N
7	USBP5P
8	GND
9	GND
10	GND
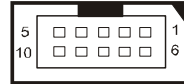
2-17. LAN CONNECTOR

LAN1: 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

LAN1
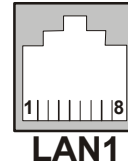
2-18. KEYBOARD CONNECTOR

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

PIN	ASSIGNMENT
1	KB DATA
2	NC
3	GND
4	VCC
5	KB CLK
6	NC

KB
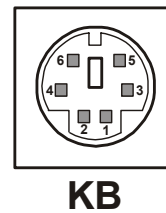
2-19. PS/2 MOUSE CONNECTOR

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

PIN	ASSIGNMENT
7	MS DATA
8	NC
9	GND
10	VCC
11	MS CLK
12	NC
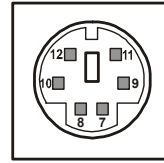
MS1

2-20. PRINTER CONNECTOR

LPT1 : Printer Connector
The pin assignments are as follows :
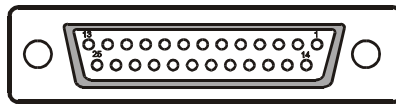
LPT1

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		

2-21. RESET CONNECTOR

J4 (18,20) : Reset Connector.
The pin assignments are as follows :

PIN	ASSIGNMENT
18	HWRSTJ
20	GROUND
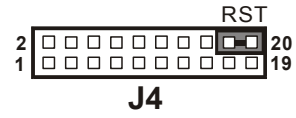
2-22. POWER BUTTON

J4 (13,15) : ATX Power Button
The pin assignments are as follows:

PIN	ASSIGNMENT
13	PW_BN1
15	PW_BN2
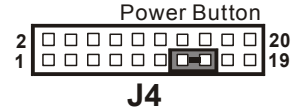
2-23. POWER LED CONNECTOR

J4 (1,3,5) : Power LED Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	PW_LED
3	PW_LED
5	GND
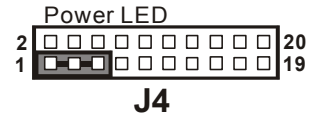
2-24. CMOS CLEAR SELECTION

JP5 : CMOS Clear Selection
The selection are as follows :

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Normal	1-2	JP5
Clear CMOS	2-3	JP5

***Manufacturing Default is set as Normal.

2-25. CPU FAN CONNECTOR

FAN1 : CPU Fan Connector.
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GROUND
2	+12V
3	FANIO1

FAN1

2-26. SYSTEM FAN CONNECTOR

FAN2 : CPU Fan Connector.
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GROUND
2	+12V
3	FANIO2

FAN2

2-27. HARD DISK DRIVE LED CONNECTOR

J4 (12,14) : Hard disk drive LED Connector
The pin assignments are as follows :
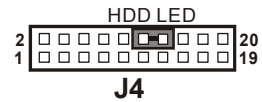
PIN	ASSIGNMENT
12	P_HLED
14	VCC

HDD LED

J4

2-28. EXTERNAL SPEAKER CONNECTOR

J4 (2,4,6,8) : External Speaker Connector
The pin assignments are as follows :
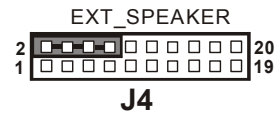
PIN	ASSIGNMENT
2	VCC
4	GND
6	NC
8	P_SPK

EXT_SPEAKER

J4

2-29. KEYLOCK CONNECTOR

J4 (7,9) : KeyLock Connector
The pin assignments are as follows :
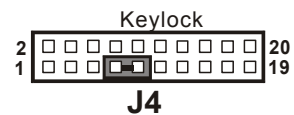
PIN	ASSIGNMENT
7	KEYLOCKJ
9	GND

Keylock

J4

2-30. EXTSMI CONNECTOR

J4 (17,19) : Extsmi Connector
The pin assignments are as follows :
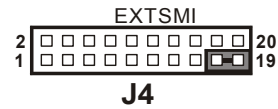
PIN	ASSIGNMENT
17	P_ESMI
19	GND

2-31. RESET / NMI / CLEAR WATCHDOG SELECTION

JP7 : Reset / NMI / Clear Watchdog Selection
The pin assignments are as follows:

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
RESET	1-2	
NMI	3-4	
CLEAR WATCHDOG	5-6	

***Manufacturing Default is set as Reset.

⌂ User may select to use the Reset or NMI watchdog. NMI, also known as Non-Maskable Interrupt, is used for serious conditions that demand the processor's immediate attention, it cannot be ignored by the system unless it is shut off specifically. To clear NMI command, user should short the "Clear Watchdog" pin via push button.

2-32. VGA CONNECTOR

VGA1 : VGA Connector
The pin assignments are as follows:
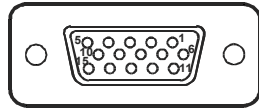
VGA1

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

2-33. SOUND CONNECTOR

Sound connector is consists of Line-In, Line-Out, Microphone and CD-In.

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

PIN	ASSIGNMENT
1	GND
2	AUDIO OUT LEFT
3	GND
4	GND
5	AUDIO OUT RIGHT
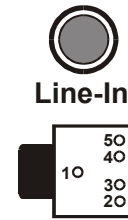
Line-In : Line-In Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	LINE-IN LEFT
3	GND
4	GND
5	LINE-IN RIGHT
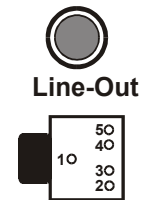
Mic-In : Microphone Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	MIC1
3	GND
4	GND
5	NC
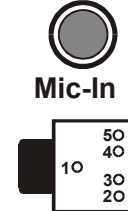
CD-IN1 : CD-IN Connector
The pin assignments are as follows:

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

CD-IN1

2-34. INFRARED CONNECTOR

IRDA : Infrared Connector
The pin assignments are as follows:

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

IRDA
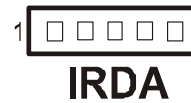
2-35. LAN LED CONNECTOR

J3: LAN LED Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	SPLEDJ
2	LLEDVCC
3	LILEDJ
4	ACTLEDJR

