USER'S MANUAL

PS-8800

Socket 370
(For VIA EDEN System)
Point-of-Sale System

PS-8800 M0

PS-8800 POS System

OPERATION MANUAL

COPYRIGHT NOTICE

ACKNOWLEDGEMENTS

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

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

1

INTRODUCTION

This chapter gives you the information for PS-8800. It also outlines the System specifications.

Section includes:

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

1-1. ABOUT THIS MANUAL

Thank you for purchasing our PS-8800 POS. The PS-8800 is an updated system designed to be comparable with the highest performance of IBM AT personal computers. It provides faster processing speed, greater expandability, and can handle more tasks. This manual is designed to assist you on how to make the proper installation to set up the system. It contains five chapters. The user can use this manual for configuration according to the following chapters :

Chapter 1 Introduction

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

Chapter 2 System Configuration

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

Chapter 3 Software Utilities

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

Chapter 4 Award BIOS Setup

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

Appendix A System Assembly

This section gives you the exploded diagram for the whole system unit.

Appendix B Technical Summary

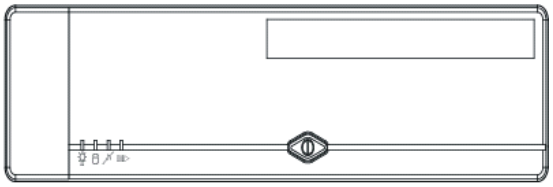
This section gives you the information about the Technical maps.

Appendix C Trouble Shooting

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

1-2. CASE ILLUSTRATION

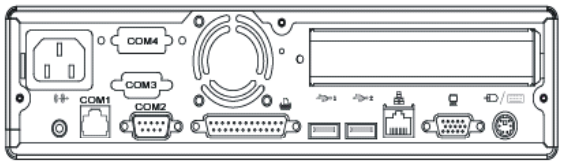
System Front View



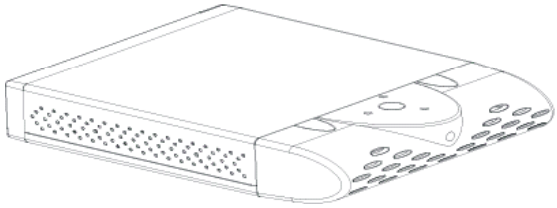
With CD-ROM & HDD Drive Bay

With HDD Only Drive Bay

System Rear View



System Back Cover View



1-3. SYSTEM SPECIFICATIONS

- **CPU PROCESSOR:**
  VIA Eden processor in mBGA packet.
  400/533/733MHz.
  Auto detect voltage regulator.

- **MEMORY :**
  One 184pin DDR-DIMM sockets on board.
  Support up to 1GB.

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

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

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

- **KEYBOARD/ MOUSE CONNECTOR :**
  Combo with mini-Din 6 Pin on Rear Panel
  Support Y-Cable

- **BUS SUPPORT :**
  External PCI Slot.

- **DISPLAY :**
  Build-in CLE266.
  Integrates graphic accelerator in the chipset.
  Supports CRT resolution up to 1280x1024.
  One 15-pin VGA D-sub connector on rear panel.

- **IDE INTERFACE :**
  Two EIDE Channels, Support Ultra ATA 33/66/100/133.
  Support 40 Pins Connector & 44 Pins Connector.

- **SERIAL PORT :**
  Four high speed 16550 Compatible UARTs with Send / Receive 16 Byte FIFOs. COM1/2/3/4 = RS-232;
  MIDI Compatible.
  Programmable Baud Rate Generator.
  All COM Ports Support +5V/+12V with RI signal.

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

- **LAN ADAPTER :**
  VIA VT6103 PHY Chip
  10/100BaseTx Ethernet
  One RJ-45 jack on rear panel
  Supports Alert-on-LAN.

- **USB CONNECTOR :**
  Two USB 1.1/2.0 connectors on Front Bezel

- **SOUND :**
  VIA VT1612A (AC'97 Codec)
  Fully Compliant AC'97 Analog I/O Component
  16-Bit Stereo Full-Duplex Codec
  Stereo Line-Level Output
  Interface: Line-out connector on rear bezel.

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

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

- **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 45°C. (32°F~113°F)

- **POWER SUPPLY :**
  100watts ATX power supply.
  Supports 90V ~ 265V auto detect power voltage.

- **DIMENSIONS :**
  CASE: 260 mm x 319 mm x 62mm (10.24" x 12.56" x 2.44')
  MAIN BOARD: 250 mm x 230 mm (9.84" x 9.05")

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

1-4. SAFETY PRECAUTIONS

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

1. **Check the Line Voltage**
   a. The operating voltage for the power supply should cover the range of 90VAC-265VAC, otherwise the system may be damaged.

2. **Environmental Conditions**
   a. Place your PS-8800 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-8800 POS system.
   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-8800 when it's been left outdoors in a cold winter day.
   d. Bear in mind that the operating ambient temperature is from 0°C up to +45°C (32°F~113°F).
   e. Avoid moving the system rapidly from a hot place to a cold place or vice versa because condensation may come from inside of the system.
   f. Place PS-8800 against strong vibrations, which may cause hard disk failure.

   g. Do not place the system too close to any radio active device. Radioactive device may cause interference.

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

4. Good Care

a. When the outside of the case is stained, remove the stain with neutral washing agent with a dry cloth.

b. Never use strong agents such as benzene and thinner to clean the system.

c. If heavy stains are present, moisten a cloth with diluted neutral washing agent or with alcohol and then wipe thoroughly with a dry cloth.

d. If dust has been accumulated on the outside, remove it by using a special made vacuum cleaner for computers.

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

SYSTEM CONFIGURATION

CHAPTER

2

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

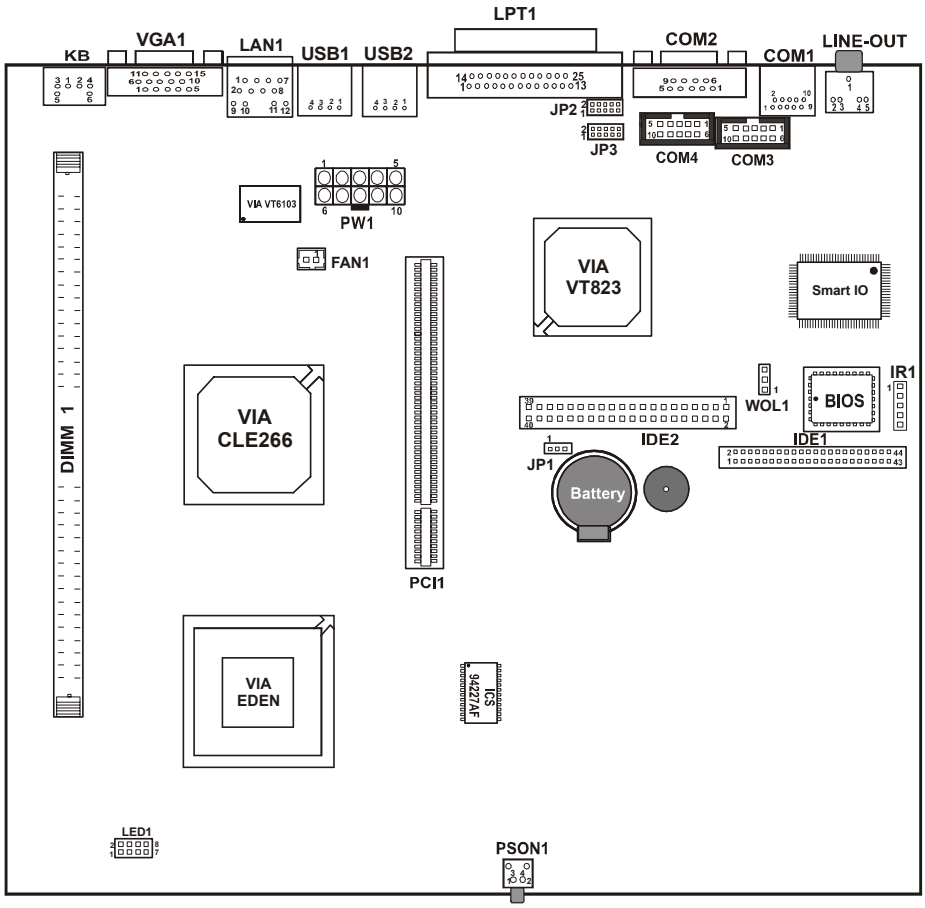
Section includes:

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

2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

COM Connector	COM1, COM2
.....	COM3, COM 4
COM1 RI & Voltage Selection …….	JP2(1-5)
COM2 RI & Voltage Selection …….	JP2(6-10)
COM3 RI & Voltage Selection …….	JP3(1-5)
COM4 RI & Voltage Selection …….	JP3(6-10)
Keyboard/ Mouse Connector	KB
VGA Connector .....…	VGA1
LAN Connector .....…	LAN
Universal Serial Bus Connector	USB1, USB2
Power Button …….	PSON1
System Fan Connector ……..	FAN1
CMOS Clear Selection ……..…….	JP1
Line-Out Connector .....…	LINE-OUT
Power Connector	PW1
Hard Disk Drive Connector	IDE1, IDE2
Printer Connector .....…..	LPT1
PCI Connector …….……	PCI
LED Connector ……..	LED1
Infrared Connector (Optional) ……	IR
Wake-On LAN Connector …….	WOL1
Memory Installation ….....…	DIMM1

2-2. COMPONENT LOCATIONS



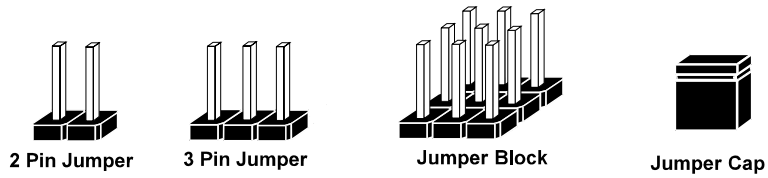
PS-8800 Connector, Jumper and Component locations

2-3. HOW TO SET THE JUMPERS

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

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

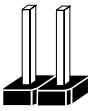
JUMPERS AND CAPS



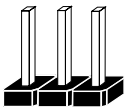
If a jumper has three pins for example, labelled PIN1, PIN2, and PIN3. You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams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

JUMPER DIAGRAMS

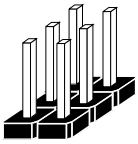
Jumper Cap looks like this



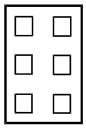
2 pin Jumper looks like this



3 pin Jumper looks like this

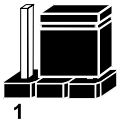


Jumper Block looks like this

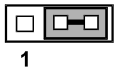


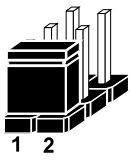
JUMPER SETTINGS

2 pin Jumper closed(enabled)
looks like this

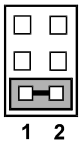


3 pin Jumper
2-3 pin closed(enabled)
looks like this





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

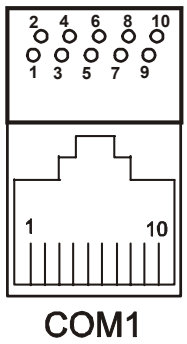


2-4. COM CONNECTOR

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

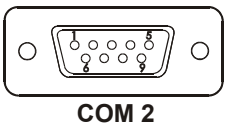
COM1 : COM1 Connector

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



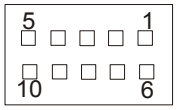
COM2 : COM2 Connector, DB9 male connector

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



COM3 : COM3 Connector
The pin assignments are as follows :

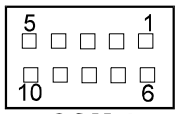
PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	NC



COM 3

COM4 : COM4 Connector
The pin assignments are as follows :

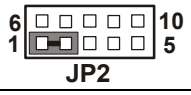
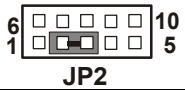
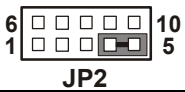
PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	NC



COM 4

2-5. COM1 RI & VOLTAGE SELECTION (Optional)

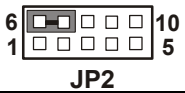
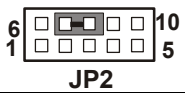
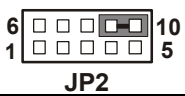
JP2 (1-5) : COM1 RI & Voltage Selection
The selections are as follows:

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 (Optional)

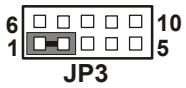
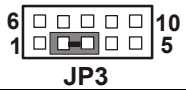
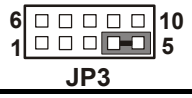
JP2 (6-10) : COM2 RI & Voltage Selection
The selections are as follows:

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

***Manufacturing Default – RI.

2-7. COM3 RI & VOLTAGE SELECTION (Optional)

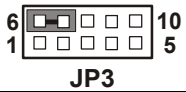
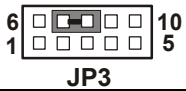
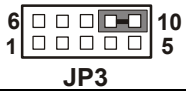
JP3 (1-5) : COM3 RI & Voltage Selection
The selections are as follows:

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

***Manufacturing Default – RI.

2-8. COM4 RI & VOLTAGE SELECTION (Optional)

JP3 (6-10) : COM4 RI & Voltage Selection
The selections are as follows:

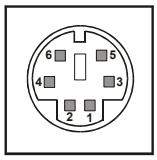
SELECTION	JUMPER SETTING (Pin Closed)	JUMPER ILLUSTRATION
+5V	6-7	
+12V	7-8	
RI	9-10	

***Manufacturing Default – RI.

2-9. KEYBOARD/MOUSE CONNECTOR

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

PIN	ASSIGNMENT
1	KBDATA
2	MSDATA
3	GND
4	5VSB
5	KBCLK
6	MSCLK

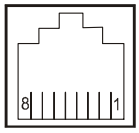


KB

2-10. LAN CONNECTOR

LAN1: LAN Connector.
The pin assignment is as follows :

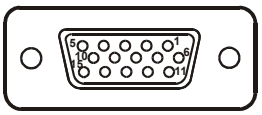
PIN	ASSIGNMENT
1	TX+
2	TX-
3	RX+
4	ISOLATED GND
5	ISOLATED GND
6	RX-
7	ISOLATED GND
8	ISOLATED GND



LAN

2-11. VGA CONNECTOR

VGA1 : VGA Connector
The pin assignments are as follows:



VGA

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

2-12. UNIVERSAL SERIAL BUS CONNECTOR

This board supports up to two USB port.

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

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

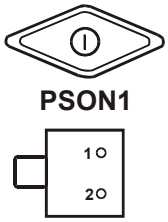
USB1

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

PIN	ASSIGNMENT
1	VCC
2	USBP1-
3	USBP1+
4	GND

USB2

2-13. POWER BUTTON



PSON1 : ATX Power Button
The pin assignments are as follows:

PIN	ASSIGNMENT
1	PWRBTN#
2	GROUND

2-14. SYSTEM FAN CONNECTOR

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

PIN	ASSIGNMENT
1	+12V
2	GROUND

2-15. CMOS CLEAR SELECTION

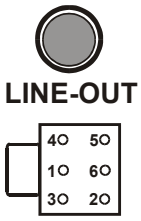
JP1 : CMOS Clear Selection
The selection are as follows :

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

*** Manufacturing Default is set as Normal.

2-16. LINE-OUT CONNECTOR

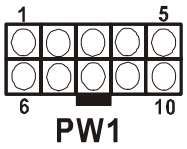
LINE-OUT : Line-Out Connector
The pin assignments are as follows :



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

2-17. POWER CONNECTOR

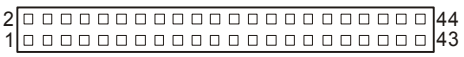
PW1 : Power Connector
The pin assignments are as follows:



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

2-18. HARD DISK DRIVE CONNECTOR

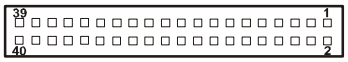
IDE1 : Hard Disk Drive Connector
The pin assignments are as follows:



IDE1

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

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

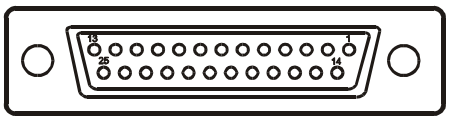


IDE2

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST#	21	SDREQ
2	GND	22	GND
3	SDD7	23	SDIOW#
4	SDD8	24	GND
5	SDD6	25	SDIOR#
6	SDD9	26	GND
7	SDD5	27	SIORDY
8	SDD10	28	GND
9	SDD4	29	SDDACK#
10	SDD11	30	GND
11	SDD3	31	IRQ14
12	SDD12	32	NC
13	SDD2	33	SDA1
14	SDD13	34	IDE_LID#
15	SDD1	35	SDA0
16	SDD14	36	SDA2
17	SDD0	37	SDCS#1
18	SDD15	38	SDCS#3
19	GND	39	HD_LED2#
20	NC	40	GND

