AXIOMTEK

IMB201 Series
Intel® Core™2 Duo/Pentium® D
Pentium® 4/Celeron® D
ATX Industrial Motherboard
User's Manual

RoHS

Disclaimers

This manual has been carefully checked and believed to contain accurate information. AXIOMTEK Co., Ltd. assumes no responsibility for any infringements of patents or any third party's rights, and any liability arising from such use.

AXIOMTEK does not warrant or assume any legal liability or responsibility for the accuracy, completeness or usefulness of any information in this document. AXIOMTEK does not make any commitment to update the information in this manual.

AXIOMTEK reserves the right to change or revise this document and/or product at any time without notice.

No part of this document may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of AXIOMTEK Co., Ltd.

CAUTION

If you replace wrong batteries, it causes the danger of explosion. It is recommended by the manufacturer that you follow the manufacturer's instructions to only replace the same or equivalent type of battery, and dispose of used ones.

ESD Precautions

Computer boards have integrated circuits sensitive to static electricity. To prevent chipsets from electrostatic discharge damage, please take care of the following jobs with precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.

- Before holding the board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. It discharges static electricity from your body.

- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components.

Trademarks Acknowledgments

AXIOMTEK is a trademark of AXIOMTEK Co., Ltd.

Windows$^®$ is a trademark of Microsoft Corporation.

Phoenix & AWARD are trademarks of Phoenix Technology Ltd.

IBM, PC/AT, PS/2, VGA are trademarks of International Business Machines Corporation.

Intel$^®$ Core^{TM} 2 Duo Pentium$^®$ D, Pentium$^®$ 4, Celeron$^®$ D are trademarks of Intel Corporation.

Winbond is a trademark of Winbond Electronics Corp.

Other brand names and trademarks are the properties and registered brands of their respective owners.

Table of Contents

MEMO

C h a p t e r   1
Introduction

The IMB201 ATX industrial motherboard supports Intel$^{®}$ Core^{TM} 2 Duo, Pentium$^{®}$ D, Pentium$^{®}$ 4 and Celeron$^{®}$ D processors at FSB 533/800/1066 MHz. The board integrates chipsets Intel$^{®}$ Q965 and ICH8DO that deliver outstanding system performance through high-bandwidth interfaces, multiple I/O functions for interactive applications and various embedded computing solutions. There are four DDR2 DIMM sockets for dual channel DDR2 533/667/800 MHz memory, maximum memory capacity up to 8GB. The board also features Ethernet 10/100/1000Mb, Dual PCI-Express LAN, six Serial ATA channels for total six Serial ATA hard drives at maximum transfer rate up to 300MB/sec, ten USB 2.0 high speed compliant, built-in high definition audio codec that can achieve the best stability and reliability for industrial applications.

1.1 Specifications

- **CPU: Intel**® **Core**™ **2 Duo, Pentium**® **D, Pentium**® **4 and Celeron**® **D processors**

- **System Chipset: Intel**® **Q965 & ICH8DO**

- **CPU Socket: LGA775**

- **Front-Side Bus: 533/800/1066MHz**

- **BIOS**
  - Phoenix-Award PnP Flash BIOS

- **EIDE (IMB201V2GF only)**
  - One ATA33/66/100 Channel for total of two IDE devices (Used PCIex1 to PATA controller)

- **System Memory**
  - Four DDR2 DIMM sockets
  - Maximum up to 8GB DDR2 memory
  - Support Dual Channel DDR2 533/667/800MHz memory

- **Onboard Multi-I/O**
  - Controller: Winbond W83627HG-AWx2
  - Serial Ports: 3 ports for RS-232(COM2/3/4) and 1 port for RS-232/422/485(COM1)
  - Parallel Port: One bi-directional with ECP/EPP/SPP support
  - Floppy Controller: Support for two drives (1.44MB for each)

- **USB Interface**
  - Ten USB 2.0 high speed compliant

- **Display**
  - Integrated on Intel Q965 GMCH(For CRT Only)

- **Ethernet**
  - Dual Realtek 8111B PCI-Express controller support 10/100/1000Mb

- **CompactFlash^{TM} (IMB201V2GF only)**
    - Support CF type II socket

- **IEEE 1394 (IMB201V2GF only)**
    - Built-in VIA 6308 IEEE1394 controller
    - Support PortA and portB

- **Serial ATA**
    - Support Serial ATA/ ATA II
    - Six Serial ATA Channels for total of Six Serial ATA hard drive
    - Maximum transfer rate could up to 300MB/sec
    - Support SATA RAID function(RAID0/1/5 function)

- **Audio**
    - Realtek ALC888 HD Audio codec onboard
    - Audio jack supports Line-out and Mic-in
    - 1 x AUX_IN (1x4pin),

- **Expansion Slot**
    - 1 PCI-E (x16) , 2 PCI-E (x1) , 4 PCI Slot(32bit/33MHZ)
    - IMB201V2GF only has 3xPCI Slot onboard

- **Hardware Monitoring**
    - Controller: Winbond W83627HF-AWx2
    - Detection of CPU temperature, System temperature, Power failure and Fan speed

- **Watchdog Timer**
    - System reset or SMI interrupt by jumper selectable
    - Software programmable timer (1-255 level)

- **Dimensions:** 305mm x 244mm (4 layer)

NOTE: All specifications and images are subject to change
without notice.

1.2   Utilities Supported

- Intel® Q965 Utility and Drivers
- VGA Drivers
- Ethernet Utility and Drivers
- Audio Utility and Drivers

1.3 Block Diagram
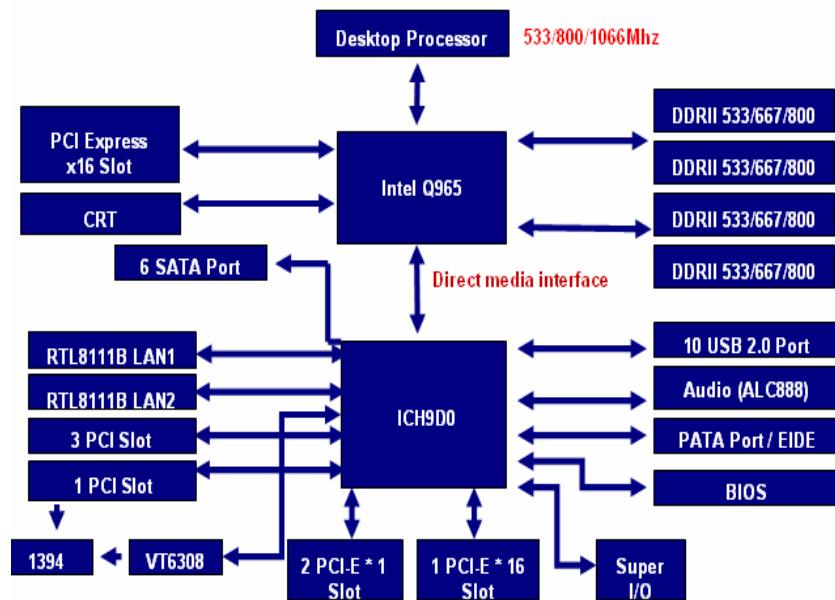
1.4 Real Panel Connector
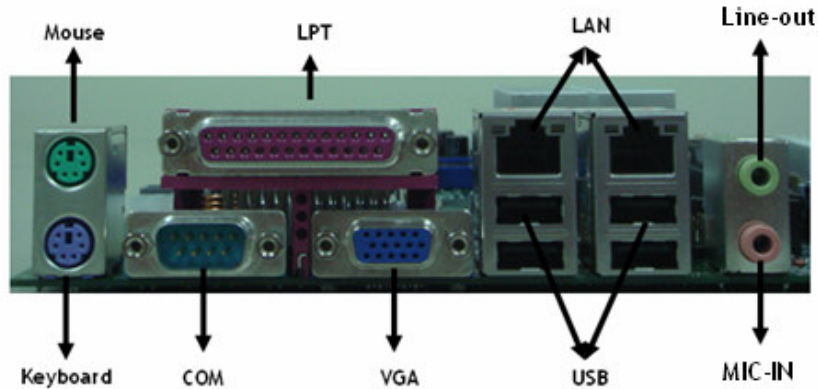
Chapter 2
Jumpers and Connectors

2.1　Board Dimensions
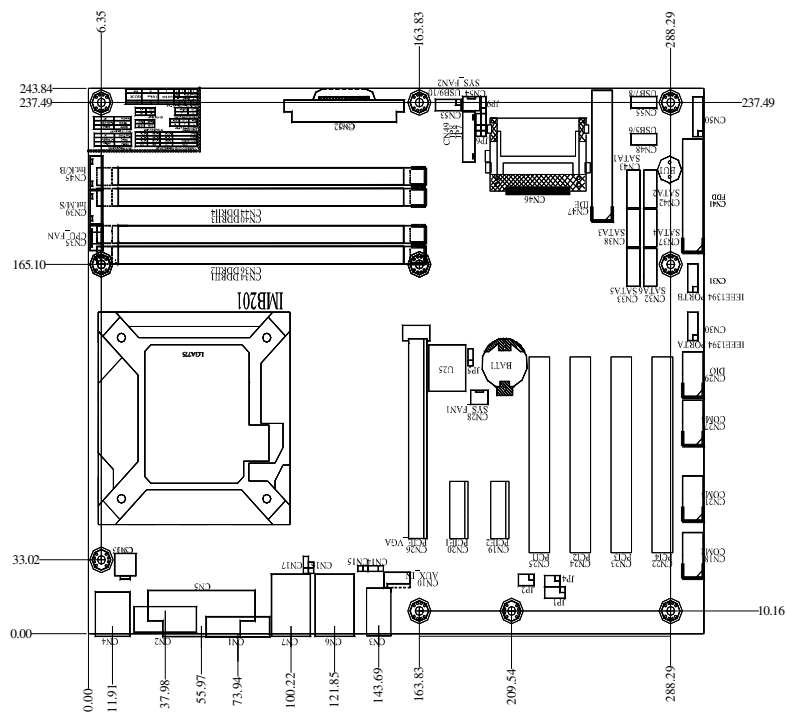
2.2   Board Layout
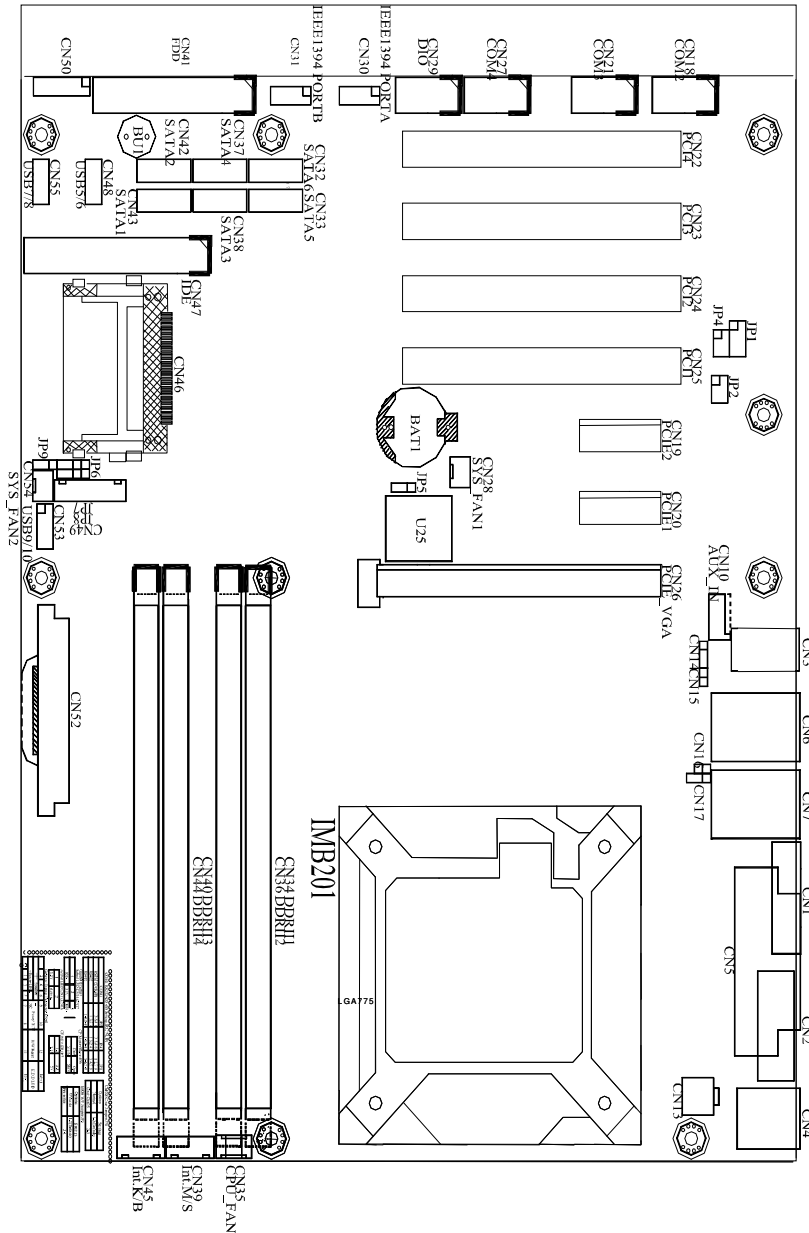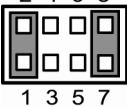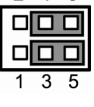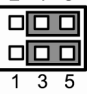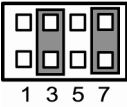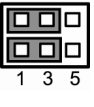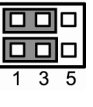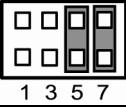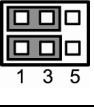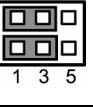
2.3　Jumper Settings

Proper jumer settings configure the **IMB201** to meet your application purpose.

2.3.1 COM1 Mode Select Jumpers: JP1, JP2, JP4

These jumpers select the COM1 port's communication mode to operate RS-232 or RS-422/485.