J3
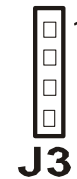
2-36. HDD/POWER LED CONNECTOR

J5: HDD/Power LED Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	P_HILED
3	PW_LED2
4	GND

J5

2-37. MOBILE CPU SELECTION

JP9 : Mobile CPU Selection
The selection are as follows :

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Normal	open	JP9
Mobile CPU	1-2	JP9

***Manufacturing Default is set as Normal.

2-38. GAMEPORT CONNECTOR

GAME1 : Gameport Connector
The pin assignments are as follows:
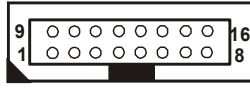
GAME1

PIN	ASSIGNMENT
1	+5 VDC
2	BUTTON 1
3	JOYSTICK 1 – X
4	GND
5	GND
6	JOYSTICK 1 – Y
7	BUTTON 2
8	+5 VDC
9	+5 VDC
10	BUTTON 3
11	JOYSTICK 2 – X
12	MIDI TRANSIT
13	JOYSTICK 2 – Y
14	BUTTON 4
15	MIDI RECEIVE

2-39. AUDIO CONNECTOR

J2 : Audio Connector
The pin assignments are as follows:
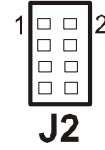
PIN	ASSIGNMENT
1	VCC12
2	VCC12
3	GND
4	GND
5	LO-L
6	LO-R
7	GND
8	GND

J2

2-40. MEMORY INSTALLATION

This system is enhanced with 2 SDRAM banks.

DRAM BANK CONFIGURATION

DIMM 1	DIMM 2	TOTAL MEMORY
32M		32M
32M	32M	64M
32M	64M	96M
64M		64M
64M	32M	96M
64M	64M	128M
64M	128M	192M
128M		128M
128M	64M	192M
128M	128M	256M
128M	256M	384M
256M		256M
256M	128M	384M
256M	256M	512M
512M		512M

2-41. PCI CONNECTOR

PCI1 : PCI Connector.
The pin assignments are as follow:
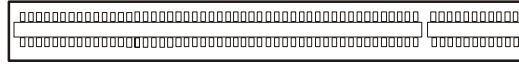
PCI1

PCI Bus:

B		A		B		A	
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
B1	-12V	A1	TRST#	B31	+3.3V	A31	AD18
B2	TCK	A2	+12V	B32	AD17	A32	AD16
B3	GND	A3	TMS	B33	C/BE2#	A33	+3.3V
B4	TDO	A4	TDI	B34	GND	A34	FRAME#
B5	+5V	A5	+5V	B35	IRDY#	A35	GND
B6	+5V	A6	INTA#	B36	+3.3V	A36	TRDY#
B7	INTB#	A7	INTC#	B37	DEVSEL#	A37	GND
B8	INTD#	A8	+5V	B38	GND	A38	STOP#
B9	REQ3#	A9	CLKC	B39	LOCK#	A39	+3.3V
B10	REQ1#	A10	+5V(I/O)	B40	PERR#	A40	SDONE
B11	GNT3#	A11	CLKD	B41	+3.3V	A41	SB0#
B12	GND	A12	GND	B42	SERR#	A42	GND
B13	GND	A13	GND	B43	+3.3V	A43	PAR
B14	CLKA	A14	GNT1#	B44	C/BE1#	A44	AD15
B15	GND	A15	RST#	B45	AD14	A45	+3.3V
B16	CLKB	A16	+5V(I/O)	B46	GND	A46	AD13
B17	GND	A17	GNT0#	B47	AD12	A47	AD11
B18	REQ0#	A18	GND	B48	AD10	A48	GND
B19	+5V(I/O)	A19	REQ2#	B49	GND	A49	AD09
B20	AD31	A20	AD30	B52	AD08	A52	C/BE0#
B21	AD29	A21	+3.3V	B53	AD07	A53	+3.3V
B22	GND	A22	AD28	B54	+3.3V	A54	AD06
B23	AD27	A23	AD26	B55	AD05	A55	AD04
B24	AD25	A24	GND	B56	AD03	A56	GND
B25	+3.3V	A25	AD24	B57	GND	A57	AD02
B26	C/BE3#	A26	GNT2#	B58	AD01	A58	AD00
B27	AD23	A27	+3.3V	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

2-42. AGP CONNECTOR

AGP1 : AGP Connector.
The pin assignments are as follow:

AGP1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	+12V	A34	VDDQ
A2	TYPEDET	A35	AD22
A3	RESERVED	A36	AD20
A4	USB-	A37	GND
A5	GND	A38	AD18
A6	INTA	A39	AD16
A7	RST	A40	VDDQ
A8	GNT	A41	FRAME
A9	VCC3.3	A42	RESERVED
A10	ST1	A43	GND
A11	RESERVED	A44	RESERVED
A12	PIPE	A45	VCC3.3
A13	GND	A46	TRDY
A14	WBF	A47	STOP
A15	SBA1	A48	PME
A16	VCC3.3	A49	GND
A17	SBA3	A50	PAR
A18	SB_STB	A51	AD15
A19	GND	A52	VDDQ
A20	SBA5	A53	AD13
A21	SBA7	A54	AD11
A22	RESERVED	A55	GND
A23	GND	A56	AD9
A24	RESERVED	A57	C/BE0
A25	VCC3.3	A58	VDDQ
A26	AD30	A59	AD_STB0
A27	AD28	A60	AD6
A28	VCC3.3	A61	GND
A29	AD26	A62	AD4
A30	AD24	A63	AD2
A31	GND	A64	VDDQ
A32	AD_STB1	A65	AD0
A33	C/BE3	A66	RESERVED

PIN	ASSIGNMENT	PIN	ASSIGNMENT
B1	OVRCNT	B34	VDDQ
B2	+5V	B35	AD21
B3	+5V	B36	AD19
B4	USB+	B37	GND
B5	GND	B38	AD17
B6	INTB	B39	C/BE
B7	CLK	B40	VDDQ
B8	REQ	B41	IRDY
B9	VCC3.3	B42	RESERVED
B10	ST0	B43	GND
B11	ST2	B44	RESERVED
B12	RBF	B45	VCC3.3
B13	GND	B46	DEVEL
B14	RESERVED	B47	VDDQ
B15	SBA0	B48	PERR
B16	VCC3.3	B49	GND
B17	SBA2	B50	SERR
B18	SB_STB	B51	C/BE1
B19	GND	B52	VDDQ
B20	SBA4	B53	AD14
B21	SBA6	B54	AD12
B22	RESERVED	B55	GND
B23	GND	B56	AD10
B24	RESERVED	B57	AD8
B25	VCC3.3	B58	VDDQ
B26	AD31	B59	AD_STB0
B27	AD29	B60	AD7
B28	VCC3.3	B61	GND
B29	AD27	B62	AD5
B30	AD25	B63	AD3
B31	GND	B64	VDDQ
B32	AD_STB1	B65	AD1
B33	AD23	B66	RESERVED

SOFTWARE UTILITIES

This chapter comprises the detailed information of VGA driver, LAN driver, Sound driver, and flash BIOS update. It also describes on how to install the watchdog timer.

