# USER'S MANUAL

## ProX-1260

**VIA EDEN Half-size
Embedded Card
With VGA/LAN/SOUND**

Prox-1260 M2

# *Prox-1260*
# *Half-size CPU Board*
## *With VGA / Sound / LAN*

# *OPERATION MANUAL*

## COPYRIGHT NOTICE

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

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## CE NOTICE

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## FCC NOTICE

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

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

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# *INTRODUCTION*

This chapter gives you the information for Prox-1260. It also outlines the System specifications.

Section includes:

● About This Manual

● 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 Prox-1260, Half Size CPU Board enhanced with VGA/Sound/LAN, is fully PC / AT/ATX compatible. The Prox-1260 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 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, and the specifications for this system. The final page of this chapter will indicate how to avoid damaging this Embedded Board.

### Chapter 2 Hardware Configuration

This chapter outlines the component locations and their functions. In the end of this chapter, you will learn how to set jumper and how to configure this card to meet your own needs.

### Chapter 3 Software Utilities

This chapter contains helpful information for proper installations of the VGA Utility, LAN Utility, Sound Utility, and 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 Expansion Bus

This Appendix introduces you the expansion bus for PC/104.

### 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. SYSTEM SPECIFICATIONS

● **CPU :**
VIA Eden 400/667 MHz processors
Auto detect voltage regulator.

● **SYSTEM CHIPSET :**
VIA VT8606, VT82C686B

● **MEMORY :**
Up to 512MB SDRAM
One 144-pin SO-DIMM socket on board.

● **CACHE :**
Built-in CPU.

● **REAL-TIME CLOCK / CALENDAR :**
CMOS data back up from BIOS set or BIOS default.
Built-in VIA VT82C686B.
External 5.0V Real Time Clock (Optional).

● **BIOS :**
PhoenixAward PnP BIOS Memory size 2 Mbytes, with VGA BIOS.
Easy update 256KB flash EEPROM.
Supports Green Function.
Supports S/IO Setup.

● **KEYBOARD CONNECTOR :**
PS/2 keyboard with mini DIN connector or one external 5-pin boxheader
connector with mini DIN cable
Supports Y-Cable.

● **MOUSE CONNECTOR :**
PS/2 mouse connector with min DIN cable
Selectable with keyboard DIN connector

● **BUS SUPPORT :**
PC/104 Bus
ISA Bus

● **DISPLAY :**

Built-in VIA VT8606, supports CRT, TTL & LVDS.
Integrated S3®'s Savage4™ 2D/3D/Video Accelerator.
Optimized Shared Memory Architecture (SMA).
2~32 MB Frame Buffer using system memory.
Supports simultaneous display of CRT & LCD.
Interface:
One 15-pin connector supports for CRT Monitor.
One 41-pin connector support 18 bit or 24 bit panel for TTL.
One 30-pin connector support 2x18 bit LVDS panel.

● **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 / 8 / 16 / 24 / 32 / 40 / 48 / 56 / 64 / 72 / 80 / 88 /
96 / 104 / 112 / 120 sec +/- 25%.

● **IDE INTERFACE :**

One EIDE port supports Ultra DMA-100/66/33.
One channel supports up to two devices.

● **FLOPPY DISK DRIVER INTERFACE :**

Supports up to two Floppy Disk Drives, 3.5" and 5.25" (1.44M / 2.88M).

● **USB CONNECTOR :**

Universal Serial Bus Connector, supports up to two USB1.1 ports.

● **LAN ADAPTER :**

Realtek 8100BL PCI Fast Ethernet
10/100 Base-TX PCI-BUS

● **SERIAL PORT :**

Two high speed 16550 Compatible UARTs with Send / Receive 16 Byte
FIFOs; COM1 for RS-232; COM2 for RS-232/422/485
COM1 with 9-pin D-SUB connector on board
COM2 with two 5-pin boxheader connector on board
Infrared Communications port option on the COM2.

● **PARALLEL PORT :**
   Supports SPP, ECP, EPP Function mode.
   Bi-directional parallel port.

● **SOUND FUNCTION :**
   Integrated Sound Blaster / DirectSound AC97 audio.
   Dual Full duplex direct sound channels bet. system memory & AC97 link.
   32 byte FIFO of each Direct Sound Channel.
   Realtek ALC202A, AC97 SoundMAX® Codec
   Interface: MIC, line-out, and speaker.

● **GREEN FUNCTION :**
   Software supported by BIOS setup.
   Hardware supported by switch control.

● **Solid-State Disk Socket :**
   Memory System DiskOnChip SSD Module support up to 288MB.

● **HARDWARE MONITORING FUNCTION :**
   Monitor CPU Voltage, CPU temperature, and Cooling Fan.

● **LED INDICATOR :**
   HDD LED: one 2-pin headpin on board
   power LED: one 2-pin headpin on board

● **DMA CONTROLLER :**
   82C37 x 2

● **DMA CHANNELS :**
   7

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

● **INTERRUPT LEVELS :**
   15

● **OPERATING TEMPERATURE :**
   0 to 60°C (32°F to 140°F)

● **SYSTEM POWER REQUIREMENT :**
   DC Voltage: +5V Standby, minimum +4.75V, maximum +5.25V.
   DC Ampere: 0.04A. (ATX Support)
   DC Voltage: +5V, minimum +4.75V, maximum +5.25V.
   DC Ampere: 2.4A.
   DC Voltage: +12V, minimum +11.4V, maximum +12.6V.
   DC Ampere: 0.2A.

● **BOARD DIMENSION :**
   185mm x 122mm (7.28" x 4.8")

● **BOARD NET WEIGHT :**
   280g (0.616 lb)

## 1-3. SAFETY PRECAUTIONS

Follow the messages below to avoid your systems from damage:

1. Keep your system away from static electricity on all occasions.

2. Prevent electric shock. Don't touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.

3. Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

# HARDWARE CONFIGURATION

## ** QUICK START **

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

This section includes:

- Jumper & Connector Quick Reference Table

- Component Locations

- Configuration and Jumper settings

- Connector's Pin Assignments

## 2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

| | |
|---|---|
| COM Connector ...........................................……… | COM1, COM2 |
| RS232/422/485 (COM2) Selection ...........................…..... | JP2 |
| Keyboard/Mouse Connector ……….…….…....…............. | KB1 |
| Keyboard/Mouse Selection ……………………………. | JP10 |
| External Speaker Connector ..........................……… | EXKB1 |
| Inverter Connector ………………………………….... | INV1 |
| Power LED Connector ……………………………….. | JP4 (1-3) |
| Reset Connector ...........................................……... | JP4 (9-10) |
| Hard Disk Drive LED Connector ...........................…… | JP4 (2-4) |
| Power Button ………………………………………... | JP4 (5-6) |
| External Buzzer Connector …………………………. | JP4 (7-8) |
| SLPBTN Connector ………………………………….. | JP4 (13-14) |
| Fan Connector …………………………………….. | FAN1 |
| IrDA Connector ………………………………………... | IR1 |
| VGA Connector ………....…………………………... | VGA1 |
| LCD Connector …………………………………………. | LCD1 |
| Universal Serial Bus Connector ...................................… | CN2 |
| Clear CMOS Selection ……………………………….... | JP7 |
| Floppy Disk Drive Connector ...................................…..... | FDD1 |
| Hard Disk Drive Connector ...................................…..... | IDE1 |
| Printer Connector ...........................................…….... | LPT1 |
| NMI/Reset/Clear Watchdog …………………………... | JP8 |
| LAN Connector ...........................................……… | UTP1 |
| ATX Power Connector ..…………………………….... | PW1 |
| ATX Backplane Connector ……………………………. | JP9 |
| AT/ATX Power Selection ..…………………………… | J2, J3 |
| Sound Connector ………………………………….... | CN1 |
| CD Audio-in Connector ………………….…………... | CD_IN1 |
| Solid-State Disk Socket ………………………………... | SSD |
| SSD Memory Mapping Selection ……………………... | JP1 |
| IRQ12 Release Selection ……………………………. | J1 |
| LVDS LCD Connector ………………………………… | LVDS1 |
| LVDS Panel Power Selection ………………………... | JP3 |

