USER'S MANUAL

PS-8120B

Socket 370 (Celeron / P-III) Panel PC System

PS-8120B M0

PS-8120B Panel PC System
With LCD / Touch screen (optional)

OPERATION MANUAL

COPYRIGHT NOTICE

This operation manual is meant to assist users in installing and setting up the system. The information contained in this document is subject to change without prior any notice.

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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.
WARNING! Some internal parts of the system may have high electrical voltage. Therefore we strongly recommend that only qualified engineers can open and disassemble the system.
The LCD and touch screen are easily breakable. Please handle them with extra care.

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CHAPTER   3   SOFTWARE UTILITIES

CHAPTER   4   AWARD BIOS SETUP

Contents

INTRODUCTION

This chapter gives you the information for PS-8120B. It also outlines the System specifications.

Section includes:

● About This Manual

● Case Illustration

● System Specifications

● Safety precautions

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

1-1. ABOUT THIS MANUAL

Thank you for purchasing our PS-8120B Panel PC. The PS-8120B is an updated system designed to be comparable with the highest performance of IBM AT personal computers. The PS-8120B provides faster processing speed, greater expandability and can handle more tasks than before. This manual is designed to assist you how to install and set up the whole system. It contains four chapters. The user can apply this manual for configuration according to the following chapters :

Chapter 1 Introduction
This chapter introduces you to the background of this manual.   It also includes illustration and the specification for the whole system. The final page of this chapter indicates some safety reminders on how to take care of your system.

Chapter 2 Hardware Configuration
This chapter outlines the Prox-3675B component's location and their function. In the end of this chapter, you will learn how to set jumper and how to configure this card to meet your own needs.

Chapter 3 Software Utilities
This chapter contains helpful information for proper installations of the VIA Utility, VGA Utility, LAN Utility, Touch Screen Utility and Flash BIOS Update. It also describes the Watchdog-timer configuration.

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

Appendix A System Assembly
This 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

FRONT VIEW
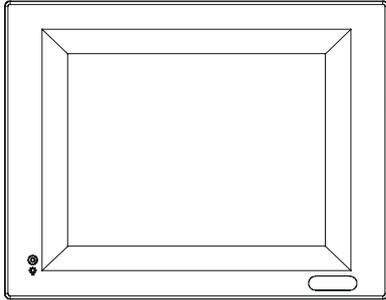
SIDE VIEW

TOP VIEW
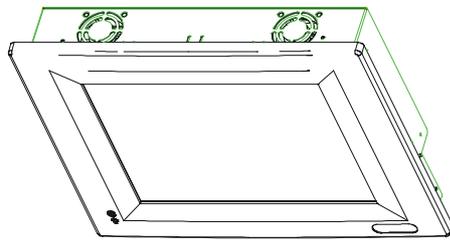
BOTTOM VIEW
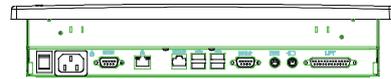
1-3. SYSTEM SPECIFICATIONS

MAINBOARD (PROX-3675B)

● **CPU TYPE :**
Intel® Celeron™ Processors, 300A ~1.0GHz
Intel® Pentium® !!! Processors, 500E ~ 1.0GHz
VIA C3™ Processors, PR433~700 MHz
Support Front Side Bus 133 / 100 / 66
Auto Detect Voltage Regulator.

● **CHIPSET :**
VIA ProSavage™ PL133.

● **MEMORY :**
Up to 512MB SDRAM
One 168-pin DIMM socket on board

● **CACHE :**
Depended on CPU

● **REAL-TIME CLOCK / CALENDAR :**
CMOS data back up from BIOS set or BIOS default
Built-in chipset with external battery

● **BIOS :**
Award Flash BIOS for plug & play function
Easy update 256KB flash EEPROM
Support Green Function
Support S/IO Setup

● **BUS SUPPORT :**
Internal PCI Bus for LAN
Internal AGP Bus for VGA

● **KEYBOARD / MOUSE CONNECTOR :**
Mini DIN connector.

● **IDE INTERFACE :**
Two IDE ports; two Channels
Support Ultra DMA-33 / 66 / 100

● **SERIAL PORT :**
Four high speed 16550 Compatible UARTs with Send / Receive 16 Byte FIFOs;
COM1 for RS-232;
COM2 for RS-232/422/485
COM3 for RS-232
COM4 for RS-232; fixed for touch screen (optional)
MIDI Compatible
Programmable Baud Rate Generator

● **PARALLEL PORT :**
Support SPP, ECP, EPP mode
Bi-directional parallel port

● **UNIVERSAL SERIAL BUS PORT :**
Support up to four USB ports

● **SSD SOCKET :**
32-pin SSD socket on board
Support up to 144MB Disk-On-Chip

● **HARDWARE MONITORING FUNCTION :**
Built-in VT82C686B
Monitor CPU voltage, temperature and cooling fan

● **WATCHDOG :**
I / O port 0443H to Enable watchdog
I / O port 0441H to Disable watchdog
Selectable for Reset / NMI Watchdog function
Time-out timing select $0 \sim 120$ sec +/- 25%

● **LED INDICATOR :**
System power
LAN LED indicator

● **LAN FUNCTION :**
   Realtek RTL 8139 PCI Fast Ethernet
   Support 10/100 Base-T specification
   Interface: RJ-45 Jack on board

● **VGA FUNCTION :**
   Built-in VIA VT8604, support CRT & LCD (LVDS)
   Integrated S3®'s Savage4™ 2D/3D/Video Accelerator
   Support simultaneous display of CRT and LCD
   Interface: One 21-pin connector

● **BOARD DIMENSION :**
   Prox-3675B: 249mm x 163.8mm

LCD PANEL

● **LCD TYPE :**
   IMES M121-55DB
   30.8cm (12.1 inch) TFT Color LCD Module
   With CFL backlight unit
   Non-glare surface type

● **RESOLUTION :**
   800 (RGB) x 600

● **PIXEL PITCH :**
   0.3075 (W) x 0.3075 (H)

● **BRIGHTNESS :**
   360 cd / m^2

● **CONTRAST RATIO :**
   200 : 1

● **VIEWING ANGLE :**
   UP 15 Degree
   DOWN 30 Degree
   LEFT 50 Degree
   RIGHT 50 Degree

● **RESPONSE TIME :**
   TR 30 ms
   TF 30 ms

● **OPERATING LIFE :**
   30,000 HOURS

● **DIMENSION :**
   278mm x 204.4mm x 6.8mm

TOUCHSCREEN (OPTIONAL)

TYPE	ANALOG RESISTIVE (7 Wire Series)
Resolution	1024 x 768
Light Transmission	80%
Controller	RS-232 interface (uses COM4)
Power Consumption	+5V
Durability (Lifetime)	10 million

GENERAL INFORMATION

● **POWER SUPPLY :**
   Model: PW-F100ATX, 100 watt ATX Power Supply
   Input: 90~265 Vac / 3A, 60~60Hz
   Output: +5VSB/2A, +5Vdc/10A, +12Vdc/2.5A, -12Vdc/0.3A
   Input Current: Max. 3.0A at 115 Vac
   Dimension: 80mm x 130mm x 40mm

● **DISK DRIVE HOUSING :**
   One standard HDD

● **SYSTEM FAN :**
   Two [50mm x 50mm x 10mm] Cooling Fan

● **HOUSING CONSTRUCTION:**
   Electro Galvanized Steel chassis, aluminium front bezel

● **DIMENSION :**
   315mm x 285mm x 145mm

● **NET WEIGHT :**
   5Kg

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. Avoid extremely hot or cold places to install your PS-8120B Panel PC.
   b. 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-8120B when it's been left outdoors in a cold winter day.
   c. Bear in mind that the operating ambient temperature is from 0°C up to 40°C.
   d. 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.
   e. Place PS-8120B against strong vibrations, which may cause hard disk failure.
   f. Do not place the system too close to any radio active device.   Radio-active device may cause interference.
   g. Always shutdown the operation system before turning off the power.

3. Handling
   a. Avoid putting heavy objects on top of the system.

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.