Description	Function	Jumper Setting		
COM1	RS-232 (Default)	**JP1** 2 4 6 8 1 3 5 7	**JP2** 2 4 6 1 3 5	**JP4** 2 4 6 1 3 5
	RS-422	**JP1** 2 4 6 8 1 3 5 7	**JP2** 2 4 6 1 3 5	**JP4** 2 4 6 1 3 5
	RS-485	**JP1** 2 4 6 8 1 3 5 7	**JP2** 2 4 6 1 3 5	**JP4** 2 4 6 1 3 5

2.3.2 BIOS Write Protection Jumper: JP5

If this jumper is set up for protection, the BIOS contents of the board can not be updated or changed in any ways.
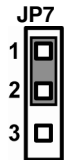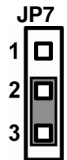
Description	Function	Jumper Setting
BIOS Write Protection	Writable (Default)	**JP5** 1 2 3
	Protection	**JP5** 1 2 3

2.3.3 CompactFlash function select: JP6 (IMB201V2GF only)

You may need to use this jumper for how to set Compactflash card on Master and slave
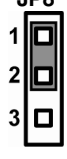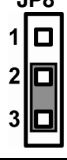
Description	Function	Jumper Setting
Compactflash function select	Slave (Default)	**JP6** 1 2
	Master	**JP6** 1 2

2.3.4 CompactFlash Power select: JP7 (IMB201V2GF only)

Description	Function	Jumper Setting
Compactflash voltage select	3.3V (Default)	JP7
	5V	JP7
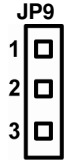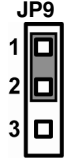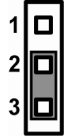
2.3.5 CMOS Clear Jumper: JP8

You may need to use this jumper is to clear the CMOS memory if incorrect settings in the Setup Utility.

Description	Function	Jumper Setting
Clear CMOS	Normal (Default)	JP8
	Clear	JP8

2.3.6 Watchdog Trigger Mode Jumper：JP9

The watchdog timer performs the sensitive error detection and report function.

Description	Function	Jumper Setting
Watchdog Trigger Mode	Disable	**JP9** 1 □ 2 □ 3 □
	GPIO	**JP9** 1 ▣ 2 ▣ 3 □
	Reset	**JP9** 1 □ 2 ▣ 3 ▣

2.4   Connectors

Connectors are linking the board with other components of the system. Loose or improper connection might cause problems that you must make sure all connectors properly and firmly connected. Here is a summary table shows you all connectors on the board.

Function	Connector	Function	Connector
VGA Port	CN1	System FAN	CN28
COM1 Port	CN2	DIO Port	CN29
Audio Jack	CN3	IEEE 1394 Port A (Optional)	CN30
KB/Mouse Port	CN4	IEEE 1394 Port B (Optional)	CN31
LPT Port	CN5	S-ATA Port6	CN32
LAN2 & USB3/USB4	CN6	S-ATA Port5	CN33
LAN1 & USB1/USB2	CN7	DDR2 Channel A Slot1	CN34
Aux IN connector	CN10	CPU FAN	CN35
ATX 12 V Power connector (2x2 Pin)	CN13	DDR2 Channel A Slot2	CN36
LAN2 Speed LED	CN14	S-ATA Port4	CN37
LAN2 Act/Link LED	CN15	S-ATA Port3	CN38
LAN1 Act/Link LED	CN16	Internal Mouse	CN39
LAN1 Speed LED	CN17	DDR2 Channel B Slot1	CN40
COM2 Port	CN18	FDD	CN41
PCIex1 Slot 2	CN19	SATA Port 2	CN42
PCIex1 Slot 1	CN20	SATA Port1	CN43
COM3 Port	CN21	DDR2 Channel B Slot2	CN44
PCI Slot4	CN22	Internal keyboard	CN45
PCI Slot3	CN23	CF Socket (optional)	CN46
PCI Slot2	CN24	IDE Port (Optional)	CN47
PCI Slot1	CN25	USB5/USB6	CN48
PCIex16 Slot	CN26	Front panel connector	CN50
COM4 Port	CN27	24 Pin ATX Power connector	CN52
Buzzer	BU1	USB9/USB10	CN53
CPU FAN	U22	System FAN2	CN54
BIOS	U25	USB7/USB8	CN55
Battery	BAT1		

-- End of Connector Table --

2.4.1 VGA Connector: CN1

CN1 is a standard 15-pin pin DB15 connector commonly used for the CRT VGA display.

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	2	Green	3	Blue
4	N/A	5	GND	6	AGND
7	AGND	8	AGND	9	N/A
10	GND	11	N/A	12	DDC DAT
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK

CN1
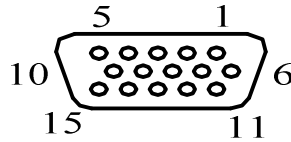
2.4.2 Serial Port Interface Connector: CN2 (RS232/RS422/RS485)

The board has four onboard serial ports .COM1 is a standard D-Sub 9 pin connector and support RS232 function
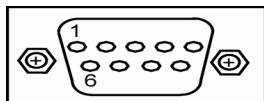
PIN Number	CN2		
	RS-232	**RS-422**	**RS-485**
1	Data Carrier Delect(DCD)	TX-	Data -
2	Receive Date(RXD)	TX+	Data +
3	Transmit Data(TXD)	RX+	NC
4	Data Terminal Ready (DTR)	RX-	NC
5	GND	GND	GND
6	Data Set Ready(DSR)	NC	NC
7	Request to Send(RTS)	NC	NC
8	Clear to Send(CTS)	NC	NC
9	Ring Indicator(RI)	NC	NC

2.4.3 Serial Port Interface Connectors: CN18, CN21, CN27 (RS232)

The serial interface for the board consists of COM2 port (CN18), COM3 (CN21) and COM4 (CN27) supports RS-232.

1	**Data Carrier Delect(DCD)**
2	**Data Set Ready(DSR)**
3	**Receive Date(RXD)**
4	**Request to Send(RTS)**
5	**Transmit Data(TXD)**
6	**Clear to Send(CTS)**
7	**Data Terminal Ready (DTR)**
8	**Ring Indicator(RI)**
9	**GND**
10	**NC**

2.4.4 PS/2 Keyboard and Mouse Connector: CN4/CN5

CN4/CN5 is a DIN connector for PS/2 Mouse and PS/2 keyboard connection.

Pin	Signal	Pin	Singal
1	Keyboard Data	7	GND
2	GND	8	Mouse Data
3	GND	9	GND
4	VCC	10	VCC
5	GND	11	GND
6	Mouse Clock	12	Mouse Clock
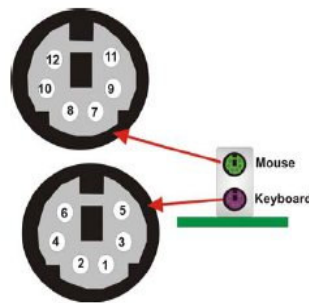
2.4.5 Ethernet Connector: CN6/CN7

CN6/CN7

PIN	DESCRIPTION	PIN	DESCRIPTION
1	TXA+	5	TXC-
2	TXA-	6	TXB-
3	TXB+	7	TXD+
4	TXC+	8	TXD-
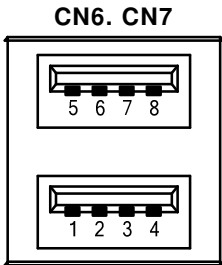
2.4.6 USB Port Connectors: CN6/CN7

The Universal Serial Bus (USB) port connector on the board is for the installation of peripherals supporting the USB interface. Each USB port consists of two 4-pin standard USB ports.

Pin	Signal
1, 5	USB Vcc
2, 6	USB -
3, 7	USB +
4, 8	USB GND
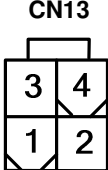
CN6. CN7

2.4.7 ATX 4 Pin 12V In Connector: CN13

You can connect it to the ATX12V power supply for CPU Core Voltage.

Pin	Signal
1	GND
2	GND
3	+12V
4	+12V

CN13

2.4.8 Floppy Disk Port Connector: CN41

The board provides a 34-pin header type connector, FDD1, supporting up to two floppy drives. The floppy drives may be any one of the following types: 5.25" 360KB/1.2MB and 3.5" 720KB/1.44MB/2.88MB.

Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	Reduce write current	3	GND
4	N/C	5	GND	6	N/C
7	GND	8	Index #	9	GND
10	Motor enable A #	11	GND	12	Drive select B #
13	GND	14	Drive select A #	15	GND
16	Motor enable B #	17	GND	18	Direction #
19	GND	20	STEP #	21	GND
22	Write data #	23	GND	24	Write gate #
25	GND	26	Track #	27	GND
28	Write protect #	29	GND	30	Read data #
31	GND	32	Side 1 select #	33	GND
34	Disk change #				

CN41
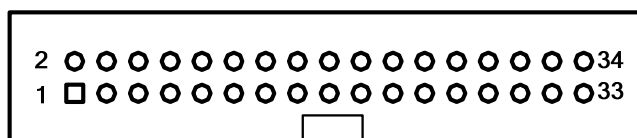
2.4.9 SATA Connectors: CN32, CN33, CN37, CN38, CN42, CN43

These SATA connectors are for high-speed SATA interface ports and they can be connected to hard disk devices.

Pin	Signal
1	GND
2	SATA_TX+
3	SATA_TX-
4	GND
5	SATA_RX-
6	SATA_RX+
7	GND

CN32, CN33, CN37, CN38, CN42, CN43

7   1
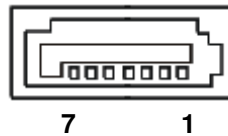
2.4.10 USB Connectors: CN48, CN53, CN55

These Universal Serial Bus (USB) connectors on this board are for installing versatile USB interface peripherals. These are 10-pin standard onboard USB connectors.

Pin	Signal	Pin	Signal
1	USB POWER	2	USB POWER
3	USB P0-	4	USB P1-
5	USB P0+	6	USB P1+
7	USB GND	8	USB GND
9	NC	10	GND

CN48, CN53, CN55
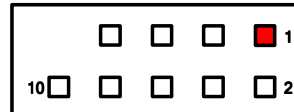
2.4.11 IEEE 1394 Port A & Port B (IMB201V2GF only)

These IEEE 1394 connectors on this board are for installing versatile 1394 interface peripherals. These are 10-pin standard onboard 1394 connectors.

Pin	Signal	Pin	Signal
1	Port A1+	2	Port A1−
3	GND	4	GND
5	Port B1+	6	Port B1−
7	+12V	8	+12V
9	NC	10	GND

2.4.12 Front Panel Connector: CN50

EXT SPK-	Buzzer	NC	EXT SPK+	PWRSW+	HW RST+	HDDLED+
2	**4**	**6**	**8**	**10**	**12**	**14**

1	**3**	**5**	**7**	**9**	**11**	**13**
PWRLED+	NC	PWRLED-	NC	PWRSW-	HW RST-	HDDLED-
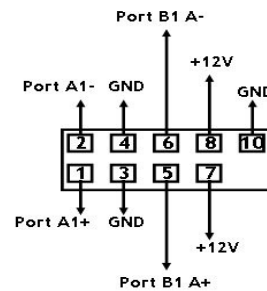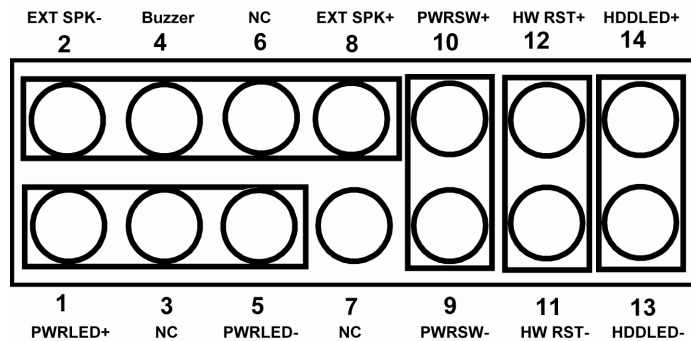
- **Power LED**

Pins 1, 3, 5 connect the system power LED indicator to its respective switch on the case. Pin 1 is +, and pin 5 assigned to -. Pin 3 is defined as NC.

- **External Speaker and Internal Buzzer Connector**

Pins 2, 4, 6, 8 can be connected to the case-mounted speaker unit or internal buzzer.

- **Power Botton**

Pins 9 and 10 connect the front panel's ATX power button to the card, which allows users to control ATX power supply on or off.

- **Hareware Reset**

Pins 11 and 12 are designed for Hardware Rese*t*.

- **HDD Activity LED**

This connector extends to the hard drive activity LED on the control panel. This LED will flash when the HDD is being accessed. Pins 13 and 14 can be connected to the hard disk drive and front panel HDD LED.

2.4.13 Internal Mouse/Keyboard Connectors: CN39/CN45

The board provides a keyboard (CN45) and Mouse (CN39) interface with two 5-pin connectors.

Clock	1 ■
Data	2 □
No Connection	3 □
GND	4 □
Power	5 □
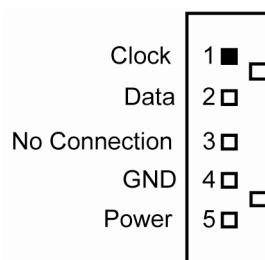
2.4.14 LAN1/LAN2 Speed LED Connector: CN17 and CN14

Pin	Signal
1	100, Low Active $-$
2	Speed LED power $+$
3	Gigibit, Low Active $-$

CN14/CN17

1 □
2 □
3 □

2.4.15 LAN1/LAN2 Act/Link LED Connector: CN16 and CN15

Pin	Signal
1	Link active $+$
2	Link active $-$

CN15/CN16

1 □
2 □

2.4.16 DIO Port Connector: CN29 (IMB201V2GF only)

The board is equipped a digital I/O connector CN29 that meets requirements for a system customary automation control. The digital I/O can be configured to control cash drawers, sense warning signals from an Uninterrupted Power System (UPS), or perform store security control. The digital I/O is controlled via software programming.

Pin	Signal	Pin	Signal
1	Out-1	2	In-1
3	Out-2	4	In-2
5	Out-3	6	In-3
7	Out-4	8	In-4
9	GND	10	GND

CN29
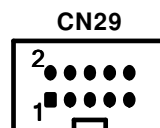
2.4.17 System Fan/Fan 2 Connectors: CN28/CN54

You can connect the system cooling fan cable to CN28/CN54 for system cooling fan power.

Pin	Signal
1	GND
2	+12V
3	SENSOR

CN28, CN54
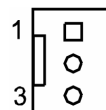
2.4.18 CPU Fan Connector: CN35

A CPU fan is always needed for cooling CPU heat. The CPU fan connector CN35 provides power to the CPU fan.

Pin	Signal
1	GND
2	+12V
3	SENSOR
4	CONTROL

CN35
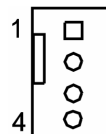
2.4.19 24-Pin ATX Power Connector: CN52

CN52 is the 24-pin ATX Power connector on the board. Please refer to next page for detailed pin assignment table.