2-19. PRINTER CONNECTOR

LPT1 : Printer Connector
The pin assignments are as follows :

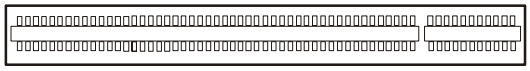


LPT1

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		

2-20. PCI CONNECTOR

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



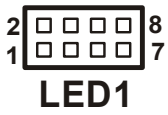
PCI1

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

2-21. LED CONNECTOR

LED1 : LED Connector
The pin assignments are as follows :

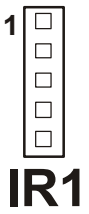
PIN	ASSIGNMENT
1	PW_LEDVCC
2	GND
3	HD_LEDR
4	HD_LED
5	L_LINK_LEDR
6	L_LINK_LED
7	L_ACT_LEDR
8	L_ACT_LED



2-22. INFRARED CONNECTOR (Optional)

IR : Infrared Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC5
2	NC
3	IRRX
4	GND
5	IRTX



2-23. WAKE-ON-LAN CONNECTOR

WOL1 : Wake-On-LAN Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	+5VSUS
2	GND
3	Ring

2-24. MEMORY INSTALLATION

This system is enhanced with 1 SDRAM banks, which support up to 512MB.

DRAM BANK CONFIGURATION

DIMM 1	TOTAL MEMORY
32M	32MB
64M	64MB
128M	128MB
256M	256MB
512M	512MB
1G	1G

SOFTWARE UTILITIES

CHAPTER

3

This chapter comprises the detailed information of VGA driver, LAN driver, and sound driver, VIA Chipset Software Installation Utility, touch screen driver, USB 2.0 driver and Flash BIOS update. It also describes how to install the watchdog timer configuration.

Section includes:

- Introduction
- VIA 4IN1 Service Pack Driver Utility
- VGA Driver Utility
- Flash BIOS Update
- LAN Driver Utility
- Sound Driver Utility
- USB2.0 Chipset Software Installation Utility
- Watchdog Timer Configuration

3-1. INTRODUCTION

Enclosed with our PS-8800 package is our driver utility, which may comes in a form of a CD ROM disc or floppy diskettes. For CD ROM disc user, you will only need some of the files contained in the CD ROM disc, please kindly refer to the following chart:

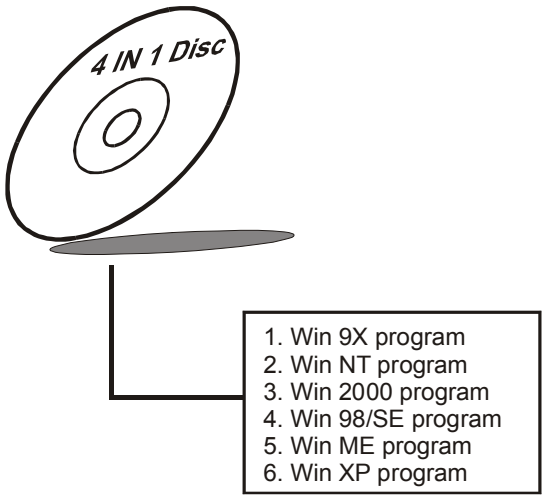
Filename (Assume that CD ROM drive is D:)	**Purpose**
D:\Utility\ ****Install this software first*!*	VIA 4in1 Service Pack Driver Utility
D:\VGA \	For VGA driver installation
D:\Flash\	For flash BIOS update
D:\ Lan \	For LAN Driver installation
D:\ Sound \	Analog Device VT1612A For Sound driver installation
D:\ USB2.0 \	USB 2.0 Software Installation Utility For Win 98SE, 2000, XP

3-2. VIA 4IN1 SERVICE PACK DRIVER

3-2-1. Introduction

The 4-in-1 drivers are a collection of periodically updated drivers that provide enhanced VIA chipset to support under Microsoft Windows. This drivers should be installed after the OS is fully installed, to improve performance, fix issues, and minimize any incompatibilities.

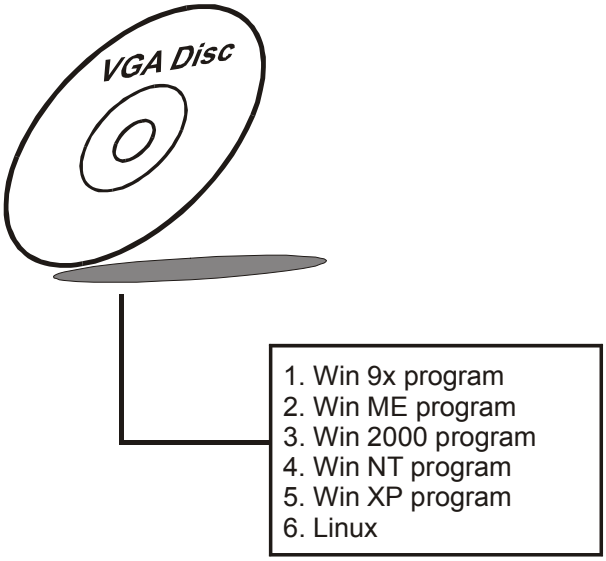
The VIA 4 In 1 driver includes four system drivers to improve the performance and maintain the stability of systems using VIA chipsets. These four drivers are: VIA Registry (INF) Driver, VIA AGP VxD driver, VIA ATAPI Vendor Support Driver and VIA PCI IRQ Miniport Driver



3-3. VGA DRIVER UTILITY

3-3-1. Introduction

The VGA interface embedded with our PS-8800 can support a wide range of display mode, such as SVGA, STN, TFT,.....etc. You can display CRT and LCD Panel simultaneously on this board, but make sure that the modes for CRT and LCD Panel are the same. If not, only one of them can be displayed.



3-3-2. Installation of VGA Driver

1. Install VGA Driver to Windows 9x/2000/XP

(1). From the task bar, click on Start, and then Run.
(2). In the Run dialog box, type D:\VGA\path\setup, where "D:\VGA\pathname" 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.

2. Install VGA driver to Windows 4.0

* Install service pack first, then install VGA driver.

(1). To install VGA drivers to Windows 4.0 is as you normally would. Click START, then SETTINGS, then CONTROL PANEL of the operating system.
(2). Select the DISPLAY icon to start the DISPLAY PROPERTIES window, then choose the SETTING tab, then DISPLAY TYPE.
(3). In the CHANGE DISPLAY TYPE window, click on the CHANGE button in the ADAPTER TYPE, this will bring up the SELECT DEVICE window.

(4). In the CHANGE DISPLAY window, click on Have Disk. Follow the instructions appearing on the screen until you complete the whole installation.
(5). Once installation is completed, the system must be shut down and restarted for the new drivers to take effect.

3-4. FLASH BIOS UPDATE

3-4-1. Introduction

Users of PS-8800 can use the program "Awdflash.exe" contained in the Utility Disk for system BIOS update.

