USER'S MANUAL

ProX-1670

For Socket 370
Embedded Board
With VGA / SOUND / 2LAN

Prox-1670 M1

ProX-1670 Socket 370
Embedded Board
With VGA / SOUND / Dual LAN

OPERATION MANUAL

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ACKNOWLEDGEMENTS

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CHAPTER 3 SOFTWARE UTILITIES

CHAPTER 4 GREEN PC FUNCTION

CHAPTER 5 AWARD BIOS SETUP

INTRODUCTION

This chapter gives you the information for Prox-1670. It also outlines the System specifications.

Section includes:

● About This Manual

● System Specifications

● Safety precautions

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

1-1. ABOUT THIS MANUAL

Thank you for purchasing our Prox-1670 Socket 370 Embedded Board with VGA/Sound/LAN, which is fully PC / AT compatible. The Prox-1670 provides faster processing speed, greater expandability and can handle more tasks than before. This manual is designed to assist you how to install and set up the system. It contains 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 specifications for this system. The final page of this chapter will indicate how to avoid damaging this Embedded Board.

Chapter 2 Hardware Configuration

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

Chapter 3 Software Utilities

This chapter contains helpful information for proper installations of the VGA Utility, LAN Utility, Sound Utility, and Flash BIOS Update. It also describes the Watchdog-timer configuration.

Chapter 4 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 W-Sound Adapter Card.

Appendix B Expansion Bus

This Appendix introduces you the expansion bus for ISA BUS.

Appendix C Technical Summary

This section gives you the information about the Technical maps.

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

1-2. SYSTEM SPECIFICATIONS

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

● **MEMORY :**
> Up to 256MB SDRAM
> One 168pin DIMM socket on board.

● **CACHE :**
> Depended on CPU (128K/256K 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 CONNECTOR :**
> 5-pin PC/At keyboard connector with mini DIN cable.

● **MOUSE CONNECTOR :**
> PS/2 mouse connector with min DIN cable.

● **BUS SUPPORT :**
> Internal PCI Bus for VGA, LAN, Sound, & IDE.
> One PISA slot.
> One PPCI connector.

● **DISPLAY :**
   Onboard C&T 69000 chipset, 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) resolution on SVGA
   Monitor.
   Integrates 2 Mbytes of SDRAM for the graphics/video frame buffer.
   Support 51-pin connector 640 x 480, 800 x 600, 1024 x 768 resolutions on
   LCD Panel.
   Panel Display support 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 port, supports Ultra DMA-33.
   Two channel, support up to four 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 :**
   A 32-pin SSD socket on board, supports up to 144MB Disk-on-chips.

● **USB CONNECTOR :**
   Universal Serial Bus Connector, supports up to two USB ports.

● **LAN ADAPTER :**
   Dual port, Intel® 82559 PCI Fast Ethernet
   10/100 Base-T PCI-BUS

● **INFRARED FUNCTION :**
   One Infrared port.
   Support IrDA v1.0 SIR protocol.

● **SERIAL PORT :**

　　Four high speed 16550 Compatible UARTs with Send / Receive 16 Byte
　　FIFOs;　　COM1/3/4 for RS-232; COM2 for RS-232/422/485.
　　MIDI Compatible.
　　Programmable Baud Rate Generator.

● **PARALLEL PORT :**

　　SPP, ECP, EPP Function.
　　Bi-directional parallel port.

● **SOUND FUNCTION :**

　　Enhance ESS 1938S (Solo-1, Single Chip PCI audio)
　　BUS: 32 bit PCI BUS
　　Stereo full duplex for playback and recording.
　　Software compatible: Windows 95/98, Windows NT 4.0
　　Sampling rate: Support from 4kHz up to 48kHz.
　　Power Management: ACPI 1.0 compliant
　　3D sound: Integrated Spatializer 3D sound software wavetable, general
　　MIDI and MPU-401 support.
　　Interface: MIC, SPK, Line-In, CD Audio-in, and Mono.

● **GREEN FUNCTION :**

　　Software support by BIOS setup.
　　Hardware support by switch control.

● **HARDWARE MONITORING FUNCTION :**

　　Monitor CPU Voltage, CPU temperature, and Cooling Fan.

● **LED INDICATOR :**

　　System power.
　　Hard Disk access.
　　LAN LED indicators.

● **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 :**
146mm x 203mm

● **BOARD NET WEIGHT :**
0.25 Kilograms.

1-3. SAFETY PRECAUTIONS

Follow the messages below to avoid your systems from damage:

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

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

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

HARDWARE CONFIGURATION

** QUICK START **

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

This section includes:

● Jumper & Connector Quick Reference Table

● Component Locations

● Configuration and Jumper settings

● Connector's Pin Assignments

2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

COM Connector ....…	COM1, COM2
…….……………………………	COM3, COM4
RS232/422/485 (COM2) Selection	JP17, JP18
Solid-State Disk Socket	SSD
SSD Memory Mapping Selection	JP9
Keyboard Connector ………..……….....…...............	KB1
Mouse Connector ……………………...................	MS1
Reset Connector	RST
Hard Disk Drive LED Connector	HDL
External Speaker Connector	SPK
VGA Connector ………….............….....................	VGA
LCD Panel Connector	LCD
Panel Inverter Delay-power Connector ………….	JP7 (1,3,5)
LCD VDD Selection ……….................................	JP7 (2,4,6)
Floppy Disk Drive Connector	FDD
Hard Disk Drive Connector	IDE1, IDE2
Printer Connector	PRT
CPU Fan Connector	CPUFAN1
………………………....…	CPUFAN2
Power LED & KeyLock Connector ……………..	JP13
Universal Serial Bus Connector	USB
NMI/Reset/Clear Watchdog ……………………..…	JP10
LAN Connector	LAN1, LAN2
PPCI Connector ………………………………….	PPCI
Power Connector …………………………..……	PWR
Sound Connector ……………………………....	JP5
CD Audio-in Connector …………………………	JP1
Mono Connector ……...……………………..	JP4
Green Function Connector ………………………	GRN
IrDA Connector ……………………………………	JP15
LAN LED Indicator …..………………………….	LD1&2, LD3&4
ATX Power Switch Connector …………………..	JP12 (3,4)
LAN Wake-up Connector ………………………..	JP16
Memory Installation	DIMM1
Sound Enabled/Disabled Selection ……………...	JP19
LAN Enable/Disable Selection ……….…………..	JP8
Reserved pin ……………………………………...	JP3, JP6, JP2

2-2. COMPONENT LOCATIONS
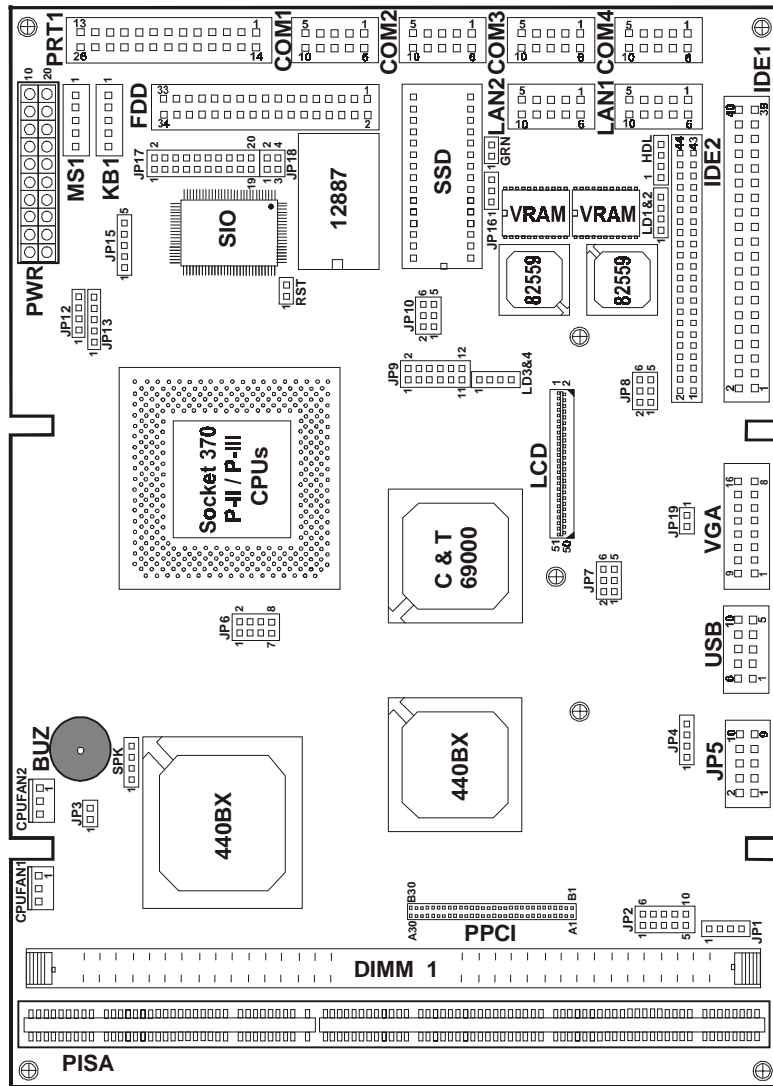
Prox-1670 Connector, Jumper and Component locations

