USER'S MANUAL

ProX-1580

For P5/6x86
Embedded Board
With VGA / SOUND / LAN

Prox-1580 M5

ProX-1580 P5/6x86 Embedded Board
With VGA / SOUND / LAN

OPERATION MANUAL

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ACKNOWLEDGEMENTS

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CHAPTER 3 SOFTWARE UTILITIES

CHAPTER 4 GREEN PC FUNCTION

INTRODUCTION

This chapter gives you the information for Prox-1580. 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-1580 P5/6x86 Embedded Board with VGA/Sound/LAN, which is fully PC / AT compatible. The Prox-1580 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 Adapter Card

This Appendix introduces you the sound adapter card.

Appendix B Expansion Bus

This Appendix introduces you the expansion bus for PCI and PC104 expansion 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®, AMD, Cyrix processors.
54C/55C/MMX, K5/K6/K6-2/K6-3, M1/M2
320/321 pin PGA socket.
1.8/1.9/2.0/2.1/2.2/2.3/2.4/2.5/2.8/2.9/3.0/3.1/3.2/3.3/3.4/3.5V regulator.

● **MEMORY :**

Up to 256MB SDRAM
One 168pin DIMM socket on board.

● **CACHE :**

L1 Cache: Capacity depended on CPU type
L2 Cache: Onboard 512KB

● **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 PCI Bus and PC104 Bus.

● **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.
Integrates 2 Mbytes of SDRAM for the graphics / video frame buffer.
Support 15-pin connector 1280 x 1024 (256 color) resolution on SVGA Monitor.
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.
Support Reset or NMI watchdog with jumper selection.
Time-out timing select 0 / 8 / 16 / 24 / 32 / 40 / 48 / 56 / 64 / 72 / 80 / 88 / 96 / 104 / 112 / 120 sec +/- 25%.

● **IDE INTERFACE :**

Two IDE ports, support 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 :**

    Realtek RTL8139 PCI Fast Ethernet
    10/100 Base-T PCI-BUS

● **INFRARED FUNCTION :**

    One Infrared port.
    Support IrDA v.1.0 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, Gameport, CD Audio-in, and Mono.

● **GREEN FUNCTION :**

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

● **HARDWARE MONITORING FUNCTION :**

    Monitor CPU Voltage, CPU temperature, and Cooling Fan.

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

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

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

HARDWARE CONFIGURATION
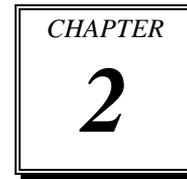
** QUICK START **

Helpful information details you the jumper & connector settings, and component's location.

Section includes:

- Jumper & Connector Quick Reference Table

- Component's Location

- Configuration and Jumper settings

- Connector Pin Assignments

2-1 JUMPER & CONNECTOR QUICK REFERENCE TABLE

CPU Clock Selection ....……..…………………	JP17
CPU Voltage Selection ……………………….………..	JP7, JP11
Bus Frequency Ratio Selection ……………….……...	JP13
COM Port Connector ....……..	COM1, COM2
………………………………………	COM3, COM4
RS-232/422/485 (COM4) Selection ....……..……..	JP18
Keyboard Connector ....………..	KB1
PS/2 Mouse Connector ....………...	MS1
Reset Connector ....…..	RST
External Speaker Connector ....……….	SPK
Turbo LED Connector ....……...	TBL
CPU FAN Power Connector ....……...	CPUFAN1
System Fan Connector ……………….………………..	SYSFAN1
Hard Disk Drive LED Connector ....……..	HDL
Power LED & Keylock Connector ....…….	KBL
VGA Connector ....…………….	VGA
Universal Serial Bus Connector ....….	USB
Panel Power Connector ……………….……..........……...	JP6
Panel VDD Selection …………………………………..	JP5
ATX Power Button …………………………………..	JP9
ATX Power Connector ....…………..	PWR
LAN Connector ....………..	LAN
LAN LED Indicator ....…………..	LED1, LED2,
………………………………………	LED3
IrDA Connector ……………….……………………...	JP16
LCD Panel Connector ....…………..	LCD
Solid-State Disk Socket ....…………..	SSD
SSD Memory Mapping Selection ....….	JP12
Floppy Disk Drive Connector ....….	FDD
Hard Disk Drive Connector ....………...	IDE1, IDE2
Printer Connector ....…………..	PRT1, PRT2
PCI / Riser Card Selection ……………………………	JP2, JP3, JP4
Mono Connector ……………….……………………...	J3
CD Audio-In ………………….………………………..	J4
Sound Connector ……………….……………………...	J1
Reset/NMI/Clear Watchdog Selection …………..…….	JP10
Memory Installation …..…...	DIMM1
COM Port IR & Voltage Selection …………..………..	JP19
AT or ATX Power Selection …………………………...	JP20, JP21, JP22
………………………………..	JP23
Reserved Pin ……………….……………………………	JP1, JP8

2-2 COMPONENT LOCATIONS

Prox-1580 Connector, Jumper and Component location

2-3 HOW TO SET THE JUMPERS

You can configure your board by setting jumpers. A jumper consists of two or three metal pins with a plastic base mounted on the card, and a small plastic "cap" (with a metal contact inside) to connect the pins. So you can set up your hardware configuration by "open" or "close" the pins.

The jumper can be combined into sets, which is 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.

JUMPERS AND CAPS

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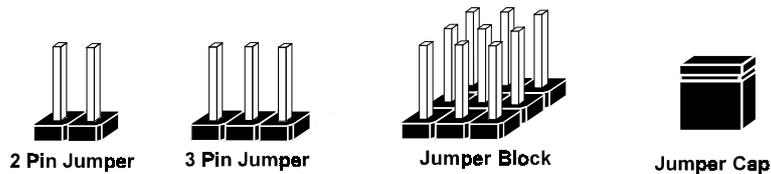
If a jumper has three pins, for example labelled PIN1, PIN2, and PIN3. You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagram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

JUMPER DIAGRAMS

Jumper Cap
looks like this
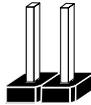
2 pin Jumper
looks like this

3 pin Jumper I
looks like this
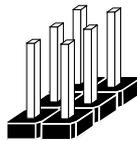
Jumper Block
looks like this
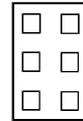
JUMPER SETTINGS

2 pin Jumper close(enabled)
looks like this

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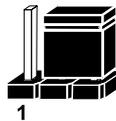
3 pin Jumper
2-3 pin close(enabled)
looks like this

1

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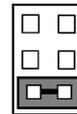
1 2

2-4 CPU TYPE & CLOCK SELECTION

JP17 : CPU Clock Selection
JP7, JP11 : CPU Voltage Selection
JP13: Bus Frequency Ratio Selection
The jumper settings are as follows:

2-4-1   Intel® 150/166 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
Intel® Pentium® 150MHz	60MHz	9-10 11-12	1-2 5-6 7-8	1-2 3-4	1-2 3-4 5-6 7-8	
Intel® Pentium® 166MHz	66MHz	9-10 11-12	1-2 5-6 7-8	1-2 3-4	3-4 5-6 7-8	

2-4-2   Intel® 200/MMX-166 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
Intel® Pentium® 200MHz	66MHz	9-10 11-12	1-2 5-6 7-8	3-4	3-4 5-6 7-8	
Intel® Pentium® MMX 166MHz	66MHz	1-2 3-4	7-8	1-2 3-4	3-4 5-6 7-8	

