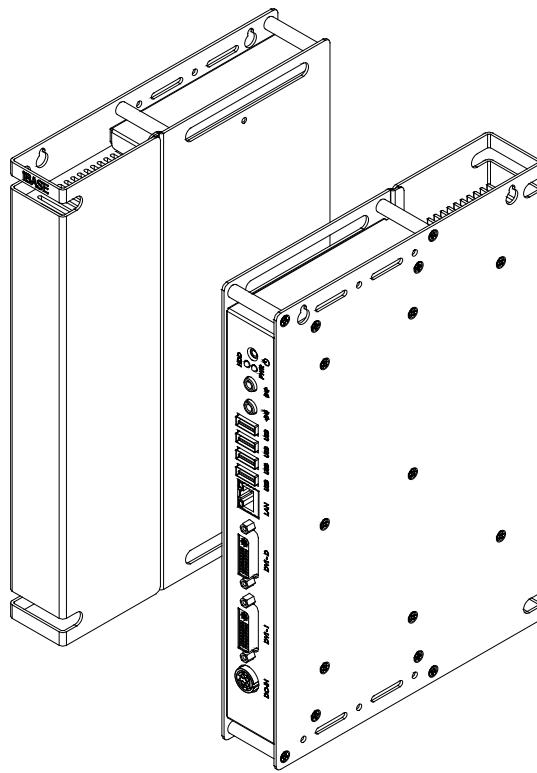


SI-96 Series User Manual



2009 February V1.0

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Safety Information

Your SI-96 is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface or secure on wall with the provided rail. Do not secure the system on any unstable plane or without the rail.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. Never insert objects of any kind into the ventilation openings.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between 0°C and 45°C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
 - The power cord or plug is damaged.
 - Liquid has been spilled into the system.
 - The system does not function properly even if you follow the operating instructions.

- The system was dropped or the cabinet is damaged.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

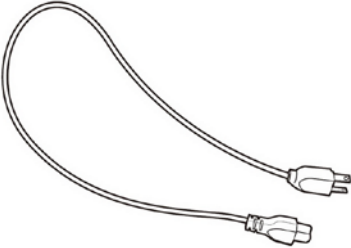

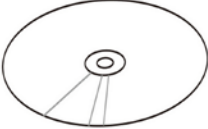
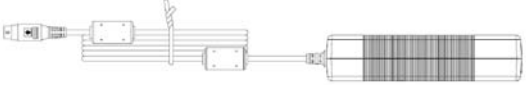
NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

Acknowledgments

- Award is a registered trademark of Award Software International, Inc.
- PS/2 is a trademark of International Business Machines Corporation.
- Intel and Intel Core 2 Duo and Intel Celeron processors are registered trademarks of Intel Corporation.
- Microsoft Windows is a registered trademark of Microsoft Corporation.
- Winbond is a registered trademark of Winbond Electronics Corporation.
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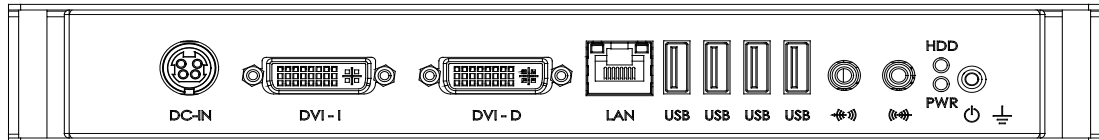
Accessories

 A power cord with a standard AC power plug on one end and a smaller, specialized connector on the other.	 A small, rectangular booklet with the words "User Manual" printed on its cover.
a. Power Cord x 1	b. System Manual x 1
 A standard compact disc (CD) with its reflective surface and a central hole.	 A power brick, which is a small, rectangular power supply unit with a power cord on one side and a connector on the other.
c. Driver CD x 1	d. Power Brick x 1

Components

I/O View

Refer to the diagram below to identify the components on this side of the system.



The power switch allows powering ON and OFF the system.

HDD

The hard disk LED blinks when data is being written into or read from the hard disk drive.

PWR

The power LED illuminated when system been power on.

DVI-I

The Digital Visual Interface (DVI) port supports a high quality VGA-compatible device such as a monitor or projector to allow viewing on a larger external display. This connector supports digital and analog video signals. To use the standard analog VGA output, you need to use the specific cable for this purpose.

DVI-D

The Digital Visual Interface (DVI) port supports a high quality VGA-compatible device such as a monitor or projector to allow viewing on a larger external display. This connector supports digital video signal only.



The stereo headphone jack (3.5mm) connects the audio signal to the system for recording or bypasses it to storage or LINE OUT.



The stereo audio jack (3.5mm) is used to connect the system's audio out signal to amplified speakers or headphones.

LAN

The 8-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

DC IN

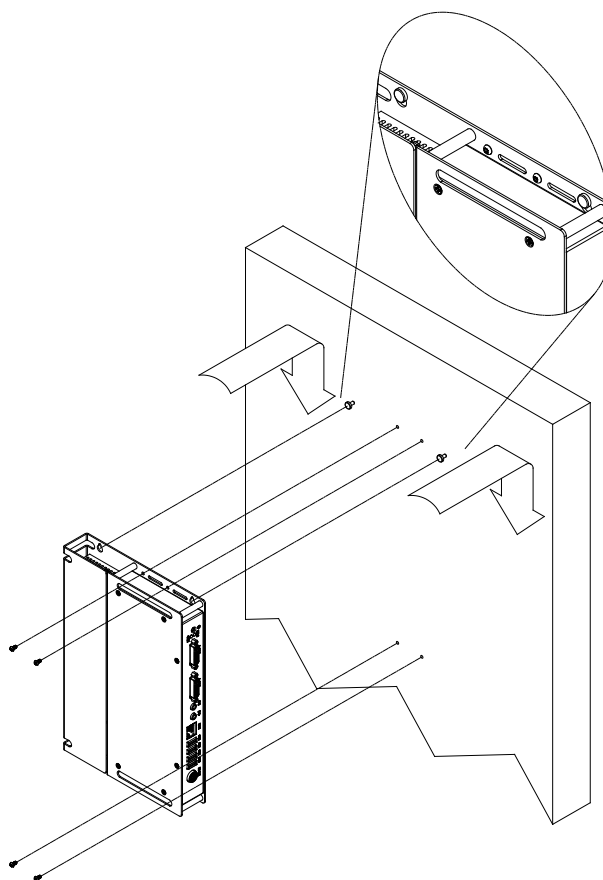
The supplied power adapter converts AC power to DC power for use with this jack. Power supplied through this jack supplies power to the system. To prevent damage to the system, always use the supplied power adapter.

Specification

System Mainboard	IB-826
Construction	Aluminum
Chassis Color	Black
Storage	2.5" 80GB SATA HDD x 1
Mounting	Desktop or wall mount
Dimensions	270(W) x 37(H) x 182(D)mm (10.63" x 1.45" x 7.16")
Power Supply	80W DC adapter
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)
Storage Temperature	-20°C ~ 80°C
Relative Humidity	5~95% @45°C (non-condensing)
Vibration	HDD: 0.25grms/5~500Hz random operation
Shock	HDD: 15grms peak acceleration (11 msec duration)
RoHS	Available

· This specification is subject to change without prior notice.

Mounting SI-96 to the Wall



You can install SI-96 on wood, drywall surface over studs, or a solid concrete or metal plane directly. Ensure the installer uses at least four M3 length 8mm screws to secure the system on wall. ***Six M3 length 8mm screws are recommended to secure the system on wall.***

Fasteners are not included with the unit, and must be supplied by the installer. The types of fasteners required are dependent on the type of wall construction. Choose fasteners that are rated either "Medium Duty" or "Heavy Duty." To assure proper fastener selection and installation, follow the fastener manufacturer's recommendations.

Wall mounting requirements

Note: Before mounting the system on wall, ensure that you are following all applicable building and electric codes.

