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***N68-VGS3 UCC /  
N68-VS3 UCC***

**User Manual**

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Published February 2011  
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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)"

**ASRock Website:** <http://www.asrock.com>

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## 1. Introduction

Thank you for purchasing ASRock **N68-VGS3 UCC / N68-VS3 UCC** 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>  
If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.  
[www.asrock.com/support/index.asp](http://www.asrock.com/support/index.asp)

### 1.1 Package Contents

One ASRock **N68-VGS3 UCC / N68-VS3 UCC** Motherboard  
(Micro ATX Form Factor: 8.5-in x 7.0-in, 21.6 cm x 17.8 cm)  
One ASRock **N68-VGS3 UCC / N68-VS3 UCC** Quick Installation Guide  
One ASRock **N68-VGS3 UCC / N68-VS3 UCC** Support CD  
Two Serial ATA (SATA) Data Cables (Optional)  
One I/O Panel Shield

## 1.2 Specifications

<b>Platform</b>	- Micro ATX Form Factor: 8.5-in x 7.0-in, 21.6 cm x 17.8 cm
<b>CPU</b>	- Support for AM3 processors: AMD Phenom™ II X6 / X4 / X3 / X2 (except 920 / 940) / Athlon II X4 / X3 / X2 / Sempron processors (see <b>CAUTION 1</b> ) - Supports Six-Core CPU - Supports UCC feature (Unlock CPU Core) (see <b>CAUTION 2</b> ) - Supports AMD's Cool 'n' Quiet™ Technology - FSB 1000 MHz (2.0 GT/s) - Supports Untied Overclocking Technology (see <b>CAUTION 3</b> ) - Supports Hyper-Transport Technology
<b>Chipset</b>	- NVIDIA® GeForce 7025 / nForce 630a
<b>Memory</b>	- Dual Channel DDR3 Memory Technology (see <b>CAUTION 4</b> ) - 2 x DDR3 DIMM slots - Support DDR3 1600/1333/1066/800 non-ECC, un-buffered memory (see <b>CAUTION 5</b> ) - Max. capacity of system memory: 8GB (see <b>CAUTION 6</b> )
<b>Expansion Slot</b>	- 1 x PCI Express x16 slot - 1 x PCI slot
<b>Graphics</b>	- Integrated NVIDIA® GeForce 7025 graphics - DX9.0 VGA, Pixel Shader 3.0 - Max. shared memory 256MB (see <b>CAUTION 7</b> ) - Supports D-Sub with max. resolution up to 1920x1440 @ 60Hz
<b>Audio</b>	- 5.1 CH HD Audio (VIA® VT1705 Audio Codec)
<b>LAN</b>	- N68-VGS3 UCC Realtek Giga PHY RTL8211CL, speed 10/100/1000 Mb/s - N68-VS3 UCC Realtek PHY RTL8201EL, speed 10/100 Mb/s - Supports Wake-On-LAN
<b>Rear Panel I/O</b>	I/O Panel - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x VGA Port - 4 x Ready-to-Use USB 2.0 Ports - 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED) - HD Audio Jack: Line in / Front Speaker / Microphone
<b>Connector</b>	- 4 x Serial ATAII 3.0Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 0+1, RAID 5, JBOD), NCQ and "Hot Plug" functions (see <b>CAUTION 8</b> )

