IAC-H668 SERIES

HALF-SIZE SBC
WITH VGA AND LAN FOR
SOCKET 370 PENTIUM III PROCESSOR

User's Manual

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CHAPTER 1.   General Information

1.1   Introduction

The IAC-H668 Series is a half-size Pentium® III/Celeron Single Board Computer (SBC) CPU card. With integrated Intel 82562EN 10/100Base-TX Ethernet chip, the IAC-H668 is targeting on the rapid growing networking, and telecommunication markets. The supporting Intel DVMT (Dynamic Video Memory Technology) makes IAC-H668 suitable for advanced 2D/3D graphic applications.

Its 8-layer printed circuit board combining with noise-tolerant and low power consumption CMOS technology enables the IAC-H668 Series to withstand any harsh industrial environments very well.

The IAC-H668 Series SBC comes with enhanced hardware monitoring that monitors system and CPU temperature, system voltages, and CPU/chassis fan speeds to prevent unexpected system failures by warning the user of adverse conditions.   The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen or stopping the HDD spindle motor to conserve energy.

Other standard features include two serial ports (one RS-232 and one RS-232/422/485 selectable), one multi-mode (ECP/EPP/SPP) parallel port, one floppy drive controller, and one PS/2 keyboard / mouse interface. The built-in PCI Enhanced IDE controller supports two IDE devices in Ultra ATA 100/66/33 bus master modes.

Carefully designed to be a feature-rich CPU card at a reasonable price, this board elegantly meets industry needs and saves time and money by waiving the hassle of going through the extra effort and cost of additional I/O cards. Being standards-compliant, it is proved to be a quality product with high performance and stability in a long run.

1.2   Features

- Various FSB (Front Side Bus) Support: 66/100/133MHz
- Integrated VGA/LAN Functions (Intel 815E Chipset)
- DVMT (Dynamic Video Memory Technology) Enables Optimum Graphic And Memory Performance For 2D/3D Graphics
- Display Resolution Up to 1600*1200*256 Colors @ 85Hz
- Remote Control Ability by Wake on LAN/Wake on MODEM Function
- PC/104 Expansion Possible
- High Reliability by Enhanced Hardware Monitoring Function
- Multiple Serial Port Type (RS-232/422/485) For Flexible Serial Communication
- 4 USB Ports Supporting Extra Peripheral Connections

1.3   Specification

IAC-H668 Series

Processor	Intel℠ Pentium III/Celeron™ Processor in Socket 370 (66/100/133 MHz)
Chipset	Intel℠ 815E chipset, IT8712F I/O Chipset, IT8888 PCI to ISA Bridge
System Memory / RAM	One 168-pin DIMM socket, support 100/133 MHz SDRAM
BIOS	Award℠ licensed BIOS
Flash Memory Disk	Reserved socket for DiskOnChip from M-System, support up to 288 MB flash memory disk
Graphics Controller	Internal graphic controller with Intel's Dynamic Video Memory Technology, resolution up to 1600 x 1200 x 256 colors @ 85 Hz, with VGA connector
Ethernet Controller	Intel 82562ET chip, support 10/100 Base-Tx Ethernet, Wake On LAN supported via ATX power supply
IDE Drive Interface	One PCI IDE port that support up to two IDE devices and Ultra ATA/100/66/33
Floppy Drive Interface	One FDD port, support up to two floppy devices
Serial Port	Two COM ports, one RS-232 and one RS-232/422/485
Parallel Port	One multi-mode parallel port (SPP / EPP / ECP)
Bus Interface	ISA bus and PC/104 expansion bus
RTC	Internal RTC with Li battery
Keyboard/Mouse	6-pin mini-Din PS/2 keyboard/mouse connector and 5-pin keyboard header
Watchdog Timer	16-level time-out intervals
Digital I/O	4-bit digital I/O header
Universal Serial Bus	Support 4 USB ports
IR Interface	Support IrDA header
Health Monitoring	Enhanced hardware monitor functions
Power interface	4-pin Aux-power connector and 4-pin ATX feature connector
Operating Temperature	0 ℃~60 ℃
Storage Temperature	-20 ℃~70 ℃
Humidity	5 ℉~95℉ RH, non-condensing
Dimensions	185 x 122 mm ± 0.5 mm
EMI/EMS	EN 50081-1/1994>EN 55022/1997> EN 61000-3-2/1995>EN 61000-3-3/1995, EN 50082-1/1994>IEC 1000-4-2/1995, IEC 1000-4-3/1995, IEC 1000-4-4/1995
Ordering Information	IAC-H668A: VGA/LAN

1.4   Unpack your IAC-H668 and Accessory

Before you begin to install your card, please make sure that you received the following materials as listed below:

● IAC-H668 Series SBC x 1 pc   Single Board Computer
● Keyboard and Mouse Cable x 1 pc   6pin Mini-Din PS/2 connector to 6pin PS/2 K/B
                                                          +6pin PS/2 Mouse Cable
● LPT/COM cable x 1 pc   26-pin to 25-pin with 10-pin to 9-pin D-Sub Cable
● ATX Feature Cable x 1 pc   4-pin 40cm cable
● IDE Cable x 1 pc   DMA-66 80pin IDE Cable
● FDD Cable x 1 pc   34 to 34-pin Standard Header Flat Ribbon Cable
● Driver Utility CD-ROM x 1 pc   Drivers & Utilities
● User's Manual x 1 pc   This User's Manual

1.5　Board Layout
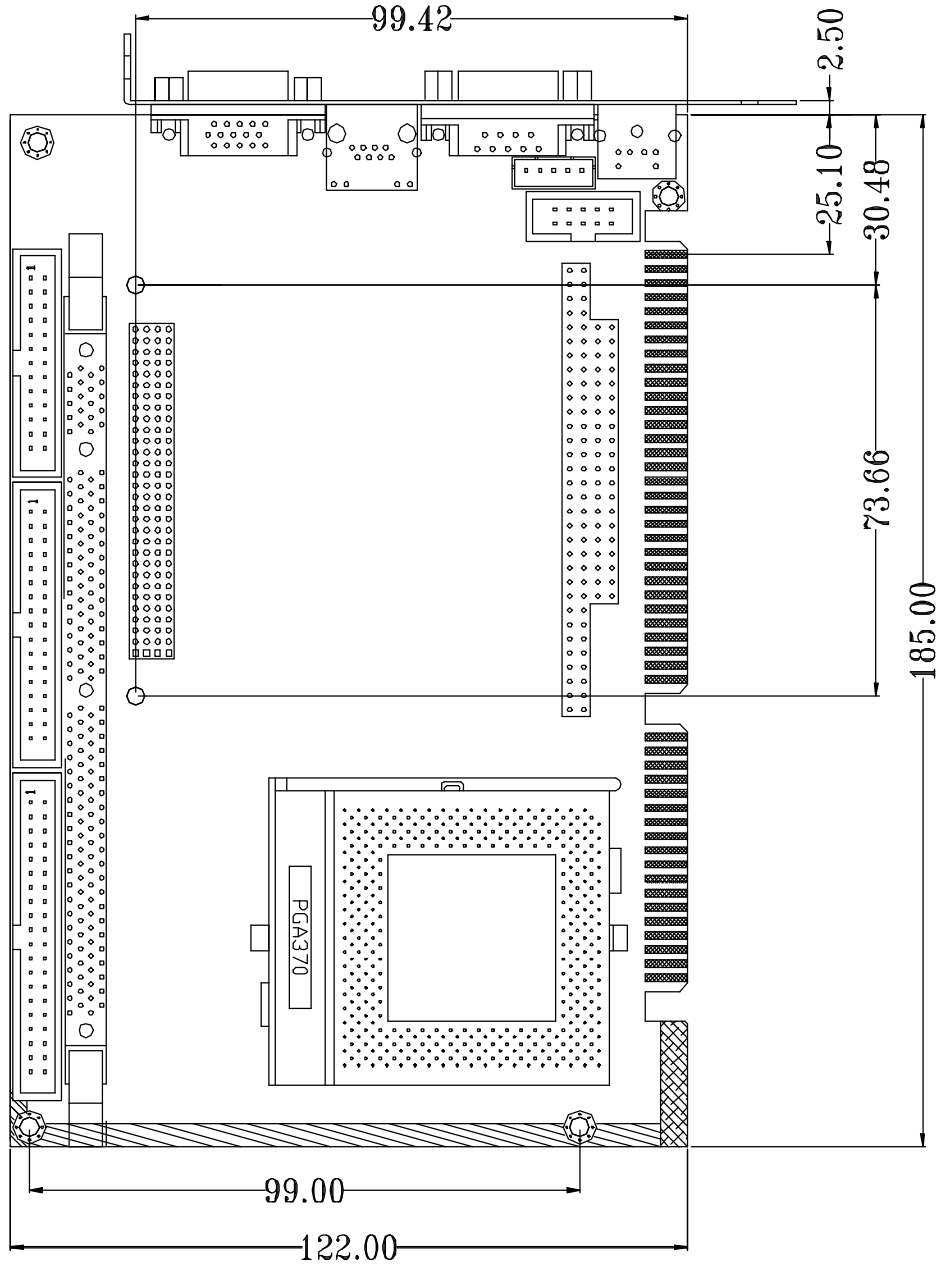
CHAPTER 2.　Installation

2.1　Hardware Setup and Installation

2.1.1　CPU Installation and Upgrading
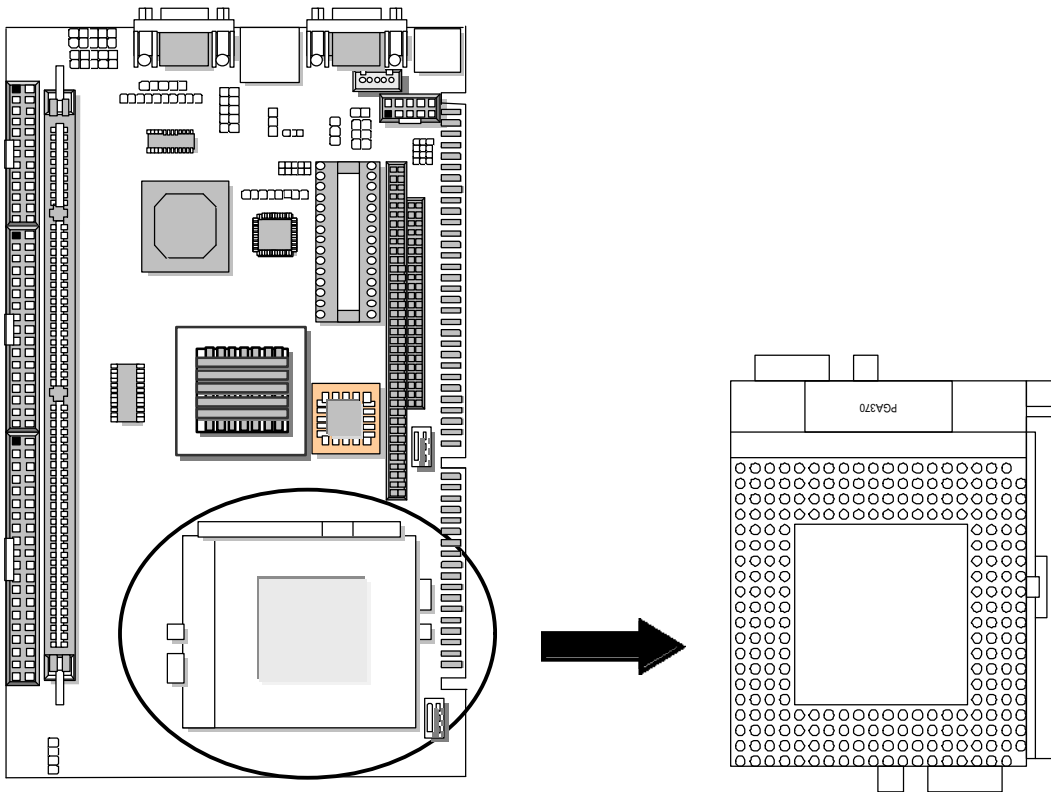
Step 1　Locate the ZIF socket and open it by first pulling the lever of socket upward.
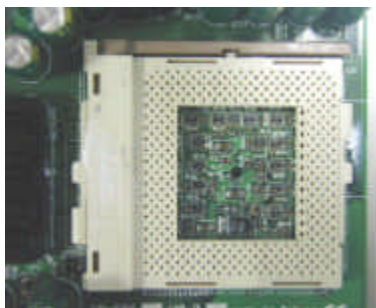
Step 2　Insert the CPU into the socket. Please keep the lever right angle when inserting CPU.