2-3. HOW TO SET THE JUMPERS

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

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

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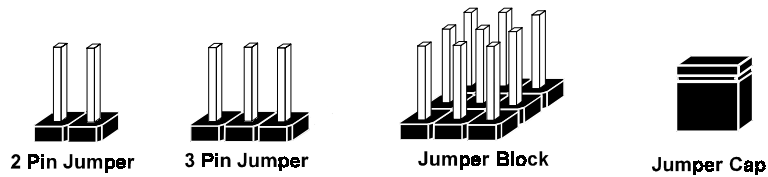
If a jumper has three pins (for example, labelled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagram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

JUMPER DIAGRAMS

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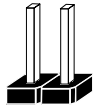
2 pin Jumper looks like this
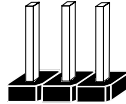
3 pin Jumper looks like this
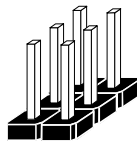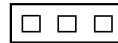
Jumper Block looks like this
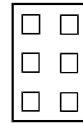
JUMPER SETTINGS

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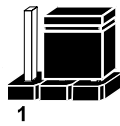
3 pin Jumper
2-3 pin close(enabled) looks like this
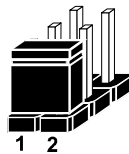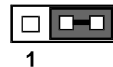
Jumper Block
1-2 pin close(enabled) looks like this
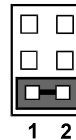
2-4. COM PORT CONNECTOR

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

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

PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	NC
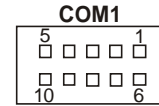
COM2 : COM2 Connector
The COM2 Connector assignments are as follows :

PIN	ASSIGNMENT		
	RS-232	RS-422	RS-485
1	DCD	TX-	TX-
2	RX	TX+	TX+
3	TX	RX+	RX+
4	DTR	RX-	RX-
5	GND	GND	GND
6	DSR	RTS-	NC
7	RTS	RTS+	NC
8	CTS	CTS+	NC
9	RI	CTS-	NC
10	NC	NC	NC
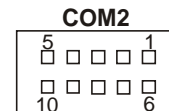
COM3 : COM3 Connector
The pin assignments are as follows :

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

COM3
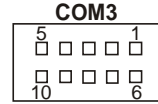
COM4 : COM4 Connector
The pin assignments are as follows :

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

COM4
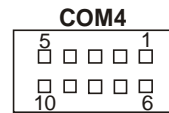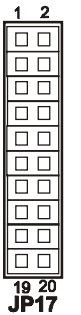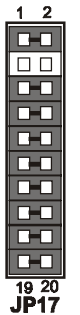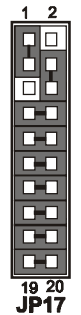
2-5. RS232/422/485 (COM2) SELECTION

JP17, JP18 : RS-232/422/485 Selection
COM2 is selectable for RS-232, 422, 485 function.
The jumper settings are as follows :

COM 2 Function	RS-232		RS-422		RS-485	
	JP17	JP18	JP17	JP18	JP17	JP18
Jumper setting (pin closed)	Open	1-2 3-4	1-2 5-6 7-8 9-10 11-12 13-14 15-16 17-18 19-20	Open	1-3 4-6 7-8 9-10 11-12 13-14 15-16 17-18 19-20	Open
Jumper illustration						

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

2-6. SOLID-STATE DISK SOCKET

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

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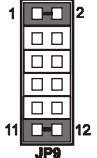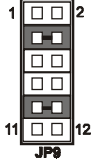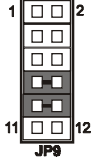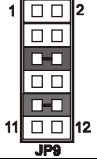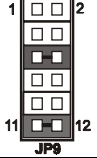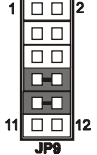
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	17	SD3
2	NC	18	SD4
3	NC	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE
7	SA5	23	SA10
8	SA4	24	OE
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	NC
13	SD0	29	NC
14	SD1	30	VCC
15	SD2	31	WE
16	GND	32	VCC

2-7. SSD MEMORY MAPPING SELECTION

JP9 : SSD Memory Mapping Selection
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 SETTINGS (pins closed)	JUMPER ILLUSTRATION
CC000h-CDFFFh	1-2 11-12	
D0000h-D1FFFh	3-4 9-10	
D4000h-D5FFFh	3-4 11-12	
D8000h-D9FFFh	5-6 9-10	
DC000h-DDFFFh	5-6 11-12	
E0000h-E1FFFh	7-8 9-10	

*** Manufactory default --- CC000h-CDFFFh

2-8. KEYBOARD CONNECTOR

KB1 : PC/AT Keyboard Connector
The jumper settings are as follows:

PIN	ASSIGNMENT
1	KCLK
2	KDATA
3	NC
4	GND
5	IOVSB

KB1
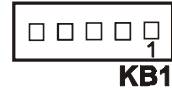
2-9. PS/2 MOUSE CONNECTOR

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

PIN	ASSIGNMENT
1	MCLK
2	MDATA
3	NC
4	GND
5	IOVSB

MS1

2-10. RESET CONNECTOR

RST : Reset Connector.
The pin assignments are as follows :

PIN	ASSIGNMENT
1	RESET
2	GROUND

1 □□
RST

2-11. HARD DISK DRIVE LED CONNECTOR

HDL : Hard Disk Drive LED Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	HDD Active Signal
3	HDD Active Signal
4	HDD Active Signal

1 □□□□
HDL

2-12. EXTERNAL SPEAKER CONNECTOR

SPK : External Speaker Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	Speaker Signal
3	Speaker Signal
4	Speaker Signal

1 □□□□
SPK

2-13. VGA CRT CONNECTOR

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

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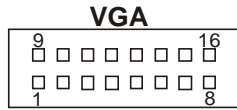
PIN	ASSIGNMENT
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	NC
13	HSYNC
14	VSYNC
15	NC
16	NC

2-14. LCD PANEL CONNECTOR

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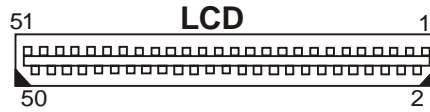
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	P0	2	P16
3	P1	4	P17
5	P2	6	P18
7	P3	8	P19
9	P4	10	P20
11	P5	12	P21
13	P6	14	P22
15	P7	16	P23
17	LCD VDD	18	LCDVDD
19	P8	20	P24
21	P9	22	P25
23	P10	24	P26
25	P11	26	P27
27	P12	28	P28
29	P13	30	P29
31	P14	32	P30
33	P15	34	P31
35	P34	36	P32
37	P35	38	P33
39	M	40	GND
41	VDDSAFE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

2-15. PANEL INVERTER DELAY-POWER CONNECTOR

JP7 (1, 3, 5) : Panel Inverter Delay-Power Connector
This connector acts as an inverter to supply proper power to LCD panel.
The pin assignments are as follows:

PIN	ASSIGNMENT
1	LCD+12V
3	GND
5	LCD VDD (+5V/3.3V)
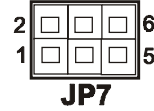
⌂ Pin 5 will depend on the jumper set on LCD VDD selection. Therefore when this connector is used, user should remember to set the jumper on LCD VDD selection

2-16. LCD VDD SELECTION

JP7 (2, 4, 6) : LCD VDD Selection
The pin assignments are as follows:

Panel VCC Selection	JUMPER SETTINGS (pins closed)	JUMPER ILLUSTRATION
VDD 5V	2-4	
VDD 3.3V	4-6	

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 there is a 34-pin flat cable to attach the FDD on the board,
the other side attaches to two FDDs.
The pin assignments are as follows :

FDD

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

2-18. HARD DISK DRIVE CONNECTOR

This board contains two IDE port, pin assignment for the respective port are mentioned below.