	<ul style="list-style-type: none"> <li>- 1 x ATA133 IDE connector (supports 2 x IDE devices)</li> <li>- 1 x Print port header</li> <li>- 1 x COM port header</li> <li>- CPU/Chassis FAN connector</li> <li>- 24 pin ATX power connector</li> <li>- 4 pin 12V power connector</li> <li>- Front panel audio header</li> <li>- 2 x USB 2.0 headers (support 4 USB 2.0 ports)</li> </ul>
<b>BIOS Feature</b>	<ul style="list-style-type: none"> <li>- 4Mb AMI BIOS</li> <li>- AMI Legal BIOS</li> <li>- Supports "Plug and Play"</li> <li>- ACPI 1.1 Compliance Wake Up Events</li> <li>- Supports jumperfree</li> <li>- SMBIOS 2.3.1 Support</li> <li>- CPU, VCCM Voltage Multi-adjustment</li> </ul>
<b>Support CD</b>	<ul style="list-style-type: none"> <li>- Drivers, Utilities, AntiVirus Software (Trial Version), ASRock Software Suite (CyberLink DVD Suite - OEM and Trial; Creative Sound Blaster X-Fi MB - Trial)</li> </ul>
<b>Unique Feature</b>	<ul style="list-style-type: none"> <li>- ASRock OC Tuner (see <b>CAUTION 9</b>)</li> <li>- Intelligent Energy Saver (see <b>CAUTION 10</b>)</li> <li>- Instant Boot</li> <li>- ASRock Instant Flash (see <b>CAUTION 11</b>)</li> <li>- ASRock OC DNA (see <b>CAUTION 12</b>)</li> <li>- ASRock AIWI (see <b>CAUTION 13</b>)</li> <li>- ASRock APP Charger (see <b>CAUTION 14</b>)</li> <li>- SmartView (see <b>CAUTION 15</b>)</li> <li>- ASRock XFast USB (see <b>CAUTION 16</b>)</li> <li>- Hybrid Booster: <ul style="list-style-type: none"> <li>- CPU Frequency Stepless Control (see <b>CAUTION 17</b>)</li> <li>- ASRock U-COP (see <b>CAUTION 18</b>)</li> <li>- Boot Failure Guard (B.F.G.)</li> </ul> </li> </ul>
<b>Hardware Monitor</b>	<ul style="list-style-type: none"> <li>- CPU Temperature Sensing</li> <li>- Chassis Temperature Sensing</li> <li>- CPU Fan Tachometer</li> <li>- Chassis Fan Tachometer</li> <li>- CPU Quiet Fan</li> <li>- Voltage Monitoring: +12V, +5V, +3.3V, Vcore</li> </ul>
<b>OS</b>	<ul style="list-style-type: none"> <li>- Microsoft® Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit compliant</li> </ul>
<b>Certifications</b>	<ul style="list-style-type: none"> <li>- FCC, CE, WHQL</li> </ul>

\* For detailed product information, please visit our website: <http://www.asrock.com>

#### **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 CPU up to 95W. Please refer to our website for CPU support list. ASRock website <http://www.asrock.com>
2. UCC (Unlock CPU Core) feature simplifies AMD CPU activation. As long as a simple switch of the BIOS option "ASRock UCC", you can unlock the extra CPU core to enjoy an instant performance boost. When UCC feature is enabled, the dual-core or triple-core CPU will boost to the quad-core CPU, and some CPU, including quad-core CPU, can also increase L3 cache size up to 6MB, which means you can enjoy the upgrade CPU performance with a better price. Please be noted that UCC feature is supported with AM3 CPU only, and in addition, not every AM3 CPU can support this function because some CPU's hidden core may be malfunctioned.
3. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 29 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 16 for proper installation.
5. Whether 1600MHz memory speed is supported depends on the AM3 CPU you adopt. If you want to adopt DDR3 1600 memory module on this motherboard, please refer to the memory support list on our website for the compatible memory modules.  
ASRock website <http://www.asrock.com>
6. Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® 7 / Vista™ / XP. For Windows® OS with 64-bit CPU, there is no such limitation.
7. The maximum shared memory size is defined by the chipset vendor and is subject to change. Please check NVIDIA® website for the latest information.
8. Before installing SATAII hard disk to SATAII connector, please read the "SATAII Hard Disk Setup Guide" on page 24 to adjust your SATAII hard disk drive to SATAII mode. You can also connect SATA hard disk to SATAII connector directly.
9. It is a user-friendly ASRock overclocking tool which allows you to surveil your system by hardware monitor function and overclock your hardware devices to get the best system performance under Windows® environment. Please visit our website for the operation procedures of ASRock OC Tuner. ASRock website: <http://www.asrock.com>