Pin	Signal	Pin	Signal
1	3.3V	2	3.3V
3	GND	4	5V
5	GND	6	5V
7	GND	8	PWR
9	5VSB	10	12V
11	12V	12	3.3V
13	3.3V	14	-12V
15	GND	16	PS_ON
17	GND	18	GND
19	GND	20	-5V
21	5V	22	5V
23	5V	24	GND

ATX Power Connector: CN52

24	23	22	21	20	19	18	17	16	15	14	13
12	11	10	9	8	7	6	5	4	3	2	1
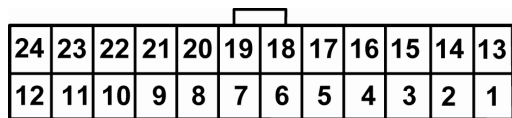
C h a p t e r 3
Hardware Installation

Before installing the processor, please access Intel$^®$ website for more detailed information http://www.intel.com .

3.1   Installing the Processor

The LGA775 processor socket comes with a cover to protect the processor. Please install the processor into the CPU socket step by step as below:
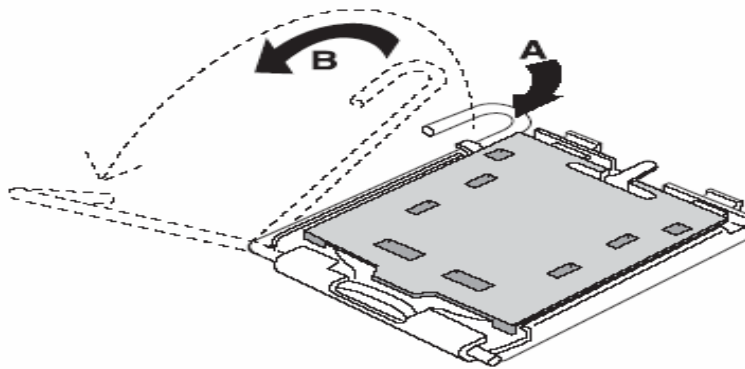
Hold the hook (A) of the lever and push it down.
Pull the lever (B) asisde to unlock the cover.
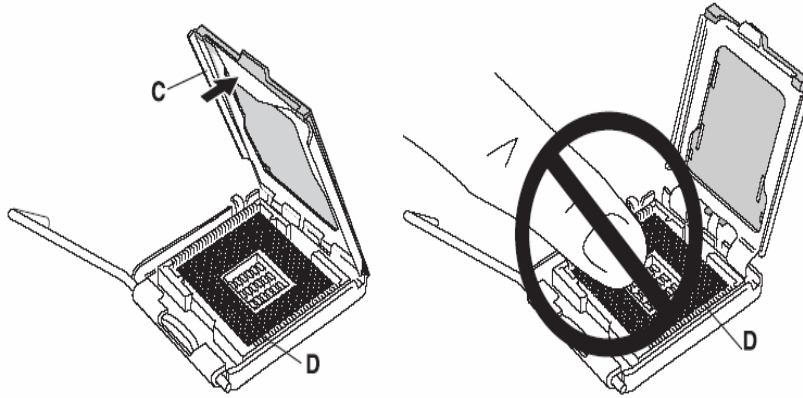
Open the cover (C), you can see the contact.

Be careful not to touch the contact (D).
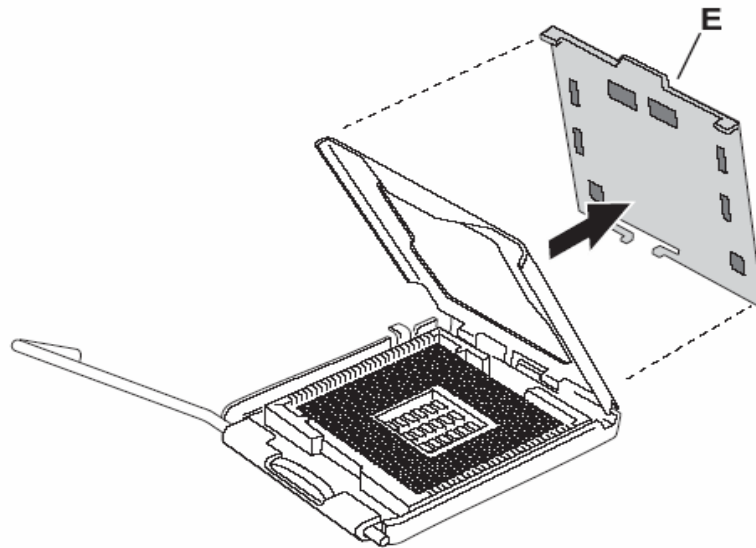
Remove the plastic cap (E) from the cover.
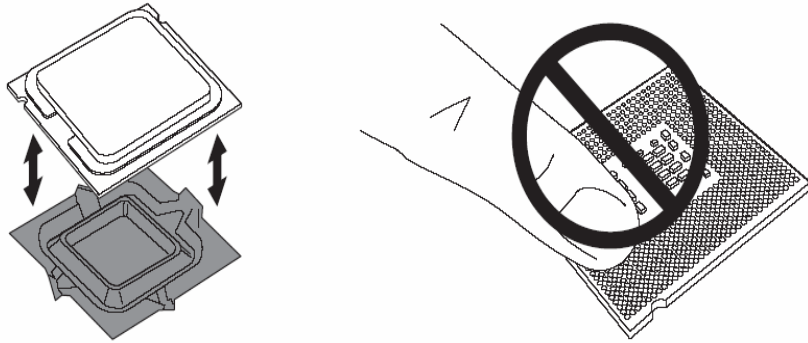
Place the CPU down into the socket. Be careful not to touch the contact.
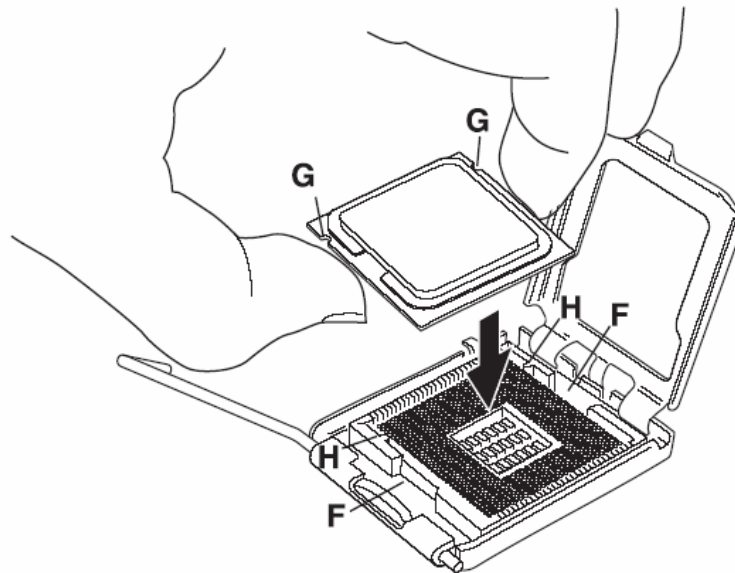
Hold the edges of the CPU, and orientate it as the marked direction (G) down into the socket to match the (H) and (F) locations.
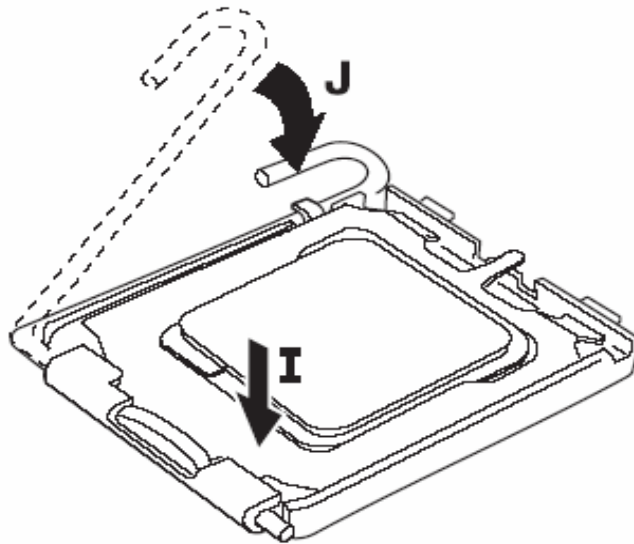
Slightly push down the cover and hook the lever (I~J). The CPU is completely locked.
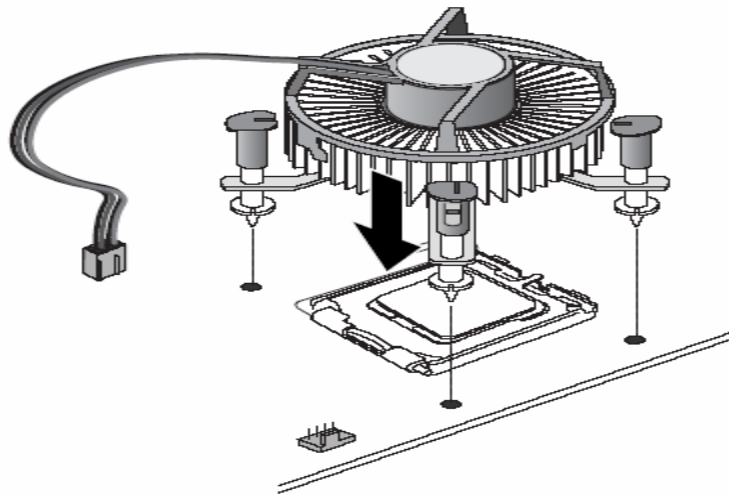
Orientate the CPU cooling fan to fixing holes on the board.
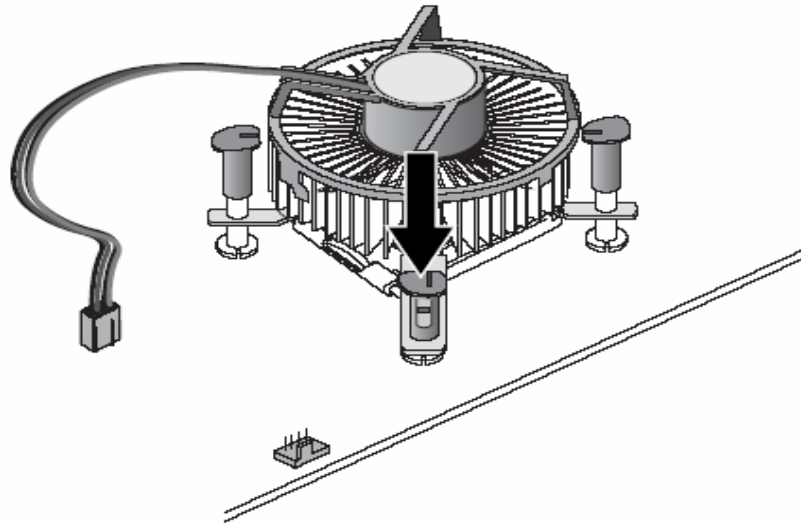
Screw the CPU cooling fan onto the board.
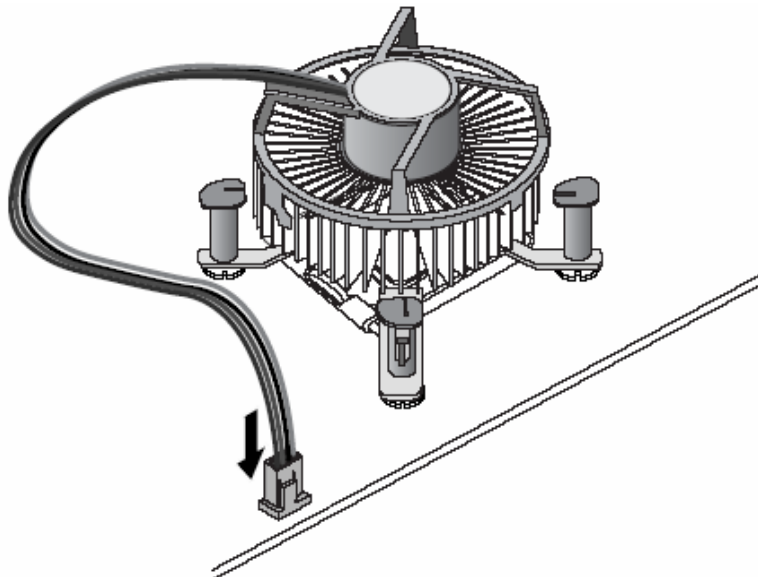
Make sure the CPU fan is plugged to the CPU fan connector.

3.2   Installing the Memory

The board supports four 240-pin DDR2 DIMM memory sockets with maximum memory capacity up to 8GB.

Please follow steps below to install the memory modules:

1   Push down latches on each side of the DIMM socket.
2   Align the memory module with the socket that notches of memory module must match the socket keys for a correct intallation.
3   Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered upwards and clipped on to the edges of the DIMM.
4   Install any remaining DIMM modules.
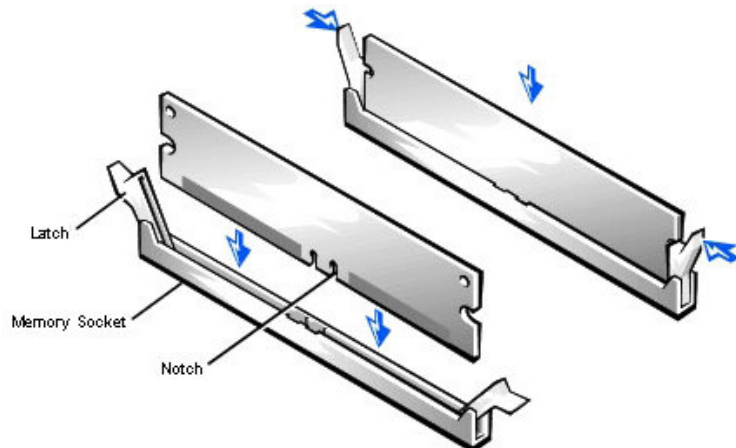
C h a p t e r 4
Hardware Description

4.1 Microprocessors

The IMB201 Series supports Intel® Core™ 2 Duo, Pentium® D, Pentium® 4 and Celeron® D processors, which make your system operated under Windows® 2000/XP and Linux environments. The system performance depends on the microprocessor. Make sure all correct settings are arranged for your installed microprocessor to prevent the CPU from damages.

4.2 BIOS

The IMB201 Series uses Award Plug and Play BIOS with a single 8Mbit Flash EEPROM.

4.3 System Memory

The IMB201 Series industrial CPU card supports four 240-pin DDR2 DIMM sockets for a maximum memory of 8GB DDR2 SDRAMs. The memory module can come in sizes of 256MB, 512MB, 1GB and 2GB.