SYSTEM CONFIGURATION

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

Section includes:

- Jumper & Connector Quick Reference Table

- Component Locations

- Configuration and Jumper settings

- Connector Pin Assignments

2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

CPU Type Selection	J7, J8, J9
COM Port Connector	COM1, COM2
	COM3, COM4
COM RI and Voltage Selection	JP8
COM +5V / +12V Selection	J1
RS232/422/485 (COM2) Selection	JP3
VGA Connector	VGA1
Panellink Connector	DFP1
LVDS Connector	LVDS1, LVDS2
Inverter Power Connector	CN3
LVDS Panel Power Connector	JP1
Solid State Disk Socket	SSD
SSD Memory Mapping Selection	JP4, JP5
Floppy Disk Drive Connector	FDD1, FDD1-1
Hard Disk Drive Connector	IDE1, IDE1-1, IDE2
PRT Connector	PRT1
LAN Connector	UTP1
Card Reader Connector	CN4
Keyboard Connector	KB1
PS/2 Mouse Connector	MS1
Mouse/IRQ12 Selection	JP16
Power Connector	CN1, CN5
AT/ATX Power Selection	JP13, JP15
Reset Connector	PANEL (9-10)
HDD LED Connector	PANEL (2, 4)
Green Function Connector	PANEL (11-12)
Sleep Button	PANEL (7-8)
External Speaker Connector	PANEL (1, 3)
CPU Fan Connector	FAN2
System Fan Connector	FAN1
Power Button	J12, J13
Power LED Connector	J10, J11
CMOS Function Selection	J4
USB Connector	USB1, USB2
Reset/NMI/Clear Watchdog Selection	JP6
Memory Installation	DIMM1
Reserved Pin	JP14, J14

2-2. COMPONENT LOCATIONS
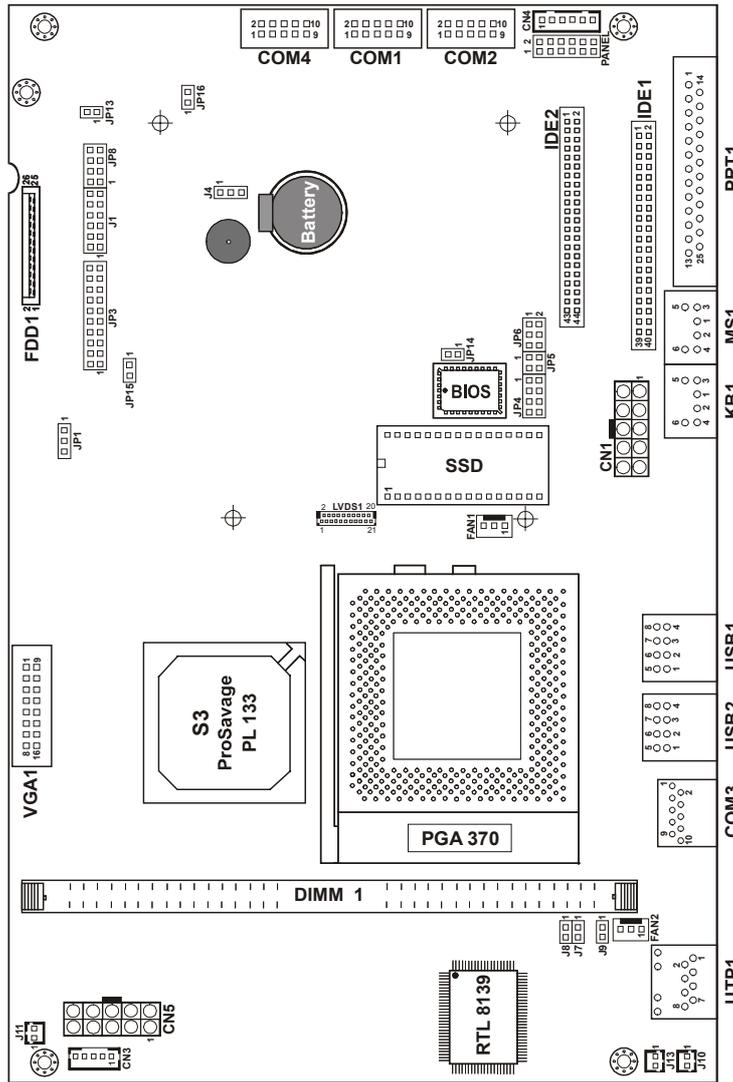
PS-8120B Connector, Jumper and Component locations

2-3. HOW TO SET THE JUMPERS

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

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

JUMPERS AND CAPS

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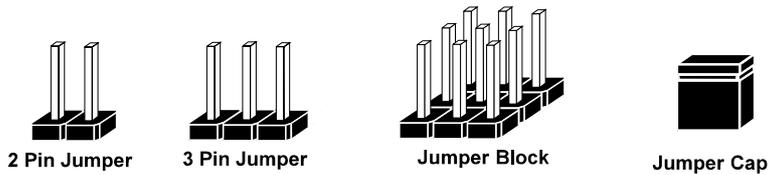
If a jumper has three pins for example, labelled PIN1, PIN2, and PIN3. You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams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

JUMPER DIAGRAMS

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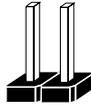
2 pin Jumper looks like this
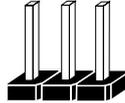
3 pin Jumper looks like this
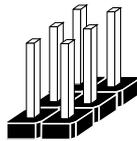
Jumper Block looks like this
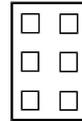
JUMPER SETTINGS

2 pin Jumper closed(enabled) looks like this

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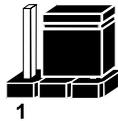
3 pin Jumper 2-3 pin closed(enabled) looks like this

1

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

1   2
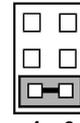
2-4. CPU TYPE SELECTION

J7, J8, J9 : CPU Type Selection
The selections are as follows :

CPU TYPE	JUMPER SETTING			JUMPER ILLUSTRATION
	J8	J7	J9	
Intel®	OFF	ON	OFF	J8 ☐ ☐ 1 J7 ▣ 1 J9 ☐ ☐ 1
Cyrix	ON	OFF	ON	J8 ▣ 1 J7 ☐ ☐ 1 J9 ▣ 1

*** Manufacturing Default is set as Intel®.

2-5. COM PORT CONNECTOR

There are four COM ports enhanced in this board namely: COM1, COM2, COM3 and COM4.   COM1, COM3 and COM4 are fixed for RS-232, while COM2 is selectable for RS-232/422/485.

COM1 : COM1 Connector
The COM1 Connector assignments are as follows :

PIN	ASSIGNMENT
1	DCD1
2	RXD1
3	TXD1
4	DTR1
5	GND
6	DSR1
7	RTS1
8	CTS1
9	RI / +5V / +12V selectable
10	NC
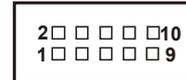
COM2 : COM2 Connector
The COM2 Connector assignments are as follows :

PIN	ASSIGNMENT		
	RS-232	RS-422	RS-485
1	DCD2	TX-	TX-
2	RXD2	TX+	TX+
3	TXD2	RX+	RX+
4	DTR2	RX-	RX-
5	GND	GND	GND
6	DSR2	RTS-	NC
7	RTS2	RTS+	NC
8	CTS2	CTS+	NC
9	RI/+5V/+12	CTS-	NC
10	NC	NC	NC
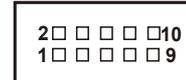
COM3 : COM3 Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI / +5V / +12V selectable
10	NC
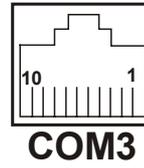
COM4 : COM4 Connector
The pin assignments are as follows :

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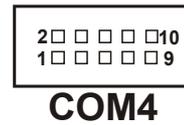
📖 All COM port's pin 9 is selectable for RI, +5V or +12V.   For more information, please refer to our "COM RI and Voltage Selection" & "COM +5V / +12V Selection"

2-6. COM RI & VOLTAGE SELECTION

JP8 (1-2) : COM1 RI & Voltage Selection
JP8 (3-4) : COM2 RI & Voltage Selection
JP8 (5-6) : COM3 RI & Voltage Selection
JP8 (7-8) : COM4 RI & Voltage Selection
The selections are as follows:

COM PORT	SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
COM1	RI	1-2	
	Voltage	Open	
COM2	RI	3-4	
	Voltage	Open	
COM3	RI	5-6	
	Voltage	Open	
COM4	RI	7-8	
	Voltage	Open	

***Manufacturing Default – RI. (All jumpers are closed).

✍ *For Voltage Selection, user may select +5V / +12V, please refer to our "COM +5V/-12V Selection".*

2-7. COM +5V / +12V SELECTION

J1 (1,3,5) : COM1 +5V/+12V Selection
J1 (2,4,6) : COM2 +5V/+12V Selection
J1 (7,9,11) : COM3 +5V/+12V Selection
J1 (8,10,12) : COM4 +5V/+12V Selection
The selections are as follows:

COM PORT	VOLTAGE SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
COM1	+5V	3-5	
	+12V	1-3	
COM2	+5V	4-6	
	+12V	2-4	
COM3	+5V	7-9	
	+12V	9-11	
COM4	+5V	8-10	
	+12V	10-12	
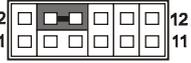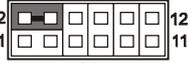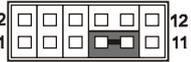
2-8. RS232/422/485 (COM2) SELECTION

JP3 : RS-232/422/485 (COM2) Selection
COM2 is selectable for RS-232, 422, 485 function.
The jumper settings are as follows :

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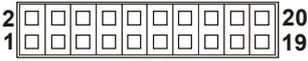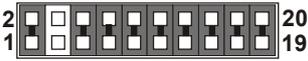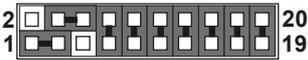
*** Manufactory default --- RS-232.