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

IDE1
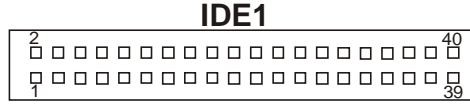
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	21	IDEREQ0
2	GND	22	GND
3	IDED7	23	IDEIOW
4	IDED8	24	GND
5	IDED6	25	IDEIOR
6	IDED9	26	GND
7	IDED5	27	IDERDY
8	IDED10	28	PULL HI
9	IDED4	29	IDEACK0
10	IDED11	30	GND
11	IDED3	31	IRQ14
12	IDED12	32	IOCS16
13	IDED2	33	IDEA1
14	IDED13	34	GND
15	IDED1	35	IDEA0
16	IDED14	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:

IDE2

```
2 □□□□□□□□□□□□□□□□□□□□□□ 44
1 □□□□□□□□□□□□□□□□□□□□□□ 43
```
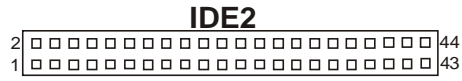
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	23	IDEIOW-
2	GND	24	GND
3	IDED7	25	IDEIOR-
4	IDED8	26	GND
5	IDED6	27	IDERDY
6	IDED9	28	PULL HI
7	IDED5	29	IDEACK-
8	IDED10	30	GND
9	IDED4	31	IRQ15
10	IDED11	32	NC
11	IDED3	33	SDA1
12	IDED12	34	NC
13	IDED2	35	SDA0
14	IDED13	36	SDA2
15	IDED1	37	SCS1-
16	IDED14	38	SCS3-
17	IDED0	39	ACTS-
18	IDED15	40	GND
19	GND	41	VCC
20	N.C.	42	VCC
21	IDEREQ0	43	GND
22	GND	44	NC

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 :

PRT

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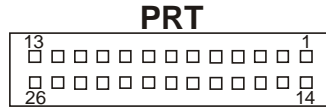
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STB	14	AUTFE
2	P0	15	ERROR
3	P1	16	INIT
4	P2	17	SLCTIN
5	P3	18	GND
6	P4	19	GND
7	P5	20	GND
8	P6	21	GND
9	P7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	NC

2-20. CPU FAN CONNECTOR

CPUFAN1 : CPU Fan connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	FAN1 IN
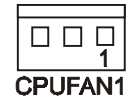
CPUFAN1

CPUFAN2 : CPU Fan connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	FAN2 IN

CPUFAN2

2-21. POWER LED & KEYLOCK CONNECTOR

JP13 : Power LED & Keylock Connector
The pin assignments are as follows :

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

JP13
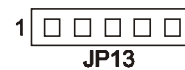
2-22. UNIVERSAL SERIAL BUS CONNECTOR

USB: Universal Serial Bus Connector
USB connector of this board can support two USB ports.
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
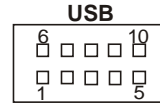
2-23. RESET/NMI/CLEAR WATCHDOG

JP10 (1-2) : For Reset
JP10 (3-4) : For NMI
JP10 (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

JP10
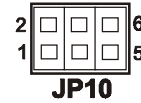
2-24. LAN CONNECTOR

This board possesses two LAN connector which can support 10 BaseT / 100 BaseTx Fast Ethernet.

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	CT
8	CT
9	GND
10	GND

LAN1
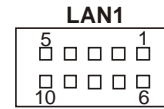
LAN2: LAN Connector
The pin assignments are as follows:

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

LAN2
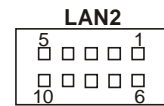
2-25. PPCI CONNECTOR

You will find a PPCI connector in our Prox-1670.   This connector is used to connect our SCSI daughter boards.

The pin assignments are as follows:
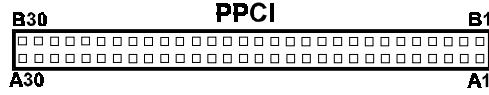
PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	GND	B1	GND
A2	AD0	B2	AD1
A3	AD2	B3	AD3
A4	AD4	B4	AD5
A5	AD6	B5	AD7
A6	AD8	B6	AD9
A7	AD10	B7	AD11
A8	VCC	B8	VCC
A9	AD12	B9	AD13
A10	AD14	B10	AD15
A11	AD16	B11	AD17
A12	AD18	B12	AD19
A13	AD20	B13	AD21
A14	AD22	B14	AD23
A15	VCC	B15	VCC
A16	AD24	B16	AD25
A17	AD26	B17	AD27
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

2-26. ATX POWER CONNECTOR

PWR : ATX Power Connector
The pin assignments are as follows :
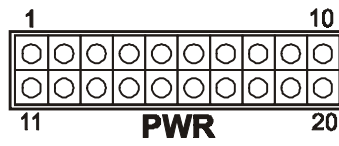
PIN	ASSIGNMENT
1	+3.3V
2	+3.3V
3	GND
4	+5.0V
5	GND
6	+5.0V
7	GND
8	Power Good
9	+5.0V Standby
10	+12.0V
11	+3.3V
12	-12.0V
13	GND
14	Power On
15	GND
16	GND
17	GND
18	-5.0V
19	+5.0V
20	+5.0V

2-27. SOUND CONNECTOR

JP5 : Sound Connector
This connector is used to connect the microphone, line-in, and line-out through our adapter card.   The pin assignments are as follows:

PIN	ASSIGNMENT
1	MIC-IN
2	MIC-VDD
3	GND
4	GND
5	LINE-L
6	LINE-R
7	GND
8	GND
9	SPK-L
10	SPK-R

JP5
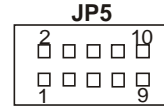
⌂ Please refer our Appendix A for more information about installation.

2-28. CD AUDIO-IN CONNECTOR

JP1 : CD Audio-in Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	AUXAL
2	GND
3	GND
4	AUXAR

JP1

2-29. MONO CONNECTOR

JP4 : Mono Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	MONO O
2	GND
3	MONO I
4	GND

2-30. GREEN FUNCTION CONNECTOR

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

PIN	ASSIGNMENT
1	EXTSMI-
2	GND

2-31. IRDA CONNECTOR

JP15: IrDA (Standard IR) Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCC
2	FIRRX
3	IRRX
4	GND
5	IRTX
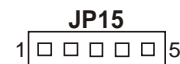
2-32. LAN LED INDICATOR

LD1&2: LAN1 Led Indicator
The pin assignments are as follows :

PIN	ASSIGNMENT
1	PULL HI
2	LED- Link/Active
3	PULL HI
4	LED-100Mbps

LD3&4: LAN2 Led Indicator
The pin assignments are as follows :

PIN	ASSIGNMENT
1	PULL HI
2	LED- Link/Active
3	PULL HI
4	LED-100Mbps

2-33. ATX POWER SWITCH CONNECTOR

JP12 (3, 4): ATX Power Switch Connector
This connector is used to switch on or off the ATX power supply.
The pin assignments are as follows:

PIN	ASSIGNMENT
3	PULL LOW
4	PWR SWITCH-IN
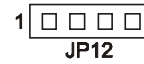
2-34. LAN WAKE-UP CONNECTOR

JP16: LAN Wake-up Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	+5V STANDBY
3	ACTIVE SIGNAL
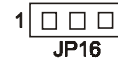
2-35. MEMORY INSTALLATION

The Prox-1670 Embedded Computer supports 1 SDRAM bank.