## 2-2. COMPONENT LOCATIONS
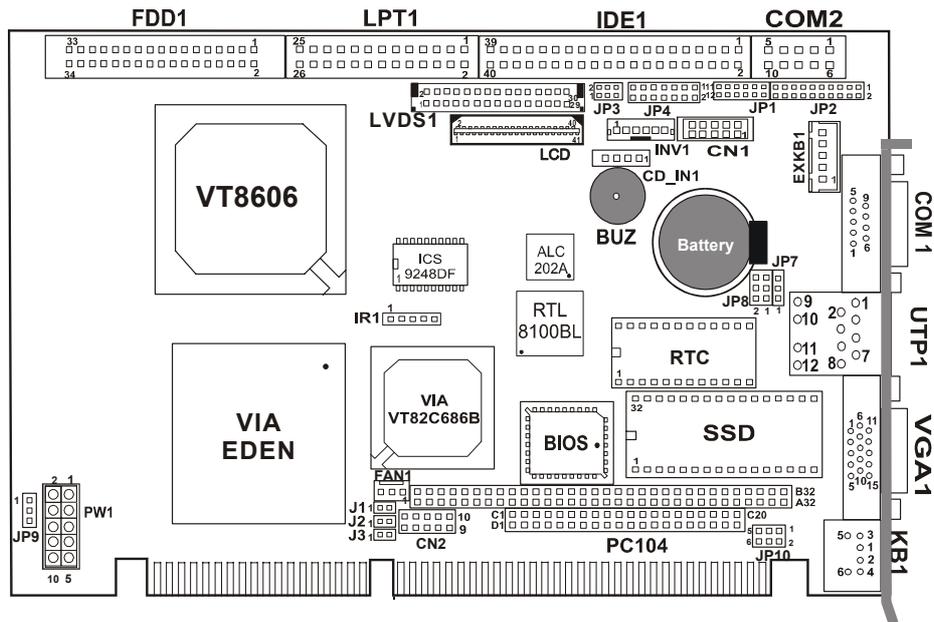


**Prox-1260 Connector, Jumper and Component locations**

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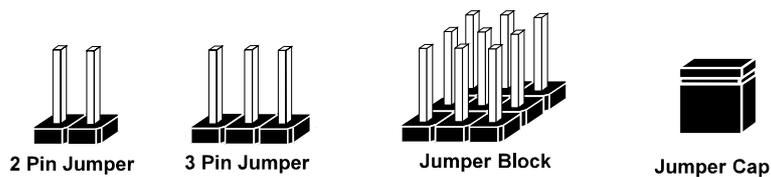
If a jumper has three pins (for example, labelled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagram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

**JUMPER DIAGRAMS**

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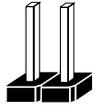
2 pin Jumper looks like this
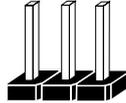
3 pin Jumper looks like this
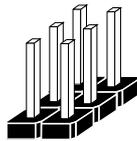
Jumper Block looks like this
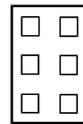
**JUMPER SETTINGS**

2 pin Jumper close(enabled)
looks like this

3 pin Jumper
2-3 pin close(enabled)
looks like this
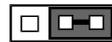
Jumper Block
1-2 pin close(enabled)
looks like this
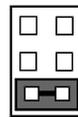
## 2-4. COM PORT CONNECTOR

There are two COM ports enhanced in this board namely: COM1 and COM2. COM1 is 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 | DCD |
| 2 | RX |
| 3 | TX |
| 4 | DTR |
| 5 | GND |
| 6 | DSR |
| 7 | RTS |
| 8 | CTS |
| 9 | RI / +5V / +12V selectable |
| 10 | NC |
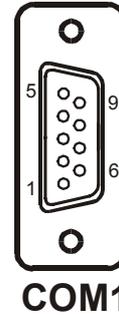
**COM2 :** COM2 Connector
The COM2 Connector assignments are as follows :

| PIN | ASSIGNMENT | | |
|-----|-----------|--------|--------|
| | **RS-232** | **RS-422** | **RS-485** |
| 1 | DCD | TX- | TX- |
| 2 | RX | TX+ | TX+ |
| 3 | TX | RX+ | RX+ |
| 4 | DTR | RX- | RX- |
| 5 | GND | GND | GND |
| 6 | DSR | RTS- | NC |
| 7 | RTS | RTS+ | NC |
| 8 | CTS | CTS+ | NC |
| 9 | RI/+5V/+12 | CTS- | NC |
| 10 | NC | NC | NC |
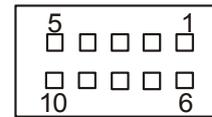
## 2-5. RS232/422/485 (COM2) SELECTION

**JP2 :** RS-232/422/485 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 | 19 20 1 2 JP2 |
| **RS-422** | 1-2, 5-6, 7-8, 9-10 11-12, 13-14, 15-16 17-18, 19-20 | 19 20 1 2 JP2 |
| **RS-485** | 1-3, 4-6, 7-8, 9-10 11-12, 13-14, 15-16 17-18, 19-20 | 19 20 1 2 JP2 |
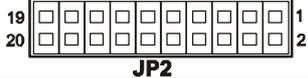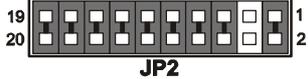
\*\*\* Manufactory default --- RS-232.

## 2-6. KEYBOARD/MOUSE CONNECTOR

**KB1** : Keyboard/Mouse Connector
The jumper settings are as follows:

| PIN | ASSIGNMENT |
|---|---|
| 1 | KBDATA |
| 2 | MSDATA |
| 3 | GND |
| 4 | KBVCC |
| 5 | KBCLK |
| 6 | MSCLK |
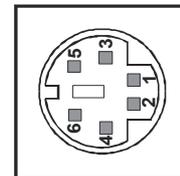
**KB1**

## 2-7. KEYBOARD/MOUSE SELECTION

**JP10** : Keyboard or Mouse Selection.
If User select to use Y-Cable, please set the jumper same as AT Keyboard.
The selections are as follows :

| DEVICE TYPE | JUMPER SETTING (pin closed) | JUMPER ILLUSTRATION |
|---|---|---|
| KEYBOARD/Y-Cable | 3-5<br>4-6 | <br>**JP10** |
| PS/2 MOUSE | 1-3<br>2-4 | <br>**JP10** |

\*\*\* Manufactory default -- AT Keyboard

## 2-8. EXTERNAL KEYBOARD CONNECTOR

**EXKB1** : External Keyboard Connector.
The pin assignments are as follows:

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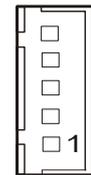


**EXKB1**

## 2-9. INVERTER CONNECTOR

**INV1** : Inverter Connector
The pin assignment is as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | +12V |
| 2 | +12V |
| 3 | GND |
| 4 | VCC |
| 5 | GND |
| 6 | ENABKL (Inverter backlight ON/OFF control signal) |

**INV1**
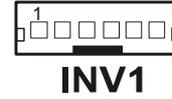
## 2-10. POWER LED CONNECTOR

**JP4 (1-3)** : Power LED Connector
The pin assignment is as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | PW_LED |
| 3 | GND |

**JP4**
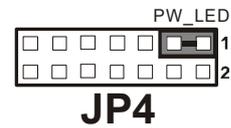
## 2-11. RESET CONNECTOR

**JP4 (9-10)** : Reset Connector.
The pin assignments are as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 9 | GROUND |
| 10 | RESET |

**JP4**

## 2-12. HARD DISK DRIVE LED CONNECTOR

**JP4 (2-4)** : Hard Disk Drive LED Connector
The pin assignments are as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 2 | VCC |
| 4 | HDD Active Signal |