When mounting, ensure that you have enough room for power and signal cable routing. And have good ventilation for power adapter. The method of mounting must be able to support weight of the SI-96 plus the suspend weight of all the cables to be attached to the system. Use the following methods for mounting your system:

Mounting to hollow walls

- **Method 1: Wood surface** – A minimum wood thickness – 38mm (1.5in.) by 25.4 cm (10in.) – of high, construction – grade wood is recommended.
Note: This method provides the most reliable attachment of the unit with little risk that the unit will come loose or require ongoing maintenance.
- **Method 2: Drywall walls** - Drywall over wood studs is acceptable.

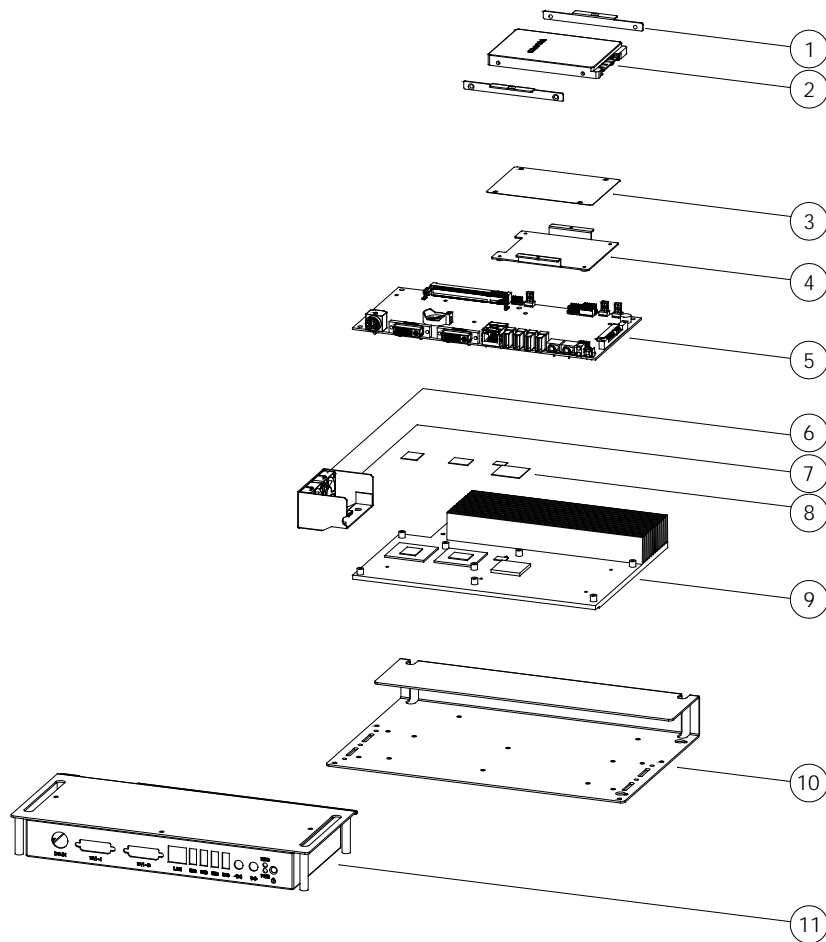
Mounting to a solid concrete or brick wall - Mounts on a flat smooth surface.

Selecting the location

Plan the mounting location thoroughly. Locations such as walkway areas, hallways, and crowded areas are not recommended. Mount the unit to a flat, sturdy, structurally sound column or wall surface.

The best mounting surface is a standard countertop, cabinet, table, or other structure that is minimally the width and length of the unit. This recommendation reduces the risk that someone may accidentally walk into and damage the device. Local laws governing the safety of individuals might require this type of consideration.

Exploded view of the SI-96 assembly



Parts description

Part NO.	Description	Part NO.	Description
1	HDD side bracket	2	HDD
3	HDD Mylar	4	HDD tray bracket
5	M/B IB826	6	System fan
7	System fan bracket	8	Thermal Interface Material
9	Heat sink	10	Bottom chassis
11	Top cover w/ I/O wall		

Installation

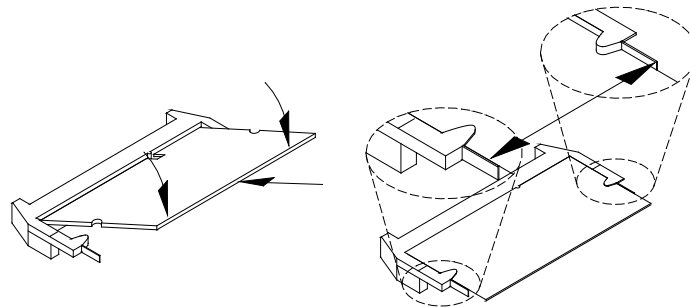
Installing the memory

The IB826 board supports one DDR2 memory socket that can support up to 2GB memory size, DDR2 533/667 (w/o ECC function).

Installing and Removing Memory Modules

To install the DDR2 modules, locate the memory slot on the board and perform the following steps:

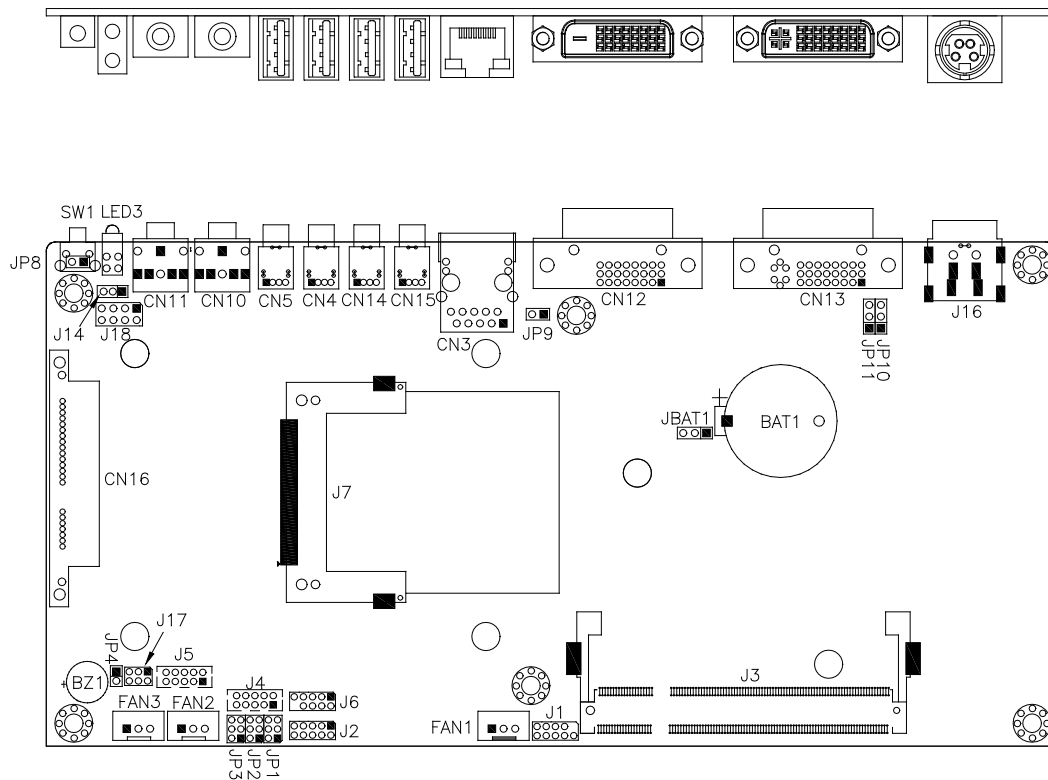
1. Hold the DDR2 module so that the key of the DDR2 module aligns with that on the memory slot. Insert the module into the socket at a slight angle (approximately 30 degrees). Note that the socket and module are both keyed, which means that the module can be installed only in one direction.
2. To seat the memory module into the socket, apply firm and even pressure to each end of the module until you feel it slip down into the socket.
3. With the module properly seated in the socket, rotate the module downward. Continue pressing downward until the clips at each end lock into position.
4. To remove the DDR2 module, press the clips with both hands.