Section includes:

● VGA Driver Utility

● Flash BIOS Update

● LAN Driver Utility

● SOUND Driver Utility

● Watchdog Timer Configuration

3-1. INTRODUCTION

Enclosed with our PS-8070 package, you will find a CD ROM disk containing all types of drivers we have.   As a PS-8070 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\	For LAN Driver installation
D:\Sound\	For Sound driver installation
D:\Utility\Infinst_autol.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-8070 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\:

1. Win 9x program
2. WinNT4.0 program
3. Win 2000 program
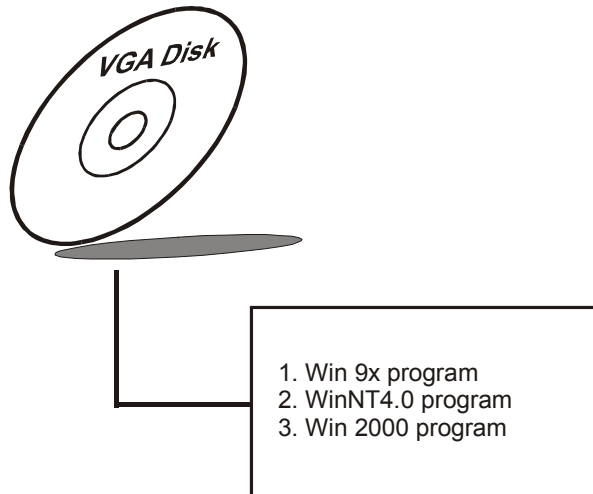
3-2-1. Installation of VGA Driver

(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\SETUP.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-8070 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-8070 vendor.
(3) Type the pathname to Awdflash.exe and execute the BIOS update with file b55xxxxx.bin
   C:\UTIL\AWDFLASH\AWARDFLASH   H50xxxxx.bin
(4) The screen will display the table below:

```
┌─────────────────────────────────────────────────────────┐
│              FLASH MEMORY WRITER v7.xx                   │
│        ( C ) Award Software 2000 All Rights Reserved     │
├─────────────────────────────────────────────────────────┤
│                                                          │
│   For i845-ITE8712-6A69RP69C-0        DATE : 05/06/01    │
│          Flash Type   -   SST   49LF004A /3.3V           │
│                                                          │
│  File Name to Program : B55xxxxx.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 i845-ITE8712-6A69RP69C-0          DATE : 05/06/01
        Flash Type   -   SSL   49LF004A /3.3V

File Name to Program : H50xxxxx.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-8070 Mainboard is enhanced with LAN function that can support various network adapters. The content of the LAN driver is found as follows :


```
1. Windows 9x
2. Windows NT
3. Windows 2000
4. Netware
5. DOS
6. OS2
7. Linux
8. Unix
```
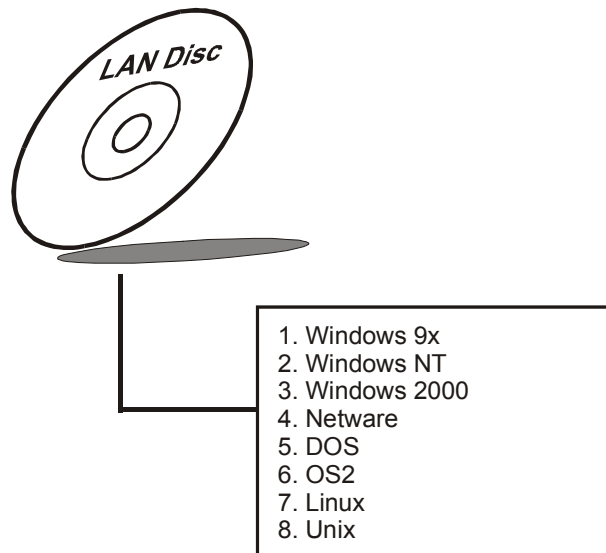
3-4-2. Installation Procedure for Windows 9x

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

1. Win 98 program
2. Win NT 4.0 program
3. Win 2000 program
4. Win XP Program
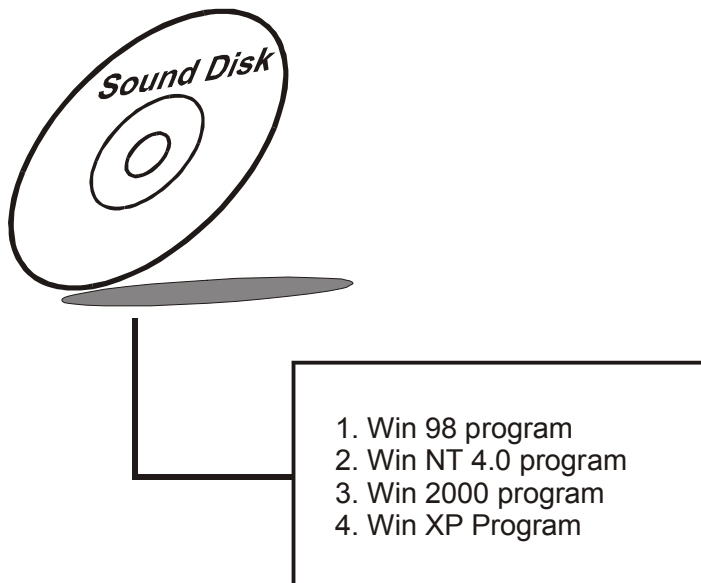
3-5-2. Installation Procedure for Windows 9x/NT/2000

(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 Selection" 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-8070 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

AWARD BIOS SETUP

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

- Password Setting

- Save and Exit Setup

4-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The Prox-3600 Socket 370 Mainboard 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:

```
Application Program

Operation System

BIOS

System Hardware
```

4-2. 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:

Phoenix – AwardBIOS CMOS Setup Utility

►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	↑↓→← : Select Item
F10 : Save & Exit Setup	
Change CPU's Clock & Voltage	

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.

4-3. THE STANDARD CMOS FEATURES

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

Phoenix – AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy) Thu, Sep 4 2003 Time (hh:mm:ss) 15 : 22 : 0	Item Help
► IDE Primary Master [ST3200014A] ► IDE Primary Slave [None] ► IDE Secondary Master [QSI CD-ROM SCR-242] ► IDE Secondary Slave [None] Drive A [1.44M, 3.5 in.] Drive B [None] Video [EGA/VGA] Halt On [All, But Keyboard] Base Memory 640K Extended Memory 1039360K Total Memory 1040384K	Menu Level ► Change the day, month, year and century

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

Standard 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.   Note that as you highlight each item, the description of the selected item is found on the right side of the screen.

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 BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detect its specifications during POST, every time system boots.

If you do not want to select drive type AUTO, other methods of selecting drive type are available:

1. Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for hard drive types 1 through 45.

2. Select USER and enter values into each drive parameter field.

3. Use the IDE HDD AUTO DETECTION function in Setup.

Here is a brief explanation of drive specifications:

- Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any predefine type are classified as type USER.

- Size: Disk drive capacity (approximate). Note that this size is usually greater than the size of a formatted disk given by a disk-checking program.

- Cyls: number of cylinders.

- Head: number of heads.

- Precomp: write precompensation cylinders.

- Landz: landing zone.

- Sector: number of sectors.

- Mode: Auto, Normal, Large or LBA.

- Auto: The BIOS automatically determines the optimal mode.

- Normal: Maximum number of cylinders, heads, sectors supported are 1024, 16 and 63.

- Large: For drives that do not support LBA and have more than 1024 cylinders.

▪ LBA (Logical Block Addressing): During drive accesses, the IDE controller transforms the data address described by sector, head and cylinder number into a physical block address, significantly improving data transfer rates. For drives greater than 1024 cylinders.

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 Mono, Color 40, VGA/EGA, and Color 80.

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

4-4. THE ADVANCED BIOS FEATURES

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

Phoenix – AwardBIOS CMOS Setup Utility
Advanced BIOS Features

Virus Warning	[Disabled]	Item Help
CPU L1 & L2 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Floppy]	Menu Level ►
Second Boot Device	[HDD-0]	
Third Boot Device	[LS120]	
Boot Other Device	[Enabled]	Allows you to choose
Swap Floppy Drive	[Disabled]	the VIRUS warning
Boot Up Floppy Seek	[Disabled]	feature for IDE Hard
Boot Up NumLock Status	[On]	Disk boot sector
Gate A20 Option	[Fast]	protection. If this
Typematic Rate Setting	[Disabled]	function is enabled and
X Typematic Rate (Chars/Sec)	6	someone attempt to
X Typematic Delay (Msec)	250	write data into this area,
Security Option	[Setup]	BIOS will show a
APIC Mode	[Enabled]	warning message on