Step 3   When inserting the CPU please note the correct orientation as shown.
The notched corner should point toward the end of the lever.
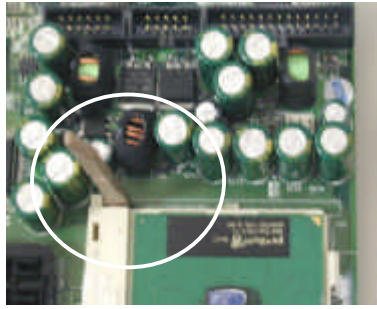
Step 4   Push the lever down to close the socket.

Step 5   Attach the heatsink onto the CPU.

Step 6   Push the clip of heatsink downward to hock the ear of socket firmly.

Step 7   Finally attach the fan cable to the CPU fan header.
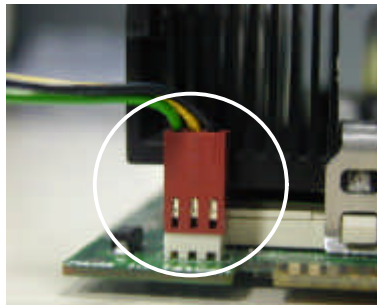
2.1.2 System Memory Installation

Step 1 Open latches of DIMM socket.
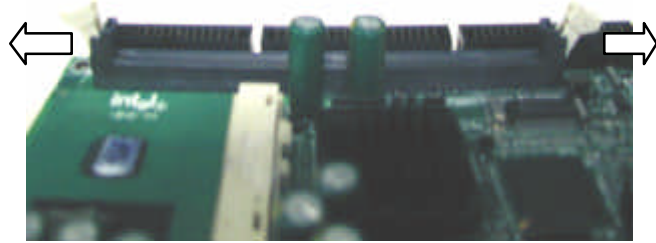
Step 2 Insert the RAM module into the DIMM socket.
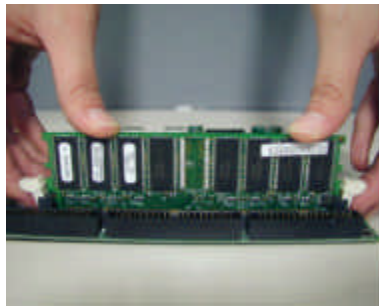
Step 3 Press the latches into the notches of the RAM module.
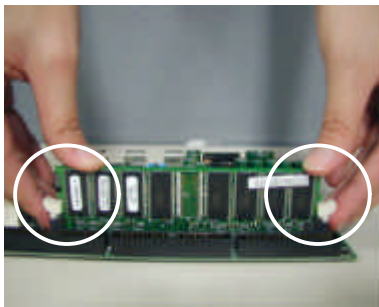
2.1.3 DiskOnChip Installation

Please make sure the central polarization key on the socket, and place the DiskOnChip as the same direction.
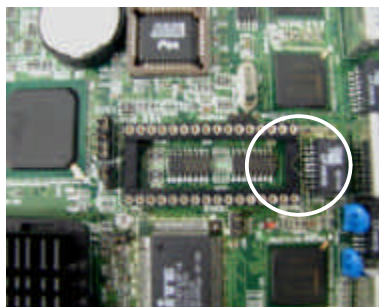
2.2 Jumper Settings and Connectors

2.2.1 Board Outline of IAC-H668
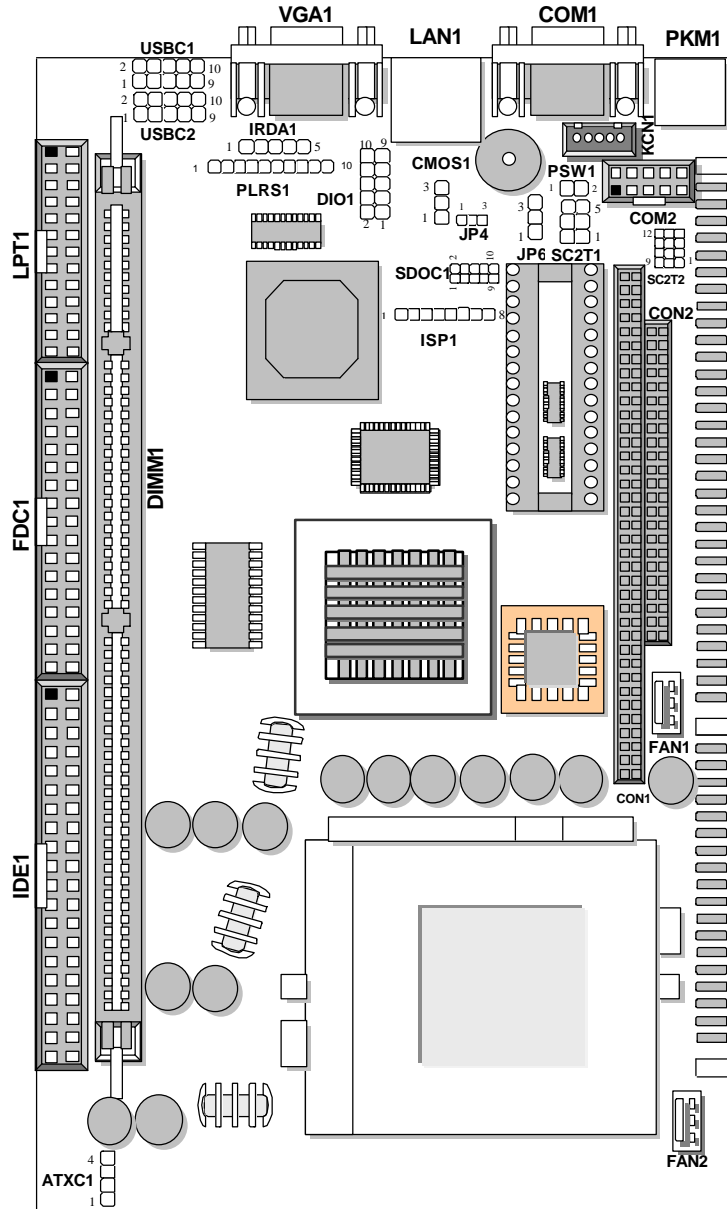
2.2.2   Jumper Setting Summary of IAC-H668

LOCATION	FUNCTION
CMOS1	Clear CMOS
SDOC1	Select DiskOnChip (Flash Disk) Address
SC2T1 / SC2T2	Select COM2 Type
JP4, JP6	Factory Use Only

● **CMOS1:Clear CMOS**

COMS1 States	CMOS1
Normal (Default)	1-2
CLEAR CMOS	2-3
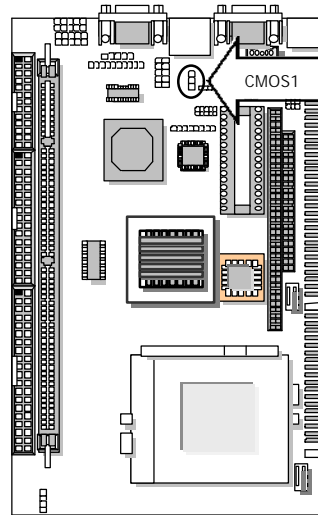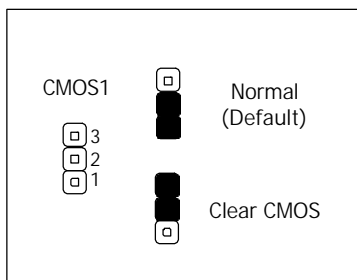
CMOS1

3
2
1

Normal
(Default)

Clear CMOS

Note: If you forget your password, the only way to solve this problem is to discharge the CMOS memory by turning power off and placing a shunt on the COMS1 (2-3) for 5 seconds, then removing the shunt.

● **SDOC1: Select DiskOnChip (Flash Disk) Address**

Flash Disk Address	SDOC1
CC00~CDFFH	1-2,9-10
D000~D1FFH	3-4,7-8
D400~D5FFH	3-4,9-10
D800~D9FFH	5-6,7-8
DC00~DDFFH	5-6,9-10
OFF (Default)	2-4,8-10
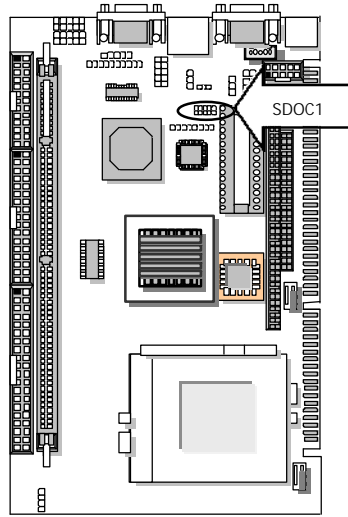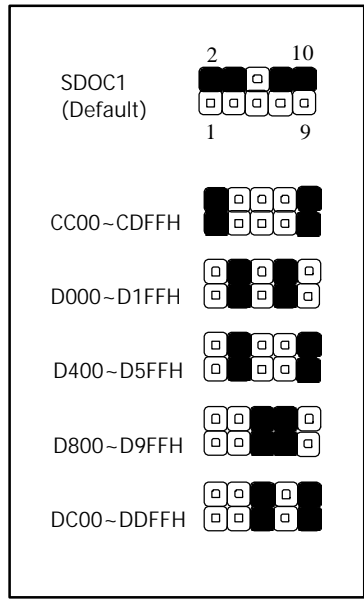
● **SC2T1/SC2T2: Select COM2 Type**

COM2 Type	SC2T2	SC2T1
RS-232 (Default)	1-5,2-6,3-7,4-8	1-2
RS-422	5-9,6-10,7-11,8-12	3-4
RS-485	5-9,6-10,7-11,8-12	5-6
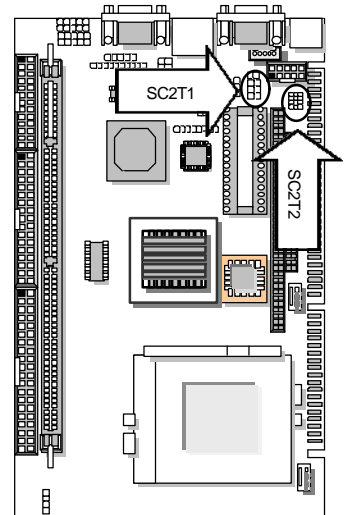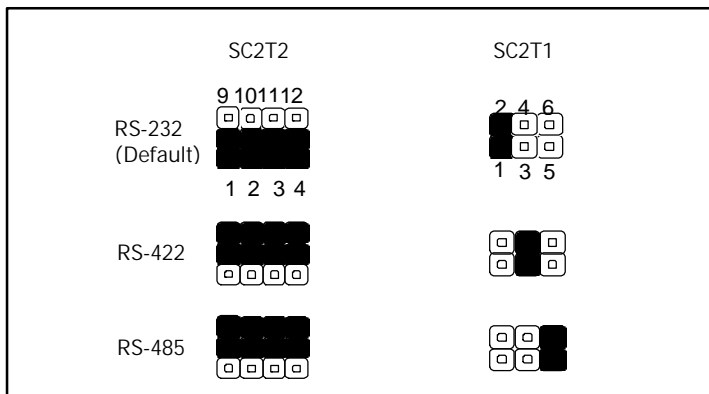
2.2.3 I/O Connector Summary

Connector	Function
ATXC1	ATX Power Expansion (Header)
PSW1	ATX Power ON Switch (Header)
KCN1	5pin Keyboard Cable Connector
PKM1	PS/2 Keyboard & Mouse Connector (Mini Din)
IPS1	Program ISP GAL Connector (Factory Only)
PLRS1	Connector for Power LED, Reset, Speaker Connector, HD LED
COM1	RS-232 Serial Port#1 Connector (D-Sub)
FAN1	System FAN Connector
FAN2	CPU FAN Connector
IRDA1	Consumer Remote Control IR (CIR)
VGA1	VGA Connector
USBC 1,2	USB Header
COM2	RS-232 Serial Port#2 Connector (Header)
IDE1	Primary IDE Cable Connector (Header)
DIO1	4bit Digital I/O Connector
LPT1	Parallel Port Connector (Header)
FDC	Floppy Cable Connector (Header)
LAN1	LAN Connector
CON1	PC/104 Connector
CON2	PC/104 Connector

● **ATXC1: ATX Power Expansion Header**

PIN NO.	Description
1	Ground
2	5V Standby
3	Ground
4	Power ON
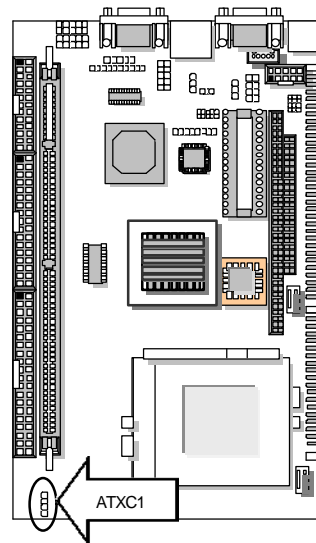
Note: To have full features from ATX power, the ATXC1 should be wired to the connectors with the same function on the Backplane. Please refer to the connector definition and description for more information.

