



# ConRoe945GZ-DVI

## User Manual

Version 1.0

Published October 2006

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

### **CALIFORNIA, USA ONLY**

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.

"Perchlorate Material-special handling may apply, see [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)"

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## Chapter 1 Introduction

Thank you for purchasing ASRock **ConRoe945GZ-DVI** motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD.



Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest VGA cards and CPU support lists on ASRock website as well. ASRock website <http://www.asrock.com>

### 1.1 Package Contents

ASRock **ConRoe945GZ-DVI** Motherboard

(Micro ATX Form Factor: 9.6-in x 8.8-in, 24.4 cm x 22.4 cm)

ASRock **ConRoe945GZ-DVI** Quick Installation Guide

ASRock **ConRoe945GZ-DVI** Support CD

(including *LGA 775 CPU Installation Live Demo*)

One 80-conductor Ultra ATA 66/100 IDE Ribbon Cable

One Ribbon Cable for a 3.5-in Floppy Drive

One Serial ATA (SATA) Data Cable (Optional)

One Serial ATA (SATA) HDD Power Cable (Optional)

One **ASRock DVI I/O Plus** I/O Shield

One COM Port Bracket

One HDMR Card (Optional)

## 1.2 Specifications

<b>Platform</b>	- Micro ATX Form Factor: 9.6-in x 8.8-in, 24.4 cm x 22.4 cm
<b>CPU</b>	- LGA 775 for Intel® Core™ 2 Duo / Pentium® D / Pentium® 4 / Celeron® D processors (see <b>CAUTION 1</b> ) - FSB 800/533 MHz - Supports Hyper-Threading Technology (see <b>CAUTION 2</b> ) - Supports Untied Overclocking Technology (see <b>CAUTION 3</b> ) - Supports EM64T CPU
<b>Chipset</b>	- Northbridge: Intel® 945GZ - Southbridge: Intel® ICH7
<b>Memory</b>	- Dual Channel DDRII Memory Technology (see <b>CAUTION 4</b> ) - 2 x DDRII DIMM slots - Support DDRII533 - Max. capacity: 2GB
<b>Hybrid Booster</b>	- CPU Frequency Stepless Control (see <b>CAUTION 5</b> ) - ASRock U-COP (see <b>CAUTION 6</b> ) - Boot Failure Guard (B.F.G.)
<b>Expansion Slot</b>	- 1 x AGI Express slot (PCI Express x4) (see <b>CAUTION 7</b> ) - 3 x PCI slots - 1 x HDMR slot
<b>Graphics</b>	- Intel® Graphics Media Accelerator 950 - Pixel Shader 2.0, DirectX 9.0 - Max. shared memory 224MB - Supports DVI-D and D-Sub ports: Either DVI-D or D-Sub port can be chosen for display at the same time
<b>Audio</b>	- 7.1 CH Windows® Vista™ Premium Level HD Audio (ALC888 Audio Codec)
<b>LAN</b>	- Realtek PCI LAN 8101L - Speed: 10/100 Ethernet - Supports Wake-On-LAN
<b>Rear Panel I/O</b>	ASRock DVI I/O Plus - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x VGA/D-Sub Port - 1 x VGA/DVI-D Port - 1 x Parallel Port (ECP/EPP Support) - 4 x Ready-to-Use USB 2.0 Ports - 1 x RJ-45 LAN Port

	- HD Audio Jack: Side Speaker/Rear Speaker/Central/Bass/Line in/Front Speaker/Microphone (see <b>CAUTION 8</b> )
<b>Connector</b>	- 4 x SATAII 3.0 Gb/s connectors (No Support for RAID and "Hot Plug" functions) (see <b>CAUTION 9</b> ) - 1 x ATA100 IDE connector (supports 2 x IDE devices) - 1 x Floppy connector - 1 x IR header - 1 x COM port header - CPU/Chassis FAN connector - 20 pin ATX power connector - 4 pin 12V power connector - CD in header - Front panel audio connector - 2 x USB 2.0 headers (support 4 USB 2.0 ports) (see <b>CAUTION 10</b> )
<b>BIOS Feature</b>	- 4Mb AMI BIOS - AMI Legal BIOS - Supports "Plug and Play" - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - AMBIOS 2.3.1 Support
<b>Support CD</b>	- Drivers, Utilities, AntiVirus Software (Trial Version)
<b>Hardware Monitor</b>	- CPU Temperature Sensing - Chassis Temperature Sensing - CPU Fan Tachometer - Chassis Fan Tachometer - CPU Quiet Fan - Voltage Monitoring: +12V, +5V, +3.3V, CPU Vcore
<b>OS</b>	- Microsoft® Windows® 2000/XP/XP 64-bit/Vista™/Vista™ 64-bit compliant (see <b>CAUTION 11</b> )
<b>Certifications</b>	- FCC, CE, WHQL

**WARNING**

Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using the third-party overclocking tools. Overclocking may affect your system stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.

## **CAUTION!**

1. This motherboard supports FSB800-CPU. If you plan to adopt Core™ 2 Duo CPU on this motherboard, you can only adopt Conroe 800 E4XXX processors.
2. About the setting of "Hyper Threading Technology", please check page 30.
3. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 26 for details.
4. This motherboard supports Dual Channel Memory Technology. Before you implement Dual Channel Memory Technology, make sure to read the installation guide of memory modules on page 17 for proper installation.
5. Although this motherboard offers stepless control, it is not recommended to perform over-clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU.
6. While CPU overheat is detected, the system will automatically shutdown. Before you resume the system, please check if the CPU fan on the motherboard functions properly and unplug the power cord, then plug it back again. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.
7. For the information of the compatible PCI Express VGA cards, please refer to the "Supported PCI Express VGA Card List for AGI Express Slot (PCI Express x4)" on page 10. For the proper installation of PCI Express VGA card, please refer to the installation guide on page 18.
8. For microphone input, this motherboard supports both stereo and mono modes. For audio output, this motherboard supports 2-channel, 4-channel, 6-channel, and 8-channel modes. Please check the table on page 12 for proper connection.
9. Before installing SATAII hard disk to SATAII connector, please read the "SATAII Hard Disk Setup Guide" on page 25 to adjust your SATAII hard disk drive to SATAII mode. You can also connect SATA hard disk to SATAII connector directly.
10. Power Management for USB 2.0 works fine under Microsoft® Windows® Vista™ / XP 64-bit / XP SP1 or SP2 / 2000 SP4.
11. Microsoft® Windows® Vista™ driver is not ready yet. We will update it to our website in the future. Please visit our website for Microsoft® Windows® Vista™ driver and related information.  
ASRock website <http://www.asrock.com>

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### 1.3 Minimum Hardware Requirement Table for Windows® Vista™ Premium and Basic Logo

For system integrators and users who purchase this motherboard and plan to submit Windows® Vista™ Premium and Basic logo, please follow the below table for minimum hardware requirement.