2-4-3 Intel® MMX-200/233 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
Intel® Pentium® MMX 200MHz	66MHz	1-2 3-4	7-8	3-4	3-4 5-6 7-8	
Intel® Pentium® MMX 233MHz	66MHz	1-2 3-4	7-8	Open	3-4 5-6 7-8	

2-4-4 Intel® Tillamook 166/266 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
Intel® Tillamook 166MHz	66MHz	5-6 7-8	1-2	1-2 3-4 9-10	3-4 5-6 7-8	
Intel® Tillamook 266MHz	66MHz	5-6 7-8	1-2	1-2 5-6 7-8 9-10	3-4 5-6 7-8	

2-4-5   Cyrix 6x86 MX-233/266 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	**JP11**	**JP13**	**JP17**	
Cyrix 6x86 MX 233MHz	66MHz	1-2 3-4	1-2 7-8	3-4	3-4 5-6 7-8	
Cyrix 6x86 MX 266MHz	83MHz	1-2 3-4	1-2 7-8	1-2 3-4	3-4 7-8	

2-4-6 Cyrix 6x86 MX-300/M2-300 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	**JP11**	**JP13**	**JP17**	
Cyrix 6x86 MX 300MHz	66MHz	1-2 3-4	1-2 7-8	Open	3-4 5-6 7-8	
Cyrix 6x86 M2 300MHz	66MHz	1-2 3-4	1-2 7-8	Open	3-4 5-6 7-8	

2-4-7 AMD K6-200/233 CPU Type & Clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	**JP11**	**JP13**	**JP17**	
AMD K6 200MHz	66MHz	1-2 3-4	1-2 7-8	3-4	3-4 5-6 7-8	
AMD K6 233MHz	66MHz	1-2 3-4	5-6 7-8	Open	3-4 5-6 7-8	

2-4-8 AMD K6-2-266/300 CPU Type & Clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
AMD K6-2 266MHz	66MHz	1-2 3-4	5-6	1-2 5-6	3-4 5-6 7-8	
AMD K6-2 300MHz	100MHz	1-2 3-4	5-6	3-4	7-8	

2-4-9 AMD K6-2-333/350 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	**JP11**	**JP13**	**JP17**	
AMD K6-2 333MHz	95MHz	1-2 3-4	5-6	3-4 5-6	3-4 5-6 7-8	
AMD K6-2 350MHz	100MHz	1-2 3-4	5-6	Open	7-8	

2-4-10   AMD K6-2-366/380 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	**JP11**	**JP13**	**JP17**	
AMD K6-2 366MHz	66MHz	1-2 3-4	5-6	7-8	3-4 5-6 7-8	
AMD K6-2 380MHz	95MHz	1-2 3-4	5-6	1-2 5-6	1-2 7-8	

2-4-11 AMD K6-2-400/450 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
AMD K6-2 400MHz	100MHz	1-2 3-4	5-6	1-2 5-6	7-8	
AMD K6-2 450MHz (2.2V)	100MHz	1-2 3-4	5-6	1-2 3-4 5-6	7-8	

2-4-12 AMD K6-2-450/500 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
AMD K6-2 450MHz (2.4V)	100MHz	1-2 3-4	3-4 5-6	1-2 3-4 5-6	7-8	
AMD K6-2 500MHz (2.4V)	100MHz	1-2 3-4	3-4 5-6	3-4 5-6	7-8	

2-4-13 AMD K6-2-500/550 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
AMD K6-2 500MHz (2.2V)	100MHz	1-2 3-4	5-6	3-4 5-6	7-8	
AMD K6-2 550MHz (2.3V)	100MHz	1-2 3-4	1-2 5-6	5-6	7-8	

2-4-14 AMD K6-3-400 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
AMD K6-3 400MHz (2.4V)	100MHz	1-2 3-4	3-4 5-6	1-2 5-6	7-8	
AMD K6-3 400MHz (2.2V)	100MHz	1-2 3-4	5-6	1-2 5-6	7-8	

2-4-15   AMD K6-3-450 CPU Type & Clock Jumper Settings

| CPU TYPE | CPU CLOCK | Jumper settings (Pin closed) | | | | Jumper Illustration |
		JP7	JP11	JP13	JP17	
AMD K6-3 450MHz (2.4V)	100MHz	1-2 3-4	3-4 5-6	1-2 3-4 5-6	7-8	
AMD K6-3 450MHz (2.2V)	100MHz	1-2 3-4	5-6	1-2 3-4 5-6	7-8	

2-4-16 AMD K6-3-500 CPU Type & Clock Jumper Settings

CPU TYPE	CPU CLOCK	Jumper settings (Pin closed)				Jumper Illustration
		JP7	JP11	JP13	JP17	
AMD K6-3 500MHz (2.4V)	100MHz	1-2 3-4	3-4 5-6	3-4 5-6	7-8	
AMD K6-3 500MHz (2.4V)	100MHz	1-2 3-4	5-6	3-4 5-6	7-8	

2-5. COM PORT CONNECTOR

COM1 : COM1 Connector is fixed for RS-232.
The COM1 Connector assignments are as follows :

PIN	ASSIGNMENT
1	TDCD1
2	TIN1
3	ROUT
4	RDTR1
5	GND
6	TDSR1
7	TRTS1
8	RCTS1
9	RI 1
10	NC

COM 1

COM2 : COM2 Connector is fixed for RS-232.
The COM2 Connector assignments are as follows :

PIN	ASSIGNMENT
1	TDCD2
2	TIN2
3	ROUT2
4	RDTR2
5	GND
6	TDSR2
7	TRTS2
8	RCTS2
9	RI 2
10	NC

COM 2
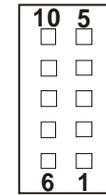
COM3 : COM3 Connector is fixed for RS-232.
The COM3 Connector assignments are as follows :

PIN	ASSIGNMENT
1	TDCD3
2	TIN3
3	ROUT3
4	RDTR3
5	GND
6	TDSR3
7	TRTS3
8	RCTS3
9	RI 3
10	NC

COM 3
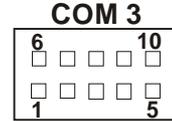
COM4 : COM4 Connector, selectable for RS-232/422/485.
The COM4 Connector assignments are as follows :

PIN	ASSIGNMENT		
	RS232	**RS422**	**RS485**
1	TDCD4	TX-	TX-
2	TIN4	TX+	TX+
3	ROUT4	RX+	RX+
4	RDTR4	RX-	RX-
5	GND	GND	GND
6	TDSR4	RTS-	NC
7	TRTS4	RTS+	NC
8	RCTS4	CTS+	NC
9	RI 4	CTS-	NC
10	NC	NC	NC
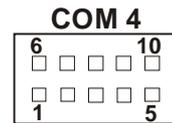
COM 4

2-6 RS232/422/485 (COM4) SELECTION

JP18: RS-232/422/485 Selection
COM1, COM2, COM3 is fixed for RS-232 function only.
COM4 is selectable for RS232, 422, 485 function
The jumper settings are as follows :

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

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

2-7 KEYBOARD CONNECTOR

KB1 : Keyboard Connector
The pin assignments for keyboard are as follows :