● **PSW1: ATX Power ON Switch (Header)**

PIN NO.	Description
1	SWON-
2	Ground

PSW1

2
1
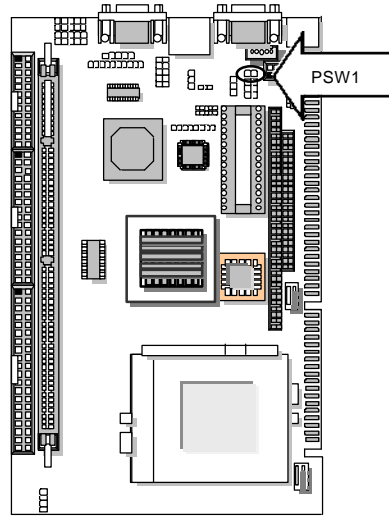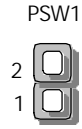
● **KCN1: 5pin Keyboard Cable Connector**

PIN NO.	Description
1	Keyboard Clock
2	Keyboard Data
3	NC
4	Ground
5	+5V

1   5

KCN1
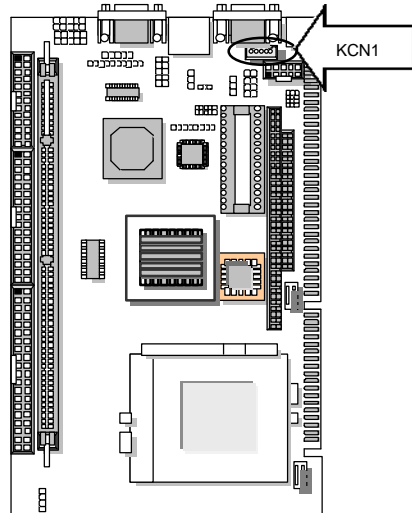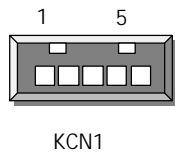
● **PKM1: PS/2 Keyboard & Mouse Connector(Mini Din)**

PIN NO.	Description
1	PS/2 Keyboard Data
2	PS/2 Mouse Data
3	Ground
4	VCC
5	PS/2 Keyboard Clock
6	PS/2 Mouse Clock

6   5
4   3
2   1

PKM1
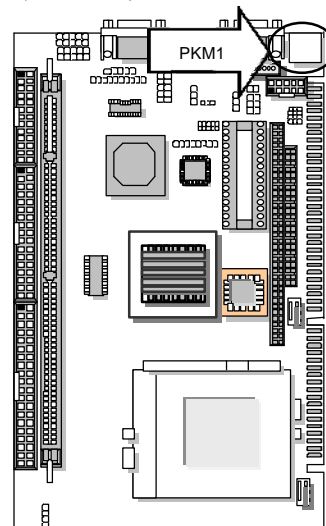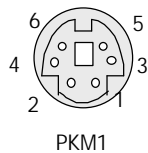
● **ISP1: Program ISP GAL Connector (Factory Only)**

PIN NO.	Description
1	Vcc
2	SDO
3	SDI
4	ISP
5	NC
6	MODE
7	Ground
8	SCLK

ISP1

1　　　　　8
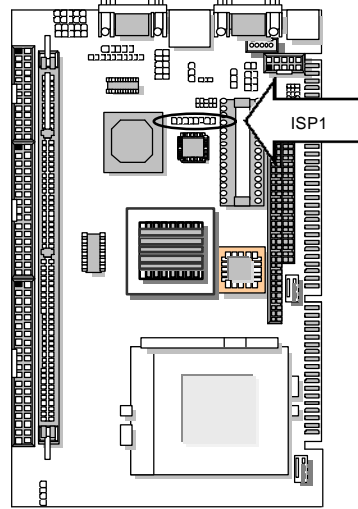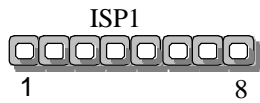
● **PLRS1: Power LED, Reset, Speaker Connector**

PIN NO.	Description
1	Power LED+
2	GND
3	HDD LED+
4	HDD LED-
5	RESET SW+
6	RESET SW-(GND)
7	External Speaker-
8	Internal Buzzer-
9	NC
10	External Speaker+

1　　　　　10
PLRS1
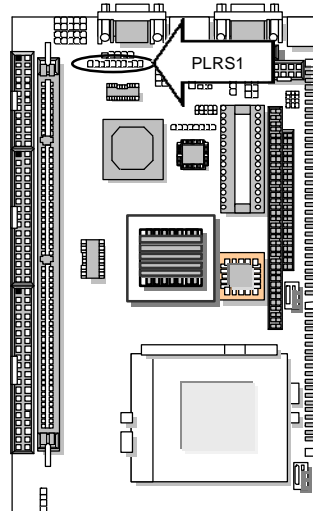
● **COM1: RS-232 Serial Port#1 Connector (D-Sub)**

PIN NO.	Description
1	Data Carrier Detect (DCDA#)
2	Receive Data (RXDA)
3	Transmit Data (TXDB)
4	Data Terminal Ready (DTRA#)
5	Ground (GND)
6	Data Set Ready (DSRA#)
7	Request To Send (RTSA#)
8	Clear To Send (CTSA#)
9	Ring Indicator (RIA#)

COM1

1　　5

6　　9
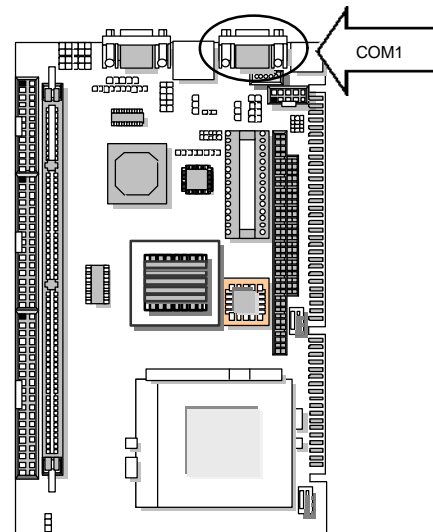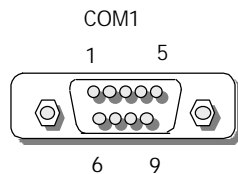
● **FAN1: System FAN Connector**

PIN NO.	Description
1	Ground
2	+12V
3	Fan Status Signal

FAN1
1
3

FAN1
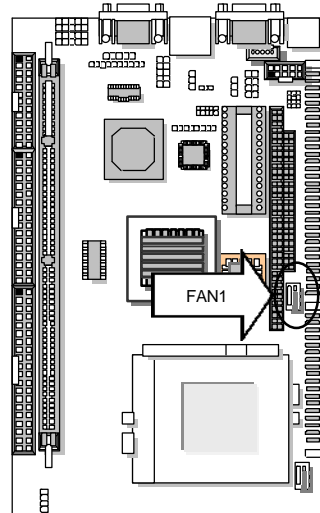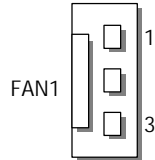
● **FAN2: CPU FAN Connector**

PIN NO.	Description
1	Ground
2	+12V
3	Fan Status Signal

FAN2
1
3

FAN2
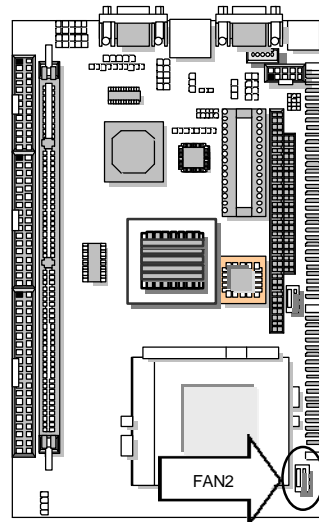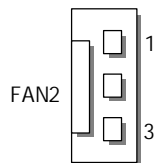
● **IRDA1: Consumer Remote Control IR (CIR)**

PIN NO.	Description
1	+5V
2	NC
3	CIRRX
4	Ground
5	CIRTX

IRDA1
1   5

IRDA1
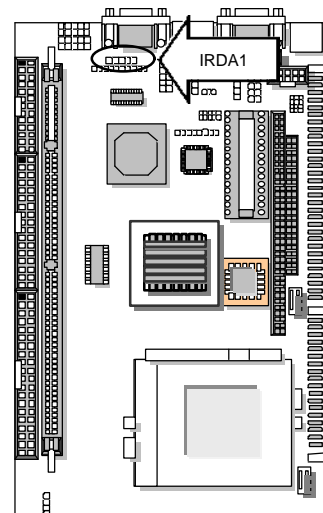
● **VGA1: VGA Connector**

PIN NO.	Description
1	Red Color Signal
2	Green Color Signal
3	Blue Color Signal
4	NC
5	Ground
6	Ground
7	Ground
8	Ground
9	+5V
10	Ground
11	NC
12	DDC-DATA
13	H-Sync.
14	V-Sync.
15	DDC-CLK

VGA1
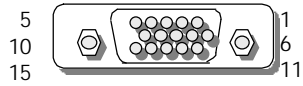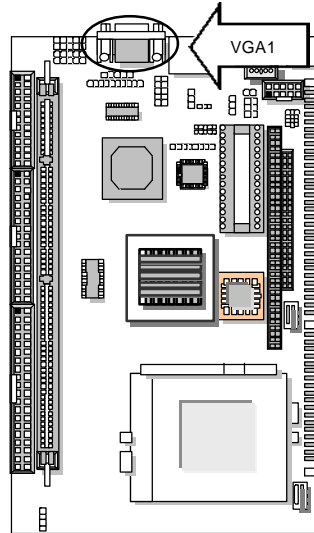
● **USB 1,2: USB Header**

PIN NO.	Description			
	USBC1		USBC2	
	USB1	USB2	USB3	USB4
1	Standby 5V	Standby 5V	Standby 5V	Standby 5V
2	USB0-	USB1-	USB2-	USB3-
3	USB0+	USB1+	USB2+	USB3+
4	USB GND	USB GND	USB GND	USB GND
5	USB GND	USB GND	USB GND	USB GND

USBC1

USBC2

USB1 USB2

USB3 USB4
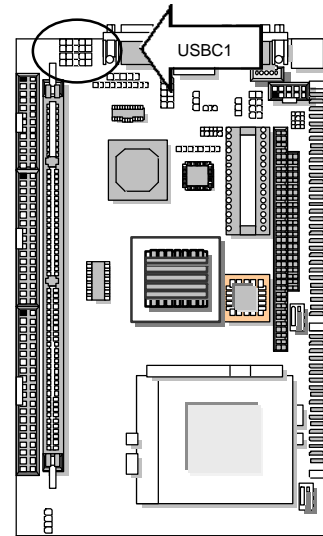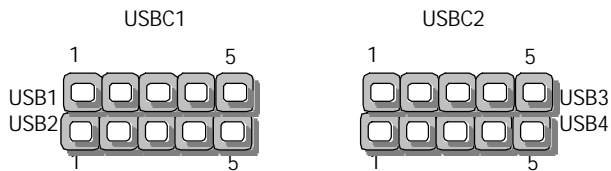
● **COM2: RS-232 Serial Port#2 Connector (Header)**