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10. Featuring an advanced proprietary hardware and software design, Intelligent Energy Saver is a revolutionary technology that delivers unparalleled power savings. The voltage regulator can reduce the number of output phases to improve efficiency when the CPU cores are idle. In other words, it is able to provide exceptional power saving and improve power efficiency without sacrificing computing performance. To use Intelligent Energy Saver function, please enable Cool 'n' Quiet option in the BIOS setup in advance. Please visit our website for the operation procedures of Intelligent Energy Saver.  
ASRock website: <http://www.asrock.com>
  11. ASRock Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. With this utility, you can press <F6> key during the POST or press <F2> key to BIOS setup menu to access ASRock Instant Flash. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system.
  12. The software name itself – OC DNA literally tells you what it is capable of. OC DNA, an exclusive utility developed by ASRock, provides a convenient way for the user to record the OC settings and share with others. It helps you to save your overclocking record under the operating system and simplifies the complicated recording process of overclocking settings. With OC DNA, you can save your OC settings as a profile and share with your friends! Your friends then can load the OC profile to their own system to get the same OC settings as yours! Please be noticed that the OC profile can only be shared and worked on the same motherboard.
  13. To experience intuitive motion controlled games is no longer only available at Wii. ASRock AIWI utility introduces a new way of PC gaming operation. ASRock AIWI is the world's first utility to turn your iPhone/iPod touch as a game joystick to control your PC games. All you have to do is just to install the ASRock AIWI utility either from ASRock official website or ASRock software support CD to your motherboard, and also download the free AIWI Lite from App store to your iPhone/iPod touch. Connecting your PC and apple devices via Bluetooth or WiFi networks, then you can start experiencing the exciting motion controlled games. Also, please do not forget to pay attention to ASRock official website regularly, we will continuously provide you the most up-to-date supported games!  
ASRock website: <http://www.asrock.com/Feature/Aiwi/index.asp>

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14. If you desire a faster, less restricted way of charging your Apple devices, such as iPhone/iPod/iPad Touch, ASRock has prepared a wonderful solution for you - ASRock APP Charger. Simply installing the APP Charger driver, it makes your iPhone charged much quickly from your computer and up to 40% faster than before. ASRock APP Charger allows you to quickly charge many Apple devices simultaneously and even supports continuous charging when your PC enters into Standby mode (S1), Suspend to RAM (S3), hibernation mode (S4) or power off (S5). With APP Charger driver installed, you can easily enjoy the marvelous charging experience than ever.

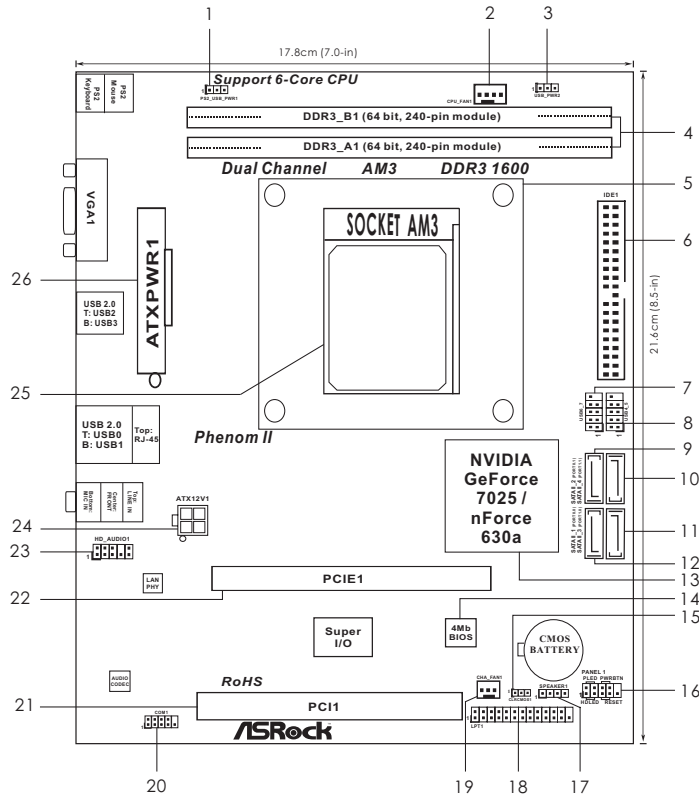
ASRock website: <http://www.asrock.com/Feature/AppCharger/index.asp>