4.4 I/O Port Address Map

The Intel$^®$ Core^{TM} 2 Duo, Pentium$^®$ D, Pentium$^®$ 4 and Celeron$^®$ D CPUs can communicate via I/O ports. There are total 1KB port addresses available for assignment to other devices via I/O expansion cards.

Address	Devices
000-01F	DMA controller #1
020-03F	Interrupt controller #1
040-05F	Timer
060-06F	Keyboard controller
070-07F	Real time clock, NMI
080-09F	DMA page register
0A0-0BF	Interrupt controller #2
0F0	Clear math coprocessor busy signal
0C0-0DF	DMA controller #2
0F1	Reset math coprocessor
0F8-0FF	Math processor
120	Disable watchdog timer operation (read)
121	Enable watchdog timer operation (read)
122	Watchdog
1F0-1F8	Fixed disk controller
200-207	Game port
300-31F	Prototype card
360-36F	Reserved
378-37F	Parallel port #1
3B0-3BF	MDA video card (including LPT1)
3C0-3CF	EGA card
3D0-3DF	CGA card
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port #1 (COM1)
2F8-2FF	Serial port #2 (COM2)

C h a p t e r 5
Award BIOS Utility

The Phoenix-Award BIOS provides users with a built-in Setup program to modify basic system configuration. All configured parameters are stored in a battery-backed-up RAM (CMOS RAM) to save the Setup information whenever the power is turned off.

5.1   Entering Setup

There are two ways to enter the Setup program. You may either turn ON the computer and press <Del> immediately, or press the <Del> and/or <Ctrl>, <Alt>, and <Esc> keys simultaneously when the following message appears at the bottom of the screen during POST (Power on Self Test).

TO ENTER SETUP PRESS DEL KEY

If the message disappears before you respond and you still want to enter Setup, please restart the system to try it again. Turning the system power OFF and ON, pressing the "RESET" button on the system case or simultaneously pressing <Ctrl>, <Alt>, and <Del> keys can restart the system. If you do not press keys at the right time and the system doesn't boot, an error message will pop out to prompt you the following information:

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR <DEL> TO ENTER SETUP

5.2　Control Keys

Up arrow	Move cursor to the previous item
Down arrow	Move cursor to the next item
Left arrow	Move cursor to the item on the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu -- Quit and delete changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp/"+" key	Increase the numeric value or make changes
PgDn/"–" key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the Setup default, only for Option Page Setup Menu
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

5.3　Getting Help

● **Main Menu**
The online description of the highlighted setup function is displayed at the bottom of the screen.

● **Status Page Setup Menu/Option Page Setup Menu**
Press <F1> to pop out a small Help window that provides the description of using appropriate keys and possible selections for highlighted items. Press <F1> or <Esc> to exit the Help Window.

5.4   The Main Menu

Once you enter the Award BIOS CMOS Setup Utility, the Main Menu appears on the screen. In the Main Menu, there are several Setup functions and a couple of Exit options for your selection. Use arrow keys to select the Setup Page you intend to configure then press <Enter> to accept or enter its sub-menu.

```
           Phoenix - AwardBIOS CMOS Setup Utility

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

   Esc : Quit       F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
   F10 : Save & Exit Setup

                Time, Date, Hard Disk Type...
```

NOTE: *If your computer can not boot after making and saving system changes with Setup, the Award BIOS will reset your system to the CMOS default settings via its built-in override feature.*

It is strongly recommended that you should avoid changing the chipset's defaults. Both Award and your system manufacturer have carefully set up these defaults that provide the best performance and reliability.

5.5   Standard CMOS Setup Menu

The Standard CMOS Setup Menu displays basic information about your system. Use arrow keys to highlight each item, and use <PgUp> or <PgDn> key to select the value you want in each item.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                       Standard CMOS Features

    Date (mm:dd:yy)          Sun, May 23 1999         Item Help
    Time (hh:mm:ss)          13 : 47 : 18
                                                   Menu Level    ►
  ► IDE Channel 0 Master
  ► IDE Channel 0 Slave                            Change the day, month,
  ► IDE Channel 1 Master                           year and century
  ► IDE Channel 1 Slave     [ None]

    Drive A                 [1.44M, 3.5 in.]
    Drive B                 [None]

    Video                   [EGA/VGA]
    Halt On                 [All , But Keyboard]

    Base Memory                  640K
    Extended Memory            64512K
    Total Memory               65536K


 ↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values              F7: Optimized Defaults
```

●   **Date**
    The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	It is determined by the BIOS and read only, from Sunday to Saturday.
date	It can be keyed with the numerical/ function key, from 1 to 31.
month	It is from January to December.
year	It shows the current year of BIOS.

●   **Time**
    This item shows current time of your system with the format <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

● **IDE Channel 0 Master/IDE Channel 0 Slave/IDE Channel 1 Master/IDE Channel 1 Slave**
These items identify the types of each IDE channel installed in the computer. There are 45 predefined types (Type 1 to Type 45) and 2 user's definable types (Type User) for Enhanced IDE BIOS. Press <PgUp>/<+> or <PgDn>/<−> to select a numbered hard disk type, or directly type the number and press <Enter>. Please be noted your drive's specifications must match the drive table. The hard disk will not work properly if you enter improper information. If your hard disk drive type does not match or is not listed, you can use Type User to manually define your own drive type.
If selecting Type User, you will be asked to enter related information in the following items. Directly key in the information and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.
If the HDD interface controller supports ESDI, select "Type 1".
If the HDD interface controller supports SCSI, select "None".
If the HDD interface controller supports CD-ROM, select "None".

CYLS.	number of cylinders	LANDZONE	landing zone
HEADS	number of heads	SECTORS	number of sectors
PRECOMP	write precom	MODE	HDD access mode

If there is no hard disk drive installed, select NONE and press <Enter>.

● **Dive A type/Drive B type**
This item identifies floppy disk type drive A or drive B installed in the computer.

None	No floppy drive installed
360K, 3.5 in	3.5 inch PC-type standard drive; 360Kb Mini ITXcity
1.2M, 3.5 in	3.5 inch AT-type high-density drive; 1.2MB Mini ITXcity
720K, 3.5 in	3.5 inch double-sided drive; 720Kb Mini ITXcity
1.44M, 3.5 in	3.5 inch double-sided drive; 1.44MB Mini ITXcity
2.88M, 3.5 in	3.5 inch double-sided drive; 2.88MB Mini ITXcity

● **Halt On**
This item determines whether the system will halt or not, if an error is detected while powering up.

No errors	The system booting will halt on any errors detected. (default)
All errors	Whenever BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system booting will not stop for a keyboard error; it will stop for other errors.
All, But Diskette	The system booting will not stop for a disk error; it will stop for other errors.
All, But Disk/Key	The system booting will not stop for a keyboard or disk error; it will stop for other errors.

Press <Esc> to return to the Main Menu page.

5.6 Advanced BIOS Features

This section allows you to configure and improve your system, to set up some system features according to your preference.
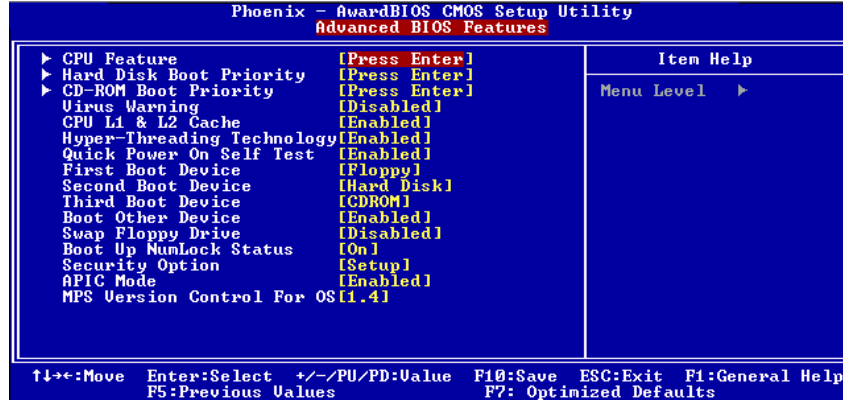
● **CPU Feature**

Scroll to this item and press <Enter> to view the CPU Feature sub menu.
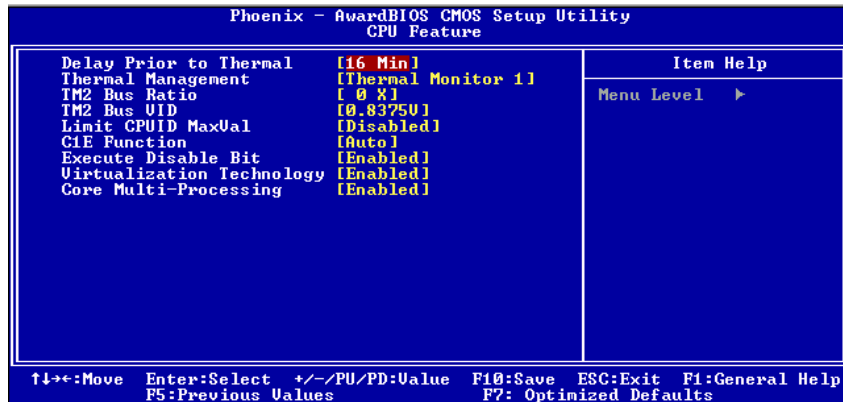
● **Hard Disk Boot Priority**

Scroll to this item and press <Enter> to view the sub menu to decide the disk boot priority.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                     Hard Disk Boot Priority

    1. Pri.Master:                           |        Item Help
    2. Pri.Slave :                           |
    3. Sec.Master:                           |  Menu Level    ▶
    4. Sec.Slave :                           |
    5. USBHDD0   :                           |  Use <↑> or <↓> to
    6. USBHDD1   :                           |  select a device , then
    7. USBHDD2   :                           |  press <+> to move it
    8. Bootable Add-in Cards                 |  up , or <−> to move it
                                             |  down the list. Press
                                             |  <ESC> to exit this
                                             |  menu.
                                             |

    ↑↓:Move      PU/PD/+/−:Change Priority      F10:Save      ESC:Exit
     F5:Previous Values     F6:Fail-Safe Defaults    F7:Optimized Defaults
```
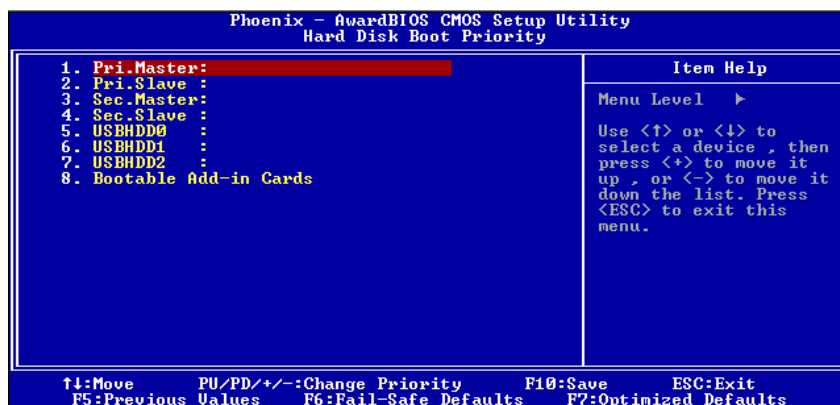
Press <Esc> to return to the Advanced BIOS Features page.

● **CD-ROM Boot Priority**

Scroll to this item and press <Enter> to view the sub menu to decide the CD-ROM boot priority.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                      CD-ROM Boot Priority

    1. Pri.Slave :                           |        Item Help
    2. Sec.Slave :                           |
    3. USB-CDROM1:                           |  Menu Level    ▶
    4. Pri.Master:                           |
    5. USB-CDROM0:                           |  Use <↑> or <↓> to
    6. Sec.Master:                           |  select a device , then
                                             |  press <+> to move it
                                             |  up , or <−> to move it
                                             |  down the list. Press
                                             |  <ESC> to exit this
                                             |  menu.
                                             |

    ↑↓:Move      PU/PD/+/−:Change Priority      F10:Save      ESC:Exit
     F5:Previous Values     F6:Fail-Safe Defaults    F7:Optimized Defaults
```
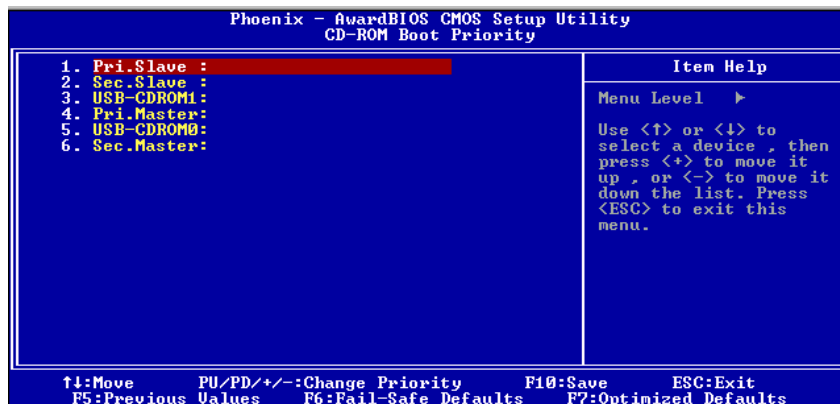
Press <Esc> to return to the Advanced BIOS Features page.

● **Virus Warning**

This option flashes on the screen. During and after the system boot up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system with the following message. You can run an anti-virus program to locate the problem. The default setting is "*Disabled*".

> ***! WARNING !***
> *Disk boot sector is to be modified*
> *Type "Y" to accept write or "N" to abort write*
> *Award Software, Inc.*

Enabled	It automatically activates while the system boots up and a warning message appears for an attempt to access the boot sector or hard disk partition table.
Disabled	No warning message will appear for attempts to access the boot sector or hard disk partition table.

NOTE: *This function is only available with DOS and other operating systems that do not trap INT13.*

● **CPU L1 & L2 Cache**

These two options speed up memory access. However, it depends on the CPU/chipset design. The default setting is *"Enabled"*. CPUs without built-in internal cache will not provide the "CPU Internal Cache" item on the menu.

Enabled	Enable cache
Disabled	Disable cache

● **Hyper-Threading Technology**

Use this item to enable or disable Hyper-Threading Technology, which makes a single physical processor perform multi-tasking function as two logical ones.

● **Quick Power On Self Test**

This option speeds up Power on Self Test (POST) after you turn on the system power. If set as Enabled, BIOS will shorten or skip some check items during POST. The default setting is *"Enabled"*.

Enabled	Enable Quick POST
Disabled	Normal POST

● **First/Second/Third Boot Device**
These items let you select the 1st, 2nd, and 3rd devices that the
system will search for during its boot-up sequence. The wide range
of selection includes Floppy, LS120, ZIP100, HDD0~3, SCSI, and
CDROM.

● **Boot Other Device**

This item allows the user to enable or disable the boot device not
listed in the First/Second/Third boot devices option above. The
default setting is "*Enabled"*.

● **Boot Up NumLock Status**
Set the the Num Lock status when the system is powered on.
The default value is *"On".*

● **Security Option**
This item allows you to limit access to the system and Setup, or just
to Setup. The default value is *"Setup".*

System	If a wrong password is entered at the prompt, the system will not boot, the access to Setup will be denied, either.
Setup	If a wrong password is entered at the prompt, the system will boot, but the access to Setup will be denied.

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

● **APIC Mode**
Use this item to enable or disable APIC (Advanced Programmable
Interrupt Controller) mode that provides symmetric multi-processing
(SMP) for systems.

● **MPS Version Control For OS**
This item specifies the version of the Multiprocessor Specification
(MPS). Version 1.4 has extended configuration tables to improve
support for multiple PCI bus configurations and provide future

expandability.

Press <Esc> to return to the Main Menu page.

5.7   Advanced Chipset Features

This section contains completely optimized chipset's features on the board that you are strongly recommended to leave all items on this page at their default values unless you are very familiar with the technical specifications of your system hardware.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                       Advanced Chipset Features
 ┌──────────────────────────────────────────────┬──────────────────────┐
 │   System BIOS Cacheable      [Enabled]        │      Item Help       │
 │ ▶ PCI Express Root Port Func[Press Enter]     ├──────────────────────┤
 │                                               │  Menu Level    ▶     │
 │   ** UGA Setting **                           │                      │
 │   PEG/Onchip UGA Control     [Auto]           │                      │
 │   PEG Force X1               [Disabled]       │                      │
 │   On-Chip Frame Buffer Size  [ 8MB]           │                      │
 │   DUMT Mode                  [DUMT]           │                      │
 │   DUMT/FIXED Memory Size     [128MB]          │                      │
 │                                               │                      │
 │                                               │                      │
 │                                               │                      │
 │                                               │                      │
 │                                               │                      │
 ├───────────────────────────────────────────────┴─────────────────────┤
 │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │           F5:Previous Values            F7: Optimized Defaults        │
 └──────────────────────────────────────────────────────────────────────┘
```

