# USER'S MANUAL

**ProX-1690**

Dual Socket 370 Processor
Embedded Card
W/ VGA / Dual LAN

Prox-1690 M2

# *ProX-1690 Dual Socket 370 processor Embedded Card*
## *With VGA/Dual 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 notice.

This manual is copyrighted November 2000. You may not reproduce or transmit in any form or by any means, electronic, or mechanical, including photocopying and recording.

## ACKNOWLEDGEMENTS

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

# TABLE OF CONTENTS

## APPENDIX  C  TROUBLE SHOOTING

# *INTRODUCTION*

This chapter gives you the information for Prox-1690. It also outlines the System specification.

Section includes:

● About This Manual

● System Specifications

● Safety precautions

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

## 1-1. ABOUT THIS MANUAL

Thank you for purchasing our Prox-1690 Socket 370 Embedded Card with VGA / Dual LAN, which is fully PC / AT compatible. Prox-1690 provides faster processing speed, greater expandability and can handle more task than before. This manual is designed to assist you how to install and set up the system. It contains five 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 specification for this system. Final part of this chapter will indicate you how to avoid damaging this Embedded Card.

*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 and Flash BIOS.   It also describes the Watchdog timer configuration.

*Chapter 4 Green PC Function*
This chapter explains the Green PC functions concisely.

*Chapter 5 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 ISA Bus, and PCI Bus.

*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 SPECIFICATION

● **CPU :**
Intel® Celeron™ processor in 370-pin socket.
300A/333/366/400/433/466/500/533/566/600 MHz clock generator.
Dual Intel® Pentium® *!!!* processor in 370-pin socket.
500E/550E/600E/650E/700/750/800/850 MHz clock generator.
Auto detect voltage regulator.

● **MEMORY :**
Up to 768MB SDRAM
Three 168-pin DIMMs socket on board.

● **CACHE :**
Depended on CPU (128/256KB Cache).

● **REAL-TIME CLOCK / CALENDAR :**
CMOS data back up from BIOS set or BIOS default.
Dallas DS 12887 Real Time Clock.

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

● **KEYBOARD/MOUSE CONNECTOR :**
Mini DIN connector for Keyboard or PS/2 Mouse by jumper selection.
One 5-pin External keyboard connector.

● **UNIVERSAL SERIAL BUS :**
Universal Serial Bus Connector on board, supports up to 2 USB ports.

● **BUS SUPPORT :**
External ISA/PCI BUS; PICMG Spec.
Internal PCI Bus for VGA, IDE, PPCI, & LAN.

● **DISPLAY :**

Support SVGA for CRT & Panel.
Support 32bits PCI Local Bus.
VGA BIOS combines in 256KB flash ROM together with system BIOS.
Support 15-pin connector 1280 x 1024 (256 color) resolutions on Monitor.
Support 2 MB of SDRAM for graphic/video frame memory.
Support 51-pin connector 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 resolutions on LCD Panel.
Panel display can support Color STN, and TFT modes.
Support Simultaneous display of CRT & LCD flat panel.

● **WATCHDOG :**

I / O port 0443H to Enable watchdog.
I / O port 0441H to Disable watchdog.
Time-out timing select 0 / 8 / 16 / 24 / 32 / 40 / 48 / 56 / 64 / 72 / 80 / 88 / 96 / 104 / 112 / 120 sec +/- 25%.

● **IDE INTERFACE :**

Two IDE ports, Support up to four Enhanced IDE devices.

● **FLOPPY DISK DRIVER INTERFACE :**

Support up to two Floppy Disk Drives, 3.5" and 5.25" (360K / 720K / 1.2M / 1.44M / 2.88M / LS-120).

● **DISK-ON-CHIPS SOCKET :**

Supports up to 144MB.

● **LAN INTERFACE :**

Intel 82559 Fast Ethernet.
Dual LAN, support for 10BaseT/100 BaseTx PCI Bus.
Two RJ-45 Jack on board.

● **SERIAL PORT :**

Two high speed 16550 Compatible UARTs with Send / Receive 16 Byte FIFOs. COM1 for RS232; COM2 for RS232/422/485.
MIDI Compatible.
Programmable Baud Rate Generator.

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

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

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

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

● **BUS SPEED :**
   ISA Bus       8MHz
   PCI Bus      33MHz
   PPCI Bus    33MHz
   USB            12Mbit/sec

● **DMA CONTROLLER :**
   82C37 x 2

● **DMA CHANNELS :**
   7

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

● **INTERRUPT LEVELS :**
   15

● **OPERATING TEMPERATURE :**
   0 to 60°C.

● **SYSTEM POWER REQUIREMENT :**
   DC Voltage: +5V, minimum +4.75V, maximum +5.25V.
   DC Ampere: 15A.
   DC Voltage: +12V, minimum +11.4V, maximum +12.6V.
   DC Ampere: 500mA.

● **BOARD DIMENSION :**
   338.5mm x 122mm

● **BOARD NET WEIGHT :**
   0.35 Kg.

## 1-3. SAFETY PRECAUTIONS

Follow the messages below to avoid your systems from damage:

1. Avoid your system 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.

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 Port Connector ...............…..................... | COM1, COM2 |
| RS232/422/485 (COM2) Selection ....................... | JP4 |
| Solid-State Disk Socket ............…................... | SSD |
| SSD Memory Mapping Selection ......................... | JP7, JP9 |
| Keyboard or PS/2 Mouse Connector .................... | DIN |
| Keyboard or PS/2 Mouse Selection ...................... | JP10 |
| External Keyboard Connector .............................. | EXKB |
| Reset Connector ...............…....................... | RST |
| Hard Disk Drive LED Connector .......................... | HDL |
| CPU Fan Connector ..............…..................…. | CPUFAN1 |
| ……………………………… | CPUFAN2 |
| External Speaker Connector ...…....................... | SPK |
| VGA CRT Connector ...............…................... | VGA |
| Hard Disk Drive Connector ..............….............. | IDE1, IDE2 |
| Floppy Disk Drive Connector ............................... | FDD |
| LCD Panel Connector ......................................... | LCD |
| Printer Connector ...............…....................... | PRT |
| Power LED & Keylock Connector ...…................. | KBL |
| Green Function Connector ................................... | GRN |
| Universal Serial Bus Connector ............................ | USB |
| Panel LCD VDD Selection ................................... | JP1 |
| IrDA Connector ……………………….………. | IR |
| Reset/NMI/Clear Watchdog ……………………... | JP6 |
| LAN Connector .................................…............ | LAN1, LAN2 |
| Memory Installation ...........................….......... | DIMM1, DIMM2 |
| ……………………………… | DIMM3 |
| PPCI Connector ……………...………………….. | PPCI |
| CPU Type Selection …………………………….... | JP14, JP15 |
| Reserved Pin …………………………………….... | JP2, JP3, JP5 |
| ……………………………….. | JP13 |

## 2-2. COMPONENT LOCATIONS



**Prox-1690 Connector, Jumper and Component locations**

## 2-3. HOW TO SET THE JUMPERS

You can configure your board by setting 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 "open" or "close" pins.

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

**JUMPERS AND CAPS**
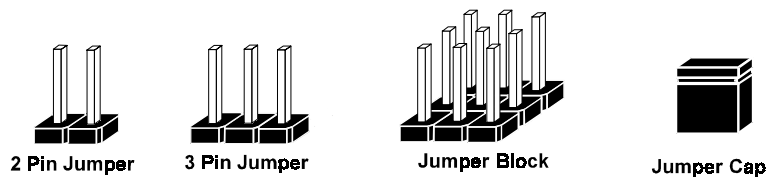


If a jumper has three pins (for examples, labelled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual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

**JUMPER DIAGRAMS**

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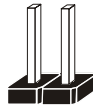
**2 pin Jumper looks like this**
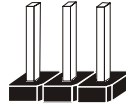
**3 pin Jumper looks like this**
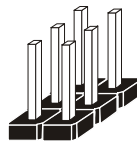
**Jumper Block looks like this**
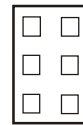
**JUMPER SETTINGS**

**2 pin Jumper close(enabled) Looks like this**

1

**3 pin Jumper 2-3 pin close(enabled) Looks like this**

1

**Jumper Block 1-2 pin close(enabled) Looks like this**

1    2
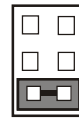
## 2-4. COM PORT CONNECTOR

Prox-1690 possesses two Communication Port namely the COM1 and COM2.
The difference between the two is that 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 |

```
5 □□□□□ 1
  □□□□□
10        6
  COM 1
```
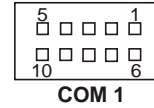
**COM2 :** COM2 Connector
The COM2 Connector assignments are as follows :

| 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 | CTS- | NC |
| 10 | NC | NC | NC |

```
5 □□□□□ 1
  □□□□□
10        6
  COM 2
```
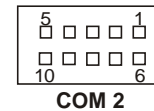
## 2-5. RS232/422/485 (COM2) SELECTION

**JP4 :** RS-232/422/485 Selection
COM1 is fixed for RS-232 function only.
COM2 is selectable for RS-232, 422, 485 function.
The jumper settings are as follows :

| COM 2 Function | RS-232 | RS-422 | RS-485 |
|---|---|---|---|
| Jumper setting (pin closed) | Open | 1-2<br>5-6<br>7-8<br>9-10<br>11-12<br>13-14<br>15-16<br>17-18<br>19-20 | 1-3<br>4-6<br>7-8<br>9-10<br>11-12<br>13-14<br>15-16<br>17-18<br>19-20 |
| Jumper illustration |  |  |  |