15. SmartView, a new function of internet browser, is the smart start page for IE that combines your most visited web sites, your history, your Facebook friends and your real-time newsfeed into an enhanced view for a more personal Internet experience. ASRock motherboards are exclusively equipped with the SmartView utility that helps you keep in touch with friends on-the-go. To use SmartView feature, please make sure your OS version is Windows® 7 / 7 64 bit / Vista™ / Vista™ 64 bit, and your browser version is IE8.

ASRock website: <http://www.asrock.com/Feature/SmartView/index.asp>

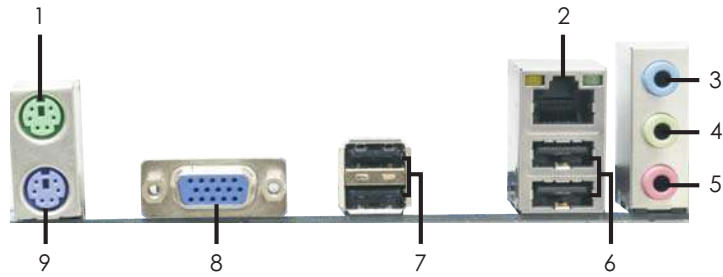
16. ASRock XFast USB can boost USB storage device performance. The performance may depend on the property of the device.
17. Although this motherboard offers stepless control, it is not recommended to perform over-clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU.
18. 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.

### 1.3 Motherboard Layout (N68-VGS3 UCC / N68-VS3 UCC)



- |  |   |
|--|---|
| 1 PS2_USB_PWR1 Jumper  | 15 Clear CMOS Jumper (CLRCMOS1)               |
| 2 CPU Fan Connector (CPU_FAN1)                                       | 16 System Panel Header (PANEL1, White)        |
| 3 USB_PWR2 Jumper  | 17 Chassis Speaker Header (SPEAKER 1, White)  |
| 4 2 x 240-pin DDR3 DIMM Slots (Dual Channel: DDR3_A1, DDR3_B1; Blue) | 18 Print Port Header (LPT1, White)            |
| 5 CPU Heatsink Retention Module                                      | 19 Chassis Fan Connector (CHA_FAN1)           |
| 6 Primary IDE Connector (IDE1, Blue)                                 | 20 Serial Port Connector (COM1)               |
| 7 USB 2.0 Header (USB6_7, Blue)                                      | 21 PCI Slot (PCI1)                            |
| 8 USB 2.0 Header (USB4_5, Blue)                                      | 22 PCI Express x16 Slot (PCIE1)               |
| 9 SATAII Connector (SATAII_2 (PORT 0.1))                             | 23 Front Panel Audio Header (HD_AUDIO1, Lime) |
| 10 SATAII Connector (SATAII_4 (PORT 1.1))                            | 24 ATX 12V Power Connector (ATX12V1)          |
| 11 SATAII Connector (SATAII_3 (PORT 1.0))                            | 25 AM3 CPU Socket                             |
| 12 SATAII Connector (SATAII_1 (PORT 0.0))                            | 26 ATX Power Connector (ATXPWR1)              |
| 13 NVIDIA GeForce 7025 / nForce 630a                                 |   |
| 14 SPI Flash Memory (4Mb)  |   |

## 1.4 I/O Panel (N68-VGS3 UCC)



- |                           |                               |
|---------------------------|-------------------------------|
| 1 PS/2 Mouse Port (Green) | 6 USB 2.0 Ports (USB01)       |
| * 2 RJ-45 Port            | 7 USB 2.0 Ports (USB23)       |
| 3 Line In (Light Blue)    | 8 VGA Port                    |
| 4 Front Speaker (Lime)    | 9 PS/2 Keyboard Port (Purple) |
| 5 Microphone (Pink)       |                               |

\* There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications.


