USER'S MANUAL

ProX-1660

For Socket 370
Half-sized Embedded Card
With VGA / LAN

Prox-1660 M5

ProX-1660 Socket 370
Half-sized Embedded Card
With VGA / LAN

OPERATION MANUAL

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TABLE OF CONTENTS

INTRODUCTION

CHAPTER

1

This chapter gives you the information for Prox-1660. 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-1660 Socket 370 Embedded Card with VGA/LAN, which is fully PC / AT compatible. The Prox-1660 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 Card.

Chapter 2 Hardware Configuration

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

Chapter 3 Software Utilities

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

Chapter 4 Green PC Function

This chapter explains the Green PC functions concisely.

Chapter 5 Award BIOS Setup

This chapter indicates you how to set up the BIOS configurations.

Appendix A Expansion Bus

This Appendix introduces you the PC104 and PCI expansion BUS.

Appendix B Technical Summary

This section gives you the information about the Technical maps.

Appendix C Trouble Shooting

This section outlines the error messages and offers you the methods to solve the problems.

1-2. SYSTEM SPECIFICATIONS

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

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

- **CACHE :**
  Depended on CPU (128K/256K Cache).

- **REAL-TIME CLOCK / CALENDAR :**
  CMOS data back up from BIOS set or BIOS default.
  Dallas DS 12887/1687-5 Real Time Clock.

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

- **KEYBOARD AND MOUSE CONNECTOR :**
  Mini DIN connector, support for keyboard or PS/2 mouse.
  One additional 5-pin external keyboard connector.

- **BUS SUPPORT :**
  Internal PCI Bus for VGA, LAN, & IDE.
  External PCI and PC104 Bus.

- **DISPLAY :**
  Support SVGA for CRT & Panel.
  Support 32bits PCI Local Bus.
  VGA BIOS combines in 256KB flash ROM together with system BIOS.
  Support 15-pin connector 1280 x 1024 (256 color) resolution on monitor.
  Integrates 2 MB of DRAM for the graphics/video frame buffer.
  Support 51-pin connector 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 resolutions on LCD Panel.
  Panel display can support Color STN, TFT, and EL modes.
  Support simultaneous display of CRT & LCD flat Panel.

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

- **IDE INTERFACE :**
  Two IDE ports, support 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 Fast Ethernet
  10/100 Base-T PCI-BUS

- **SERIAL PORT :**
  Two high speed 16550 Compatible UARTs with Send / Receive 16 Byte FIFOs;
  COM1 is fixed as RS-232; COM2 selectable for RS-232/422/485.
  MIDI Compatible.
  Programmable Baud Rate Generator.

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

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

- **HARDWARE MONITORING FUNCTION :**
  CPUFAN.
  CPU Temperature.
  Auto Detect Voltage.

- **IRDA :**
  One Infrared port.

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

- **DMA CONTROLLER :**
  82C37 x 2

- **DMA CHANNELS :**
  7

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

- **INTERRUPT LEVELS :**
  15

HARDWARE CONFIGURATION

CHAPTER

2

*** QUICK START ***

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

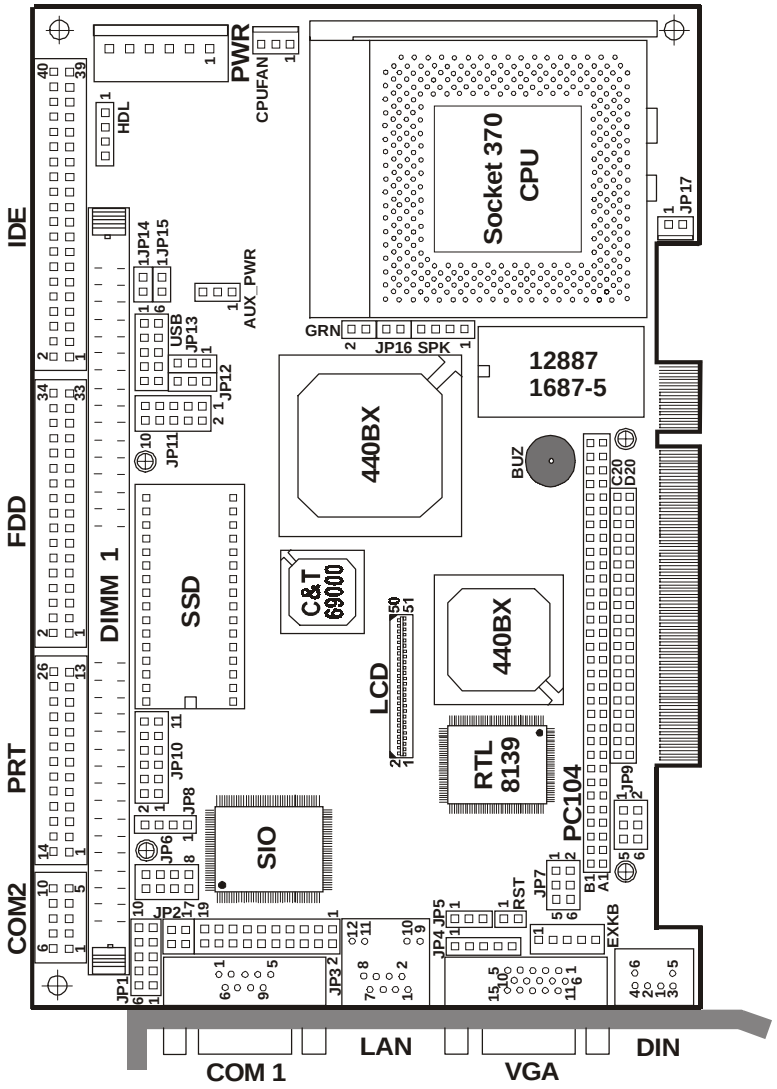
This section includes:

- Jumper & Connector Quick Reference Table
- Component Locations
- Configuration and Jumper settings
- Connector's Pin Assignments