PIN NO.	Description		
	RS-232	RS-422	RS-485
1	Data Carrier Detect (DCDB#)	Transmit Data- (TXD-)	Data -
2	Receive Data (RXDB)	Transmit Data+ (TXD+)	Data +
3	Transmit Data (TXDB)	Receive Data+ (RXD+)	NC
4	Data Terminal Ready (DTRB#)	Receive Data- (RXD-)	NC
5	Ground	NC	NC
6	Data Set Ready (DSRB #)	NC	NC
7	Request To Send (CTSB#)	NC	NC
8	Clear To Send (CTSB#)	NC	NC
9	Ring Indicator (RIB #)	NC	NC
10	NC	NC	NC
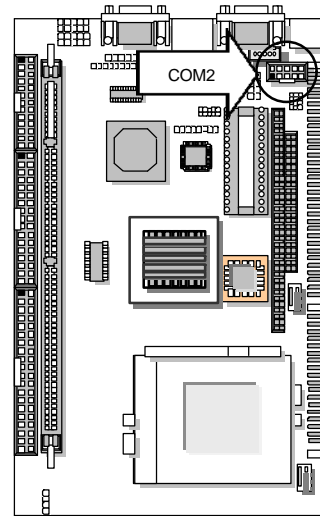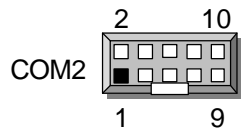
● **IDE1: Primary IDE Cable Connector (Header)**

PIN NO.	Description	PIN NO.	Description
1	Reset #	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	NC
21	DMA REQ	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	NC
29	DMA ACK#	30	Ground
31	Interrupt	32	NC
33	SA1	34	DMA 66 Detect
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD Active LED#	40	Ground
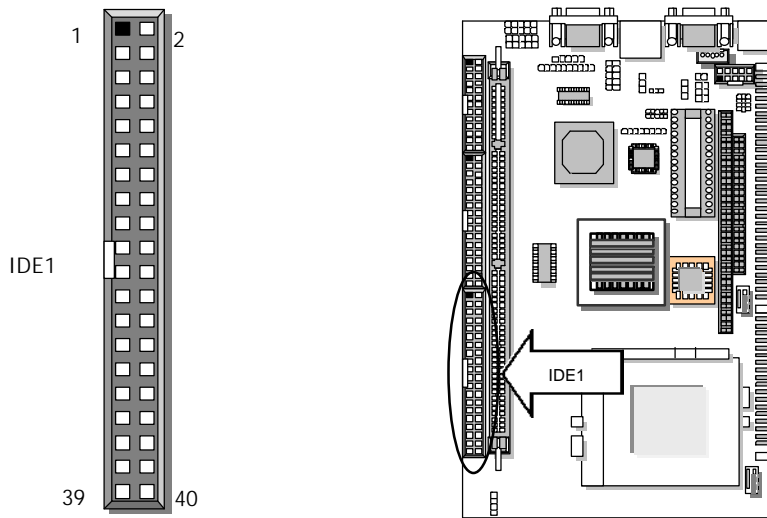
● DIO1: 4bit Digital I/O Connector

PIN NO.	Description	PIN NO.	Description
1	In0	2	Out0
3	In1	4	Out1
5	In2	6	Out2
7	In3	8	Out3
9	GND	10	GND

DIO1
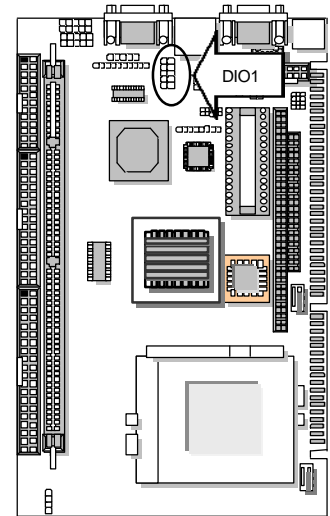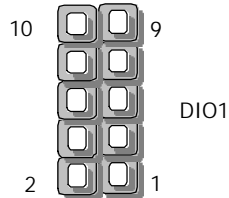
● LAN1: LAN CONNECTOR

Pin No.	Description
1	TX+
2	TX-
3	RX+
4	NC
5	NC
6	RX-
7	NC
8	NC

LAN1
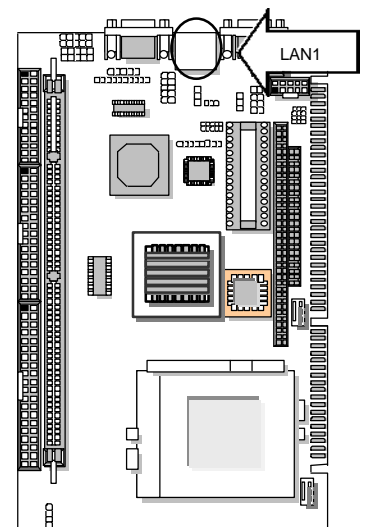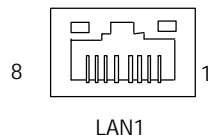
● LPT1: Parallel Port Connector (Header)

PIN NO.	Description	PIN NO.	Description
1	Strobe #	2	Auto Form Feed #
3	Data 0	4	Error #
5	Data 1	6	Initialize #
7	Data 2	8	Printer Select In #
9	Data 3	10	Ground
11	Data 4	12	Ground
13	Data 5	14	Ground
15	Data 6	16	Ground
17	Data 7	18	Ground
19	Acknowledge#	20	Ground
21	Busy	22	Ground
23	Paper Empty	24	Ground
25	Printer Select	26	NC
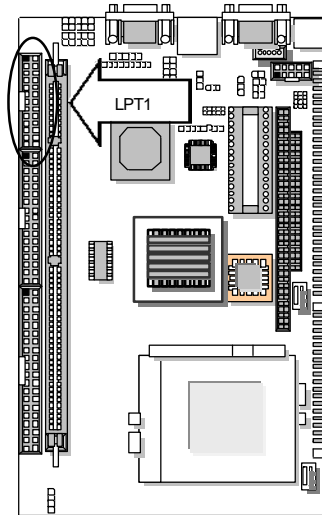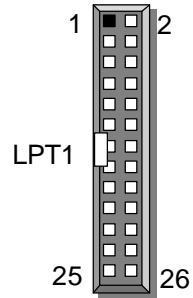
● **FDC1:Floppy Cable Connector (Header)**

PIN NO.	Description	PIN NO.	Description
1	Ground	2	Density Select
3	Ground	4	NC
5	Ground	6	NC
7	Ground	8	Index #
9	Ground	10	Motor Enable A #
11	Ground	12	Drive Select B #
13	Ground	14	Drive Select A #
15	Ground	16	Motor Enable B #
17	Ground	18	Direction #
19	Ground	20	Step #
21	Ground	22	Write Data #
23	Ground	24	Write Gate #
25	Ground	26	Track 0 #
27	Ground	28	Write Protect #
29	NC	30	Read Data #
31	Ground	32	Head Side Select #
33	NC	34	Disk Change #
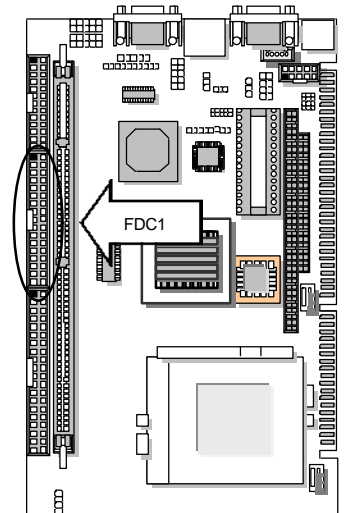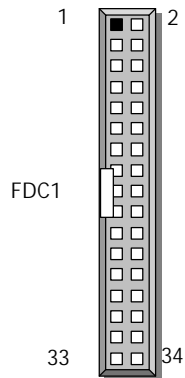
CON1, CON2: PC/104 Connector

Pin No.	Description			
	CON1		CON2	
	Row A	Row B	Row C	Row D
1	IOCHCK#	Ground	Ground	Ground
2	SD7	RSTDRV	SBHE#	MEMCS16#
3	SD6	+5V	LA23	IOCS16#
4	SD5	IRQ9	LA22	IRQ10
5	SD4	-5V	LA21	IRQ11
6	SD3	DRQ2	LA20	IRQ12
7	SD2	-12V	LA19	IRQ15
8	SD1	0 WS#	LA18	IRQ14
9	SD0	+12V	LA17	DACK0#
10	IOCHRDY	NC	MEMR#	DRQ0
11	AEN	SMEMW#	MEMW#	DACK5#
12	SA19	SMEMR#	SD8	DRQ5
13	SA18	IOW#	SD9	DACK6#
14	SA17	IOR#	SD10	DRQ6
15	SA16	DACK3#	SD11	DACK7#
16	SA15	DRQ3	SD12	DRQ7
17	SA14	DACK1#	SD13	+5V
18	SA13	DRQ1	SD14	MASTER#
19	SA12	REFRESH#	SD15	Ground
20	SA11	SYSCLK	NC	Ground
21	SA10	IRQ7	---	---
22	SA9	IRQ6	---	---
23	SA8	IRQ5	---	---
24	SA7	IRQ4	---	---
25	SA6	IRQ3	---	---
26	SA5	DACK2#	---	---
27	SA4	TC	---	---
28	SA3	BALE	---	---
29	SA2	+5V	---	---
30	SA1	OSC	---	---
31	SA0	Ground	---	---
32	Ground	Ground	---	---
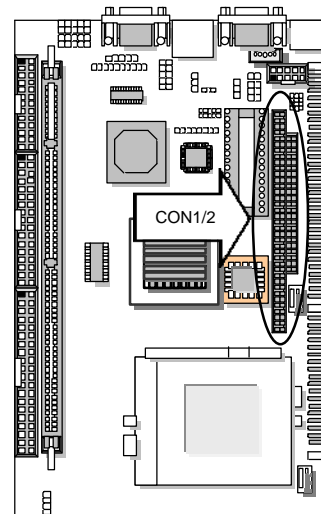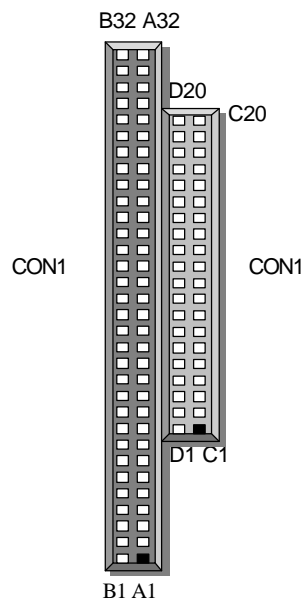
CHAPTER 3.　BIOS Setup

Award's ROM BIOS provides a built-in Setup program that allows user to modify the basic system configuration and settings. The modified data will be stored in a battery-backed CMOS RAM so that these data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM stay unchanged unless there is configuration change in the system, such as hard drive replacement or new equipment is installed.

3.1　Running AWARD BIOS

The Setup Utility is stored in the BIOS ROM. When the power of the computer system is turned on, a screen message appears to give you an opportunity to call up the Setup Utility; while the BIOS will enter the Power On Self Test (POST) routines.   The POST routines perform various diagnostic checks while initializing the board hardware. If the routines encounter an error during the tests, the error will be reported either with a series of short beeps or an error message on the screen display. There are two kinds of error: fatal or non-fatal. The system can usually continue the boot up sequence with non-fatal errors.   Non-fatal error messages usually appear on the screen along with the following instructions:

" Press <F1> to RESUME "

Write down the message and press F1 key to continue the boot up sequence. After the POST routines are completed, the following message appears:

" Press DEL to enter SETUP "

<u>Entering Setup</u>

Turn on the power of the computer system and press <Del> immediately. If you don't have the chance to respond, reset the system by simultaneously typing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the ' Reset ' button on the system cabinet. You can also restart by turning the system OFF then ON.

3.2　CMOS Setup Utility

To access the AWARD BIOS SETUP program, press the <DEL> key. The screen display will appears as:

CMOS Setup Utility – Copyright © 1984-2001 Award Software

✎ Standard CMOS Features	✎ Frequency/Voltage Control	
✎ Advanced BIOS Features	Load Fail-Safe Defaults	
✎ Advanced Chipset Features	Load Optimized Defaults	
✎ Integrated Peripherals	Set Supervisor Password	
✎ Power Management Setup	Set User Password	
✎ PnP/PCI Configurations	Save & Exit Setup	
✎ PC Health Status	Exit Without Saving	
✎		

Esc　: Quit	🌡 🖰 ☾ ↦　　: Select Item
F10　: Save & Exit Setup	

Time, Date, Hard Disk Type....

This screen provides access to the utility's various functions.

Listed below are explanations of the keys displayed at the bottom of the screen:

<ESC>: Exit the utility.

< ↓ ⇥ ☾ ≋ >: Use arrow keys ↓ ⇥ ☾ ≋ to move the cursor to your desired selection.

<F10>: Save all changes made to Setup and exit program.

<Shift> <F2>: Change background and foreground colors.

Standard CMOS Features: Use this menu for basic system configurations.

Advanced BIOS Features: Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features: Use this menu to change the values in the chipset registers and optimizes your system's performance.