MPS Version Control For OS	[1.4]	screen and alarm beep
OS Select for DRAM > 64MB	[Non-OS2]	
HDD S.M.A.R.T. Capability	[Disabled]	
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

Advanced BIOS Features Setup Screen

The "ADVANCED 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.   When this function is enabled, the BIOS will supervise the boot sector and partition table of the hard disk drive for any attempt for modification.

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 load the operating system in a sequence selected by 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. The choices are 6, 8, 10, 12, 15, 20, 24, and 30.

TYPEMATIC DELAY (MSEC):

The item sets the delay time after the key is held down before it begins to repeat the keystroke. The choices are 250, 500, 750, and 1000.

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.

MPS VERSION CONTROL FOR OS :

The BIOS supports versions 1.1 and 1.4 of the Intel multiprocessor specification. Select the version supported by the operating system running on this computer.

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.

4-5. ADVANCED CHIPSET FEATURES

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

Phoenix – AwardBIOS CMOS Setup Utility
Advanced Chipset Features

DRAM Timing Selectable	[By SPD]	Item Help
X CAS Latency Time	2.5	
X Active to Precharge Delay	7	Menu Level ►
X DRAM RAS# to CAS# Delay	3	
X DRAM RAS# Precharge	3	
Memory Frequency For	[Auto]	
System BIOS Cacheable	[Enabled]	
Video BIOS Cacheale	[Disabled]	
Memory Hole At 15M-16M	[Disabled]	
Delayed Transaction	[Enabled]	
AGP Aperture Size (MB)	[64]	
** On-Chip VGA Setting **		
On-Chip VGA	[Enabled]	
On-Chip Frame Buffer Size	[8MB]	
Boot Display	[Auto]	
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

Advanced Chipset Features Setup

The parameters in this setup 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.

DRAM TIMING SELECTABLE:

The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

CAS LATENCY TIME:

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

ACTIVE TO PRECHARGE DELAY:

This item controls the number of DRAM clocks for TRAS.

DRAM RAS# TO CAS# DELAY:

This field let's 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.

DRAM RAS# PRECHARGE:

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.

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 APERTURE SIZE:

This field determines the effective size of the Graphic Aperture used for a particular GMCH configuration. It can be updated by the GMCH-specific BIOS configuration sequence before the PCI standard bus enumeration

sequence takes place.   If it is not updated then a default value will select an aperture of maximum size.

IO CHANNEL CHECK NMI:

This field enables or disables IO channel check NMI.   Before selecting this function, the user should check first that NMI function is enabled as described in chapter 2 (Reset/NMI/Clear Watchdog Selection)

4-6. INTEGRATED PERIPHERALS

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

Phoenix – AwardBIOS CMOS Setup Utility
Integrated Peripherals

On-Chip Primary PCI IDE	[Enabled]	Item Help
IDE Primary Master PIO	[Auto]	
IDE Primary Slave PIO	[Auto]	Menu Level ▶
IDE Primary Master UDMA	[Auto]	
IDE Primary Slave UDMA	[Auto]	
On-Chip Secondary PCI IDE	[Enabled]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
USB Controller	[Enabled]	
USB 2.0 Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	
Init Display First	[PCI Slot]	
AC97 Audio	[Auto]	
Onboard LAN	[Enabled]	
Init Display First	[Onboard/AGP]	