2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

COM Connector	COM1, COM2
RS232/422/485 (COM2) Selection	JP2, JP3
Solid-State Disk Socket	SSD
SSD Memory Mapping Selection	JP10
Keyboard or PS/2 Mouse Connector	DIN
Keyboard or PS/2 Mouse Selection	JP7
External Keyboard Connector	EXKB
Reset Connector	RST
Hard Disk Drive LED Connector	HDL
External Speaker Connector	SPK
ATX Power Button	JP8 (3-4)
LAN Wake-up Connector	JP5
VGA Connector	VGA
LCD Panel Connector	LCD
Green Function Connector	GRN
LCD VDD Selection	JP12
Floppy Disk Drive Connector	FDD
Hard Disk Drive Connector	IDE1
Printer Connector	PRT
CPU Fan Connector	CPUFAN
ATX Signal Connector	AUX_PWR
Power LED & KeyLock Connector	JP4
Universal Serial Bus Connector	USB
NMI/Reset/Clear Watchdog	JP9
LAN Connector	LAN
Power Connector	PWR
IrDA Connector	JP1
Auxilary Battery Input Connector	JP17
Memory Installation	DIMM1
Power Selection	JP14, JP15
Reserved Pin	JP6, JP11, JP13
.....	JP16

2-2. COMPONENT LOCATIONS



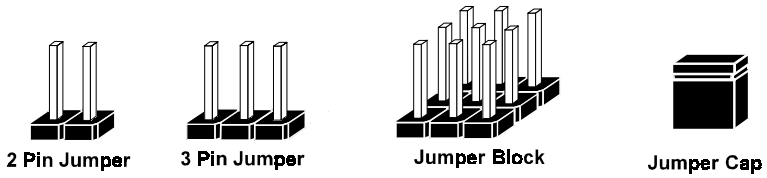
Prox-1660 Connector, Jumper and Component locations

2-3. HOW TO SET THE JUMPERS

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

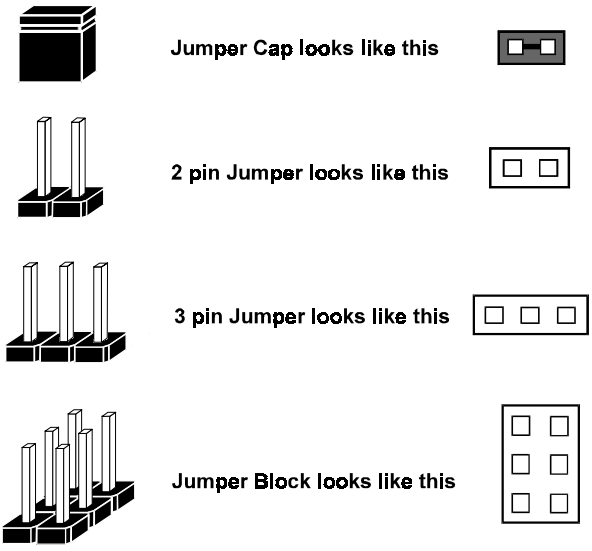
The jumper can be combined into sets that called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how this looks like.

JUMPERS AND CAPS

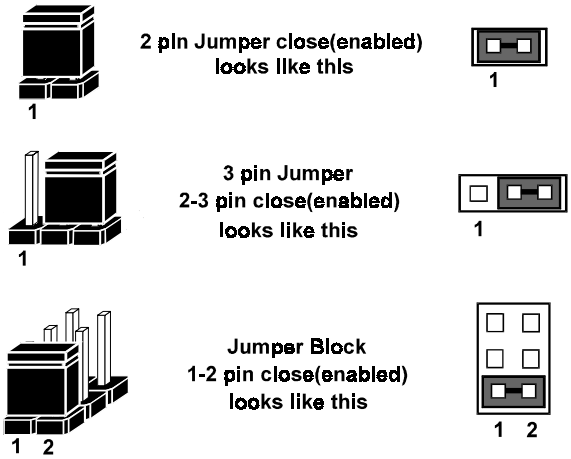


If a jumper has three pins (for example, labelled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagram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

JUMPER DIAGRAMS



JUMPER SETTINGS

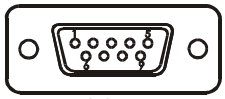


2-4. COM PORT CONNECTOR

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

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

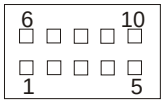
PIN	ASSIGNMENT
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI



COM 1

COM2 : COM2 Connector
The COM2 Connector assignments are as follows :

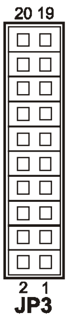
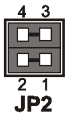
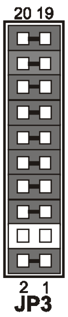
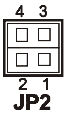
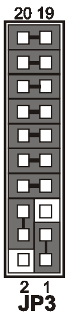
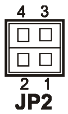
PIN	ASSIGNMENT		
	RS-232	RS-422	RS-485
1	DCD	TX-	TX-
2	RX	TX+	TX+
3	TX	RX+	RX+
4	DTR	RX-	RX-
5	GND	GND	GND
6	DSR	RTS-	NC
7	RTS	RTS+	NC
8	CTS	CTS+	NC
9	RI	CTS-	NC
10	NC	NC	NC



COM 2

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

JP2, JP3 : RS-232/422/485 Selection
COM2 is selectable for RS-232, 422, 485 function.
The jumper settings are as follows :

COM 2 Function	**RS-232**		**RS-422**		**RS-485**	
	JP3	**JP2**	**JP3**	**JP2**	**JP3**	**JP2**
Jumper settings (pin closed)	Open	1-2 3-4	1-2 5-6 7-8 9-10 11-12 13-14 15-16 17-18 19-20	Open	1-3 4-6 7-8 9-10 11-12 13-14 15-16 17-18 19-20	Open
Jumper illustration						

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

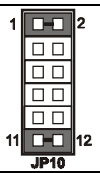
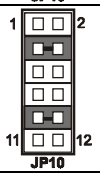
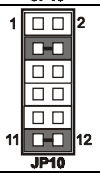
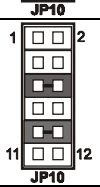
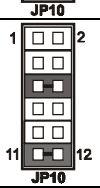
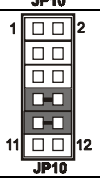
2-6. SOLID-STATE DISK SOCKET