Setting Jumper

Jumpers are used on IB826 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the connectors on IB826 and their respective functions

Jumper Locations on IB826

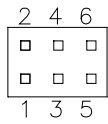


J14: ATX or AT Power Selection

JP14	ATX Power
 1 2 3	ATX
 1 2 3	AT

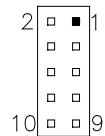
JP1, JP2, JP3: RS232/422/485 (COM2) Selection

COM1 is fixed for RS-232 use only. COM2 is selectable for RS232, RS-422 and RS-485. The following describes the settings for COM2.



COM2 Function	RS-232	RS-422	RS-485
Jumper Setting (pin closed)	JP1: 1-2 JP2: 3-5 & 4-6 JP3: 3-5 & 4-6	JP1: 3-4 JP2: 1-3 & 2-4 JP3: 1-3 & 2-4	JP1: 5-6 JP2: 1-3 & 2-4 JP3: 1-3 & 2-4

- COM2 is jumper selectable for RS-232, RS-422 and RS-485.





Pin #	Signal Name		
	RS-232	RS-422	RS-485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	Ground	Ground	Ground
6	DSR	RTS-	NC
7	RTS	RTS+	NC
8	CTS	CTS+	NC
9	RI	CTS-	NC
10	NC	NC	NC

JBAT1: Clear CMOS Setting

JBAT1	Setting
	Normal
	Clear CMOS

JP10/JP11: For CN13 DVI & CRT DDC_Clock, DDC_Data Select

JP10/JP11	Monitor
 1 2 3	DVI
 1 2 3	CRT

BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the board.

BIOS Introduction

The Award BIOS (Basic Input / Output System) installed in your computer system's ROM supports various processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the key immediately allows you to enter the Setup utility. If you are a little bit late pressing the key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press <DEL> to Enter Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Phoenix - AwardBIOS CMOS Setup Utility

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...	

The section below the setup items of the Main Menu displays the control keys for this menu. At the bottom of the Main Menu just below the control keys section, there is another section, which displays information on the currently highlighted item in the list.

Note: *If the system cannot boot after making and saving system changes with Setup, the Award BIOS supports an override to the CMOS settings that resets your system to its default.*

Warning: *It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

Standard CMOS Setup

“Standard CMOS Setup” choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features

Date (mm:dd:yy)	Fri, Jan 9, 2009	Item Help
Time (hh:mm:ss)	11 : 00 : 00	Menu Level >
IDE Channel 0 Master	None	Change the day, month, Year and century
IDE Channel 0 Slave	None	
IDE Channel 1 Master	None	
Video	EGA/VGA	
Halt On	All , But Keyboard	
Base Memory	640K	
Extended Memory	2086912K	
Total Memory	2087936K	

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

Date

To set the date, highlight the “Date” field and use the PageUp / PageDown or +/- key to set the current time.

The date format is:

Day: Sun to Sat

Month: 1 to 12

Date: 1 to 31

Year: 1999 to 2099

Time

To set the time, highlight the "Time" field and use the <PgUp>/ <PgDn> or +/- key to set the current time.

The time format is:

Hour: 00 to 23

Minute: 00 to 59

Second: 00 to 59

IDE Channel Master/Slave

The onboard PCI IDE connector provides Primary and Secondary channels for connecting up to two IDE hard disks or other IDE devices.

Press <Enter> to configure the hard disk. The selections include Auto, Manual, and None. Select 'Manual' to define the drive information manually. You will be asked to enter the following items.

CYLS: Number of cylinders

HEAD: Number of read/write heads

PRECOMP: Write precompensation

LANDING ZONE: Landing zone

SECTOR: Number of sectors

The Access Mode selections are as follows:

CHS	(HD < 528MB)
LBA	(HD > 528MB and supports Logical Block Addressing)
Large	(For MS-DOS only)
Auto	

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA For EGA, VGA, SEGA, SVGA
 or VGA monitor adapters. (Default)

CGA 40 Power up in 40 column mode.

CGA 80 Power up in 80 column mode.

MONO For Hercules or MDA adapters.

Halt On

This field determines whether or not the system will halt if an error is detected during power up.

No errors:

The system boot will not be halted for any error that may be detected.

All errors:

Whenever the BIOS detect a non-fatal error, the system will stop and you will be prompted.

All, But Keyboard:

The system boot will not be halted for a keyboard error; it will stop for all other errors

All, But Diskette:

The system boot will not be halted for a disk error; it will stop for all other errors.

All, But Disk/Key:

The system boot will not be halted for a key- board or disk error; it will stop for all others.

Advanced BIOS Features

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Phoenix - AwardBIOS CMOS Setup Utility

Advanced BIOS Features

		ITEM HELP
CPU Feature	Press Enter	
Hard Disk Boot Priority	Press Enter	Menu Level >
Virus Warning	Disabled	
Quick Power On Self Test	Enabled	
First Boot Device	Hard Disk	
Second Boot Device	USB-CDROM	
Third Boot Device	USB-FDD	
Boot Other Device	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	
APIC Mode	Enabled	
MPS Version Control for OS	1.4	
OS Select For DRAM>64MB	Non-OS2	
Full Screen Logo Show	Enabled	
Small Logo (EPA) Show	Disabled	
Summary Screen Show	Enabled	

CPU Feature

Press Enter to configure the settings relevant to CPU Feature.

Hard Disk Boot Priority

With the field, there is the option to choose, aside from the hard disks connected, "Bootable add-in Cards" which refers to other external devices.

Virus Warning

If this option is enabled, an alarm message will be displayed when trying to write on the boot sector or on the partition table on the disk, which is typical of the virus.

Quick Power On Self Test

When enabled, this field speeds up the Power On Self Test (POST) after the system is turned on. If it is set to *Enabled*, BIOS will skip some items.

First/Second/Third Boot Device

These fields determine the drive that the system searches first for an operating system. The options available include *Floppy*, *LS120*, *Hard Disk*, *CDROM*, *ZIP100*, *USB-Floppy*, *USB-ZIP*, *USB-CDROM*, *LAN* and *Disable*.

Boot Other Device

These fields allow the system to search for an OS from other devices other than the ones selected in the First/Second/Third Boot Device.

Boot Up NumLock Status

This allows you to activate the NumLock function after you power up the system.

Gate A20 Option

This field allows you to select how Gate A20 is worked. Gate A20 is a device used to address memory above 1 MB.

Typematic Rate Setting

When disabled, continually holding down a key on your keyboard will generate only one instance. When enabled, you can set the two typematic controls listed next. By default, this field is set to ***Disabled***.

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, the system registers repeated keystrokes speeds. Settings are from 6 to 30 characters per second.

Typematic Delay (Msec)

When the typematic rate is enabled, this item allows you to set the time interval for displaying the first and second characters. By default, this item is set to ***250msec***.

Security Option

This field allows you to limit access to the System and Setup. The default value is ***Setup***. When you select *System*, the system prompts for the User Password every time you boot up. When you select *Setup*, the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

APIC Mode

APIC stands for Advanced Programmable Interrupt Controller. The default setting is **Enabled**.

MPS Version Control for OS

This option specifies the MPS (Multiprocessor Specification) version for your operating system. MPS version 1.4 added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability.

OS Select for DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is **Non-OS/2**.

HDD S.M.A.R.T. Capability

By default, this field is **Disabled**.

Small Logo (EPA) Show

The EPA logo appears at the right side of the monitor screen when the system is boot up.

The default setting is **Disabled**.

Advanced Chipset Features

This Setup menu controls the configuration of the chipset.