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

## 2-6. SOLID-STATE DISK SOCKET

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

```
 32                              17
 ┌─────────────────────────────┐
 │ □□□□□□□□□□□□□□□□              │
 □            SSD                │
 │ □□□□□□□□□□□□□□□□              │
 └─────────────────────────────┘
 1                               16
```
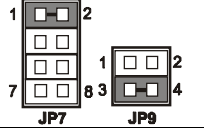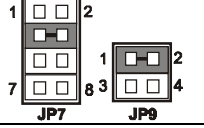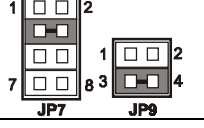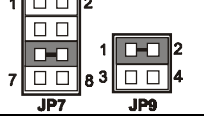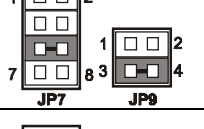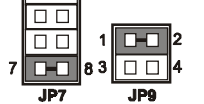
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | NC | 17 | SD3 |
| 2 | NC | 18 | SD4 |
| 3 | NC | 19 | SD5 |
| 4 | SA12 | 20 | SD6 |
| 5 | SA7 | 21 | SD7 |
| 6 | SA6 | 22 | CE |
| 7 | SA5 | 23 | SA10 |
| 8 | SA4 | 24 | OE |
| 9 | SA3 | 25 | SA11 |
| 10 | SA2 | 26 | 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 |

## 2-7. SSD MEMORY MAPPING SELECTION

**JP7, JP9 :** 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) JP7 | JP9 | JUMPER ILLUSTRATION |
|---|---|---|---|
| CC000h-CDFFFh | 1-2 | 3-4 |  |
| D0000h-D1FFFh | 3-4 | 1-2 |  |
| D4000h-D5FFFh | 3-4 | 3-4 |  |
| D8000h-D9FFFh | 5-6 | 1-2 |  |
| DC000h-DDFFFh | 5-6 | 3-4 |  |
| E0000h-E1FFFh | 7-8 | 1-2 |  |

\*\*\* Manufactory default --- CC000h-CDFFFh

## 2-8. KEYBOARD OR PS/2 MOUSE CONNECTOR

**DIN :** PC/AT Keyboard or PS/2 Mouse Connector
DIN connector can support Keyboard, Y-cable, or PS/2 Mouse by jumper selection, user may select the right device to used on "Keyboard or PS/2 Mouse Selection". The pin assignments are as follows :

| PIN | ASSIGNMENT | |
|-----|------------|------------|
| | **Keyboard** | **PS/2 Mouse** |
| 1 | KBDATA | MSDATA |
| 2 | MSDATA | MSDATA |
| 3 | GND | GND |
| 4 | VCC | VCC |
| 5 | KBCLK | MSCLK |
| 6 | MSCLK | MSCLK |

**DIN**
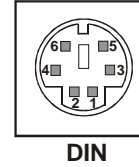
## 2-9. KEYBOARD OR PS/2 MOUSE SELECTION

**JP10 :** PC/AT Keyboard or PS/2 Mouse Selection
If User select to use Y-Cable, please set the jumper same as AT Keyboard.
The jumper settings are as follows:

| DEVICE TYPE | JUMPER SETTING (pin closed) JP9 | JUMPER ILLUSTRATION |
|-------------|--------------------------------|---------------------|
| AT KEYBOARD | 3-5 4-6 | JP10 |
| PS/2 MOUSE | 1-3 2-4 | JP10 |

*** Manufactory default -- AT Keyboard

## 2-10. EXTERNAL KEYBOARD CONNECTOR

**EXKB :** External Keyboard Connector
The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | KBCLK |
| 2 | KBDATA |
| 3 | NC |
| 4 | GND |
| 5 | VCC |
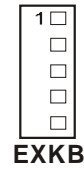
## 2-11. RESET CONNECTOR

**RST :** Reset Connector.
The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | RESET |
| 2 | GROUND |
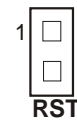
## 2-12. HARD DISK DRIVE LED CONNECTOR

**HDL :** Hard Disk Drive LED Connector
The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | VCC |
| 2 | HDD Active Signal |
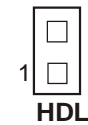
## 2-13. CPU FAN CONNECTOR

There are two CPU FAN connector found on this board.

**CPUFAN1 :** CPU Fan1 connector
The pin assignment is as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | GND |
| 2 | +12V |
| 3 | CPUFAN1 |

1

CPUFAN1

**CPUFAN2 :** CPU Fan2 connector
The pin assignment is as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | GND |
| 2 | +12V |
| 3 | CPUFAN2 |

1

CPUFAN2
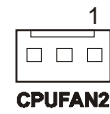
## 2-14. EXTERNAL SPEAKER CONNECTOR

**SPK :** External Speaker Connector
The pin assignment is as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | Vcc |
| 2 | Speaker Signal |
| 3 | Speaker Signal |
| 4 | Speaker Signal |

1

SPK
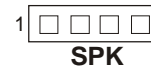
## 2-15. VGA CRT CONNECTOR

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

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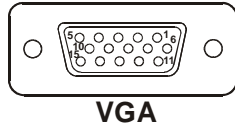
| PIN | ASSIGNMENT |
|-----|------------|
| 1 | RED |
| 2 | GREEN |
| 3 | BLUE |
| 4 | NC |
| 5 | GND |
| 6 | GND |
| 7 | GND |
| 8 | GND |
| 9 | NC |
| 10 | GND |
| 11 | NC |
| 12 | NC |
| 13 | HSYNC |
| 14 | VSYNC |
| 15 | NC |

## 2-16. HARD DISK DRIVE CONNECTOR

**IDE1:** Hard Disk Drive Connector
The Prox-1690 possesses two HDD connectors, IDE1 and IDE2. The pin assignments are as follows:

**IDE1**
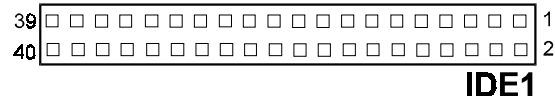
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|
| 1 | IDERST | 21 | IDEREQ0 |
| 2 | GND | 22 | GND |
| 3 | IDED7 | 23 | IDEIOW |
| 4 | IDED8 | 24 | GND |
| 5 | IDED6 | 25 | IDEIOR |
| 6 | IDED9 | 26 | GND |
| 7 | IDED5 | 27 | IDERDY |
| 8 | IDED10 | 28 | PULL LOW |
| 9 | IDED4 | 29 | IDEDACK- |
| 10 | IDED11 | 30 | GND |
| 11 | IDED3 | 31 | IRQ14 |
| 12 | IDED12 | 32 | NC |
| 13 | IDED2 | 33 | IDEA1 |
| 14 | IDED13 | 34 | NC |
| 15 | IDED1 | 35 | IDEA0 |
| 16 | IDED14 | 36 | IDEA2 |
| 17 | IDED0 | 37 | IDECS1P |
| 18 | IDED15 | 38 | IDECS3P |
| 19 | GND | 39 | IDELEDP |
| 20 | N.C. | 40 | GND |

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

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

**IDE2**
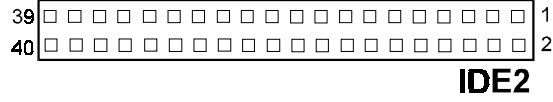
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | IDERST | 21 | IDEREQ1 |
| 2 | GND | 22 | GND |
| 3 | IDED7 | 23 | IDEIOW |
| 4 | IDED8 | 24 | GND |
| 5 | IDED6 | 25 | IDEIOR |
| 6 | IDED9 | 26 | GND |
| 7 | IDED5 | 27 | IDERDY |
| 8 | IDED10 | 28 | PULL LOW |
| 9 | IDED4 | 29 | IDEDACK- |
| 10 | IDED11 | 30 | GND |
| 11 | IDED3 | 31 | IRQ14 |
| 12 | IDED12 | 32 | NC |
| 13 | IDED2 | 33 | IDEA1 |
| 14 | IDED13 | 34 | NC |
| 15 | IDED1 | 35 | IDEA0 |
| 16 | IDED14 | 36 | IDEA2 |
| 17 | IDED0 | 37 | IDECS1S |
| 18 | IDED15 | 38 | IDECS3S |
| 19 | GND | 39 | IDELEDS |
| 20 | N.C. | 40 | GND |

## 2-17. FLOPPY DISK DRIVE CONNECTOR

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

```
33 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □   1
34 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □   2
```

**FDD**
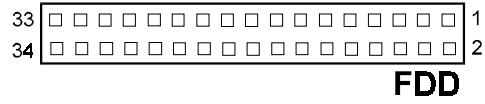
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | GND | 2 | RWC- |
| 3 | GND | 4 | NC |
| 5 | GND | 6 | NC |
| 7 | GND | 8 | INDEX |
| 9 | GND | 10 | MOA- |
| 11 | GND | 12 | DSB |
| 13 | GND | 14 | DSA |
| 15 | GND | 16 | MOB |
| 17 | GND | 18 | DIR |
| 19 | GND | 20 | STEP |
| 21 | GND | 22 | WD |
| 23 | GND | 24 | WE |
| 25 | GND | 26 | TRK0 |
| 27 | GND | 28 | WRPRT |
| 29 | NC | 30 | RDATA |
| 31 | GND | 32 | HEAD |
| 33 | NC | 34 | DSKCHG |