HDD_LED

**JP4**
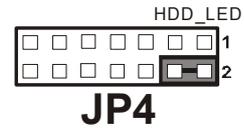
## 2-13. POWER BUTTON

**JP4 (5-6)** : Power Button for ATX power.
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 5 | GROUND |
| 6 | PW_BN |

PW_BN

**JP4**
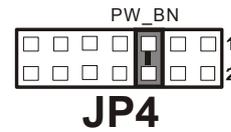
## 2-14. EXTERNAL BUZZER CONNECTOR

**JP4 (7-8)** : External Buzzer Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 7 | E_BUZ |
| 8 | VCC |

EXT_BUZ

**JP4**
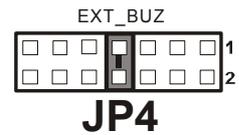
## 2-15. SLPBTN CONNECTOR

**JP4 (13-14)** : SLPBTN Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 13  | GND        |
| 14  | SLPBTN     |

SLPBTN

**JP4**
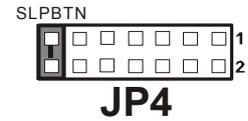
## 2-16. FAN CONNECTOR

**FAN1** : FAN Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT       |
|-----|------------------|
| 1   | GND              |
| 2   | +12V             |
| 3   | FAN speed monitor |

**FAN1**

## 2-17. IRDA CONNECTOR

**IR1** : IrDA (SIR) Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1   | VCC        |
| 2   | NC         |
| 3   | IRRX       |
| 4   | GND        |
| 5   | IRTX       |

**IR1**

## 2-18. VGA CONNECTOR

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

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | RED |
| 2 | GREEN |
| 3 | BLUE |
| 4 | NC |
| 5 | GND |
| 6 | GND |
| 7 | GND |
| 8 | GND |
| 9 | NC |
| 10 | GND |
| 11 | NC |
| 12 | I2CCK |
| 13 | HSYNC |
| 14 | VSYNC |
| 15 | I2CDA |

**VGA**
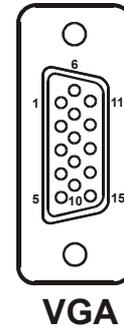
## 2-19. LCD CONNECTOR

**LCD1 :** LCD Connector
The pin assignments are as follows :
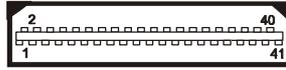


LCD1

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|
| 1 | P20 | 2 | GND |
| 3 | P16 | 4 | LCD_VCC5 |
| 5 | P21 | 6 | P0 |
| 7 | P17 | 8 | P8 |
| 9 | P22 | 10 | P1 |
| 11 | P18 | 12 | P9 |
| 13 | P23 | 14 | P2 |
| 15 | P19 | 16 | P10 |
| 17 | LCD_VCC5 | 18 | P3 |
| 19 | FPVS | 20 | P11 |
| 21 | FPDEN | 22 | P4 |
| 23 | FPHS | 24 | P12 |
| 25 | FPCLLK | 26 | P5 |
| 27 | LCD_VCC3 | 28 | P13 |
| 29 | LCD_VCC3 | 30 | P6 |
| 31 | ENABKL | 32 | P14 |
| 33 | VCC | 34 | P7 |
| 35 | ENVDD | 36 | P15 |
| 37 | GND | 38 | +12V |
| 39 | GND | 40 | +12V |
| 41 | NC | | |

## 2-20. UNIVERSAL SERIAL BUS CONNECTOR

**CN2** : Universal Serial Bus Connector
USB connector of this board can support two USB ports.
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1   | 5V_SB      |
| 2   | USBDT0−    |
| 3   | USBDT0+    |
| 4   | GND        |
| 5   | GND        |
| 6   | 5V_SB      |
| 7   | USBDT1−    |
| 8   | USBDT1+    |
| 9   | GND        |
| 10  | GND        |
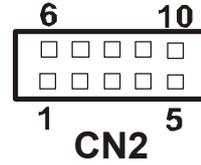
## 2-21. CLEAR CMOS SELECTION

**JP7** : Clear CMOS Selection
The selections are as follows:

| FUNCTION | JUMPER SETTING (pin closed) | JUMPER ILLUSTRATION |
|----------|------------------------------|---------------------|
| **Normal** | 1-2 | |
| **Clear CMOS** | 2-3 | |
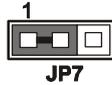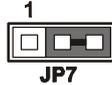
*** Manufacturing Default – Normal.

## 2-22. FLOPPY DISK DRIVE CONNECTOR

**FDD1** : Floppy Disk Drive Connector
You can use a 34-pin daisy-chain cable to connect two FDDs. On one end of this cable there is a 34-pin flat cable to attach the FDD on the board, the other side attaches to two FDDs.
The pin assignments are as follows :

**FDD**
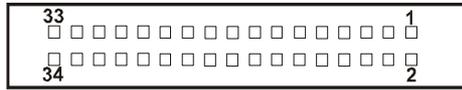
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|
| 1 | GND | 2 | DRVDEN0 |
| 3 | GND | 4 | NC |
| 5 | GND | 6 | DRVDEN1 |
| 7 | GND | 8 | INDEX |
| 9 | GND | 10 | MTR0 |
| 11 | GND | 12 | DRV1 |
| 13 | GND | 14 | DRV0 |
| 15 | GND | 16 | MTR1 |
| 17 | GND | 18 | DIR |
| 19 | GND | 20 | STEP |
| 21 | GND | 22 | WDATA |
| 23 | GND | 24 | WGATE |
| 25 | GND | 26 | TRK0 |
| 27 | GND | 28 | WRPRT |
| 29 | GND | 30 | RDATA |
| 31 | GND | 32 | SEL |
| 33 | GND | 34 | DSKCHG |

## 2-23. HARD DISK DRIVE CONNECTOR

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

**IDE1**
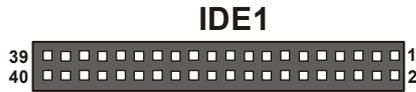
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|
| 1 | IDERST | 2 | GND |
| 3 | PDD7 | 4 | PDD8 |
| 5 | PDD6 | 6 | PDD9 |
| 7 | PDD5 | 8 | PDD10 |
| 9 | PDD4 | 10 | PDD11 |
| 11 | PDD3 | 12 | PDD12 |
| 13 | PDD2 | 14 | PDD13 |
| 15 | PDD1 | 16 | PDD14 |
| 17 | PDD0 | 18 | PDD15 |
| 19 | GND | 20 | NC |
| 21 | DDREQA | 22 | GND |
| 23 | -DIOWA | 24 | GND |
| 25 | -DIORA | 26 | GND |
| 27 | HDRDYA | 28 | PULL LOW |
| 29 | -DDACKA | 30 | GND |
| 31 | IRQ14 | 32 | NC |
| 33 | PDA1 | 34 | PD_80P |
| 35 | PDA0 | 36 | PDA2 |
| 37 | -PDCS1 | 38 | -PDCS3 |
| 39 | HDLED1 | 40 | GND |

## 2-24. PRINTER CONNECTOR

**LPT1** : 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 :

# LPT1

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|
| 1 | STB | 14 | AUTFE |
| 2 | P0 | 15 | ERROR |
| 3 | P1 | 16 | INIT |
| 4 | P2 | 17 | SLCTIN |
| 5 | P3 | 18 | GND |
| 6 | P4 | 19 | GND |
| 7 | P5 | 20 | GND |
| 8 | P6 | 21 | GND |
| 9 | P7 | 22 | GND |
| 10 | ACK | 23 | GND |
| 11 | BUSY | 24 | GND |
| 12 | PE | 25 | GND |
| 13 | SLCT | 26 | NC |