Phoenix - AwardBIOS CMOS Setup Utility

Advanced Chipset Features

System BIOS Cacheable	Enabled	ITEM HELP
Memory Hole at 15M-16M	Disabled	
PCI Express Root Port Function	Press Enter	
** VGA Setting **		
PEG/On Chip VGA Control	Auto	
PEG Force X1	Disabled	
On-Chip Frame Buffer Size	8MB	
DVMT Mode	DVMT	
DVMT/FIXED memory Size	128MB	
Boot Display	CRT+DVI	

System BIOS Cacheable

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

Memory Hole At 15M-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 16 MB. The choices are *Enabled* and *Disabled*.

On-Chip VGA Setting

The fields under the On-Chip VGA Setting and their default settings are:

PEG/On Chip VGA Control	Onchip VGA
PEG Force X1	Disabled
On-Chip Frame Buffer Size	8MB
DVMT Mode	DVMT
DVMT/FIXED memory Size	128MB
Boot Display	CRT+DVI

Integrated Peripherals

This section sets configurations for your hard disk and other integrated peripherals. The first screen shows three main items for user to select. Once an item selected, a submenu appears. Details follow.

Phoenix - AwardBIOS CMOS Setup Utility

Integrated Peripherals

OnChip IDE Device	Press Enter	ITEM HELP
SuperIO Device	Press Enter	Menu Level >
USB Device Setting	Press Enter	

Phoenix - AwardBIOS CMOS Setup Utility

OnChip IDE Device

IDE HDD Block Mode	Enabled	ITEM HELP
IDE DMA transfer access	Enabled	Menu Level >
On-Chip Serial ATA Setting		
SATA Mode	IDE	
On-Chip Serial AT	SATA Only	
On-Chip PATA Setting		
On-chip Primary PCI IDE	Enabled	
IDE Primary Master PIO	Auto	
IDE Primary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
On-Chip Secondary PCI IDE	Enabled	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	

Phoenix - AwardBIOS CMOS Setup Utility

SuperIO Device

POWER ON Function	BUTTON ONLY	ITEM HELP
KB Power ON Password	Enter	Menu Level >
Hot Key Power ON	Ctrl-F1	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
PWRON After PWR-Fail	Off	

USB Device Setting

USB 1.0 Controller	Enabled	ITEM HELP
USB 2.0 Controller	Enabled	Menu Level >
USB Operation Mode	High Speed	
USB Keyboard Function	Enabled	
USB Mouse Function	Enabled	
USB Storage Function	Enabled	
*** USB Mass Storage Device Boot Setting ***		

IDE HDD Block Mode

This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

IDE DMA transfer access

This field, by default, is **Enabled**.

On-chip Primary PCI IDE Enabled

This field, by default, is **Enabled**.

On-chip Primary/Secondary PCI IDE

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

IDE Primary/Secondary Master/Slave PIO

These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with the controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

IDE Primary/Secondary Master/Slave UDMA

These fields allow your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

On-Chip Serial ATA Setting

The fields under the SATA setting include Serial ATA Mode (IDE) and ON-Chip Serial ATA (SATA Only).

Power ON Function

This field is related to how the system is powered on – such as with the use of conventional power button, keyboard or hot keys. The default is **BUTTON ONLY**.

KB Power ON Password

This field allows users to set the password when keyboard power on is the mode of the Power ON function.

Hot Key Power ON

This field sets certain keys, also known as hot keys, on the keyboard that can be used as a ‘switch’ to power on the system.

Onboard Serial Port

These fields allow you to select the onboard serial ports and their addresses. The default values for these ports are:

Serial Port 1	3F8/IRQ4
Serial Port 2	2F8/IRQ3

PWRON After PWR-Fail

This field sets the system power status whether *on* or *off* when power returns to the system from a power failure situation.

USB 1.0 Controller

By default, this field is set to **Enabled**.

USB 2.0 Controller

The options for this field are *Enabled* and *Disabled*. By default, this field is set to **Enabled**. In order to use USB 2.0, necessary OS drivers must be installed first. **Please update your system to Windows XP SP2.**

USB Keyboard/Mouse/Storage Function

The options for this field are *Enabled* and *Disabled*. By default, this field is set to **Enabled**.

Power Management Setup

Phoenix - AwardBIOS CMOS Setup Utility

Power Management Setup

ACPI Function	Enabled	ITEM HELP
ACPI Suspend	S1(POS)	
RUN VGABIOS if S3 Resume	Auto	Menu Level >
Power Management	User Define	
Video Off Method	V/H SYNC+Blank	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Modem Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
CPU THRM-Throttling	50.0%	
Wake-Up by PCI Card	Disabled	
Power On by Ring	Disabled	
Resume by Alarm	Disabled	
Date (of Month) Alarm	0	
Time (hh:mm:ss) Alarm	0 : 0 : 0	
** Reload Global Timer Events **		
Primary IDE 0	Enabled	
Primary IDE 1	Enabled	
Secondary IDE 0	Enabled	
Secondary IDE 1	Enabled	
FDD, COM, LPT Port	Enabled	
PCI PIRQ[A-D] #	Enabled	

ACPI Function

Enable this function to support ACPI (Advanced Configuration and Power Interface).

ACPI Suspend

The default setting of the ACPI Suspend mode is **S1(POS)**.

RUN VGABIOS if S3 Resume

The default setting of this field is **Auto**.

Power Management Option

This field allows you to select the type of power saving management modes. There are four selections for Power Management.

- Min. Power Saving: Minimum power management
- Max. Power Saving: Maximum power management.
- User Define: Each of the ranges is from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min.

Video Off Method

This field defines the Video Off features. There are three options.

V/H SYNC + Blank: Default setting, blank the screen and turn off vertical and horizontal scanning.

DPMS: Allows BIOS to control the video display.

Blank Screen: Writes blanks to the video buffer.

Video Off In Suspend

When enabled, the video is off in suspend mode. The default setting is **Yes**.

Suspend Type

The default setting for the Suspend Type field is **Stop Grant**.

Modem Use IRQ

This field sets the IRQ used by the Modem. By default, the setting is **3**.

Suspend Mode

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

HDD Power Down

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

CPU THRM-Throttling

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

Soft-Off by PWRBTN

This field defines the power-off mode when using an ATX power supply. The *Instant Off* mode allows powering off immediately upon pressing the power button. In the *By Hardware mode*, the system powers off when the power button is pressed for more than four seconds or enters the suspend mode when pressed for less than 4 seconds.

Wake up by PCI Card

By default, this field is *Disabled*.

Power On by Ring

This field *enables* or *disables* the power on of the system through the modem connected to the serial port or LAN.

Resume by Alarm

This field *enables* or *disables* the resumption of the system operation. When enabled, the user is allowed to set the *Date* and *Time*.

Reload Global Timer Events

The HDD, FDD, COM, LPT Ports, and PCI PIRQ are I/O events that can prevent the system from entering a power saving mode or can awaken the system from such a mode. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

PNP/PCI Configurations

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

Phoenix - AwardBIOS CMOS Setup Utility

PnP/PCI Configurations

Init Display First	Onboard	ITEM HELP
Reset Configuration Data	Disabled	Menu Level
Resources Controlled By IRQ Resources	Auto (ESCD) Press Enter	Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
PCI/VGA Palette Snoop	Disabled	
PCI Express relative items Maximum Payload Size	128	

Init Display First

The default setting is **Onboard**.

Reset Configuration Data

This field allows you to determine whether to reset the configuration data or not.

The default value is **Disabled**.

Resources Controlled by

This PnP BIOS can configure all of the boot and compatible devices with the use of a PnP operating system such as Windows 95.

PCI/VGA Palette Snoop

Some non-standard VGA display cards may not show colors properly. This field allows you to set whether or not MPEG ISA/VESA VGA cards can work with PCI/VGA. When this field is enabled, a PCI/VGA can work with an MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with an MPEG ISA/VESA card.

Maximum Payload Size

The default setting of the PCI Express Maximum Payload Size is 128.

PC Health Status

This section shows the parameters in determining the PC Health Status. These parameters include temperatures, fan speeds and voltages.