CPU	Celeron D 326
Memory	512MB x 2 Dual Channel (Premium)
	512MB Single Channel (Basic)
	256MB x 2 Dual Channel (Basic)

\* If you plan to use external graphics card on this motherboard, please refer to Premium Discrete requirement at <http://www.asrock.com>

## 1.4 Supported PCI Express VGA Card List for AGI Express Slot (PCI Express x4)

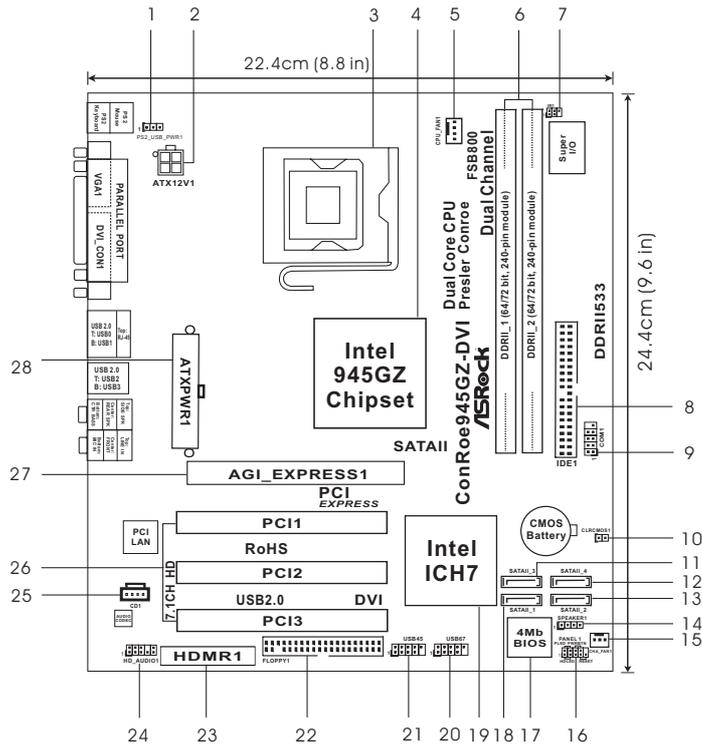
(for Windows® 2000/XP/XP 64-bit/Vista™)

Graphics Chip Vendor	Model Name	Chipset Name
NVIDIA	ASUS EN5750/A	GeForce 5750
	ASUS EN5900	GeForce 5900
	ASUS EN6600GT	GeForce 6600
	ASUS Extreme N6800GT	GeForce 6800GT
	ASUS EN7600GT/2DHT	GeForce 7600GT
	ALBATRON PC6600GT	GeForce 6600GT
	GIGABYTE GV-NX62128D	GeForce 6200
	Inno3D GeForce6600LE	GeForce 6600LE
	LEADTEK PX6500 TDH	GeForce 6500
	LEADTEK PX7300GS TDH	GeForce 7300 GS
	LEADTEK PX7300LE-TDH	GeForce 7300 LE
	SPARKLE GeFORCE 6200TC	GeForce 6200TC
	ATI	ASUS EAX700Pro
ASUS EAX1300PRO/TD/256M/A		Radeon X1300 PRO
ASUS EAX1900XT/2DHTV		Radeon X1900XT
GECUBE Radeon X850XT 256M		RADEON X850XT
MSI RX300SE-TD128E		Radeon X300SE
MSI RX1300GPRO-TD256E		RADEON X1300Pro
MSI RX1600GPRO-TD256E		RADEON X1600Pro
MSI RX1600XT-T2D256EZ		RADEON X1600XT

For the latest updates of the supported PCI Express VGA card list for AGI Express slot (PCI Express x4), please visit our website for details.

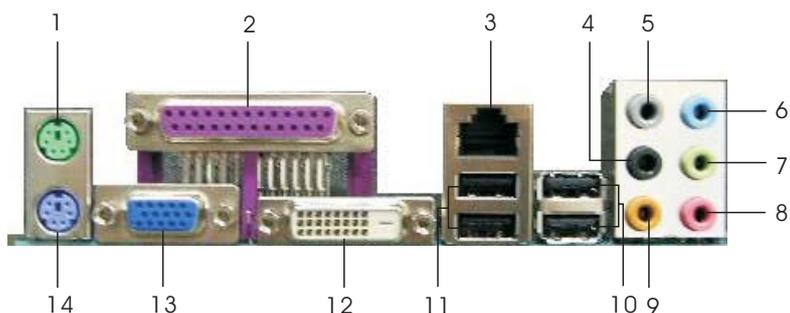
ASRock website: <http://www.asrock.com/support/index.htm>

## 1.5 Motherboard Layout



- |    |  |    |  |
|----|--|----|--|
| 1  | PS2_USB_PWR1 Jumper  | 15 | Chassis Fan Connector (CHA_FAN1)         |
| 2  | ATX 12V Connector (ATX12V1)  | 16 | System Panel Header (PANEL1)             |
| 3  | 775-Pin CPU Socket   | 17 | BIOS FWH Chip                            |
| 4  | North Bridge Controller  | 18 | Primary SATAII Connector (SATAII_1; Red) |
| 5  | CPU Fan Connector (CPU_FAN1)   | 19 | South Bridge Controller                  |
| 6  | 2 x 240-pin DDRII DIMM Slots<br>(Dual Channel: DDRIL_1, DDRIL_2; Yellow) | 20 | USB 2.0 Header (USB67, Blue)             |
| 7  | Infrared Module Header (IR1)   | 21 | USB 2.0 Header (USB45, Blue)             |
| 8  | IDE1 Connector (IDE1, Blue)  | 22 | Floppy Connector (FLOPPY1)               |
| 9  | Serial Port Connector (COM1)   | 23 | HDMR Slot (HDMR1)                        |
| 10 | Clear CMOS Jumper (CLRCMOS1)   | 24 | Front Panel Audio Header (HD_AUDIO1)     |
| 11 | Third SATAII Connector (SATAII_3; Orange)                                | 25 | Internal Audio Connector: CD1 (Black)    |
| 12 | Fourth SATAII Connector (SATAII_4; Orange)                               | 26 | PCI Slots (PCI1-3)                       |
| 13 | Secondary SATAII Connector (SATAII_2; Red)                               | 27 | AGI Express Slot (PCI Express x4)        |
| 14 | Chassis Speaker Header (SPEAKER 1)                                       | 28 | ATX Power Connector (ATXPWR1)            |

## 1.6 ASRock DVI I/O Plus



- |                           |                                |
|---------------------------|--------------------------------|
| 1 PS/2 Mouse Port (Green) | 8 Microphone (Pink)            |
| 2 Parallel Port           | 9 Central / Bass (Orange)      |
| 3 RJ-45 Port              | 10 USB 2.0 Ports (USB23)       |
| 4 Rear Speaker (Black)    | 11 USB 2.0 Ports (USB01)       |
| 5 Side Speaker (Gray)     | 12 VGA/DVI-D Port              |
| 6 Line In (Light Blue)    | 13 VGA/D-Sub Port              |
| *7 Front Speaker (Lime)   | 14 PS/2 Keyboard Port (Purple) |

\* If you use 2-channel speaker, please connect the speaker's plug into "Front Speaker Jack". See the table below for connection details in accordance with the type of speaker you use.

**TABLE for Audio Output Connection**

Audio Output Channels	Front Speaker (No. 7)	Rear Speaker (No. 4)	Central / Bass (No. 9)	Side Speaker (No. 5)
2	V	--	--	--
4	V	V	--	--
6	V	V	V	--
8	V	V	V	V

\* To enable Multi-Streaming function, you need to connect a front panel audio cable to the front panel audio header. After restarting your computer, you will find "Mixer" tool on your system. Please select "Mixer ToolBox" , click "Enable playback multi-streaming", and click "ok". Choose "2CH", "4CH", "6CH", or "8CH" and then you are allowed to select "Realtek HDA Primary output" to use Rear Speaker, Central/Bass, and Front Speaker, or select "Realtek HDA Audio 2nd output" to use front panel audio.

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## Chapter 2 Installation

**ConRoe945GZ-DVI** is a Micro ATX form factor (9.6-in x 8.8-in, 24.4 cm x 22.4 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.

### 2.1 Screw Holes

Place screws into the holes indicated by circles to secure the motherboard to the chassis.



Do not over-tighten the screws! Doing so may damage the motherboard.