IDE HDD Block Mode	[Enabled]	
BIOS Flash Function	[Enabled]	
IDE HDD Block Mode	[Enabled]	
Power ON Function	[BUTTON ONLY]	
X KB Power ON Password	enter	
X Hot Key Power ON	Ctrl-F1	
Onboard FDC Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
X RxD , TxD Active	Hi, Lo	
X IR Transmission Delay	Enabled	
X UR2 Duplex Mode	Half	
X USE IR Pins	IR-Rx2Tx2	
Onboard Parallel Port 1	[378/IRQ4]	
Parallel Port Mode	[SPP]	
X EPP Mode Select	EPP1.7	
X ECP Mode Use DMA	3	
PWRON after PWR-Fail	[Off]	
Game Port Address	[201]	
Midi Port Address	[330]	

Midi Port IRQ	[5]	
Onboard Serial Port 3	[3E8]	
Serial Port 3 Use IRQ	[IRQ10]	
Onboard Serial Port 4	[2E8]	
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, press the <F1> key, the all options for the desired selection will be displayed for choice.

✍ In bios setup menu item if support USB device boot, it will cause that Win9x detects the same storage twice when reboot the system, then USB HDD will fail. Note: this cause only happen under Win9x, the phenomenon is a limitation.

ON-CHIP PRIMARY PCI IDE
ON-CHIP 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 MASTER/SLAVE PIO:
IDE 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 MASTER/SLAVE UDMA:
IDE SECONDARY MASTER/SLAVE UDMA:
UDMA (Ultra DMA) is a DMA data transfer protocol, that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s.   The implementation of UDMA is possible only if your IDE hard drive supports it and the operating environ-ment 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 MOUSE SUPPORT:

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

AC97 AUDIO:

This item allows you to decide to enable or disable the 810 chipset family to support AC97 Audio.

INIT DISPLAY FIRST:

This item allows you to decide to active whether PCI Slot or on-chip VGA first.

BIOS FLASH FUNCTION:

This item allows you to enable the BIOS Flash function.

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.

POWER ON FUNCTION:

This item allows you the select power on event.

KB POWER ON PASSWORD:

This item allows you to set the keyboard power on password.

HOT KEY POWER ON:

This item allows you to select the hot key of the keyboard power on.
The choice: Ctrl-F1~F12.

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
ONBOARD SERIAL 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.

RxD, TxD ACTIVE:
This item allows you to determine the active of RxD, TxD.

IR TRANSMISSION DELAY:
This item allows you to enable/disable IR transmission delay.

UR2 DUPLEX MODE:
This item allows you to select the IR half/full duplex function.

USE IR PINS:
This item allows you to select IR transmission routes, one is RxD2m, TxD2 (COM Port) and the other is IR-Rx2Tx2.

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

EPP MODE SELECT:
Select EPP port type 1.7 or 1.9.

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. The choice: Off, On, Former-Sts.

PWRON AFTER PWR-FAIL:
> This item allows you to select if you want to power on the system after power failure.

GAME PORT ADDRESS:
> This item allows you to select the Game Port Address.

MIDI PORT ADDRESS:
> This item allows you to select the Midi Port Address.

MIDI PORT IRQ:
> This item allows you to select the corresponding interrupt for Midi Port.

ONBOARD SERIAL PORT 3:
ONBOARD SERIAL PORT 4:
> Select an address for the third and forth serial ports.

SERIAL PORT 3 USE IRQ:
SERIAL PORT 4 USE IRQ:
> Select a corresponding interrupt for the third and forth serial ports.

4-7. POWER MANAGEMENT SETUP

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