Integrated Peripherals: Use this menu to specify your settings for integrated peripherals.

Power Management Setup: Use This Menu to specify your settings for power management.

PnP/PCI Configuration: This entry appears if your system supports PnP/PCI.

PC Health Status: This entry shows your PC health status.   If Hardware Monitor Chipset is installed.

Frequency / Voltage Control: Use this menu to specify your settings for frequency / voltage control.

Load Fail-Safe Defaults: Use this menu to load the BIOS default values for the minimal/settings for optimal performance system operations.

Load Optimized Defaults: Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Set Supervisor Password: Use this menu to set Supervisor Passwords.

Set User Password: Use this menu to set User Passwords.

Save & Exit Setup: Save CMOS value changes to CMOS and exit setup.

Exit Without Saving: Abandon all CMOS value changes and exit setup.

3.3   Standard CMOS Features

When you select the "STANDARD CMOS SETUP" on the main program, the screen display will appears as:

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Standard CMOS Features

Date (mm:dd:yy)	Thu, Apr 17. 2000	Item Help
Time (hh:mm:ss)	16 : 54 : 33	Menu Level ⌀
⌀ IDE Primary Master	None	Change the day,
⌀ IDE Primary Slave	None	month , year and
		century.
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	260096K	
Total Memory	261120K	

The Standard CMOS Setup utility is used to configure the following components such as date, time, hard disk drive, floppy drive, display and memory. Once a field is highlighted, on-line help information is displayed in the left bottom of the Menu screen.

Date: the date format is "Date (mm:dd:yy)" week, month, date, year

Time: The time format is Time (hh:mm:ss)
Use 24-hour clock format (for p.m. time, add 12 to the hour number, e.g. you would enter 4:30 p.m. as 16:30).

When you select the "STANDARD CMOS SETUP" on the main program, the screen display will appears as:

IDE Primary Master / IDE Primary Slave: Press PgUp / <+> or PgDn / <-> to select Manual, None, Auto type.   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 Manual to define your own drive type manufacturer.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

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"

Here is a brief explanation of drive specifications:

Access Mode: The settings are Auto, Normal, Large, and LBA.
Cylinder: Number of cylinders
Head: Number of heads
Precomp: Write precom.
Landing Zone: Landing Zone
Sector: Number of sectors

Drive A/B: The two items allow you to set the type of floppy drivers installed. Available options are "None", "360K, 5.25in", "720k, 3.5in", "1.44M, 3.5in", "2.88M, 3.5in". Default value for Drive A is "1.44M, 3.5in", and for Drive B is "None".

Video: This item allows you to set the type of video card, Available option are "EGA/VGA", "CGA40", "CGA80", and "MONO". Default value is "EGA/VGA".

Halt on: This item allows you to "set the type of errors that will cause system halt on. Availbale options are "All Errors", "No Errors", "All, But Keyboard", "All, But Diskette", and "All, But Diskette", and "All, But Disk/Key". Default value is "All Errors".

Base/Extended/Total Memory: The three items show the memory status of your system (read only)

3.4 Advanced BIOS Features

When you select "Advanced BIOS FEATURES" on the main program, the screen display will appears as:

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Advanced BIOS Features

			Item Help
Anti-Virus Protection	Disabled		Menu Level
CPU Internal Cache	Enabled		Allow you to choose the
External Cache	Enabled		VIRUS warning feature
CPU L2 Cache ECC Checking	Enabled		for IDE Hard Disk boot
Processor Number Feature	Enabled		sector protection. If
Quick Power On Self Test	Enabled		this function is enabled
First Boot Device	Floppy		and someone attempt
Second Boot Device	HDD-0		to write data into this
Third Boot Device	LS120		area, BIOS will show a
Boot Other Device	Enabled		warning message on
Swap Floppy Drive	Disabled		screen and alarm beep.
Boot Up Floppy Seek	Disabled		
Boot Up NumLock Status	On		
Gate A20 Option	Fast		
Typematic Rate Setting	Disabled		
X Typematic Rate (Chars/Sec)	6		
X Typematic Delay (Msec)	250		
Security Option	Setup		
OS Select For DRAM >64MB	Non-OS2		
Report No FDD For WIN 95	No		
Video BIOS Shadow	Enabled		
C8000 – CBFFF Shadow	Disabled		
CC000 – CFFFF Shadow	Disabled		
D0000 – D3FFF Shadow	Disabled		
D4000 – D7FFF Shadow	Disabled		
D8000 – DBFFF Shadow	Disabled		
DC000 – DFFFF Shadow	Disabled		
Small Logo (EPA) Show	Enabled		

: MoveEnter: Select +/-/PU/PD: Value F10: Save   Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe DefaultsF7: Optimized Defaults

The following explains the options for each of the features as listed in the above menu:

Anti-Virus Protection: The default setting of the Virus Warning is "Disabled". When it is enabled, any attempt to write to the boot sector and partition table will halt system and cause a warning message to appear. If this happens, you can use an anti-Virus utility on a virus free, bootable floppy diskette to reboot, clean and investigate your system.

CPU Internal Cache: The default setting is "Enabled". This setting enables the CPU internal cache.

External Cache: The default setting is "Enabled". This setting enables the external cache.

CPU L2 Cache ECC Checking: The default setting is "Enabled". When you select Enabled, memory checking is enabled when the external cache contains ECC SRAMs.

Processor Number Feature: The default setting is "Enabled". Enable to show the Pentium !!! CPU serial number.

Quick Power On Self-Test: The default setting is "Enabled". This speeds up the Power On Self Test (POST) by skipping some items that are normally checked during the full POST. If your system is functioning normally, you can choose this feature to speed up the booting process.

First / Second / Third / Other Boot Device: The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, and Disabled

Swap Floppy Drive: The default setting is "Disabled". This setting gives you an option to swap A and B floppy disks. Normally, the floppy drive A is the one at the end of the cable and drive B is at the other end. If you set this option to "Enabled", the Drive A will function as Drive B, and vice-versa under the DOS.

Boot Up Floppy Seek: The default setting is "Disabled". When enabled, the BIOS will check whether there is a floppy disk drive installed.

Boot Up NumLock Status: The default setting is "On". If set "Off", the cursor controls will function on the numeric keypad.

Gate A20 Option: The default setting is "Fast". This is the optimal setting for the CPU card. The other option is "Normal".

Typematic Rate Setting: The default setting is "Disabled". If enabled, you can set the typematic rate and typematic delay.

Typematic Rate (Chars/Sec) : This setting controls the speed at which the system registers the repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is "6" Chars/Sec.

Typematic Delay (M/Sec) : This setting controls the time between the display of the first and second characters. There are four delay choices: 250ms, 500ms, 750ms and 1000ms. The default setting is "250" ms.

Security Option: This setting controls the password in the main screen. The options are "Setup" and "System". Select "Setup" and it will protect the Setup Utility settings from being tampered with. Select "System" if you want to use password feature every time the system boots up. The default setting is "Setup". You can create your password by using the "SUPERVISOR/USER PASSWORD" utility on the main program screen.

OS Select For DRAM > 64MB: The default setting is "Non-OS2". Set to "OS2" if the system memory size is greater than 64MB and the operating system is OS/2.

Report No FDD For Win95: 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: The default setting is "Enabled" which will copy the VGA display card BIOS into system DRAM to improve performance.

C8000-CBFFF Shadow to DC000-DFFFF Shadow: The default setting for the shadow feature is "Disabled". When enabled, the ROM with the specific address is copied into system DRAM. It will also reduce the size of memory available to the system. After you have made your selection in the BIOS FEATURES SETUP, press the <ESC> key to go back to the main program screen.

SMALL LOGO (EPA) SHOW: The default setting is "Enable" which will display EPA logo (small) on the screen during POST process.

3.5 Advanced Chipset Features

When you select the "CHIPSET FEATURES SETUP" on the main program, the screen display will appears as:

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Advanced Chipset Features

		Item Help
SDRAM CAS Latency Time	3	
SDRAM Cycle Time Tras / Trc	Auto	Menu Level ✍
SDRAM RAS-to-CAS Delay	Auto	
SDRAM RAS Precharge Time	Auto	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
CPU Latency Timer	Disabled	
Delayed Transaction	Disabled	
AGP Graphic Aperture Size	64MB	
Power-Supply Type	AT	
OnChip Video Window Size	64MB	

⌂ ⬛ ☾ ↦:Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe DefaultsF7: Optimized Defaults

The following explains the options for each of the features as listed in the above menu:

SDRAM CAS Latency Time: When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer. The Default setting is "3"

SDRAM Cycle Time Tras/Trc: Select the number of SCLKs for an access cycle. The default setting is "auto".

SDRAM RAS-to-CAS Delay: This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance. This field applies only when synchronous DRAM is installed in the system.

SDRAM RAS Precharge Time: If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

System BIOS Cacheable: Selecting "Enabled" allows caching of the system BIOS ROM at F0000h – FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are "Enabled" and "Disabled".

Video BIOS Cacheable: Selecting Enabled allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

Memory Hole At 15M-16M: You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

CPU Latency Timer: Selecting "Enable", the CPU cycle will only be deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. Select "Disable", the CPU cycle will be deferred immediately after the GMCH receives with PCI specification version 2.1.

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

AGP Graphic Aperture Size: Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

Power-Supply Type: This option allows the user to set the Power Supply. The settings are "AT", "ATX". The Default Setting is "AT".

On Chip Video Window Size: This option allows the user to set the on-chip video window size for VGA driver use.

3.6 Integrated Peripherals

When you select the "INTEGRATED PERIPHERIALS" on the main program, the screen display will appears as:

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Integrated Peripherals

			Item Help
	OnChip Primary PCI IDE	Enabled	Menu Level
	IDE Primary Master PIO	Auto	
	IDE Primary Slave PIO	Auto	
	IDE Primary Master UDMA	Auto	
	IDE Primary Slave UDMA	Auto	
	USB Controller	Enabled	
	USB Keyboard Support	Disabled	
	Init Display First	Onboard/AGP	
	IDE HDD Block Mode	Enabled	
	POWER ON Function	Button only	
X	KB Power On Password	Enable	
X	Hot Key Power On	Ctrl-F1	
	Onboard FDD Controller	Enabled	
	Onboard Serial Port 1	3F8/IRQ4	
	Onboard Serial Port 2	2F8/IRQ3	
	UART Mode Select	Normal	
X	UR2 Duplex Mode	Half	
	Onboard Parallel Port	378 / IRQ7	
	Parallel Port Mode	SPP	
X	ECP Mode Use DMA	3	
	PWRON After PWR-Fail	Off	

↕ ☞ ☽ ↤: Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe DefaultsF7: Optimized Defaults

On-Chip Primary PCI IDE: The Intel 82C440BX chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface.

IDE Primary Master / Slave PIO: The four IDE PIO (Programmed Input/Output) fields let you 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. The settings are "Auto", "Mode 0", "Mode 1", "Mode 2", "Mode 3", "Mode 4".

IDE Primary Master / Slave UDMA: Ultra DMA/66 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 98 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/66, select Auto to enable BIOS support. The settings are "Auto" and "Disabled".

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

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

Init Display First: This item allows you to decide to active whether PCI Slot of VGA card or AGP first. The settings are "PCI Slot" and "AGP Slot".

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. The settings are "Enabled" and "Disabled".

Power On Function: this function allows you to select the item to power on the system. The settings are: Button Only, Mouse Left, Mouse Right, Password, Hotkey, and Keyboard98.

KB Power On Password: Normally, this item is unselectable. To enable this function, choose the "Password" setting in POWR ON Function. This will allow you to input the password for the KB power on function.

Hot Key Power On: If POWER ON Function is set to "Hot Key", and then you can assign a hot key combination in the field for the PS/2 keyboard to power on the system. Available options are "Ctrl-F1" through "Ctrl-F2".

Onboard FDD Controller: Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you want to use it. If you install add-in FDC or the system has no floppy drive, select Disabled in this field. The settings are "Enabled" and "Disabled".

Onboard Serial Port 1 / Port 2: Select an address and corresponding interrupt for the first and second serial ports. The settings are "3F8/IRQ4", "2E8/IRQ3", "3E8/IRQ4", "2F8/IRQ3", "Disabled", "Auto". The Default settings are "3F/8/IRQ4", "2F8/IRQ3".

UART Mode Select: This item allows you to determine which InfraRed(IR)function of the onboard I/O chip. This functions uses.