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

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

2-7. SSD MEMORY MAPPING SELECTION

JP10 : SSD Memory Mapping Selection
A 32-pin SSD socket supports Disk-on-Chip up to 144MB. This PnP Flash ROM SSD can be install as one of user's hard disk drive.
The SSD Memory Mapping Selections are as follows:

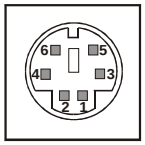
SSD Memory Map	JUMPER SETTINGS (pins closed)	JUMPER ILLUSTRATION
CC000h-CDFFFh	1-2 11-12	
D0000h-D1FFFh	3-4 9-10	
D4000h-D5FFFh	3-4 11-12	
D8000h-D9FFFh	5-6 9-10	
DC000h-DDFFFh	5-6 11-12	
E0000h-E1FFFh	7-8 9-10	

*** Manufactory default --- CC000h-CDFFFh

2-8. KEYBOARD OR PS/2 MOUSE CONNECTOR

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

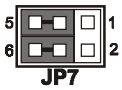
PIN	ASSIGNMENT	
	Keyboard	**PS/2 Mouse**
1	KBDATA	MSDATA
2	MSDATA	MSDATA
3	GND	GND
4	IOVSB	IOVSB
5	KBCLK	MSCLK
6	MSCLK	MSCLK



DIN

2-9. KEYBOARD OR PS/2 MOUSE SELECTION

JP7 : Keyboard or PS/2 Mouse Selection
If User select to use Y-Cable, please set the jumper same as AT keyboard.
The jumper settings are as follows:

DEVICE TYPE	JUMPER SETTINGS (pin closed)	JUMPER ILLUSTRATION
AT KEYBOARD	3-5 4-6	 JP7
PS/2 MOUSE	1-3 2-4	 JP7

*** Manufactory default -- AT Keyboard

2-10. EXTERNAL KEYBOARD CONNECTOR

EXKB : External Keyboard Connector
The pin assignments are as follows :

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

2-11. RESET CONNECTOR

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

PIN	ASSIGNMENT
1	RESET
2	GROUND

2-12. HARD DISK DRIVE LED CONNECTOR

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

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

2-13. EXTERNAL SPEAKER CONNECTOR

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

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

2-14. ATX POWER BUTTON

JP8(3-4) : ATX Power Button
The pin assignments are as follows:

PIN	ASSIGNMENT
3	Pull Low
4	PWR BTN Switch

2-15. LAN WAKE-UP CONNECTOR

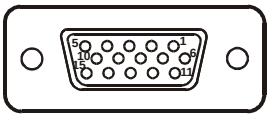
JP5 : LAN Wake-up Connector
This connector is used only for external LAN card with a Wake-On-LAN output. The connector powers up the system when a wakeup packet or signal is received through the LAN card.
The pin assignments are as follows:

PIN	ASSIGNMENT
1	GROUND
2	+5V STANDBY
3	ACTIVE SIGNAL

🕮 Note: This feature requires that Wake-Up On LAN is set to enable (see Power Management Setup) and that your system has an ATX power supply with at least 720mA +5V standby power.

2-16. VGA CONNECTOR

VGA : VGA Connector
The pin assignments are as follows:

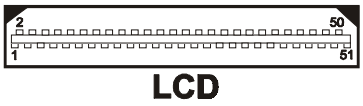


VGA

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

2-17. LCD PANEL CONNECTOR

LCD : LCD Panel Connector
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		

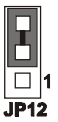
2-18. GREEN FUNCTION CONNECTOR

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

PIN	ASSIGNMENT
1	EXTSMI-
2	GND

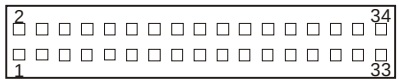
2-19. LCD VDD SELECTION

JP12 : LCD VDD Selection
The pin assignments are as follows:

Panel VCC Selection	JUMPER SETTINGS (pin closed)	JUMPER ILLUSTRATION
VDD +5V	1-2	
VDD +3.3V	2-3	

2-20. FLOPPY DISK DRIVE CONNECTOR

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

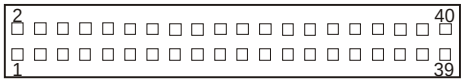


FDD

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

2-21. HARD DISK DRIVE CONNECTOR

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

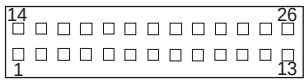


IDE

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

2-22. PRINTER CONNECTOR

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



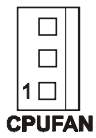
PRT

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

2-23. CPU FAN CONNECTOR

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

PIN	ASSIGNMENT
1	GND
2	+12V
3	FAN1 IN



2-24. ATX SIGNAL CONNECTOR

AUX_PWR : ATX Signal Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	+5VSBIN
2	GND
3	PWR ON

2-25. POWER LED & KEYLOCK CONNECTOR

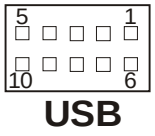
JP4 : Power LED & Keylock Connector
The pin assignments are as follows :

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

2-26. UNIVERSAL SERIAL BUS CONNECTOR

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

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



USB

2-27. RESET/NMI/CLEAR WATCHDOG

JP9 (1-2) : For Reset
JP9 (3-4) : For NMI
JP9 (5-6) : For Clear Watchdog
The pin assignments are as follows:

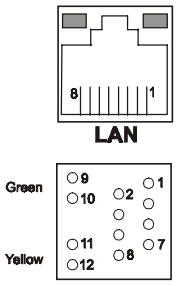
PIN	ASSIGNMENT
1	WDGRST
2	WDGRSTJ
3	WDGNMI
4	IOCHKJ
5	CLRWDG
6	GND

JP9

2-28. LAN CONNECTOR

LAN : LAN Connector
You will find two LAN LED indicators LAN connector, the green LED is used to detect the 100Mbps speed, while the yellow LED is used to detect "LINK" and "ACTIVE" signal.
The pin assignments are as follows:

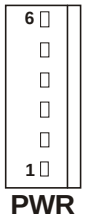
PIN	ASSIGNMENT
1	TX+
2	TX-
3	RX+
4	NC
5	NC
6	RX-
7	NC
8	NC
9	Pull Hi
10	LED – Green
11	Pull Hi
12	LED – Yellow



2-29. POWER CONNECTOR

PWR : Power Connector
The pin assignments are as follows :

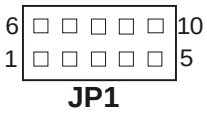
PIN	ASSIGNMENT
1	NC
2	+5V
3	+12V
4	-12V
5	GND
6	GND



2-30. IRDA CONNECTOR

JP1 : IrDA (Standard IR) Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCC
2	FIRRX
3	IRRX
4	GND
5	IRTX
6	NC
7	NC
8	NC
9	NC
10	NC



2-31. MEMORY INSTALLATION

The Prox-1660 Embedded Computer supports 1 SDRAM bank.

DRAM BANK CONFIGURATION

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

2-32. AUXILARY BATTERY INPUT CONNECTOR

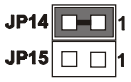
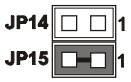
JP17 : Auxilary Battery Input Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VBAUX
2	GND

🕮 This connector is only present for Dallas 1687-5.

2-33. POWER SELECTION

JP14, JP15 : ATX or AT Power Selection
The selections are as follows:

Power Selection	JUMPER SETTINGS (pin closed) JP14	JP15	JUMPER ILLUSTRATION
ATX	ON	OFF	
AT	OFF	ON	

***Manufacturing Default: ATX.

As a reminder, when you choose to use the ATX function, please be sure to set the corresponding configuration found in BIOS setup such as:

1. Inside the “CHIPSET FEATURES” setting, set the power supply type to ATX.
2. Inside the “POWER MANAGEMENT” setting, set the ACPI function to enable.

- **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 DIMENSIONS :**
  185mm x 122mm

- **BOARD NET WEIGHT :**
  0.28 Kilograms.

1-3. SAFETY PRECAUTIONS

Follow the messages below to avoid your systems from damage:

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

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

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

SOFTWARE UTILITIES

CHAPTER
3

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
- Watchdog Timer Configuration

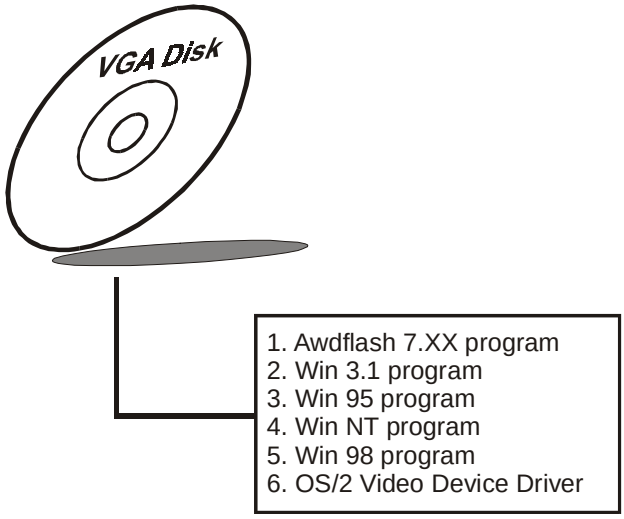
3-1. INTRODUCTION

Enclosed with our Prox-1660 package is our driver utilities, 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

3-2. VGA DRIVER UTILITY

The VGA interface embedded with our Prox-1660 can support a wide range of display mode, such as SVGA, STN, TFT, EL,.....etc. You can display CRT and LCD Panel simultaneously on this board, but make sure that the modes for CRT and LCD Panel are the same. If not, only one of them can be displayed.



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

1. Install VGA Driver to Windows 3.1

(1). To install VGA driver to Windows 3.1, please insert Utility Disk into floppy disk drive A/B or CD ROM drive under your Windows 3.1 system, and go to directory where VGA driver is located.

(2). Click Setup.exe file for VGA driver installation directly. Follow the instructions on the screen and complete the installation.

(3). Once installation is completed, you must shut down system and restart in order for changes to take effect.

2. Install VGA Driver to Windows 95

(1). Click START, SETTINGS, then CONTROL PANEL.

(2). On CONTROL PANEL, click the DISPLAY icon and enter the SETTINGS tab of the DISPLAY PROPERTIES window.

(3). Select the SETTINGS page, push the CHANGE DISPLAY TYPE button. Click the CHANGE button in the "Adapter Type" area.

(4). Push the "HAVE DISK BUTTON" and press OK.

(5). Specify the path for the new driver and press the <Enter> key. The "Select Device" dialog box will appear. Select the "Chips and Tech 69000 PCI".

(6). Follow the remaining instruction that appears on the screen to complete the rest of the installation, and 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-1660 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-1660 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 files 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 B60xxxxx.bin
   C:\UTIL\AWDFLASH>AWDFLASH B60xxxxx.bin
4. The screen will display the table below:

FLASH MEMORY WRITER v7.XX (C) Award Software 2000 All Rights Reserved
For i440BX- W977EF-2A69KP6OC -0 DATE: 09/09/2000 Flash Type: MXIC 29F002(N)T/5V File Name to Program: B60xxxxx.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-2A69KP6OC-0 DATE: 09/09/2000 Flash Type: MXIC 29F002(N)T/5V File Name to Program: B60xxxxx.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:

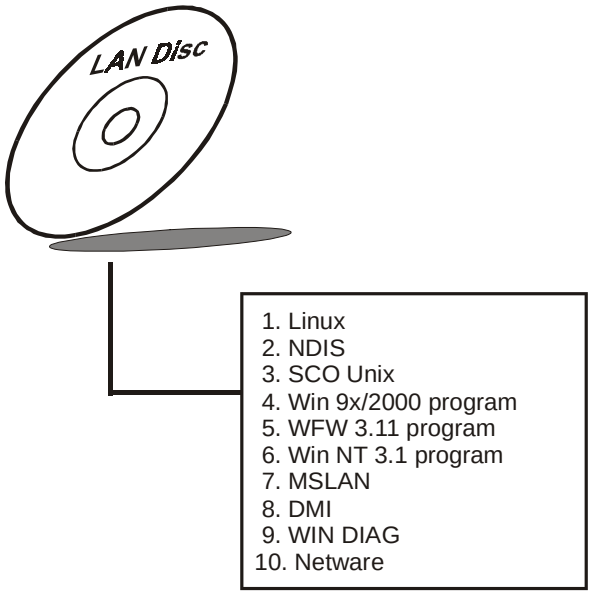
FLASH MEMORY WRITER v7.XX (C) Award Software 2000 All Rights Reserved
For i440BX- W977EF-2A69KP6OC -0 DATE: 09/09/2000 Flash Type: MXIC 29F002(N)T/5V File Name to Program: B60xxxxx.bin Checksum: XXXXX Reset System or Power off to accomplish update process!
F1: Reset F10: Exit

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

3-4. LAN DRIVER UTILITY

3-4-1. Introduction

Prox-1660 Embedded Board is enhanced with LAN function can support various network adapters. Installation programs for LAN drivers are listed as follows:



3-5-2. Installing Procedures on 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 pathname A:\.
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.

3-5-3. Installing Procedures on Microsoft Windows NT

1. In the Main group to NT, select the “Control Panel” icon.
2. In the Control Panel window, choose the “Network” icon.
3. In the Network Settings dialog box, choose the “Add adapter” button. The Add Network Adapter dialog box appears.
4. In the list of network cards, select “<Other> requires disk from manufacturer”, and then press <Enter> button.
5. Insert the LAN Driver disk in Drive A, and key-in A:\ (pathname) where the setup file OEMSETUP.INF is located, and then choose OK button.
6. The screen will appear “Select Line Speed” dialog box, which is provided by RTL8139.SYS driver. The default value is “auto” so that the line speed can be auto detected as 10Mb or 100Mb, while the RTL8139.SYS is loading.
7. The screen will appear “Input Ethernet ID” dialog box, which is provided by RTL8139.SYS driver. This option is only required when you have more than one RTL8139 PCI Fast Ethernet adapters on this computer. Select “SKIP” if only one adapter is installed on this computer.
8. “Bus Location” 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.
9. NT will then perform the binding process. If any additional network software options were installed, you may be prompted for specific information for these packages.
10. Re-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. WATCHDOG TIMER CONFIGURATION

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

In Prox-1660 watchdog function, You must write your program so when it writes I/O port address 443 for enable watchdog and write I/O port address 441 for disable watchdog. The timer's intervals have a tolerance of 25% so you should program an instruction that will refresh the timer about every second.