Phoenix - AwardBIOS CMOS Setup Utility

PC Health Status

Shutdown Temperature	Disabled	ITEM HELP
CPU Warning Temperature	Disabled	
Current System Temp	45°C/113°F	Menu Level >
Current CPU Temp	45°C/113°F	
FAN2 Speed	5400 RPM	
FAN1 Speed	5400 RPM	
FAN3 Speed	5400 RPM	
Vcore	1.16 V	
12 V	11.87 V	
1.8V	1.90 V	
5V	5.17 V	
3.3V	3.31 V	
VBAT (V)	3.26 V	
3VSB(V)	3.29 V	

Shutdown Temperature

This field allows the user to set the temperature by which the system automatically shuts down once the threshold temperature is reached. This function can help prevent damage to the system that is caused by overheating.

CPU Warning Temperature

This field allows the user to set the temperature so that when the temperature is reached, the system sounds a warning. This function can help prevent damage to the system that is caused by overheating.

Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the board. The values are read-only values as monitored by the system and show the PC health status.

Frequency/Voltage Control

This section shows the user how to configure the processor frequency.

Phoenix - AwardBIOS CMOS Setup Utility

Frequency/Voltage Control

Auto Detect PCI Clk	Disabled	ITEM HELP
Spread Spectrum	Disabled	Menu Level >

Auto Detect PCI Clk

This field enables or disables the auto detection of the PCI clock.

Spread Spectrum

This field sets the value of the spread spectrum. The default setting is ***Disabled***.

This field is for CE testing use only.

Load Fail-Safe Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

Load Optimized Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

Set Supervisor Password

These two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Save & Exit Setup

This option allows you to determine whether or not to accept the modifications. If you type "Y", you will quit the setup utility and save all changes into the CMOS memory. If you type "N", you will return to Setup utility.

Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing "Y" will quit the Setup utility without saving the modifications. Typing "N" will return you to Setup utility.

Driver Installation

This section describes the installation procedures for software and drivers under Windows XP and Windows Vista. The software and drivers are included with the board. If you find the items missing, please contact the vendor where you made the purchase.

IMPORTANT NOTE:

After installing your Windows operating system (Windows XP/ Vista), you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

Intel Chipset Software Installation Utility

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation under Windows XP/Vista.

1. Insert the CD that comes with the board. Click Intel and then Intel(R)GM/GME965 Chipset Drivers.
2. Click **Intel(R) Chipset Software Installation Utility**.



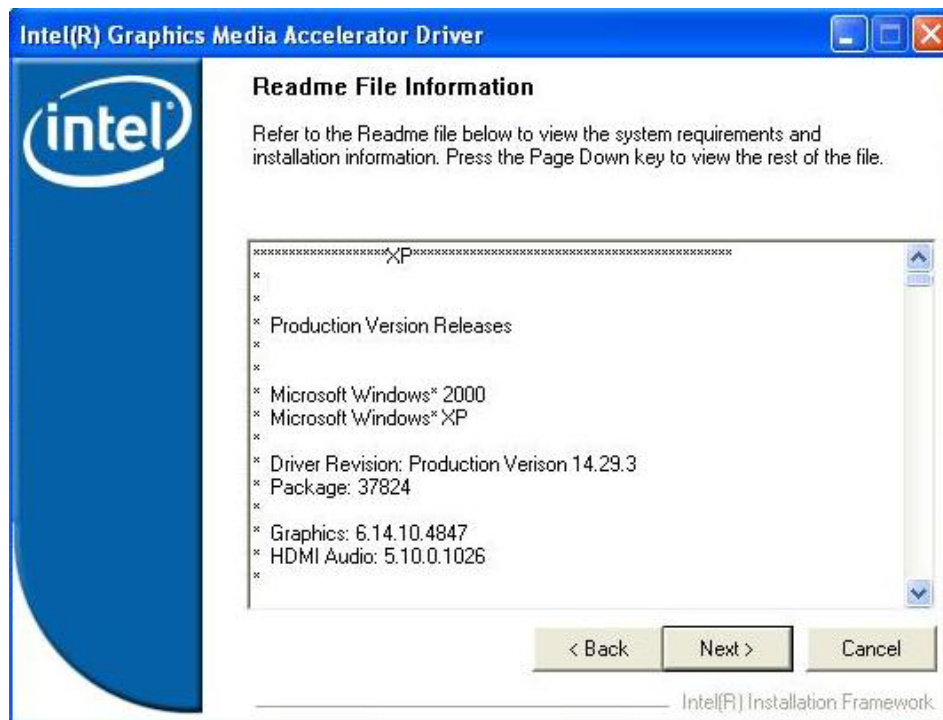
3. When the Welcome screen appears, click **Next** to continue.



4. Click **Yes** to accept the software license agreement and proceed with the installation process.



5. On Readme Information screen, click **Next** to continue the installation.



2. Click **Intel(R) Chipset Software Installation Utility**.



6. The Setup process is now complete. Click **Finish** to restart the computer and for changes to take effect.

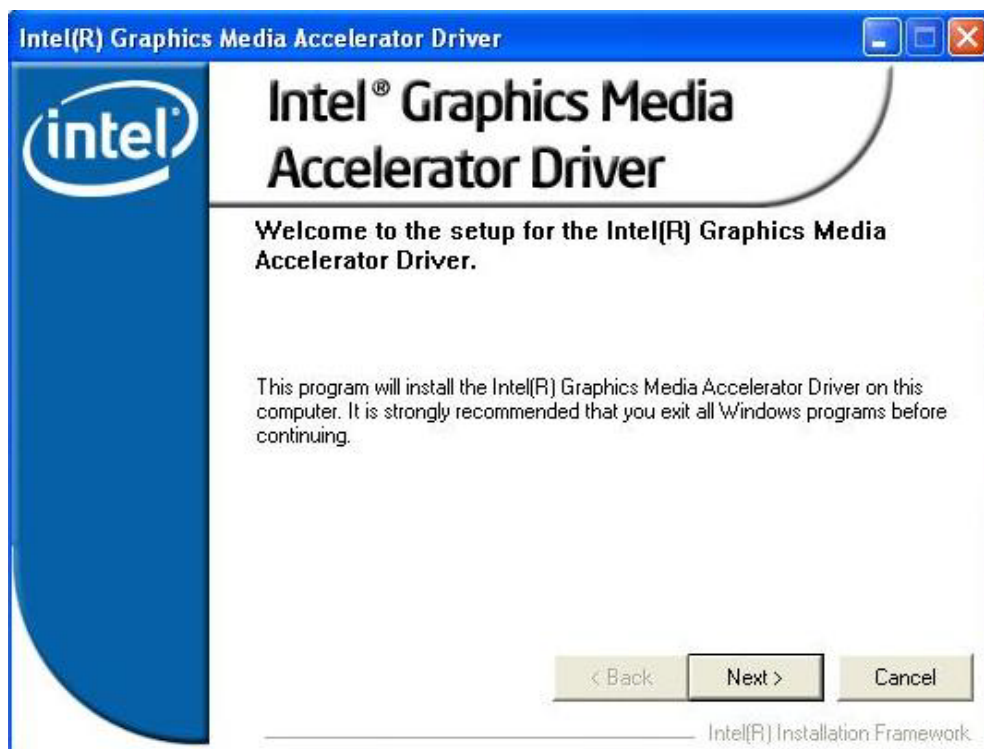
VGA Driver Installation

To install the VGA drivers, follow the steps below to proceed with the installation.