UR2 Duplex Mode: This item allows you to select the IR half/full duplex function. The default setting is "Half"

Onboard Parallel Port: This item allows you to determine onboard parallel port controller I/O address setting. The settings are "378H/IRQ7", "278H/IRQ5", "3BC/IRQ7", "Disabled".

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 parallel port for use during ECP mode. The settings are "3" and "1".

PWRON After PWR-Fail: This item allows you to determine how the system will power on after a power failure.

3.7 POWER MANAGEMENT SETUP

The "Power Management Setup" controls the CPU card's "Green" features. When you select the "POWER MANAGEMENT SETUP" on the main program, the screen display will appears as:

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Power Management Setup

			Item Help
ACPI Function	Enabled		
ACPI Suspend Type	S1 (POS)		
Power Management	User Define		Menu Level
Video Off Method	DPMS		
Video Off In Suspend	Yes		
Suspend Type	Stop Grant		
MODEM Use IRQ	NA		
Suspend Mode	Disabled		
HDD Power Down	Disabled		
Soft-Off by PWR-BTTN	Instant – off		
PowerOn by Ring	Enabled		
X USB KB Wake-Up From S3	Disabled		
Resume by Alarm	Disabled		
X Date (of Month) Alarm	0		
X Time (hh: mm:ss) Alarm	0 : 0 : 0		
** Reload Global Timer Events **			
Primary IDE 0	Disabled		
Primary IDE 1	Disabled		
FDD , COM, LPT Port	Disabled		
PCI PIRQ [A-D]#	Disabled		

↕ ➡ ℂ ↤: Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults F7: Optimized Defaults

ACPI Function: This item allows you to enable or disable the Advanced Configuration and Power Management (ACPI). The settings are "Enabled" and "Disabled".

ACPI Suspend Type: This item will set which ACPI suspend type will be used.

S1 (POS)	The S1 sleeping state is low wake-up latency sleeping state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system contexts.
S3 (STR)	The S3 state is low wake-up latency sleeping sates where all system contexts are lost expecting system memory. CPU cache, and chipset context are lost this state. Hardware maintains memory context and restores some CPU and L2 configuration context.

Power Management:
This option allows you to determine if the values in power management are disabled, user-defined, or predefined.

Disable (Default)	No power management Disables all four modes
Min Power Saving	Minimum power management. Doze Mode=1hr. Sandy Mode=1hr., Suspend Mode=1hr., and HDD Power Down=15min.
Max Power Saving	Maximum power management. –Only available for SL CPU's Doze Mode=1mm., Standby Mode=1min., Suspend Mode=1min., and HDD Power Down=1mm.
User Defined	Allows you to set each mode individually. When not disabled. Each of the ranges are from 1min. to 1hr. except for HDD Power Down which ranges from 1min to 15min. and disabled.

Video Off Method: This determines the manner in which the monitor is blanked.   The default setting is "V/H SYNC+Blank".

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

Videos Off in Suspend: This determines the manner in which the monitor is blanked. The setting are: Yes and No.

Suspend Type: Select the suspend Type. The settings are: PWRON Suspend, Stop Grant.

MODEM Use IRQ: Name the interrupt request (IRQ) line assigned to the modem (if any) on your system.   Activity of the selected IRQ always awakens the system. The default setting is "N/A".

Suspend Mode: Option are from "1 Min" to "1 Hour" and "Disable". The CPU clock will be stopped and the video signal will be suspended, if no Power Management events occur for a specified length of time. Full power function will return when a Wake-Up event is detected.

HDD Power Down: Options are from "1 Min." to "15 Min." and "Disable".   The IDE hard drive will spin down if it is not accessed within a specified length of time.

Soft-Off by PWR-BTN: Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: "Delay 4 Sec.", "Instant-Off".

Power On by Ring: When Enabled, an input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

USB KB Wake-UP From S3: This option is use to Enabled/Disabled USB Keyboard wake up with suspend to RAM.

Resume by Alarm: This function is for setting date and time for your computer to boot up. During "Disabled", you cannot use this function. During "Enabled", choose the Date and Time Alarm:

Date Alarm	You can choose which month the system will boot up. Set to 0, to boot every day.
Time Alarm	You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

Reload Global Timer Events : When Enabled, an event occurring on each device listed below restarts the global time for Standby mode.
   Primary IDE 0
   Primary IDE 1
   FDD, COM, LPT Port
   PCI PIRQ [A-D] #
After you have made your selection in the POWER MANAGEMENT SETUP, press the <ESC> key to go back to the main program screen.

3.8   PnP/PCI Configurations

Both the ISA and PCI buses on the CPU card use system IRQs & DMAs. You must set up the IRQ and DMA assignments correctly through the PnP/PCI Configuration Setup utility; otherwise the motherboard will not work properly.

CMOS Setup Utility – Copyright © 1984-2001 Award Software
PnP/PCI Configurations

	PnP OS Installed	No	Item Help
	Reset Configuration Data	Disabled	Menu Level ⌐
			Select Yes if you are using a
	Resources Controlled By	Manual	Plug and Play capable
⌐	IRQ Resources	Press Enter	operating system. Select No
⌐	DMA Resources	Press Enter	if you need the BIOS to
			configure non-boot devices.

↕ ⬅ ☾ ↦:   MoveEnter: Select +/-/PU/PD: Value F10: Save   Esc: Exit F1: General Help
F5: Previous Values   F6: Fail-Safe DefaultsF7: Optimized Defaults

PnP OS Installed: When set to "Yes", BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows® 95 or 98.   When set to "No", BIOS will initialize all the PnP cards.   So, for non-PnP operating system (DOS, Netware®), this option must set to "Yes".

Reset Configuration Data: Normally, you leave this field "Disabled", Select "Enabled" to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.
The settings are: "Enabled and Disabled".

Resource Controlled By : The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices.   However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows♣98. If you set this field to "Manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is proceded by a "✐"). The settings are "Auto (ESCD)", "Manual".

IRQ Resources: When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt.

3.9   PC Health Status

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact your motherboard supplier to get proper value about your setting of the CPU temperature.

CMOS Setup Utility – Copyright © 1984-2001 Award Software
PC Health Status

Shutdown Temperature	Disable	Item Help
Voltage 0	1.58V	Menu Level ✐
Voltage 1	3.21V	
Voltage 3	4.62V	
Voltage 4	11.77 V	
Temperature 1	45	
Fan 1 Speed	0 RPM	
Fan 2 Speed	4655 RPM	

🌡 🖱 ☾↤:   MoveEnter: Select +/-/PU/PD: Value F10: Save Esc: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe DefaultsF7: Optimized Defaults

Shutdown Temperature: This option is for setting the Shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system. The default setting is "Disable".

Voltage 0 / Voltage 1 / Voltage 3 / Voltage 4 / temperature 1 / Fan1 Speed / Fan 2 Speed: This will show the CPU/FAN/System voltage chart and FAN speed. (Read only)

3.10 Frequency / Voltage Control

This section is for setting CPU Frequency / Voltage Control.

CMOS Setup Utility – Copyright © 1984-2001 Award Software
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Disabled	Item Help
Spread Spectrum	Disabled	Menu Level ✍
Clock By Slight Adjust	100	
CPU Clock Ratio	X3	

🌡 🖳 ☾ ↦:   MoveEnter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
F5: Previous Values   F6: Fail-Safe DefaultsF7: Optimized Defaults

Auto Detect DIMM/PCI Clk: This item allows you to enable / disable auto detect DIMM / PCI Clock. The settings are "Enabled" and "Disabled".

Spread Spectrum: This item allows you to enable/disabled auto detect DIMM/PCI Clock. The settings are "Enabled" and 'Disabled".

Clock By Slight Adjust: This item allows you to slightly adjust the CPU clock. For 66MHZ, you can adjust the clock up to 100MHZ; for 100MHZ you can adjust the clock up to 133MHz, for 133MHz, you can adjust the clock up to 166MHz. Please refer to your CPU specification before adjusting the clock Value. The damage caused by improper clock adjusting is not warranted.

CPU Clock Ratio: The item allows you to set up the CPU clock ratio. This function depends on your CPU specification and the change might not take affect due to the CPU specification limitation.

3.11 Load Fail-Safe Defaults

When you press "Enter" on this item, you get a confirmation dialog box with a message similar to :

✍ Standard Cmos Setup	Frequency / Voltage Control
✍ Advanced BIOS Feature	Load Fail-Salf Defaults
✍ Advan...	
✍ Integ... Load fail-safe defaults (Y/N)? N	
✍ Power Management Setup	Set User Password
✍ PnP/PCI Configurations	Save & Exit Setup
✍ PC Health Status	Exit Without Saving
ESC: Quit 🌡 🖳 ☾ ≳: Select Item F10: Save & Exit Setup (Shift) F2: Change Color	
Load Fail-Safe Defaults....	

Pressing "Y" loads the BIOS default values for the most stable, minimal-performance system operations.

3.12   Load Optimized Defaults

When you press "Enter" on this item, you get a confirmation dialog box with a message similar to :

```
  Standard Cmos Setup            Frequency / Voltage Control
  Advanced BIOS Feature          Load Fail Self Defaults
  Advan┌─────────────────────────────────────────┐
  Integr│        Load optimized defaults (Y/N)? N │
  Power Ma└──────────────────────────────────────┘
  PnP/PCI Configurations         Set User Password
  PC Health Status               Save & Exit Setup
                                 Exit Without Saving

          ESC : Quit         : Select Item
       F10  : Save & Exit Setup  (Shift) F2 : Change Color

                  Load optimized defaults...
```
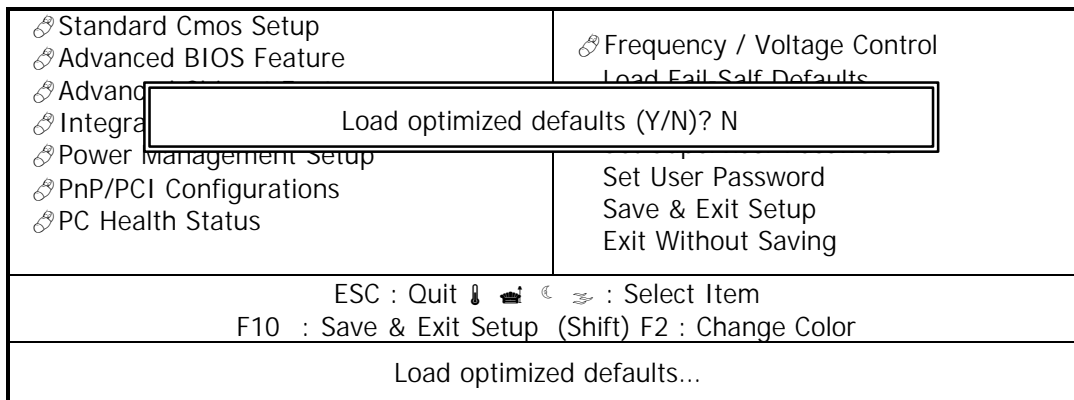
Pressing "Y" loads the default values that are factory settings for optimal performance system operations.

3.13 Set Supervisor / User Password

The "SUPERVISOR/USER PASSWORD" utility sets the password. The SBC is shipped with the password disabled. If you want to change the password, you must first enter the current password, then at the prompt -- enter your new password. The password is case sensitive, and can be up to 8 alphanumeric characters. Press <Enter> after you have finished typing in the password. At the next prompt, confirm the new password by re-typing it and pressing <Enter> again. When you are done, the screen automatically reverts to the main screen. Remember that when you use this feature, the "Security Option" line in BIOS FEATURES SETUP will determine when entering the password will be required.

To disable the password, press the <Enter> key instead of entering a new password when the "Enter Password" in the dialog box appears. A message will appear confirming that the password is disabled.

If you have set both supervisor and user password, only the supervisor password allows you to enter the BIOS SETUP PROGRAM.
Note: If you forget your password, the only way to solve this problem is to discharge the CMOS memory.

3.14 Save & Exit Setup

Select this option and press the <Enter> key to save the new setting information in the CMOS memory and continue with the booting process.

3.15 Exit Without Saving

Select this option and press the <Enter > key to exit the Setup Utility without recording any new values or changing old ones.

CHAPTER 4.   Drivers Support

4.1   DRIVERS SUPPORT

4.1.1   Core Chip

For installing Microsoft Windows operating system (95/98/ME/NT/200), you will need some device drivers. These drivers could be found in "IAC-H668 Series "directory on "Drivers CDROM". It is strongly recommended to use the driver provided instead of the ones supported by Microsoft Windows system.