Phoenix – AwardBIOS CMOS Setup Utility
Power Management Setup

ACPI Function	[Enabled]	Item Help
Power Management	[User Define]	
MODEM Use IRQ	[3]	Menu Level ►
Suspend Mode	[Disabled]	
Soft-Off by PWR-BTTN	[Instant-Off]	
Wake-Up by PCI card	[Enabled]	
Power On by Ring	[Enabled]	
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]	

↑↓→←: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 Screen

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 the following modes:
a. HDD Power Down
b. Suspend Mode

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.

SOFT-OFF BY PWR-BTTN:
Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung".

WAKE-UP BY PCI CARD:
An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from the soft-off state.

POWER ON BY RING:
This category enables or disables the powering up of the system when the modem receives a call while the computer is in Soft-Off state.

RESUME BY ALARM:
When enabled, you can set the date and time at which the RTC alarm awakens the system from Suspend mode.

PM EVENTS:
PM Events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything, which occurs to a device, which is configured as Enabled, even when the system is in a power down mode.

❶Primary IDE 0   ❷Primary IDE 1
❸Secondary IDE 0   ❹Secondary IDE 1
❺FDD, COM, LPT Port   ❻PCI PIRQ[A-D]#

4-8. PNP/PCI CONFIGURATION

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

Phoenix – AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

PNP OS Installed	[No]	Item Help
Reset Configuration Data	[Disabled]	
		Menu Level ►
Resources Controlled By	[Auto (ESCD)	
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 can not 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:

When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DMA channel.

PCI/VGA PALETTE SNOOP:

Leave this field at disabled.

4-9. PC HEALTH STATUS

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

Phoenix – AwardBIOS CMOS Setup Utility
PC Health Status

DOS Shutdown Temperature	[Disabled]	Item Help
Current CPU Temperature	58℃/136℉	
Current CPU Fan Speed	4687 RPM	
Current SYSTEM Fan Speed	0 RPM	
Vcore	1.45V	
3.3 V	3.37V	Menu Level ►
+ 5 V	5.10V	
+12V	11.49V	
-12V	(-)12.28V	
-5V	(-) 5.04V	
VBAT (V)	3.21V	
5VSB (V)	4.99V	
Shutdown Temperature	[Disabled]	

↑↓→←: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 Setup Screen

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

CPU TEMPERATURE:
This item displays the current CPU temperature.

CPU FAN SPEED:
This item displays the CPU FAN1 operating speed.

VCORE:
This item shows you the current system voltage.

3.3V / +5V / +12V / -12V / -5V:
   Show you the voltage of 3.3V/+5V/+12V/-12V/-5V.

SHUTDOWN TEMPERATURE:
   This item allows you to set up the CPU shutdown Temperature.   This
   function is only effective under Windows 98 ACPI mode.

4-10. FREQUENCY/VOLTAGE CONTROL

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

<div align="center">

Phoenix – AwardBIOS CMOS Setup Utility
Frequency/Voltage Control

</div>

Auto Detect PCI Clk [Enabled] Spread Spectrum [Disabled]	Item Help
	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	

Frequency / Voltage Control Setup Screen

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.

4-11. 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.

4-12. 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.

4-13. 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.

4-14. 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:

Phoenix – AwardBIOS CMOS Setup Utility