2-9. VGA CONNECTOR

VGA : VGA Connector
The pin assignments are as follows:

```
8 □ □ □ □ □ □ □ □ 1
16 □ □ □ □ □ □ □ □ 9
```

VGA1

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

2-10. PANELLINK (DFP) CONNECTOR

DFP1 : PanelLink Connector
The pin assignments are as follows :

```
11 □□□□□□□□□□ 20
 1 □□□□□□□□□□ 10
         DFP1
```
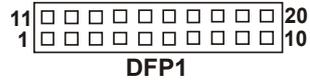
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	TX1+	11	TX2+
2	TX1-	12	TX2-
3	GND	13	GND
4	GND	14	GND
5	TXC+	15	TX0+
6	TXC-	16	TX0-
7	GND	17	NC
8	+5V	18	Panel detect
9	NC	19	PL_SDA
10	NC	20	PL_SCL

2-11. LVDS CONNECTOR

LVDS1 : LVDS Connector
The pin assignments are as follows :

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	12	A1P
2	GND	13	A1M
3	A3P	14	GND
4	A3M	15	A0P
5	GND	16	A0M
6	CLK1P	17	GND
7	CLK1M	18	GND
8	GND	19	Panel VDD
9	A2P	20	Panel VDD
10	A2M	21	NC
11	GND		

2 **LVDS1** 20

1   21
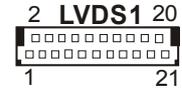
2-12. INVERTER POWER CONNECTOR

CN3: Inverter Power Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	V_FP
2	GND
3	BR CTR
4	GND
5	+12V

1

CN3

2-13. LVDS PANEL POWER CONNECTOR

JP1: LVDS Panel Power Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	PANEL VDD
3	DVCC

2-14. SOLID STATE DISK SOCKET

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

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

2-15. SSD MEMORY MAPPING SELECTION

JP4, JP5 : SSD Memory Mapping Selection
A 32-pin SSD socket supports Disk-on-Chip up to 288MB. This PnP
Flash ROM SSD can be install as one of user's hard disk drive.
The SSD Memory Mapping Selections are as follows:

SSD Memory Map	JUMPER SETTINGS (pin closed)		JUMPER ILLUSTRATION
	JP4	JP5	
CC000h-CDFFFh	1-2	3-4	
D0000h-D1FFFh	3-4	1-2	
D4000h-D5FFFh	3-4	3-4	
D8000h-D9FFFh	5-6	1-2	
DC000h-DDFFFh	5-6	3-4	
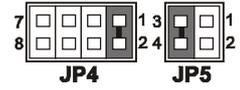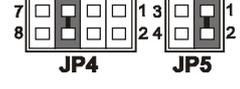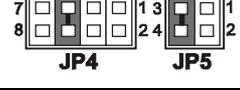
*** Manufactory default --- CC000h-CDFFFh.

2-16. FLOPPY DISK DRIVE CONNECTOR

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

FDD1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
2	INDEX#	1	VCC
4	DRVA#	3	VCC
6	DSKCHG#	5	VCC
8	NC	7	NC
10	MOTEA#	9	NC
12	FDIR#	11	NC
14	STEP#	13	DENSEL#
16	WDATA#	15	NC
18	WGATE#	17	GND
20	TK00#	19	GND
22	WPT#	21	GND
24	RDATA#	23	GND
26	SIDE1#	25	GND

2-17. HARD DISK DRIVE CONNECTOR

The board contains three Hard Disk Drive Connector namely: the IDE1, IDE1-1, and IDE2.

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

```
39 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ 1
40 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ 2
```
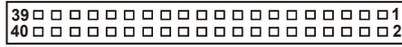
IDE1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	PRSTDRV-	21	IDEREQ0
2	GND	22	GND
3	IDED7	23	IDEIOW
4	IDED8	24	GND
5	IDED6	25	IDEIOR
6	IDED9	26	GND
7	IDED5	27	IDERDY
8	IDED10	28	PULL LOW
9	IDED4	29	IDEACK-
10	IDED11	30	GND
11	IDED3	31	IRQ14
12	IDED12	32	NC
13	IDED2	33	IDEA1
14	IDED13	34	NC
15	IDED1	35	IDEA0
16	IDED14	36	IDEA2
17	IDED0	37	IDECS1-
18	IDED15	38	IDECS3-
19	GND	39	IDEACTP
20	N.C.	40	GND

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

IDE2

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST#	2	GND
3	SDD7	4	SDD8
5	SDD6	6	SDD9
7	SDD5	8	SDD10
9	SDD4	10	SDD11
11	SDD3	12	SDD12
13	SDD2	14	SDD13
15	SDD1	16	SDD14
17	SDD0	18	SDD15
19	GND	20	NC
21	DDREQB	22	GND
23	DIOWB	24	GND
25	DIORB	26	GND
27	HDRDYB	28	PULL LOW
29	DDACKB	30	GND
31	IDE_IRQ15	32	NC
33	SDA1	34	S66 DETECT
35	SDA0	36	SDA2
37	SDCS1	38	SDCS3
39	IDE LED2	40	GND
41	VCC	42	VCC
43	GND	44	NC

2-18. PRINTER CONNECTOR

PRT1 : Printer Connector
As to link the Printer to the card, you need a cable to connect both DB25
connector and parallel port.
The pin assignments are as follows :
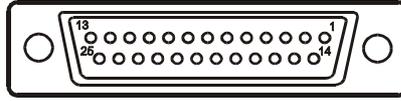
PRT1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STROBE	14	AUTOF-
2	PPD0	15	ERROR
3	PPD1	16	INIT-
4	PPD2	17	SLCTIN
5	PPD3	18	GND
6	PPD4	19	GND
7	PPD5	20	GND
8	PPD6	21	GND
9	PPD7	22	GND
10	ACK-	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

2-19. LAN CONNECTOR

UTP1: 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
9	PULL HI
10	LED – Green
11	PULL HI
12	LED - Yellow
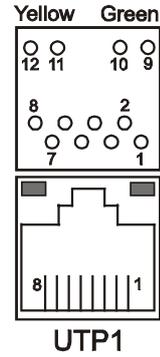
2-20. CARD READER CONNECTOR

CN4 : Card Reader Connector
The pin assignment is as follows :

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

2-21. KEYBOARD CONNECTOR

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

PIN	ASSIGNMENT
1	KB DATA
2	NC
3	GND
4	VCC
5	KB CLK
6	NC
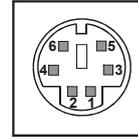
KB1

2-22. PS/2 MOUSE CONNECTOR

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

PIN	ASSIGNMENT
1	MS DATA
2	NC
3	GND
4	VCC
5	MS CLK
6	NC
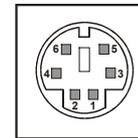
MS1

2-23. MOUSE / IRQ12 SELECTION

JP16 : Mouse / IRQ 12 Selection
The selections are as follows:

SELECTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
IRQ12	closed	1 [▢▬▬] JP16
PS/2 MOUSE	Open	1 [▢ ▢] JP16

***Manufacturing Default is set as PS/2 Mouse.

2-24. POWER CONNECTOR

CN1 : Power Connector
The pin assignments are as follows:

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

CN1
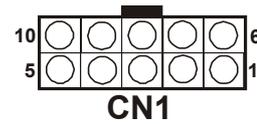
CN5 : Power Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCC
2	VCC
3	GROUND
4	GROUND
5	+12V
6	+5V SBY
7	VCC
8	GROUND
9	PS_ON
10	-12V
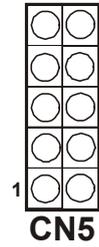
2-25. AT / ATX POWER SELECTION

JP13, JP15 : AT/ATX Power Selection
The selections are as follows :

POWER TYPE	JUMPER SETTING (pin closed) JP13	JP15	JUMPER ILLUSTRATION
AT	ON	ON	
ATX	OFF	OFF	

*** Manufacturing Default is set as ATX Power.

2-26. RESET CONNECTOR

PANEL(9-10) : Reset Connector.
The pin assignment is as follows :