### 2.2 Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

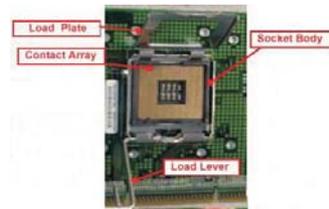
1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.



Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

## 2.3 CPU Installation

For the installation of Intel 775-LAND CPU, please follow the steps below.



775-Pin Socket Overview



Before you insert the 775-LAND CPU into the socket, please check if the CPU surface is unclean or if there is any bent pin on the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.

### Step 1. Open the socket:

Step 1-1. Disengaging the lever by depressing down and out on the hook to clear retention tab.



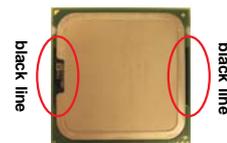
Step 1-2. Rotate the load lever to fully open position at approximately 135 degrees.



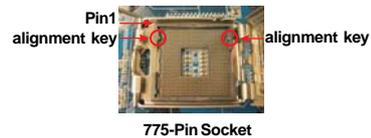
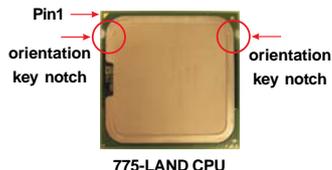
Step 1-3. Rotate the load plate to fully open position at approximately 100 degrees.

### Step 2. Insert the 775-LAND CPU:

Step 2-1. Hold the CPU by the edges where are marked with black lines.



Step 2-2. Orient the CPU with IHS (Integrated Heat Sink) up. Locate Pin1 and the two orientation key notches.





For proper inserting, please ensure to match the two orientation key notches of the CPU with the two alignment keys of the socket.

Step 2-3. Carefully place the CPU into the socket by using a purely vertical motion.

Step 2-4. Verify that the CPU is within the socket and properly mated to the orient keys.



Step 3. Remove PnP Cap (Pick and Place Cap):

Use your left hand index finger and thumb to support the load plate edge, engage PnP cap with right hand thumb and peel the cap from the socket while pressing on center of PnP cap to assist in removal.



1. It is recommended to use the cap tab to handle and avoid kicking off the PnP cap.
2. This cap must be placed if returning the motherboard for after service.

Step 4. Close the socket:

Step 4-1. Rotate the load plate onto the IHS.

Step 4-2. While pressing down lightly on load plate, engage the load lever.

Step 4-3. Secure load lever with load plate tab under retention tab of load lever.



## 2.4 Installation of CPU Fan and Heatsink

This motherboard is equipped with 775-Pin socket that supports Intel 775-LAND CPU. Please adopt the type of heatsink and cooling fan compliant with Intel 775-LAND CPU to dissipate heat. Before you installed the heatsink, you need to spray thermal interface material between the CPU and the heatsink to improve heat dissipation. Ensure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU\_FAN connector (CPU\_FAN1, see page 11, No. 5).

**For proper installation, please kindly refer to the instruction manuals of your CPU fan and heatsink.**

Below is an example to illustrate the installation of the heatsink for 775-LAND CPU.

Step 1. Apply thermal interface material onto center of IHS on the socket surface.



Step 2. Place the heatsink onto the socket. Ensure fan cables are oriented on side closest to the CPU fan connector on the motherboard (CPU\_FAN1, see page 11, No. 5).



Step 3. Align fasteners with the motherboard throughholes.

Step 4. Rotate the fastener clockwise, then press down on fastener caps with thumb to install and lock. Repeat with remaining fasteners.



If you press down the fasteners without rotating them clockwise, the heatsink cannot be secured on the motherboard.

Step 5. Connect fan header with the CPU fan connector on the motherboard.

Step 6. Secure excess cable with tie-wrap to ensure cable does not interfere with fan operation or contact other components.

## 2.5 Installation of Memory Modules (DIMM)

**ConRoe945GZ-DVI** motherboard provides two 240-pin DDRII (Double Data Rate) DIMM slots, and supports Dual Channel Memory Technology. For dual channel configuration, you always need to install two **identical** (the same brand, speed, size and chip-type) memory modules in the DDRII DIMM slots to activate Dual Channel Memory Technology. Otherwise, it will operate at single channel mode.



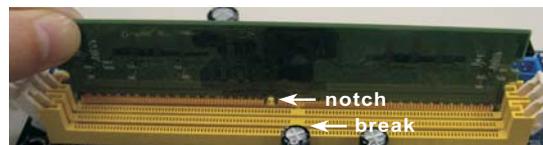
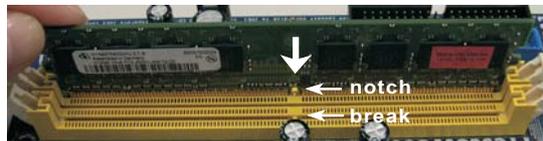
1. It is not allowed to install a DDR memory module into DDRII slot; otherwise, this motherboard and DIMM may be damaged.
2. If you install only one memory module or two non-identical memory modules, it is unable to activate the Dual Channel Memory Technology.

### Installing a DIMM



Please make sure to disconnect power supply before adding or removing DIMMs or the system components.

- Step 1. Unlock a DIMM slot by pressing the retaining clips outward.
- Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

- Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

---

## 2.6 Expansion Slots (PCI, HDMR and AGI Express Slots)

There are 3 PCI slots, 1 HDMR slot and 1 AGI Express slot (PCI Express x4) on this motherboard.

**PCI slots:** PCI slots are used to install expansion cards that have the 32-bit PCI interface.

**HDMR slot:** HDMR slot is used to insert a HDMR card (optional) with v.92 Modem functionality.

**AGI Express slot (PCI Express x4):**

AGI Express slot (PCI Express x4) is used to install PCI Express expansion cards. For the information of the compatible PCI Express VGA cards, please refer to the "Supported PCI Express VGA Card List for AGI Express Slot (PCI Express x4)" on page 10.



If you install the add-on PCI Express VGA card, BIOS setup will automatically disable the onboard VGA.

### Installing an expansion card

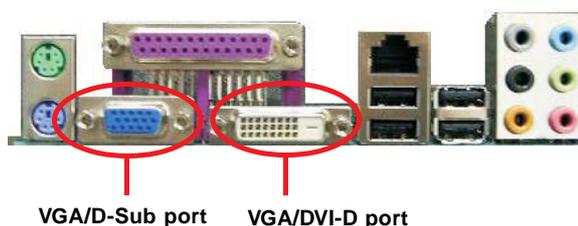
- Step 1. Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.
- Step 2. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.
- Step 3. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
- Step 4. Fasten the card to the chassis with screws.

---

## 2.7 Multi Monitor Feature

This motherboard supports Multi Monitor upgrade. With the internal VGA output support (DVI-D or D-Sub) and the external add-on PCI Express VGA card, you can easily enjoy the benefits of Multi Monitor feature. Please refer to the following steps to set up a Multi Monitor environment:

1. Boot your system. Press <F2> to enter BIOS setup. Enter "Onboard VGA Selection" option to [Enabled] to enable the function of onboard VGA. If you do not adjust the BIOS setup, the default value of "Onboard VGA Selection", [Auto], will disable onboard VGA function when the add-on VGA card is inserted to this motherboard.
2. Install the PCI Express VGA card to AGI Express slot (PCI Express x4). Please refer to page 18 for proper expansion card installation procedures for details.
3. Connect the monitor cable to the corresponding VGA connector of the add-on VGA card.
4. Connect the monitor cable to the VGA port on the I/O panel of this motherboard. There are two VGA ports on the I/O panel: VGA/DVI-D and VGA/D-Sub ports. Either VGA/DVI-D or VGA/D-Sub port can be chosen for display at the same time. In other words, you can only choose to connect either VGA/DVI-D or VGA/D-Sub port at the same time.