● **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 default value is *"Disabled"*.

● **PCI Express Root Port Func.**

Scroll to this item and press <Enter> to view the sub menu to decide the PCI Express Port.
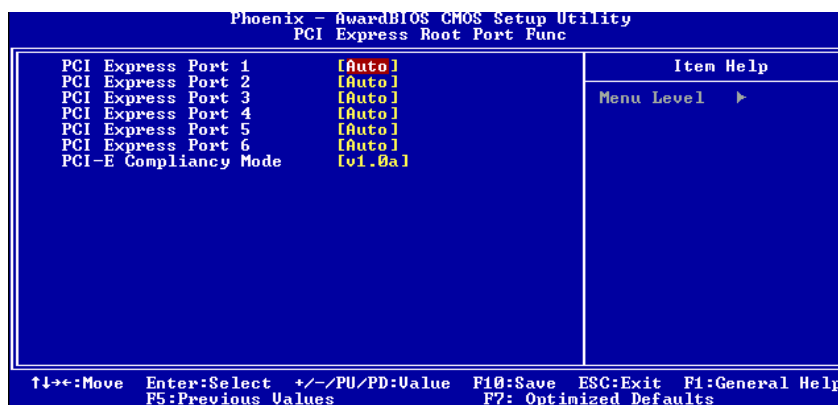
● **PCI Express Port 1 ~ 6**

There are several PCI Express Ports for your selection.

● **PCI-E Compliancy Mode**

This item allows you to set the version of the PCI Express base specifications.

Press <Esc> to return to the Advanced Chipset Features page.

**** VGA Setting ****

● **PEG/Onchip VGA Control**

Use this item to choose the primary display card.

● **PEG Force X1**
Use this item to select PCI Express X1 forcedly.

● **On-Chip Frame Buffer Size**
Use this item to set the VGA frame buffer size.

● **DVMT Mode**
DVMT (Dynamic Video Memory Technology) helps you select the video mode.

● **DVMT/FIXED Memory Size**
DVMT (Dynamic Video Memory Technology) allows you to select a maximum size of dynamic amount usage of the video memory. The system would configure the video memory dependent on your application.

Press <Esc> to return to the Main Menu page.

5.8   Integrated Peripherals

This section allows you to configure your SuperIO Device, IDE Function and Onboard Device.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                      Integrated Peripherals
  ┌──────────────────────────────────────────┬──────────────────────┐
  │ ▶ OnChip IDE Device       [Press Enter]   │      Item Help       │
  │ ▶ SuperIO Device          [Press Enter]   │                      │
  │   Onboard Serial Port 3   [3E8]           │ Menu Level    ▶      │
  │   Serial Port 3 Use IRQ   [IRQ3]          │                      │
  │   Onboard Serial Port 4   [2E8]           │                      │
  │   Serial Port 4 Use IRQ   [IRQ4]          │                      │
  │ ▶ USB Device Setting      [Press Enter]   │                      │
  │                                           │                      │
  │                                           │                      │
  │                                           │                      │
  │                                           │                      │
  │                                           │                      │
  └──────────────────────────────────────────┴──────────────────────┘
   ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
              F5:Previous Values               F7: Optimized Defaults
```

● **OnChip IDE Device**

Scroll to this item and press <Enter> to view the sub menu OnChip IDE Device.

```
          Phoenix - AwardBIOS CMOS Setup Utility
                    OnChip IDE Device
   IDE HDD Block Mode        [Enabled]          ┌───────────────────┐
   IDE DMA transfer access   [Enabled]          │      Item Help     │
   IDE Primary Master PIO    [Auto]             ├───────────────────┤
   IDE Primary Slave  PIO    [Auto]             │ Menu Level    ▶   │
   IDE Primary Master UDMA   [Auto]             │                   │
   IDE Primary Slave  UDMA   [Auto]             │ If your IDE hard drive│
   On-Chip Secondary PCI IDE [Enabled]          │ supports block mode│
   IDE Secondary Master PIO  [Auto]             │ select Enabled for │
   IDE Secondary Slave  PIO  [Auto]             │ automatic detection of│
   IDE Secondary Master UDMA [Auto]             │ the optimal number of│
   IDE Secondary Slave  UDMA [Auto]             │ block read/writes per│
   SATA Mode                 [IDE]              │ sector the drive can│
   LEGACY Mode Support       [Disabled]         │ support            │
                                                │                   │
                                                │                   │
                                                └───────────────────┘
 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values            F7: Optimized Defaults
```

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

> **IDE DMA transfer access**
> Automatic data transfer between system memory and IDE device with minimum CPU intervention. This improves data throughput and frees CPU to perform other tasks.

> **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. The default value is *"Enabled"*.
> **NOTE**: *Choosing Disabled for these options will automatically remove the IDE rimaryMaster/Slave PIO and/or IDE Secondary Master/Slave PIO items on the menu.*

> **IDE Primary/Secondary 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 to 4 provide

successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

➢ **IDE Primary/Secondary Master/Slave UDMA**
Select the mode of operation for the IDE drive. Ultra DMA-33/66/100/133 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver. If your hard drive and system software both support Ultra DMA-33/66/100/133, select Auto to enable UDMA mode by BIOS.

● **SATA Mode**
There are these options for you to set up SATA mode: IDE, RAID or AHCI.

● **LEGACY Mode Support**
Legacy mode support allows devices to function in an operating environment that is not USB-aware.

Press <Esc> to return to the Integrated Peripherals page.

● **Super IO Device**

Scroll to this item and press <Enter> to view the sub menu Super IO Device.
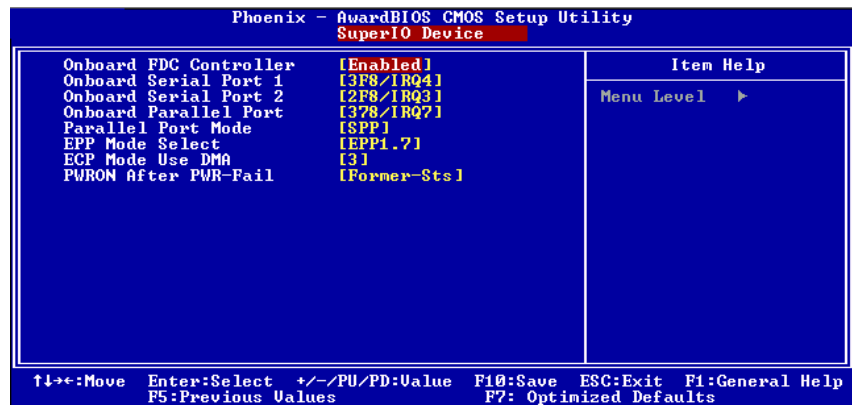
➢ **Onboard FDC Controller**
Select Enabled, if your system has a floppy disk controller (FDC) installed on the system board and you want to use it.

If you install and-in FDC or the system has no floppy drive, select Disabled in this field. Options: Enabled and Disabled.

➢ **Onboard Serial Port 1 / 2**
Select an address and corresponding interrupt for the serial port. Options: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

➢ **Onboard Parallel Port**
This item allows you to determine the I/O address for onboard parallel port. Options: 378H/IRQ7, 278H/IRQ5, 3BC/IRQ7 and Disabled.

➢ **Parallel Port Mode**
Select an operating mode for the onboard parallel (printer) port. Select Normal unless your hardware and software require another mode in this field. Options: EPP1.9, ECP, SPP, ECPEPP1.7, EPP1.7.

➢ **EPP Mode Select**
Select EPP port type 1.7 or 1.9.

➢ **ECP Mode Use DMA**
Select a DMA channel for the parallel port while using the ECP mode.

➢ **PWRON After PWR-Fail**
This item enables your computer to automatically restart or return to its operating status.

Press <Esc> to return to the Integrated Peripherals page.

● **Onboard Serial Port 3**
This item assigns which I/O address to access onboard serial port 3.

● **Serial Port 3 Use IRQ**
This item selects a corresponding interrupt for the third serial port.

● **Onboard Serial Port 4**
This item assigns which I/O address to access onboard serial port 4.

● **Serial Port 4 Use IRQ**
This item selects a corresponding interrupt for the fourth serial port.

● **USB Device Setting**

Scroll to this item and press <Enter> to view the sub menu USB Device Setting.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                      USB Device Setting
   USB Controller              [Enabled]          Item Help
   USB 2.0 Controller           Enabled
   USB Operation Mode          [High Speed]    Menu Level    ▶
   USB Keyboard Function       [Enabled]
   USB Mouse Function          [Enabled]       [Enable] or [Disable]
   USB Storage Function        [Enabled]       Universal Host
                                               Controller
   *** USB Mass Storage Device Boot Setting *** Interfacefor Universal
   UFDDA                        USB Floppy      Serial Bus.
   UFDDB                        USB Floppy
   No Device                   [Auto mode]
   No Device                   [Auto mode]
   No Device                   [Auto mode]
   No Device                   [Auto mode]
   No Device                   [Auto mode]
   No Device                   [Auto mode]
   No Device                   [Auto mode]
   No Device                   [Auto mode]

↑↓→←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values              F7: Optimized Defaults
```

➢ **USB1.0 Controller**
This setting is used to enable/disable the onboard USB 1.0 controller.

➢ **USB 2.0 Controller**
This setting is used to enable/disable the onboard USB 2.0 controller.

➢ **USB Operation Mode**
This setting controls the USB operation speed.

➢ **USB Keyboard** / **Mouse** / **Storage Function**
Set to [Enabled] if your need to use a USB-interfaced keyboard/mouse/storage device in the operating system that does not support or have any USB driver installed, such as DOS and SCO Unix.

Press <Esc> to return to the Integrated Peripherals page.

5.9 Power Management Setup

The Power Management Setup allows you to save energy of your system effectively. It will shut down the hard disk and turn OFF video display after a period of inactivity.

```
                  Phoenix - AwardBIOS CMOS Setup Utility
                          Power Management Setup

  ACPI Function                [Enabled]              Item Help
  ACPI Suspend Type            [S1<POS>]
x Run VGABIOS if S3 Resume      Auto           Menu Level    ►
  Power Management             [Min Saving]
  Video Off Method             [DPMS]
  Video Off In Suspend         [Yes]
  Suspend Type                 [Stop Grant]
  MODEM Use IRQ                [3]
  Suspend Mode                  1 Hour
  HDD Power Down                15 Min
  Soft-Off by PWR-BTTN         [Instant-Off]
  CPU THRM-Throttling          [50.0%]
  Wake-Up by PCI card          [Enabled]
  Power On 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

↑↓←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
          F5:Previous Values          F7: Optimized Defaults
```

● **ACPI Function**
   This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). The function is always "*Enabled*".

● **ACPI Suspend Type**
   This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 98SE, Windows ME and Windows 2000, you can choose to enter the Standby mode in S1 (POS) or S3 (STR) fashion through the setting of this field. Options are:

   [S1 (POS)] The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system contexts.
   [S3 (STR)] The S3 sleep mode is a lower power state where the information of system configuration and open applications/files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a "wake up" event occurs.

● **Run VGABIOS if S3 Resume**
   When this item is set Auto, the system will run VGA BIOS if it is reaumed from the S3 state.

● **Power Management**
    This option allows you to select the type of power Management.
    Options: APM, ACPI.

● **Video Off Method**
    This setting determines the manner in which the monitor is blanked.

V/H SYNC+Blank	It turns OFF vertical and horizontal synchronization ports and writes blanks to the video buffer.
DPMS	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the supplied software for your video subsystem to select video power management values.
Blank Screen	The System only writes blanks to the video buffer.

● **Video Off In Suspend**
    This item defines if the video is powered down when the system is put into suspend mode.

● **Suspend Type**
    If this item is set to the default Stop Grant, the CPU will go into Idle Mode during power saving mode.

● **Moden Use IRQ**
    If you want an incoming call on a modem to automatically resume the system from a powersaving mode, use this item to specify the interrupt request line (IRQ) used by the modem. You might have to connect the fax/modem to the board Wake On Modem connector for working this feature.

● **Suspend Mode**
    After a selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off. The default value is *"Disabled"*.

Disabled	The System will never enter the SUSPEND mode.
1/2/4/6/8/10/ 20/30/40 Min/1 Hr	It defines continuous idle time before the system entering the SUSPEND mode. If any item defined in (J) is enabled and active, the SUSPEND timer will be reloaded.