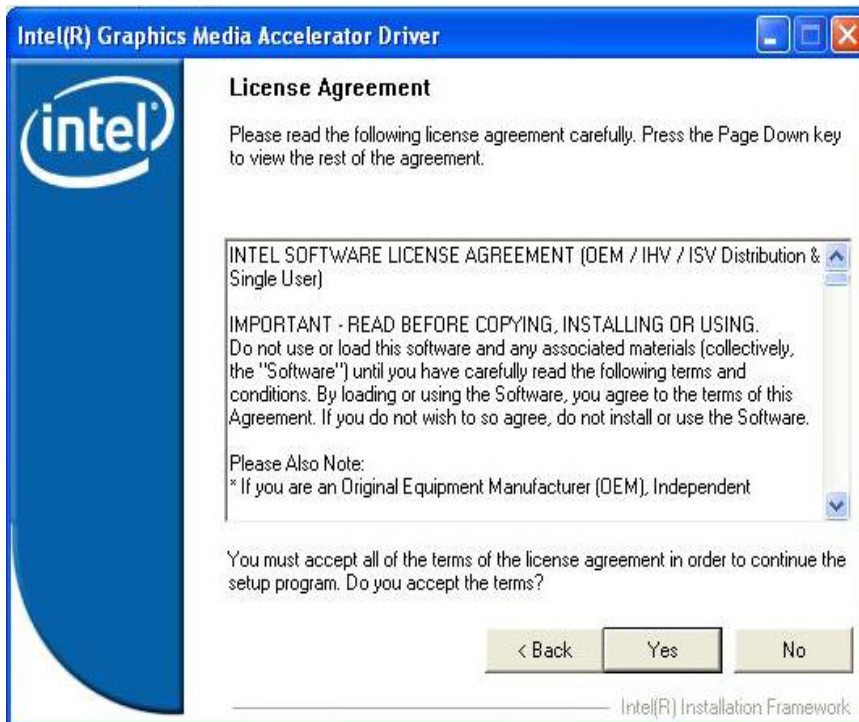
1. Insert the CD that comes with the board. Click **Intel** and then **Intel(R) GM/GME965 Chipset Drivers**.
2. Click **Intel(R) GM/GME965 Chipset Family Graphics Driver**.



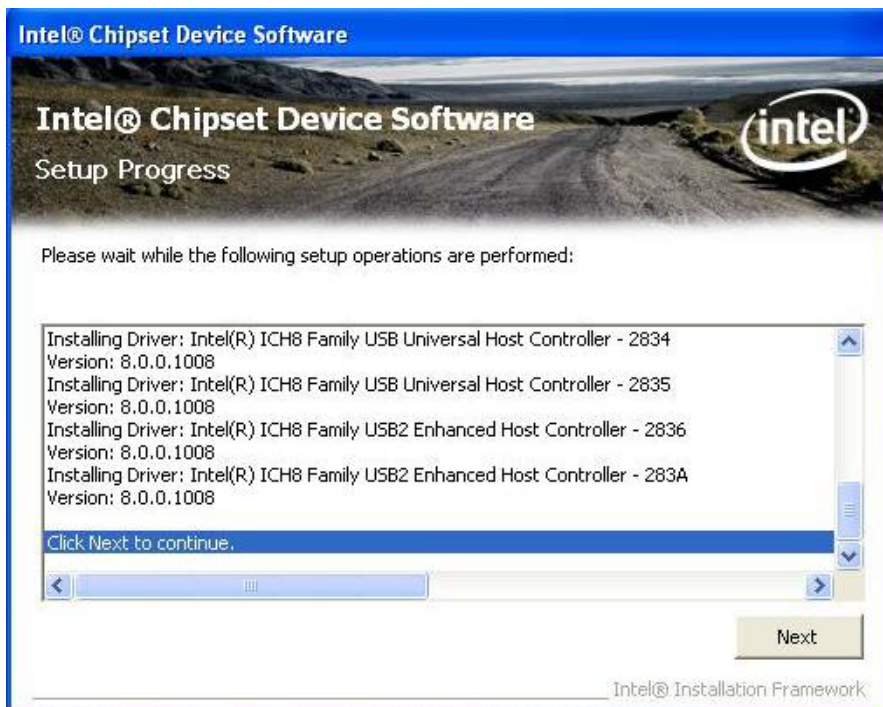
3. When the Welcome screen appears, click **Next** to continue.



4. Click **Yes** to agree with the license agreement and continue the installation.



5. Proceed as instructed and restart the computer as prompted and for changes to take effect.

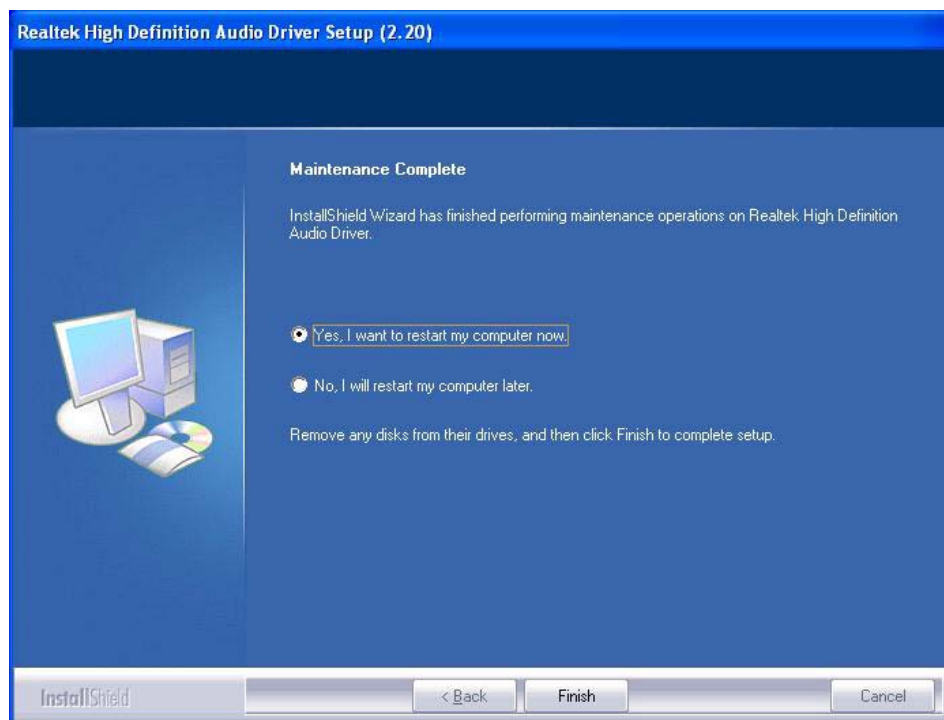


Realtek High Definition Audio Driver Installation

1. Insert the CD that comes with the board. Click **Intel** and then **Intel(R)GM/GME965Chipset Drivers**. And **Click Realtek High Definition Codec Audio Driver**.



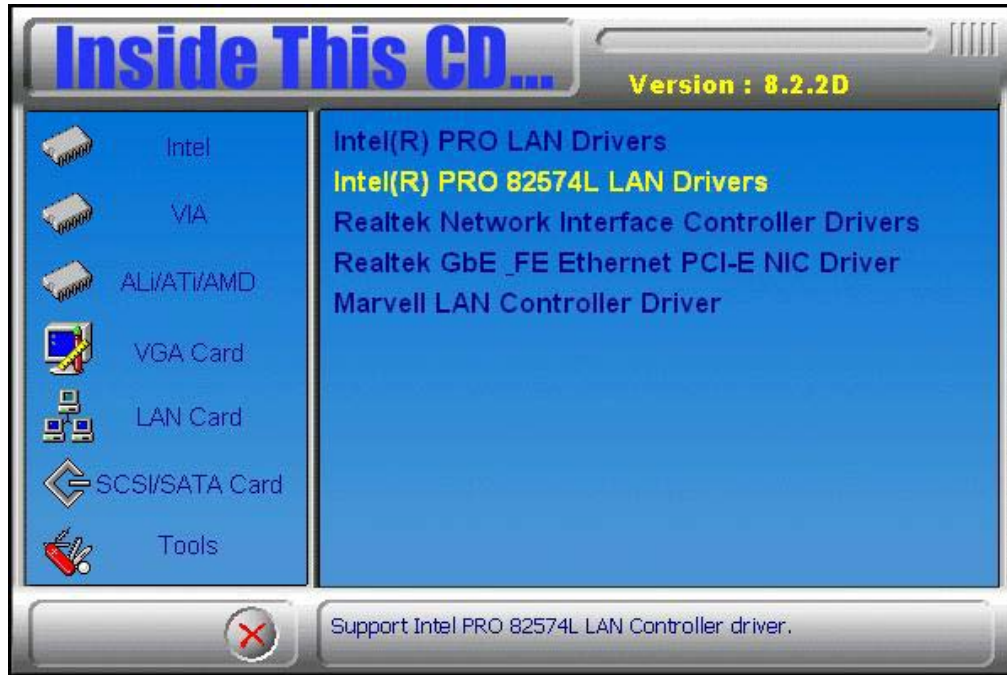
2. In the **Welcome** screen, click **Next** to continue. After the driver installation, click **Finish** on the next screen to restart the computer.