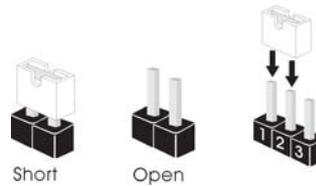


5. Install the onboard VGA driver and the add-on PCI Express VGA card driver to your system. If you have installed the onboard VGA driver and the add-on PCI Express VGA card driver already, there is no need to install them again.
6. Set up a multi-monitor display. Right click the desktop, choose "Properties", and select the "Settings" tab so that you can adjust the parameters of the multi-monitor according to the steps below. (The item names and operation procedures described in this step are under Windows® XP environment. If you install other Windows® OS, the item names and operation procedures may be similar.)

- A. Click the "Identify" button to display a large number on each monitor.
  - B. Right-click the display icon in the Display Properties dialog that you wish to be your primary monitor, and then select "Primary". When you use multiple monitors with your card, one monitor will always be Primary, and all additional monitors will be designated as Secondary.
  - C. Select the display icon identified by the number 2.
  - D. Click "Extend my Windows desktop onto this monitor".
  - E. Right-click the display icon and select "Attached", if necessary.
  - F. Set the "Screen Resolution" and "Color Quality" as appropriate for the second monitor. Click "Apply" or "OK" to apply these new values.
  - G. Repeat steps C through E for the diaplay icon identified by the number one, two and three.
7. Use Multi Monitor. Click and drag the display icons to positions representing the physical setup of your monitors that you would like to use. The placement of display icons determines how you move items from one monitor to another.

## 2.8 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "Short". If no jumper cap is placed on pins, the jumper is "Open". The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when jumper cap is placed on these 2 pins.



Jumper	Setting	Description
PS2_USB_PWR1 (see p.11 No. 1)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1_2</p>  <p>+5V</p> </div> <div style="text-align: center;"> <p>2_3</p>  <p>+5VSB</p> </div> </div>	Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

Clear CMOS (CLRCMOS1, 2-pin jumper) (see p.11 No. 10)	 2-pin jumper
---	---

Note: CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short 2 pins on CLRCMOS1 for 5 seconds.

## 2.9 Onboard Headers and Connectors



Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

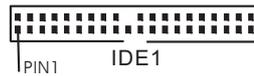
FDD connector  
(33-pin FLOPPY1)  
(see p.11 No. 22)



↑  
the red-striped side to Pin1

Note: Make sure the red-striped side of the cable is plugged into Pin1 side of the connector.

Primary IDE connector (Blue)  
(39-pin IDE1, see p.11 No. 8)



connect the blue end to the motherboard      connect the black end to the IDE devices  
80-conductor ATA 66/100 cable

Note: Please refer to the instruction of your IDE device vendor for the details.

Serial ATAII Connectors

(SATAII\_1: see p.11, No. 18)



SATAII\_3



SATAII\_4

(SATAII\_2: see p.11, No. 13)

(SATAII\_3: see p.11, No. 11)



SATAII\_1



SATAII\_2

(SATAII\_4: see p.11, No. 12)

These Serial ATAII (SATAII) connectors support SATAII or SATA hard disk for internal storage devices. The current SATAII interface allows up to 3.0 Gb/s data transfer rate.

Serial ATA (SATA)  
Data Cable  
(Optional)



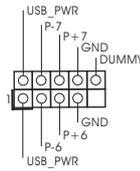
Either end of the SATA data cable can be connected to the SATA / SATAII hard disk or the SATAII connector on the motherboard.

Serial ATA (SATA)  
Power Cable  
(Optional)



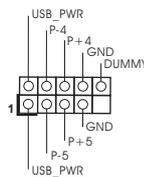
Please connect the black end of SATA power cable to the power connector on each drive. Then connect the white end of SATA power cable to the power connector of the power supply.

**USB 2.0 Headers**  
 (9-pin USB67)  
 (see p.11 No. 20)

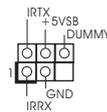


Besides four default USB 2.0 ports on the I/O panel, there are two USB 2.0 headers on this motherboard. Each USB 2.0 header can support two USB 2.0 ports.

(9-pin USB45)  
 (see p.11 No. 21)

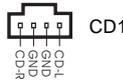


**Infrared Module Header**  
 (5-pin IR1)  
 (see p.11 No. 7)



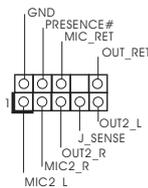
This header supports an optional wireless transmitting and receiving infrared module.

**Internal Audio Connector**  
 (4-pin CD1)  
 (CD1: see p.11 No. 25)



This connector allows you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

**Front Panel Audio Header**  
 (9-pin HD\_AUDIO1)  
 (see p.11 No. 24)



This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

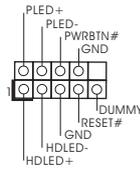


1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instruction in our manual and chassis manual to install your system.
2. If you use AC'97 audio panel, please install it to the front panel audio header as below:
  - A. Connect Mic\_IN (MIC) to MIC2\_L.
  - B. Connect Audio\_R (RIN) to OUT2\_R and Audio\_L (LIN) to OUT2\_L.
  - C. Connect Ground (GND) to Ground (GND).
  - D. MIC\_RET and OUT\_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel.
  - E. Enter BIOS Setup Utility. Enter Advanced Settings, and then select Chipset Configuration. Set the Front Panel Control option from [Auto] to [Enabled].

F. Enter Windows system. Click the icon on the lower right hand taskbar to enter Realtek HD Audio Manager. Click "Audio I/O", select "Connector Settings" , choose "Disable front panel jack detection", and save the change by clicking "OK".

#### System Panel Header

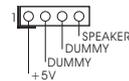
(9-pin PANEL1)  
(see p.11 No. 16)



This header accommodates several system front panel functions.

#### Chassis Speaker Header

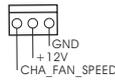
(4-pin SPEAKER 1)  
(see p.11 No. 14)



Please connect the chassis speaker to this header.

#### Chassis Fan Connector

(3-pin CHA\_FAN1)  
(see p.11 No. 15)



Please connect a chassis fan cable to this connector and match the black wire to the ground pin.

#### CPU Fan Connector

(4-pin CPU\_FAN1)  
(see p.11 No. 5)



Please connect a CPU fan cable to this connector and match the black wire to the ground pin.



Though this motherboard provides 4-Pin CPU fan (Quiet Fan) support, the 3-Pin CPU fan still can work successfully even without the fan speed control function. If you plan to connect the 3-Pin CPU fan to the CPU fan connector on this motherboard, please connect it to Pin 1-3.

**Pin 1-3 Connected** 

3-Pin Fan Installation

#### ATX Power Connector

(20-pin ATXPWR1)  
(see p.11 No. 28)



Please connect an ATX power supply to this connector.

---

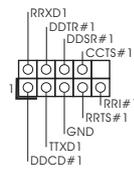
**ATX 12V Connector**  
(4-pin ATX12V1)  
(see p.11 No. 2)



Please note that it is necessary to connect a power supply with ATX 12V plug to this connector so that it can provides sufficient power. Failing to do so will cause the failure to power up.

---

**Serial port Header**  
(9-pin COM1)  
(see p.11 item 9)



This COM1 header supports a serial port module.

## 2.10 SATAII Hard Disk Setup Guide

Before installing SATAII hard disk to your computer, please carefully read below SATAII hard disk setup guide. Some default setting of SATAII hard disks may not be at SATAII mode, which operate with the best performance. In order to enable SATAII function, please follow the below instruction with different vendors to correctly adjust your SATAII hard disk to SATAII mode in advance; otherwise, your SATAII hard disk may fail to run at SATAII mode.