● **HDD Power Down**
    If HDD activity is not detected for a specified length of time in this field, the hard disk drive will be powered down while other devices remain active.

● **Soft-Off by PWR-BTTN**
This option only works with systems using an ATX power supply. It also allows users to define which type of soft power OFF sequence the system will follow. The default value is *"Instant-Off"*.

Instant-Off	This option follows the conventional manner of system performance when turning the power to OFF. Instant-Off is a software power OFF sequence requiring the power supply button is switched to OFF.
Delay 4 Sec.	Upon the system's turning OFF through the power switch, this option will delay the complete system power OFF sequence approximately 4 seconds. Within this delay period, the system will temporarily enter into the Suspend Mode enabling you to restart the system at once.

● **CPU THRM-Throttling**
This item allows you to set up the CPU thermal throttling rate that you can reduce the CPU speed when it reaches the preset highest temperature.

● **Wake-Up by PCI card**
If enable this item, the system can automatically resume when the PCI Modem or PCI LAN card receives an incoming call.

● **Power On by Ring**
This option allows the system to resume or wake up upon detecting any ring signals coming from an installed modem. The default value is *"Enabled"*.

● **USB KB Wake-Up From S3**
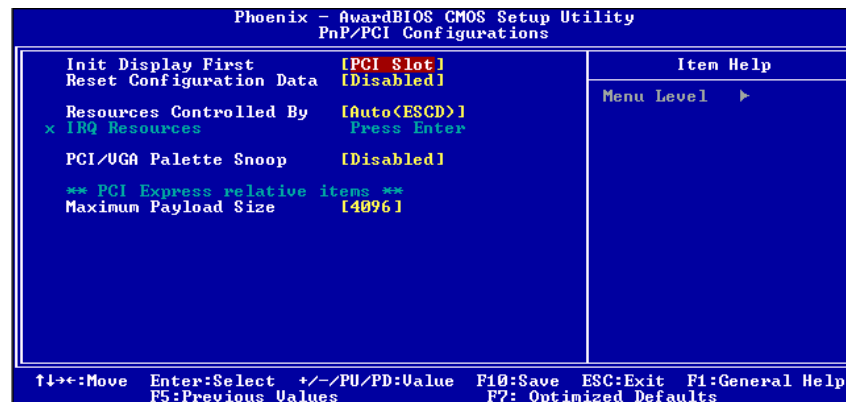This item allows you to use the USB keyboard to wake up the system from the S3 state.

● **Resume by Alarm**
If enable this item, the system can automatically resume after a fixed time in accordance with the system's RTC (realtime clock).

Press <Esc> to return to the Main Menu page.

5.10 PnP/PCI Configuration Setup

This section describes the configuration of PCI (Personal Computer Interconnect) bus system, which allows I/O devices to operate at speeds close to the CPU speed while communicating with other important components. This section covers very technical items that only experienced users could change default settings.

```
         Phoenix - AwardBIOS CMOS Setup Utility
                  PnP/PCI Configurations

   Init Display First          [PCI Slot]              Item Help
   Reset Configuration Data    [Disabled]
                                                  Menu Level   ►
   Resources Controlled By     [Auto(ESCD)]
 x IRQ Resources                   Press Enter

   PCI/VGA Palette Snoop       [Disabled]

   ** PCI Express relative items **
   Maximum Payload Size        [4096]




 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
           F5:Previous Values              F7: Optimized Defaults
```

- **Init Display First**
  This item allows you to decide whether PCI Slot or AGP to be the first primary display card.

- **Reset Configuration Data**
  Normally, you leave this item Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup or if installing a new add-on cause the system reconfiguration a serious conflict that the operating system can not boot. Options: Enabled, Disabled.

- **Resources Controlled By**
  The Award Plug and Play BIOS can automatically configure all boot and Plug and Play-compatible devices. If you select Auto, all interrupt request (IRQ), DMA assignment, and Used DMA fields disappear, as the BIOS automatically assigns them. The default value is *"Manual"*.

- **IRQ Resources**
  When resources are controlled manually, assign each system interrupt to one of the following types in accordance with the type of devices using the interrupt:

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

The default value is *"PCI/ISA PnP"*.

● **PCI/VGA Palette Snoop**
Some non-standard VGA display cards may not show colors properly. This item allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card; when disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.
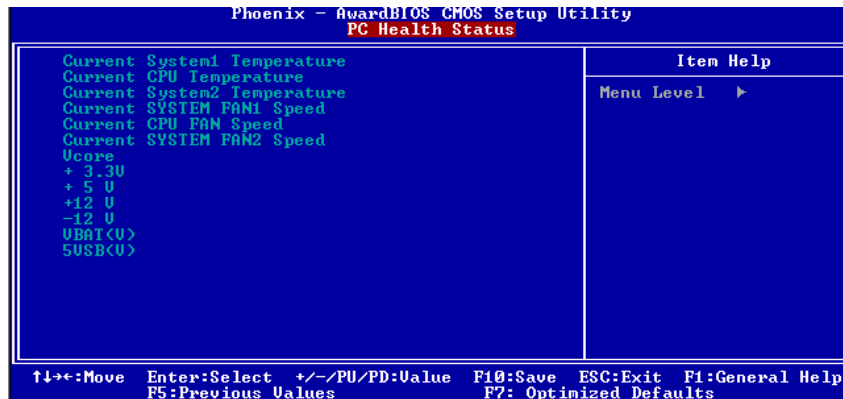
** PCI Express relative items **

● **Maximum Payload Size**

When using DDR SDRAM and Buffer size selection, another consideration in designing a payload memory is the size of the buffer for data storage. Maximum Payload Size defines the maximum TLP (Transaction Layer Packet) data payload size for the device.

Press <Esc> to return to the Main Menu page.
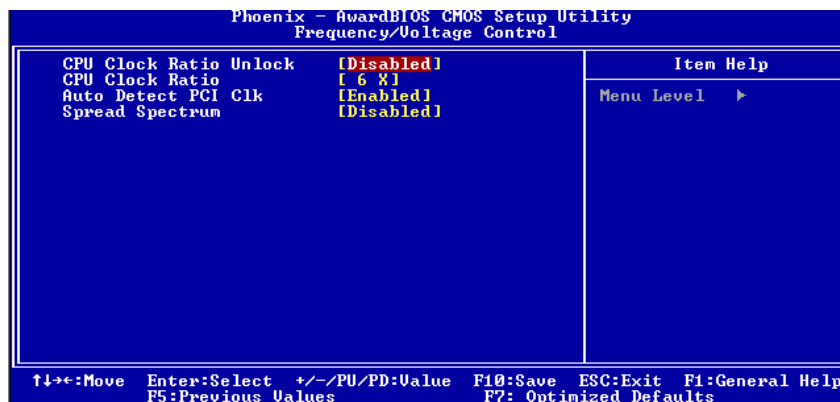
5.11 PC Health Status

This section supports hardware monitering that lets you monitor those parameters for critical voltages, temperatures and fan speed of the board.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                     PC Health Status
   Current System1 Temperature                        Item Help
   Current CPU Temperature
   Current System2 Temperature             Menu Level    ▶
   Current SYSTEM FAN1 Speed
   Current CPU FAN Speed
   Current SYSTEM FAN2 Speed
   Vcore
   + 3.3V
   + 5 V
   +12 V
   -12 V
   VBAT(V)
   5VSB(V)




   ↑↓←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
             F5:Previous Values              F7: Optimized Defaults
```

- ● **Current SYSTEM1 Temperature**
  Show you the current system1 temperature.

- ● **Current CPU Temperature**
  The current system CPU temperature will be automatically detected by the system.

- ● **Current SYSTEM2 Temperature**
  Show you the current system2 temperature.

- ● **Current SYSTEM FAN1 Speed**
  Show you the current system fan1 temperature.

- ● **Current CPU FAN Speed**
  These optional and read-only items show current speeds in RPM (Revolution Per Minute) for the CPU fan and chassis fan as monitored by the hardware monitoring IC.

- ● **Current SYSTEM FAN2 Speed**
  Show you the current system fan1 temperature.

- ● **Vcore +3.3V/+5V/+12V/VBAT(V)/5VSB**
  Show you the voltage of +3.3V/+5V/+12V.

5.12 Frequency/Voltage Control

This section is to control the CPU frequency and Supply Voltage, DIMM OverVoltage and AGP voltage.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                     Frequency/Voltage Control

   CPU Clock Ratio Unlock     [Disabled]              Item Help
   CPU Clock Ratio            [ 6 X]
   Auto Detect PCI Clk        [Enabled]         Menu Level    ▶
   Spread Spectrum            [Disabled]




 ↑↓←:Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values                F7: Optimized Defaults
```

- **CPU Clock Ratio**
  Use this item to select the CPU's frequency.

- **Auto Detect PCI Clk**
  The enabled item can automatically disable the clock source for a PCI slot without a module, to reduce EMI (ElectroMagnetic Interference).

- **Spread Spectrum**
  If spread spectrum is enabled, EMI (ElectroMagnetic Interference) generated by the system can be significantly reduced.

5.13 Load Optimized Defaults

This option allows you to load your system configuration with default values. These default settings are optimized to enable high performance features.

```
                Phoenix - AwardBIOS CMOS Setup Utility
   ┌─────────────────────────────────────────────────────────────────┐
   │  ▶ Standard CMOS Features         ▶ Frequency/Voltage Control     │
   │  ▶ Advanced BIOS Features            Load Optimized Defaults      │
   │  ▶ Advanced Chipset Features         Set Supervisor Password      │
   │  ▶ Integrated Peripherals            Set User Password            │
   │  ▶ Power Management          ┌──────────────────────────┐  etup   │
   │  ▶ PnP/PCI Configura         │ Load Optimized Defaults (Y/N)? N │Saving │
   │  ▶ PC Health Status          └──────────────────────────┘        │
   │                                                                   │
   │  Esc : Quit       F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item  │
   │  F10 : Save & Exit Setup                                          │
   │                                                                   │
   │                   Load Optimized Defaults                         │
   └─────────────────────────────────────────────────────────────────┘
```

To load CMOS SRAM with SETUP default values, please enter "Y". If not, please enter "N".

5.14 Set Supervisor/User Password

You can set a supervisor or user password, or both of them. The differences between them are:

1. **Supervisor password:** You can enter and change the options on the setup menu.
2. **User password:** You can just enter, but have no right to change the options on the setup menu.

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type a maximum eight-character password, and press <Enter>. This typed password will clear previously entered password from the CMOS memory. You will be asked to confirm this password. Type this password again and press <Enter>. You may also press <Esc> to abort this selection and not enter a password.

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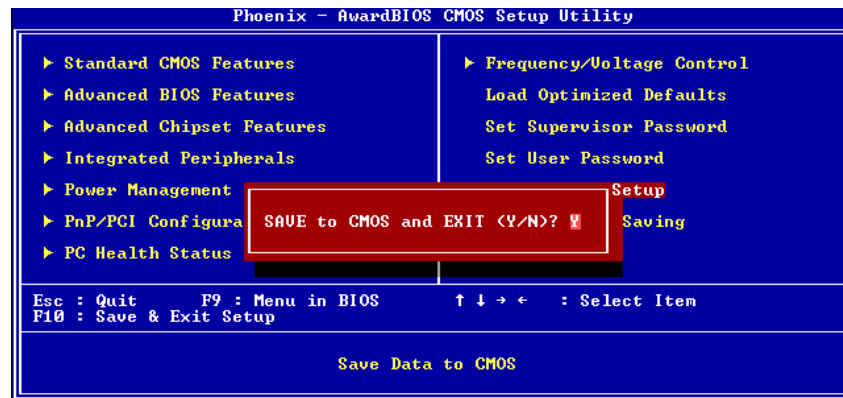
PASSWORD DISABLED

When a password is enabled, you have to type it every time you enter the Setup. It prevents any unauthorized persons from changing your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time the system reboots. This would prevent unauthorized use of your computer.

You decide when the password is required for the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password is required during booting up and entry into the Setup; if it is set as "Setup", a prompt will only appear before entering the Setup.
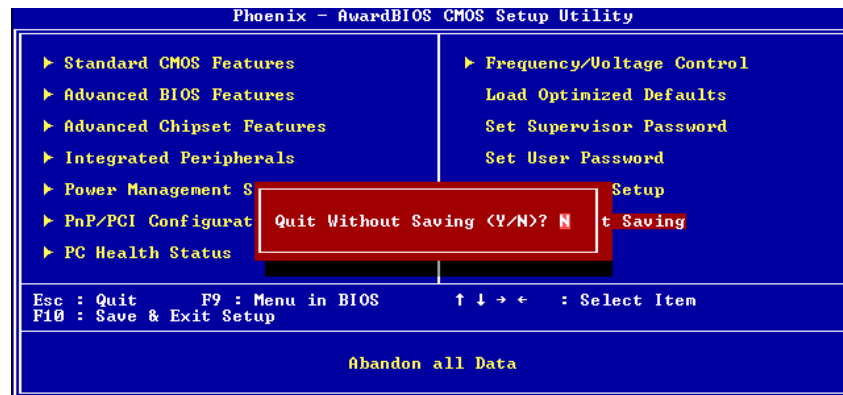
5.15 Save & Exit Setup

This section allows you to determine whether or not to accept your modifications. Type "Y" to quit the setup utility and save all changes into the CMOS memory. Type "N" to bring you back to the Setup utility.

```
                 Phoenix - AwardBIOS CMOS Setup Utility
  ┌──────────────────────────────────────────────────────────────────┐
  │  ▶ Standard CMOS Features          ▶ Frequency/Voltage Control     │
  │                                                                    │
  │  ▶ Advanced BIOS Features             Load Optimized Defaults       │
  │                                                                    │
  │  ▶ Advanced Chipset Features          Set Supervisor Password       │
  │                                                                    │
  │  ▶ Integrated Peripherals             Set User Password             │
  │                                                                    │
  │  ▶ Power Management          ┌───────────────────────┐ Setup        │
  │                              │ SAVE to CMOS and EXIT <Y/N>? Y       │
  │  ▶ PnP/PCI Configura         │                       │  Saving      │
  │                              └───────────────────────┘              │
  │  ▶ PC Health Status                                                 │
  │                                                                    │
  │  Esc : Quit       F9 : Menu in BIOS        ↑ ↓ → ←   : Select Item  │
  │  F10 : Save & Exit Setup                                            │
  │                                                                    │
  │                      Save Data to CMOS                             │
  └──────────────────────────────────────────────────────────────────┘
```