## 2-25. RESET/NMI/CLEAR WATCHDOG SELECTION

**JP8** : Reset/NMI/Clear Watchdog Selection
The selections are as follows:

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

***Manufacturing Default is set as Reset.

## 2-26. LAN CONNECTOR

**UTP1** : LAN Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | TX+ |
| 2 | TX- |
| 3 | RX+ |
| 4 | ISOLATED GND |
| 5 | ISOLATED GND |
| 6 | RX- |
| 7 | CT |
| 8 | CT |
| 9 | PULL HI |
| 10 | LED-Green (Speed) |
| 11 | PULL HI |
| 12 | LED-Yellow (Link) |
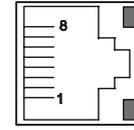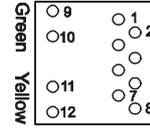
## 2-27. ATX POWER CONNECTOR

**PW1** : Power Connector
The pin assignments are as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | VCC |
| 2 | VCC |
| 3 | GND |
| 4 | GND |
| 5 | +12V |
| 6 | 5V_SB |
| 7 | VCC |
| 8 | GND |
| 9 | PS_ON |
| 10 | -12V |
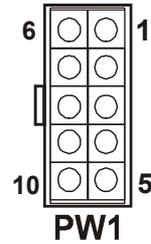
## 2-28. ATX BACKPLANE CONNECTOR

**JP9** : ATX Backplane Connector.
The pin assignments are as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | 5V_SB |
| 2 | GND |
| 3 | PS_ON |

**JP9**

## 2-29. AT/ATX POWER SELECTION

**J2, J3** : AT/ATX Power Selection
The selections are as follows:

| POWER SELECTION | JUMPER SETTING (pin closed) | | JUMPER ILLUSTRATION |
|-----------------|------|------|---------------------|
| | **J2** | **J3** | |
| ATX | Open | Open | |
| AT | Close | Close | |

***Manufacturing Default: ATX

✍ As a reminder, when you choose to use the ATX function, please be sure to set the corresponding configuration found in BIOS setup such as:
  1. Inside the "POWER MANAGEMENT" setting, set the ACPI function to enable.

## 2-30. SOUND CONNECTOR

**CN1** : Sound Connector
This connector is used to connect the microphone, line-in, and line-out
through our adapter card.   The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | MIC-IN |
| 2 | GND_AUD |
| 3 | LINE-L |
| 4 | GND_LOUT |
| 5 | SPK-L |
| 6 | MIC-VDD |
| 7 | GND_AUD |
| 8 | LINE-R |
| 9 | GND_LOUT |
| 10 | SPK-R |
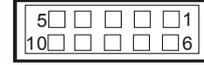
☝ Please refer our Appendix A for more information about installation.

## 2-31. CD AUDIO-IN CONNECTOR

**CD_IN1 :** CD Audio-in Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | CD_L |
| 2 | GND |
| 3 | GDN |
| 4 | CD_R |
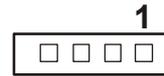
## 2-32. SOLID-STATE DISK SOCKET

**SSD**: 32pin Disk-on-chip Socket
The pin assignments are as follows:

```
 32                           17
 □□□□□□□□□□□□□□□□
□           SSD
 □□□□□□□□□□□□□□□□
 1                            16
```

| 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 |

## 2-33. SSD MEMORY MAPPING SELECTION

**JP1 :** SSD Memory Mapping Selections
A 32-pin SSD socket supports Disk-on-Chip up to 144MB. This PnP Flash
ROM SSD can be install as one of user's hard disk drive.
The SSD Memory Mapping Selections are as follows:

| SSD Memory Map | JUMPER SETTING (pin closed) | | JUMPER ILLUSTRATION |
|---|---|---|---|
| D0000h-D1FFFh | 3-4 | 9-10 | JP1 |
| D4000h-D5FFFh | 3-4 | 11-12 | JP1 |
| D8000h-D9FFFh | 5-6 | 9-10 | JP1 |
| DC000h-DDFFFh | 5-6 | 11-12 | JP1 |

\*\*\* Manufactory default --- D0000h-D1FFFh.

## 2-34. IRQ12 RELEASE SELECTION

**J1 :** IRQ12 Release Selection.
The selections are as follows:

| SELECTION | JUMPER SETTING | JUMPER ILLUSTRATION |
|---|---|---|
| IRQ12 Release | Open | J1 |
| PS/2 Mouse | Closed | J1 |

## 2-35. LVDS CONNECTOR

**LVDS1 :** LVDS Connector.

The pin assignments are as follows:

| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | LCD_VCC | 2 | GND |
| 3 | ZCM | 4 | ZCP |
| 5 | GND | 6 | Z2M |
| 7 | Z2P | 8 | GND |
| 9 | Z1M | 10 | Z1P |
| 11 | GND | 12 | GND |
| 13 | Z0P | 14 | Z0M |
| 15 | GND | 16 | YCP |
| 17 | YCM | 18 | GND |
| 19 | Y2P | 20 | Y2M |
| 21 | GND | 22 | Y1P |
| 23 | Y1M | 24 | GND |
| 25 | Y0P | 26 | Y0M |
| 27 | GND | 28 | GND |
| 29 | LCD_VCC | 30 | LCD_VCC |

## 2-36. LVDS PANEL POWER SELECTION

**JP3 :** LVDS Panel Power Selection.

The selections are as follows:

| SELECTION | JUMPER SETTING | JUMPER ILLUSTRATION |
|-----------|----------------|---------------------|
| LVDS_VCC3 | 1-3<br>2-4 | <br>**JP3** |
| LVDS_VCC5 | 3-5<br>4-6 | <br>**JP3** |
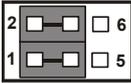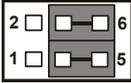
# SOFTWARE UTILITIES

This chapter comprises the detailed information of VGA driver, LAN driver, sound driver, and Flash BIOS update. It also describes how to install the watchdog timer configuration.

Section includes:

● VGA Driver Utility

● Flash BIOS Update

● LAN Driver Utility

● Sound Driver Utility

● Watchdog Timer Configuration

## 3-1. INTRODUCTION

Enclosed with our Prox-1260 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:\VGA\VIA VT8606 | For VGA driver installation |
| D:\Flash\ | For BIOS update |
| D:\LAN\RTL8100BL | Realtek RTL8100BL For LAN Driver installation |
| D:\Sound\ALC202A | For Sound Driver installation |

## 3-2. VGA DRIVER UTILITY

The VGA interface embedded with our Prox-1260 can support a wide range of display mode, such as SVGA, STN, TFT .....etc. You can display CRT and LVDS simultaneously with the same mode.



1. Win 98/98SE/ME program
2. Win NT program
3. Win 2000 program
4. Win XP program
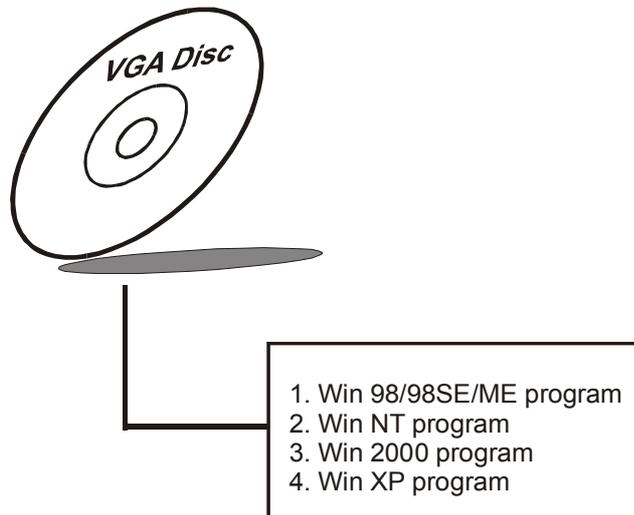
## 3-3. FLASH BIOS UPDATE

**3-3-1. System BIOS Update:**
Users of Prox-1260 can use the program "Awdflash.exe" contained in the Utility Disk for system BIOS and VGA BIOS update.