### Western Digital



If pin 5 and pin 6 are shorted, SATA 1.5Gb/s will be enabled.

On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 5 and pin 6.

### SAMSUNG



If pin 3 and pin 4 are shorted, SATA 1.5Gb/s will be enabled.

On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 3 and pin 4.

### HITACHI

Please use the Feature Tool, a DOS-bootable tool, for changing various ATA features. Please visit HITACHI's website for details:

<http://www.hitachigst.com/hdd/support/download.htm>



The above examples are just for your reference. For different SATAII hard disk products of different vendors, the jumper pin setting methods may not be the same. Please visit the vendors' website for the updates.

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## 2.11 Serial ATA (SATA) / Serial ATAII (SATAII) Hard Disks Installation

This motherboard adopts Intel® ICH7 south bridge chipset that supports Serial ATA (SATA) / Serial ATAII (SATAII) hard disks. You may install SATA / SATAII hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA / SATAII hard disks.

- STEP 1: Install the SATA / SATAII hard disks into the drive bays of your chassis.
- STEP 2: Connect the SATA power cable to the SATA / SATAII hard disk.
- STEP 3: Connect one end of the SATA data cable to the motherboard's SATAII connector.
- STEP 4: Connect the other end of the SATA data cable to the SATA / SATAII hard disk.

## 2.12 Driver Installation Guide

To install the drivers to your system, please insert the support CD to your optical drive first. Then, the drivers compatible to your system can be auto-detected and listed on the support CD driver page. Please follow the order from up to bottom side to install those required drivers. Therefore, the drivers you install can work properly.

## 2.13 HDMR Card and Driver Installation

If you do not insert HDMR card to this motherboard, and you finish installing all drivers to your system now, but in the future, you plan to use HDMR card function on this motherboard, please follow the steps below then.

1. Insert HDMR card to HDMR slot on this motherboard. Please make sure that the HDMR card is completely seated on the slot.
2. Install HDMR card driver from our support CD to your system.
3. Reboot your system.

## 2.14 Untied Overclocking Technology

This motherboard supports Untied Overclocking Technology, which means during overclocking, FSB enjoys better margin due to fixed PCI / PCIE buses. Before you enable Untied Overclocking function, please enter "Overclock Mode" option of BIOS setup to set the selection from [Auto] to [CPU, PCIE, Async.]. Therefore, CPU FSB is untied during overclocking, but PCI and PCIE buses are in the fixed mode so that FSB can operate under a more stable overclocking environment.



Please refer to the warning on page 7 for the possible overclocking risk before you apply Untied Overclocking Technology.

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## Chapter 3 BIOS SETUP UTILITY

### 3.1 Introduction

This section explains how to use the BIOS SETUP UTILITY to configure your system. The BIOS FWH chip on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.



Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

#### 3.1.1 BIOS Menu Bar

The top of the screen has a menu bar with the following selections:

- Main** To set up the system time/date information
- Advanced** To set up the advanced BIOS features
- PCIPnP** To set up the PCI features
- Boot** To set up the default system device to locate and load the Operating System
- Security** To set up the security features
- Chipset** To set up the chipset features
- Exit** To exit the current screen or the BIOS SETUP UTILITY

Use <←> key or <→> key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.

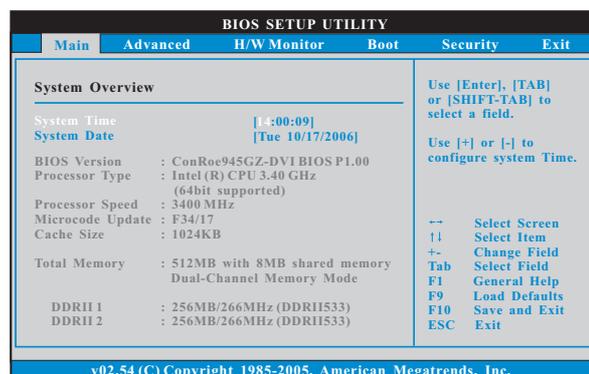
### 3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the BIOS SETUP UTILITY
<ESC>	To jump to the Exit Screen or exit the current screen

### 3.2 Main Screen

When you enter the BIOS SETUP UTILITY, the Main screen will appear and display the system overview



#### System Time [Hour:Minute:Second]

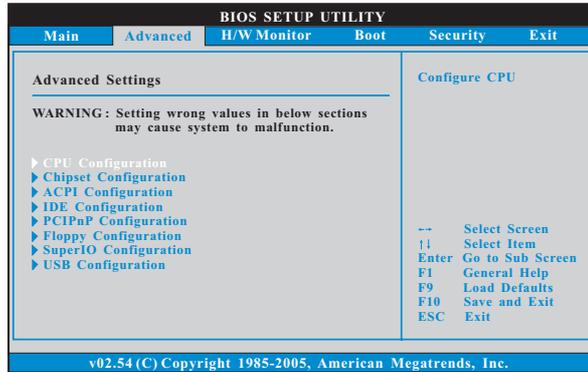
Use this item to specify the system time.

#### System Date [Day Month/Date/Year]

Use this item to specify the system date.

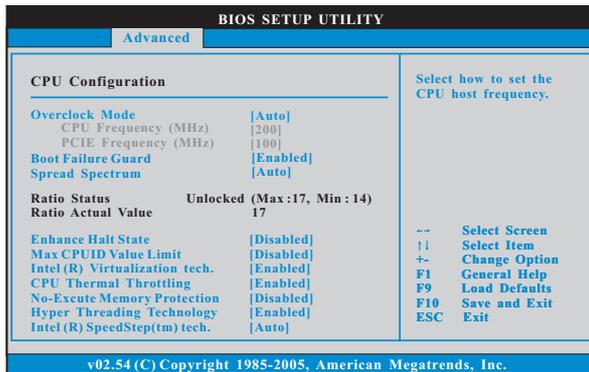
### 3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, IDE Configuration, PCI PnP Configuration, Floppy Configuration, SuperIO Configuration, and USB Configuration.



Setting wrong values in this section may cause the system to malfunction.

### 3.3.1 CPU Configuration



#### Overclock Mode

Use this to select Overclock Mode. The default value is [Auto]. Configuration options: [Auto], [CPU, PCIE, Sync.] and [CPU, PCIE, Async.].

#### CPU Frequency (MHz)

Use this option to adjust CPU frequency. The default value is [200].

#### PCIE Frequency (MHz)

Use this option to adjust PCIE frequency. The default value is [100].

#### Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

#### Spread Spectrum

This item should always be [Auto] for better system stability.

#### Ratio Status

This is a read-only item, which displays whether the ratio status of this

motherboard is “Locked” or “Unlocked”. If it shows “Unlocked”, you will find an item **Ratio CMOS Setting** appears to allow you changing the ratio value of this motherboard.

**Ratio Actual Value**

This is a read-only item, which displays the ratio actual value of this motherboard.

**Ratio CMOS Setting**

If the ratio status is unlocked, you will find this item appear to allow you changing the ratio value of this motherboard. If the CPU you adopt supports EIST (Intel (R) SpeedStep(tm) tech.), and you plan to adjust the ratio value, please disable the option “ Intel (R) SpeedStep(tm) tech.” in advance.

**Enhance Halt State**

All processors support the Halt State (C1). The C1 state is supported through the native processor instructions HLT and MWAIT and requires no hardware support from the chipset. In the C1 power state, the processor maintains the context of the system caches.