## 2-18. LCD PANEL CONNECTOR

**LCD** : LCD Panel Connector
The connector LCD is a 51-pin, dual-in-line header used for Flat Panel displays. The pin assignments are as follows :



**LCD**
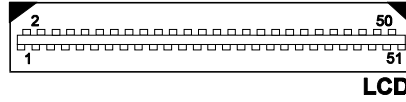
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|
| 1 | P0 | 2 | P16 |
| 3 | P1 | 4 | P17 |
| 5 | P2 | 6 | P18 |
| 7 | P3 | 8 | P19 |
| 9 | P4 | 10 | P20 |
| 11 | P5 | 12 | P21 |
| 13 | P6 | 14 | P22 |
| 15 | P7 | 16 | P23 |
| 17 | LCD VDD | 18 | LCDVDD |
| 19 | P8 | 20 | P24 |
| 21 | P9 | 22 | P25 |
| 23 | P10 | 24 | P26 |
| 25 | P11 | 26 | P27 |
| 27 | P12 | 28 | P28 |
| 29 | P13 | 30 | P29 |
| 31 | P14 | 32 | P30 |
| 33 | P15 | 34 | P31 |
| 35 | P34 | 36 | P32 |
| 37 | P35 | 38 | P33 |
| 39 | M | 40 | GND |
| 41 | VDDSAFE | 42 | FLM |
| 43 | VDDSAFE | 44 | GND |
| 45 | ENABKL | 46 | SHFCLK |
| 47 | ENVEE | 48 | GND |
| 49 | 12VSAFE | 50 | LP |
| 51 | 12VSAFE | | |

## 2-19. PRINTER CONNECTOR

**PRT :** 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 :

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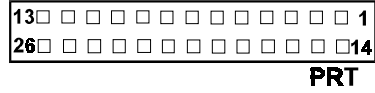
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|------------|-----|------------|
| 1 | STB | 14 | AUTFE |
| 2 | P0 | 15 | ERROR |
| 3 | P1 | 16 | INIT |
| 4 | P2 | 17 | SLCTIN |
| 5 | P3 | 18 | GND |
| 6 | P4 | 19 | GND |
| 7 | P5 | 20 | GND |
| 8 | P6 | 21 | GND |
| 9 | P7 | 22 | GND |
| 10 | ACK | 23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

## 2-20. POWER LED & KEYLOCK CONNECTOR

**KBL :** Power LED & Keylock Connector
The pin assignments are as follows :

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | Power LED |
| 2 | NC |
| 3 | Ground |
| 4 | Keyboard INT |
| 5 | Ground |

```
1 □
  □
  □
  □
  □
KBL
```
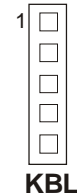
## 2-21. GREEN FUNCTION CONNECTOR

**GRN:** Green Function Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|-----------|
| 1 | EXTSMI- |
| 2 | GND |

**GRN**

## 2-22. UNIVERSAL SERIAL BUS CONNECTOR
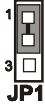
**USB:** Universal Serial Bus Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|-----------|
| 1 | VCC |
| 2 | USBP∅− |
| 3 | USBP∅+ |
| 4 | GND |
| 5 | GND |
| 6 | VCC |
| 7 | USBP1− |
| 8 | USBP1+ |
| 9 | GND |
| 10 | GND |

**USB**
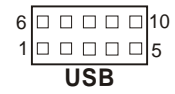
## 2-23. PANEL LCD VDD SELECTION

**JP1**: Panel LCD VDD Selection
The pin assignments are as follows:

| Panel LCD VDD Selection | JUMPER SETTING (pin closed) | JUMPER ILLUSTRATION |
|---|---|---|
| LCD VDD 5V | 1-2 | JP1 |
| LCD VDD 3.3V | 2-3 | JP1 |

## 2-24. IRDA CONNECTOR

**IR**: IrDA (Infrared) Connector
The pin assignments are as follows:

| PIN | ASSIGNMENT |
|---|---|
| 1 | VCC |
| 2 | FIR |
| 3 | SIR |
| 4 | GND |
| 5 | IR |
| 6 | NC |
| 7 | CIR |
| 8 | VCC |
| 9 | NC |
| 10 | NC |

**IR**
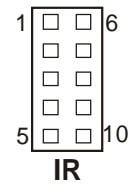
## 2-25. LAN CONNECTOR

There are two LAN port found in this card called the LAN1 and LAN2. User must remember to choose LAN1 port connector when only one port is intended for use.

As you may notice, each individual port has two LAN led indicator. The green LED indicates power link, and the Yellow LED is used to detect data active transfer signal.

**LAN1:** 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 | ISOLATED GND |
| 8 | ISOLATED GND |
| 9 | PULL HI |
| 10 | LED – Green |
| 11 | PULL HI |
| 12 | LED - Yellow |
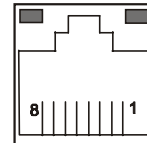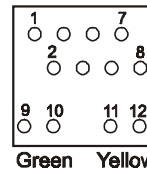
✎ The LAN1 function of this CPU Card is designed based on PCI Bus Master, which means one of the PCI Bus Masters is occupied. The LAN Bus Master is same as 1st PCI Slot on the backplane. **When the LAN chipset is on-board, the 1st PCI slot on backplane would fail even if LAN function is disabled.**

**LAN2:** LAN Connector

The pin assignments are as follows:
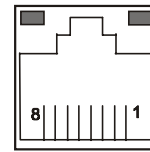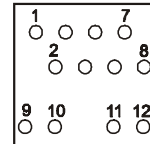
| PIN | ASSIGNMENT |
|-----|------------|
| 1 | TX+ |
| 2 | TX- |
| 3 | RX+ |
| 4 | ISOLATED GND |
| 5 | ISOLATED GND |
| 6 | RX- |
| 7 | ISOLATED GND |
| 8 | ISOLATED GND |
| 9 | PULL HI |
| 10 | LED – Green |
| 11 | PULL HI |
| 12 | LED - Yellow |

## 2-26. RESET / NMI / CLEAR WATCHDOG

**JP6 (1-2)** : For Reset

**JP6 (3-4)** : For NMI

**JP6 (5-6)** : For Clear Watchdog

The pin assignments are as follows:

| PIN | ASSIGNMENT |
|-----|------------|
| 1 | WDGRST |
| 2 | WDGRSTJ |
| 3 | WDGNMI |
| 4 | IOCHKJ |
| 5 | CLRWDG |
| 6 | GND |
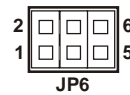
## 2-27. MEMORY INSTALLATION

Prox-1690 Socket 370 Embedded Card support up to 768MB in 3 SDRAM banks.

**DRAM BANK CONFIGURATION**

| DIMM 1 | DIMM 2 | DIMM3 | TOTAL MEMORY |
|--------|--------|-------|--------------|
| 32M    |        |       | 32M          |
| 32M    | 32M    |       | 64M          |
| 32M    | 32M    | 32M   | 96M          |
| 32M    | 64M    |       | 96M          |
| 32M    | 64M    | 32M   | 128M         |
| 32M    | 64M    | 64M   | 160M         |
| 64M    |        |       | 64M          |
| 64M    | 32M    |       | 96M          |
| 64M    | 32M    | 32M   | 128M         |
| 64M    | 64M    |       | 128M         |
| 64M    | 64M    | 32M   | 160M         |
| 64M    | 64M    | 64M   | 192M         |
| 128M   |        |       | 128M         |
| 128M   | 32M    |       | 160M         |
| 128M   | 64M    | 32M   | 224M         |
| 128M   | 128M   | 64M   | 320M         |
| 128M   | 128M   | 128M  | 384M         |
| 256M   |        |       | 256M         |
| 256M   | 32M    |       | 288M         |
| 256M   | 64M    | 32M   | 352M         |
| 256M   | 128M   | 64M   | 448M         |
| 256M   | 256M   | 128M  | 640M         |
| 256M   | 256M   | 256M  | 768M         |

## 2-28. PPCI CONNECTOR

You will find a PPCI connector in our Prox-1690.　This connector is used to connect our SCSI daughter boards.