3-4-2. Installation of system BIOS

1. Install "Awdflash.exe" from Utility Disk to Drive C.
2. Type the path to Awdflash.exe and execute the system BIOS
   C:\UTIL\AWDFLASH>AWDFLASH s92xxxxx.bin
3. The screen will display the table below:

FLASH MEMORY WRITER V7.XX (C) Award Software 2001 All Rights Reserved
Flash Type – MX1C 29F004T/5V File Name to Program: s92xxxxx.bin
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 2001 All Rights Reserved
Flash Type - MX1C 29F004T/5V File Name to Program: s92xxxxx.bin
Error Message : Are You Sure To Program (Y/N)

Select "Y", and the BIOS will be renewed. When you are refreshing the BIOS, do not turn off or reset the system, or you will damage the BIOS. After you have completed all the programming, the screen displays the table below:

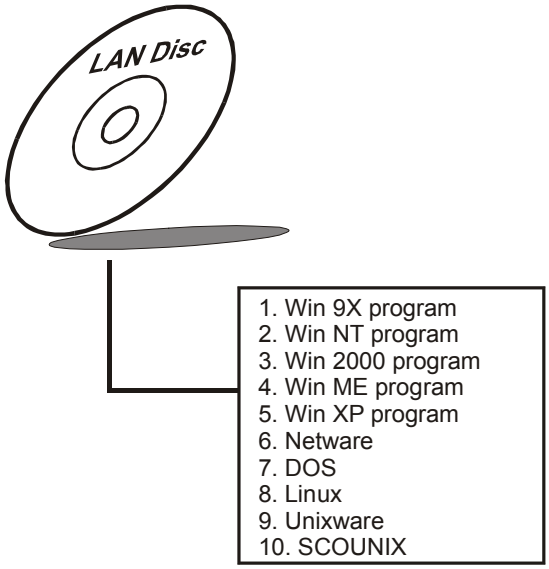
FLASH MEMORY WRITER V7.XX (C) Award Software 2001 All Rights Reserved
Flash Type - MX1C 29F004T/5V File Name to Program: s92xxxxx.bin Verifying Flash Memory – 7FE00 OK ☐Write OK ☐No Update ☐Write Fail
F1: Reset F10: Exit

Please reset or power off the system, then the Flash BIOS is fully implemented.

3-5. LAN DRIVER UTILITY

3-5-1. Introduction

The PS-8800 Panel PC is enhanced with LAN function that can support various network adapters. Installation programs for LAN drivers are listed as follows:



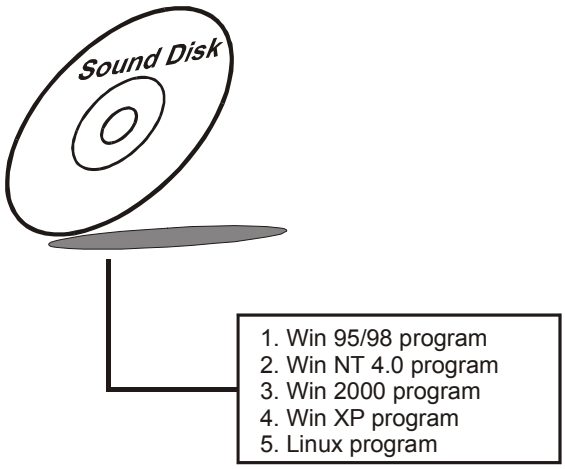
3-5-2. Installation Procedure for Windows 9x/2000/XP/NT

1. From the task bar, click on Start, and then Run.
2. In the Run dialog box, type D:\LAN\winsetup.exe, where "D:\LAN\winsetup.exe" 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. SOUND DRIVER UTILITY

3-6-1. Introduction

The VT1612A sound function enhanced in this system is fully compatible with Windows 95/98, Windows NT 4.0, and Windows 2000. Below, you will find the content of the Sound driver :



3-6-2. 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\pathname" 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.

3-7. USB2.0 SOFTWARE INSTALLATION UTILITY

3-7-1. Installation of Utility for Windows 98SE/ 2000/XP

1. From the task bar, click on Start, and then Run.
2. In the Run dialog box, type D:\USB2.0\setup.exe, where "D:\USB2.0\setup.exe" 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.

3-8. 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" found in chapter 2.

Time-out timing select 10 / 20 / 30 / 40 / 60 / 120 / 240 sec. The timer's intervals have a tolerance of 25% so you should program an instruction that will refresh the timer about every second.

AWARD BIOS SETUP

CHAPTER

4

This chapter shows how to set up the Award BIOS.

Section includes:

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

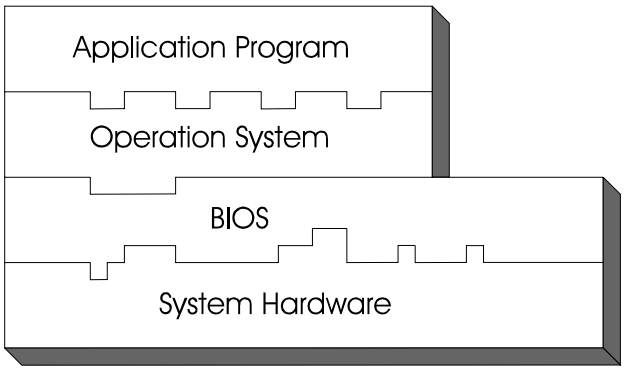
4-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The PS-8800 Book-size PC system is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of the BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

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

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

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



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 F10 : Save & Exit Setup	↑↓→← : Select Item
Time, Date, Hard Disk Type ….	

Setup program initial screen

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

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)	Mon, Sep 15 2003	Item Help
Time (hh:mm:ss)	13 : 36 : 45	Menu Level ►
► IDE Primary Master	[FUJITSU MHR2020AT]	
► IDE Primary Slave	[None]	Change the day, month, year and century
► IDE Secondary Master	[None]	
► IDE Secondary Slave	[None]	
Drive A	[None]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	506880K	
Total Memory	507904K	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

CMOS Setup screen

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

Date:

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

Time:

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

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

The 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 as follows:

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

HALT ON:

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

BASE MEMORY:

Displays the amount of conventional memory detected during boot up.

EXTENDED MEMORY:

Displays the amount of extended memory detected during boot up.

TOTAL MEMORY:

Displays the total memory available in the system.

HARD DISK ATTRIBUTES:

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

Award Hard Disk Type Table

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 Internal Cache	[Enabled]	
External Cache	[Enabled]	Menu Level ►
CPU L2 Cache ECC Checking	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[USB-FDD]	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Second Boot Device	[HDD-0]	
Third Boot Device	[HDD-2]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Disabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
X Typematic Rate (Chars/Sec)	6	
X Typematic Delay (Msec)	250	
Security Option	[Setup]	
OS Select for DRAM > 64MB	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
Small Logo (EPA) Show	[Disabled]	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

BIOS Features Setup

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

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

VIRUS WARNING :

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

CPU INTERNAL CACHE/EXTERNAL CACHE :

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

CPU L2 CACHE ECC CHECKING :

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

QUICK POWER ON SELF TEST:

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

FIRST/SECOND/THIRD OTHER BOOT DEVICE:

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

SWAP FLOOPY DRIVE:

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

BOOT UP FLOPPY SEEK:

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

BOOT UP NUMLOCK STATUS:

Select power on state for NumLock.

GATE 20A OPTION:

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

TYPEMATIC RATE SETTING:

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

TYPEMATIC RATE (CHARS/SEC):

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

TYPEMATIC DELAY (MSEC):

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

SECURITY OPTION:

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

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

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

OS SELECT FOR DRAM >64MB :

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

VIDEO BIOS SHADOW:

Determines whether video BIOS will be coped to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

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 Clock/Drive Control	[Press Enter]	Item Help
►AGP & P2P Bridge Control	[Press Enter]	Menu Level ►
►CPU & PCI Bus Control	[Press Enter]	
Memory Hole	[Disabled]	
System BIOS Cacheable	[Disabled]	
Video RAM Cacheable	[Disabled]	
VGA Share Memory Size	[32M]	
Select Display Device	[CRT]	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Chipset Features Setup

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

DRAM CLOCK/DRIVE CONTROL:

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

Phoenix – AwardBIOS CMOS Setup Utility
DRAM Clock/Drive Control

Current FSB Frequency	133 MHz	Item Help
Current DRAM Frequency	133 MHz	Menu Level ►►
DRAM Clock	[BySPD]	
DRAM Timing	[By SPD]	
X DRAM CAS Latency	2.5	
X Bank Interleave	Disabled	
X Precharge to Active (Trp)	3T	
X Active to Precharge (Tras)	6T	
X Active to CMD (Trcd)	3T	
DRAM Command Rate	[2T Command]	

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

Table 1 – DRAM Clock/Drive Control sub menu

Descriptions on each item above are as follows:

1. Current FSB Frequency
   This field displays the current front side bus frequency, if your computer contains a monitoring system.
2. Current DRAM Frequency
   This field displays the current DRAM frequency, if your computer contains a monitoring system.
3. DRAM Clock
   This item allows you to control the DRAM speed. The Choice: Host Clock, HCLK-33M.
4. DRAM Timing
   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.