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

Watchdog enable program:

```
MOV     AX, 000FH       (choose the values you need; start from 0)
MOV     DX, 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

CHAPTER

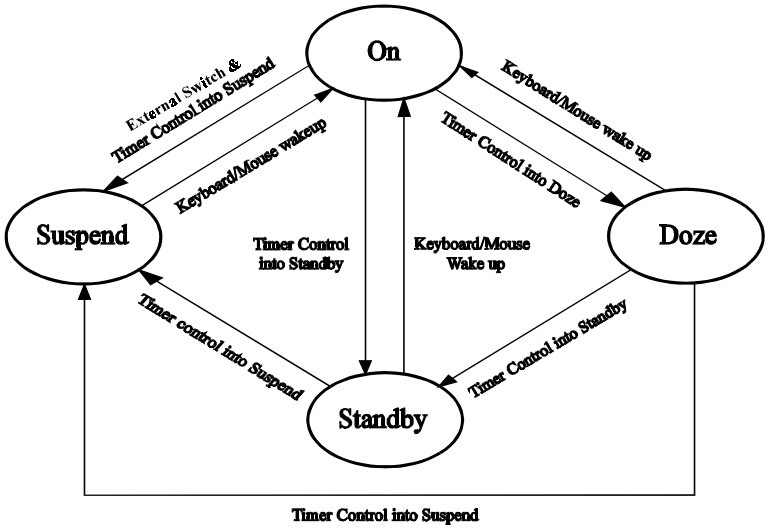
4

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. Flash LED to indicate power saving status.
3. Monitor Activity, according to the setting of Advanced Setup.
4. 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. Flash LED to indicate power saving status.
3. Level 1 cache are disabled.
4. VGA monitor displays blank screen.
5. Fixed disk driver motor will be spin off.
6. 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 sound.
3. Flash LED to indicate power saving status.
4. Level 2 cache are disabled.
5. VGA monitor displays blank screen.
6. Fixed disk driver motor will be spin off.
7. Monitor activity according to the setting of Advanced Setup.
8. When system in Suspend mode, only Keyboard / Mouse / Alarm resume can wakeup system.

AWARD BIOS SETUP

CHAPTER

5

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
- IDE HDD Auto Detection
- Save and Exit Setup

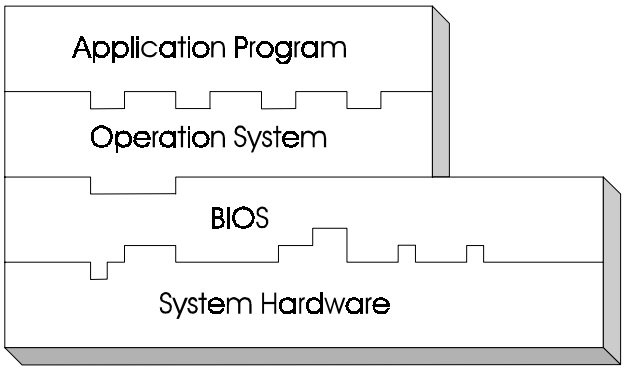
5-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The Prox-1660 Socket 370 Embedded Card is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of 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 (2A69KP60)
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 coloured 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 (2A69KP60)
                    STANDARD CMOS SETUP
                    AWARD SOFTWARE, INC.

Date (mm:dd:yy)    :  Tue,  Sep  5  2000
Time (hh:mm:ss)    :  19  :  30  :  51

                    CYLS.  HEADS  PRECOMP  LANDZONE  SECTORS  MODE
Drive C : Auto (    0Mb)  0      0        0         0        AUTO
Drive D : Auto (    0Mb)  0      0        0         0        AUTO

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

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

CMOS setup screen

In the above table the base memory size and the extended memory size are displayed. This is automatically read from your systems, and you do not need to set these parameters. The screen shows a calendar. Since you have not yet set the time and date, the date displayed is probably incorrect. Description on each 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/Primary 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"

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 differences 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 identifies the types of floppy disk drive A or drive B that have been installed in the computer.

VIDEO :

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

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

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 detect a non-fatal error the system will be 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 Diskette	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 determines 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 (2A69KP60)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
		D4000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D8000- DBFFF Shadow	: Disabled
Boot Sequence	: A,C, SCSI	DC000-DFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Enabled		
Boot Up Numlock Status	: On		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup	Esc : Quit	↑↓→← : Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	Pu/Pd/+/- : Modify
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

The "BIOS FEATURES SETUP" allows you to configure your system for basic operation. You have the opportunity to 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/EXTERNAL CACHE :

These two categories speed up memory access. However, it depends on CPU/chipset design.

CPU L2 CACHE ECC CHECKING :

When enabled, memory checking is enable when the external Cache contains ECC SRAMs.

QUICK POWER ON SELF TEST:

This item allows you to speed up Power On Self Test (POST) after power-on the computer when it is Enabled. The BIOS will shorten or skip some check items during POST. We recommend that you normally disable quick POST. Better to find a problem during POST than lose data during your work.

BOOT SEQUENCE:

This category determines the sequence of which drive to search first for the disk operating system.

SWAP FLOOPY DRIVE:

This category allows you to determine whether enable the swap floppy drive or not.

BOOT UP FLOPPY SEEK:

This category enables or disables BIOS to search for floppy disk drive and to determine if it is 40 or 80 tracks.

BOOT UP NUMLOCK STATUS:

This item determines the default state of the numeric keypad. By default, the system boots up with NumLock on.

GATE 20A OPTION:

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1Mbytes. Initially the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common and much faster for the 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 typematic rate is enabled, this selection allows you to select the rate at which the keys are accelerated.

TYPEMATIC DELAY (MSEC):

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

SECURITY OPTION:

This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

PCI/VGA PALETTE SNOOP:

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

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 :

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

C8000-CBFFF SHADOW/DC000-DFFFF SHADOW :

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

5-5. CHIPSET FEATURES SETUP

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

ROM PCI/ISA BIOS (2A69KP60)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	Power - Supply Type	: AT
EDO DRAM Speed Selection	: 60 ns	Auto Detect DIMM/PCI Clk	: Enabled
EDO CASx# MA Wait State	: 2	Spread Spectrum	: Disabled
EDO RASx# Wait State	: 2	CPU Warning Temperature	: Disabled
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge Time	: 3	Current CPU1 Temperature	: 49°C/120°F