The pin assignments are as follows:

**PPCI**
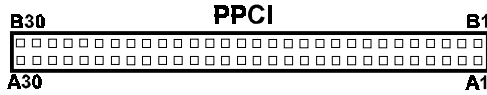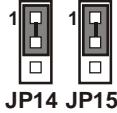
| PIN | ASSIGNMENT | PIN | ASSIGNMENT |
|-----|-----------|-----|-----------|
| A1  | GND       | B1  | GND       |
| A2  | AD0       | B2  | AD1       |
| A3  | AD2       | B3  | AD3       |
| A4  | AD4       | B4  | AD5       |
| A5  | AD6       | B5  | AD7       |
| A6  | AD8       | B6  | AD9       |
| A7  | AD10      | B7  | AD11      |
| A8  | VCC       | B8  | VCC       |
| A9  | AD12      | B9  | AD13      |
| A10 | AD14      | B10 | AD15      |
| A11 | AD16      | B11 | AD17      |
| A12 | AD18      | B12 | AD19      |
| A13 | AD20      | B13 | AD21      |
| A14 | AD22      | B14 | AD23      |
| A15 | VCC       | B15 | VCC       |
| A16 | AD24      | B16 | AD25      |
| A17 | AD26      | B17 | AD27      |
| A18 | AD28      | B18 | AD29      |
| A19 | AD30      | B19 | AD31      |
| A20 | SCSILED   | B20 | PAR       |
| A21 | PCICLKA   | B21 | IRDYJ     |
| A22 | ID SEL    | B22 | TRDYJ     |
| A23 | CBEJ0     | B23 | CBEJ1     |
| A24 | CBEJ2     | B24 | CEBJ3     |
| A25 | GNTJ0     | B25 | REQJ0     |
| A26 | SERRJ     | B26 | PERRJ     |
| A27 | INTDJ     | B27 | PCIRSTJ   |
| A28 | STOPJ     | B28 | LOCKJ     |
| A29 | DEVSELJ   | B29 | FRAMEJ    |
| A30 | GND       | B30 | GND       |

☛ The PPCI expansion connector of this Card is designed based on PCI Bus Master.　That means when the PPCI expansion connector is used, the 4th PCI slot on the backplane is occupied.

## 2-29 CPU TYPE SELECTION

**JP14, JP15** : Pentium *!!!* & Celeron™ CPU Selection
The CPU type selections are shown as follows:

| CPU TYPE | JUMPER SETTING (pin closed) JP14 JP15 | | JUMPER ILLUSTRATION |
|---|---|---|---|
| **Pentium III** | 1-2 | 1-2 |  JP14 JP15 |
| **Celeron™** | 2-3 | 2-3 |  JP14 JP15 |

\*\*\* Manufacturing Default is set as Pentium III.

# SOFTWARE UTILITIES

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

Section includes:

● VGA Driver Utility

● Flash BIOS Update

● LAN Driver Utility

● Watchdog Timer Configuration

## 3-1. INTRODUCTION

Enclosed with our Prox-1690 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:

| File name (Assume that CD ROM drive is D:) | Purpose |
| --- | --- |
| D:\VGA\C&T\CT69K | C&T 69000 For VGA driver installation |
| D:\Flash\Awdflash.exe | For BIOS update |
| D:\Lan\I82559 | For LAN Driver installation |

## 3-2. VGA DRIVER UTILITY

The VGA interface embedded with our Prox-1690 can support a wide range of display mode, such as SVGA, STN, TFT, EL,.....etc. You can display CRT and LCD Panel simultaneously on this board, but make sure that the modes for CRT and LCD Panel are the same. If not, only one of them can be displayed.



1. Awdflash 7.XX program
2. Win 3.1 program
3. Win 95 program
4. Win NT program
5. Win 98 program
6. OS/2 Video Device Driver
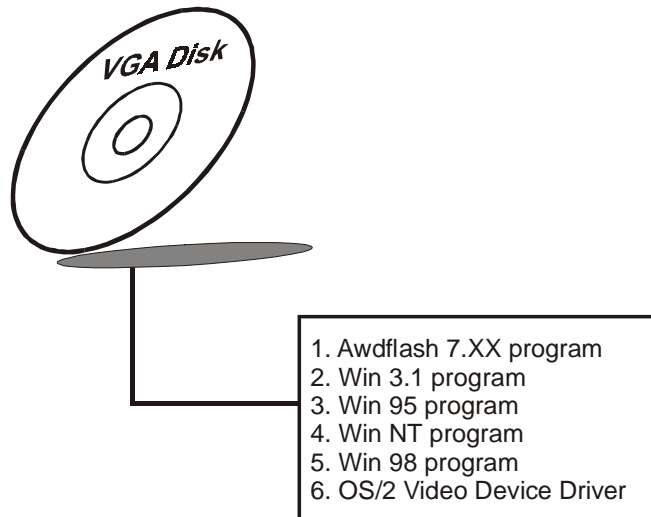
**For more details on Installation procedure, please refer to readme.txt or install.txt file found on VGA DRIVER UTILITY.**

## 3-3. FLASH BIOS UPDATE

**3-3-1. System BIOS Update:**
Users of Prox-1690 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-1690 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 C&T 69000 file 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 B9xxxxxx.bin
   C:\UTIL\AWDFLASH>AWDFLASH   B9xxxxxx.bin
4. The screen will display the table below:

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 1999 All Rights Reserved

For i440BX-W977EF-2A69KP6KC-0        DATE:   01/07/2000
            Flash Type - WINBOND 29C020/5V
          File Name to Program:   B9xxxxxx.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 1999 All Rights Reserved     │
├───────────────────────────────────────────────────────┤
│                                                       │
│   For i440BX-W977EF-2A69KP6KC-0    DATE:  01/07/2000   │
│          Flash Type - WINBOND 29C020/5V                │
│         File Name to Program:  B9xxxxxx.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 1999 All Rights Reserved     │
├───────────────────────────────────────────────────────┤
│                                                       │
│   For i440BX-W977EF-2A69KP6KC-0    DATE:  01/07/2000   │
│          Flash Type - WINBOND 29C020/5V                │
│         File Name to Program:   B9xxxxxx.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-1690 Embedded Card is enhanced with dual LAN function that can support various network adapters.    Installation programs for LAN drivers are listed as follows:



```
1. Win 95/98 program
2. Win NT program
3. DOS
4. Netware
5. SCO Unix
6. Unix
```
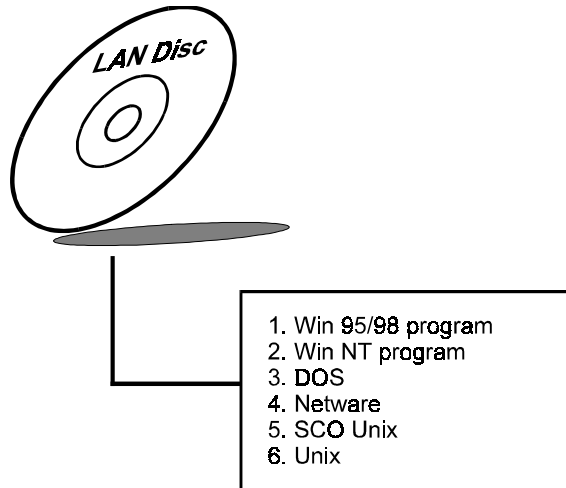
**For more details on Installation procedure, please refer to INFO directory found on LAN DRIVER UTILITY.**

## 3-5. 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 JP6 as described in chapter 2. This is defined at I/O port **443H**. When you want to enable the watchdog timer, please write I/O port **443H**, 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-1690 watchdog function, you must write your program so when it writes I/O port address 443 for enable watchdog and write I/O port address 441 for disable watchdog. The timer's intervals have a tolerance of 25% so you should program an instruction that will refresh the timer about every second.

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

**Watchdog enable program:**
MOV AX, 000FH(choose the values you need; start from 0)
MOV DX, 443H
OUT DX, AX

**Watchdog disable program:**
MOV AX, 000FH(this value can be ignored)
MOV DX, 441H
OUT DX, AX

The Watchdog Timer control table is as follows:

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

# *GREEN PC FUNCTION*

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

Section includes:

● Power Saving Block Diagram

● CPU Doze Mode

● System STANDBY Mode

● System SUSPEND Mode

## 4-1. POWER SAVING BLOCK DIAGRAM
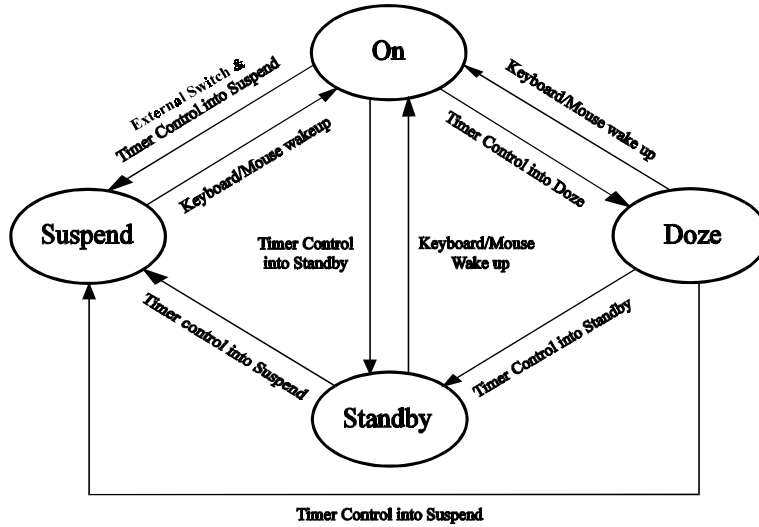


## 4-2. CPU DOZE MODE

1. After out of the timer, CPU clock is slow down to 8MHz.
2. One beep sound.
3. Flash LED to indicate power saving status.
4. Monitor Activity, according to the setting of Advanced Setup.
5. Any activity occurs, system will exit from Doze mode to On mode.

## 4-3. SYSTEM STANDBY MODE

1. After out of the timer, CPU clock is slow down to 8MHz.
2. Two beep sound.
3. Flash LED to indicate power saving status.
4. Level 1 cache are disabled.
5. VGA monitor displays blank screen.
6. Fixed disk driver motor will be spin off.
7. Any activity occurs, system will exit from Standby mode to On mode.