LAN Port LED Indications			
Activity/Link LED		SPEED LED	
Status	Description	Status	Description
Off	No Activity	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
		Green	1Gbps connection

ACT/LINK LED    SPEED LED


LAN Port

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 "VIA HD Audio Deck" tool on your system. Please follow below instructions according to the OS you install.

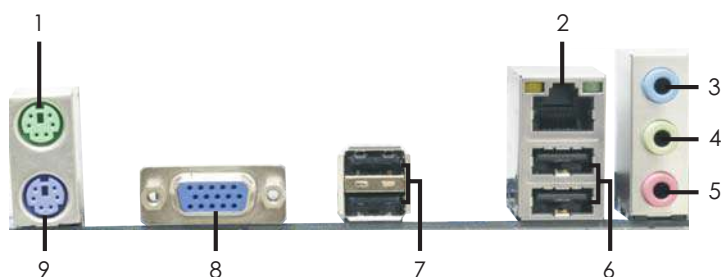
**For Windows® XP / XP 64-bit OS:**

Please click "VIA HD Audio Deck" icon , and click "Speaker". Then you are allowed to select "2 Channel" or "4 Channel". Click "Power" to save your change.

**For Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS:**

Please click "VIA HD Audio Deck" icon , and click "Advanced Options" on the left side on the bottom. In "Advanced Options" screen, select "Independent Headphone", and click "OK" to save your change.


## 1.5 I/O Panel (N68-VS3 UCC)



- |                           |                               |
|---------------------------|-------------------------------|
| 1 PS/2 Mouse Port (Green) | 6 USB 2.0 Ports (USB01)       |
| *2 RJ-45 Port             | 7 USB 2.0 Ports (USB23)       |
| 3 Line In (Light Blue)    | 8 VGA Port                    |
| 4 Front Speaker (Lime)    | 9 PS/2 Keyboard Port (Purple) |
| 5 Microphone (Pink)       |                               |

\* There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications.


LAN Port LED Indications			
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Blinking	Data Activity	Orange	100Mbps connection




LAN Port

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 "VIA HD Audio Deck" tool on your system. Please follow below instructions according to the OS you install.

### For Windows® XP / XP 64-bit OS:

Please click "VIA HD Audio Deck" icon , and click "Speaker". Then you are allowed to select "2 Channel" or "4 Channel". Click "Power" to save your change.

### For Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS:

Please click "VIA HD Audio Deck" icon , and click "Advanced Options" on the left side on the bottom. In "Advanced Options" screen, select "Independent Headphone", and click "OK" to save your change.

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## 2. Installation

This is a Micro ATX form factor (8.5-in x 7.0-in, 21.6 cm x 17.8 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

### Pre-installation Precautions

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



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.

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 anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

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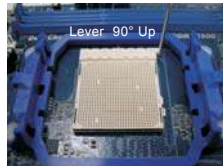
## 2.1 CPU Installation

- Step 1. Unlock the socket by lifting the lever up to a 90° angle.
- Step 2. Position the CPU directly above the socket such that the CPU corner with the golden triangle matches the socket corner with a small triangle.
- Step 3. Carefully insert the CPU into the socket until it fits in place.

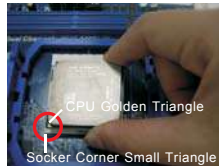


The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

- Step 4. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.