**Max CPUID Value Limit**

For Prescott CPU only, some OSes (ex. NT4.0) cannot handle the function with disable. This should be enabled in order to boot legacy OSes that cannot support CPUs with extended CPUID functions.

**Intel (R) Virtualization tech.**

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology. This option will be hidden if the installed CPU does not support Intel (R) Virtualization Technology.

**CPU Thermal Throttling**

You may select [Enabled] to enable P4 CPU internal thermal control mechanism to keep the CPU from overheated.

**No-Execute Memory Protection**

No-Execution (NX) Memory Protection Technology is an enhancement to the IA-32 Intel Architecture. An IA-32 processor with “No Execute (NX) Memory Protection” can prevent data pages from being used by malicious software to execute code. This option will be hidden if the current CPU does not support No-Execute Memory Protection.

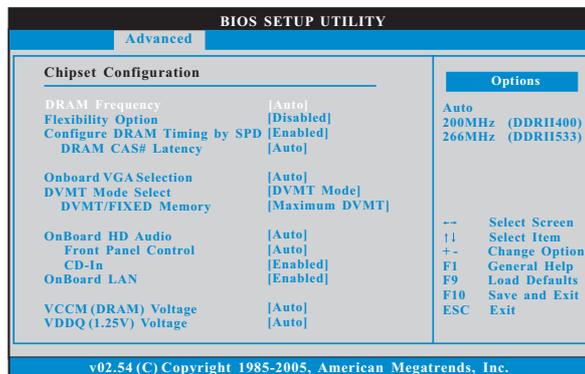
**Hyper Threading Technology**

To enable this feature, it requires a computer system with an Intel Pentium®4 processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP. Set to [Enabled] if using Microsoft® Windows® XP, or Linux kernel version 2.4.18 or higher. This option will be hidden if the installed CPU does not support Hyper-Threading technology.

### Intel (R) SpeedStep(tm) tech.

Intel (R) SpeedStep(tm) tech. is Intel's new power saving technology. Processor can switch between multiple frequency and voltage points to enable power savings. If you select [Auto], you need to set the "Power Schemes" as "Portable/Laptop" to enable this function.

### 3.3.2 Chipset Configuration



#### DRAM Frequency

If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically. You may also select other value as operating frequency: [200MHz (DDR11400)], [266MHz (DDR11533)].

#### Flexibility Option

The default value of this option is [Disabled]. It will allow better tolerance for memory compatibility when it is set to [Enabled].

#### Configure DRAM Timing by SPD

Select [Enabled] will configure the following items by the contents in the SPD (Serial Presence Detect) device. If you select [Disabled], you will find the items "DRAM RAS# to CAS# Delay", "DRAM RAS# Precharge", and "DRAM RAS# Activate to Precharge" appear to allow you adjusting them.

#### DRAM CAS# Latency

Use this item to adjust the means of memory accessing. Configuration options are [6], [5], [4], [3], and [Auto].

#### DRAM RAS# to CAS# Delay

This controls the latency between the DRAM active command and the read / write command. Configuration options: [2 DRAM Clocks], [3 DRAM Clocks], [4 DRAM Clocks], [5 DRAM Clocks], and [6 DRAM Clocks].

#### DRAM RAS# Precharge

This controls the idle clocks after a precharge command is issued. Configuration options: [2 DRAM Clocks], [3 DRAM Clocks], [4 DRAM

Clocks], [5 DRAM Clocks], and [6 DRAM Clocks].

#### **DRAM RAS# Activate to Precharge**

This controls the number of DRAM clocks for TRAS. Configuration options: [4 DRAM Clocks], [5 DRAM Clocks], [6 DRAM Clocks], [7 DRAM Clocks], [8 DRAM Clocks], [9 DRAM Clocks], [10 DRAM Clocks], [11 DRAM Clocks], [12 DRAM Clocks], [13 DRAM Clocks], [14 DRAM Clocks], and [15 DRAM Clocks].

#### **Onboard VGA Selection**

This allows you to enjoy the benefits of Surround Display feature. If you select [Auto], the onboard VGA will be automatically disabled when you install PCI Express x16 VGA card; the onboard VGA will be enabled without the installation of any add-on VGA card. If you select [Enabled], the onboard VGA will be enabled, and your first screen will always be onboard VGA.

#### **DVMT Mode Select**

Use this option to adjust DVMT mode. Configuration options: [Fixed Mode], [DVMT Mode] and [Fixed+DVMT Mode]. The default value is [DVMT Mode]. DVMT (Dynamic Video Memory Technology) is an architecture that offers breakthrough performance for the motherboard through efficient memory utilization. In Fixed mode, a fixed-size fragment of the system memory is allocated to the graphics core. In DVMT mode, the graphics driver allocates memory as needed for running graphics applications and is cooperatively using this memory with other system components. In Fixed+DVMT mode, the graphics processor gets a fixed-size chunk of 64MB of memory and up to 64MB of dynamically-allotted memory. This mode guarantees that at least 64MB of memory is available to the graphics core, with a possibility to increase this amount to 128MB, if necessary.

#### **DVMT/FIXED Memory**

You are allowed to adjust the shared memory size in this item if you set DVMT Mode Select as [DVMT Mode]. Configuration options: [64MB], [128MB] and [Maximum DVMT].

#### **OnBoard HD Audio**

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged.

#### **Front Panel Control**

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio Front Panel.

#### **CD-In**

Use this item to enable or disable CD-In of OnBoard HD Audio. If you plan to use this motherboard to submit Windows® Vista™ logo test, please disable this option.

#### **OnBoard LAN**

This allows you to enable or disable the "OnBoard LAN" feature.

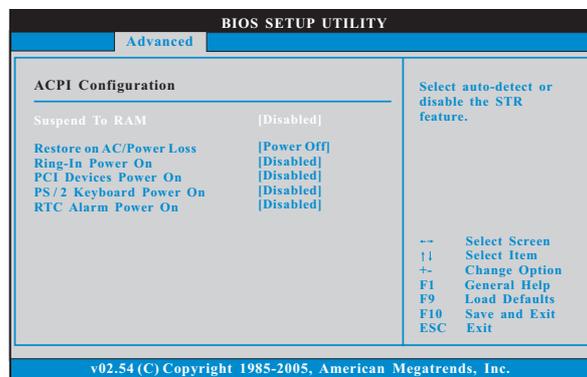
### VCCM (DRAM) Voltage

Use this to select VCCM (DRAM) Voltage. Configuration options: [High], [Middle], [Low], and [Auto]. The default value of this feature is [Auto].

### VDDQ (1.25V) Voltage

Configuration options: [High], [Low] and [Auto]. The default value of this feature is [Auto].

## 3.3.3 ACPI Configuration



### Suspend to RAM

This field allows you to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the system supports it.

### Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/Power loss. If [Power Off] is selected, the AC/Power remains off when the power recovers. If [Power On] is selected, the AC/Power resumes and the system starts to boot up when the power recovers.

### Ring-In Power On

Use this item to enable or disable Ring-In signals to turn on the system from the power-soft-off mode.

### PCI Devices Power On

Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode.

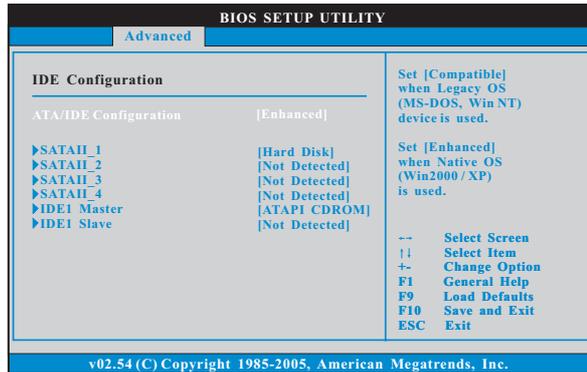
### PS/2 Keyboard Power On

Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

### RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

### 3.3.4 IDE Configuration



#### ATA/IDE Configuration

Please select **[Compatible]** when you install legacy OS (Windows NT). If native OS (Windows 2000 / XP) is installed, please select **[Enhanced]**.