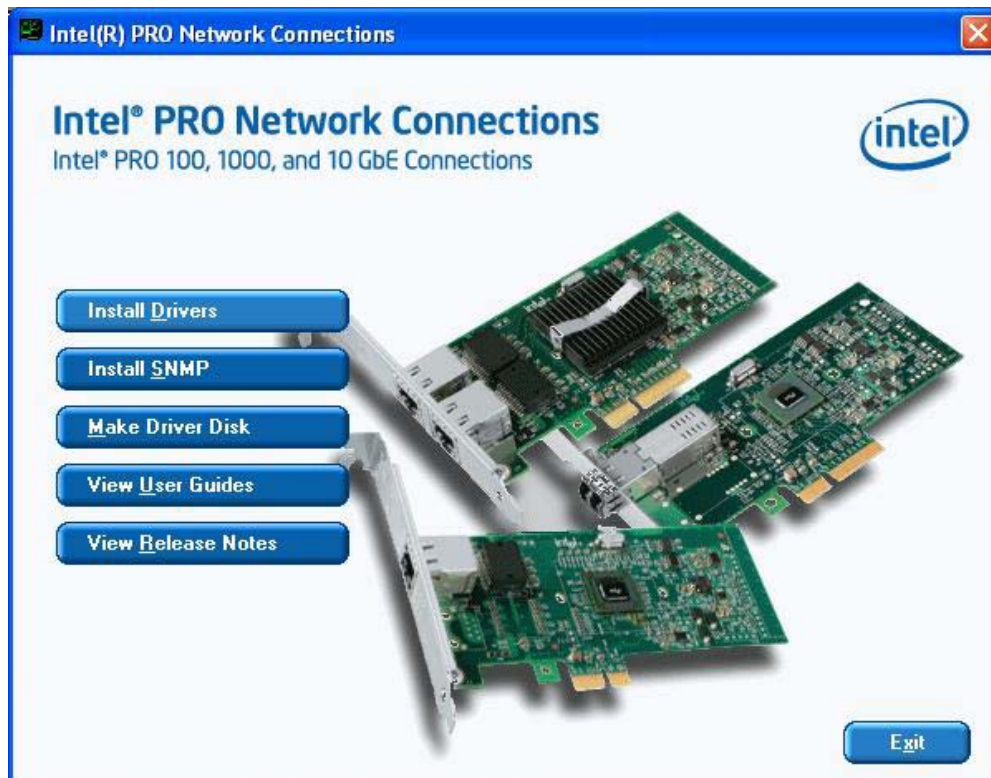
LAN Driver Installation

Follow the steps below to install the **Intel 82574L LAN Drivers**.

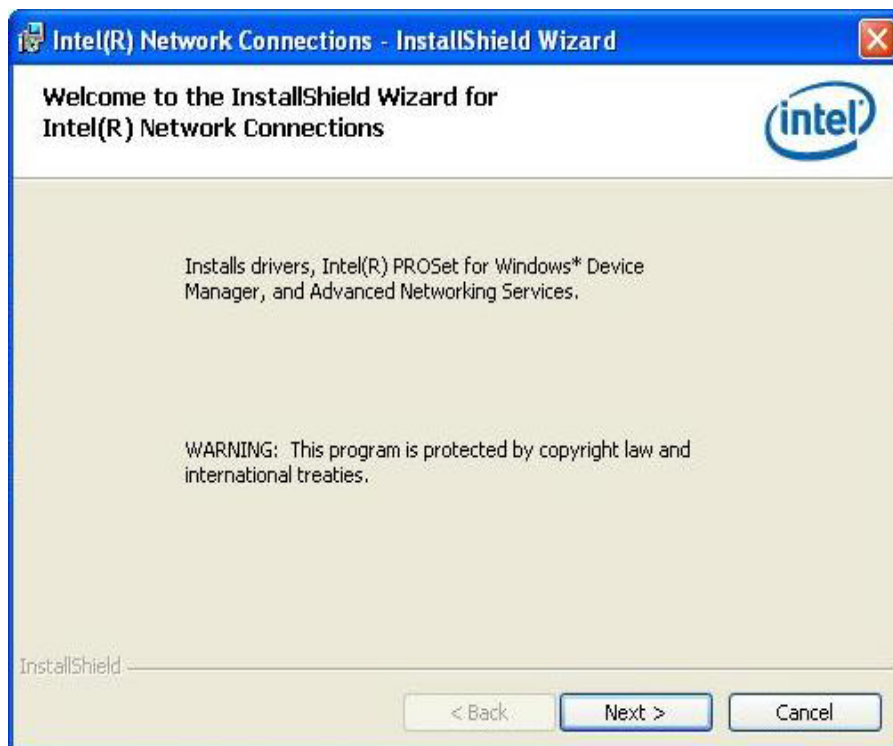
1. Insert the CD that comes with the board. Click **LAN Card** and then **Intel(R) PRO 82574L LAN Drivers**.



2. In the next screen, click **Install Drivers**.



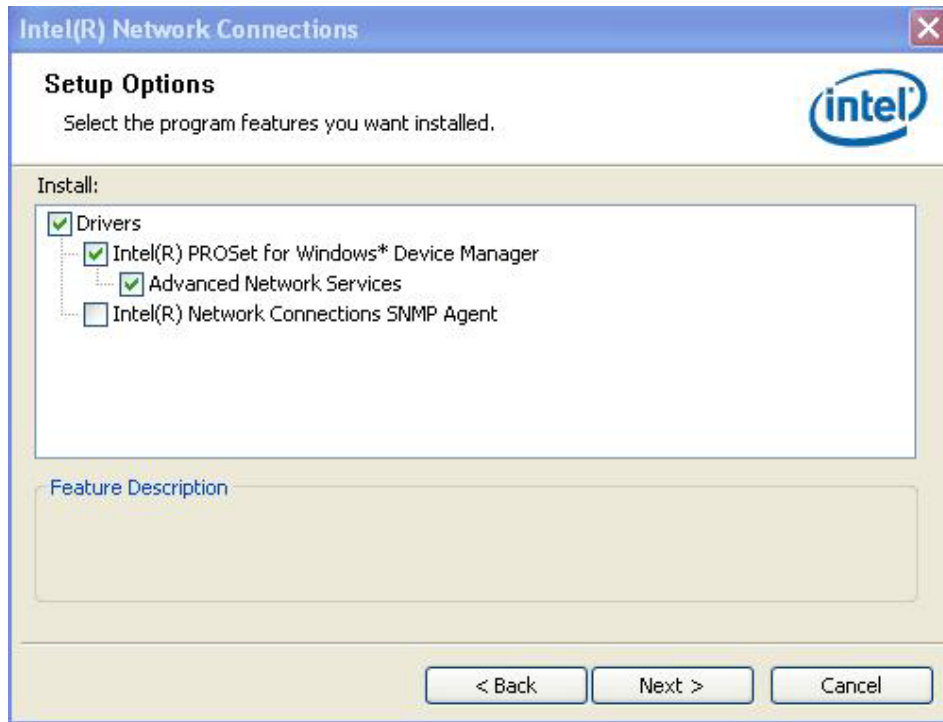
3. In the Welcome screen to the InstallShield Wizard for Intel(R) Network Connections, click **Next**.