**3-3-2. To update VGA BIOS for LCD Flat Panel Display:**
As Prox-1260 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 C30bxxxx.bin
   C:\UTIL\AWDFLASH>AWDFLASH   C30bxxxx.bin
4. The screen will display the table below:

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2000 All Rights Reserved


For 8604-686B-6A6LLP69C-0          DATE:   04/23/2001
         Flash Type - MXIC 29F002(N)T   /5V
     File Name to Program:   C30bxxxx.bin
              Checksum:   XXXXX


Error Message :   Do You Want To Save BIOS (Y/N)
```

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

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2000 All Rights Reserved

For 8604-686B-6A6LLP69C-0         DATE:   04/23/2001
          Flash Type - MXIC 29F002(N)T  /5V
          File Name to Program:   C30bxxxx.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

For 8604-686B-6A6LLP69C-0         DATE:   04/23/2001
          Flash Type - MXIC 29F002(N)T  /5V
          File Name to Program:   C30bxxxx.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.

## 3-4. LAN DRIVER UTILITY

### 3-4-1. Introduction

Prox-1260 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/XP program
2. Win NT program
3. LINUX
```
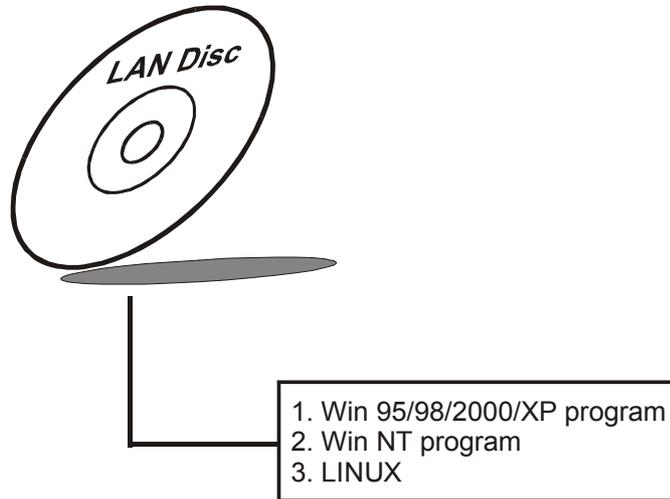
### 3-4-2. Installation Procedures of LAN Driver

#### 1. Install LAN Driver to Windows 98/2000/XP

Executing Windows 98/Windows 2000/Windows XP, 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 RTL8100B 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 R8139n5.SYS driver.   The default value is "auto" so that the line speed can be auto detected as 10MB or 100MB, while the R8139n5.SYS is loading.

(7) The screen will appear "Input Ethernet ID" dialog box, which is provided by R8139n5.SYS driver. This option is only required when you have more than one RTL8100B 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.**

## 3-5. SOUND DRIVER UTILITY

### 3-5-1. Introduction

The sound function enhanced in this system is fully compatible with Windows 9x/98SE/ME, Windows NT, DOS, OS2, Linux, Windows 2000 and Windows XP. Below, you will find the content of the Sound driver :



```
1. Win 98 program
2. Win NT 4.0 program
3. Win 2000 program
4. Win XP program
```
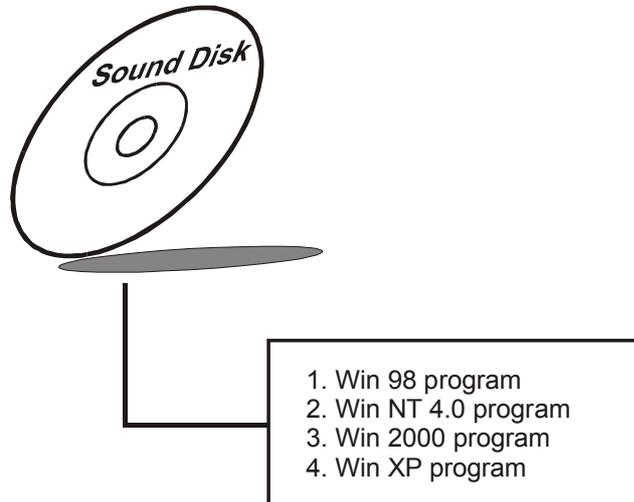
### 3-5-2. Installation Procedure In Windows NT

(1) Open "Main" Window in Program Manager.
(2) Select "Control Panel" in Main Window, then open it.
(3) Select "Drivers" in Control Panel. Double Click it to open this window. Then choose "ADD" item to add driver.
(4) Choose "Unlisted or Updated Driver" on the list. Then press "OK" button.
(5) Change the "Install Driver" directory to the "VIA Audio Driver directory". Then press "OK" button.
(6) If it correct, you will see a pop window, which shows "VIA PCI Audio Controller". Press "OK" button to process installing.
(7) Restart the computer.

## 3-6. WATCHDOG TIMER CONFIGURATION

This board has watchdog timer function for monitoring whether the system is still work or not after a period of time. The user can select watchdog timer to system reset or NMI (Non Maskable interrupt) depending on the jumper set in "Reset/NMI/Clear Watchdog Selection" 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 Prox-1260 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

- Exit Without Saving

## 4-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The Prox-1260 half size Embedded Board is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of the BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

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

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

The following diagram illustrates the interlocking relationships between the system hardware, BIOS, operating system, and application program:
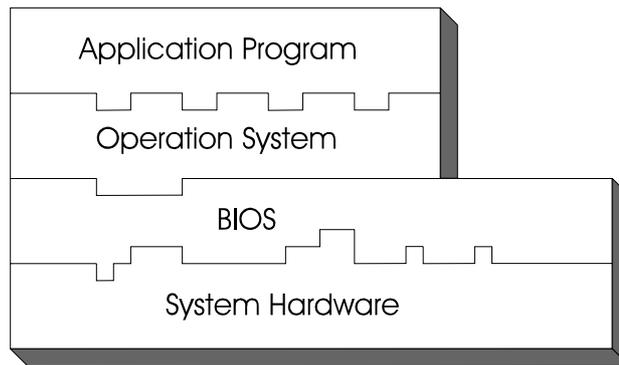
## 4-2. ENTERING SETUP

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

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

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

Phoenix - AwardBIOS CMOS Setup Utility

| | |
|---|---|
| ►Standard CMOS Features | ►Frequency/Voltage Control |
| ►Advanced BIOS Features | Load Fail-Safe Defaults |
| ►Advanced Chipset Features | Load Optimized Defaults |
| ►Integrated Peripherals | Set 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:

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

| Date (mm:dd:yy) | Fri Jun 20 2003 | Item Help |
|---|---|---|
| Time (hh:mm:ss) | 10 : 40 : 20 | |
| | | Menu Level ► |
| ► IDE Primary Master | [None] | |
| ► IDE Primary Slave | [None] | Change the day, month, year and century |
| ► IDE Secondary Master | [None] | |
| ► 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 | 244736K | |
| Total Memory | 244760K | |

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

**CMOS Setup screen**

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

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

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

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

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

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

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

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

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

Here is a brief explanation of drive specifications:

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

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

- Cyls: number of cylinders.

- Head: number of heads.

- Precomp: write precompensation cylinders.

- Landz: landing zone.

- Sector: number of sectors.

- Mode: Auto, Normal, Large or LBA.

  Auto: The BIOS automatically determines the optimal mode.

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

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

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

**DRIVE A AND DRIVE B:**

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

**VIDEO:**

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

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

**HALT ON:**

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

**BASE MEMORY:**

Displays the amount of conventional memory detected during boot up.

**EXTENDED MEMORY:**

Displays the amount of extended memory detected during boot up.

**TOTAL MEMORY:**

Displays the total memory available in the system.

**HARD DISK ATTRIBUTES:**

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

**Award Hard Disk Type Table**

## 4-4. THE ADVANCED BIOS FEATURES

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

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features

| | | Item Help |
|---|---|---|
| Virus Warning | [Disabled] | |
| 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 | [Enabled] | Disk boot sector |
| Swap Floppy Drive | [Disabled] | protection. If this |
| Boot Up Floppy Seek | [Disabled] | 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/SECOND/THIRD/OTHER BOOT DEVICE:**

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

**SWAP FLOOPY DRIVE:**

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

**BOOT UP FLOPPY SEEK:**

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

**BOOT UP NUMLOCK STATUS:**

Select power on state for NumLock.