**STEP 1:**  
Lift Up The Socket Lever



**STEP 2 / STEP 3:**  
Match The CPU Golden Triangle  
To The Socket Corner Small  
Triangle



**STEP 4:**  
Push Down And Lock  
The Socket Lever

## 2.2 Installation of CPU Fan and Heatsink

After you install the CPU into this motherboard, it is necessary to install a larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure 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. 2). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink.

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## 2.3 Installation of Memory Modules (DIMM)

**N68-VGS3 UCC / N68-VS3 UCC** motherboard provides two 240-pin DDR3 (Double Data Rate 3) 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 DDR3 DIMM slots to activate Dual Channel Memory Technology. Otherwise, it will operate at single channel mode.



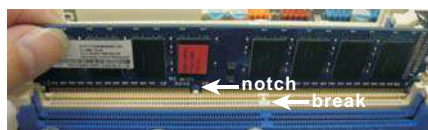
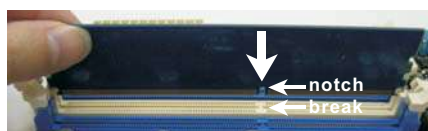
1. It is not allowed to install a DDR or DDR2 memory module into DDR3 slot; otherwise, this motherboard and DIMM may be damaged.
2. If you install only one memory module or two non-identical memory modules, it is unable to activate the Dual Channel Memory Technology.

### 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.



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## 2.4 Expansion Slots (PCI and PCI Express Slots)

There are 1 PCI slot and 1 PCI Express slot on this motherboard.

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

**PCIe slot:** PCIe1 (PCIe x16 slot) is used for PCI Express cards with x16 lane width graphics cards.

### 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.

---

## 2.5 Easy Multi Monitor Feature

This motherboard supports Multi Monitor upgrade. With the internal onboard VGA 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. Install the NVIDIA® PCI Express VGA card to PCIE1 (PCIE x16 slot). Please refer to page 17 for proper expansion card installation procedures for details.
2. Connect the D-Sub monitor cable to the VGA/D-Sub port on the I/O panel of this motherboard. Connect another D-Sub monitor cable to the VGA/D-Sub connector of the add-on PCI Express VGA card. Connect the DVI-D monitor cable to the VGA/DVI-D connector of the add-on PCI Express VGA card.
3. Boot your system. Press <F2> or <Del> to enter BIOS setup. Enter “Share Memory” option to adjust the memory capability to [16MB], [32MB], [64MB], [128MB] or [256MB] to enable the function of onboard VGA/D-sub. Please make sure that the value you select is less than the total capability of the system memory. If you do not adjust the BIOS setup, the default value of “Share Memory”, [Auto], will disable onboard VGA/D-Sub function when the add-on VGA card is inserted to this motherboard.
4. Install the onboard VGA driver to your system. If you have installed the onboard VGA driver already, there is no need to install it again.
5. Set up a multi-monitor display.

### For Windows® XP / XP 64-bit OS:

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.

- 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 display icon identified by the number one, two and three.

### For Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS:

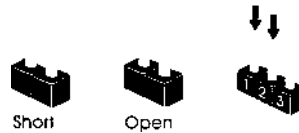
Right click the desktop, choose “Personalize”, and select the “Display Settings” tab so that you can adjust the parameters of the multi-monitor according to the steps below.



- A. Click the number “2” icon.

- B. Click the items "This is my main monitor" and "Extend the desktop onto this monitor".
  - C. Click "OK" to save your change.
  - D. Repeat steps A through C for the display icon identified by the number one, two and three.
6. Use Multi Monitor feature. 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.



## 2.6 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	
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 USB01/23 wake up events.

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

USB_PWR2 (see p.11, No. 3)	<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 USB4_5/6_7 wake up events.
-------------------------------	--	---

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

Clear CMOS Jumper (CLRCMOS1) (see p.11, No. 15)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1_2</p>  <p>Default</p> </div> <div style="text-align: center;"> <p>2_3</p>  <p>Clear CMOS</p> </div> </div>	
---	---	--

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 pin2 and pin3 on CLRCMOS1 for 5 seconds. However, please do not clear the CMOS right

after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action.