## 4-4. SYSTEM SUSPEND MODE

1. After out of the timer, CPU clock is slow down to 8MHz, if you use Intel Pentium or Cyrix (SMI) CPU, then CPU clock will be stopped.
2. Three beep sound.
3. Flash LED to indicate power saving status.
4. Level 2 cache are disabled.
5. VGA monitor displays blank screen.
6. Fixed disk driver motor will be spin off.
7. Monitor activity according to the setting of Advanced Setup.
8. When system in Suspend mode, only Keyboard / Mouse / Alarm resume can wakeup system.

# *AWARD BIOS SETUP*
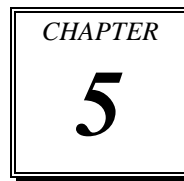
This chapter states out how to set up the Award BIOS.

Section includes:

- Introduction

- Entering Setup

- The Standard CMOS Setup

- The BIOS Features Setup

- The Chipset Features Setup

- Power Management Setup

- PNP/PCI Configuration

- Load BIOS defaults

- Integrated Peripherals

- IDE HDD Auto Detection

- Save and Exit Setup

## 5-1. INTRODUCTION

This chapter will show you the function of a BIOS in managing the features of your system. The Prox-1690 Socket 370 Embedded Card is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of a BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

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

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

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

```
┌─────────────────────────────┐
│    Application Program       │
├─────────────────────────────┤
│    Operation System          │
├─────────────────────────────┤
│         BIOS                 │
├─────────────────────────────┤
│    System Hardware           │
└─────────────────────────────┘
```
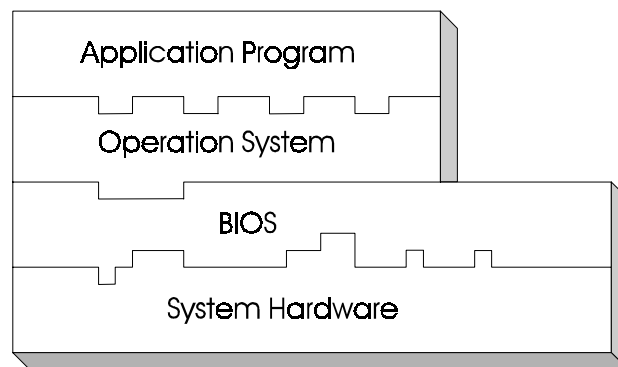
## 5-2. ENTERING SETUP

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

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

As long as this message is present on the screen you may press the <Del> key (the one that shares the decimal point at 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:

```
ROM PCI / ISA BIOS (2A69KP6K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP           INTEGRATED PERIPHERALS

BIOS FEATURES SETUP           SUPERVISOR PASSWORD

CHIPSET FEATURES SETUP        USER PASSWORD

POWER MANAGEMENT SETUP        IDE HDD AUTO DETECTION

PNP/PCI CONFIGURATION         SAVE & EXIT SETUP

LOAD BIOS DEFAULTS            EXIT WITHOUT SAVING

LOAD SETUP DEFAULTS

Esc : Quit                    ↑↓→←  :SELECT ITEM
F10 : Save & Exit Setup       (Shift)F2 : Change Color

Time, Date, Hard Disk Type.........
```

**Setup program initial screen**

You may use the cursor up/down keys to highlight each individual menu items. As you highlight each item, a brief description of that item's function will appear in the lower window. If you have a color monitor you can use the Shift F2 keys to scroll through the various color combinations available.

## 5-3. THE STANDARD CMOS SETUP

Highlight the 〝STANDARD CMOS SETUP〞 and press < ENTER >, a screen will display as follows:

```
                ROM PCI / ISA BIOS (2A69KP6K)
                   STANDARD CMOS SETUP
                   AWARD SOFTWARE, INC.

 Date   (mm:dd:yy)    :  Wed,  Jun  28  2000
 Time   (hh:mm:ss)    :  15  :  45  :  11

 HARD DISKS       TYPE  SIZE   CYLS   HEAD   PRECOMP   LANDZ   SECTOR  MODE
 Primary Master   : Auto  0M     0      0        0        0        0   AUTO
 Primary Slave    : Auto  0M     0      0        0        0        0   AUTO
 Secondary Master : Auto  0M     0      0        0        0        0   AUTO
 Secondary Slave  : Auto  0M     0      0        0        0        0   AUTO

 Drive A : 1.44M, 3.5 in.              Base Memory:        640K
 Drive B : None                    Extended Memory:      64512K
                                      Other Memory:        384K
 Video   : EGA/VGA            -----------------------------------
 Halt On: All, But keyboard           Total Memory:      65536K

 Esc : Quit            ↑↓→← :Select Item        Pu/Pd/+/- : Modify
 F1   : Help           (Shift) F2 : Change Color
```
**Standard CMOS setup screen**

The 〝Standard CMOS Setup Menu〞 are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want.

Information on each category is as follows:

**Date:**

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

**Time:**

The time format is <hour> <minute> <second>.    The time is calculated based on the 24-hour military-time clock.    For example, 1 p.m. is entered as 13:00:00.

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

The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type User is user-definable.

Press <PgUp > or <PgDn> to select a numbered hard disk type or type the number and press < Enter >. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type "User" to define your own drive type manually.

If you select Type User, the related information will be asked to enter. Enter the information directly from the keyboard and press < Enter >. This information must be included in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is ESDI, the selection shall be "Type 1".

If the controller of HDD interface is SCSI, the selection shall be "None"

If you select Type "Auto", BIOS will auto-detect the HDD & CD-ROM Drive at the POST stage and showing the IDE for HDD & CD-ROM Drive.

**TYPE:**

This is the number designation for a drive with certain identification parameters.

**CYLS.:**

This is the number of cylinders found in the specified drive type.

**HEADS:**

This is the number of heads found in the specified drive type.

**PRECOMP:**

Precomp is the read delay circuitry which takes into account the timing differences between the inner and outer edges of the surface of the disk platter. The number designates the starting cylinder of the signal.

**LANDZ:**

Landzone is the landing zone of the heads. This number determines the cylinder location where the heads will normally park when the system is shut down.

**SIZE (CAPACITY):**

This is the formatted capacity of the drive based on the following formula:
(# of heads) X (# of cylinders) X (# of sets) X ( 512bytes/sects)

**DRIVE A AND DRIVE B:**

This item identifies the type of floppy disk drive A or drive B that have been installed in the computer. The option are 360KB 5.25 in, 1.2M 5.25 in, 720KB 3.5 in, 1.44M 3.5 in, 2.88MB 3.5 in and None.

**VIDEO:**

This item selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you don't have to select the type in Setup. The available options are ❶Mono, ❷VGA/EGA, ❸Color 40, and ❹Color 80.

**HALT ON:**

This item determines whether the computer will stop when error is detected during power up. The available options are ❶No errors, ❷All errors, ❸All, But Keyboard, ❹All, but Diskette, and ❺All, But Disk/Key.

**HARD DISK ATTRIBUTES:**

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

**Award Hard Disk Type Table**

## 5-4. The BIOS FEATURES SETUP

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

```
                ROM PCI/ISA BIOS (2A69KP6K)
                    BIOS FEATURES SETUP
                   AWARD SOFTWARE, INC.

Virus Warning              : Disabled   Video    BIOS Shadow      : Enabled
CPU Internal Cache         : Enabled    C8000-CBFFF Shadow        : Disabled
External Cache             : Enabled    CC000-CFFFF Shadow        : Disabled
CPU L2 Cache ECC Checking  : Enabled    D0000-D3FFF Shadow        : Disabled
                                        D4000-D7FFF Shadow        : Disabled
Quick Power On Self Test   : Disabled   D8000- DBFFF Shadow       : Disabled
Boot Sequence              : A,C,SCSI   DC000-DFFFF Shadow        : Disabled
Swap Floppy Drive          : Disabled
Boot Up Floppy Seek        : Enabled
Boot Up NumLock Status     : On
Gate A20 Option            : Fast
Typematic Rate Setting     : Disabled
Typematic Rate (Chars/Sec) : 6
Typematic Delay (Msec)     : 250
Security Option            : Setup      Esc : Quit      ↑↓→←  :  Select Item
PCI/VGA Palette snoop      : Disabled   F1 : Help      Pu/Pd/+/- :  Modify
MPS Version Control For OS  : 1.1       F5 : Old Values  (Shift)F2 :  Color
OS Select For DRAM > 64MB  : Non-OS2    F6 : Load BIOS Defaults
Report No FDD For WIN 95   : Yes        F7 : Load Setup Defaults
```

**BIOS Features Setup**

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

To get help on each item, highlight the relevant item and press the F1 key. A window will appear on your screen detailing the various options available for each item. A brief introduction of each setting is given below.

### VIRUS WARNING:

When enabled, the BIOS will supervise the boot sector and partition table of the hard disk drive for any attempt for modification.

**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 / 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, BIOS will shorten or skip some check items during POST.

**BOOT SEQUENCE:**

This category determines the sequence for which drive to look for first when system boots up. You may set the system to look first at drive A: and then at drive C: or vice versa.

**SWAP FLOOPY DRIVE:**

This item is effective only in systems wherein there are two floppy drives. Selecting Enabled assigns physical swapping of 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 directly to the hard disk drive.

**BOOT UP NUMLOCK STATUS:**

This item allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.

**GATE 20A OPTION:**

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1Mbytes. Initially the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common and much faster for the sytem chipset to provide support for 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.