**GATE A20 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.

Phoenix - AwardBIOS CMOS Setup Utility
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] | |
| System BIOS Cacheable | [Disabled] | |
| Video RAM Cacheable | [Disabled] | |
| Frame Buffer Size | [16M] | |
| AGP Aperture Size | [64M] | |
| AGP-4X Mode | [Enabled] | |
| AGP Driving Control | [Auto] | |
| x AGP Driving Value | DA | |
| Select Display Device | [CRT] | |
| Panel Type | [08] | |
| Boot Device Select | [Auto] | |
| OnChip USB | [Enabled] | |
| USB Keyboard Support | [Disabled] | |
| OnChip Sound | [Auto] | |
| 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.

### 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.

### 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.

### 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.

**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:

Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals

| | | |
|---|---|---|
| On-Chip IDE Channel0 | [Enabled] | Item Help |
| IDE Prefetch Mode | [Enabled] | |
| Primary Master PIO | [Auto] | Menu Level ► |
| Primary Slave PIO | [Auto] | |
| Primary Master UDMA | [Auto] | |
| Primary Slave UDMA | [Auto] | |
| Init Display First | [PCI Slot] | |
| IDE HDD Block Mode | [Enabled] | |
| Onboard FDD Controller | [Enabled] | |
| Onboard Serial Port 1 | [Auto] | |
| Onboard Serial Port 2 | [Auto] | |
| UART 2 Mode | [Standard] | |
| x  IR Function Duplex | Half | |
| x  TX,RX inverting enable | No, Yes | |
| Onboard Parallel Port | [378/IRQ7] | |
| Onboard Parallel Mode | [Normal] | |
| x  ECP Mode Use DMA | 3 | |
| x  Parallel Port EPP Type | EPP1.9 | |

↑↓→←: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.

### 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:**
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:**
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 $1^{st}$, $2^{nd}$, $3^{rd}$ and forth serial ports.

**UART 2 MODE:**
This item allows you to select which mode for the Onboard Serial Port 2.

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

**TX, RX INVERTING ENABLE:**
This item allows you to enable TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system.

**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.

**PARALLEL PORT EPP TYPE:**
Select EPP port type 1.7 or 1.9 as required by your parallel peripheral.

## 4-7. POWER MANAGEMENT SETUP

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

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup

| | | |
|---|---|---|
| ACPI function | [Disabled] | Item Help |
| ►Power Management | [Press Enter] | |
| PM Control by APM | [Yes] | Menu Level ► |
| Video Off Option | [Suspend -> Off] | |
| Video Off Method | [V/H SYNC+Blank] | |
| MODEM Use IRQ | [3] | |
| Soft-off by PWRBTN | [Instant-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 → OFF | Monitor blanked when system enters Suspend mode. |
| SUSP,STBY → OFF | Monitor blanked when system enters either Suspend or Standby mode. |
| ALL MODES → 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.

**WAKE UP EVENTS:**

Wake up 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:

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                            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│
│   PCI/VGA Palette Snoop         [Disabled]            │ capable operating    │
│   Assign IRQ for VGA            [Enabled]             │ system Select No if  │
│   Assign IRQ for USB            [Enabled]             │ you need the BIOS to │
│                                                        │ configure non-boot   │
│                                                        │ devices              │
│                                                        │                      │
│                                                        │                      │
├──────────────────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←: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**

❖ Note: Please change IRQ 15 to Legacy ISA before installing Windows 98.

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 USB:**

Enable or Disable to assign IRQ for USB.

**ASSIGN IRQ FOR VGA:**

Enable or Disable to assign IRQ for VGA.

## 4-9. PC HEALTH STATUS

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

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

| | | Item Help |
|---|---|---|
| Current CPU Temp. | 48ºC/ 118ºF | |
| Current CPU FAN Speed | 0 RPM | Menu Level ► |
| | | |
| Vcore | 1.12V | |
| 2.5V | 2.51V | |
| 3.3V | 3.27V | |
| 5V | 5.00V | |
| 12V | 11.88V | |

↑↓→←: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 CPUFAN 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:

Phoenix - AwardBIOS CMOS Setup Utility
Frequency Control

| VIA Eden Clock Ratio | [Default] | Item Help |
| Auto Detect DIMM/PCI Clk | [Enabled] | |
| Spread Spectrum | [Disabled] | Menu Level  ► |
| | | This item is for VIA C3 CPU Ratio adjustment. |

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

**Frequency / Voltage Control 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.

## 4-11. LOAD FAIL-SAFE DEFAULTS

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

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

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

## 4-12. LOAD OPTIMIZED DEFAULTS

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

Load Optimized Defaults ( Y/N ) ? N

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

## 4-13. PASSWORD SETTING

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

### TO SET A PASSWORD

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

```
Enter Password:
```

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

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

### TO DISABLE THE PASSWORD

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

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

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

## 4-14. SAVE & EXIT SETUP

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

Phoenix - AwardBIOS CMOS Setup Utility

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

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:

Phoenix - AwardBIOS CMOS Setup Utility

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

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

Abandon all Data

# *EXPANSION BUS*

This appendix indicates you the pin assignments.

Section includes:

● PC-104 Connector Pin Assignment

● ISA BUS Pin Assignment

## PC-104 CONNECTOR PIN ASSIGNMENT

**104AB, 104CD : PC-104 Connector**
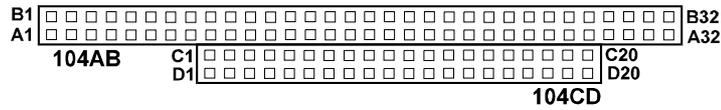


The PC-104 can support multi-pieces of PC-104 modules. It has two connectors : one (104AB) consists of 64 pin; the other one (104CD) consists of 40 pin, both of them are dual-in-line headers

The pin assignments for connector 104AB & 104CD are as follow:

| PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|-----|-----------|-----|-----------|
| A1 | IOCHK | B1 | GND | C1 | GND | D1 | GND |
| A2 | D7 | B2 | REST | C2 | SBHE | D2 | MEMCS16 |
| A3 | D6 | B3 | VCC | C3 | LA23 | D3 | IOCS16 |
| A4 | D5 | B4 | IRQ9 | C4 | LA22 | D4 | IRQ10 |
| A5 | D4 | B5 | -5V | C5 | LA21 | D5 | IRQ11 |
| A6 | D3 | B6 | DRQ2 | C6 | LA20 | D6 | IRQ12 |
| A7 | D2 | B7 | -12V | C7 | LA19 | D7 | IRQ15 |
| A8 | D1 | B8 | OWS | C8 | LA18 | D8 | IRQ14 |
| A9 | D0 | B9 | +12V | C9 | LA17 | D9 | DACK0 |
| A10 | IOCHRDY | B10 | GND | C10 | MEMR | D10 | DRQ0 |
| A11 | AEN | B11 | SMEMW | C11 | MEMW | D11 | DACK5 |
| A12 | A19 | B12 | SMEMR | C12 | D8 | D12 | DRQ5 |
| A13 | A18 | B13 | IOW | C13 | D9 | D13 | DACK6 |
| A14 | A17 | B14 | IOR | C14 | D10 | D14 | DRQ6 |
| A15 | A16 | B15 | DACK3 | C15 | D11 | D15 | DACK7 |
| A16 | A15 | B16 | DRQ3 | C16 | D12 | D16 | DRQ7 |
| A17 | A14 | B17 | DACK1 | C17 | D13 | D17 | VCC |
| A18 | A13 | B18 | DRQ1 | C18 | D14 | D18 | MASTER |
| A19 | A12 | B19 | REFRESH | C19 | D15 | D19 | GND |
| A20 | A11 | B20 | CLK | C20 | KEY PIN | D20 | GND |
| A21 | A10 | B21 | IRQ7 | | | | |
| A22 | A9 | B22 | IRQ6 | | | | |
| A23 | A8 | B23 | IRQ5 | | | | |
| A24 | A7 | B24 | IRQ4 | | | | |
| A25 | A6 | B25 | IRQ3 | | | | |
| A26 | A5 | B26 | DACK2 | | | | |
| A27 | A4 | B27 | TC | | | | |
| A28 | A3 | B28 | BALE | | | | |
| A29 | A2 | B29 | VCC | | | | |
| A30 | A1 | B30 | OSC | | | | |
| A31 | A0 | B31 | GND | | | | |
| A32 | GND | B32 | GND | | | | |