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

KB1

2-8 PS/2 Mouse Connector

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

PIN	ASSIGNMENT
1	MSCLK
2	MSDATA
3	NC
4	GND
5	VCC

MS1

2-9 RESET CONNECTOR

RST : Reset Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	RESET
2	GROUND

1 □
□
RST

2-10 EXTERNAL SPEAKER CONNECTOR

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

PIN	ASSIGNMENT
1	VCC
2	GROUND
3	NC
4	SPEAKER SIGNAL

1 □
□
□
□
SPK

2-11 TURBO LED

TBL : Turbo LED Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	VCC
2	TURBO SIGNAL

1 □
□
TBL

2-12 CPUFAN POWER CONNECTOR

CPUFAN : CPU Fan power connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	CPUFAN

CPUFAN1

2-13 SYSFAN POWER CONNECTOR

SYSFAN : System Fan power connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	SYSFAN

SYSFAN1

2-14 HARD DISK DRIVE LED CONNECTOR

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

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

HDL

2-15 POWER LED & KEYLOCK CONNECTOR

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

PIN	ASSIGNMENT
1	POWER LED
2	NC
3	GROUND
4	KB INH
5	GROUND

KBL

2-16 VGA CRT CONNECTOR

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

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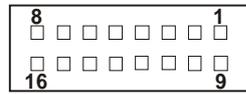
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	RED	9	NC
2	GREEN	10	GND
3	BLUE	11	NC
4	NC	12	DDCDAT
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DDCCLK
8	GND	16	NC

2-17 USB CONNECTOR

USB : Universal Serial Bus Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCC
2	DATA0–
3	DATA0+
4	GND
5	CGND
6	VCC
7	DATA1–
8	DATA1+
9	GND
10	CGND

```
5 □ □ □ □ □ 1
10 □ □ □ □ □ 6
      USB
```
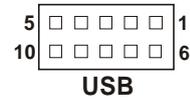
2-18 PANEL POWER CONNECTOR

JP6 : Panel Power Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	LCD VDD +12V
2	GND
3	LCD VDD (+5V/3.3V)

```
1 □
  □
  □
 JP6
```

2-19 LCD VDD SELECTION

JP5 : LCD VDD Selection
The pin assignments are as follows :

Panel VDD Selection	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
VCC 5V	1-2	1 ▮ ▯ **JP5**
VCC3.3V	2-3	1 ▯ ▮ **JP5**

2-20 ATX POWER BUTTON

JP9 : ATX Power Button
The pin assignments are as follows:

PIN	ASSIGNMENT
1	PWRBTNJ
2	GND

1 ▯ ▯ **JP9**

2-21 ATX POWER CONNECTOR

PWR : ATX Power Connector
The pin assignments are as follows:

PWR
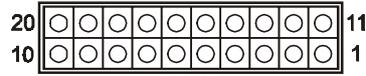
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	+5V
10	12V	20	+5V

2-22 LAN CONNECTOR

LAN : LAN Connector
The pin assignments are as follows:

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

LAN
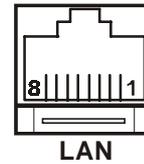
2-23 LAN LED INDICATOR

This card possesses 3 LAN LED Indicator, namely: LED1, LED2, and LED3. The pin assignments are as follows:

LED1: LAN LED Indicator

PIN	ASSIGNMENT
1	Pull Hi
2	LED1

LED2: LAN LED Indicator

PIN	ASSIGNMENT
1	Pull Hi
2	LED2

LED3: LAN LED Indicator

PIN	ASSIGNMENT
1	Pull Hi
2	LED3

2-24 IRDA CONNECTOR

JP16: IrDA (Standard IR) Connector
The pin assignments are as follows:

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

2-25 LCD PANEL CONNECTOR

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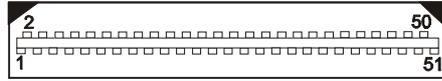
LCD

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

2-26 SOLID-STATE DISK SOCKET

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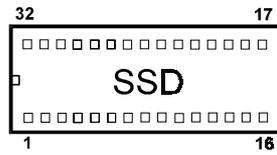
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	17	SD3
2	NC	18	SD4
3	NC	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE
7	SA5	23	SA10
8	SA4	24	OE
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	NC
13	SD0	29	NC
14	SD1	30	VCC
15	SD2	31	WE
16	GND	32	VCC

2-27 SSD MEMORY MAPPING SELECTION

JP12: SSD Memory Mapping Selection.
The SSD Memory Mapping Selections are as follow:

SSD Memory Map	Jumper Setting (Pin 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	
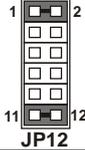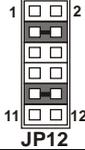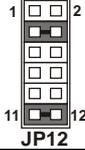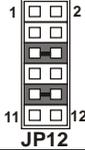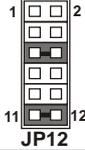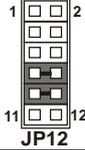
✍ A 32-pin SSD socket supports an SSD up to 144MB. This PnP flash ROM SSD can be
installed as one of user's hard disks. And if set as Drive C, it can be used to boot up the
computer with MS-DOS installed.

***Manufactory default --- CC000h-CDFFFh

2-28 FLOPPY DISK DRIVE CONNECTOR

FDD : Floppy Disk Drive Connector
You can use a 34-pin daisy-chain cable to connect two FDDs. On one end of this cable is a 34-pin flat cable to attach the FDD on the board, the other side is to attach two FDDs.
The pin assignments are as follows :
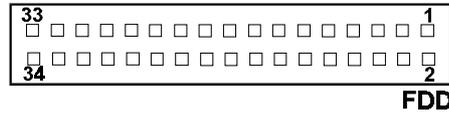
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	2	RPM
3	GND	4	NC
5	GND	6	NC
7	GND	8	INDEXJ
9	GND	10	MTR0J
11	GND	12	DR1J
13	GND	14	DR0J
15	GND	16	MTR1J
17	GND	18	FDIR
19	GND	20	STEPJ
21	GND	22	WDATAJ
23	GND	24	WGATEJ
25	GND	26	TRK0J
27	GND	28	WRTPRTJ
29	GND	30	RDATAJ
31	GND	32	HDSEL
33	GND	34	DSKCHG

2-29 HARD DISK DRIVE CONNECTOR

IDE1: Hard Disk Drive Connector
The Prox-1580 possesses two HDD connectors, IDE1 and IDE2. The pin
assignments are as follows:

```
39  □□□□□□□□□□□□□□□□□□□  1
    □□□□□□□□□□□□□□□□□□□
40                        2
```
IDE1
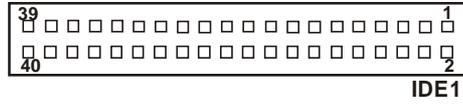
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERSTJ	21	PIDE DRQ
2	GND	22	GND
3	IDE D7	23	PIDEIOWJ
4	IDE D8	24	GND
5	IDE D6	25	PIDEIORJ
6	IDE D9	26	GND
7	IDE D5	27	PIDE RDY
8	IDE D10	28	PULL LOW
9	IDE D4	29	IDE AKJ
10	IDE D11	30	GND
11	IDE D3	31	SIRQI
12	IDE D12	32	NC
13	IDE D2	33	PIDE A1
14	IDE D13	34	GP104
15	IDE D1	35	PIDE A0
16	IDE D14	36	PIDE A2
17	IDE D0	37	PIDE CS1J
18	IDE D15	38	PIDE CS3J
19	GND	39	H LED1
20	N.C.	40	GND