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

AGP & P2P Bridge Control:

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

Phoenix – AwardBIOS CMOS Setup Utility
AGP & P2P Bridge Control

AGP Aperture Size	[64M]	Item Help
AGP Driving Control	[Auto]	
X AGP Driving Value	DA	Menu Level ►►
AGP Fast Write	[Disabled]	
AGP Master 1 WS Write	[Disabled]	
AGP Master 1 WS Read	[Disabled]	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Table 2 – AGP & P2P Bridge Control sub menu

Descriptions on each item above are as follows:

1. AGP Aperture Size
   Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The Choice: 4M, 8M, 16M, 32M, 65M, 128M, 256M.
2. AGP Driving Control
   This item allows you to adjust the AGP driving force. Choose *Manual* to key in a AGP Driving Value in the next selection. This field is recommended to set in Auto for avoiding any error in your system. The Choice: Auto, Manual.
3. AGP Driving Value
   This item allows you to adjust the AGP driving force. The Choice: Min=0000~ Max=00FF.
4. AGP Master 1 WS Write
   When *Enabled,* writes to the AGP(Accelerated Graphics Port) are executed with one wait states.The choice: Enabled, Disabled

5. AGP Master 1 WS Read
   When *Enabled,* read to the AGP (Accelerated Graphics Port) are executed with one wait states. The choice: Enabled, Disabled

CPU & PCI BUS CONTROL:

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

Phoenix – AwardBIOS CMOS Setup Utility
CPU & PCI Bus Control

CPU to PCI Write Buffer	[Enabled]	Item Help
PCI Master 0 WS Write	[Enabled]	Menu Level ►►
PCI Delay Transaction	[Disabled]	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Table 3 – CPU & PCI Bus Control sub menu

Descriptions on each item above are as follows:

1. CPU to PCI Write Buffer
   When Enabled, the CPU can write up to four dwords of data to the PCI write buffer before the CPU must wait for the PCI bus cycles to finish. When Disabled, the CPU must wait after each write cycle until the PCI bus signals that it is ready to receive more data.
2. PCI Master 0 WS Write
   When Enabled, writes to the PCI bus are executed with zero wait states.
3. PCI 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.

MEMORY HOLE:

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16MB.

SYSTEM BIOS CACHEABLE:

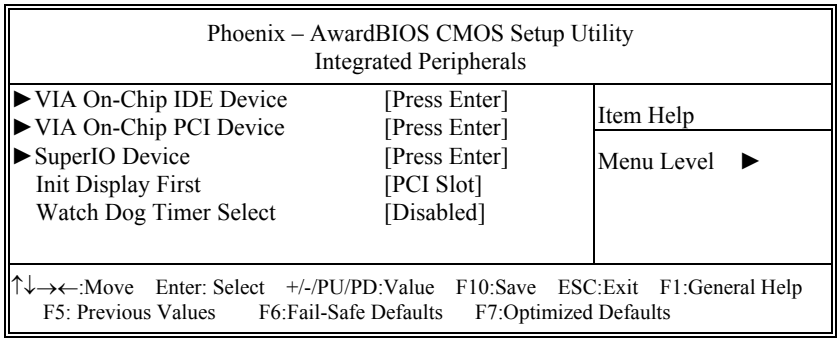
This item allows you to enable caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

VIDEO RAM CACHEABLE:

Select Enabled allows caching of the video RAM , resulting in better system performance. However, if any program writes to this memory area, a system error may result.

4-6. INTEGRATED PERIPHERALS

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



INTEGRATED PERIPHERALS

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

VIA ON-CHIP IDE DEVICE:

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

Phoenix – AwardBIOS CMOS Setup Utility
VIA On-Chip IDE Device

OnChip IDE Channel 0	[Enabled]	Item Help
OnChip IDE Channel 1	[Enabled]	
IDE Prefetch Mode	[Enabled]	Menu Level ►►
Primary Master PIO	[Auto]	
Primary Slave PIO	[Auto]	
Secondary Master PIO	[Auto]	
Secondary Slave PIO	[Auto]	
Primary Master UDMA	[Auto]	
Primary Slave UDMA	[Auto]	
Secondary Master UDMA	[Auto]	
Secondary Slave UDMA	[Auto]	
IDE HDD Block Mode	[Enabled]	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Table 1 – VIA On-Chip IDE Device sub menu

Descriptions on each item above are as follows:

1. OnChip IDE Channel 0
   The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary IDE interface. Select Disabled to deactivate this interface

2. OnChip IDE Channel 1
   The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the secondary IDE interface. Select Disabled to deactivate this interface

3. IDE Prefetch Mode
   The onboard IDE drive interfaces supports IDE prefetching for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to *Disabled* if the interface does not support prefetching.

4. Primary/Secondary Master/Slave PIO
   The four IDE PIO (Programmed Input/Output) fields let you 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.

5. Primary/Secondary Master/Slave UDMA
   Ultra DMA/66 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 98 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/66, select Auto to enable BIOS support.

6. 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.

VIA ON-CHIP PCI DEVICE:

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

Phoenix – AwardBIOS CMOS Setup Utility
VIA On-Chip PCI Device

USB 2.0 Support	[Enabled]	Item Help
VIA AC97 Audio	[Auto]	
VIA OnChip LAN	[Enabled]	Menu Level ►►
Onboard Lan Boot ROM	[Disabled]	
OnChip USB Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Table 2 – VIA On-Chip PCI Device sub menu

Descriptions on each item above are as follows:

1. VIA AC97 Audio
   This item allows you to enable or disable to support AC97 Audio.
2. OnChip USB Controller
   Select enabled if the system contains a Universal Serial Bus (USB) controller and you have a USB peripherals.
3. USB Keyboard Support
   Select enabled if the system contains a Universal Serial Bus (USB) controller and you have a USB Keyboard.

SUPER IO DEVICE:

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

Phoenix – Award CMOS Setup Utility
SuperIO Device

Onboard FDC Controller	[Enabled]	Item Help
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	Menu Level ►
X RxD, TxD Active	Hi, Lo	
X IR Transmission Delay	Enabled	
X UR2 Duplex Mode	Half	
X Use IR Pins	IR-Rx2Tx2	
Onboard Serial Port 3	[3E8]	
Serial Port 3 Use IRQ	[IRQ10]	
Onboard Serial Port 4	[2E8]	
Serial Port 4 Use IRQ	[IRQ11]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
X EPP Mode Select	EPP1.7	
X ECP Mode Use DMA	3	

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

Table 3 – SuperIO Device sub menu

Descriptions on each item above are as follows:

1. 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.
2. Onboard Serial Port 1/2/3/4
   Select an address and corresponding interrupt for the first and second serial ports.
3. UART Mode Select

This item allows you to select UART mode.

4. UR2 Duplex Mode
   This item allows you to select the IR half/full duplex function.
5. Use IR Pins
   This item allows you to select IR transmission routes, one is RxD2m, TxD2 (COM Port) and the other is IR-Rx2Tx2.
6. Onboard Parallel Port
   This item allows you to determine access onboard parallel port controller with which I/O address.
7. 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.
8. ECP Mode Use DMA
   Select a DMA channel for the parallel port for use during ECP mode.

INIT DISPLAY FIRST:

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

4-7. POWER MANAGEMENT SETUP

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

Phoenix – Award CMOS Setup Utility Power Management Setup		
ACPI Function	[Enabled]	Item Help
Power Management Option	[User Define]	
Suspend Mode	[Disabled]	Menu Level ►
Video Off Option	[Suspend -> Off]	
Video Off Method	[V/H SYNC+Blank]	
MODEM Use IRQ	[3]	
Soft-Off by PWR-BTTN	[Instant-Off]	
Ac Loss Auto Restart	[Off]	
►IRQ/Event Activity Detect	[Press Enter]	
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Power Management Setup

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

ACPI FUNCTION:

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

POWER MANAGEMENT:

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

SUSPEND MODE:

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

VIDEO OFF OPTION:

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the systems enters the Suspend mode.
Susp,Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the system enters any power saving mode.