**TYPEMATIC RATE (CHARS/SEC):**

When the typematic rate is enabled, this selection allows you to choose the rate at which the keys are accelerated. The available options are 6, 8, 10, 12, 15, 20, 24 and 30.

**TYPEMATIC DELAY (MSEC):**

When the typematic rate is enabled, this selection allows you to choose the delay between when the key was first depressed and when the acceleration begins.   The available options are 250, 500, 750 and 1000 (msec).

**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.

**PCI/VGA PALETTE SNOOP:**

This entry determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not.

**MPS VERSION CONTROL FOR OS:**

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

**OS SELECT FOR DRAM >64MB**

This item allows you to access the memory that over 64MB in OS/2.
You may choose OS2 or Non-OS2.

**REPORT NO FDD FOR WIN 95:**

Whether report no FDD for Win 95 or not.

**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.

## 5-5. CHIPSET FEATURES SETUP

Choose the 〝CHIPSET FEATURES SETUP〞 from the main menu, the screen shown as below.

```
ROM PCI/ISA BIOS (2A69KP6K)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration        : Enable      Auto Detect DIMM/PCI Clk   : Enabled
EDO DRAM Speed Selection  : 60 ns       CPU Warning Temperature    : Disabled
EDO CASx# MA Wait State   : 2           Current System Temp.       : 75°C/167°F
EDO RASx# Wait State      : 2           Current CPU1 Temperature   : 51°C/123°F
SDRAM RAS-to-CAS Delay    : 3           Current CPU2 Temperature   :  0°C/ 32°F
SDRAM RAS Precharge Time  : 3           Current CPUFAN1 Speed      :     0 RPM
SDRAM CAS latency Time     : 3           Current CPUFAN2 Speed      : 5232 RPM
SDRAM Precharge Control   : Disabled    IN0 (V) :  1.98V   IN1(V)  :  1.47 V
DRAM Data Integrity Mode  : Non-ECC     IN2 (V) :  3.26V  + 5 V    :  4.89 V
System BIOS Cacheable     : Disabled    +12 V  : 12.16V   -12 V    :-11.78 V
Video BIOS Cacheable      : Disabled    - 5 V  : - 4.99V
Video RAM Cacheable       : Disabled
8 Bit I/O Recovery Time   : 1
16 Bit I/O Recovery Time  : 1
Memory Hole At 15M-16M    : Disabled    Esc : Quit        ↑↓→←  :  Select Item
Passive Release           : Enabled     F1 : Help        Pu/Pd/+/- :  Modify
Delayed Transaction       : Disabled    F5 : Old Values   (Shift)F2 :  Color
AGP Aperture Size   (MB)  : 64          F6 : Load BIOS Defaults
                                        F7 : Load Setup Defaults
```

**Chipset Features Setup**

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

### AUTO CONFIGURATION:

Auto Configuration selects predetermined optimal values of chipset parameters. When disabled, chipset parameters revert to setup information stored in CMOS. Many fields in this screen are not available when Auto Configuration is Enabled.

**EDO DRAM SPEED SELECTION:**

The DRAM timing is controlled by the DRAM Timing Registers. The timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory. The choices are 50ns, and 60ns.

**EDO CASx# MA WAIT STATE:**

You can select the timing control type of EDO DRAM CAS MA. (memory address bus).   The choices are 1 and 2.

**EDO RASx# WAIT STATE:**

You can select the timing control type of EDO DRAM RAS MA (memory address bus). The choices are 1 and 2.

**SDRAM RAS-to-CAS DELAY:**

You can select RAS to CAS Delay time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.
The choices are 2 and 3.

**SDRAM RAS PRECHARGE TIME:**

Defines the length of time for Row Address Strobe is allowed to precharge.

**SDRAM CAS LATENCY TIME:**

You can select CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this filed unless you change specifications of the installed DRAM or the installed CPU.

**SDRAM PRECHARGE CONTROL:**

When Enabled, all CPU cycles to SDRAM result in an All Banks Precharge Command on the SDRAM interface.

**DRAM DATA INTEGRITY MODE:**

Select parity or ECC (error-correcting code), according to the type of installed DRAM.

**SYSTEM BIOS CACHEABLE :**

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

**VIDEO BIOS CACHEABLE:**

Select Enabled allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video 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.

**8 Bit I/O RECOVERY TIME:**

The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating so much faster than the input / output bus that the CPU must be delayed to allow fro the completion of the I/O. This item allows you to determine the recovery time allowed for 8bit I/O.

**16 Bit I/O RECOVERY TIME:**

This item allows you to determine the recovery time allowed for 16bit I/O. Choices from NA, 1 to 4 CPU clocks.

**MEMORY HOLE AT 15-16M:**

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

**PASSIVE RELEASE:**

When Enabled, CPU to PCI bus accesses is allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

**DELAYED TRANSACTION:**

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

**AGP APERTURE SIZE:**

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for AGP information.

**AUTO DETECT DIMM/PCI CLK:**

To reduce the occurrence of electromagnetic interference (EMI), the BIOS detects the presence or absence of components in DIMM and PCI slots and turns off system clock generator pulses to empty slots.

**CPU WARNING TEMPERATURE:**

Select the combination of lower and upper limits for the CPU temperature. If the CPU temperature extends beyond either limit, any warning mechanism programmed into your system will be activated.

**CURRENT SYSTEM TEMP.:**

This item displays the current system temperature, if your computer contains a monitoring system.

**CURRENT CPU1/CPU2 TEMPERATURE:**

This item displays the current CPU temperature, if your computer contains a monitoring system.

**CURRENT CPUFAN1/CPUFAN2 SPEED:**

This item displays the current system speed of the CPU fans, if your computer contains a monitoring system.

## 5-6. POWER MANAGEMENT SETUP

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

```
ROM PCI/ISA BIOS (2A69KP6K)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management      : User Define      ** Reload Global Timer  Events **
PM Control by APM     : Yes              IRQ (3-7, 9-15), NMI       : Disabled
Video Off Method      : DPMS             Primary IDE 0              : Disabled
Video Off After       : Standby          Primary IDE 1              : Disabled
MODEM Use IRQ         : NA               Secondary IDE 0            : Disabled
Doze Mode             : Disable          Secondary IDE 1            : Disabled
Standby Mode          : Disable          Floppy Disk               : Disabled
Suspend Mode          : Disable          Serial Port               : Enabled
HDD Power Down        : Disable          Parallel Port             : Disabled
Throttle Duty Cycle   : 62.5%
PCI/VGA Act-Monitor   : Disabled
PowerOn by Ring       : Enabled
IRQ 8 Break Suspend   : Disabled

                                        Esc : Quit        ↑↓→←  :  Select Item
                                        F1 : Help         Pu/Pd/+/- :  Modify
                                        F5 : Old Values   (Shift)F2 :  Color
                                        F6 : Load BIOS Defaults
                                        F7 : Load Setup Defaults
```

**Power Management Setup**

This category allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.   Having made all the settings above, press < Esc > to return to the main menu.

### POWER MANAGEMENT:

This category allows you to select the type or degree of power saving and is directly related to Doze Mode, Standby Mode, Suspend Mode, and HDD Power Down. The available options are Disable, Min. Power Saving, Max. Power Saving, and User Define.

### PM CONTROL BY APM:

When set to "*Yes*", an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock.

**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 write blanks to video buffer. |
|---|---|
| BLANK SCREEN | This selection only writes blanks to video buffer. |
| DPMS | Initial display power management signaling. |

**VIDEO OFF AFTER:**

When enabled, this feature allows the VGA adapter to operate in a power saving mode. The available choices are as follows:

| N/A | Monitor will remain on during power saving modes. |
|---|---|
| SUSPEND | Monitor blanked when the systems enters the Suspend mode. |
| STANDBY | Monitor blanked when the system enters Standby mode. |
| DOZE | Monitor blanked when the system enter any power saving mode. |

**MODEM USE IRQ:**

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

**DOZE MODE:**

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

**STANDBY MODE:**

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

**SUSPEND MODE:**

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

**HDD POWER DOWN:**

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

**THROTTLE DUTY CYCLE:**

This item allows you to select the percent of time that the clock runs when the system enters Doze mode.

**PCI/VGA ACT-MONITOR:**

When enabled, any video activity restarts the global timer for Standby mode.

**POWERON BY RING:**

When enabled, an incoming call on the modem awakens the system from a soft off state.

**IRQ 8 BREAK SUSPEND:**

This item allows you to enabled and disable the monitoring of IRQ8 so it doesn't awaken the system from Suspend mode.