SDRAM CAS latency Time	: 3	Current CPUFAN1 Speed	: 5000 RPM
SDRAM Precharge Control	: Disabled	IN0 (V) : 2.00 V	IN1 (V) : 2.00 V
DRAM Data Integrity Mode	: Non-ECC	IN2 (V) : 3.34 V	+ 5 V : 4.99 V
System BIOS Cacheable	: Disabled	+12 V : 12.03 V	-12 V :-12.15 V
Video BIOS Cacheable	: Disabled	5VSB(V): 4.99 V	VBAT(V) : 3.29 V
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	Esc : Quit	↑↓→← : Select Item
Delayed Transaction	: Disabled	F1 : Help	Pu/Pd/+/- : Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift)F2 : Color
IO Channel Check NMI	: Disabled	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Chipset Features Setup

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

AUTO CONFIGURATION:

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

EDO DRAM SPEED SELECTION:

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

EDO CASx# MA WAIT STATE:

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

EDO RASx# WAIT STATE:

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

SDRAM RAS-to-CAS DELAY:

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

SDRAM RAS PRECHARGE TIME:

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

SDRAM CAS LATENCY TIME:

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

DRAM DATA INTEGRITY MODE:

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

SYSTEM BIOS CACHEABLE :

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

VIDEO BIOS CACHEABLE:

Select Enabled allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

VIDEO RAM CACHEABLE:

Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

8 Bit I/O RECOVERY TIME:

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

16 Bit I/O RECOVERY TIME:

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

MEMORY HOLE AT 15-16M:

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

PASSIVE RELEASE:

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

DELAYED TRANSACTION:

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

AGP APERTURE SIZE (MB) :

The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

AUTO DETECT DIMM/PCI CLK :

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

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 CPU1 TEMPERATURE :

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

CURRENT CPUFAN1 SPEED :

This field display the current speed of the CPU fan, if your computer contains a monitoring system.

5-6. POWER MANAGEMENT SETUP

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

ROM PCI/ISA BIOS (2A69KP60)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function	: Disabled	** Reload Global Timer	Events **
Power Management	: User Define	IRQ (3-7, 9-15), NMI	: Disabled
PM Control by APM	: Yes	Primary IDE 0	: Disabled
Video Off Method	: DPMS	Primary IDE 1	: Disabled
Video Off After	: Standby	Secondary IDE 0	: Disabled
MODEM Use IRQ	: NA	Secondary IDE 1	: Disabled
Doze Mode	: Disable	Floppy Disk	: Disabled
Standby Mode	: Disable	Serial Port	: Enabled
Suspend Mode	: Disable	Parallel Port	: Disabled
HDD Power Down	: Disable		
Throttle Duty Cycle	: 62.5%		
PCI/VGA Act-Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Instant-Off		
Wake Up On LAN	: Enabled	Esc : Quit	↑↓→← : Select Item
IRQ 8 Break Suspend	: Disabled	F1 : Help	Pu/Pd/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Power Management Setup

This category determines how much power consumption for system after selecting below items. Default value is Disable. 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, Suspend Mode and Standby Mode. There are four available options : Disable, Min. Power Saving, Max. Power Saving, and User Define.

PM CONTROL BY APM:

When this item is set to be YES, the system BIOS will wait for APM's prompt before it enter any PM mode e.g. DOZE, STANDBY or SUSPEND. If APM is installed, & if there is a task running, even when the timer is timed out, the APM will not prompt the BIOS to put the system into 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.

VIDEO OFF AFTER:

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

MODEM USE IRQ:

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

DOZE MODE:

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

STANDBY MODE:

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

SUSPEND MODE:

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

HDD POWER DOWN:

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

THROTTLE DUTY CYCLE:

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

PCI/VGA ACT-MONITOR:

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

SOFT-OFF BY PWR-BTTN:

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

WAKE UP ON LAN:

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

IRQ 8 BREAK SUSPEND:

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

RELOAD GLOBAL TIMER EVENTS:

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

❶ IRQ (3-7, 9-15), NMI
❷ Primary IDE 0/1
❸ Secondary IDE 0/1
❹ Floppy Disk
❺ Serial Port
❻ Parallel Port

5-7. PNP/PCI CONFIGURATION

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

ROM PCI/ISA BIOS (2A69KP60)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

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

PNP/PCI CONFIGURATION

This section describes how to configure PCI bus system. This section covers technical items, which is strongly recommended for experienced users only.

PNP OS INSTALLED:

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

RESOURCE CONTROLLED BY:

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

RESET CONFIGURATION DATA:

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

IRQ # ASSIGNED TO:

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

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

DMA # ASSIGNED TO:

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

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

USED MEM BASE ADDR:

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

5-8. LOAD BIOS DEFAULTS

AUTO CONFIGURATION WITH BIOS DEFAULTS

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