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

IDE2
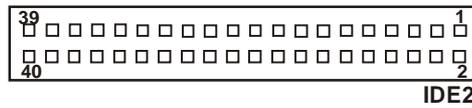
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERSTJ	21	SIDE DRQ
2	GND	22	GND
3	SIDED7	23	SIDEIOWJ
4	SIDED8	24	GND
5	SIDED6	25	SIDEIORJ
6	SIDED9	26	GND
7	SIDED5	27	SIDE RDY
8	SIDED10	28	PULL LOW
9	SIDED4	29	SIDE AKJ
10	SIDED11	30	GND
11	SIDED3	31	SIDE SIRQ
12	SIDED12	32	NC
13	SIDED2	33	SIDE A1
14	SIDED13	34	GP104
15	SIDED1	35	SIDE A0
16	SIDED14	36	SIDE A2
17	SIDED0	37	SIDE CS1J
18	SIDED15	38	SIDE CS3J
19	GND	39	H LED
20	N.C.	40	GND

2-30 PRINTER CONNECTOR

As to link the Printer to the card, you need a cable to connect the DB25 connector with parallel port. Prox-1580 possesses two Printer connector.

PRT1 : Printer Connector
The pin assignments are as follows :
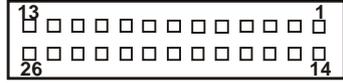
PRT1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STROB	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

PRT2 : Printer Connector
The pin assignments are as follows :
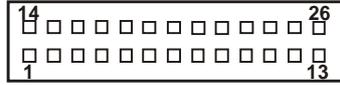
```
14 □□□□□□□□□□□□ 26
   □□□□□□□□□□□□
1                    13
```
PRT2

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STROB	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

2-31 PCI OR RISER CARD SELECTION

The PCI Bus found in this board can support PCI card or Riser card.
User may select to use either to use PCI card or Riser card by setting the
JP2, JP3 and JP4 jumper.
The PCI/Riser card selections are shown as follows:

FUNCTION	JUMPER SETTING (pin closed)			JUMPER ILLUSTRATION
	JP2	JP3	JP4	
Riser Card	Closed	Closed	1-2	
PCI Card	Open	Open	2-3	
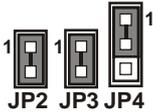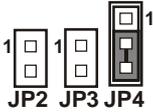
*** Manufacturing Default – PCI Card.

2-32. MONO CONNECTOR

J3 : Mono Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	MONO O
2	GND
3	MONO I
4	GND
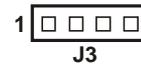
2-33 CD AUDIO-IN CONNECTOR

J4 : CD Audio-in Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	AUXAL
2	GND
3	GND
4	AUXAR

2-34 SOUND CONNECTOR

J1 : Sound Connector
The pin assignments are as follows:
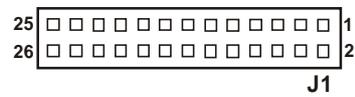
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GMVCC	2	GMVCC
3	SWA	4	SWC
5	ETA	6	ETC
7	GND	8	GND
9	ETB	10	ETD
11	SWB	12	SWD
13	RMSOUT	14	RMSIN
15	GMVCC	16	GND
17	MIC-IN	18	MIC-VDD
19	GND	20	GND
21	LINE-L	22	LINE-R
23	GND	24	GND
25	SPK-L	26	SPK-R

☺ Please kindly refer to Appendix A for more information about installation.

2-35 RESET/NMI/CLEAR WATCHDOG SELECTION

JP10 : Reset/NMI/Clear Watchdog Selection
The selections are as follows:

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
RESET	1-2	
NMI	3-4	
CLEAR WATCHDOG	5-6	
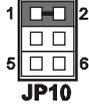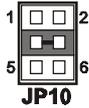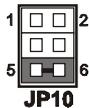
***Manufacturing Default is set as Reset.

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

2-36 MEMORY INSTALLATION

The Prox-1580 has one 168-pin DIMM socket on board, which may support up to 256MB DRAM

DRAM BANK CONFIGURATION:

DIMM1	TOTAL
32M	32M
64M	64M
128M	128M
256M	256M

2-37 COM PORT RI & VOLTAGE SELECTION

JP19 : COM Port RI & Voltage Selection
The selections are as follows:

COM PORT	IR/VOLTAGE SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
COM1	RI	1-3	
	+5V	3-5 7-9	
	+12V	3-5 9-11	
COM2	RI	2-4	
	+5V	4-6 8-10	
	+12V	4-6 10-12	

☞ This connector is used to set pin 9 of COM1 & COM2.

2-38 AT OR ATX POWER SELECTION

JP20, JP21, JP22, JP23: AT or ATX Power Selection
The selections are as follows:

SELECTION	JUMPER SETTING (pin closed)				JUMPER ILLUSTRATION
	JP20	**JP21**	**JP22**	**JP23**	
AT	Close	1-2 3-4	Close	Open	
ATX	Open	Open	Open	Close	
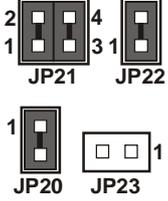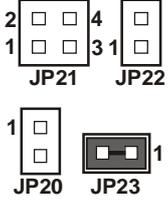
SOFTWARE UTILITIES

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-1580 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\RTL8139	For LAN Driver installation
D:\Sound\ESS1938	For Sound Driver installation

3-2. VGA DRIVER UTILITY

The VGA interface embedded with our Prox-1580 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.

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
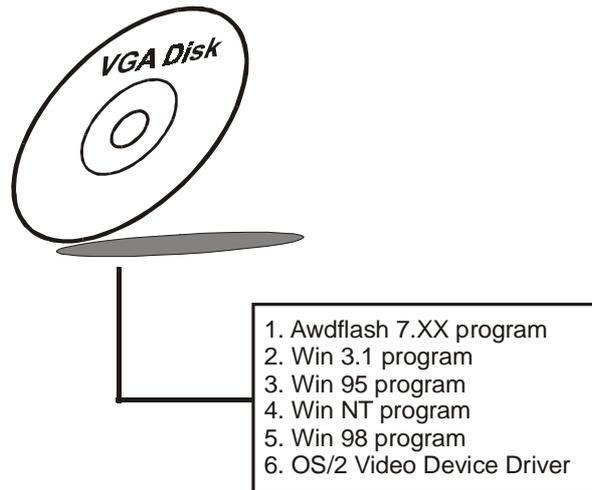
3-2-1. Installation of VGA Driver

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-1580 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-1580 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 F80xxxxx.bin
    C:\UTIL\AWDFLASH>AWDFLASH   F80xxxxx.bin
4. The screen will display the table below:

```
┌─────────────────────────────────────────────────────────┐
│              FLASH MEMORY WRITER v7.XX                    │
│        (C) Award Software 2000 All Rights Reserved       │
├─────────────────────────────────────────────────────────┤
│                                                          │
│  For i440BX-W977EF- 2A5KKP6FC-0        DATE:   03/02/2001 │
│            Flash Type:   MXIC 29F002(N)T/5V              │
│          File Name to Program:   F80xxxxx.bin            │
│                Checksum:   XXXXX                         │
│                                                          │
├─────────────────────────────────────────────────────────┤
│  Error Message :   Do You Want To Save BIOS (Y/N)        │
└─────────────────────────────────────────────────────────┘
```