## 2.7 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!

### Primary IDE connector (Blue)

(39-pin IDE1, see p.11 No. 6)



connect the blue end  
to the motherboard



connect the black end  
to the IDE devices

80-conductor ATA 66/100/133 cable

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

### Serial ATAII Connectors

(SATAII\_1 (PORT 0.0):

see p.11, No. 12)

(SATAII\_2 (PORT 0.1):

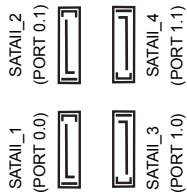
see p.11, No. 9)

(SATAII\_3 (PORT 1.0):

see p.11, No. 11)

(SATAII\_4 (PORT 1.1):

see p.11, No. 10)



These four 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

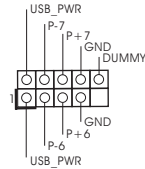
(Optional)



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

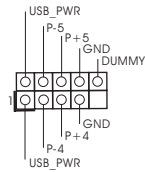
### USB 2.0 Headers

(9-pin USB6\_7)  
(see p.11 No. 7)



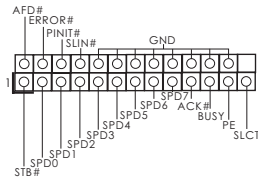
Besides four default USB 2.0 ports on the I/O panel, there are two USB 2.0 headers on this motherboard. Each USB 2.0 header can support two USB 2.0 ports.

(9-pin USB4\_5)  
(see p.11 No. 8)



### Print Port Header

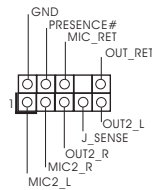
(25-pin LPT1)  
(see p.11 No. 18)



This is an interface for print port cable that allows convenient connection of printer devices.

### Front Panel Audio Header

(9-pin HD\_AUDIO1)  
(see p.11, No. 23)



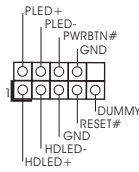
This is an interface for the front panel audio cable that allows convenient connection and control of audio devices.



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.

### System Panel Header

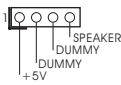
(9-pin PANEL1)  
(see p.11 No. 16)



This header accommodates several system front panel functions.

### Chassis Speaker Header

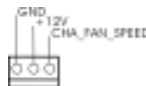
(4-pin SPEAKER 1)  
(see p.11 No. 17)



Please connect the chassis speaker to this header.

### Chassis Fan Connector

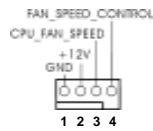
(3-pin CHA\_FAN1)  
(see p.11 No. 19)



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. 2)



Please connect the 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.

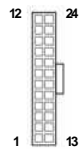
Pin 1-3 Connected



3-Pin Fan Installation

### ATX Power Connector

(24-pin ATXPWR1)  
(see p.11 No. 26)

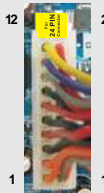


Please connect an ATX power supply to this connector.



Though this motherboard provides 24-pin ATX power connector, it can still work if you adopt a traditional 20-pin ATX power supply. To use the 20-pin ATX power supply, please plug your power supply along with Pin 1 and Pin 13.

20-Pin ATX Power Supply Installation



---

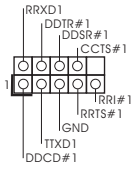
**ATX 12V Power Connector**  
(4-pin ATX12V1)  
(see p.11 No. 24)



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

---

**Serial port Header**  
(9-pin COM1)  
(see p.11 No.20)



This COM1 header supports a serial port module.

## 2.8 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.



---

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

This motherboard adopts NVIDIA® GeForce 7025 / nForce 630a chipset that supports Serial ATA (SATA) / Serial ATAII (SATAII) hard disks and RAID functions. 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.

## 2.10 Hot Plug and Hot Swap Functions for SATA / SATAII HDDs

This motherboard supports Hot Plug and Hot Swap functions for SATA / SATAII Devices.