When **[Compatible]** is selected

#### Combined Option

It allows you to select between **[SATA 1, SATA 2, SATA 3, SATA 4]**, **[SATA 1, SATA 3, IDE 1]**, and **[IDE 1, SATA 2, SATA 4]**. If it is set to **[SATA 1, SATA 3, IDE 1]**, then SATAII\_2, SATAII\_4 will not work. Likewise, if it is set to **[IDE 1, SATA 2, SATA 4]**, then SATAII\_1, SATAII\_3 will not work.

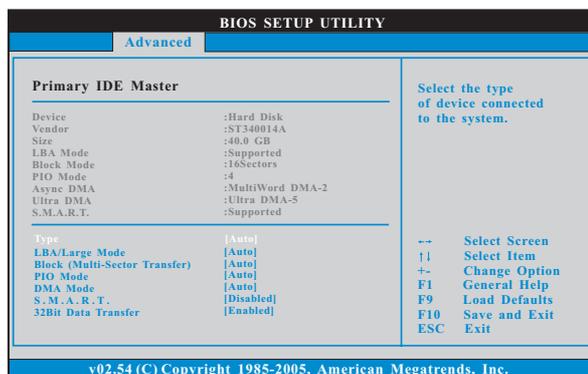


Because Intel® ICH7 south bridge only supports four IDE devices under legacy OS (Windows NT), you have to choose **[SATA 1, SATA 2, SATA 3, SATA 4]**, **[SATA 1, SATA 3, IDE 1]**, or **[IDE 1, SATA 2, SATA 4]** when the installed device is used with legacy OS.

	[SATA 1, SATA 2, SATA 3, SATA 4]	[SATA 1, SATA 3, IDE 1]	[IDE 1, SATA 2, SATA 4]
Master	SATAII_1, SATAII_2	SATAII_1	SATAII_2
Slave	SATAII_3, SATAII_4	SATAII_3	SATAII_4

#### IDE Device Configuration

You may set the IDE configuration for the device that you specify. We will use the "Primary IDE Master" as the example in the following instruction.



### TYPE

Use this item to configure the type of the IDE device that you specify. Configuration options: [Not Installed], [Auto], [CD/DVD], and [ARMD].

**[Not Installed]:** Select [Not Installed] to disable the use of IDE device.

**[Auto]:** Select [Auto] to automatically detect the hard disk drive.



After selecting the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format the new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

**[CD/DVD]:** This is used for IDE CD/DVD drives.

**[ARMD]:** This is used for IDE ARMD (ATAPI Removable Media Device), such as MO.

### LBA/Large Mode

Use this item to select the LBA/Large mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Disabled] to disable the LBA/Large mode.

### Block (Multi-Sector Transfer)

The default value of this item is [Auto]. If this feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

### PIO Mode

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

### DMA Mode

DMA capability allows the improved transfer-speed and data-integrity for compatible IDE devices.

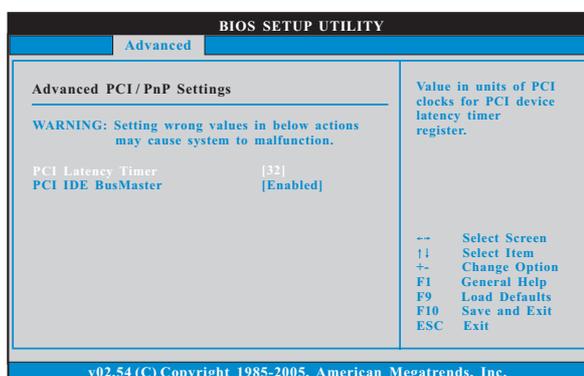
### S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled], [Auto], [Enabled].

### 32-Bit Data Transfer

Use this item to enable 32-bit access to maximize the IDE hard disk data transfer rate.

## 3.3.5 PCI/PnP Configuration



### PCI Latency Timer

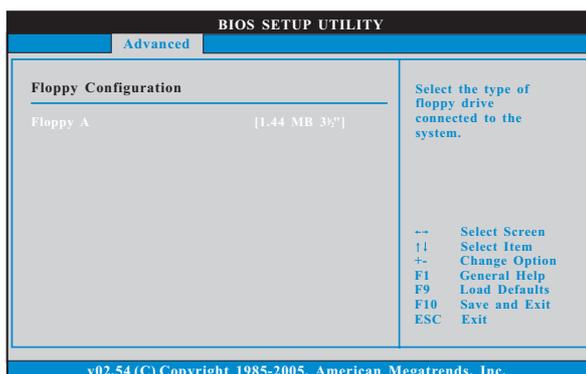
The default value is 32. It is recommended to keep the default value unless the installed PCI expansion cards' specifications require other settings.

### PCI IDE BusMaster

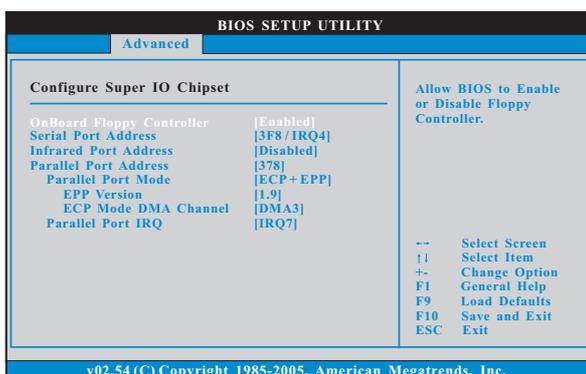
Use this item to enable or disable the PCI IDE BusMaster feature.

### 3.3.6 Floppy Configuration

In this section, you may configure the type of your floppy drive.



### 3.3.7 Super IO Configuration



#### OnBoard Floppy Controller

Use this item to enable or disable floppy drive controller.

#### Serial Port Address

Use this item to set the address for the onboard serial port or disable it.

Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4], [2E8 / IRQ3].

#### Infrared Port Address

Use this item to set the address for the onboard infrared port or disable it.

Configuration options: [Disabled], [2F8 / IRQ3], and [2E8 / IRQ3].

### Parallel Port Address

Use this item to set the address for the onboard parallel port or disable it. Configuration options: [Disabled], [378], and [278].

### Parallel Port Mode

Use this item to set the operation mode of the parallel port. The default value is [ECP+EPP]. If this option is set to [ECP+EPP], it will show the EPP version in the following item, "EPP Version". Configuration options: [Normal], [Bi-Directional], and [ECP+EPP].

### EPP Version

Use this item to set the EPP version. Configuration options: [1.9] and [1.7].

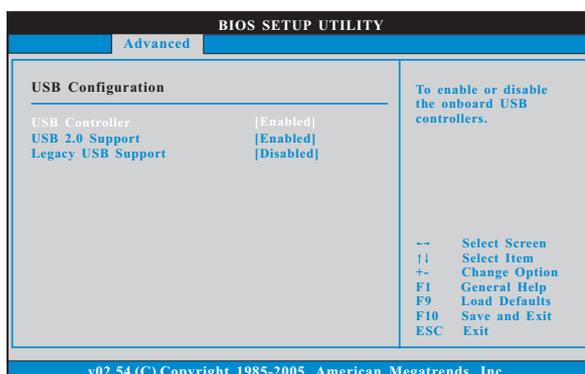
### ECP Mode DMA Channel

Use this item to set the ECP mode DMA channel. Configuration options: [DMA0], [DMA1], and [DMA3].