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

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│           FLASH MEMORY WRITER v7.XX                   │
│       (C) Award Software 2000 All Rights Reserved     │
│                                                       │
├─────────────────────────────────────────────────────┤
│   For i440BX-W977EF- 2A5KKP6FC-0      DATE:  03/02/2001│
│           Flash Type:   MXIC 29F002(N)T/5V            │
│         File Name to Program:   F80xxxxx.bin          │
│               Checksum:   XXXXX                       │
│                                                       │
│                                                       │
├─────────────────────────────────────────────────────┤
│  Error Message :   Are You Sure To Program (Y/N)      │
└─────────────────────────────────────────────────────┘
```

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

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│           FLASH MEMORY WRITER v7.XX                   │
│       (C) Award Software 2000 All Rights Reserved     │
│                                                       │
├─────────────────────────────────────────────────────┤
│   For i440BX-W977EF- 2A5KKP6FC-0      DATE:  03/02/2001│
│           Flash Type:   MXIC 29F002(N)T/5V            │
│         File Name to Program:   F80xxxxx.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-1580 Embedded Board is enhanced with LAN function that can support various network adapters.   Installation programs for LAN drivers are listed as follows:


```
1. Linux
2. NDIS
3. SCO Unix
4. Win 95/98/2000 program
5. WFW 3.11 program
6. Win NT 3.1program
7. MSLAN
8. DMI
9. WIN DIAG
10. Netware
```
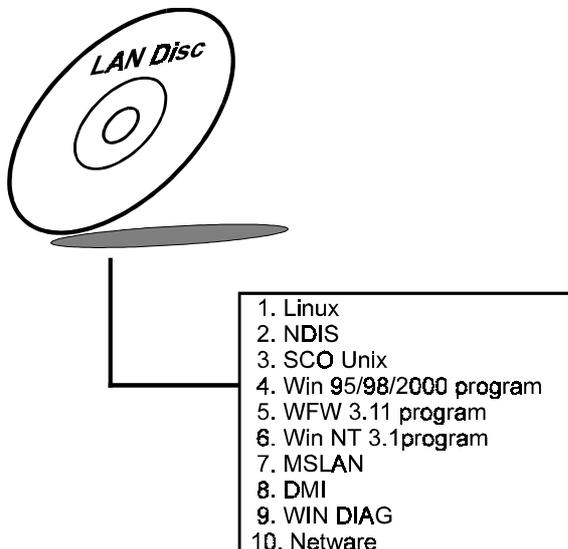
3-4-2. Installation of LAN Driver

1. **Install LAN driver for Microsoft Windows 95**
    Executing Windows 95, it will auto-detect your system configuration and find the adapter hardware.
    (1) Insert the LAN driver disk into Drive A or CD-ROM drive and specify the setup file, ex: pathname A:\ or D:\
    (2) Windows 95 will appear some messages to insert Windows 95 system disk to complete setup.
    (3) Windows 95 will finish the other installation procedure automatically, and then restart the system.

2. Install LAN driver for Microsoft Windows NT

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

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

(3) In the list of network cards, select "<Other> requires disk from manufacturer", and then press <Enter> button.

(4) Insert the LAN Driver disk in Drive A/B or CD ROM drive, and type D:\ (pathname) where the setup file OEMSETUP.INF is located, and then choose OK button.

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

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

(7) "Bus Location" display in next screen. If your system contains more than one hardware bus, please select the Bus Type and Bus number on which your network adapter card in installed.

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

(9) Re-boot your system to complete the installation process.

*** Note: Installing Multiple LAN Adapters:

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

For more details on Installation procedure, please refer to TXT 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
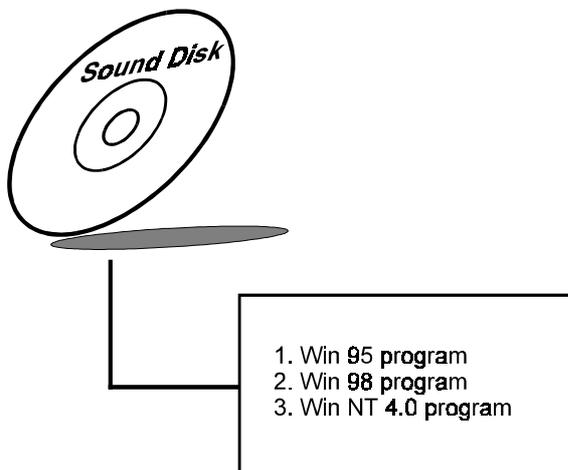
3-5-2. Installation of Sound Driver

1. **Install Sound Driver for Windows 95/98**

   (1) In the Main group of Win95/98, 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.

2. **Install Sound driver for 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-1580 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
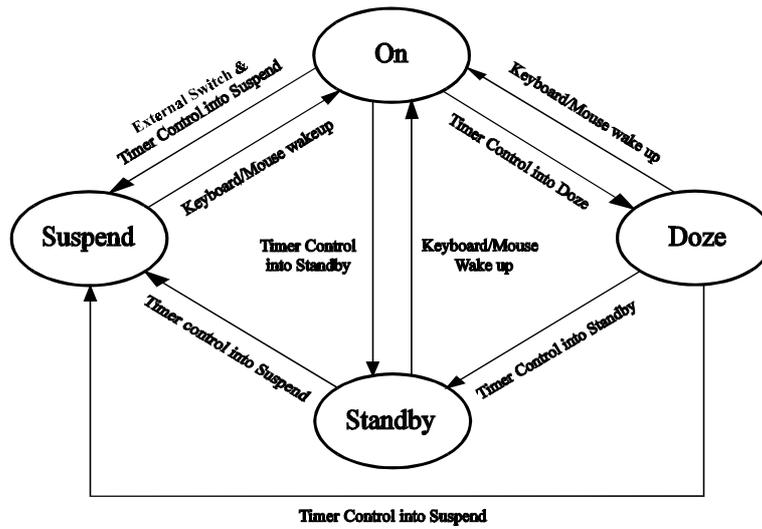
4-2. CPU DOZE MODE

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-1580 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:
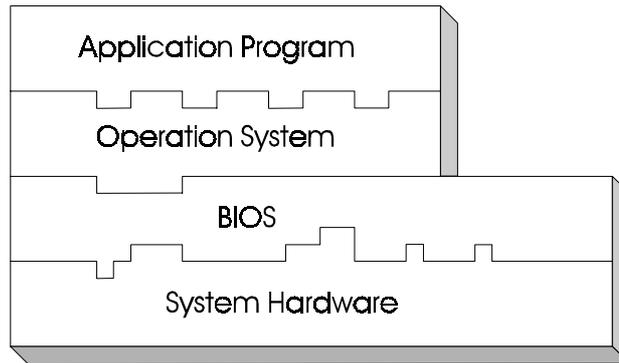
5-2. ENTERING SETUP

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 (2A5KKP6F)	
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 (2A5KKP6F)
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:      261120K
                                       Other Memory:         384K
Video   : EGA/VGA                  ---------------------------------
Halt On: All, But Keyboard            Total Memory:      262144K


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:
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 (2A5KKP6F)
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
Quick Power On Self Test   : Disabled    D0000-D3FFF Shadow     : Disabled
Boot Sequence              : A, C, SCSI  D4000-D7FFF Shadow     : Disabled
Swap Floppy Drive          : Disabled    D8000-DBFFF Shadow     : Disabled
Boot Up Floppy Seek        : Enabled     DC000-DFFFF Shadow     : Disabled
Boot Up Numlock Status     : On          Cyrix 6x86/MII CPUID   : Enabled
Boot Up System Speed       : High
Gate A20 Option            : Fast
Typematic Rate Setting     : Disabled
Typematic Rate (Chars/Sec) : 6
Typematic Delay (Msec)     : 250
Security Option            : Setup
PS/2 mouse function control : Enabled   Esc : Quit    ↑↓→←  :  Select Item
PCI/VGA Palette Snoop      : Disabled    F1 : Help      Pu/Pd/+/- :   Modify
OS Select For DRAM > 64MB  : Non-OS2     F5 : Old Values  (Shift)F2 :   Color
Report No FDD For WIN 95   : Yes         F6 : Load BIOS Defaults
                                         F7 : Load Setup Defaults
```

BIOS Features Setup Screen

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.