►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	word

Save to CMOS and EXIT Y/N)? Y

►PnP/PCI Configura	etup
►PC Health Status	Saving

Esc : Quit   F9 : Menu in BIOS   ↑↓→← : Select Item
F10 : Save & Exit Setup

Save Data to CMOS

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.

4-14. 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:

Phoenix – AwardBIOS CMOS Setup Utility

►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	word
►PnP/PCI Configura	Quit Without Saving (Y/N)? N	etup
►PC Health Status	Saving

Esc : Quit   F9 : Menu in BIOS   ↑↓→← : Select Item
F10 : Save & Exit Setup

Abandon all Datas
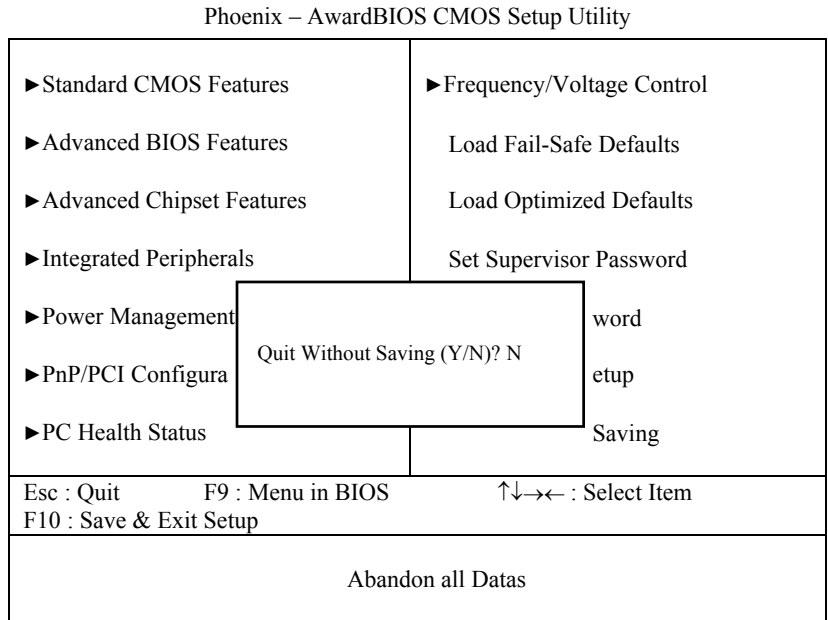
SYSTEM ASSEMBLY
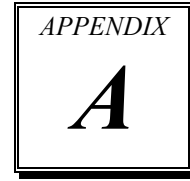
This appendix contain exploded diagram of the system.

Section includes:

● Exploded Diagram for Whole System Unit

● Exploded Diagram for CD-ROM/ FDD/ HDD

● Exploded Diagram for Removing System Case

EXPLODED DIAGRAM FOR WHOLE SYSTEM UNIT
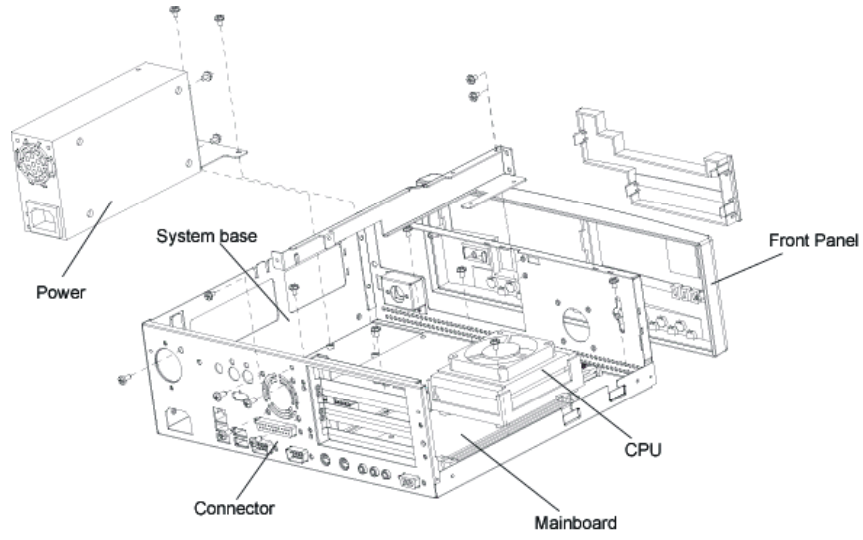
EXPLODED DIAGRAM FOR CD-ROM/ FDD/ HDD
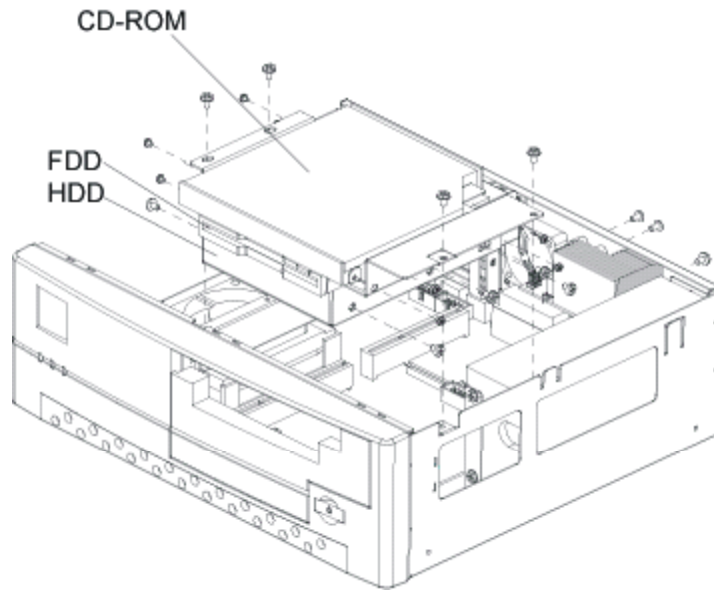
EXPLODED DIAGRAM FOR REMOVING SYSTEM CASE
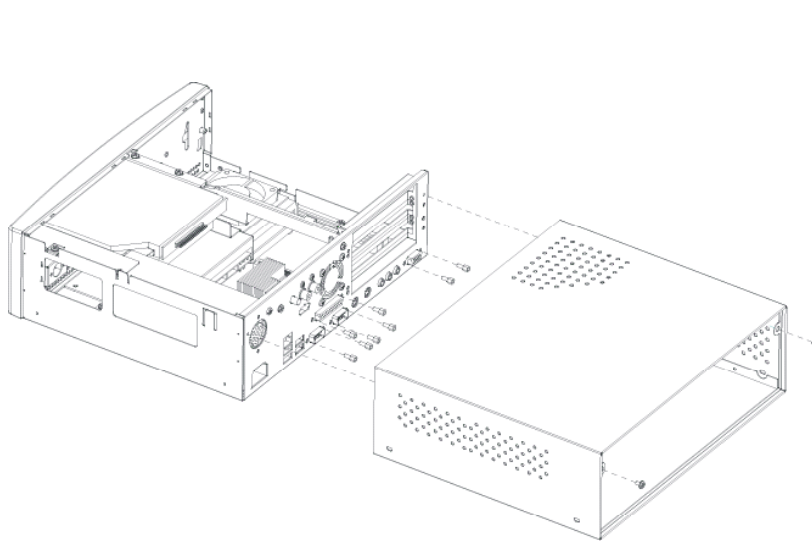
RISER CARD
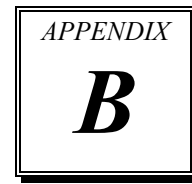
This appendix explains the riser card and the respective pin assignments of the expansion slots found in the riser card.

Section includes:

● Riser Card

● Audio Board

B-1 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-8070 Book-sized PC, you can make expansion for any other ISA card and PCI card.

There are two kinds of Riser Card, one of which is included in our PS-8070 Package.   Below, you will find illustration of the Riser card.

First Illustration:
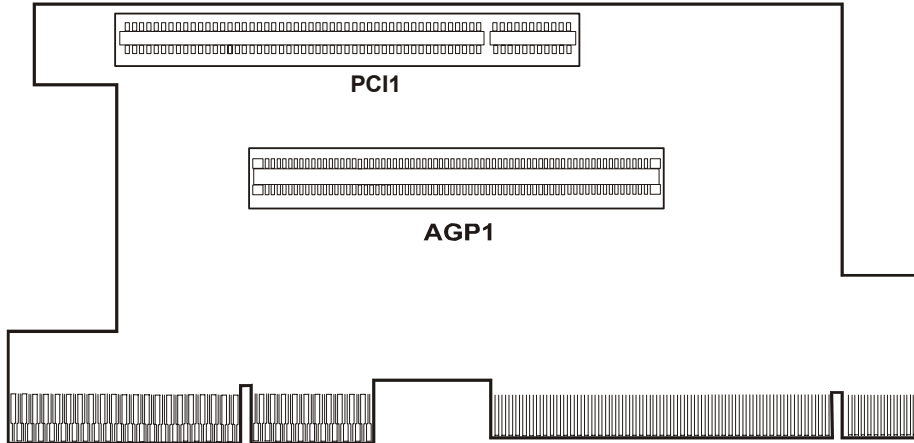
PCI1

AGP1

PROX 3770S1 has a total of 2 expansion slots:
(1) PCI1.
(2) AGP1.

Second Illustration:
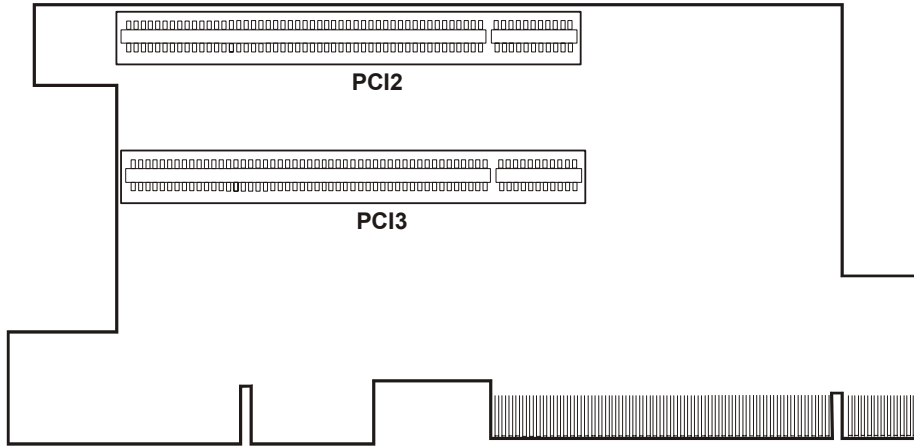
PCI2

PCI3

PROX 3770S2 has a total of 2 expansion slots:
(1) PCI2.
(2) PCI3.

B-2   AUDIO BOARD

B-2-1   Illustration:
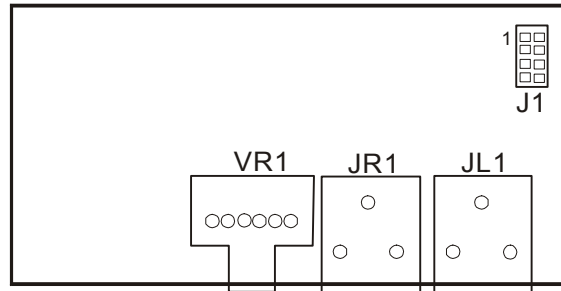
B-2-2   Reference Table:

Audio Connector   ………………………..   J1
Speaker Connector   ……………………….   JR1, JL1
Speaker Volume Controller   ………………   VR1

B-2-3 AUDIO CONNECTOR

J1 : Audio Connector. The connector is connected to PS-8070 main board.
The pin assignments are as follow:

PIN	ASSIGNMENT
1	VCC12
2	VCC12
3	GND
4	GND
5	AMP-L
6	AMP-R
7	GND
8	GND

B-2-3 SPEAKER CONNECTOR

JR1 : Speaker connector.
The pin assignments are as follow:

PIN	ASSIGNMENT
1	OUT2M
2	NC
3	OUT2P

JR1
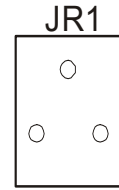
JL1 : Speaker connector.
The pin assignments are as follow:

PIN	ASSIGNMENT
1	OUT1M
2	NC
3	OUT1P

JL1
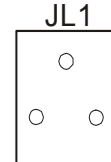
B-2-3 SPEAKER VOLUME CONTROLLER

VR1 : Speaker volume controller.
VR1 is to control the Speaker volume in Prox-3770.
The control functions are as follows :

VR1

Controller	Volume
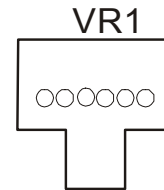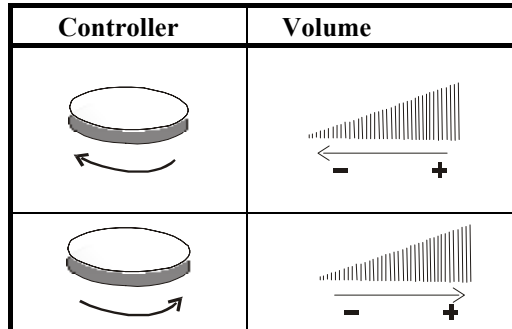
TECHNICAL SUMMARY
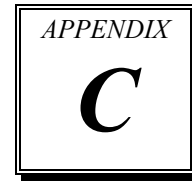
This section introduce you the maps concisely.

Section includes:

● Block Diagram

● Interrupt Map

● RTC (Standard) RAM Bank

● Timer & DMA Channels Map

● I / O & Memory Map

BLOCK DIAGRAM
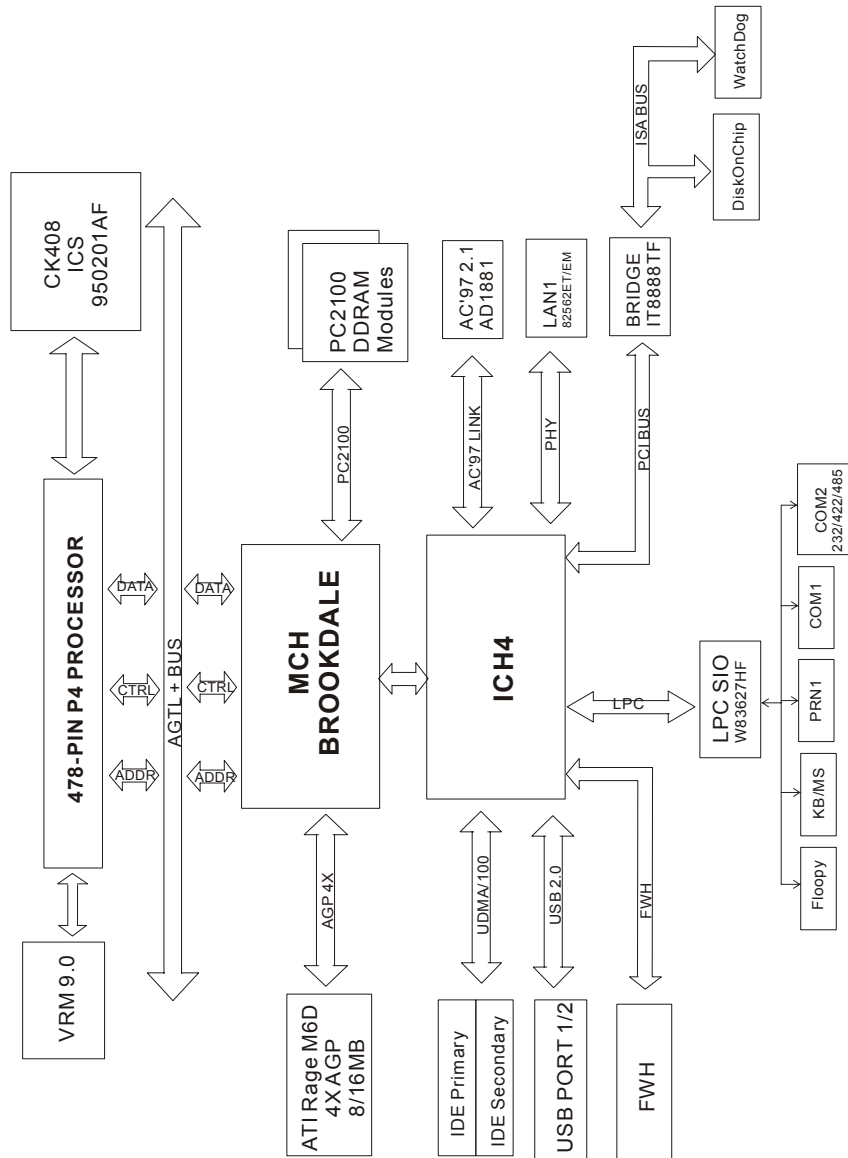
INTERRUPT MAP

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	Parallel Port 2
6	Floppy Disk adapter
7	Parallel port 1
8	RTC clock
9	Available
10	Serial 3
11	Serial 4
12	PS/2 Mouse
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.

TROUBLE SHOOTING

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)

PRINTED IN TAIWAN