DRAM BANK CONFIGURATION

DIMM 1	TOTAL MEMORY
32M	32M
64M	64M
128M	128M
256M	256M

2-36. SOUND ENABLE/DISABLE SELECTION

JP19 : Sound Enable/disable Selection
The pin assignments are as follows:

FUNCTION	JUMPER SETTINGS (pins closed)	JUMPER ILLUSTRATION
ENABLE	CLOSED	JP19
DISABLE	OPEN	JP19

2-37. LAN ENABLE/DISABLE SELECTION

JP8 : LAN Enable/disable Selection
The pin assignments are as follows:

LAN PORT SELECTION	ENABLE		DISABLE	
	JP8	Illustration	JP8	Illustration
LAN1	1-3		3-5	
LAN2	2-4		4-6	

SOFTWARE UTILITIES

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

Section includes:

● VGA Driver Utility

● Flash BIOS Update

● LAN Driver Utility

● Sound Driver Utility

● Watchdog Timer Configuration

3-1. INTRODUCTION

Enclosed with our Prox-1670 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	For VGA driver installation
D:\Flash\Awdflash.exe	For BIOS update
D:\Lan\I82559	For LAN Driver installation
D:\Sound\ESS1938	For Sound Driver installation

3-2. VGA DRIVER UTILITY

The VGA interface embedded with our Prox-1670 can support a wide range of display mode, such as SVGA, STN, TFT,.....etc. You can display CRT and LCD Panel simultaneously on this board, but make sure that the modes for CRT and LCD Panel are the same. If not, only one of them can be displayed.

VGA Disk

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
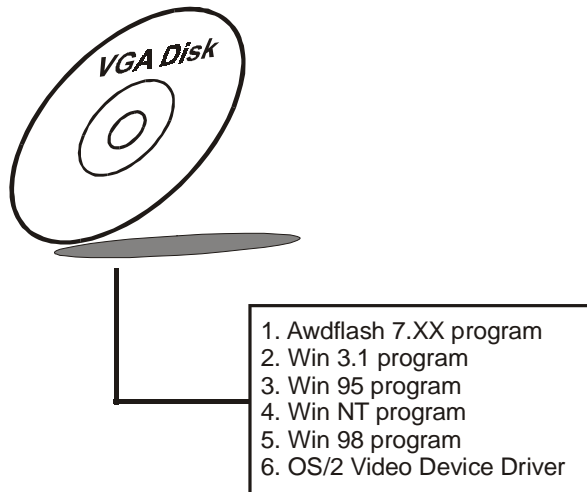
3-1-2. Installation of VGA Driver for PCI

1. Install VGA Driver to Windows 3.1
(1).   To install VGA driver to Windows 3.1, please insert Utility Disk into floppy disk drive A/B or CD ROM drive under your Windows 3.1 system, and go to directory where VGA driver is located.
(2).   Click Setup.exe file for VGA driver installation directly. Follow the instructions on the screen and complete the installation.
(3).   Once installation is completed, you must shut down system and restart in order for changes to take effect.

2. Install VGA Driver to Windows 95
(1).   Click START, SETTINGS, then CONTROL PANEL.
(2).   On CONTROL PANEL, click the DISPLAY icon and enter the SETTINGS tab of the DISPLAY PROPERTIES window.
(3).   Select the SETTINGS page, push the CHANGE DISPLAY TYPE button. Click the CHANGE button in the "Adapter Type" area.
(4).   Push the "HAVE DISK BUTTON" and press OK.
(5).   Specify the path for the new driver and press the <Enter> key.   The "Select Device" dialog box will appear. Select the "Chips and Tech 69000 PCI".
(6).   Follow the remaining instruction that appears on the screen to complete the rest of the installation, then restart your computer.

3. Install VGA driver to Windows NT 3.5x/4.0
(1).   To install VGA drivers to Windows 3.5x/4.0 is as you normally would. Click START, then SETTINGS, then CONTROL PANEL of the operating system.
(2).   Select the DISPLAY icon to start the DISPLAY PROPERTIES window, then choose the SETTING tab, then DISPLAY TYPE.
(3).   In the CHANGE DISPLAY TYPE window, click on the CHANGE button in the ADAPTER TYPE, this will bring up the SELECT DEVICE window.

(4). In the CHANGE DISPLAY window, click on Have Disk. Follow the instructions appearing on the screen until you complete the whole installation.

(5). Once installation is completed, the system must be shut down and restarted for the new drivers to take effect.

4. Install VGA driver to OS/2 Warp Operation System

(1) Preliminary Steps:

(i) OS/2 DOS Support must be installed.

(ii) If you previously installed SVGA support, you must reset the system to VGA mode. VGA is the default video mode enable when OS/2 is to be installed.

(iii) To restore VGA mode, Use SELECTIVE INSTALL and select VGA for PRIMARY DISPLAY. For more information on this procedure, see the section on Changing Display Adapter Support in the OS/2 User's Guide.

(2) Start Driver installation

(i) Open an OS/2 full screen or windowed session.

(ii) Place into Drive A/B the Utility Disk, which contains the 69000 Display Driver.

(iii) At the OS/2 command prompt , type the following commands to copy the files to the OS/2 drive:
Type A: and press <enter> to make this the default drive.
Type Setup A: C: and press ENTER

⧖ When the setup Program is completed, you will need to perform a shut down and then restart the system in order for change to take effect.

(iv) After restarting the system, first open the OS/2 System folder.

(v) Then open the System Setup folder.

(vi) Open the Display Driver Install Object.

(vii) When the Display Driver Install window appears, select PRIMARY DISPLAY, and click OK.

(viii) When the Primary Display Driver List window appears, select "Chips and Technologies 69000" from the list of Adapter types, then select OK to install the video driver.

(ix) When installation is complete, you should shut down and restart the system for the changes to take effect. And also make sure to remove the install Utility Disk before restarting system.

3-3. FLASH BIOS UPDATE

3-3-1. System BIOS Update:
Users of Prox-1670 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-1670 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 B70xxxxx.bin
   C:\UTIL\AWDFLASH>AWDFLASH   B70xxxxx.bin
4. The screen will display the table below:

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


For i440BX-W977EF-2A69KP6LC-0          DATE:    11/11/2000
             Flash Type:    MXIC 29F002(N)T/5V
          File Name to Program:    B70xxxxx.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-2A69KP6LC-0      DATE:  11/11/2000 │
│           Flash Type:   MXIC 29F002(N)T/5V            │
│          File Name to Program:   B70xxxxx.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-2A69KP6LC-0      DATE:  11/11/2000 │
│           Flash Type:   MXIC 29F002(N)T/5V            │
│          File Name to Program:   B70xxxxx.bin          │
│                 Checksum:   XXXXX                       │
│                                                        │
│              Reset System or Power off to              │
│              accomplish update process!                │
├───────────────────────────────────────────────────────┤
│  F1: Reset    F10: Exit                                │
└────────────────────────────────────────────────────────┘
```

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

3-4. LAN DRIVER UTILITY

3-4-1. Introduction

Prox-1670 Embedded Board is enhanced with dual LAN function that can support various network adapters.   Installation programs for LAN drivers are listed as follows:
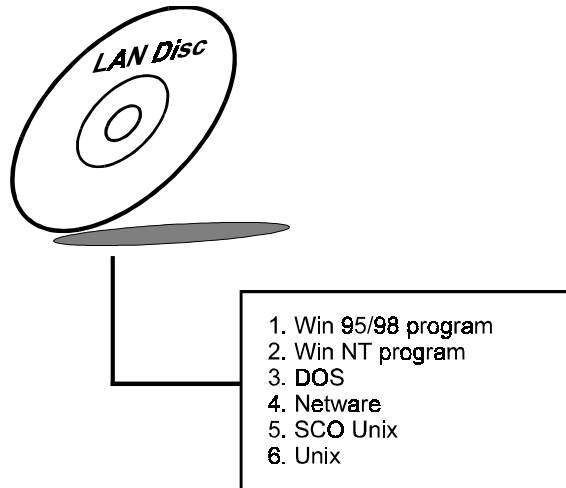
> **For more details on Installation procedure, please refer to INFO directory found on LAN DRIVER UTILITY.**

3-5. SOUND DRIVER UTILITY

3-5-1. Introduction

The ESS ES1938 sound function enhanced in this system is fully compatible with Windows 95, Windows 98 and Windows NT 4.0. It can fully support Sound Blaster Pro, Adlib, Windows Sound System, MPU-401 & GM.

Below, you will find the content of the Sound driver :