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.

BOOT UP SYSTEM SPEED:

Select High to boot at the default CPU speed; select Low to boot at the speed of the AT bus. Some add-in peripherals or old software (such as old games) may require a slow CPU speed. The default setting is High.

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.

PS/2 MOUSE FUNCTION CONTROL:

If your system has a PS/2 mouse port and you install a serial pointing device, select Disabled.

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 (2A5KKP6F)
            CHIPSET FEATURES SETUP
            AWARD SOFTWARE, INC.

Auto Configuration    : Enable    CPU Host Clock (CPU/PCI)  : Default
AT Bus Clock          : CLK2/4    CPU Warning Temperature   : Disabled
L2 TAG RAM size       : 8         Current System Temp.      : 0°C/ 32°F
DRAM Timing           : Normal    Current CPU1 Temperature  : 53°C/127°F
SDRAm CAS Latency     : 3         Current CPUFAN1 Speed     :    0RPM
Pipelined Function    : Enabled   Current CPUFAN2 Speed     :    0RPM
Graphics Aperture Size : 64MB     IN0(V) :  2.28 V   IN1(V) :  3.32V
DRAM Data Integrity Mode : Disabled  IN2(V) :  3.34 V   + 5 V :  5.08V
Memory Hole At 15-16M : Disabled  +12 V :  11.91 V    -12  V :- 11.86V
Host Read DRAM Command Mode : Bypass  - 5 V : - 4.99 V        :  3.31V
AGP Read Burst        : Enabled   5VSB(V) : 5.05 V
ISA Line Buffer       : Enabled   Shutdown Temperature      : Disabled
Passive Release       : Enabled
Delayed Transaction   : Disabled
Primary Frame Buffer  : All
VGA Frame Buffer      : Enabled
Data Merge            : Disabled  Esc : Quit      ↑↓→← : Select Item
IO Recovery Period    : 1 us      F1  : Help      Pu/Pd/+/- :  Modify
Auto Detect DIMM/PCI Clk  :  Enabled  F5  : Old Values  (Shift)F2 :  Color
Spread Spectrum       :   Disabled  F6  : Load BIOS Defaults
                                  F7  : Load Setup Defaults
```

Chipset Features Setup Screen

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.

AT BUS CLOCK:

The chipset generates the ISA bus clock (ATCLK) from an internal division of PCICLK. You can set the speed of the AT bus in terms of a fraction of the CPU clock speed, or at the fixed speed of 7.16 MHz.

DRAM TIMING:

The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

SDRAM CAS LATENCY:

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.

PIPELINED FUNCTION:

When Enabled, the controller signals the CPU for a new memory address before all data transfers for the current cycles are complete, resulting in faster performance.

GRAPHIC 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.

DRAM DATA INTEGRITY MODE:

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

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.

ISA LINE BUFFER:

The PCI to ISA Bridge has an 8-byte bi-directional line buffer for ISA or DMA bus master memory reads from or writes to the PCI bus. When Enabled, an ISA or DMA bus master can prefetch two doublewords to the line buffer for a read cycle.

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.

PRIMARY FRAME BUFFER:

Select a size for the PCI frame buffer. The size of the buffer should not impinge on local memory.

VGA FRAME BUFFER:

When Enabled, a fixed VGA frame buffer from A000h TO BFFFh and a CPU-to-PCI write buffer are implemented.

DATA MERGE:

This field controls the word-merge feature for frame buffer cycles. When Enabled, this controller checks the eight CPU Byte Enable signals to determine if data words read from the PCI bus by the CPU can be merged.

IO RECOVERY PERIOD:

The peripheral controller insert a minimum of 2 bus clock (BCLK) delays between back-to-back 8- or 16-bit ISA I/O cycles issued from the PCI master.

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 HOST CLOCK (CPU/PCI) :

Select Default or select a timing combination for the CPU and the PCI bus.   When set to Default, the BIOS uses the actual CPU and PCI bus clock values.

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 automatically 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 (2A5KKP6F)
               POWER MANAGEMENT SETUP
                 AWARD SOFTWARE, INC.

ACPI function        : Enable      LPT Ports              : Disabled
Power Management     : User Define
PM Control by APM    : Yes             ** External Switch **
MODEM Use IRQ        : 3           Power Button Mode      : Instant-Off
Video Off Option     : Susp,Stby→Off   DOCK I/O SMI       : Disabled
Video Off Method     : DPMS Support    AC Power SMI       : Disabled
                                   Thermal SMI mode       : Disabled
      ** PM Monitor   **
HDD Power Down       : Disable
Doze Mode            : Disable
Standby Mode         : Disable
Suspend Mode         : Disable
FAN Off Option       : Suspend →Off
Wake on LAN Use      : NA

       ** PM Events   **
Primary HDD          : Disabled    Esc : Quit      ↑↓→←  :  Select Item
Floppy               : Disabled    F1 : Help       Pu/Pd/+/- :  Modify
COM Ports            : Enabled     F5 : Old Values  (Shift)F2 :  Color
Keyboard             : Enabled     F6 : Load BIOS Defaults
                                   F7 : Load Setup Defaults
```
Power Management Setup Screen

The 〝POWER MANAGEMENT SETUP〞 allows you to configure your system to the 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.

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.

VIDEO OFF OPTION:
Selects the power-saving modes during which the monitor goes blank:

Always On	Monitor remains on during power-saving modes.
Suspend → Off	Monitor blanked when system enters Suspend mode.
Susp, Stby → Off	Monitor blanked when system enters either Suspend or Standby mode.
All Modes → Off	Monitor blanked when system enters any power saving mode.

VIDEO OFF METHOD:
This category determines the manner in which the monitor is blanked.

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

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.

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.

WAKE ON LAN USE:

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

PM EVENTS:

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

❶Primary HDD   ❷ Floppy
❸COM Ports   ❹ Keyboard
❺LPT Ports

DOCK I/O SMI:

This item allows you to enable or disable the function of DOCK I/O SMI.

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 (2A5KKP6F)
              PNP/PCI CONFIGURATION
               AWARD SOFTWARE, INC.

PNP OS Installed         : Yes        PCI IDE 2nd Channel    : Disabled
Resources Controlled by  : Manual     PCI IRQ Actived By     : Level
Reset Configuration Data : Disabled   PCI IDE IRQ Map To     : ISA

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  : Legacy ISA
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  : Legacy ISA
IRQ-15   assigned to  : Legacy ISA
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.