### Parallel Port IRQ

Use this item to set the IRQ for the parallel port. Configuration options: [IRQ5] and [IRQ7].

## 3.3.8 USB Configuration



### USB Controller

Use this item to enable or disable the use of USB controller.

### USB 2.0 Support

Use this item to enable or disable the USB 2.0 support.

### Legacy USB Support

Use this item to enable or disable the support to emulate legacy I/O devices such as mouse, keyboard,... etc. Or you may select [Auto] so that the system will start to auto-detect; if there is no USB device connected, "Auto" option will disable the legacy USB support.

### 3.4 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.

BIOS SETUP UTILITY					
Main	Advanced	H/W Monitor	Boot	Security	Exit
<b>Hardware Health Event Monitoring</b>			<b>Target Fan Speed</b>		
CPU Temperature	:	37°C / 98°F	Fast		
M/B Temperature	:	31°C / 87°F	Middle		
CPU Fan Speed	:	3400 RPM	Slow		
Chassis Fan Speed	:	N/A			
Vcore	:	1.629V	--	Select Screen	
+ 3.30V	:	3.306V	F1	Select Item	
+ 5.00V	:	5.067V	F1	General Help	
+ 12.00V	:	11.890V	F9	Load Defaults	
CPU Quiet Fan	:	[Enabled]	F10	Save and Exit	
Target CPU Temperature ( °C)	:	[50]	ESC	Exit	
Tolerance ( °C)	:	[02]			
Target Fan Speed	:	[Fast]			

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#### CPU Quiet Fan

This item allows you to identify the temperature of CPU fan. If you set this option as [Disabled], the CPU fan will operate in full speed. If you set this option as [Enabled], you will find the items "Target CPU Temperature ( °C)", "Tolerance ( °C)", and "Minimum Fan Speed" appear to allow you adjusting them. The default value is [Disabled]. You are allowed to enable this function only when you install 4-pin CPU fan.

#### Target CPU Temperature ( °C)

The target temperature will be between 45 °C and 65 °C. The default value is [50].

#### Tolerance ( °C)

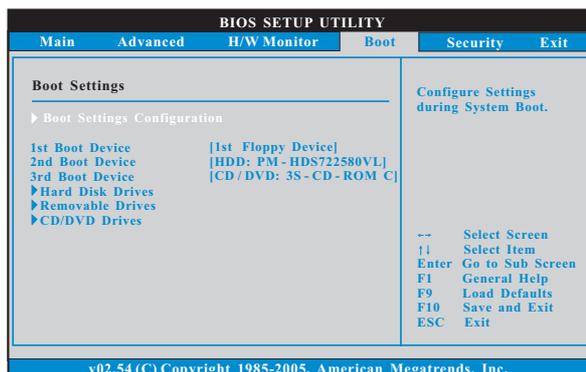
The default value of tolerance is [2], which means the error of the target CPU temperature will be within 2 °C.

#### Target Fan Speed

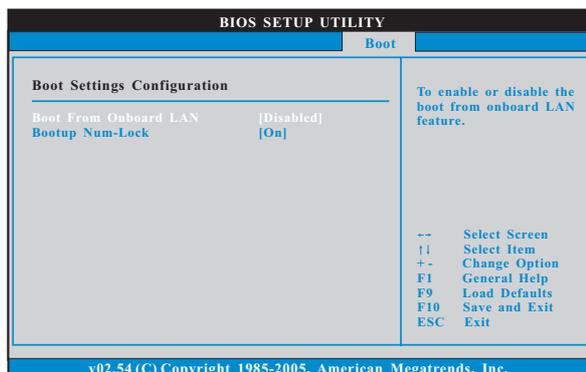
Use this option to set the target fan speed. You can freely adjust the target fan speed according to the target CPU temperature that you choose. The default value is [Fast]. Configuration options: [Fast], [Middle] and [Slow].

### 3.5 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



#### 3.5.1 Boot Settings Configuration



##### Boot From Onboard LAN

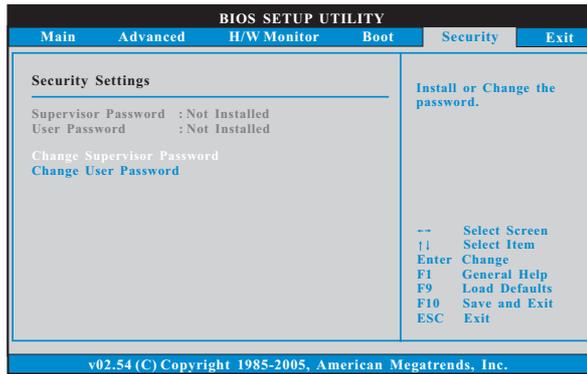
Use this item to enable or disable the Boot From Onboard LAN feature.

##### Boot Up Num-Lock

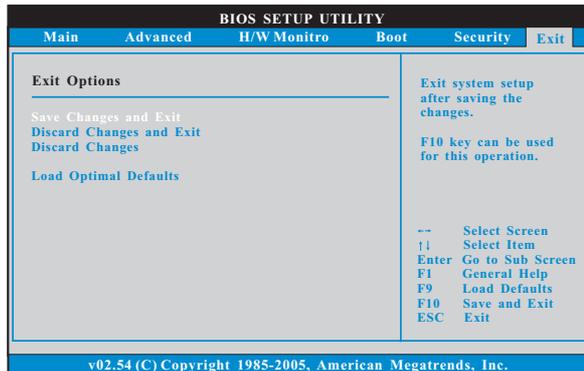
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

### 3.6 Security Screen

In this section, you may set or change the supervisor/user password for the system. For the user password, you may also clear it.



### 3.7 Exit Screen



#### Save Changes and Exit

When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the BIOS SETUP UTILITY.

#### Discard Changes and Exit

When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the BIOS SETUP UTILITY without saving any changes.

#### Discard Changes

When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

#### Load Optimal Defaults

When you select this option, it will pop-out the following message, "Load optimal defaults?" Select [OK] to load the default values for all the setup configurations.

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## **Chapter 4 Software Support**

### **4.1 Install Operating System**

This motherboard supports various Microsoft® Windows® operating systems: 2000 / XP / XP 64-bit / Vista™ / Vista™ 64-bit. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information.

### **4.2 Support CD Information**

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features.

#### **4.2.1 Running The Support CD**

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASSETUP.EXE" from the BIN folder in the Support CD to display the menus.

#### **4.2.2 Drivers Menu**

The Drivers Menu shows the available devices drivers if the system detects installed devices. Please install the necessary drivers to activate the devices.

#### **4.2.3 Utilities Menu**

The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

#### **4.2.4 "LGA 775 CPU Installation Live Demo" Program**

This motherboard is equipped with Intel LGA 775 socket, which is a new CPU socket interface that Intel has released. Since it has several tiny pins, which are easily to be damaged by improper handling, ASRock sincerely presents you a clear installation guide through this "LGA 775 CPU Installation Live Demo". We hope you may check this live demo program before you start the installation of LGA 775 CPU in order to reduce the risks of CPU and motherboard damages caused by any improper handling. To see this Live Demo, you can run Microsoft® Media Player® to play the file. You may find this Live Demo in the motherboard's Support CD through the following path:

**..\ Live Demo \ PC DIY \ LGA775INST\_English.dat**

#### **4.2.5 Contact Information**

If you need to contact ASRock or want to know more about ASRock, welcome to visit ASRock's website at <http://www.asrock.com>; or you may contact your dealer for further information.