PIN	ASSIGNMENT
9	GROUND
10	RESET SW
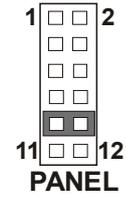
2-27. HDD LED CONNECTOR

PANEL(2,4) : HDD LED Connector
The pin assignment is as follows :

PIN	ASSIGNMENT
2	VCC
4	HDD LED
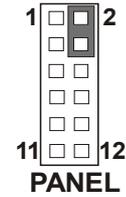
2-28. GREEN FUNCTION CONNECTOR

PANEL(11-12) : Green Function Connector
The pin assignment is as follows :

PIN	ASSIGNMENT
11	EXTSMI
12	GROUND
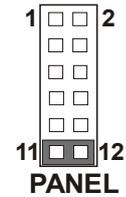
2-29. SLEEP BUTTON

PANEL(7-8) : Sleep Button
The pin assignment is as follows :

PIN	ASSIGNMENT
7	SLP BTN
8	GROUND
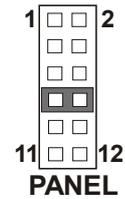
2-30. EXTERNAL SPEAKER CONNECTOR

PANEL(1,3) : External Speaker Connector
The pin assignment is as follows :

PIN	ASSIGNMENT
1	VCC
3	EXT BUZ
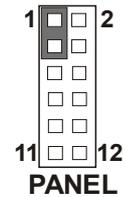
2-31. CPU FAN CONNECTOR

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

PIN	ASSIGNMENT
1	GROUND
2	+12V
3	FAN2

2-32. SYSTEM FAN CONNECTOR

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

PIN	ASSIGNMENT
1	GROUND
2	+12V
3	FAN1

FAN1

2-33. POWER BUTTON

J13 : Power Button
The pin assignments are as follows:

PIN	ASSIGNMENT
1	PW BTN
2	GROUND

J13
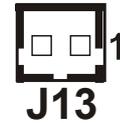
2-34. POWER LED CONNECTOR

J10 : Power LED Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	GROUND

J10

2-35. CMOS FUNCTION SELECTION

J4: CMOS Function Selection
The selections are as follows:

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
NORMAL	1-2	
CLEAR CMOS	2-3	

*** Manufacturing Default – Normal.

  To clear CMOS data, user must power-off the computer and set the jumper to "Clear CMOS" as illustrated above.   After five to six seconds, set the jumper back to "Normal" and power-on the computer.

2-36. UNIVERSAL SERIAL BUS CONNECTOR

USB1: Universal Serial Bus Connector.
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	USB DT0-
3	USB DT0+
4	GND
5	VCC
6	USB DT1-
7	USB DT1+
8	GND
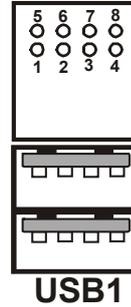
USB1

USB2: Universal Serial Bus Connector.
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	USB DT2-
3	USB DT2+
4	GND
5	VCC
6	USB DT3-
7	USB DT3+
8	GND
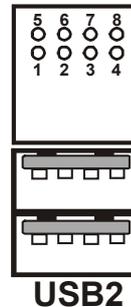
USB2

2-37. RESET / NMI / CLEAR WATCHDOG SELECTION

JP6 : Reset/NMI/Clear Watchdog Selection
The selections are as follows:

FUNCTION	JUMPER SETTING	JUMPER ILLUSTRATION
Reset	1-2	5 □□■ 1 6 □□■ 2 **JP6**
NMI	3-4	5 □■□ 1 6 □■□ 2 **JP6**
Clear Watchdog	5-6	5 ■□□ 1 6 ■□□ 2 **JP6**
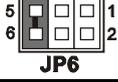
*** Manufacturing Default --- is set as Reset.

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

2-38. 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

SOFTWARE UTILITIES

This chapter comprises the detailed information of VGA driver, LAN driver, sound driver, VIA 4IN1 service pack driver, Touch screen driver and Flash BIOS update. It also describes how to install the watchdog timer configuration.

Section includes:

- VGA Driver Utility

- Flash BIOS Update

- LAN Driver Utility

- VIA 4IN1 Service Pack Driver Utility

- Touch screen Driver Utility

- Watchdog Timer Configuration

3-1. INTRODUCTION

Enclosed with our PS-8120B 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\SETUP.EXE	VIA 4in1 Service Pack Driver Utility
D:\VGA\	For VGA Driver installation
D:\Flash\	For flash BIOS update
D:\LAN\RTL8139	Realtek RTL8139 For LAN Driver installation
D:\Touch Screen\Fujitsu Touch\	For Touch screen Driver installation

✍ User must install VIA's 4IN1 Service Pack right after OS installation.

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
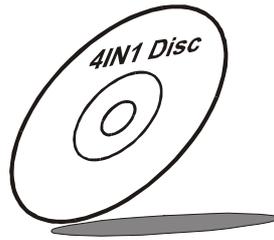
```
1. Win 95 program
2. Win NT program
3. Win 2000 program
4. Win 98/SE program
5. Win ME program
```

3-3. VGA DRIVER UTILITY

The VGA interface embedded with our PS-8120B can support a wide range of display mode, such as SVGA, STN, TFT .....etc. You can display CRT, LVDS and PanelLink simultaneously with the same mode.


```
1. Win 9x program
2. Win ME program
3. Win NT program
4. Win 2000 program
```

3-4. FLASH BIOS UPDATE

3-4-1. System BIOS Update:

Users of PS-8120B can use the program "Awdflash.exe" contained in the Utility Disk for system BIOS and VGA BIOS update.

3-4-2. To update VGA BIOS for LCD Flat Panel Display:

As PS-8120B user, you have to update the VGA BIOS for your specific LCD flat panel you are going to use. For doing this, you need two files. One is the "Awdflash.exe" file and the other is the VGA BIOS for LCD panel display. Both file must be provided by the vendor or manufacturer. When you get these two files ready, follow the following steps for updating your VGA BIOS:

1. Install "Awdflash.exe" from Utility Disk to Drive C.
2. Insert the VGA BIOS file you have obtained from the vendor.
3. Type the path to Awdflash.exe and execute the VGA BIOS update with file S75xxxxx.bin
   C:\UTIL\AWDFLASH>AWDFLASH   S75xxxxx.bin
4. The screen will display the table below:

```
┌─────────────────────────────────────────────────┐
│          FLASH MEMORY WRITER v7.XX                │
│     (C) Award Software 2000 All Rights Reserved   │
├─────────────────────────────────────────────────┤
│                                                   │
│         Flash Type - MXIC   29F002(N)T/5V         │
│                                                   │
│       File Name to Program:   S75xxxxx.bin        │
│               Checksum:   XXXXX                   │
│                                                   │
├─────────────────────────────────────────────────┤
│  Error Message :   Do You Want To Save BIOS (Y/N) │
└─────────────────────────────────────────────────┘
```

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

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│            FLASH MEMORY WRITER v7.XX                  │
│       (C) Award Software 2000 All Rights Reserved     │
│                                                       │
├─────────────────────────────────────────────────────┤
│                                                       │
│         Flash Type - MXIC   29F002(N)T/5V             │
│                                                       │
│                                                       │
│      File Name to Program:   S75xxxxx.bin             │
│              Checksum:   XXXXX                         │
│                                                       │
│                                                       │
├─────────────────────────────────────────────────────┤
│                                                       │
│   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 2000 All Rights Reserved     │
│                                                       │
├─────────────────────────────────────────────────────┤
│                                                       │
│         Flash Type - MXIC   29F002(N)T/5V             │
│                                                       │
│      File Name to Program:   S75xxxxx.bin             │
│              Checksum:   XXXXX                         │
│                                                       │
│            Reset System or Power off to               │
│             accomplish update process!                │
├─────────────────────────────────────────────────────┤
│   F1: Reset    F10: Exit                              │
└─────────────────────────────────────────────────────┘
```

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

3-5. LAN DRIVER UTILITY

3-5-1. Introduction

PS-8120B Embedded Board is enhanced with LAN function that can support various network adapters.   Installation programs for LAN drivers are listed as follows:


```
1. Win 95/98/2000 program
2. Win NT program
3. Novell 3.x/4.x program
4. SCO-Unix program
5. WFW 3.11 program
6. NDIS
7. MSLAN
8. LINUX
```
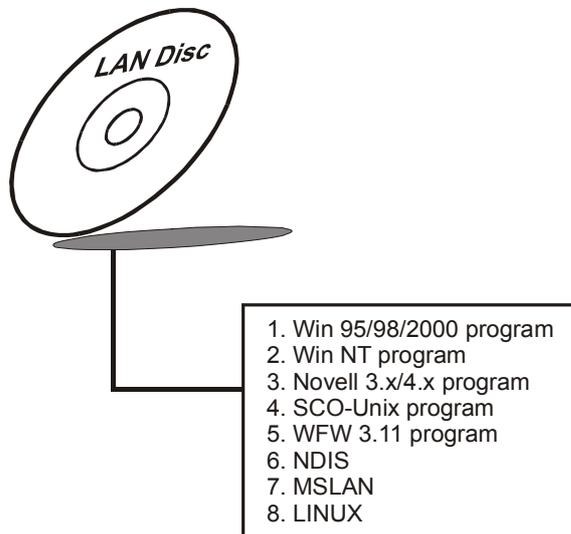
3-5-2. Installation Procedures of LAN Driver

1. Install LAN Driver to Windows 98/2000

Executing Windows 98/Windows 2000, it will auto-detect your system configuration and find the adapter hardware.

(1) Ask you to select which driver you want to install, select "Driver from disk provided by hardware manufacturer".

(2) Insert the Realtek RTL8139 driver disk into the drive A or CD drive and specify the setup file pathname, ex: A:\ .

(3) Win 98/ Win 2000 will appear some messages to insert Windows 98/Win2000 system disk to complete setup step.

(4) Windows 98/Windows 2000 will finish the other installation procedure automatically, and then restart the system.

2. Install LAN Driver to Windows NT 3.0/4.0

(1) In the Main group of NT, select the "Control Panel" icon.

(2) In the Control Panel window, choose the "Network" icon.

(3) In the Network Settings dialog box, choose the "Add adapter" button. The Add Network Adapter dialog box appears.

(4) In the list of network cards, select "<other> Requires disk from manufacturer", and then press <Enter> button.

(5) Insert the LAN driver utility, and enter the filename (ex. A:\ pathname) where the setup file OEMSETUP.INF is located, and then choose OK button.

(6) The screen will appear "Select Line Speed" dialog box, which is provided by RTL8139.SYS driver. The default value is "auto" so that the line speed can be auto detected as 10MB or 100MB, while the RTL8139.SYS is loading.

(7) The screen will appear "Input Ethernet ID" dialog box, which is provided by RTL8139.SYS driver. This option is only required when you have more than one RTL8139 PCI Fast Ethernet adapters on this computer. Select "SKIP" if only one adapter is installed on this computer.

(8) "Bus Location" displayed in next screen. Your machine contains more than one hardware bus, please select the Bus Type and Bus number on which your network adapter card is installed.

(9) NT will then perform the binding process. If any additional network software options were installed, you may be prompted for specific information for these packages.

(10) Re-starting your system you will acquire network service.

📁 Note: For Installing Multiple LAN Adapters:
Enter Windows NT and follow above setup procedure step 2, in the "Network Settings" dialog box, choose the "Configure..." button. The "Input Ethernet ID" dialog box appears and input adapter's Ethernet ID. Last step to select OK and close NETWORK SETUP. Select SKIP if only one adapter is installed on this computer.

For more information on installation procedure, please refer to TXT directory found on LAN DRIVER UTILITY.

3-6. TOUCH SCREEN DRIVER UTILITY (OPTIONAL)

The Touch Screen driver included in our CD-ROM Driver Disc is:

Fujitsu Touch   (Driver location - D:\Touch Screen\Fujitsu Touch\)

To install, kindly refer to the readme.txt file found separate file in the Driver Disc.

3-7. 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. This is defined at I/O port **443H**. When you want to enable the watchdog timer, please write I/O port **443H**, and then the system will either reset itself or perform the NMI function. Likewise, when you want to disable the function, write I/O port **441H**, the system will run the command to stop the Watchdog function.

In PS-8120B watchdog function, you must write your program so when it writes I/O port address 443 for enable watchdog and write I/O port address 441 for disable watchdog. The timer's intervals have a tolerance of 25% so you should program an instruction that will refresh the timer about every second.

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

Watchdog enable program:
MOVAX, 000FH(choose the values you need; start from 0)
MOVDX, 443H
OUTDX, AX

Watchdog disable program:
MOVAX, 000FH(this value can be ignored)
MOVDX, 441H
OUTDX, AX

The Watchdog Timer control table is as follows:

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

AWARD BIOS SETUP
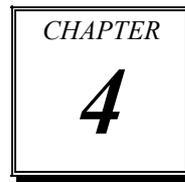
This chapter shows how to set up the Award BIOS.

Section includes:

- Introduction
- Entering Setup
- The Standard CMOS Features
- The Advanced BIOS Features
- The Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PNP/PCI Configuration
- PC Health Status
- Frequency/Voltage Control
- Load Fail-Safe Defaults
- 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-8120B Panel PC 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:
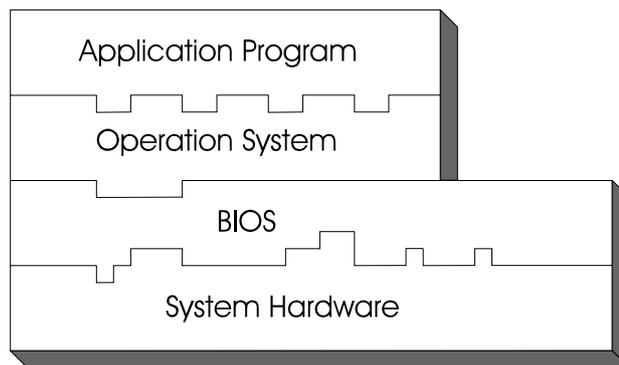
4-2. ENTERING SETUP

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:

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software

►Standard CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Password
►Power Management Setup	Save & Exit Setup
►PnP/PCI Configurations	Exit Without Saving
►PC Health Status	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
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:

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
Standard CMOS Features

Date (mm:dd:yy)	Fri, Jan 4 2002	Item Help
Time (hh:mm:ss)	22 : 40 : 32	
		Menu Level ►
► IDE Primary Master	[IBM-DHEA-36481]	
► IDE Primary Slave	[None]	Change the day, month,
► IDE Secondary Master	[FX54++W]	year and century
► IDE Secondary Slave	[None]	
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	56320K	
Total Memory	57344K	

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

CMOS Setup screen

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

Date:

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

Time:

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

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

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

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
IDE Primary Master

IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Primary Master	[Auto]	Menu Level ►►
Access Mode	[Auto]	
Capacity	13022 MB	To auto-detect the HDD's size, head…on this channel
Cylinder	25232	
Head	16	
Precomp	65535	
Landing Zone	25231	
Sector	63	

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

Table 1 – IDE Primary Master sub menu

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

3. Access Mode

There are four available options for this item, namely: Normal, LBA, Large and Auto. Choose the access mode for this hard disk.

4. Capacity

Disk Drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

DRIVE A AND DRIVE B:

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

VIDEO:

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

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

HALT ON:

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

BASE MEMORY:

Displays the amount of conventional memory detected during boot up.

EXTENDED MEMORY:

Displays the amount of extended memory detected during boot up.

TOTAL MEMORY:

Displays the total memory available in the system.

HARD DISK ATTRIBUTES:

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

Award Hard Disk Type Table

4-4. THE ADVANCED BIOS FEATURES

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

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
Advanced BIOS Features

Virus Warning	[Disabled]	Item Help
CPU Internal Cache	[Enabled]	
External Cache	[Enabled]	Menu Level ►
CPU L2 Cache ECC Checking	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Floppy]	Allows you to choose
Second Boot Device	[HDD-0]	the VIRUS warning
Third Boot Device	[LS120]	feature for IDE Hard
Boot Other Device	[Disabled]	Disk boot sector
Swap Floppy Drive	[Disabled]	protection. If this
Boot Up Floppy Seek	[Enabled]	function is enabled and
Boot Up NumLock Status	[On]	someone attempt to
Gate A20 Option	[Fast]	write data into this area,
Typematic Rate Setting	[Disabled]	BIOS will show a
X Typematic Rate (Chars/Sec)	6	warning message on
X Typematic Delay (Msec)	250	screen and alarm beep
Security Option	[Setup]	
OS Select for DRAM > 64MB	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
C8000-CBFFF Shadow	[Disabled]	
CC000-CFFFF Shadow	[Disabled]	
D0000-D3FFF Shadow	[Disabled]	
D4000-D7FFF Shadow	[Disabled]	
D8000-DBFFF Shadow	[Disabled]	
DC000-DFFFF Shadow	[Disabled]	
Small Logo (EPA) Show	[Enabled]	

↑↓→←: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 Menu

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 BOOT DEVICE:
SECOND BOOT DEVICE:
THIRD BOOT DEVICE:
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 copied to RAM.   However, it is optional depending on chipset design.   Video Shadow will increase the video speed.

C8000-CBFFF SHADOW ~ DC000-DFFFF SHADOW :
   These categories determine whether option ROMs will be copied to RAM. An example of such option ROM would be support of on-board SCSI.

4-5. ADVANCED CHIPSET FEATURES

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

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
Advanced Chipset Features

		Item Help
DRAM Timing by SPD	[Enabled]	
X DRAM Clock	Host CLK	
X SDRAM Cycle Length	3	Menu Level ►
X Bank Interleave	Disabled	
Memory Hole	[Disabled]	
P2C/C2P Concurrency	[Enabled]	
Fast R-W Turn Around	[Disabled]	
System BIOS Cacheable	[Disabled]	
Video RAM Cacheable	[Disabled]	
Frame Buffer Size	[8M]	
AGP Aperture Size	[64M]	
AGP-4X Mode	[Enabled]	
AGP Driving Control	[Auto]	
X AGP Driving Value	DA	
OnChip USB	[Enabled]	
USB Keyboard Support	[Disabled]	
OnChip Sound	[Auto]	
Keyboard POWER-ON	[Disabled]	
CPU to PCI Write Buffer	[Enabled]	
PCI Dynamic Bursting	[Enabled]	
PCI Master 0 WS Write	[Enabled]	
PCI Delay Transaction	[Disabled]	
PCI#2 Access #1 Retry	[Enabled]	
AGP Master 1 WS Write	[Disabled]	
AGP Master 1 WS Read	[Disabled]	
IO Channel check NMI	[Disabled]	

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

Chipset Features Setup Screen