VIDEO OFF METHOD:

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

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

MODEM USE IRQ:

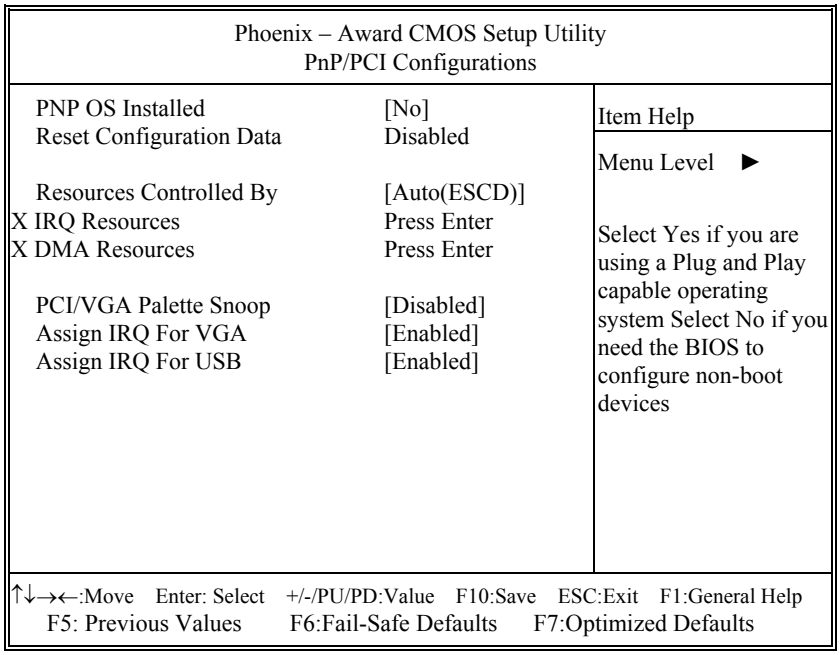
This item enable you to name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

SOFT-OFF BY PWRBTN:

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

4-8. PNP/PCI CONFIGURATION

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



PNP/PCI CONFIGURATION

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

PNP OS INSTALLED:

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

RESET CONFIGURATION DATA:

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

RESOURCE CONTROLLED BY:

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

IRQ RESOURCES:

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

DMA RESOURCES:

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

PCI/VGA PALETTE SNOOP:

Leave this field at disabled.

ASSIGN IRQ FOR VGA:

This item Enable/Disable to assign IRQ for VGA.

ASSIGN IRQ FOR USB:

This item Enable/Disable to assign IRQ for USB.

4-9. PC HEALTH STATUS

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

Phoenix – Award CMOS Setup Utility PC Health Status		
CPU Warning Temperature	[Disabled]	Item Help
System Temperature	33°C/91°F	
CPU Temperature	56°C/132°F	Menu Level ►
Vcore	1.10V	
+3.3V	3.40V	
+ 5 V	5.29V	
+12V	12.46V	
-12V	-12.11V	
VBAT(V)	3.37V	
5VSB(V)	5.13V	
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

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

CPU WARNING TEMERATURE:

This item will prevent CPU from overheating.

SYSTEM TEMPERATURE:

This item shows you the current system temperature.

CPU TEMPERATURE:

This item shows you the current CPU temperature.

VCORE:

This item shows you the current system voltage.

+3.3V/+5V/+12V/-12V:

This item shows you the voltage of +3.3V/+5V/+12V/-12V.

SHUTDOWN TEMPERATURE:

This item allows you to set the CPU shutdown Temperature. This function is only effective under Window 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:

Phoenix – Award CMOS Setup Utility Frequency/Voltage Control		
VIA Clock Ratio	[Default]	Item Help
Auto Detect DIMM/PCI Clk	[Enabled]	
Spread Spectrum	[Enabled]	Menu Level ►
CPU Clock	[133]	This item is for VIA C3 CPU Ratio adjustment.
↑↓→←:Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

FREQUENCY/VOLTAGE CONTROL

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

AUTO DETECT DIMM/PCI CLK:

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

SPREAD SPECTRUM:

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

CPU CLOCK RATIO:

This item allows you to select the CPU ratio.

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

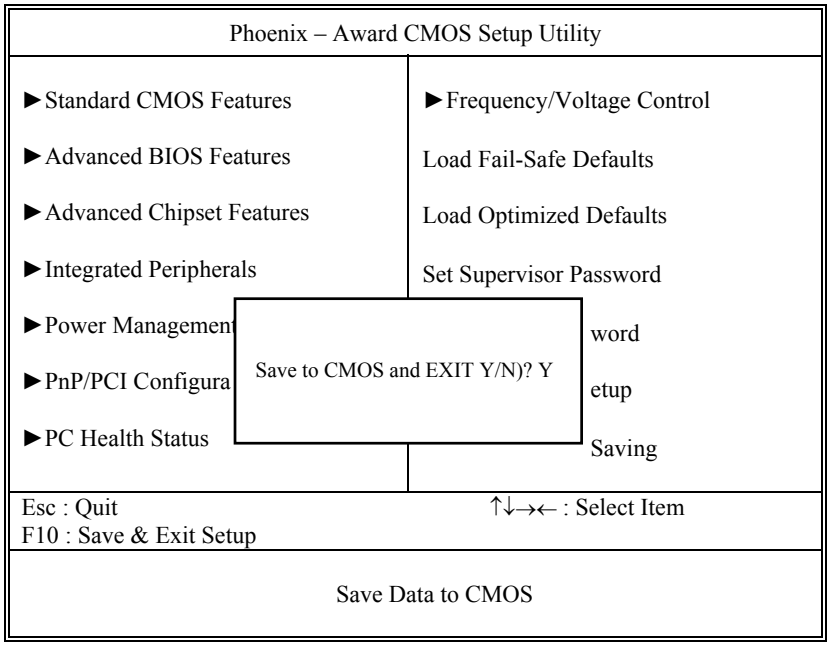
To disable the password, select this function (do not enter any key when you are prompt to enter a password), and press the <Enter> key and a message will appear at the center of the screen:

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

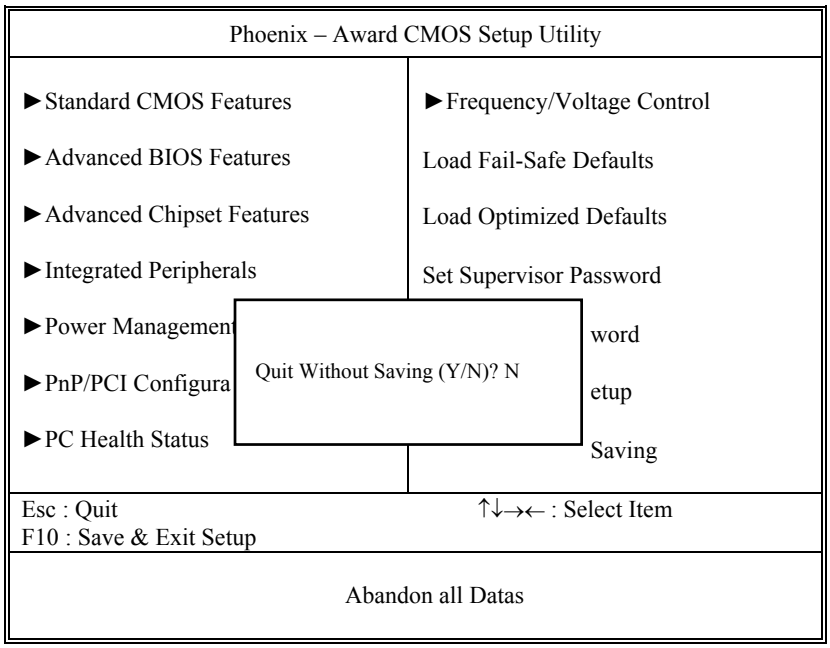
After you have completed adjusting all the settings as required, you must remember to save these setting into the CMOS RAM. To save the settings, select "SAVE & EXIT SETUP" and press <Enter>, a display will be shown as follows:



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.

4-15. EXIT WITHOUT SAVING

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



SYSTEM ASSEMBLY

APPENDIX

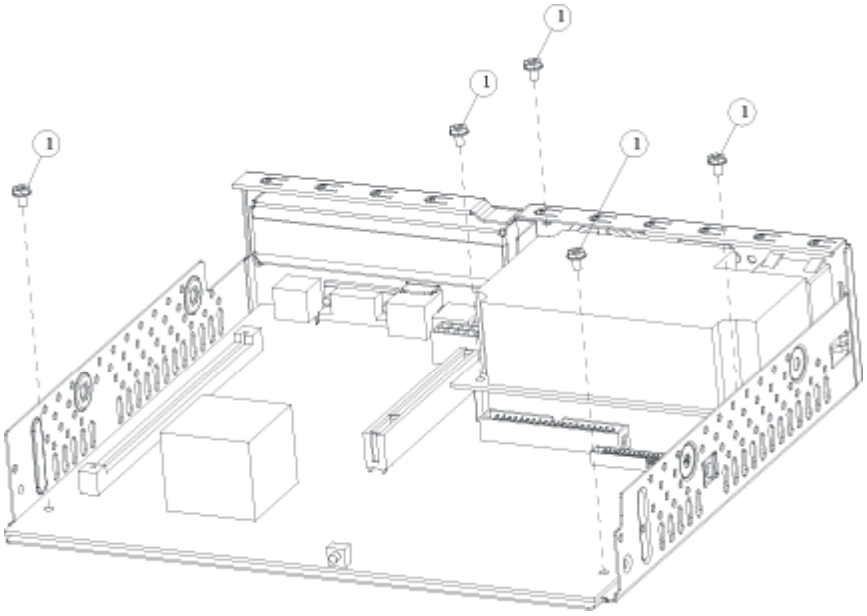
A

This appendix contain exploded diagram of the system.