In "IAC-H668 Series" directory, there are three main sub-directories: Corechip, VGA and Ethernet. Please refer to the explanation below for the explanation and installation.

Corechip:
Two sub-directories: "ide_exe" and "System". You might found "it8888" sub-directory only in some earlier version of "Driver CDROM" and it is not necessary to install this driver any more.)

Corechip/ide_exe
This directory contains Intel Ultra ATA Storage Driver 6.0. Please run the installing program intelata603_multi.exe under Microsoft Windows systems.

Corechip/System
This directory contains Intel(R) Chipset Software Installation Utility. It will install to the target system the Windows* INF files that outline to the operating system how the chipset components will be configured. This is needed for the proper functioning of the following features:
    -Core PCI and ISA PnP Services
    -AGP Support
    -IDE/ATA33/ATA66 Storage Support
    -USB Support
    -Identification of Intel Chipset Components in Device Manager
Please refer to the readme.txt in directory Corechip/System/Disk1 before running the installing program setup.exe

4.1.2   Network Setup

Ethernet
The directory contains Intel(R) PRO LAN Adapter drivers (release 4.1.1). There are drivers for Microsoft Windows 95/98/ME/NT/2000, Novell NetWare Servers & Clients, Microsoft DOS and IBM OS2. Please refer to readme.txt and relnotes.txt before installing the driver.

4.1.3   VGA Setup

VGA: Sub-directories are listed below.

VGA/vga_linux:
The directory contains RPM for driving Intel 810 & 815 Chipset Family under Linux System. Please refer to release_linux.pdf for installation information.

VGA/vga_nt4
The directory contains graphics drivers for Intel(R) 810/810E/815/815E Chipsets in Microsoft Windows NT4.0. Please refer to readment4.txt first before running the auto-installing program winnt4m60.exe.

VGA/vga_w2k

The directory contains graphics drivers for Intel(R) 810/810E/815/815E Chipsets in Microsoft Windows 2000. Please refer to readmewin2k.txt first before running the auto-installing program win2km60.exe.

VGA/win9x

The directory contains graphics drivers for Intel(R) 810/810E/815/815E Chipsets in Microsoft Windows 95/98/Millenium. Please refer to readme.txt first before running the auto-installing program setup.exe.
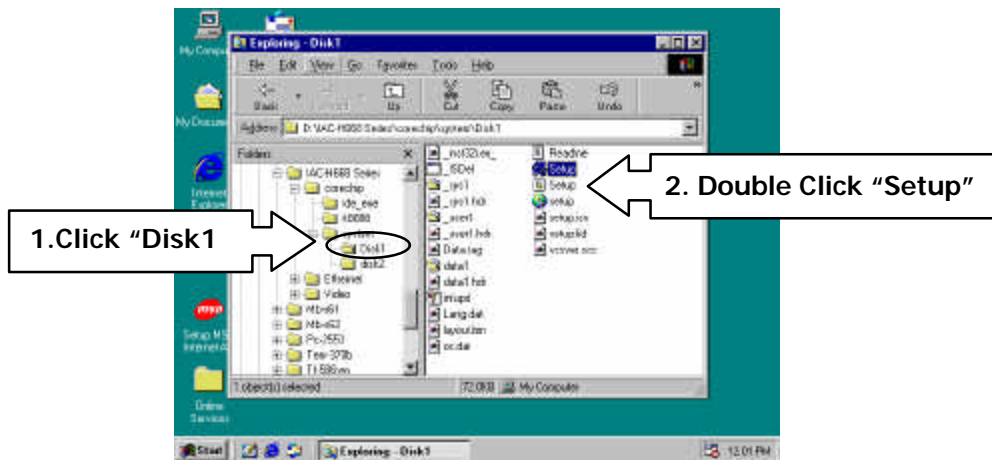
4.2 Drivers Support List
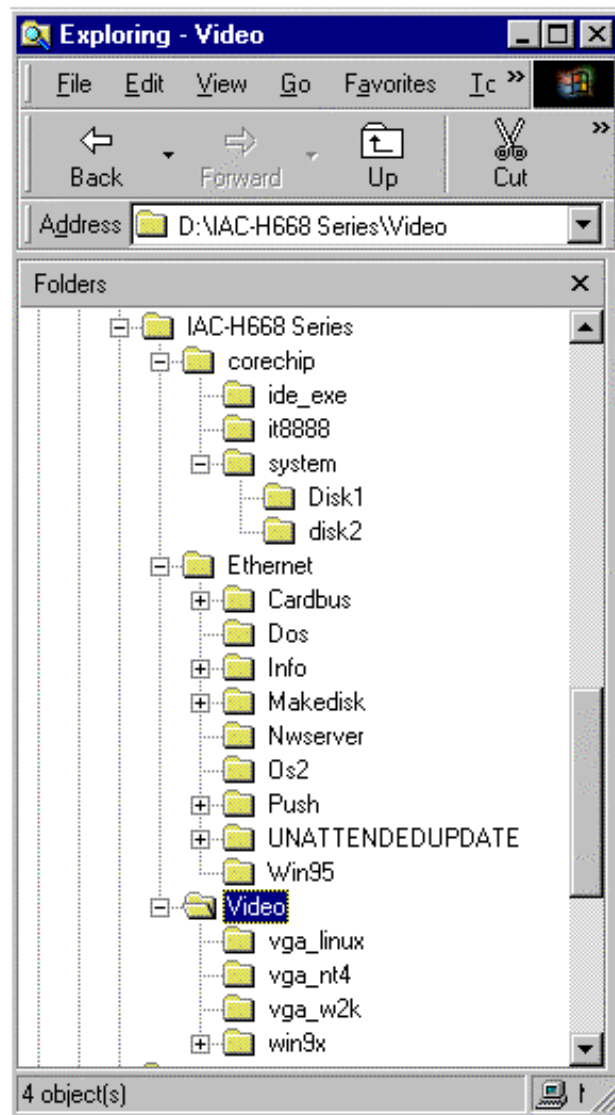
4.3   Driver Setup & Installation

4.3.1   Intel 815 Chipset Driver Setup

Setp1 Run Driver CD-ROM

Setp2 Directory: IAC-H668 Series/ corechip/ system/ Disk1/Setup.exe

1.Click "Disk1"

2. Double Click "Setup"

Setp3.

Click "Next"

Setp4.

Click "Yes"

Setp5.

Click "Next"

Setp6.

Click "Finish"
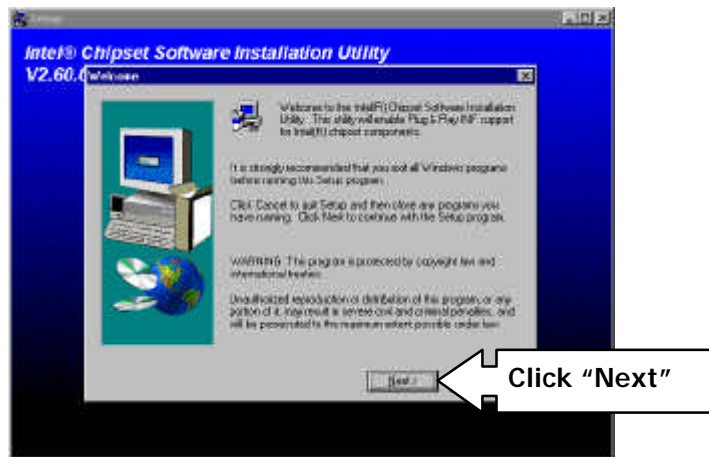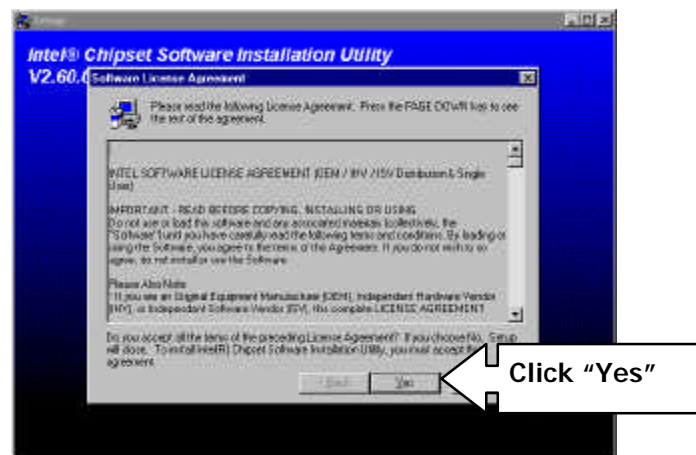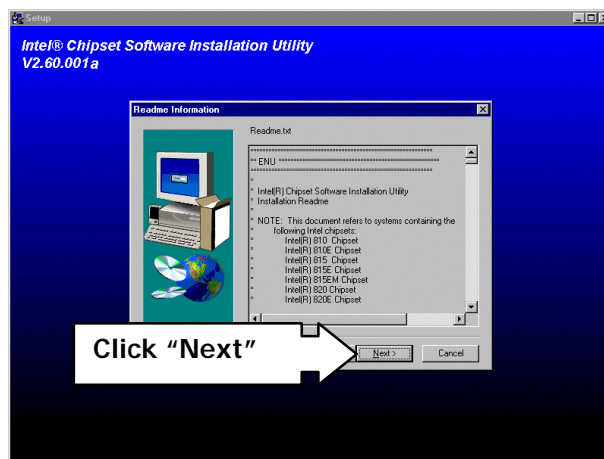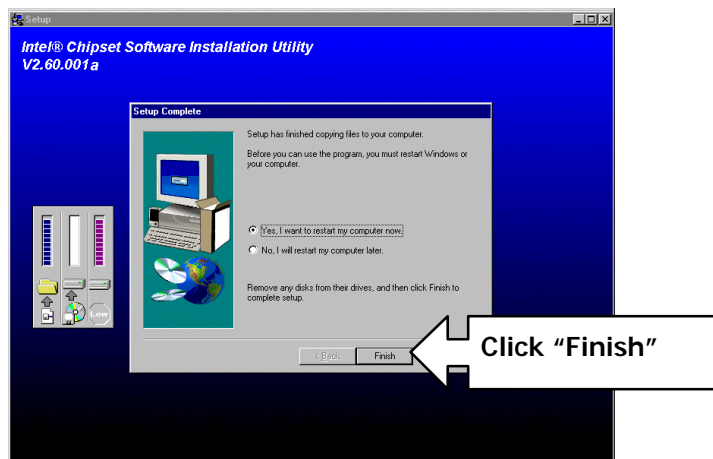
4.3.2 Intel Ultra ATA Storage Driver Install

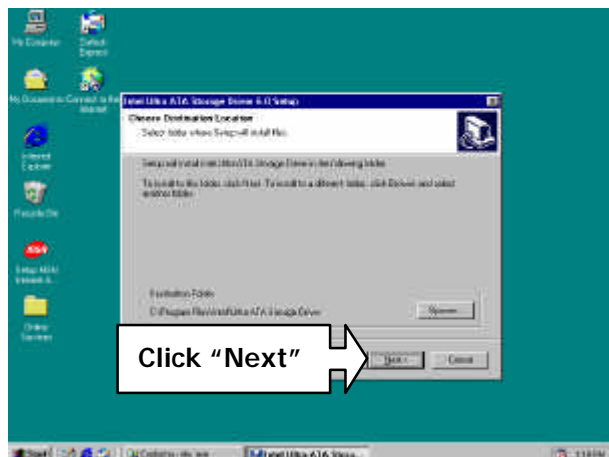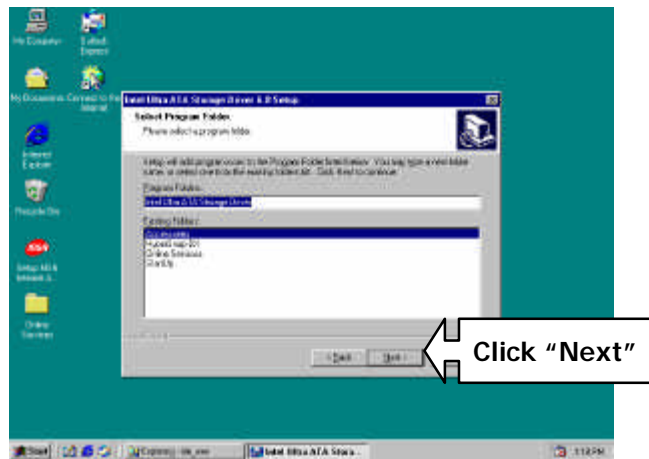**Step 1.** Directory: IAC-H668 Series/ corechip/ ide_exe /intelata063_multi.exe

1. Click "ide_exe"

2. Double Click
   intelata063_multi.exe"

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Setp2.