PCI IDE 2ND CHANNEL :

Since your chipset supports a second IDE channel, you can use this selection to enable or disable the second channel.   The second channel may connect to a CD-ROM.

PCI IRQ ACTIVATED BY :

Leave the IRQ trigger set at Level unless the PCI device assigned to the interrupt specifies Edge-triggered interrupts.

PCI IDE IRQ MAP TO :

This field lets you select PCI IDE IRQ mapping/PC AT (ISA) interrupts. If your system does not have one or two PCI IDE connectors on the system board, select values according to the type of IDE interface(s) installed in your system (PCI/ISA).   Standard ISA interrupts for IDE channels are IRQ14 for primary and IRQ15 for secondary.

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-1580.

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 (2A5KKP6F)
                     INTEGRATED PERIPHERALS
                     AWARD SOFTWARE, INC.

On-Chip Primary IDE        : Enabled   Onboard UART Port 2    : 2F8/IRQ3
  Master PIO               : Auto
  Slave PIO                : Auto      Onboard Parallel Port  : 378/IRQ7
  Master Ultra DMA         : Auto      Parallel Port Mode     : ECPEPP1
  Slave Ultra DMA          : Auto      ECP Mode Use DMA       : 3
On-Chip Secondary IDE      : Enabled   Onboard IrDA Port      : Disable
  Master PIO               : Auto
  Slave PIO                : Auto
  Master Ultra DMA         : Auto      Onboard Serial Port 3  : 3E8H
  Slave Ultra DMA          : Auto      Serial Port 3 Use IRQ  : IRQ3
IDE HDD Block Mode         : Enabled   Onboard Serial Port 4  : 2E8H
On-Chip USB Controller     : Enabled   Serial Port 4 Use IRQ  : IRQ4
  USB Keyboard Support     : Disabled  Onboard Parallel Port 2 : 278H
Init Display First         : PCI Slot  Parallel Port 2 Use IRQ : IRQ7

POWER ON Function          : Button Only
                                      Esc : Quit      ↑↓→← :  Select Item
                                      F1 : Help     Pu/Pd/+/- :  Modify
KBC clock source           : 8 MHz    F5 : Old Values  (Shift)F2 :  Color
Onboard FDC Controller     : Enabled  F6 : Load BIOS Defaults
Onboard UART Port 1        : 3F8/IRQ4 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:

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.

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.

ON-CHIP USB CONTROLLER:

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

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.

INIT DISPLAY FIRST:

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

POWER ON FUNCTION:

This item allows you the select power on event.

ONBOARD FDC CONTROLLER:

Select Enabled unless you installed an add-in FDC.

ONBOARD UART PORT 1:
ONBOARD UART PORT 2:
ONBOARD SERIAL PORT 3:
ONBOARD SERIAL PORT 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.

ECP MODE USE DMA:

Select a DMA channel for the port.

5-11. PASSWORD SETTING

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

TO SET A PASSWORD

If you want to enable this item you should choose the〝PASSWORD SETTING〞option from the main menu, the following message will appear at the center of the screen to assist you in creating a password.

```
Enter Password:
```

Type the password, up to eight characters, and press < Enter >. You will be asked to confirm the password.   Type the password again and press < Enter >. You may also press < Esc > to abort the selection and not enter a password.

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

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

You may determine when the password is required within the BIOS Features Setup Menu and its Security Option.   If the Security Option is set to "System", the password will be required both at boot and at entry to Setup.   If set to "Setup", prompting 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 (2A5KKP6F)
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 (2A5KKP6F)
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 (2A5KKP6F)                    │
│                   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
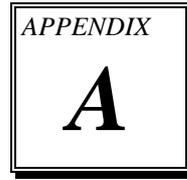
This appendix explains the adapter card.

Section includes:

● W-581-Sound Adapter Card

W-581-SOUND ADAPTER CARD

Introduction:

You will also find W-581-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-581-Sound Adapter Card:
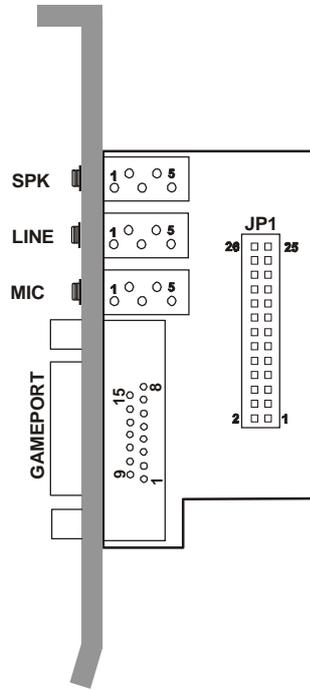
Front View   **Side View**

Connector's Pin Assignment:

You will find the following connectors on the W-581-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
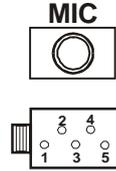
SPK : Speaker Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	SPK-L
3	MC
4	SPK-R
5	NC
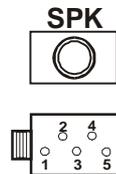
LINE : Line Input Connector
The pin assignments are as follows :

PIN	ASSIGNMENT
1	GND
2	LINE-R
3	GND
4	LINE-L
5	GND
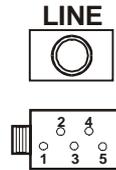
GAMEPORT : Game Port Connector.
The pin assignments are as follows :
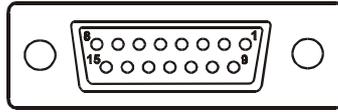
GAMEPORT

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	+5 VDC	9	+5 VDC
2	Button 1	10	Button 4
3	Joystick 1 - X	11	Joystick 2 - X
4	GND	12	MIDI Transit
5	GND	13	Joystick 2 - Y
6	Joystick 1 - Y	14	Button 3
7	Button 2	15	MIDI Receive
8	+5 VDC		

Instruction for Assembling the W-581-Sound:

The JP1 found in our W-581-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 (J1 found in Prox-1580 board), and the other end to the JP1 of the W-sound Adapter Card.

EXPANSION BUS
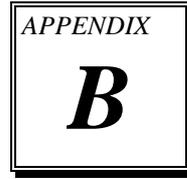
This appendix indicates the pin assignments of the expansion bus found in Prox-1580 Embedded Board.