The parameter allows you to configure the system based on the specific features of the installed chipset.   The chipset manages bus speed and access to system memory resources, such as DRAM and the external cache.

It also coordinates communications between conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for the system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM CLOCK:
This item allows you to control the DRAM speed.

SDRAM CYCLE LENGTH:
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

BANK INTERLEAVE:
This item allows you to set how many banks of SDRAM support in your mainboard.

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

P2C/C2P CONCURRENCY:
This item allows you to enable/disable the PCI to CPU, CPU to PCI concurrency.

FAST R-W TURN AROUND:
This item controls the DRAM timing. It allows you to enable/disable the fast read/write turn around.

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.

FRAME BUFFER SIZE:
This item allows you to control the VGA frame buffer size.

AGP APERTURE SIZE:
This allows you to adjust the graphics aperture size.   The aperture is a portion of the PCI memory address range dedicated for graphics memory address space.   Host cycles that hit the aperture range are forwarded to the AGP without any translation.

AGP-4X MODE:
This item allows you to enable or disable the AGP-4X Mode.

AGP DRIVING CONTROL:
This item allows you to adjust the AGP driving force.   Choose *Manual* to key in an AGP Driving Value in the next selection.   This field is recommended to set in Auto for avoiding any error in your system.

AGP DRIVING VALUE:
This item allows you to adjust the AGP driving force.

ONCHIP USB:
This should be enabled if your system has a USB installed on the system board and you want to use it.   Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

USB KEYBOARD SUPPORT:
Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

ONCHIP SOUND:
This item allows you to control the onboard AC '97 audio.

KEYBOARD POWER-ON:
This item allows you to power-up the system through keyboard.

CPU TO PCI WRITE BUFFER:
When this field is Enabled, writes from the CPU to the PCI bus are buffered, to compensate for the speed differences between the CPU and the PCI bus. When Disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.

PCI DYNAMIC BURSTING:
When Enabled, every write transaction goes to the write buffer. Burstable transactions then burst on the PCI bus and non-burstable transaction don't.

PCI MASTER 0 WS WRITE:
When Enabled, writes to the PCI bus are executed with zero wait states.

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.

PCI#2 ACCESS #1 RETRY:
When disabled, PCI#2 will not be disconnected until access finishes. When Enabled, PCI#2 will be disconnected if max retries are attempted without success.

AGP MASTER 1 WS WRITE:
When Enabled, writes to the AGP (Accelerated Graphics Port) are executed with one wait state.

AGP MASTER 1 WS READ:
When Enabled, read to the AGP (Accelerated Graphics Port) are executed with one wait state.

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

4-6. INTEGRATED PERIPHERALS

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

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
Integrated Peripherals

On-Chip IDE Channel0	[Enabled]	Item Help
On-Chip IDE Channel1	[Enabled]	
IDE Prefetch Mode	[Disabled]	
Primary Master PIO	[Auto]	Menu Level ▶
Primary Slave PIO	[Auto]	
Secondary Master PIO	[Auto]	
Secondary Slave PIO	[Auto]	
Primary Master UDMA	[Disabled]	
Primary Slave UDMA	[Disabled]	
Secondary Master UDMA	[Disabled]	
Secondary Slave UDMA	[Disabled]	
Init Display First	[PCI Slot]	
IDE HDD Block Mode	[Disabled]	
Onboard FDD Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
Onboard Parallel Port	[378/IRQ7]	
Onboard Parallel Mode	[Normal]	
x ECP Mode Use DMA	3	
x Parallel Port EPP Type	EPP1.9	
Onboard Serial Port 3	[3E8]	
Serial Port 3 Use IRQ	[IRQ10]	
Onboard Serial Port 4	[2E8]	
Serial Port 4 Use IRQ	[IRQ11]	
Infrared Controller	[Disabled]	
x IR I/O Port	3E0H	
x IR Mode	IrDA	
x IR Transmission delay	Disabled	
x IR Use IRQ	IRQ5	
x FIR Mode Use DMA	Disable	

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

Integrated Peripherals Setup Screen

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.

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.

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.

IDE PREFETCH MODE:
The onboard IDE drive interfaces supports IDE pre-fetching 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 pre-fetching.

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

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

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

IDE HDD BLOCK MODE:

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

ONBOARD FDC CONTROLLER:

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

ONBOARD SERIAL PORT 1:
ONBOARD SERIAL PORT 2:

　　Select an address and corresponding interrupt for the 1st, and second serial ports.

ONBOARD SERIAL PORT 3:
SERIAL PORT 3 USE IRQ:
ONBOARD SERIAL PORT 4:
SERIAL PORT 4 USE IRQ:

　　Select an address and corresponding interrupt for the 3rd and forth serial ports.

ONBOARD PARALLEL PORT:

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

ONBOARD PARALLEL MODE:

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

ECP MODE USE DMA:

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

INFRARED CONTROLLER:

　　Select the *I/O port address*, *corresponding interrupt*, *IR Mode*, *transmission delay* and *FIR Mode Use DMA*.

PARALLEL PORT EPP TYPE:

Select EPP port type 1.7 or 1.9 as required by your parallel peripheral.

ONBOARD LEGACY AUDIO:

This field controls the onboard legacy audio.

❶ Sound Blaster   ❷ SB I/O Base Address
❸ SB IRQ Select   ❹ SB DMA Select
❺ MPU-401   ❻ MPU-401 I/O Address
❼ Game Port (200-207H)

4-7. POWER MANAGEMENT SETUP

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

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
Power Management Setup

ACPI Function	[Enabled]	Item Help
►Power Management	[Press Enter]	
PM Control by APM	[Yes]	Menu Level ►
Video Off Option	[Suspend->Off]	
Video Off Method	[DPMS Support]	
MODEM Use IRQ	[3]	
Soft-Off by PWRBTN	[Instant-Off]	
State After Power Failure	[off]	
►Wake Up Events	[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 Screen

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

ACPI FUNCTION:

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

POWER MANAGEMENT:

This item allows the user to select the type or degree of power saving and is directly related to HDD Power Down, Doze Mode and Suspend Mode.

PM CONTROL BY APM:

If Advanced Power Management (APM) is installed on your system, selecting Yes gives better power savings.

VIDEO OFF OPTION:

This category determines the power-saving modes during which the monitor goes blank:

ALWAYS ON	Monitor remains on during power-saving modes.
SUSPEND $\rightarrow$ OFF	Monitor blanked when system enters Suspend mode.
SUSP,STBY $\rightarrow$ OFF	Monitor blanked when system enters either Suspend or Standby mode.
ALL MODES $\rightarrow$ OFF	Monitor blanked when 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 SUPPORT	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.

STATE AFTER POWER FAILURE:

This field lets you determine the state that your system returns to after a power failure. When set to OFF, the system will not boot after a power failure. When set to ON, the system will restart after a power failure.

PM EVENTS:

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

VGA:

When Enabled, you can set the VGA awakens the system.

LPT & COM:

When *ON of LPT & COM*, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

HDD & FDD:

When *ON of HDD & FDD*, any activity from one of the listed system peripheral devices wakes up the system.

PCI MASTER:

When *ON of PCI Master*, any activity from one of the listed system peripheral devices wakes up the system.

WAKE UP ON LAN/RING:

This category allows you to wake up the system from LAN from remote host. And it also can be awaken from an input signal on serial Ring Indicator (RI) line (incoming call on the modem).

RTC ALARM RESUME:

When Enabled, you can set the date and the time at which the RTC alarm awakens the system from Suspend mode.

PRIMARY INTR:

When set to Off, IRQ Activity Monitoring is set to BIOS default.   When set to On, user may select the desired setting.

4-8. PNP/PCI CONFIGURATION

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

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
PnP/PCI Configurations

PNP OS Installed	[Yes]	Item Help
Reset Configuration Data	[Disabled]	
		Menu Level ►
Resources Controlled By	[Auto(ESCD)]	
X IRQ Resources	Press Enter	
X DMA Resources	Press Enter	Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
PCI/VGA Palette Snoop	[Disabled]	
Assign IRQ for VGA	[Enabled]	
Assign IRQ for USB	[Enabled]	

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

PNP/PCI Configuration Setup Screen

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:

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

PCI/VGA PALETTE SNOOP:

Leave this field at disabled.

ASSIGN IRQ FOR VGA:

Enable or Disable to assign IRQ for VGA.

ASSIGN IRQ FOR USB:

Enable or 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:

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
PC Health Status

Current CPU Temp.	53°C/127°F	Item Help
Current CPUFAN1 Speed	0 RPM	
Current CPUFAN2 Speed	5799 RPM	Menu Level ►
Vcore	2.01 V	
2.5V	2.50 V	
3.3V	3.25 V	
5V	5.07 V	
12V	11.40 V	

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

PC Health Status Setup Screen

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

CURRENT CPU TEMPERATURE:
This item shows you the current CPU temperature.

CURRENT CPUFAN1/CPUDAN2 SPEED:
This item shows you the current CPUFAN speed.

VCORE:
This item shows you the current system voltage.

4-10. FREQUENCY/VOLTAGE CONTROL

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