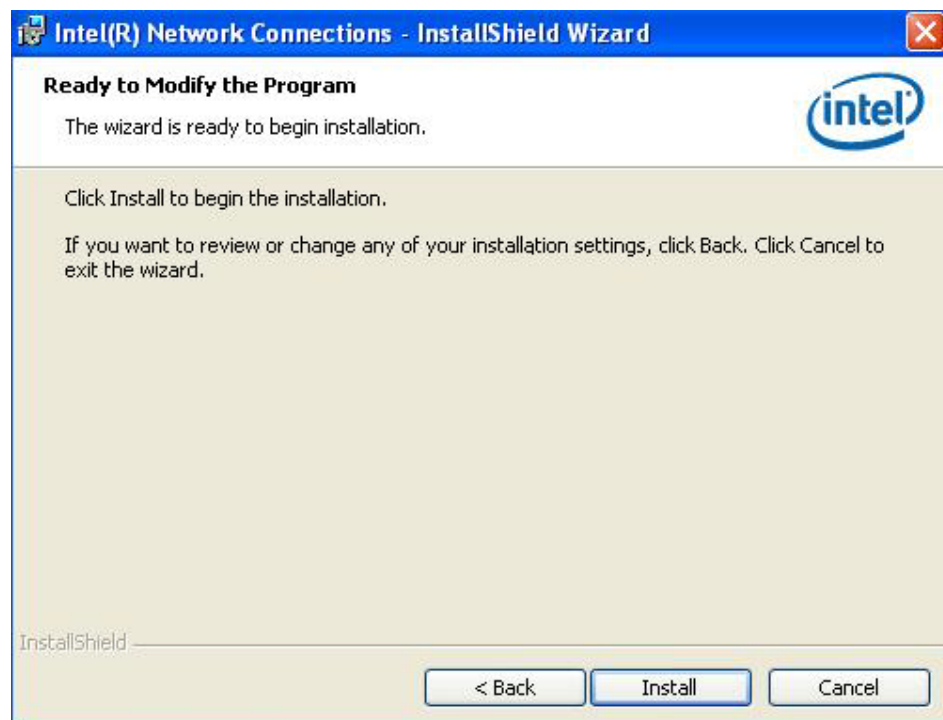
4. In the License Agreement screen, click **Next** to accept the terms in the license agreement.



5. In the Setup Options screen, click the checkbox of Drivers to select it and then click **Next**.



6. Click **Install** to begin installation of the drivers.



7. When the InstallShield Wizard is completed, click **Finish**.

Appendix

I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Reserved
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Reserved
IRQ10	Reserved
IRQ11	Reserved
IRQ12	PS/2 Mouse
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE

Watchdog Timer Configuration

The WDT is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sorts of circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

SAMPLE CODE:

```
//=====
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//=====
#include <stdio.h>
#include <stdlib.h>
#include "W627EHF.H"
//=====
int main (int argc, char *argv[]);
void copyright(void);
void EnableWDT(int);
void DisableWDT(void);
//=====
int main (int argc, char *argv[])
{
    unsigned char bBuf;
    unsigned char bTime;
    char **endptr;

    copyright();

    if (argc != 2)
    {
        printf(" Parameter incorrect!!\n");
        return 1;
    }

    if (Init_W627EHF() == 0)
    {
        printf(" Winbond 83627HF is not detected, program abort.\n");
        return 1;
    }
    bTime = strtol (argv[1], endptr, 10);
    printf("System will reset after %d seconds\n", bTime);

    EnableWDT(bTime);

    return 0;
}
//=====
```



```

void copyright(void)
{
    printf("\n===== Winbond 83627EHF Watch Timer Tester (AUTO DETECT) =====\n")
        "      Usage : W627E_WD reset_time\n"
        "      Ex : W627E_WD 3 => reset system after 3 second\n"
        "      W627E_WD 0 => disable watch dog timer\n");
}
//=====
void EnableWDT(int interval)
{
    unsigned char bBuf;

    bBuf = Get_W627EHF_Reg( 0x2D);
    bBuf &= (!0x01);
    Set_W627EHF_Reg( 0x2D, bBuf);           //Enable WDTO

    Set_W627EHF_LD( 0x08);                 //switch to logic device 8
    Set_W627EHF_Reg( 0x30, 0x01);         //enable timer

    bBuf = Get_W627EHF_Reg( 0xF5);
    bBuf &= (!0x08);
    Set_W627EHF_Reg( 0xF5, bBuf);         //count mode is second

    Set_W627EHF_Reg( 0xF6, interval);     //set timer
}
//=====
void DisableWDT(void)
{
    Set_W627EHF_LD(0x08);                 //switch to logic device 8
    Set_W627EHF_Reg(0xF6, 0x00);         //clear watchdog timer
    Set_W627EHF_Reg(0x30, 0x00);         //watchdog disabled
}
//=====

//=====
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//=====
#include "W627EHF.H"
#include <dos.h>
//=====
unsigned int W627EHF_BASE;
void Unlock_W627EHF (void);
void Lock_W627EHF (void);
//=====
unsigned int Init_W627EHF(void)
{
    unsigned int result;
    unsigned char ucDid;

    W627EHF_BASE = 0x2E;
    result = W627EHF_BASE;

    ucDid = Get_W627EHF_Reg(0x20);
    if (ucDid == 0x88)
    {   goto Init_Finish;   }

    W627EHF_BASE = 0x4E;
    result = W627EHF_BASE;
    ucDid = Get_W627EHF_Reg(0x20);
    if (ucDid == 0x88)
    {   goto Init_Finish;   }

    W627EHF_BASE = 0x00;
    result = W627EHF_BASE;

Init_Finish:
    return (result);
}
//=====
void Unlock_W627EHF (void)
{
    outportb(W627EHF_INDEX_PORT, W627EHF_UNLOCK);
    outportb(W627EHF_INDEX_PORT, W627EHF_UNLOCK);
}

```

```

//=====
void Lock_W627EHF (void)
{
    outportb(W627EHF_INDEX_PORT, W627EHF_LOCK);
}
//=====
void Set_W627EHF_LD( unsigned char LD)
{
    Unlock_W627EHF();
    outportb(W627EHF_INDEX_PORT, W627EHF_REG_LD);
    outportb(W627EHF_DATA_PORT, LD);
    Lock_W627EHF();
}

//=====
void Set_W627EHF_Reg( unsigned char REG, unsigned char DATA)
{
    Unlock_W627EHF();
    outportb(W627EHF_INDEX_PORT, REG);
    outportb(W627EHF_DATA_PORT, DATA);
    Lock_W627EHF();
}
//=====
unsigned char Get_W627EHF_Reg(unsigned char REG)
{
    unsigned char Result;
    Unlock_W627EHF();
    outportb(W627EHF_INDEX_PORT, REG);
    Result = inportb(W627EHF_DATA_PORT);
    Lock_W627EHF();
    return Result;
}
//=====

//=====
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//=====
#ifndef __W627EHF_H
#define __W627EHF_H          1
//=====
#define W627EHF_INDEX_PORT (W627EHF_BASE)
#define W627EHF_DATA_PORT  (W627EHF_BASE+1)
//=====
#define W627EHF_REG_LD      0x07
//=====
#define W627EHF_UNLOCK      0x87
#define W627EHF_LOCK        0xAA
//=====
unsigned int Init_W627EHF(void);
void Set_W627EHF_LD( unsigned char);
void Set_W627EHF_Reg( unsigned char, unsigned char);
unsigned char Get_W627EHF_Reg( unsigned char);
//=====
#endif          __W627EHF_H

```