Section includes:

● PC104 Connector Pin Assignment

● PCI Bus Pin Assignment

PC-104 CONNECTOR PIN ASSIGNMENT

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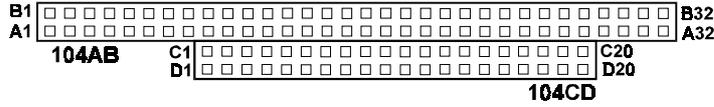
The PC-104 can support multi-pieces of PC-104 modules. This card has two connectors : one (104AB) consists of 64 pin; the other one (104CD) consists of 40 pin, both of them are dual-in-line headers

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

104AB				104CD			
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	IOCHK	B1	GND	C1	GND	D1	GND
A2	D7	B2	REST	C2	SBHE	D2	MEMCS16
A3	D6	B3	VCC	C3	LA23	D3	IOCS16
A4	D5	B4	IRQ9	C4	LA22	D4	IRQ10
A5	D4	B5	-5V	C5	LA21	D5	IRQ11
A6	D3	B6	DRQ2	C6	LA20	D6	IRQ12
A7	D2	B7	-12V	C7	LA19	D7	IRQ15
A8	D1	B8	OWS	C8	LA18	D8	IRQ14
A9	D0	B9	+12V	C9	LA17	D9	DACK0
A10	IOCHRDY	B10	GND	C10	MEMR	D10	DRQ0
A11	AEN	B11	SMEMW	C11	MEMW	D11	DACK5
A12	A19	B12	SMEMR	C12	D8	D12	DRQ5
A13	A18	B13	IOW	C13	D9	D13	DACK6
A14	A17	B14	IOR	C14	D10	D14	DRQ6
A15	A16	B15	DACK3	C15	D11	D15	DACK7
A16	A15	B16	DRQ3	C16	D12	D16	DRQ7
A17	A14	B17	DACK1	C17	D13	D17	VCC
A18	A13	B18	DRQ1	C18	D14	D18	MASTER
A19	A12	B19	REFRESH	C19	D15	D19	GND
A20	A11	B20	CLK	C20	KEY PIN	D20	GND
A21	A10	B21	IRQ7				
A22	A9	B22	IRQ6				
A23	A8	B23	IRQ5				
A24	A7	B24	IRQ4				
A25	A6	B25	IRQ3				
A26	A5	B26	DACK2				
A27	A4	B27	TC				
A28	A3	B28	BALE				
A29	A2	B29	VCC				
A30	A1	B30	OSC				
A31	A0	B31	GND				
A32	GND	B32	GND				

PCI BUS PIN ASSIGNMENT

The PCI Bus divided into two sets : one consists of 98 pins; the other consists of 22 pins.   The pin assignments are as follow :
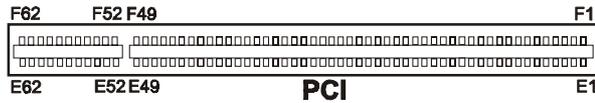
|	F		E		F		E
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
F1	-12V	E1	TRSTJ	F31	+3.3V	E31	AD18
F2	TCK	E2	+12V	F32	AD17	E32	AD16
F3	GND	E3	TMS	F33	C-BE-2	E33	+3.3V
F4	NC	E4	TDI	F34	GND	E34	FRAME-
F5	+5V	E5	+5V	F35	IRDY-	E35	GND
F6	+5V	E6	IRQ-A	F36	+3.3V	E36	TRDY-
F7	IRQ-B	E7	IRQ-C	F37	DEVSEL-	E37	GND
F8	IRQ-D	E8	+5V	F38	GND	E38	STOP-
F9	REQ-3	E9	CLK2	F39	LOCK-	E39	+3.3V
F10	REQ-1	E10	+5V	F40	PERR-	E40	SDONE
F11	GNT-3	E11	CLK3	F41	+3.3V	E41	SBOJ
F12	GND	E12	GND	F42	SERR-	E42	GND
F13	GND	E13	GND	F43	+3.3V	E43	PAR
F14	CLK0	E14	GNT-1	F44	C-BE-1	E44	AD15
F15	GND	E15	RST-	F45	AD14	E45	+3.3V
F16	CLK1	E16	+5V	F46	GND	E46	AD13
F17	GND	E17	GNT-0	F47	AD12	E47	AD11
F18	REQ-0	E18	GND	F48	AD10	E48	GND
F19	+5V	E19	REQ-2	F49	GND	E49	AD9
F20	AD31	E20	AD30	F52	AD8	E52	C-BE-0
F21	AD29	E21	+3.3V	F53	AD7	E53	+3.3V
F22	GND	E22	AD28	F54	+3.3V	E54	AD6
F23	AD27	E23	AD26	F55	AD5	E55	AD4
F24	AD25	E24	GND	F56	AD3	E56	GND
F25	+3.3V	E25	AD24	F57	GND	E57	AD2
F26	C/BE-3	E26	GNT-2	F58	AD1	E58	AD0
F27	AD23	E27	+3.3V	F59	+5V	E59	+5V
F28	GND	E28	AD22	F60	U1A64	E60	U1R64
F29	AD21	E29	AD20	F61	+5V	E61	+5V
F30	AD19	E30	GND	F62	+5V	E62	+5V

TECHNICAL SUMMARY
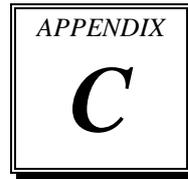
This section introduce you the maps concisely.

Sections include:

● Block Diagram

● Interrupt Map

● RTC & CMOS RAM Map

● Timer & DMA Channels Map

● I / O & Memory Map

BLOCK DIAGRAM
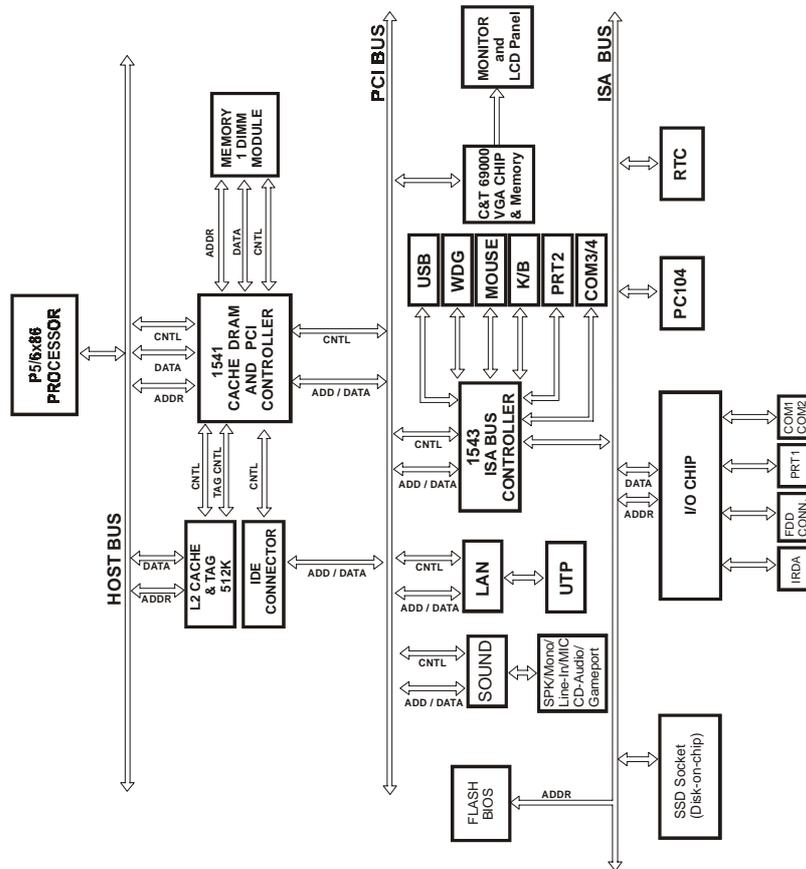
INTERRUPT MAP

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

I/O & MEMORY MAP

Memory Map :

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

I/O Map :

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

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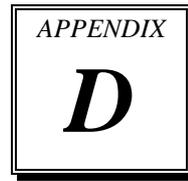
This section outlines the errors messages that may occur when you operate the system. It also gives you the suggestions on solving the problems.

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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