```
1. Win 95 program
2. Win 98 program
3. Win NT 4.0 program
```
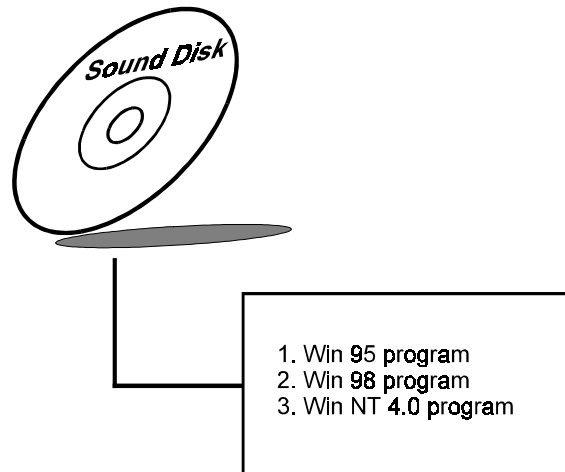
3-5-2. Install Sound driver to Windows 95/98

1. In the Main group of Win 95/98, select the "Control Panel" icon.
2. Select "Driver from disk provided by hardware manufacturer" from New Hardware Found dialog box, then click OK button.
3. Insert the CD ROM disk driver into your CD-ROM drive, then enter the correct pathname (ex: D:\SOUND\ESS1938\W95 or \W98), then click "OK" button from "Install from Disk dialog box".
4. Follow screen instructions to complete the process.
5. Restart your computer.

3-5-3. Install Sound driver to Windows NT 4.0

1. In "My Computer" icon of NT4.0, choose the "Control Panel" icon.
2. In the Control Panel window, choose the "Multimedia" icon.
3. Select "Devices", then click "Add" button.
4. In the "List of Driver" dialog box, select the "Unlisted/updated Driver" from the list and press the "OK" button and a "Install Driver" dialog box will appear on screen.
5. Insert the CD ROM driver disk into your CD ROM drive, and then choose the "Browse" button.
6. Locate the pathname where the sound driver is located. "D:\SOUND\ESS1938\" and press the <ENTER> key.
7. Follow screen instructions to complete the process.
8. Restart your computer.

3-6. WATCHDOG TIMER CONFIGURATION

This board has watchdog timer function for monitoring whether the system is still work or not after a period of time. The user can select watchdog timer to system reset or NMI (Non Maskable interrupt) depending on the jumper set as described in chapter 2. This is defined at I/O port **443H**. When you want to enable the watchdog timer, please write I/O port **443H**, then the system will either reset itself or perform the NMI function. Likewise, when you want to disable the function, write I/O port **441H**, the system will run the command to stop the Watchdog function.

The Prox-1670 watchdog function, You must write your program so when it writes I/O port address 0443 for enable watchdog and write I/O port address 0441 for disable watchdog. The timer's intervals have a tolerance of 25% so you should program an instruction that will refresh the timer about every second.

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

Watchdog enable program:
MOV   AX, 000FH   (choose the values you need; start from 0)
MOV   DX, 0443H
OUT   DX, AX

Watchdog disable program:
MOV   AX, 000FH   (this value can be ignored)
MOV   DX, 0441H
OUT   DX, AX

The Watchdog Timer control table is as follows:

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

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
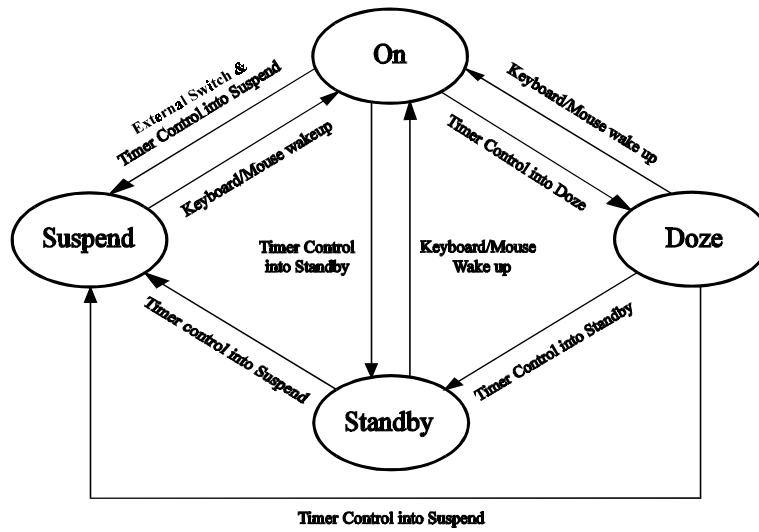
4-2. CPU DOZE MODE

1. After timing out, CPU clock slows 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 timing out, CPU clock slows down to 8MHz.
2. Two beep sounds.
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 timing-out, CPU clock slows down to 8MHz, if you use Intel Pentium or Cyrix (SMI) CPU, then CPU clock will be stopped.
2. Three beep sounds.
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 shows 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/Setup defaults

- Integrated Peripherals

- Password Setting

- IDE HDD Auto Detection

- Save and Exit Setup

5-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The Prox-1670 Embedded Board is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of the BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

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

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

The following diagram illustrates the interlocking relationships between the system hardware, BIOS, operating system, and application program:
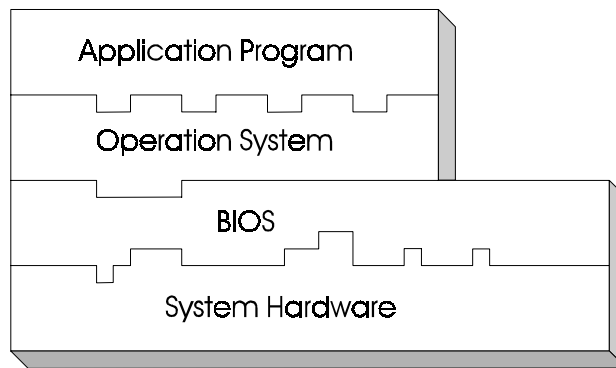
5-2. ENTERING SETUP

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 the bottom of the number keypad) to access the Setup program. In a moment, the main menu of the Award SETUP program will appear on the screen:

```
ROM PCI / ISA BIOS (2A69KP6L)
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 the individual menu items. As you highlight each item, a brief description of that item's function appears 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 MENU

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

```
ROM PCI / ISA BIOS (2A69KP6L)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date   (mm:dd:yy)   :  Thu,  Sep  21   2000
Time   (hh:mm:ss )  :  18 :  14 :  57

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


Drive A : 1.44M, 3.5 in.
Drive B : None                         Base Memory:       640K
                                   Extended Memory:     31744K
                                      Other Memory:       384K
Video   : EGA/VGA                 ---------------------------------
Halt On: All, But Keyboard            Total Memory:     32768K

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

CMOS setup screen

The above items 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 in each item. Description on each individual item are listed 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:

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

Primary Master/Slave or Secondary Master/Slave:

These 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, related information is asks to be entered to the following items. Enter the information directly from the keyboard and press < Enter >. This information should be provided 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 the controller of HDD interface is CD-ROM, 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.

If a hard disk has not been installed select "None" and press <Enter>.

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.

HEAD :

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 difference between the inner and outer edges of the surface of the disk platter. The number designates the starting cylinder of the signal.

LANDZ :

Landz 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.

SECTOR :

This is the number of sectors found in a specified drive type.

DRIVE A AND DRIVE B :

The category determines the types of floppy disk drive A or B that have been installed in the computer.

VIDEO :

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

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

HALT ON:

This category allows user to choose whether the computer will stop if an error is detected during power up. Available options are as follows:

No Errors	Whenever the BIOS detects a non-fatal error the system will stopped and you will be prompted.
All Errors	The system boot will not be stopped for any error that may be detected.
All, But keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskettes	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

BASE MEMORY:

The POST will determine the amount of base (or conventional) memory installed in the system.   The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

EXTENDED MEMORY:

The BIOS determine how much extended memory is present during the POST.   This is the amount of memory located above 1MB in the CPU's memory address map.

OTHER MEMORY:

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications.   DOS uses this area to load device drivers in an effort to keep as much base memory free for application programs.   The BIOS is the most frequent user of this RAM area since this is where it shadows RAM.

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			

Hard Disk Type Table

5-4. The BIOS FEATURES SETUP MENU

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