Section includes:

- Exploded Diagram for System Base Unit
- Exploded Diagram for System Cover
- Exploded Diagram for System Back Cover

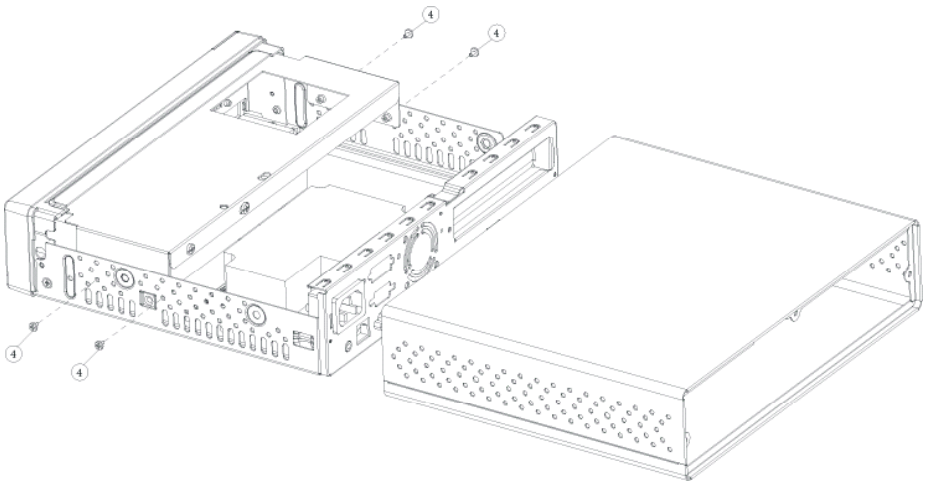
EXPLODED DIAGRAM FOR SYSTEM BASE UNIT



NO	PART NO	DESCRIPTION	Q'TY
1	QSTUD-G		5

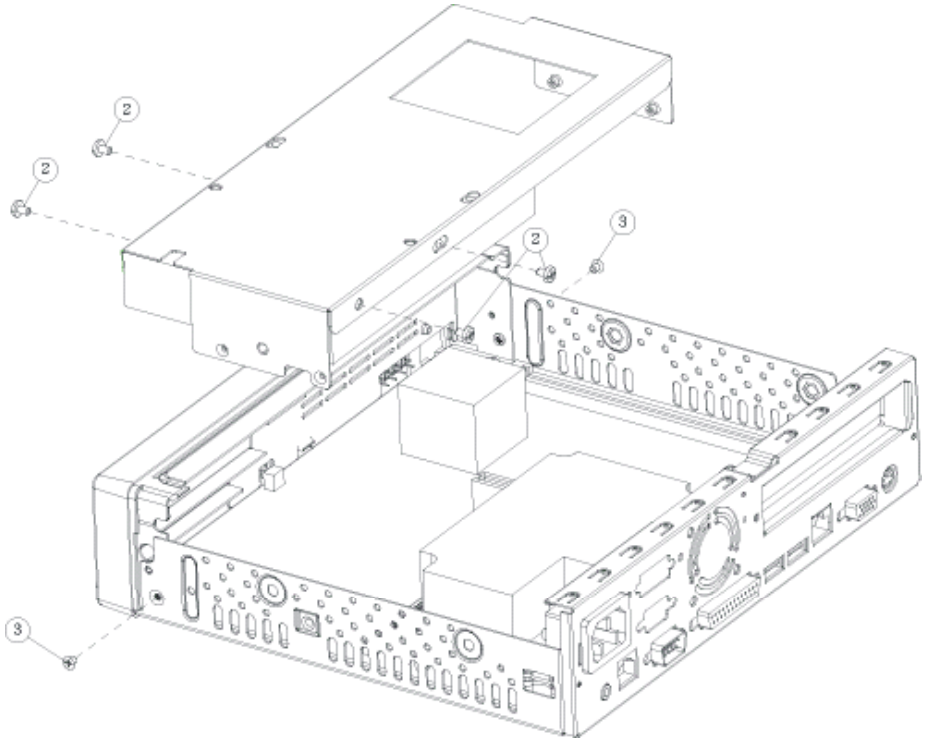
EXPLODED DIAGRAM FOR SYSTEM COVER

Diagram 1:



NO	PART NO	DESCRIPTION	Q'TY
4	QSTUD-I		4

Diagram 2:



NO	PART NO	DESCRIPTION	Q'TY
2	QSTUD-3		4
3	QSTUD-K		2

EXPLODED DIAGRAM FOR SYSTEM BACK COVER

Diagram 1: System Rear View

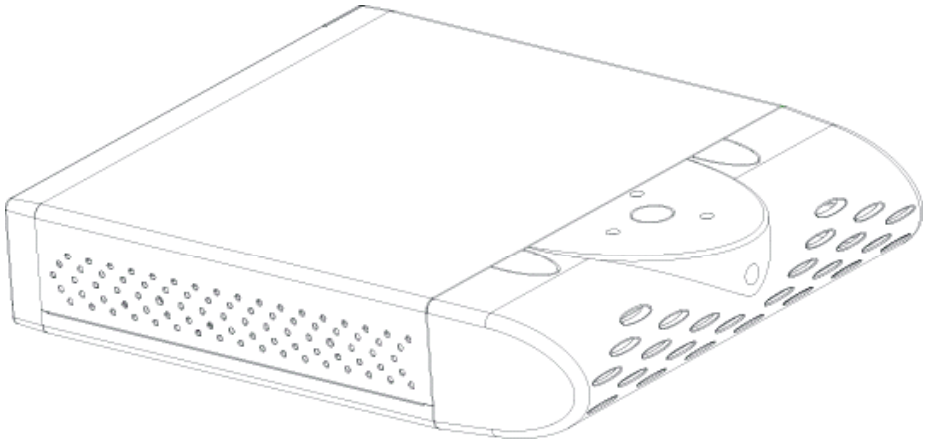
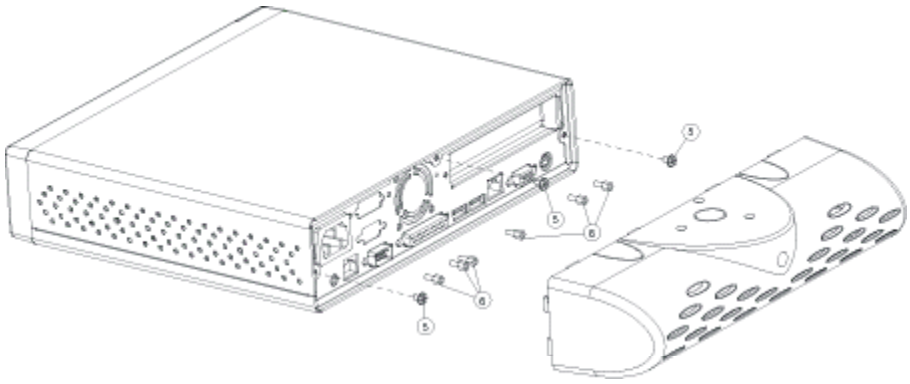