**RELOAD GLOBAL TIMER EVENTS:**

When enabled, an event occurring on each device listed below restarts the global time for standby mode:

❶IRQ[3-7,9-15], NMI  ❷Primary IDE 0      ❸Primary IDE 1
❹Secondary IDE 0      ❺Secondary IDE 2  ❻ Floppy Disk
❼Serial Port               ❽Parallel Port

## 5-7. PNP/PCI CONFIGURATION

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

```
              ROM PCI/ISA BIOS (2A69KP6K)
                PNP/PCI CONFIGURATION
                 AWARD SOFTWARE, INC.
```

| | | |
|---|---|---|
| PNP OS Installed | : No | Used MEM base addr : N/A |
| Resources Controlled by | : Manual | |
| Reset Configuration Data | : Disabled | |
| | | |
| IRQ-3 assigned to | : PCI/ISA PnP | |
| IRQ-4 assigned to | : PCI/ISA PnP | |
| IRQ-5 assigned to | : PCI/ISA PnP | |
| IRQ-7 assigned to | : PCI/ISA PnP | |
| IRQ-9 assigned to | : PCI/ISA PnP | |
| IRQ-10 assigned to | : PCI/ISA PnP | |
| IRQ-11 assigned to | : PCI/ISA PnP | |
| IRQ-12 assigned to | : PCI/ISA PnP | |
| IRQ-14 assigned to | : PCI/ISA PnP | |
| IRQ-15 assigned to | : PCI/ISA PnP | |
| DMA-0 assigned to | : PCI/ISA PnP | |
| DMA-1 assigned to | : PCI/ISA PnP | Esc : Quit    ↑↓→← : Select Item |
| DMA-3 assigned to | : PCI/ISA PnP | F1 : Help    Pu/Pd/+/- : Modify |
| DMA-5 assigned to | : PCI/ISA PnP | F5 : Old Values  (Shift)F2 : Color |
| DMA-6 assigned to | : PCI/ISA PnP | F6 : Load BIOS Defaults |
| DMA-7 assigned to | : PCI/ISA PnP | F7 : Load Setup Defaults |

**PNP/PCI CONFIGURATION**

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

You can manually configure the PnP/PCI Device's IRQ. Highlight the selected item and pressing <F1> key, the all options for the desired selection will be displayed for choice.

**RESOURCE CONTROLLED BY:**

The Award Plug and Play Bios can automatically configure all the booth and Plug and Play-compatible devices. If set to Auto, all interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

**RESET CONFIGURATION DATA:**

When Enable, the system will reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

**IRQ # ASSIGNED TO:**

If resources are controlled manually, assign each system interrupt as Legacy ISA Devices or PCI/ISA PnP Devices.

| Legacy ISA Devices | It complaint with the original PC AT bus specification, requiring a specific interrupt such as IRQ4 for serial port 1. |
|---|---|
| PCI/ISA PnP Devices | It complaint with the Plug and Play standard, whether designed for PCI or ISA bus architecture. |

**DMA # ASSIGNED TO:**

If resources are controlled manually, assign each system DMA channel as as Legacy ISA Devices or PCI/ISA PnP Devices.

| Legacy ISA Devices | It complaint with the original PC AT bus specification, requiring a specific DMA channel. |
|---|---|
| PCI/ISA PnP Devices | It complaint with the Plug and Play standard, whether designed for PCI or ISA bus architecture. |

**USED MEM BASE ADDR:**

Select a base address for the memory area used by any peripheral that requires high memory.

## 5-8. LOAD BIOS DEFAULTS

### AUTO CONFIGURATION WITH BIOS DEFAULTS

"LOAD BIOS DEFAULTS" loads the default BIOS values. When the diagnostic aid of your system becomes unusable, choose this option and the following message appears:

> Load BIOS Default ( Y / N ) ? Y

To use the BIOS defaults, change the prompt to "Y" and press < Enter >, the CMOS is load automatically when you power on the Prox-1690.

## 5-9. LOAD SETUP DEFAULTS

### AUTO CONFIGURATION WITH SETUP DEFAULTS

This Main Menu item uses the default SETUP values. Use this option as a diagnostic aid of your system behaves erratically. Choose this item and the following message appears:

> Load SETUP Default ( Y / N ) ? Y

To use the SETUP defaults, change the prompt to "Y" and press <Enter> The CMOS is load automatically form SETUP default values.

## 5-10. INTEGRATED PERIPHERALS

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

```
┌──────────────────────────────────────────────────────────────────┐
│                  ROM PCI/ISA BIOS (2A69KP6K)                       │
│                   INTEGRATED PERIPHERALS                           │
│                   AWARD SOFTWARE, INC.                             │
├────────────────────────────────────┬───────────────────────────────┤
│ IDE HDD Block Mode      : Enabled   │ Onboard Serial Port 1   : 3F8/IRQ4 │
│ IDE Primary Master PIO  : Auto      │ Onboard Serial Port 2   : 2F8/IRQ3 │
│ IDE Primary Slave PIO   : Auto      │ UART Mode Select        : Normal   │
│ IDE Secondary Master PIO : Auto     │                                    │
│ IDE Secondary Slave PIO : Auto      │                                    │
│ IDE Primary Master UDMA : Auto      │                                    │
│ IDE Primary Slave UDMA  : Auto      │ Onboard Parallel Port   : 378/IRQ7 │
│ IDE Secondary Master UDMA : Auto    │ Parallel Port Mode      : SPP      │
│ IDE Secondary Slave UDMA : Auto     │                                    │
│ On-Chip Primary PCI IDE : Enabled   │                                    │
│ On-Chip Secondary PCI IDE : Enabled │                                    │
│ Onboard PCI SCSI Chip   : Enabled   │                                    │
│ USB Keyboard Support    : Disabled  │                                    │
│ Init Display First      : PCI Slot  │                                    │
│                                     ├───────────────────────────────┤
│                                     │ Esc : Quit    ↑↓→← :  Select Item │
│                                     │ F1 : Help     Pu/Pd/+/- :  Modify │
│                                     │ F5 : Old Values  (Shift)F2 :  Color │
│                                     │ F6 : Load BIOS Defaults            │
│ Onboard FDC Controller  : Enabled   │ F7 : Load Setup Defaults           │
└────────────────────────────────────┴───────────────────────────────┘
```

**INTEGRATED PERIPHERALS**

By moving cursor to the desired selection and pressing <F1> key, the all options for the desired selection will be displayed for choice. User has to use select the desired option. Having made all the setting according to your selections. Press <Esc> to return to the Main Menu.

## 5-11. PASSWORD SETTING

You may choose to select to set either supervisor or user password, or both of them.   The differences is that the supervisor password can enter and change options of the setup menus while user password can only enter setup menu but does not have any rights to change any settings.

### TO SET A PASSWORD

If you want to enable this item you should choose the 〝PASSWORD SETTING〞 option from the main menu, 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, and press < Enter >. You will be asked to confirm the password.   Type the password again and press < Enter >. You may also press < Esc > to abort the selection and not enter a password.

To change the original password, enter CMOS setup Menu again and you will be asked to enter the original password, then select   〝PASSWORD SETTING〞 and press enter.   The system will asked you to enter a password, and then you may enter new password and re-type new password for confirmation.

🖉 User should bear in mind that when a password is set, you will be ask to enter the password whenever you enter CMOS setup Menu.   This can prevent an unauthorized person from changing any part of your system configuration.

You may determine when the password is required within the BIOS Features Setup Menu and its Security Option.   If the Security Option is set to "System", the password will be required both at boot and at entry to Setup.   If set to "Setup", prompting will only occurs when trying to enter Setup.

**TO DISABLE THE PASSWORD**

Upon entering the CMOS setup Menu, the system will ask you to enter the original password, after entering the original password, press 〝PASSWORD SETTING〞 a message will appear at the center.

```
          Password Disabled!!!
       Press any key to continue...
```

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

## 5-12. IDE HDD AUTO DETECTION

Choose the 〝IDE HDD AUTO DETECTION〞 option . The screen will be shown as below.

```
ROM PCI / ISA BIOS (2A69KP6K)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

                 CYLS.  HEADS  PRECOMP  LANDZONE  SECTORS  MODE
Drive C   : (850Mb)  824    32      0        1647       63    LBA
Drive D   : (   Mb)

        Select Drive D Option (N=Skip) : N

  Option  Size  Cyls  Heads  Precomp  Landzone  Sectors  Mode
  _____
  1 (Y)    0     0     0       0        0         0     Normal

  Note: Some Oses (like SCO-UNIX) must use "Normal" for installation
                        Esc : Skip
```

**IDE HDD AUTO DETECTION Screen**

This setup menu allows you to save time in finding the Hard Disk Drive information, just follow the following steps:

1. Select the 〝IDE HDD AUTO DETECTION〞 from the Main Menu.
2. After a couple of seconds, the screen will appear the Hard Disk information and following message:

**"SELECT PRIMARY MASTER OPTION (N=SKIP):N"**

3. Enter Y or N to confirm the acceptance of the parameter reported by BIOS, then press the <ENTER> key.

✆ The process will repeat again form Primary Slave, Secondary Master and Secondary Slave Hard Disks.