Click "Next"

Setp3.

Click "Yes"

Setp4.

Click "Next"

Page:41

Setp5.

Click "Next"

Setp6.

Click "Finish"
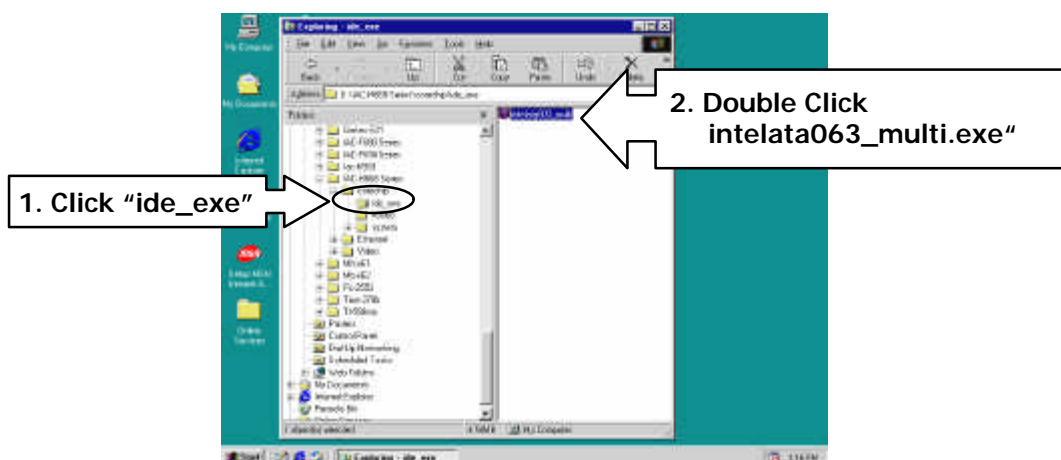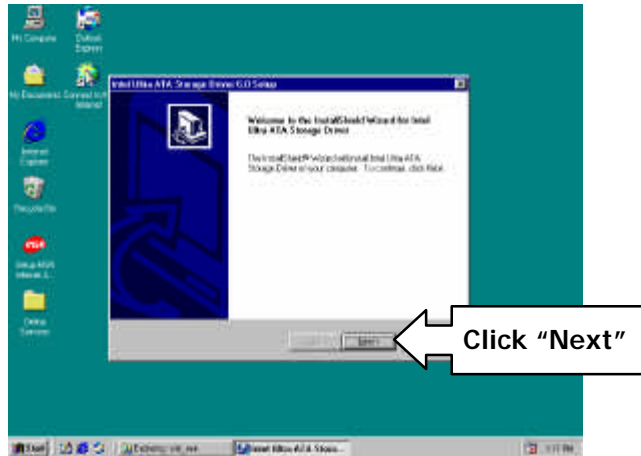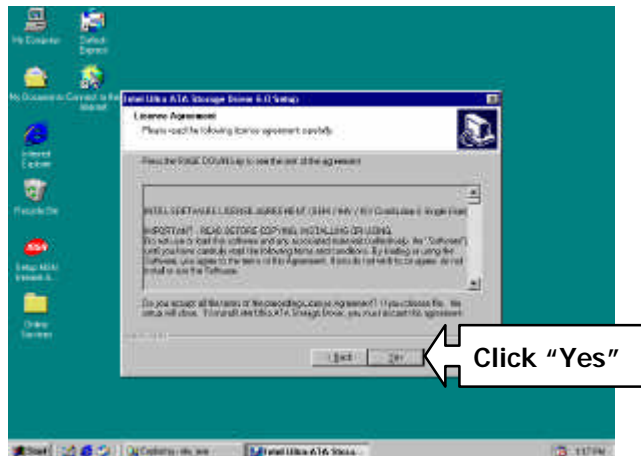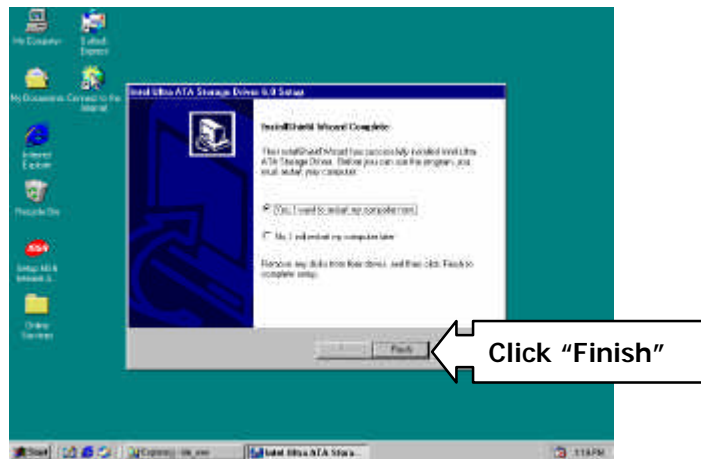
4.3.3 VGA Driver Install

Step 1

Double Click "Display"

Step2.

1.Select "Settings"

2.Click "Advanced"

Step3

1.Select "Adapter"

2.Click "Change"

Step4.

Click "Next"

Step5.

Click "Next"

Step6.

1. **Put Driver CD into CD-ROM Driver.**
2. **Select "Specify a location"**
3. **Type in or use browse to give the correct driver directory location**

4.Click "Next"

Step7.

Click "Next"

Step8.

Click "Finish"

4.3.4 Network Driver Install

Setp1.

Double Click "Control Panel"

Setp2.

Double Click "System"

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Setp3.

Double Click "PCI Ethernet Control"

Setp4.

Click "Update Driver"

Setp5.

Click "Next"

Setp6.

Click "Next"

Setp7.

4.Click "Next"

1. Put Driver CD into CD-ROM Driver.
2. Select "Specify a location"
3. Type in or use browse to give the correct driver directory location

Setp8.

Click "Next"

Setp9.

Click "OK"

Setp10.

1.Put win98 CD-ROM Driver

2.Click "OK"

Setp11.

Click "OK"

Setp12
.

4.Click "Next"

1. Put Driver CD into CD-ROM Driver.
2. Select "Specify a location"
3. Type in or use browse to give the correct driver directory location

Setp13

Click "Finish"

APPENDIXA.   Watch-Dog Timer

You can enable the watch-dog when your application software monitors an unexpected or not respond, then the timer generates a reset to reboot your system.   During the period of enable to reset, you could still cancel reset by disabling the watch-dog.   Decide the way you want to set the period for reset by selecting hardware or software w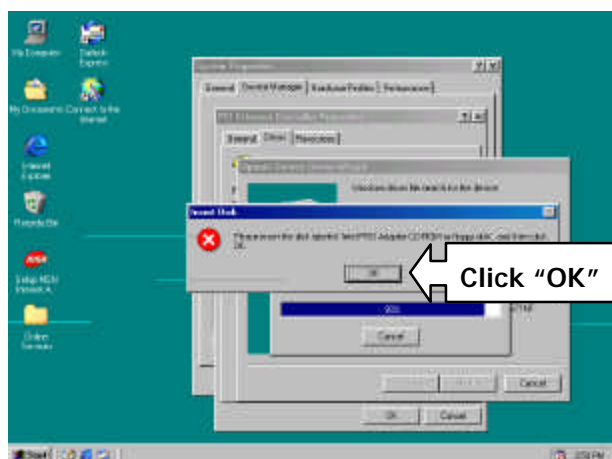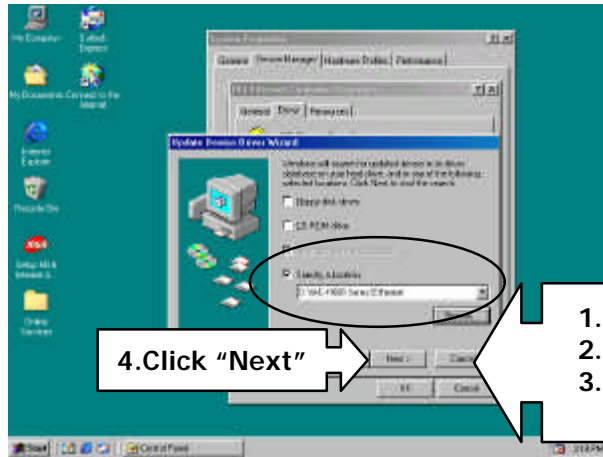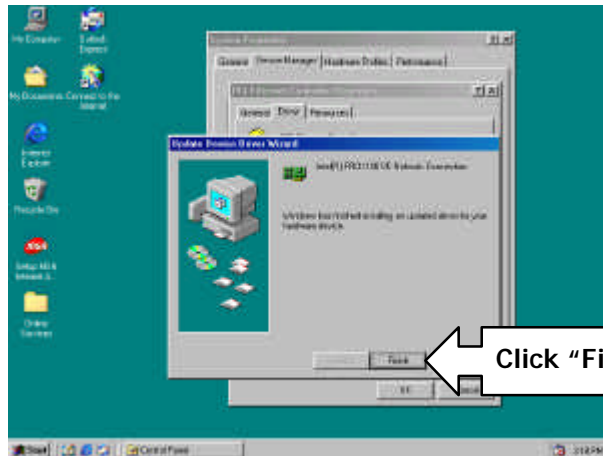atch-dog (if both of them are available). For hardware setting period, select period by jumper. For software setting period, normally setting hardware watch-dog timer period to 16 sec.

Software watch-dog using example
EX.1: For DOS

Enable	**Disable**
C:\DOS> DEBUG	**C:\DOS>DEBUG**
-o443 D	**-o441 F**

EX.2: For assemble Language

Enable :	**Disable :**
MOV DX, 443H	**MOVDX, 441H**
MOV AL, 0FH	**MOVAL, 0FH**
OUT DX, AL	**OUT DX, AL**

Note: **"F" is the period of software watch-dog timer (normally "F" indicated 0 sec.).   0 to 9 and A to F are used for represent different period. Normally, the step is 2 sec. That means "E" is 2, "D" is 4, "2" is 26, "1" is 28 and "0" is 30 seconds.**

Warranty Policy

1. All products are warranted against defects in materials and workmanship for a period of two years from the date of purchase by the customer.

2. The buyer will bear the return freight charges for goods that are returned for repair within the warranty period whereas manufacturer will bear the return to user freight charges after repair.

3. The buyer will pay for repair (for the replaced materials plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.

4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service ", RMA goods will be returned at the customer expense.

5. The following conditions are excluded from this warranty

    A. Improper or inadequate maintenance by the customer.

    B. Unauthorized modification or misuse.

    C. Operation outside of the environmental specifications for the product.

RMA Service

1. Request a RMA#:

Complete and fax to Supplier the "RMA Request Form" to obtain a RMA number.

2. Shipping:

A. The customer is requested to fill up the problem code as listed. If none of the code is selected, please write the symptom description on the remark.

B. Ship the defective units with freight prepaid.

C. Mark the RMA # clearly on the box.

D. Shipping damage as a result of inadequate packing is the customer's responsibility.

E. Use the original packing materials whenever possible.

3. All RMA# are valid for 30 days only:

When RMA goods are received after valid RMA# period, the goods will be rejected.

When requesting RMA service, please fill out this **"RMA Service Request Form"**.
Without this form your RMA will be REJECTED!!!

RMA No:	Reasons to Return: Repair(Please include failure details) Testing Purpose	

Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Applied Date:

Return Shipping Address:＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

Shipping by: Air Freight   Sea   Express:＿＿＿   Others:＿＿＿＿

Item	Model Name	Serial Number	Configuration

Item	**Problem Code**	Failure Status

*Problem Code:

01:D.O.A.	07: BIOS Problem	13: SCSI	19: DIO
02: Second Time R.M.A.	08: Keyboard Controller Fail	14: LPT Port	20: Buzzer
03: CMOS Data Lost	09: Cache RMA Problem	15: PS2	21: Shut Down
04: FDC Fail	10: Memory Socket Bad	16: LAN	22: Panel Fail
05: HDC Fail	11: Hang Up Software	17: COM Port	23: CRT Fail
06: Bad Slot	12: Out Look Damage	18: Watchdog Timer	24: Others (Pls specify)

Request Party   ***Confirmed By Supplier***

＿＿＿＿＿＿＿＿＿   ＿＿＿＿＿＿＿＿＿

Authorized Signatures / Date   **Authorized Signatures / Date**