## ISA BUS PIN ASSIGNMENT

The ISA BUS for this card is called "Gold Fingers". It is divided into two sets :
one consists of 62 pins; the other consists of 36 pins.
The pin assignments are as follows :

D18                     D1  B31                                              B1

C18                     C1  A31          COMPONENT SIDE              A1

| | B | | A | | D | | C |
|---|---|---|---|---|---|---|---|
| PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT |
| B1 | GND | A1 | -I/O CH CHK | D1 | -MEMCS16 | C1 | SBHE |
| B2 | RESET | A2 | SD07 | D2 | -I/OCS16 | C2 | LA23 |
| B3 | +5V | A3 | SD06 | D3 | IRQ10 | C3 | LA22 |
| B4 | IRQ9 | A4 | SD05 | D4 | IRQ11 | C4 | LA21 |
| B5 | -5V | A5 | SD04 | D5 | IRQ12 | C5 | LA20 |
| B6 | DRQ2 | A6 | SD03 | D6 | IRQ15 | C6 | LA19 |
| B7 | -12V | A7 | SD02 | D7 | IRQ14 | C7 | LA18 |
| B8 | OWS | A8 | SD01 | D8 | -DACK0 | C8 | LA17 |
| B9 | +12V | A9 | SD00 | D9 | DRQ0 | C9 | -MEMR |
| B10 | GND | A10 | -I/O CH RDY | D10 | -DACK5 | C10 | -MEMW |
| B11 | -SMEMW | A11 | AEN | D11 | DRQ5 | C11 | SD08 |
| B12 | -SMEMR | A12 | SA19 | D12 | -DACK6 | C12 | SD09 |
| B13 | -IOW | A13 | SA18 | D13 | DRQ6 | C13 | SD10 |
| B14 | -IOR | A14 | SA17 | D14 | -DACK7 | C14 | SD11 |
| B15 | -DACK3 | A15 | SA16 | D15 | DRQ7 | C15 | SD12 |
| B16 | -DRQ3 | A16 | SA15 | D16 | +5V | C16 | SD13 |
| B17 | -DACK1 | A17 | SA14 | D17 | -MASTER | C17 | SD14 |
| B18 | -DRQ1 | A18 | SA13 | D18 | GND | C18 | SD15 |
| B19 | -REFRESH | A19 | SA12 | | | | |
| B20 | BCLK | A20 | SA11 | | | | |
| B21 | IRQ7 | A21 | SA10 | | | | |
| B22 | IRQ6 | A22 | SA09 | | | | |
| B23 | IRQ5 | A23 | SA08 | | | | |
| B24 | IRQ4 | A24 | SA07 | | | | |
| B25 | IRQ3 | A25 | SA06 | | | | |
| B26 | -DACK2 | A26 | SA05 | | | | |
| B27 | T/C | A27 | SA04 | | | | |
| B28 | BALE | A28 | SA03 | | | | |
| B29 | +5V | A29 | SA02 | | | | |
| B30 | OSC | A30 | SA01 | | | | |
| B31 | GND | A31 | SA00 | | | | |

# TECHNICAL SUMMARY

This section introduce you the maps concisely.

Section includes:

● Block Diagram

● Interrupt Map

● RTC & CMOS RAM Map

● Timer & DMA Channels Map

● I / O & Memory Map

## BLOCK DIAGRAM
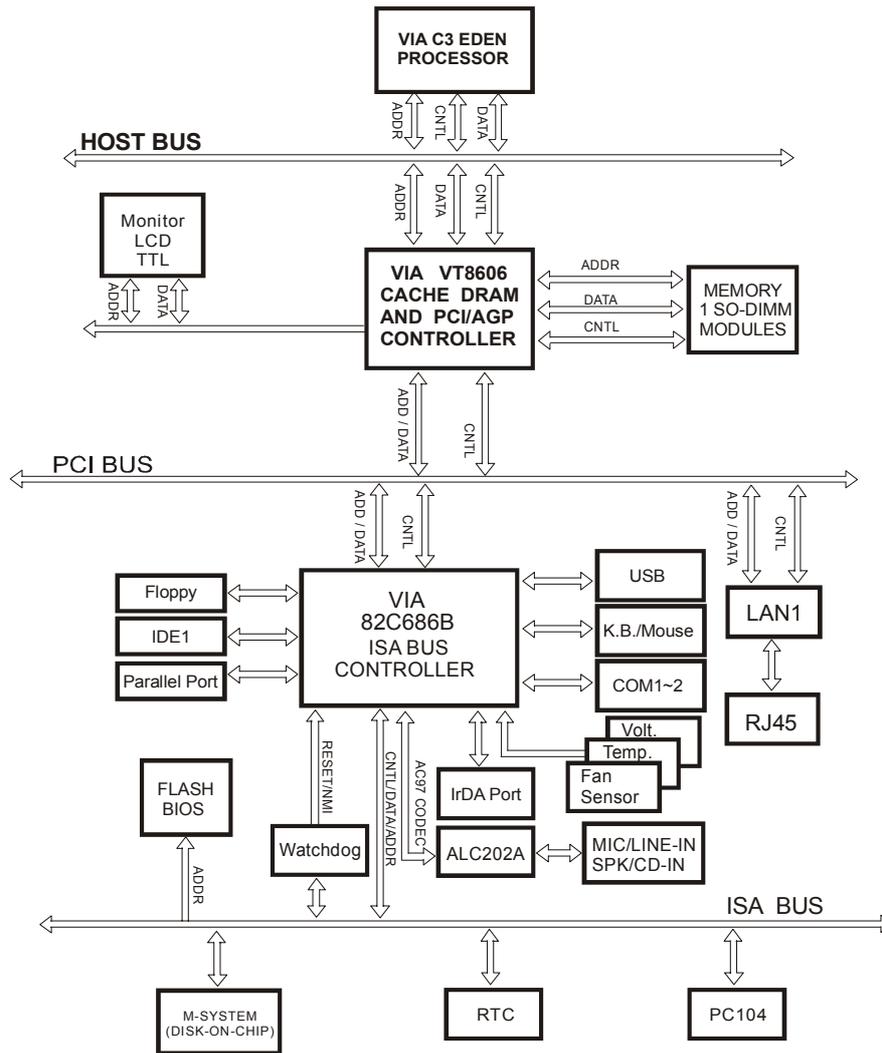
## INTERRUPT MAP

| IRQ | ASSIGNMENT |
|-----|------------|
| 0 | System TIMER interrupt from TIMER-0 |
| 1 | Keyboard output buffer full |
| 2 | Cascade for IRQ 8-15 |
| 3 | Serial port 2 / Modem |
| 4 | Serial port 1 |
| 5 | Parallel port 2 / Sound Blaster |
| 6 | Floppy |
| 7 | Parallel port 1 |
| 8 | RTC clock |
| 9 | Available |
| 10 | Available |
| 11 | Available |
| 12 | PS/2 Mouse |
| 13 | Math coprocessor |
| 14 | IDE1 |
| 15 | Available |

## 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 / Sound Blaster |
| 2 | Floppy |
| 3 | Available / ECP |
| 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*
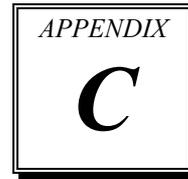
This section outlines the error messages that may occur when you operate the system. It also gives you some tips on how to solve the problems.