5.16 Exit Without Saving

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

```
                 Phoenix - AwardBIOS CMOS Setup Utility
  ┌──────────────────────────────────────────────────────────────────┐
  │  ▶ Standard CMOS Features          ▶ Frequency/Voltage Control     │
  │                                                                    │
  │  ▶ Advanced BIOS Features             Load Optimized Defaults       │
  │                                                                    │
  │  ▶ Advanced Chipset Features          Set Supervisor Password       │
  │                                                                    │
  │  ▶ Integrated Peripherals             Set User Password             │
  │                                                                    │
  │  ▶ Power Management S        ┌───────────────────────┐ Setup        │
  │                              │ Quit Without Saving <Y/N>? N         │
  │  ▶ PnP/PCI Configurat        │                       │ t Saving     │
  │                              └───────────────────────┘              │
  │  ▶ PC Health Status                                                 │
  │                                                                    │
  │  Esc : Quit       F9 : Menu in BIOS        ↑ ↓ → ←   : Select Item  │
  │  F10 : Save & Exit Setup                                            │
  │                                                                    │
  │                      Abandon all Data                              │
  └──────────────────────────────────────────────────────────────────┘
```

MEMO

C h a p t e r 6
Installation of Drivers

The device drivers are located on the Product Information CD-ROM that comes with the IMB201 Series package. The auto-run function of drivers will guide you to install the utilities and device drivers under a Windows system. You can follow the onscreen instructions to install these devices:

- Chipset
- VGA
- LAN
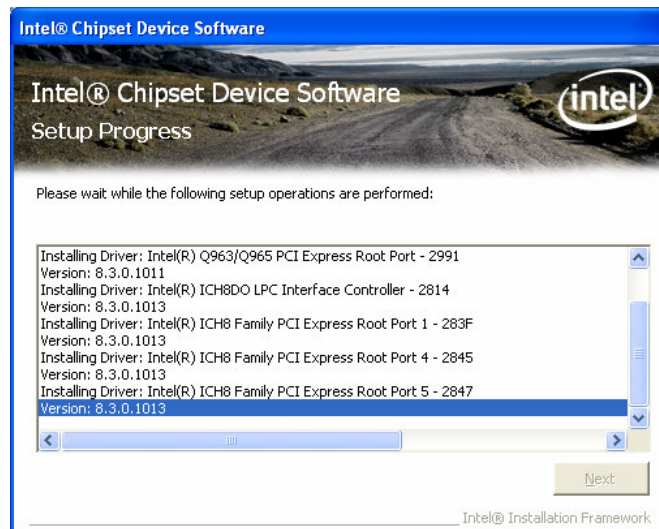- Audio

6.1 Installing Chipset Driver

1. Run the SETUP.EXE program from the driver directory in your driver CD. Click "Next" to next step.

2. An Intel® License Agreement appears to show you the important information. Click "Yes" to next step.

3. Please wait while running the following setup operations.

4. Click "Finish" to complete the setup process.

5. You will be asked to reboot your computer when the installation is completed. Please click "Yes, I want to restart my computer now" if you don't need to install any other drivers. Otherwise, please click "No, I will restart my computer later", and go on next step.

6.2   Installing VGA Driver

1. Run the SETUP.EXE program from the driver directory in your driver CD. Click "Next" to next step.
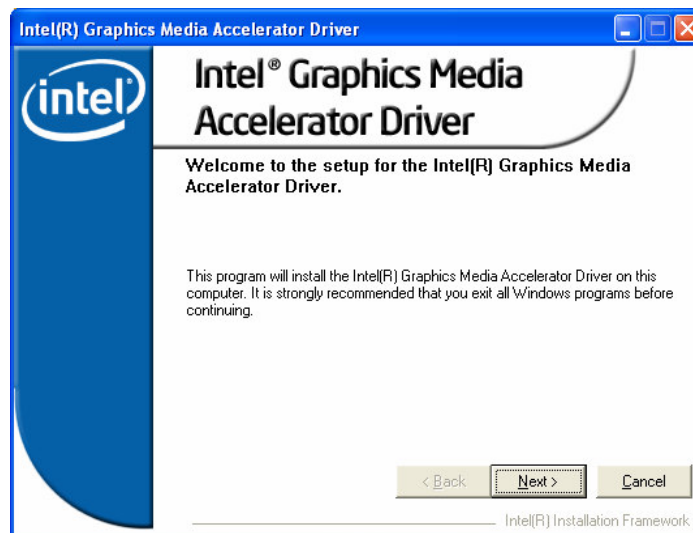
2. An Intel® License Agreement appears to show you the important information. Click "Yes" to next step.
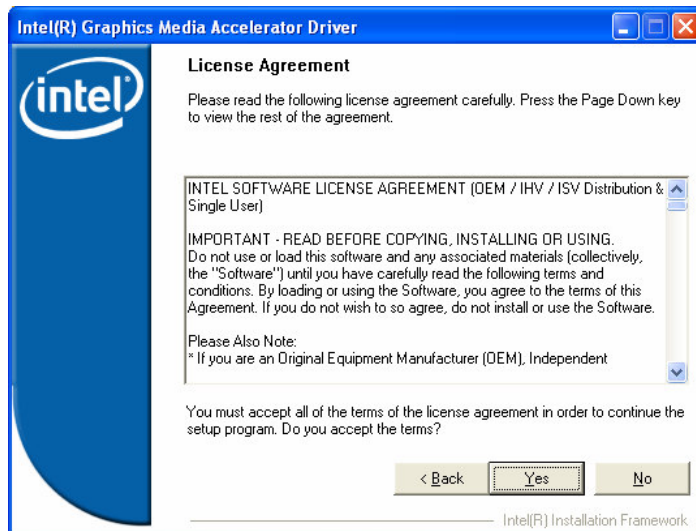
3. The message of Readme File Information appears to show you the system requirements and installation information. Please click "Next".
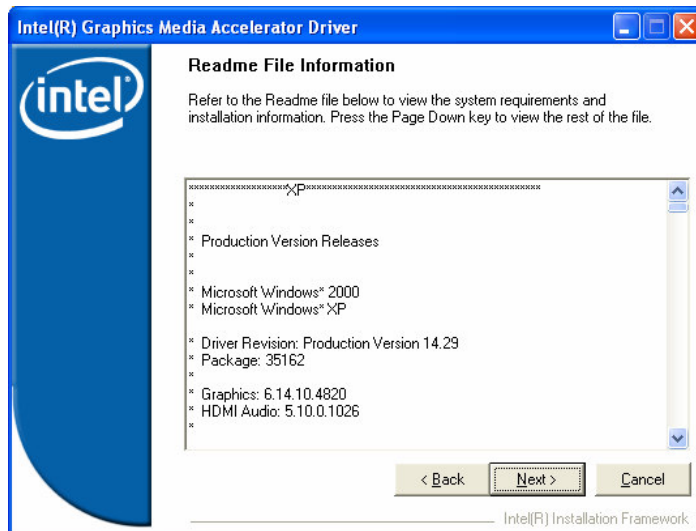
4. Please wait while running the following setup operations.
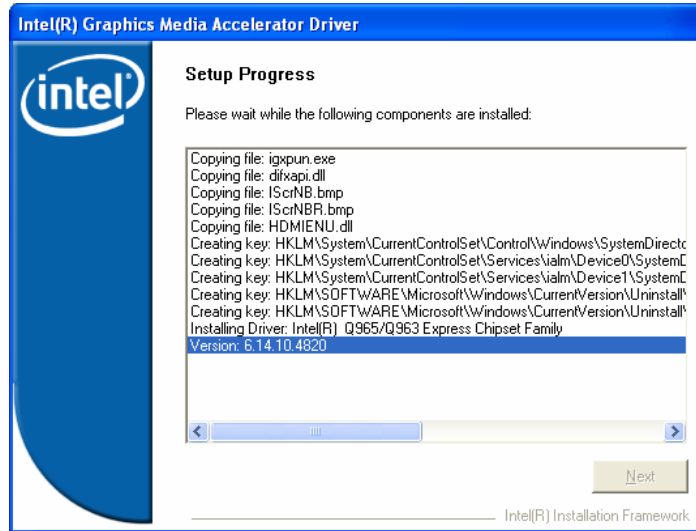

5. When this message appears, please click "Next".
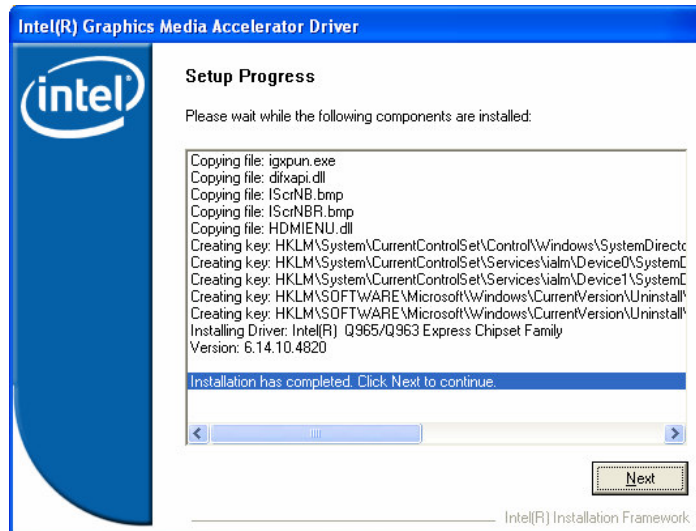
6. You will be asked to reboot your computer when the installation is completed. Please click "Yes, I want to restart my computer now" if you don't need to install any other drivers. Otherwise, please click "No, I will restart my computer later", and click "Finish" to complete the installation.
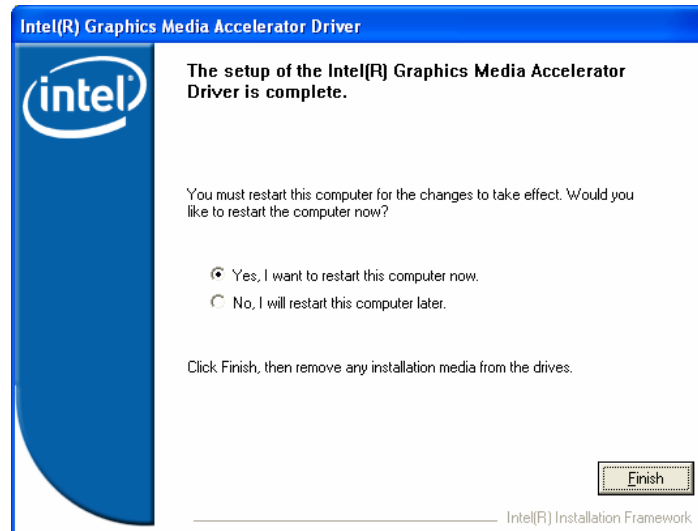
6.3 Installing LAN Driver

1. Run the InstallShield Wizard for Ethernet from the driver directory in your driver CD. Click "Next" to next step.
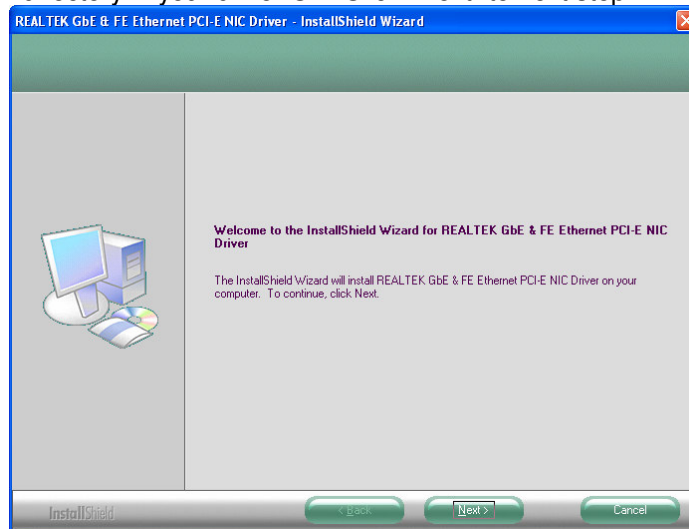
2. Click "Install" to start the installation.
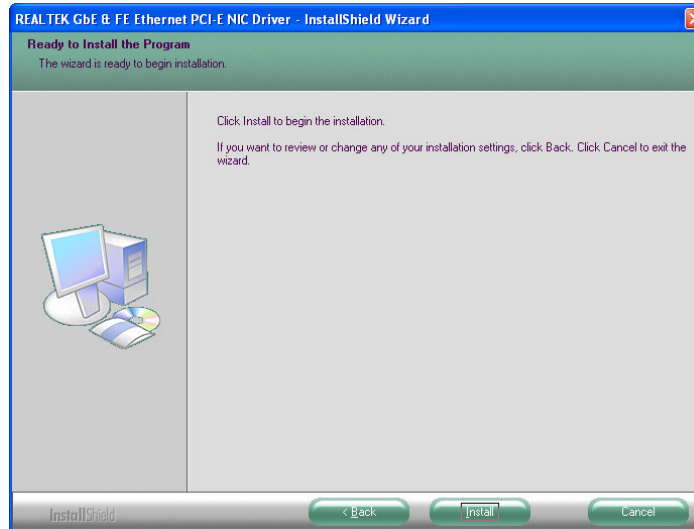
3. Please wait while running the following installation operation.
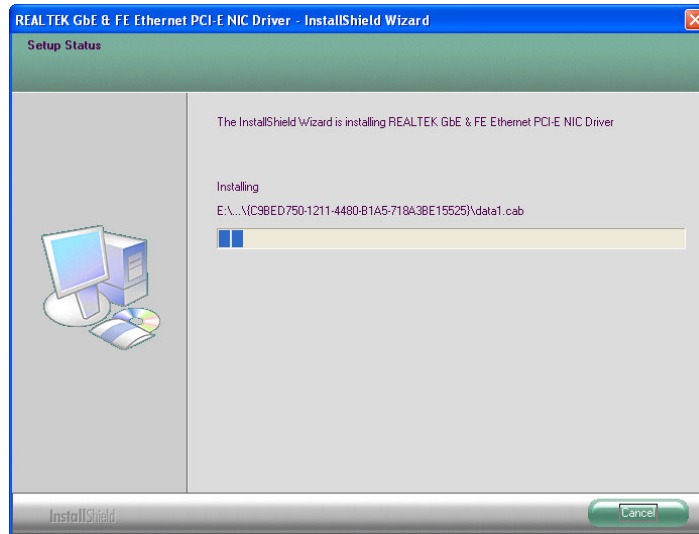
4. Click "Finish" to complete the installation.
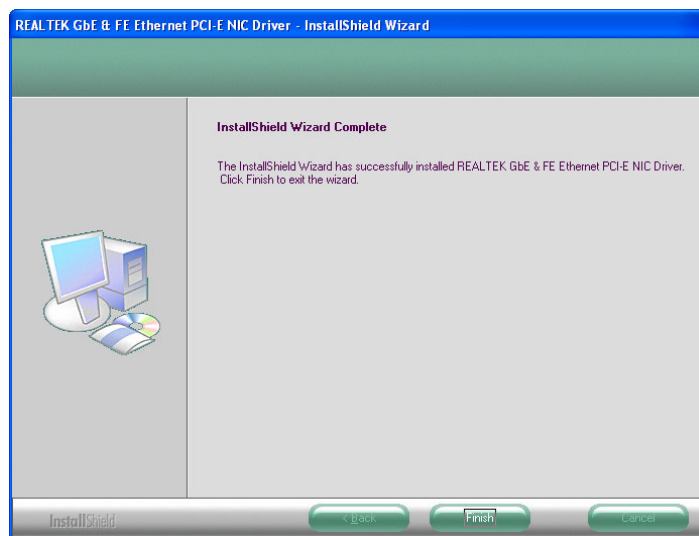
6.4 Installing Audio Driver