Diagram 2: Removing System Back Cover



NO	PART NO	DESCRIPTION	QTY
5	OSTUD-G		3
6	OSTUD-UNF-NO4 -4.8-7		6

TECHNICAL SUMMARY

APPENDIX

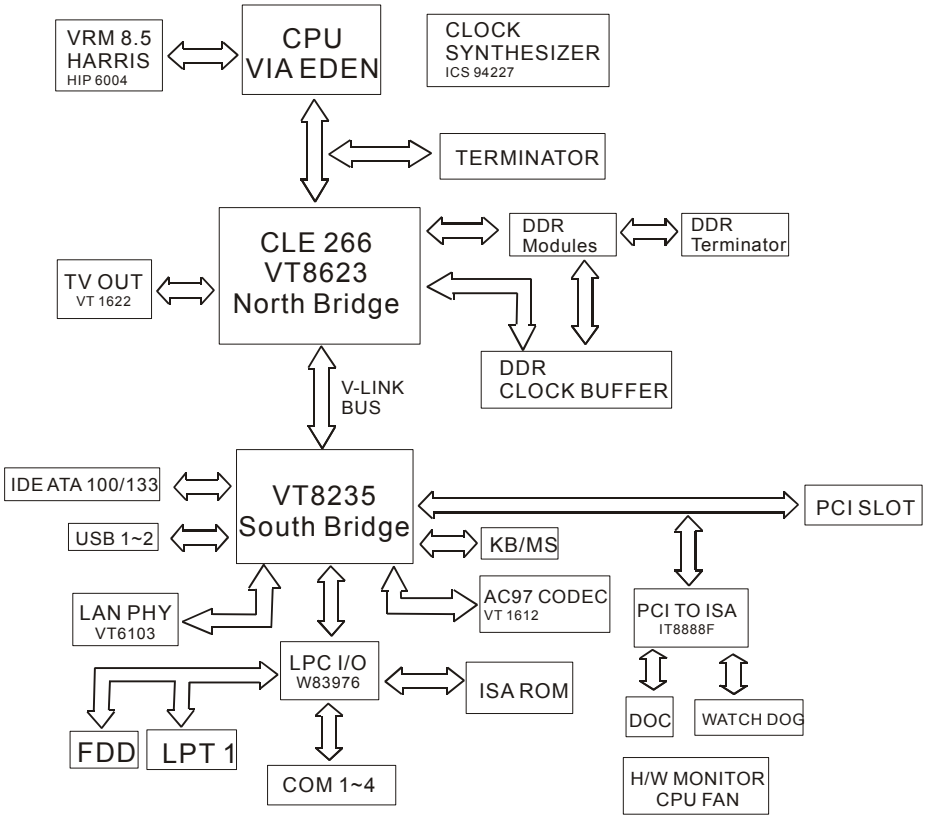
B

This section introduce you the maps concisely.

Section includes:

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

BLOCK DIAGRAM



INTERRUPT MAP

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

RTC (STANDARD) RAM BANK

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

TIMER & DMA CHANNELS MAP

Timer Channel Map :

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

DMA Channel Map :

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

I/O & MEMORY MAP

Fixed I/O Ranges Decoded by ICH2 :

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

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

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

Memory Decode Ranges From Processor Perspective :

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

TROUBLE SHOOTING

APPENDIX

C

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

Section includes:

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

TROUBLE SHOOTING FOR ERROR MESSAGES

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

POST BEEP :

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

CMOS BATTERY HAS FAILED :

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

CMOS CHECKSUM ERROR :

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

DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER :

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

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP :

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

DISPLAY SWITCH IS SET INCORRECTLY :

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

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT :

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

EISA CONFIGURATION CHECKSUM ERROR
PLEASE RUN EISA CONFIGURATION UTILITY :

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

EISA CONFIGURATION IS NOT COMPLETE
PLEASE RUN EISA CONFIGURATION UTILITY :

The slot configure information stored in the EISA non-volatile memory is incomplete.

Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE :

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

ERROR INITIALIZING HARD DISK CONTROLLER :

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

FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT :

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

INVALID EISA CONFIGURATION
PLEASE RUN EISA CONFIGURATION UTILITY :

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

KEYBOARD ERROR OR NO KEYBOARD PRESENT :

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

If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

MEMORY ADDRESS ERROR AT ... :

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

MEMORY PARITY ERROR AT ... :

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

MEMORY SIZE HAS CHANGED SINCE LAST BOOT :

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

MEMORY VERIFY ERROR AT ... :

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

OFFENDING ADDRESS NOT FOUND :

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

OFFENDING SEGMENT :

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

PRESS A KEY TO REBOOT :

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

PRESS F1 TO DISABLE NMI, F2 TO REBOOT :

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

RAM PARITY ERROR – CHECKING FOR SEGMENT :

Indicates a parity error in Random Access Memory.

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

A valid board ID was found in a slot that was configured as having no board ID.

Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

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

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.

Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Slot Not Empty :

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

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

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

Wrong Board in Slot
PLEASE RUN EISA CONFIGURATION UTILITY :

The board ID does not match the ID stored in the EISA non-volatile memory.

Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

FLOPPY DISK(S) FAIL (80) :

Unable to reset floppy subsystem.

FLOPPY DISK(S) FAIL (40) :

Floppy type dismatch.

Hard Disk(S) Fail (80) :

Hard Disk Drive reset failed.

Hard Disk(S) Fail (40) :

Hard Disk Drive controller diagnostics failed.

Hard Disk(S) Fail (20) :

Hard Disk Drive initialization error.

Hard Disk(S) Fail (10) :

Unable to recalibrate fixed disk.

Hard Disk(S) Fail (08) :

Sector Verify failed.

Keyboard is locked out – Unlock the key :

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

Keyboard error or no keyboard present :

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

Manufacturing POST loop :

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

BIOS ROM checksum error – System halted :

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail :

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

TROUBLE SHOOTING FOR POST CODES

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

CFh : Test CMOS R/W functionality.

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

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

C3h : Expand compressed BIOS code to DRAM.

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

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

02h : Reserved.

03h : Initial Superio_Early_Init switch.

04h : Reserved.

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

06h : Reserved

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

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

09h : Reserved

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

0Bh : Reserved

0Ch : Reserved

0Dh : Reserved

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

0Fh : Reserved

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

11h : Reserved

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

13h : Reserved

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

15h : Reserved

16h : Initial Early_Init_Onboard_Generator switch.

17h : Reserved

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

19h : Reserved

1Ah : Reserved

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

1Ch : Reserved

1Dh : Initial EARLY_PM_INIT switch

1Eh : Reserved

1Fh : Load keyboard matrix (notebook platform)

20h : Reserved

21h : HPM initialization (notebook platform)

22h : Reserved

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

24h : Reserved

25h : Reserved

26h : Reserved

27h : Initialize INT 09 buffer

28h : Reserved

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

2Ah : Reserved

2Bh : Reserved

2Ch : Reserved

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

2Eh : Reserved

2Fh : Reserved

30h : Reserved

31h : Reserved

32h : Reserved

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

34h : Reserved

35h : Reserved

36h : Reserved

37h : Reserved

38h : Reserved

39h : Reserved

3Ah : Reserved

3Bh : Reserved

3Ch : Test 8254

3Dh : Reserved

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

3Fh : Reserved

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

41h : Reserved

42h : Reserved

43h : Test 8259 functionality.

44h : Reserved

45h : Reserved

46h : Reserved

47h : Initialize EISA slot

48h : Reserved

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

4Ah : Reserved

4Bh : Reserved

4Ch : Reserved

4Dh : Reserved

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

4Fh : Reserved

50h : Initialize USB

51h : Reserved

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

53h : Reserved

54h : Reserved

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

56h : Reserved

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

58h : Reserved

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

5Ah : Reserved

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

5Ch : Reserved

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

5Eh : Reserved

5Fh : Reserved

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

61h : Reserved

62h : Reserved

63h : Reserved

64h : Reserved

65h : Initialize PS/2 Mouse

66h : Reserved

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

68h : Reserved

69h : Turn on L2 cache.

6Ah : Reserved

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

6Ch : Reserved

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

6Eh : Reserved

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

70h : Reserved

71h : Reserved

72h : Reserved

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

74h : Reserved

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

76h : Reserved

77h : Detect serial ports and parallel ports

78h : Reserved

79h : Reserved

7Ah : Detect and install co-processor

7Bh : Reserved

7Ch : Reserved

7Dh : Reserved

7Eh : Reserved

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

80h : Reserved

81h : Reserved

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

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

84h : Initialize ISA PnP boot devices.

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

86h : Reserved

87h : Reserved

88h : Reserved

89h : Reserved

90h : Reserved

91h : Reserved

92h : Reserved

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

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

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

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

FFh : Boot attempt (INT 19h)

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