Section includes:

● Troubleshooting for Error Messages

● Troubleshooting for POST Code

## TROUBLESHOOTING FOR ERROR MESSAGE

The following information inform 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 kind of beep codes in BIOS. The 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 con-sists of a single long beep followed by three short beeps. The other one code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

**CMOS BATTERY FAILURE :**
When the CMOS battery is out of work or has run out, the user has to replace the whole unit.

**CMOS CHECKSUM ERROR :**
This error inform you that the CMOS is corrupted. When the battery runs weak, this situation might happen. Please check the battery and change a new one when necessary.

**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.

**DISK BOOT FAILURE:**
When you can't find the boot device, insert a system disk into Drive A and press < Enter >. Make sure both the controller and cables are all in proper positions, also make sure the disk is formatted correct device. Then reboot the system.

**DISKETTE DRIVES OR TYPES MISMATCH ERROR :**
When the diskette drive type is different from CMOS, please run setup or configure the drive again.

**ERROR ENCOUNTERED INITIALIZING HARD DRIVE :**
When you can't initialize the hard drive. Assure 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 :**
When this error occurs. Be sure the cord is exactly installed in the bus. Make sure the correct hard drive type is selected in Setup. Also check whether all of the jumpers are set correctly in the hard drive.

**FLOPPY DISK CONTROLLER ERROR OR**
**NO CONTROLLER PRESENT :**
When you cannot find or initialize the floppy drive controller, please check the controller whether in proper Setup. If there are no floppy drive installed, Ensure the Diskette Drive selection in Setup is set to NONE.

**KEYBOARD ERROR OR NO KEYBOARD PRESENT :**
When this situation happens, please check keyboard attachment 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 :**
When the memory address indicates error. 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 :**
Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to re-configure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

**MEMORY VERIFYING ERROR :**

It 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 MISSING :**

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

**REBOOT ERROR :**

When this error occurs that requires you to reboot.. Press any key and the system will reboot.

**SYSTEM HALTED :**

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.

## TROUBLESHOOTING FOR POST CODES

When you power on your PC, and the screen display nothing. You have to insert the POST Card for test. The address for ISA POST port is 80h. Make sure the card is in correct slot. The lists below indicate you the error messages. Please follow the instruction to adjust your system. If the error still occurred, please contact with your distributor for maintenance.

**C0 :** Turn off OEM specific cache, shadow.....

**03 :** Initialize all the standard devices with default values Standard devices includes :
DMA controller (8237).
Programmable Interrupt Controller (8259).
Programmable Interval Timer (8254).
RTC chip.

**05 :** 1.Keyboard Controller Self-Test.
2.Enable Keyboard Interface.

**07 :** Verfies CMOS's basic R/W functionality.

**BE :** Program defaults values into chipset according to the MODBINable Chipset Default Table.

**C1 :** Auto-detection of onboard DRAM & Cache.

**C5 :** Copy the BIOS from ROM into E0000-FFFFF shadow RAM so that POST will go faster.

**08 :** Test the first 256K DRAM.

**09 :** 1. Program the configuration register of Cyrix CPU according to the MODBINable Cyrix Register Table.
2. OEM specific cache initialization (if needed).

**0A :** 1. Initialize the first 32 interrupt vectors with corresponding Interrupt handlers Initialize INT no from 33-120 with Dummy(Spurious) Interrupt Handler.
   2. Issue CPUID instruction to identify CPU type.
   3. Early Power Management initialization (OEM specific).

**0B :** 1.Verify the RTC time is valid or not.
   2. Detect bad battery.
   3. Read CMOS data into BIOS stack area.
   4. PnP initializations including (PnP BIOS only).
       -Assign CSN to PnP ISA card.
       -Create resource map from ESCD.
   5. Assign I/O & Memory for PCI devices (PCI BIOS only).

**0C :** Initialization of the BIOS Data Area (40 : 0N-40:FF).

**0D :** 1. Program some of the Chipset's value according to Setup. (Early Setup Value Program).
   2. Measure CPU speed for display & decide the system clock speed.
   3. Video initialization including Monochrome ,CGA, EGA/VGA. If no display device found, the speaker will beep.

**0E :** 1. Initialize the APIC (Multi-Processor BIOS only).
   2. Test video RAM (If Monochrome display device found).
   3. Show messages including :
       -Award Logo, Copyright string, BIOS Date code & Part No.
       -OEM specific sign on messages.
       -Energy Star Loge (Green BIOS only).
       -CPU brand, type & speed.
       -Test system BIOS checksum (Non-compress Version only).

**0F :** DMA channel 0 test.

**10 :** DMA channel 1 test.

**11 :** DMA page registers test.

**14 :** Test 8254 Timer 0 Counter2.

**15 :** Test 8259 interrupt mask bits for channel 1.

**16 :** Test 8259 interrupt mask bits for channel 2.

**19 :** Test 8259 functionality.

**30 :** Detect Base Memory & Extended Memory Size.

**31 :** 1. Test Base Memory from 256K to 640K.
        2. Test Extended Memory from 1M to the top of memory.

**32 :** 1.Display the Award Plug & Play BIOS Extension message (PnP BIOS only).
        2.Program all onboard super I/O chips (if any) including COM ports, LPT
           ports, FDD port....according to setup value.

**3C :** Set flag to allow users to enter CMOS Setup Utility.

**3D :** 1 Initialize Keyboard.
        2 Install PS2 mouse.

**3E :** Try to turn on Level 2 cache.
        Note : Some chipset may need to turn on the L2 cache in this stage. But
               usually, the cache is turn on later in POST 61h.

**BF :** 1. Program the rest of the Chipset's value according to Setup. (Later Setup
           Value Program).
        2. If auto-configuration is enabled, programmed the chipset with pre-defined
           value in the MODBINable Auto-Table.

**41 :** Initialize floppy disk drive controller.

**42 :** Initialize Hard drive controller.

**43 :** If it is a PnP BIOS, initialize serial & parallel ports.

**45 :** Initialize math coprocessor.

**4E :** If there is any error detected (such as video, kb....), show all the error messages the screen & wait for user to press <F1> key.

**4F :** 1. If password is needed, ask for password.
    2. Clear the Energy Star Logo (Green BIOS only).

**50 :** Write all CMOS values currently in the BIOS stack area back into the CMOS.

**52 :** 1.Initialize all ISA ROMs.
    2. Later PCI initializations (PCI BIOS only).
        -assign IRQ to PCI devices.
        -initialize all PCI ROMs.
    3.PnP Initializations (PnP BIOS only).
        -assign I/O, Memory, IRQ & DMA TO PnP ISA devices.
        -initialize all PnP ISA ROMs.
    4. Program shadows RAM according to Setup settings.
    5. Program parity according to Setup setting.
    6. Power Management Initialization.
        -Enable/Disable global PM.
        -APM interface initialization.

**53 :** 1.If it is NOT a PnP BIOS, initialize serial & parallel ports.
    2. Initialize time value in BIOS data area by translate the RTC time value into a timer tick value.

**60 :** Setup Virus Protection (Boot Sector Protection) functionality according to Setup setting.

**61 :** 1. Try to turn on Level 2 cache.
    Note : if L2 cache is already turned on in POST 3D, this part will be skipped.
    2. Set the boot up speed according to Setup setting.
    3. Last chance for Chipset initialization.
    4. Last chance for Power Management initialization (Green BIOS   only).
    5. Show the system configuration table.

**62 :** 1.Setup daylight saving according to Setup value.
2.Program the NumLock, typematic rate & typematic speed according to Setup setting.

**63 :** 1. If there is any changes in the hardware configuration, update the ESCD information (PnP BIOS only).
2. Clear memory that have been used.
3. Boot system via INT 19H.

**FF :** System Booting. this means that the BIOS already pass the control right to the operating system.

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