1. Run the InstallShield Wizard program from the driver directory in your driver CD. Please wait while running the following operation.
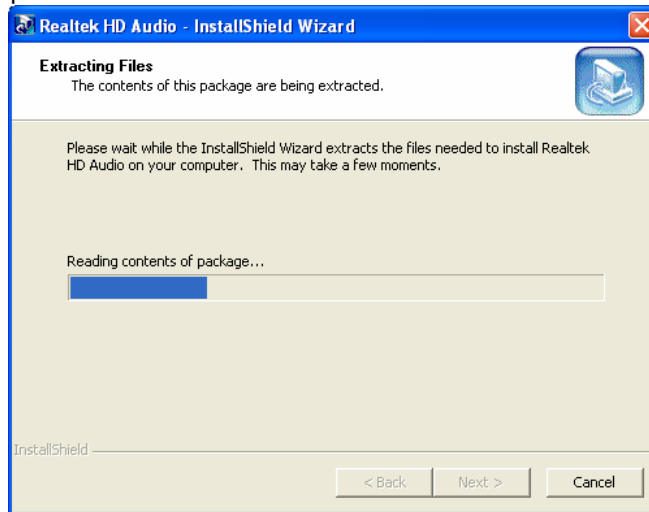
2. When this message appears, please click "Next".

3. You will be asked to reboot your computer when the InstallShield Wizard is installed. Please click "Yes, I want to restart my computer now" or "No, I will restart my computer later", and next click "Finish" to complete the installation.
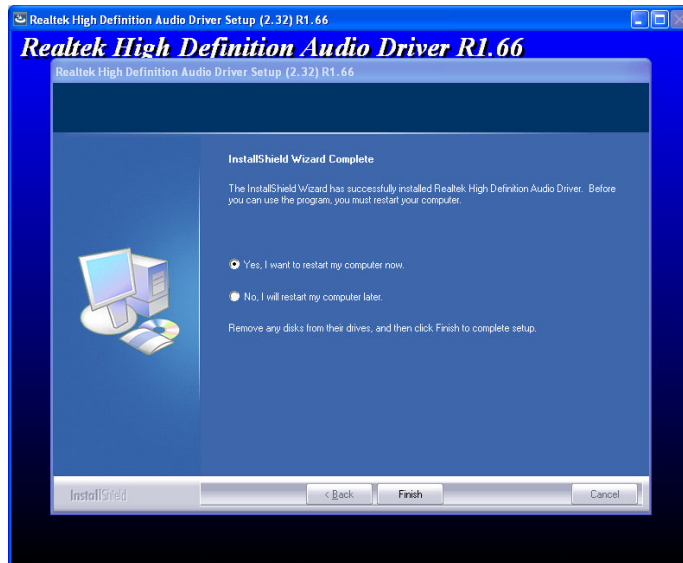
MEMO

A p p e n d i x A
Watchdog Timer

Please follow the below WDT process for setup the WDT function.
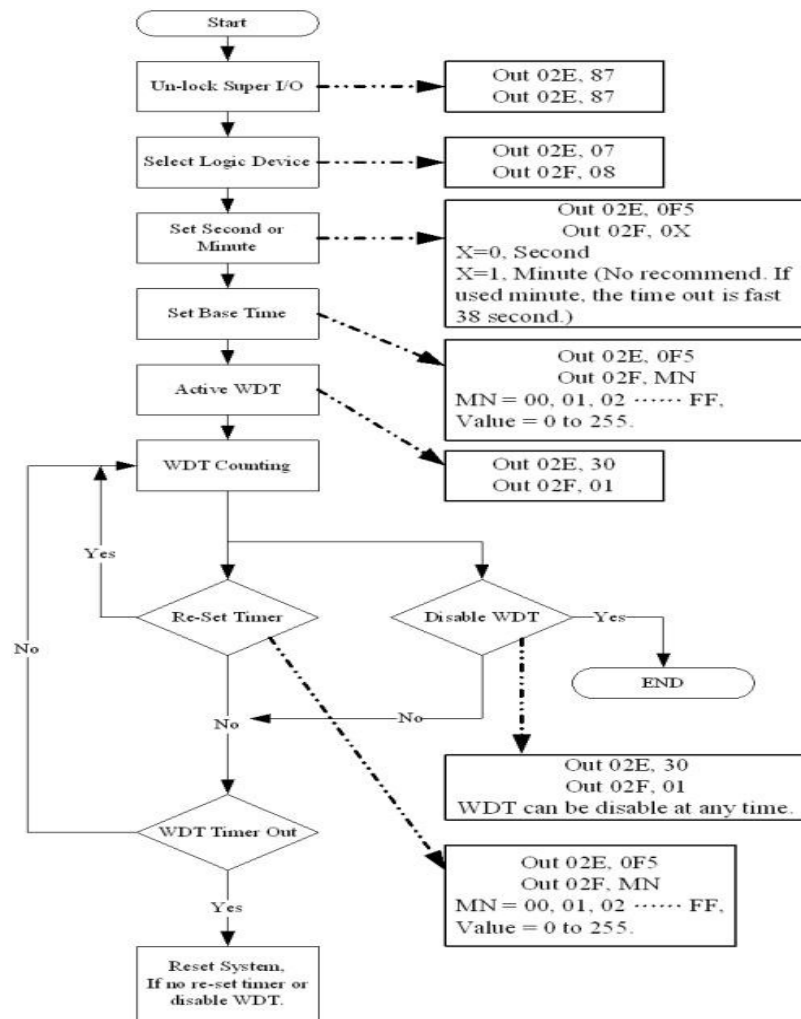
MEMO

A p p e n d i x B
PCI IRQ Routing

Digital I/O Software Programming

PICMG PCI IRQ Routing

Slot	ID	Int
PCI Slot 1	31	BCDA
PCI Slot 2	30	CDAB
PCI Slot 3	29	DABC
PCI Slot 4	28	ABCD

On Board Device IRQ Routing

Device	ID	Slot	Int
IEEE 1394	28	4	A

MEMO

A p p e n d i x C

What Is SATA RAID Function?

Introduction

ICH8DO supports the SATA RAID function that allows you to combine four SATA-II disk drives into RAID volume configurations. The RAID configurations help you increase disk access speed (RAID0), or withstand a single disk drive failure (RAID1 or RAID5) and thus protect your data.

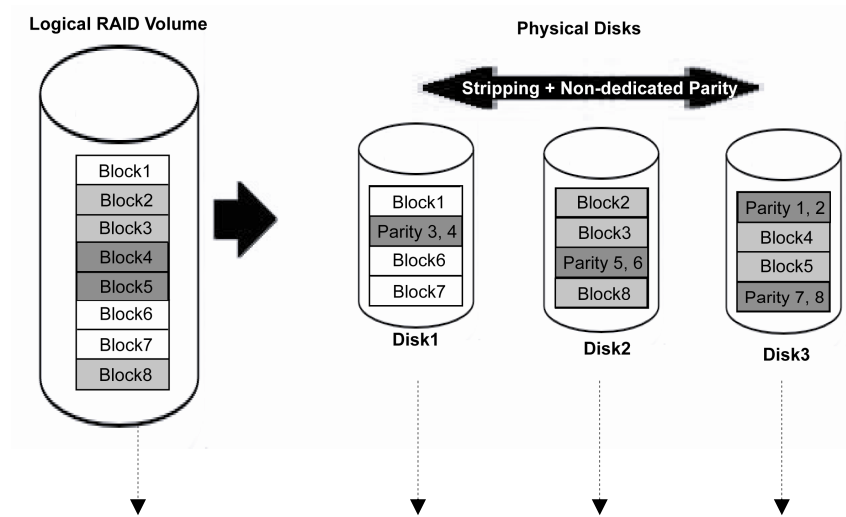Main features of ICH8DO RAID functionalities are listed as follows:
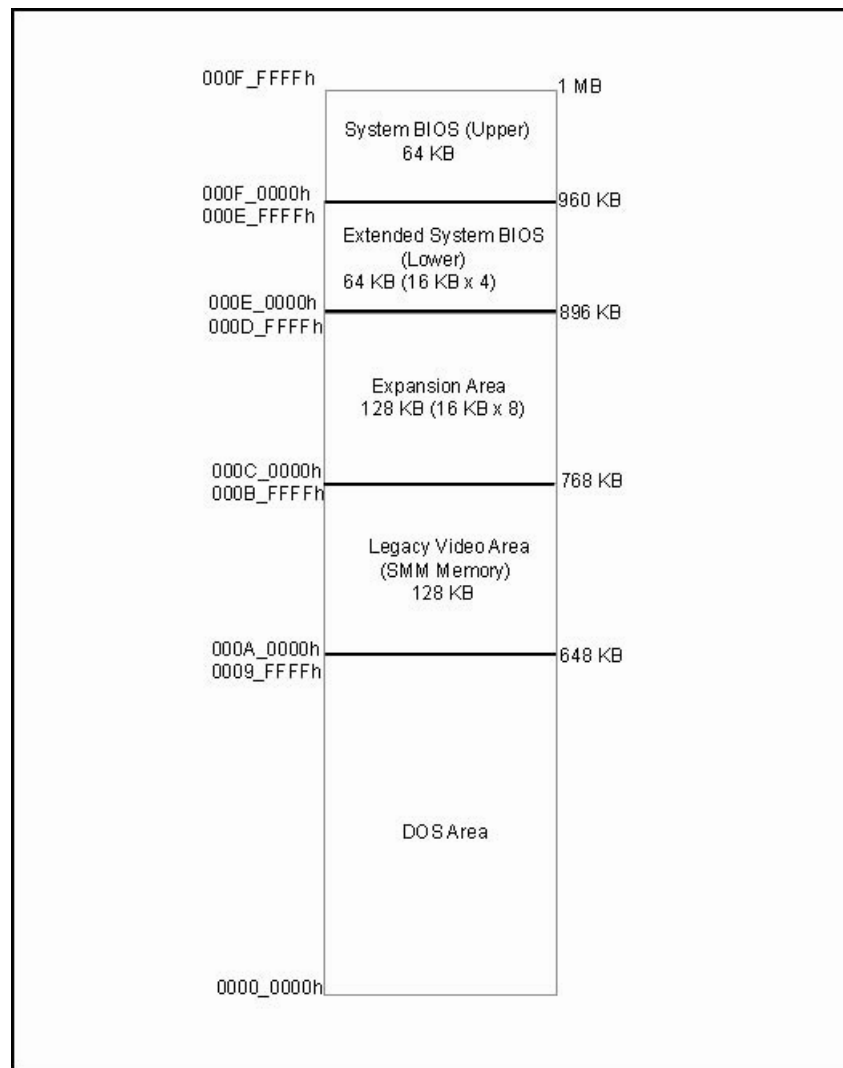
1. **RAID0** (Striping)
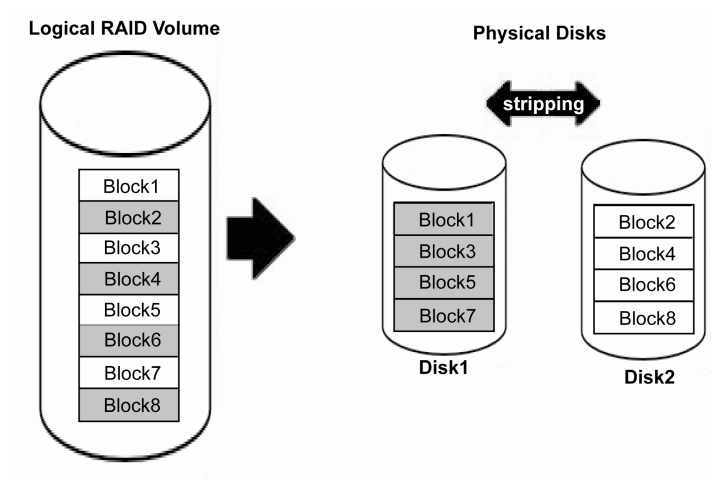
2. **RAID1** (Mirroring)
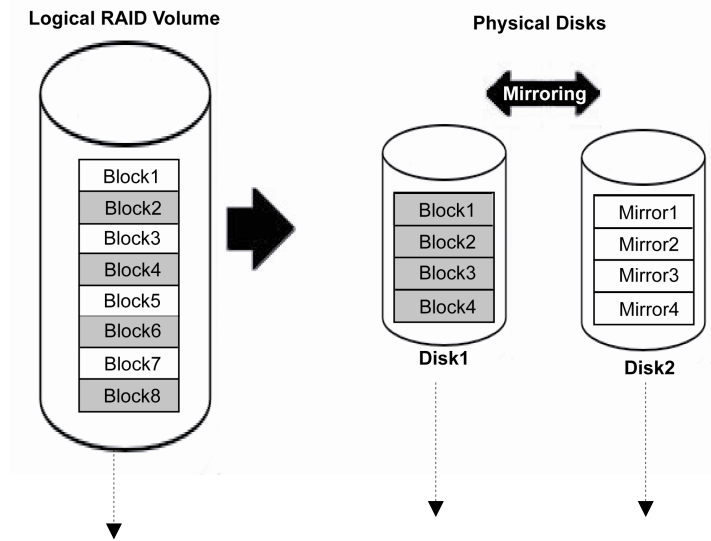
3. **RAID5** (Block Interleaved Distributed Parity)

A p p e n d i x D
Memory I/O Address

MEMO