```
            ROM PCI/ISA BIOS (2A69KP6L)
                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
PCI/VGA Palette Snoop      : Disabled   Esc : Quit      ↑↓→←  :  Select Item
OS Select For DRAM > 64MB  : Non-OS2    F1 : Help       Pu/Pd/+/- :  Modify
Report No FDD For WIN 95   : Yes        F5 : Old Values  (Shift)F2 :  Color
                                        F6 : Load BIOS Defaults
                                        F7 : Load Setup Defaults
```

BIOS Features Setup

The "BIOS FEATURES SETUP" allows you to configure your system for basic operation.   You may select the system's default speed, boot-up sequence, keyboard operation, shadowing and security. When you change any of the settings, you may recall the default settings at any time from the main menu.

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 :

When you select Enabled, memory checking is enable when the external Cache contains ECC SRAMs.

QUICK POWER ON SELF TEST:

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

BOOT SEQUENCE:

This item allows you to determine the sequence for which the drives are looked for first for the disk operating system such as DOS.

SWAP FLOOPY DRIVE:

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

BOOT UP FLOPPY SEEK:

During POST, BIOS will determine if FDD installed is 40/80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

BOOT UP NUMLOCK STATUS:

This allows you to determine the default state of the numeric keypad. By default, the system boot 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 system 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 select the rate at which the keys are accelerated.

TYPEMATIC DELAY (MSEC):

When the typematic rate is enabled, this selection allows you to select the delay between when the key was first depressed and when the acceleration begins.

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 enable or disable the system to work with MPEG ISA/VESA VGA Card.

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 :

Select Yes to release IRQ6 when the system contains no floppy drive, for compatibility with Windows 95 logo certification. In the Integrated Peripherals screen, select Disabled for the Onboard FDC Controller field.

VIDEO BIOS SHADOW :

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

C8000-CBFFF ~ DC000-DFFFF SHADOW :

These categories determine whether option ROMs will be copied to RAM.   An example of such option ROM would be support of onboard SCSI.

5-5. CHIPSET FEATURES SETUP

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

```
                    ROM PCI/ISA BIOS (2A69KP6L)
                     CHIPSET FEATURES SETUP
                      AWARD SOFTWARE, INC.

Auto Configuration        : Enable    Auto Detect DIMM/PCI Clk : Enabled
EDO DRAM Speed Selection   : 60 ns     Spread Spectrum           : Disabled
EDO CASx# MA Wait State    : 2         CPU Warning Temperature   : Disabled
EDO RASx# Wait State       : 2         Current System Temp.      : 0°C/ 32°F
SDRAM RAS-to-CAS Delay     : 3         Current CPU1 Temperature  : 41°C/114°F
SDRAM RAS Precharge Time   : 3         Current CPUFAN1 Speed     :    0RPM
SDRAM CAS latency Time     : 3         Current CPUFAN2 Speed     : 5769RPM
SDRAM Precharge Control    : Disabled  IN0(V) :   2.00 V    IN1(V)    :   1.48V
DRAM Data Integrity Mode   : Non-ECC   IN2(V) :   3.31 V    + 5  V    :   4.99V
System BIOS Cacheable      : Disabled  +12 V  :  12.16 V    -12  V   :- 13.18V
Video BIOS Cacheable       : Disabled  - 5 V  : - 5.20 V   VBAT(V)   :   3.21V
Video RAM Cacheable        : Disabled  5VSB(V) : 5.05 V
8 Bit I/O Recovery Time    : 1         Shutdown Temperature       : Disabled
16 Bit I/O Recovery Time   : 1
Memory Hole At 15M-16M     : Disabled
Passive Release            : Enabled   Esc : Quit        ↑↓→← : Select Item
Delayed Transaction        : Disabled  F1  : Help        Pu/Pd/+/- :  Modify
AGP Aperture Size (MB)     : 64        F5  : Old Values   (Shift)F2 :  Color
IO Channel Check NMI       : Disabled  F6  : Load BIOS Defaults
                                       F7  : Load Setup Defaults
```

Chipset Features Setup

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

AUTO CONFIGURATION:
Auto Configuration selects predetermined optimal values of the 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.

EDO CASx# MA WAIT STATE:

You can select the timing control type of EDO DRAM CAS MA. (memory address bus)

EDO RASx# WAIT STATE:

You can select the timing control type of EDO DRAM RAS MA (memory address bus).

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.

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.

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 are 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 (MB) :
   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.

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

SPREAD SPECTRUM :
   When the system clock generator pulses, the extreme values of the pulse
   generate excess EMI.   Enabling pulse spectrum spread modulation
   changes the extreme values from spikes to flat curves, thus reducing
   EMI.   This benefit may in some cases be outweighed by problems with
   timing-critical devices such as a clock-sensitive SCSI device.

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 TEMPERATURE :
   This field displays the current system temperature if your system
   contains a monitoring system.

CURRENT CPU1 TEMPERATURE :
   This field displays the current CPU temperature if your system contains
   a monitoring system.

CURRENT CPUFAN1/2 SPEED :
   These fields display the current speed of the CPU fan, if your computer
   contains a monitoring system.

SHUTDOWN TEMPERATURE :

This field enables you to set the temperature wherein the system will auto-matically shutdown when the CPU temperature exceeds the temperature set.

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 (2A69KP6L)
                POWER MANAGEMENT SETUP
                   AWARD SOFTWARE, INC.

ACPI function       : Enable       ** Reload Global Timer  Events **
Power Management    : User Define  IRQ (3-7, 9-15), NMI    : Disabled
PM Control by APM   : Yes          Primary IDE 0           : Disabled
Video Off Method    : DPMS         Primary IDE 1           : Disabled
Video Off After     : Standby      Secondary IDE 0         : Disabled
MODEM Use IRQ       : 3            Secondary IDE 1         : Disabled
Doze Mode           : Disable      Floppy Disk             : Disabled
Standby Mode        : Disable      Serial Port             : Enabled
Suspend Mode        : Disable      Parallel Port           : Disabled
HDD Power Down      : Disable
Throttle Duty Cycle : 62.5%
PCI/VGA Act-Monitor : Disabled
Soft-Off by PWR-BTTN : Instant-Off
PowerOn by Ring     : Enabled
Wake Up On LAN      : 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 setup menu allows 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.

ACPI FUNCTION:

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

POWER MANAGEMENT:

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

PM CONTROL BY APM:

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

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:

As the system moves from lesser to greater power-saving modes, select the mode in which you want the monitor to blank.

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.

SOFT-OFF BY PWR-BTTN:

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung".

POWERON BY RING:

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

WAKE UP ON LAN:

This category allows your computer to be booted from another computer through network by sending a wake-up signal.

IRQ 8 BREAK SUSPEND:

This item allows you to enable 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 timer for Standby mode.

❶ IRQ[3-7, 9-15], NMI   ❷ Primary IDE 0
❸ Primary IDE 1   ❹ Secondary IDE 0
❺ Secondary IDE 1   ❻ Floppy Disk
❼ Serial Port   ❽ Parallel 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 (2A69KP6L)
                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. This section
covers technical items, which is strongly recommended for experienced
users only.

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

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	complaint with the original PC AT bus specification, requiring a specific interrupt such as IRQ4 for serial port 1.
PCI/ISA PnP Devices	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	complaint with the original PC AT bus specification, requiring a specific interrupt such as IRQ4 for serial port 1.
PCI/ISA PnP Devices	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 loaded automatically when you power on the Prox-1670.

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 loaded automatically from the 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 (2A69KP6L)
                       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 Serial Port 3   : 3E8H
USB Keyboard Support      : Disabled │ Serial Port 3 Use IRQ   : IRQ10
                                     │ Onboard Serial Port 4   : 2E8H
                                     │ Serial Port 4 Use IRQ   : IRQ11
POWER ON Function         : Button Only│ Esc : Quit      ↑↓→← :  Select Item
                                     │ F1 : Help     Pu/Pd/+/- :  Modify
                                     │ F5 : Old Values  (Shift)F2 :  Color
KBC input clock           : 8 MHz    │ F6 : Load BIOS Defaults
Onboard FDC Controller    : Enabled  │ F7 : Load Setup Defaults
```

INTEGRATED PERIPHERALS

By moving the cursor to the desired selection, and press the <F1> key, all options for the desired selection will be displayed for choice. User may select the desired option. Having made all the setting according to your selections. Press <Esc> to return to the Main Menu. Information on each item are listed as follows:

IDE HDD BLOCK MODE:

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

IDE PRIMARY/SECONDARY MASTER/SLAVE PIO:

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

IDE PRIMARY/SECONDARY MASTER/SLAVE UDMA:

UDMA, also known as Ultra DMA, is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select Auto in the four IDE UDMA fields, the system automatically determines the optimal data transfer rate for each IDE device.