```
         CMOS Setup Utility – Copyright (C) 1984-2001 Award Software
                             Frequency Control
┌──────────────────────────────────────────────┬────────────────────────┐
│ Auto Detect DIMM/PCI Clk      [Enabled]        │                        │
│ Spread Spectrum               [Disabled]       │ Item Help              │
│ CPU Host Clock (CPU/PCI)      [Default]         ├────────────────────────┤
│                                                │ Menu Level    ►        │
│                                                │                        │
│                                                │                        │
│                                                │                        │
│                                                │                        │
│                                                │                        │
│                                                │                        │
│                                                │                        │
│                                                │                        │
│                                                │                        │
├────────────────────────────────────────────────┴───────────────────────┤
│ ↑↓→←:Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│    F5: Previous Values     F6:Fail-Safe Defaults    F7:Optimized Defaults │
└──────────────────────────────────────────────────────────────────────────┘
```

Frequency / Voltage Control Setup Screen

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 HOST CLOCK (CPU/PCI):
Select Default or select a timing combination for the CPU and the PCI bus. When set to Default, the BIOS uses the actual CPU and PCI bus clock values.

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:

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software

►Standard CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management	word
►PnP/PCI Configura	etup
►PC Health Status	Saving

Save to CMOS and EXIT Y/N)? Y

Esc : Quit   ↑↓→← : Select Item
F10 : Save & Exit Setup

Save Data to CMOS

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

4-15. 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:

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software

►Standard CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management	word
►PnP/PCI Configura	Quit Without Saving (Y/N)? N etup
►PC Health Status	Saving

Esc : Quit   ↑↓→← : Select Item
F10 : Save & Exit Setup

Abandon all Datas

SYSTEM ASSEMBLY

This appendix contain exploded diagram of the system.

Section includes:

- Exploded Diagram for Whole System Unit

- Optional Strong Arm Holder

EXPLODED DIAGRAM FOR WHOLE SYSTEM UNIT

Front Bezel with Touch Screen

System Base with LCD Panel,
HDD, Main Board, & Power
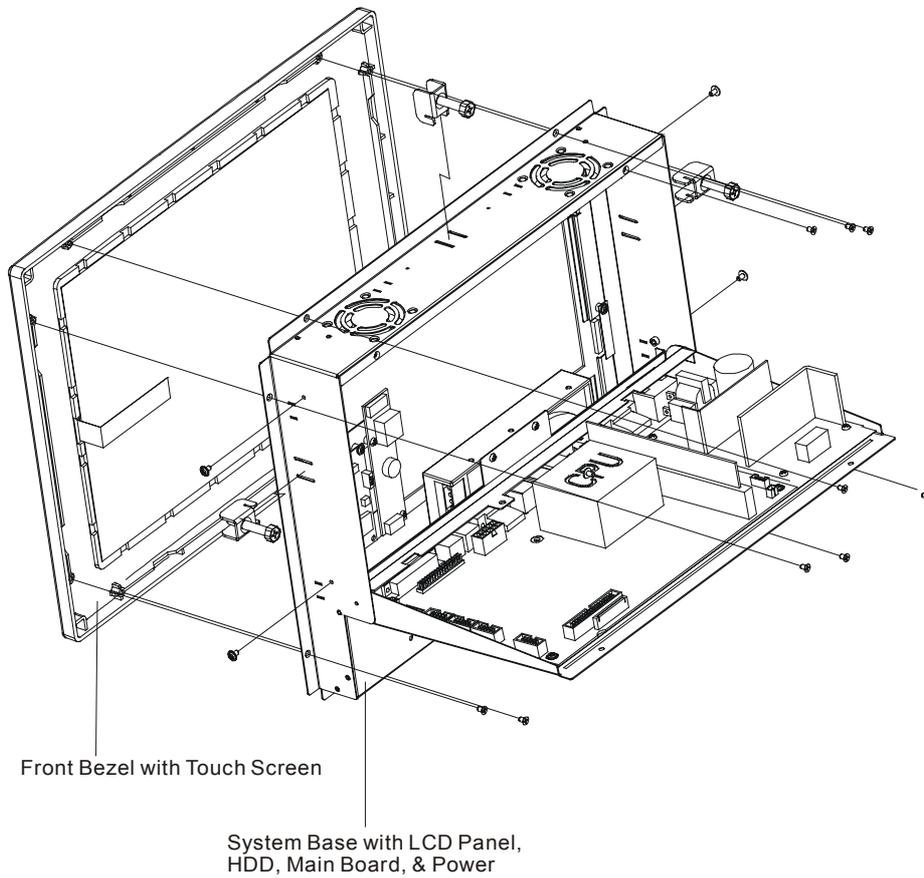
OPTIONAL STRONG ARM HOLDER
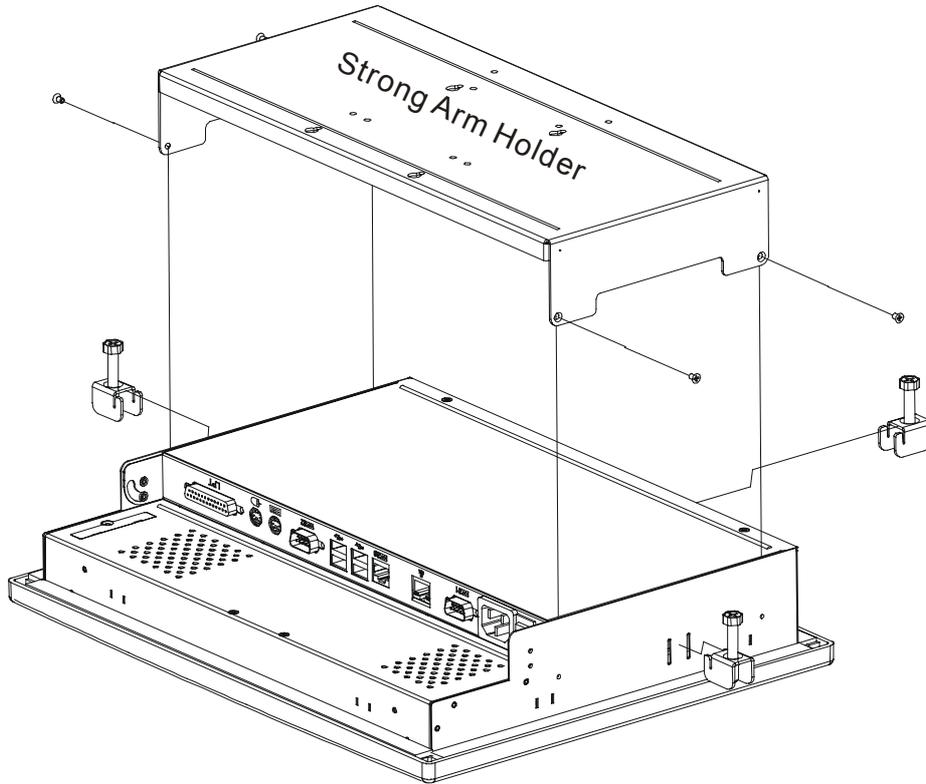
TECHNICAL SUMMARY
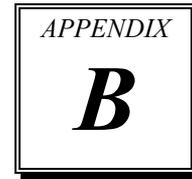
This section introduce you the maps concisely.

Section includes:

● Block Diagram

● Interrupt Map

● RTC (Standard) RAM Bank

● Timer & DMA Channels Map

● I / O & Memory Map

BLOCK DIAGRAM