```
Load BIOS Default ( Y / N ) ? Y
```

To use the BIOS defaults, change the prompt to "Y" and press < Enter >, the CMOS is loaded automatically when you power on the Prox-1660.

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 (2A69KP60)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard Parallel Port	: 378/IRQ7
IDE Primary Master PIO	: Auto	Parallel Port Mode	: SPP
IDE Primary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
Init Display First	: PCI Slot		
POWER ON Function	: Button Only		
KBC input clock	: 8 MHz		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3		
UART Mode Select	: Normal		

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

INTEGRATED PERIPHERALS

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

IDE HDD BLOCK MODE:

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

IDE PRIMARY MASTER/SLAVE PIO:

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

IDE PRIMARY MASTER/SLAVE UDMA:

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

ON-CHIP PRIMARY PCI IDE:

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

USB KEYBOARD SUPPORT:

Select Enabled if you have a USB Keyboard.

INIT DISPLAY FIRST:

Initialize the AGP video display before initializing any other display device on the system. Thus the AGP display becomes the primary display.

ONBOARD FDC CONTROLLER:

Select Enabled unless you installed an add-in FDC.

ONBOARD SERIAL PORT 1/PORT 2:

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

ONBOARD PARALLEL PORT:

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

PARALLEL PORT MODE:

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

5-11. PASSWORD SETTING

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

TO SET A PASSWORD

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

Type the password up to eight characters, and press the < Enter > key. 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.

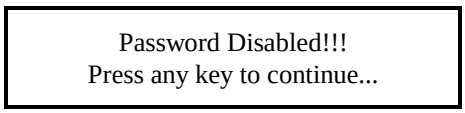
To change the original password, enter CMOS setup Menu again, you will be asked to enter the original password, then select "PASSWORD SETTING" and press enter. The system will asked you to enter a password, then you may enter new password and re-type new password for confirmation.

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

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

TO DISABLE THE PASSWORD

Upon entering the CMOS setup Menu, the system will ask you to enter the original password. Type the original password, select "PASSWORD SETTING" and you will be prompted to enter a password. Instead of typing a new password, press the enter key and a message will appear at the center of the screen.



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 (2A69KP60)
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:

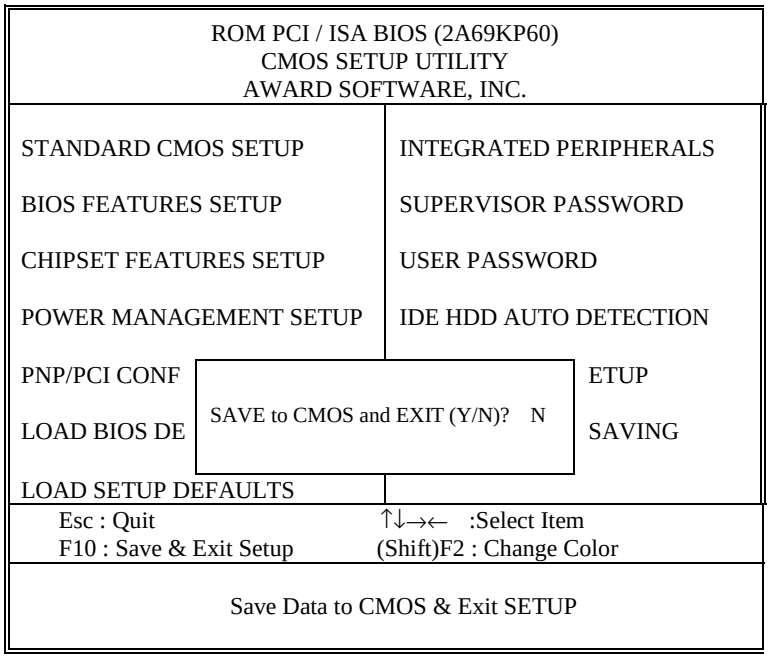
   “SELECT PRIMARY MASTER OPTION (N=SKIP):N”

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

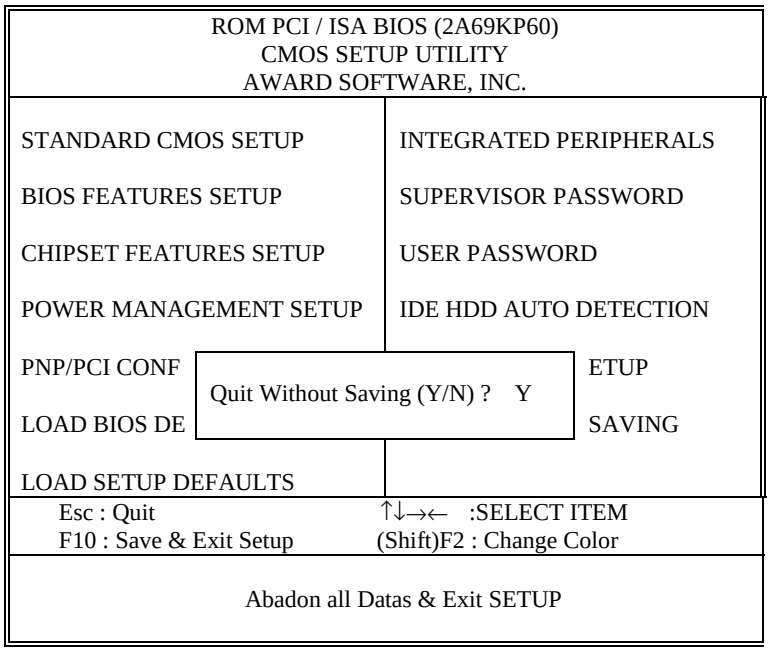
When you have completed adjusting all the settings as required, you must have these setting into the CMOS RAM. Select “SAVE & EXIT SETUP” and press<Enter>, as the display shown on below:



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:



APPENDIX

A

EXPANSION BUS

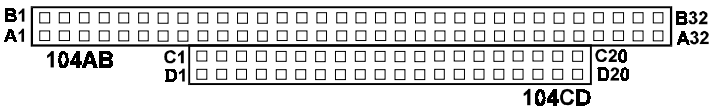
This appendix indicates the pin assignments.

Section includes:

- PC104 BUS Pin Assignment
- PCI BUS Pin Assignment

PC-104 CONNECTOR PIN ASSIGNMENT

104AB, 104CD : PC-104 Connector



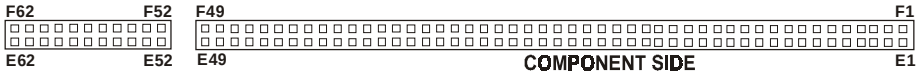
The PC-104 can support multi-pieces of PC-104 modules. It has two connectors : one (104AB) consists of 64 pin; the other one (104CD) consists of 40 pin, both of them are dual-in-line headers

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

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 edge connector is divided into two sets: one consists of 98-pin; the other consists of 22-pin. The pin assignments are as follows :



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

TECHNICAL SUMMARY

APPENDIX

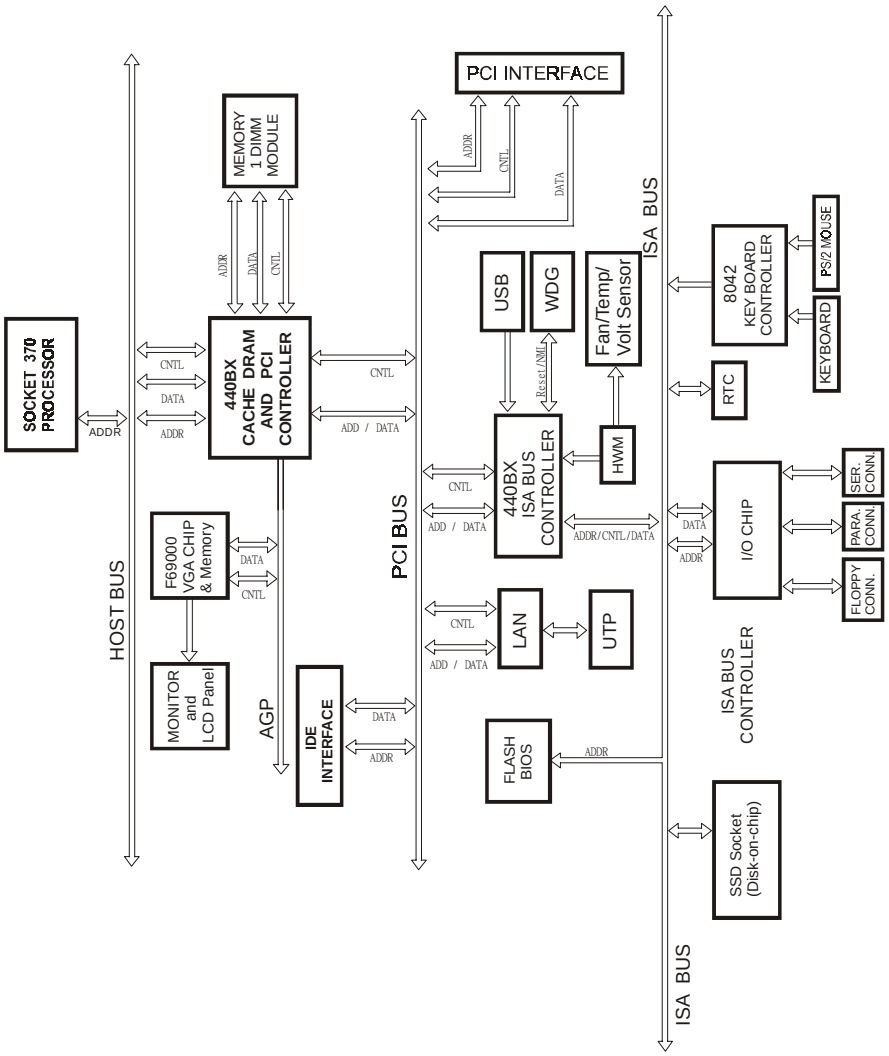
B

This section introduce you the maps concisely.

Section includes:

- Block Diagram
- Interrupt Map
- RTC & CMOS RAM Map
- Timer & DMA Channels Map
- I / O & Memory Map

BLOCK DIAGRAM



INTERRUPT MAP

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

RTC & CMOS RAM MAP

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

TIMER & DMA CHANNELS MAP

Timer Channel Map :

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

DMA Channel Map :

DMA Channel	Assignment
0	Available
1	IBM SDLC
2	Floppy Disk adapter
3	Channel-3 Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

I/O & MEMORY MAP

Memory Map :

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

APPENDIX

C

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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