ON-CHIP PRIMARY/SECONDARY PCI IDE:

The Integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

ONBOARD PCI SCSI CHIP:

Select Enabled if your system contains a built-in SCSI controller.

USB KEYBOARD SUPPORT:

Select Enabled if you have a USB Keyboard.

KBC INPUT CLOCK:

The system designer must select the correct frequency for the keyboard controller input clock. Do not change this value from the default value.

ONBOARD FDC CONTROLLER:

Select Enabled unless you installed an add-in FDC.

ONBOARD SERIAL PORT 1/2/3/4:

Select a logical COM port name and matching address for the first and second serial ports. Select an address and corresponding interrupt for the first and second serial ports.

ONBOARD PARALLEL PORT:

Select a logical LPT port address and corresponding interrupt for the physical parallel port.

PARALLEL PORT MODE:

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

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, 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 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 (2A69KP6L)                  │
│                  CMOS SETUP UTILITY                          │
│                  AWARD SOFTWARE, INC.                        │
├─────────────────────────────────────────────────────────────┤
│             Type Size  CYLS.  HEADS  PRECOMP  LANDZONE  SECTORS  MODE │
│  Primary Master : (  Mb)    0      0      0        0        0    ------- │
│  Primary Slave  :                                            │
│                                                              │
│  :  ┌──────────────────────────────────────────────────┐    │
│     │    Select Secondary Slave Option (N=Skip) : N     │    │
│     │                                                   │    │
│     │ Options  Size   Cyls   Head   Precomp  Landz  Sector  Mode │
│     │ ─────────────────────────────────────────────────── │    │
│     │  2(Y)   3224   781    128       0    6252    63    LBA │
│     │   1     3227   6253    16    65535   6252    63  Normal │
│     │   3     3224   781    128   65535   6252    63   Large │
│     └──────────────────────────────────────────────────┘    │
│  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 SETUP" and press<Enter>, as the display shown on below:

```
┌─────────────────────────────────────────────────────────────┐
│                  ROM PCI / ISA BIOS (2A69KP6L)               │
│                      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.

5-14. EXIT WITHOUT SAVING

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 (2A69KP6L)
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
```

ADAPTER CARD
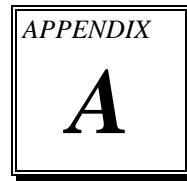
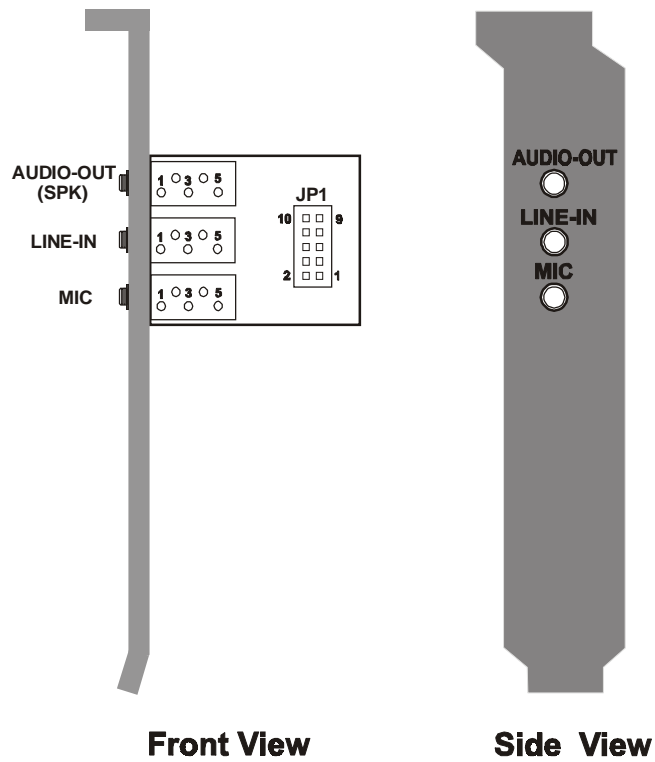This appendix explains the adapter card.

Section includes:

● W-Sound Adapter Card

W-SOUND ADAPTER CARD

Introduction:

You will also find W-Sound Adapter Card in our package. This card is designed as a converter of sound connector found in our system board. Below, you will find an illustration of our W-Sound Adapter Card:

Front View   **Side View**

Connector's Pin Assignment:

You will find the following connectors on the W-Sound Adapter Card, pin assignment are listed as follows:

MIC : Microphone Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	MIC-IN
3	NC
4	MIC VDD
5	GND

MIC
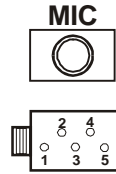
Audio-Out (SPK) : Speaker Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	SPK-L
3	NC
4	SPK-R
5	NC

**AUDIO-OUT
(SPK)**
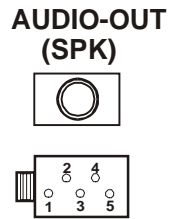
LINE-IN : Line Input Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	LINE-R
3	GND
4	LINE-L
5	GND

LINE-IN
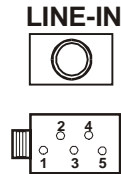
Instruction for Assembling the W-Sound:

The JP1 found in our W-Sound Adapter Card is used to connect the Sound Connector.   To assemble, follow the following instruction:

(1) Turn-off the computer system
(2) Check the Sound cable enclosed with the package.
(3) Connect one end of the cable to the Sound connector (JP5 found in Prox-1675 board), and the other end to the JP1 of the W-sound Adapter Card.

EXPANSION BUS
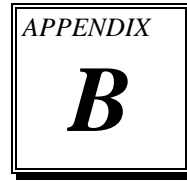
This appendix indicates the pin assignments.

Section includes:

● PISA BUS Pin Assignment

PCI / ISA EXTENSION BUS CONNECTOR

PISA : PISA Extension Bus Connector.
The pin assignments are as follow:

PISA

PCI Bus:

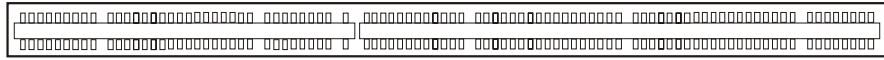| PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
E1	I2CLK	F1	I2DAT	E26	GND	F26	GNT#3
E2	GND	F2	GND	E27	AD16	F27	AD17
E3	INTB#	F3	INTA#	E28	FRAME#	F28	IRDY#
E4	INTD#	F4	INTC#	E29	CBE#2	F29	DEVSEL#
E5	VCC	F5	VCC	E30	TRDY#	F30	LOCK#
E7	VCC	F7	V I/O	E31	STOP#	F31	PERR#
E8	PCIRST#	F8	PCICLK2	G1	GND	H1	SERR#
E9	GNT#0	F9	GND	G2	NC	H2	AD15
E10	REQ#0	F10	GNT#1	G3	CBE#1	H3	AD14
E11	GND	F11	GND	G4	PAR	H4	AD12
E12	PCICLK1	F12	REQ#1	G5	GND	H5	GND
E13	GND	F13	AD31	G7	GND	H7	M66EN
E14	AD30	F14	AD29	G8	AD13	H8	AD10
E15	REQ#2	F15	PCICLK3	G9	AD11	H9	AD8
E17	GNT#2	F17	PCICLK4	G10	AD9	H10	AD7
E18	AD28	F18	AD27	G11	CBE#0	H11	AD5
E19	AD26	F19	AD25	G12	AD6	H12	AD3
E20	AD24	F20	CBE#3	G13	AD4	H13	AD1
E21	AD22	F21	AD23	G14	AD2	H14	AD0
E22	AD20	F22	AD21	G16	VCC	H16	V I/O
E23	AD18	F23	AD19	G17	VCC	H17	VCC
E24	PWRGDIN	F24	REQ#3	G18	GND	H18	GND
				G19	GND	H19	GND