```
                    ┌─────────────────────────┐
                    │  Socket 370  Processors │
                    └─────────────────────────┘
                                ↕
    ◄═══════════════════════════╪═══════════════════════►  Host Bus
                                ↕
  ┌──────────┐        ┌─────────────────────┐        ┌──────────┐
  │   CRT    │ ◄──►   │         VIA         │ ◄──►   │ MEMORY   │
  │ MONITOR  │        │                     │        │ 1 DIMM   │
  ├──────────┤        │      VT 8604        │        │ MODULE   │
  │   LCD    │ ◄──►   │   NORTH BRIDGE      │        └──────────┘
  │LVDS/PanelLink│    └─────────────────────┘
  └──────────┘                  ↕
    ◄═══════════════════════════╪═══════════════════════►  PCI Bus
                                ↕
  ┌──────────┐        ┌─────────────────────┐        ┌──────────┐
  │   H/M    │ ◄──►   │         VIA         │ ◄──►   │ KB / MS  │
  ├──────────┤        │                     │        ├──────────┤
  │  Sound   │ ◄──►   │     VT 82C686B      │ ◄──►   │ IDE 1-2  │
  │          │        │    SOUTH BRIDGE     │        │ ATA-100  │
  ├──────────┤        │                     │        ├──────────┤
  │ USB 1-4  │ ◄──►   └─────────────────────┘ ◄──►   │ COM1-2   │
  └──────────┘                  ↕                    │ LPT / FDD│
                                ↕                    └──────────┘
  ◄═════╪═══════════╪═══════════╪═══════════╪═══════►  ISA Bus
        ↕           ↕           ↕           ↕
  ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
  │Flash ROM │ │  PC104   │ │  IRDA    │ │ COM 3-4  │
  └──────────┘ └──────────┘ └──────────┘ └──────────┘
```
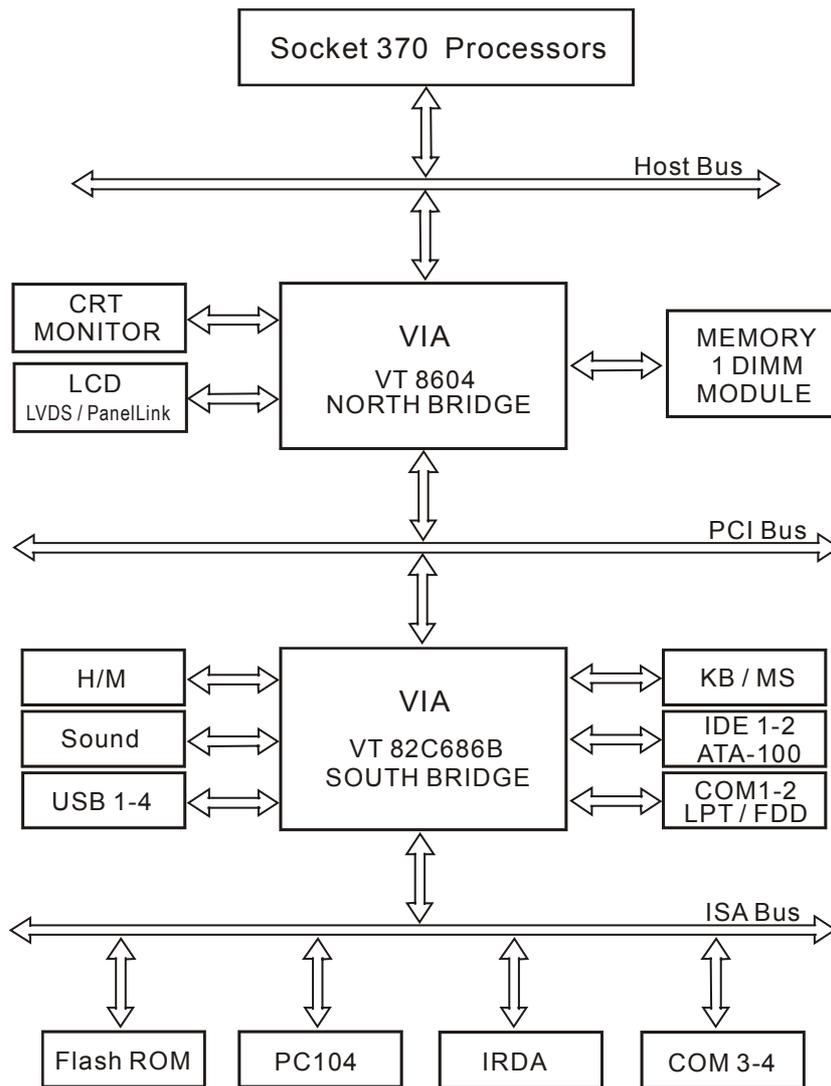
INTERRUPT MAP

IRQ	ASSIGNMENT
0	System TIMER interrupt from TIMER-0
1	Keyboard
2	Cascade for IRQ 8-15
3	Serial port 2
4	Serial port 1
5	Parallel port 2
6	Floppy disk
7	Parallel port 1
8	RTC Alarm clock
9	IRQ2 Redir
10	COM3
11	COM4
12	PS/2 Mouse
13	Coprocessor
14	IDE1
15	IDE2

RTC & CMOS RAM MAP

CODE	ASSIGNMENT
00	Seconds
01	Second alarm
02	Minutes
03	Minutes alarm
04	Hours
05	Hours alarm
06	Day of week
07	Day of month
08	Month
09	Year
0A	Status register A
0B	Status register B
0C	Status register C
0D	Status register D
0E	Diagnostic status byte
0F	Shutdown byte
10	Floppy Disk drive type byte
11	Reserve
12	Hard Disk type byte
13	Reserve
14	Equipment byte
15	Base memory low byte
16	Base memory high byte
17	Extension memory low byte
18	Extension memory high byte
30	Reserved for extension memory low byte
31	Reserved for extension memory high byte
32	Date Century byte
33	Information Flag
34-3F	Reserve
40-7f	Reserved for Chipset Setting Data

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
2	Floppy
3	Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

I/O & MEMORY MAP

Memory Map :

MEMORY MAP	ASSIGNMENT
0000000-009FFFF	System memory used by DOS and application
00A0000-00BFFFF	Display buffer memory for VGA/ EGA / CGA / MONOCHROME adapter
00C0000-00DFFFF	Reserved for I/O device BIOS ROM or RAM buffer.
00E0000-00EFFFF	Reserved for PCI device ROM
00F0000-00FFFFF	System BIOS ROM
0100000-FFFFFFF	System extension memory

I/O Map :

I/O MAP	ASSIGNMENT
000-01F	DMA controller (Master)
020-021	Interrupt controller (Master)
022-023	Chipset controller registers I/O ports.
040-05F	Timer control regsiters.
060-06F	Keyboard interface controller (8042)
070-07F	RTC ports & CMOS I/O ports
080-09F	DMA register
0A0-0BF	Interrupt controller (Slave)
0C0-0DF	DMA controller (Slave)
0F0-0FF	Math coprocessor
1F0-1F8	Hard Disk controller
278-27F	Parallel port-2
2B0-2DF	Graphics adapter controller
2F8-2FF	Serial port-2
360-36F	Net work ports
378-37F	Parallel port-1
3B0-3BF	Monochrome & Printer adapter
3C0-3CF	EGA adapter
3D0-3DF	CGA adapter
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port-1

TROUBLE SHOOTING
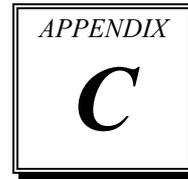
This section outlines the errors may occur when you operate the system.   It also gives you the suggestions on solving the problems.

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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