## 5-13. SAVE & EXIT SETUP

When you have completed adjusting all the settings as required, you must have these setting into the CMOS RAM. Select SAVE & EXIT and press<Enter>, as the display shown on below:

```
┌─────────────────────────────────────────────────────────┐
│              ROM PCI / ISA BIOS (2A69KP6K)                │
│                  CMOS SETUP UTILITY                       │
│                 AWARD SOFTWARE, INC.                      │
├─────────────────────────────────────────────────────────┤
│                                                           │
│  STANDARD CMOS SETUP         INTEGRATED PERIPHERALS       │
│                                                           │
│  BIOS FEATURES SETUP         SUPERVISOR PASSWORD          │
│                                                           │
│  CHIPSET FEATURES SETUP      USER PASSWORD                │
│                                                           │
│  POWER MANAGEMENT SETUP      IDE HDD AUTO DETECTION       │
│                                                           │
│  PNP/PCI CONF  ┌──────────────────────────┐   ETUP       │
│                │ SAVE to CMOS and EXIT (Y/N)?   N │       │
│  LOAD BIOS DE  │                          │   SAVING     │
│                │                          │             │
│  LOAD SETUP DEFAULTS                                     │
├─────────────────────────────────────────────────────────┤
│   Esc : Quit               ↑↓→←  :Select Item            │
│   F10 : Save & Exit Setup  (Shift)F2 : Change Color      │
├─────────────────────────────────────────────────────────┤
│            Save Data to CMOS & Exit SETUP                │
└─────────────────────────────────────────────────────────┘
```

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

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

```
ROM PCI / ISA BIOS (2A69KP6K)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP          INTEGRATED PERIPHERALS

BIOS FEATURES SETUP          SUPERVISOR PASSWORD

CHIPSET FEATURES SETUP       USER PASSWORD

POWER MANAGEMENT SETUP       IDE HDD AUTO DETECTION

PNP/PCI CONF                                    ETUP
              Quit Without Saving (Y/N) ?  Y
LOAD BIOS DE                                    SAVING

LOAD SETUP DEFAULTS

  Esc : Quit                  ↑↓→← :SELECT ITEM
  F10 : Save & Exit Setup    (Shift)F2 : Change Color

             Abandon all Datas & Exit SETUP
```

# *EXPANSION BUS*
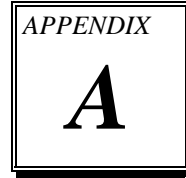
This appendix indicates the pin assignments.

Section includes:

● ISA BUS Pin Assignment

● PCI BUS Pin Assignment

## ISA BUS PIN ASSIGNMENT

There are two edge connector (called ″gold fingers″) on this CPU Card, on the right hand is the connector of ISA Bus, followed up by PCI BUS connector. The ISA-bus connector is divided into two sets: one consists of 62 pins; the other consists of 36 pins.

The pin assignments are as follows :

| | 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 | | | | |

## PCI BUS PIN ASSIGNMENT

Like ISA-BUS connector, the PCI-BUS edge connector is also divided into two sets: one consists of 98-pin; the other consists of 22-pin. The standard of PICMG 32-bit PCI-ISA connector contains 218 pins in total.
The pin assignments are as follows :

COMPONENT SIDE
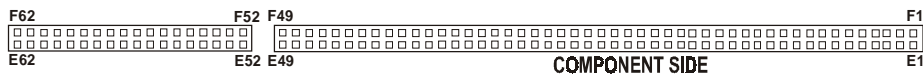
| F | | E | | F | | E | |
|---|---|---|---|---|---|---|---|
| PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT | PIN | ASSIGNMENT |
| F1 | -12V | E1 | TRST# | F31 | +3.3V | E31 | AD18 |
| F2 | TCK | E2 | +12V | F32 | AD17 | E32 | AD16 |
| F3 | GND | E3 | TMS | F33 | C/BE2# | E33 | +3.3V |
| F4 | TDO | E4 | TDI | F34 | GND | E34 | FRAME# |
| F5 | +5V | E5 | +5V | F35 | IRDY# | E35 | GND |
| F6 | +5V | E6 | INTA# | F36 | +3.3V | E36 | TRDY# |
| F7 | INTB# | E7 | INTC# | F37 | DEVSEL# | E37 | GND |
| F8 | INTD# | E8 | +5V | F38 | GND | E38 | STOP# |
| F9 | REQ3# | E9 | CLKC | F39 | LOCK# | E39 | +3.3V |
| F10 | REQ1# | E10 | +5V(I/O) | F40 | PERR# | E40 | SDONE |
| F11 | GNT3# | E11 | CLKD | F41 | +3.3V | E41 | SB0# |
| F12 | GND | E12 | GND | F42 | SERR# | E42 | GND |
| F13 | GND | E13 | GND | F43 | +3.3V | E43 | PAR |
| F14 | CLKA | E14 | GNT1# | F44 | C/BE1# | E44 | AD15 |
| F15 | GND | E15 | RST# | F45 | AD14 | E45 | +3.3V |
| F16 | CLKB | E16 | +5V(I/O) | F46 | GND | E46 | AD13 |
| F17 | GND | E17 | GNT0# | F47 | AD12 | E47 | AD11 |
| F18 | REQ0# | E18 | GND | F48 | AD10 | E48 | GND |
| F19 | +5V(I/O) | E19 | REQ2# | F49 | GND | E49 | AD09 |
| F20 | AD31 | E20 | AD30 | F52 | AD08 | E52 | C/BE0# |
| F21 | AD29 | E21 | +3.3V | F53 | AD07 | E53 | +3.3V |
| F22 | GND | E22 | AD28 | F54 | +3.3V | E54 | AD06 |
| F23 | AD27 | E23 | AD26 | F55 | AD05 | E55 | AD04 |
| F24 | AD25 | E24 | GND | F56 | AD03 | E56 | GND |
| F25 | +3.3V | E25 | AD24 | F57 | GND | E57 | AD02 |
| F26 | C/BE3# | E26 | GNT2# | F58 | AD01 | E58 | AD00 |
| F27 | AD23 | E27 | +3.3V | F59 | +5V(I/O) | E59 | +5V(I/O) |
| F28 | GND | E28 | AD22 | F60 | ACK64# | E60 | REQ64# |
| F29 | AD21 | E29 | AD20 | F61 | +5V | E61 | +5V |
| F30 | AD19 | E30 | GND | F62 | +5V | E62 | +5V |

# *TECHNICAL SUMMARY*
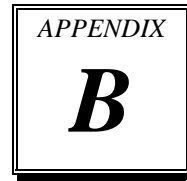
This section introduce you the maps concisely.

Section includes:

- Block Diagram

- Interrupt Map

- RTC & CMOS RAM Map

- Timer & DMA Channels Map

- I / O & Memory Map

## BLOCK DIAGRAM
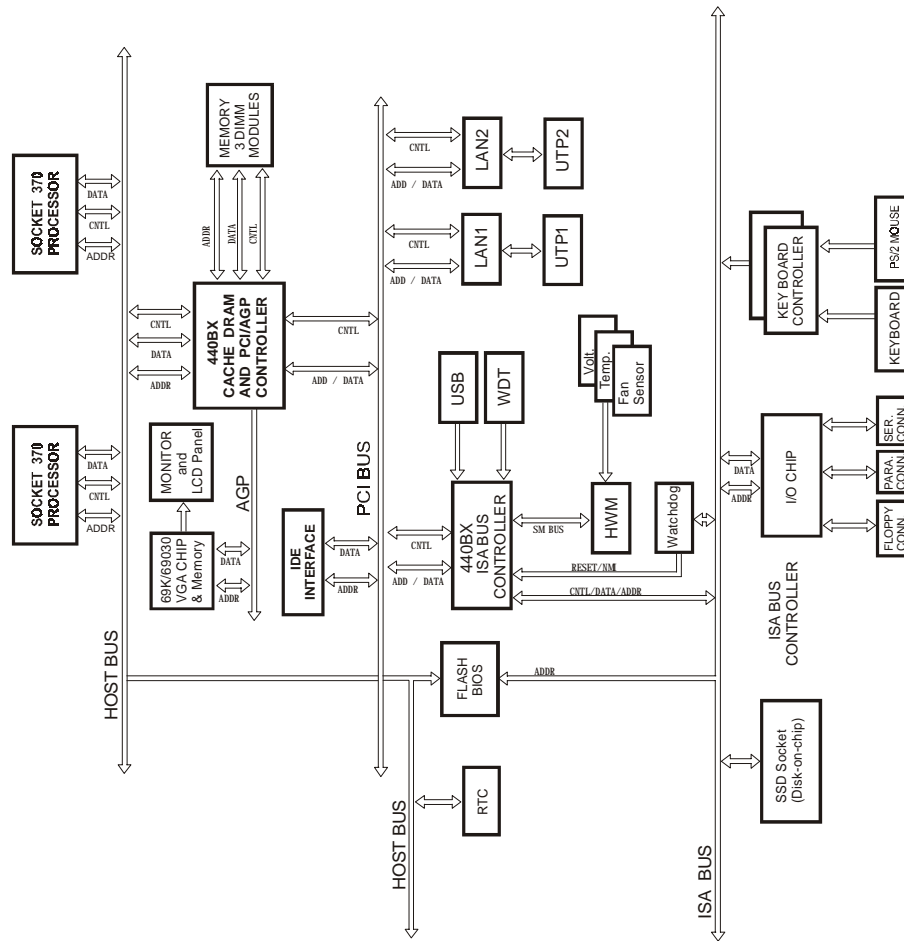
## INTERRUPT MAP

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

## I/O & MEMORY MAP

**Memory Map :**

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

**I/O Map :**

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

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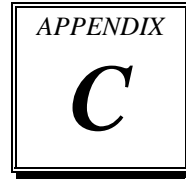
This section outlines the errors may occur when you operate the system.     It also gives you the suggestions on solving the problems.

Section includes:

● Trouble Shooting for Error Messages

● Trouble Shooting for POST Code

## TROUBLE SHOOTING FOR ERROR MESSAGES

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

### POST BEEP :

Currently there are two kinds of beep codes in BIOS. 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 consists 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.

## TROUBLE SHOOTING 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 :** Verifies 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.

**PRINTED IN TAIWAN**