ISA Bus:

| PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	/IOCHCHK	B1	GND	C1	/SBHE	D1	/MCS16
A2	SD7	B2	RSTDRV	C2	LA23	D2	/IOCS16
A3	SD6	B3	VCC	C3	LA22	D3	IRQ10
A4	SD5	B4	IRQ9	C4	LA21	D4	IRQ11
A5	SD4	B5	-5V	C5	LA20	D5	IRQ12
A6	SD3	B6	DRQ2	C6	LA19	D6	IRQ15
A7	SD2	B7	-12V	C7	LA18	D7	IRQ14
A8	SD1	B8	/0WS	C8	LA17	D8	/DACK0
A9	SD0	B9	+12V	C9	/MEMR	D9	DRQ0
A10	IOCHRDY	B10	GND	C10	/MEMW	D10	/DACK5
A11	AEN	B11	/SMEMW	C11	SD8	D11	DRQ5
A12	SA19	B12	/SMEMR	C12	SD9	D12	/DACK6
A13	SA18	B13	/IOW	C13	SD10	D13	DRQ6
A14	SA17	B14	/IOR	C14	SD11	D14	/DACK7
A15	SA16	B15	/DACK3	C15	SD12	D15	DRQ7
A16	SA15	B16	DRQ3	C16	SD13	D16	VCC
A17	SA14	B17	/DACK1	C17	SD14	D17	/MASTER
A18	SA13	B18	DRQ1	C18	SD15	D18	GND
A19	SA12	B19	/RFRSH				
A20	SA11	B20	SYSCLK				
A21	SA10	B21	IRQ7				
A22	SA9	B22	IRQ6				
A23	SA8	B23	IRQ5				
A24	SA7	B24	IRQ4				
A25	SA6	B25	IRQ3				
A26	SA5	B26	/DACK2				
A27	SA4	B27	T/C				
A28	SA3	B28	BALE				
A29	SA2	B29	VCC				
A30	SA1	B30	OSC				
A31	SA0	B31	GND				

TECHNICAL SUMMARY
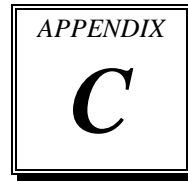
This section introduce you the maps concisely.

Sections include:

- Block Diagram

- Interrupt Map

- RTC & CMOS RAM Map

- Timer & DMA Channels Map

- I / O & Memory Map

BLOCK DIAGRAM
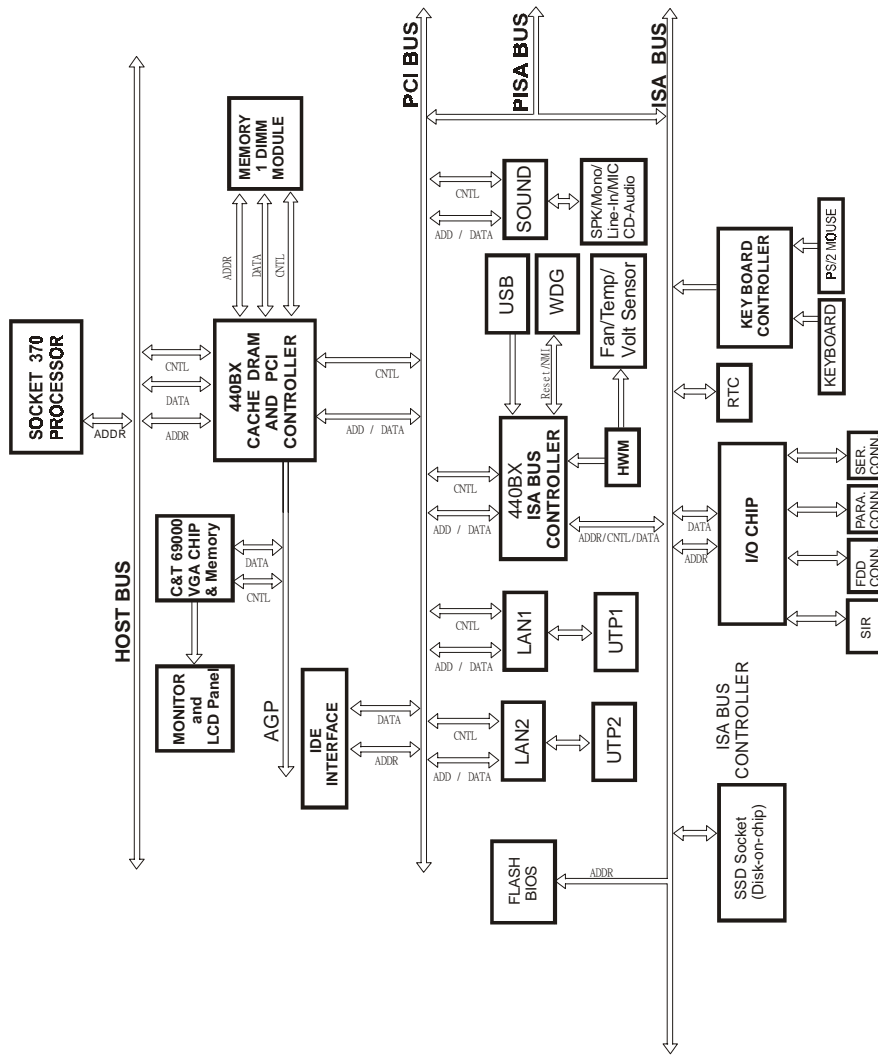
INTERRUPT MAP

IRQ	ASSIGNMENT
0	System TIMER
1	Keyboard
2	Cascade for IRQ 8-15
3	Serial port 2
4	Serial port 1
5	Available
6	Floppy
7	Parallel port 1
8	RTC clock
9	Available
10	Serial port 3
11	Serial port 4
12	Available or PS/2 Mouse
13	Math coprocessor
14	IDE1
15	IDE2

RTC & CMOS RAM MAP

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

TIMER & DMA CHANNELS MAP

Timer Channel Map :

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

DMA Channel Map :

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

I/O & MEMORY MAP

<u>**Memory Map :**</u>

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

<u>**I/O Map :**</u>

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

Section includes:

● Trouble Shooting for Error Messages

● Trouble Shooting for POST Code

TROUBLE SHOOTING FOR ERROR MESSAGES

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

POST BEEP :

Currently there are two kind of beep codes in BIOS. The one code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code 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 CMOS battery is no longer functional. The user should replace it.

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 if 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, INSERT SYSTEM DISK AND PRESS ENTER :

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

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP :

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

ERROR ENCOUNTERED INITIALIZING HARD DRIVE :

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Make sure to select the right hard drive type in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER :

Cannot initialize controller.   Make sure the cord is correctly and firmly installed in the bus. Make sure to select the right hard drive type in Setup. Also check whether all of the jumpers are set correctly in the hard drive.

FLOPPY DISK CONTROLLER ERROR OR
NO CONTROLLER PRESENT :

Cannot find or initialize the floppy drive controller. Make sure the controller is installed properly and firmly.   If there are no floppy drives installed, make sure 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 AT ... :

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

MEMORY PARITY ERROR AT ... :

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

MEMORY SIZE HAS CHANGED SINCE LAST BOOT :

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

MEMORY VERIFYING ERROR AT ... :

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 NOT FOUND :

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

OFFENDING SEGMENT :

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

PRESS A KEY TO REBOOT :

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

PRESS F1 TO DISABLE NMI, F2 TO REBOOT :

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

RAM PARITY ERROR - CHECKING FOR SEGMENT ... :

Indicates a parity error in Random Access Memory.

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.

BIOS ROM CHECKSUM ERROR- SYSTEM HALTED :

The checksum of ROM address F0000H-FFFFFH is bad.

FLOPPY DISK(S) FAIL (80) :

Unable to reset floppy subsystem.

FLOPPY DISK(S) FAIL (40) :

Floppy type dismatch.

HARD DISK(S) FAIL (80) :

Hard Disk Drive reset failed.

HARD DISK(S) FAIL (40) :

Hard Disk Drive controller diagnostics failed.

HARD DISK(S) FAIL (20) :

Hard Disk Drive initialization error.

HARD DISK(S) FAIL (10) :

Unable to recalibrate fixed disk.

HARD DISK(S) FAIL (08) :

Sector Verify failed.

KEYBOARD ERROR OR NO KEYBOARD PRESENT :

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

MEMORY TEST FAIL :

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

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.

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