### NOTE

#### What is Hot Plug Function?

If the SATA / SATAII HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition. However, please note that it cannot perform Hot Plug if the OS has been installed into the SATA / SATAII HDD.

#### What is Hot Swap Function?

If SATA / SATAII HDDs are built as RAID1 or RAID 5 then it is called "Hot Swap" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition.

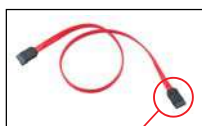
## 2.11 SATA / SATAII HDD Hot Plug Feature and Operation Guide

This motherboard supports Hot Plug feature for SATA / SATAII HDD in RAID mode. Please read below operation guide of SATA / SATAII HDD Hot Plug feature carefully. Before you process the SATA / SATAII HDD Hot Plug, please check below cable accessories from the motherboard gift box pack.

A. 7-pin SATA data cable

B. SATA power cable with SATA 15-pin power connector interface

A. SATA data cable (Red)



SATA 7-pin  
connector

B. SATA power cable



The SATA 15-pin power  
connector (Black) connect  
to SATA / SATAII HDD

1x4-pin conventional  
power connector (White)  
connect to power supply

### Caution

1. Without SATA 15-pin power connector interface, the SATA / SATAII Hot Plug cannot be processed.
2. Even some SATA / SATAII HDDs provide both SATA 15-pin power connector and IDE 1x4-pin conventional power connector interfaces, the IDE 1x4-pin conventional power connector interface is definitely not able to support Hot Plug and will cause the HDD damage and data loss.

### Points of attention, before you process the Hot Plug:

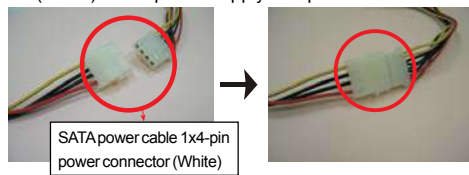
1. Below operation procedure is designed only for our motherboard, which supports SATA / SATAII HDD Hot Plug.
  - \* The SATA / SATAII Hot Plug feature might not be supported by the chipset because of its limitation, the SATA / SATAII Hot Plug support information of our motherboard is indicated in the product spec on our website:  
[www.asrock.com](http://www.asrock.com)
2. Make sure your SATA / SATAII HDD can support Hot Plug function from your dealer or HDD user manual. The SATA / SATAII HDD, which cannot support Hot Plug function, will be damaged under the Hot Plug operation.
3. Please make sure the SATA / SATAII driver is installed into system properly. The latest SATA / SATAII driver is available on our support website:  
[www.asrock.com](http://www.asrock.com)
4. Make sure to use the SATA power cable & data cable, which are from our motherboard package.
5. Please follow below instructions step by step to reduce the risk of HDD crash or data loss.

### How to Hot Plug a SATA / SATAII HDD:

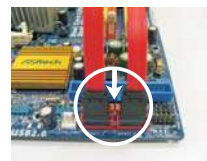
Points of attention, before you process the Hot Plug:

Please do follow below instruction sequence to process the Hot Plug, improper procedure will cause the SATA / SATAII HDD damage and data loss.

**Step 1** Please connect SATA power cable 1x4-pin end (White) to the power supply 1x4-pin cable.



**Step 2** Connect SATA data cable to the motherboard's SATAII connector.



**Step 3** Connect SATA 15-pin power cable connector (Black) end to SATA / SATAII HDD.



**Step 4** Connect SATA data cable to the SATA / SATAII HDD.

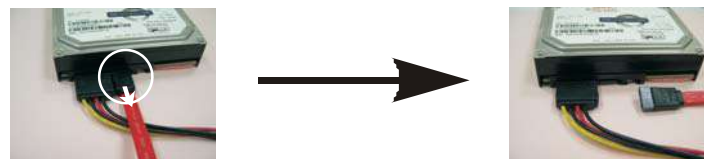


### How to Hot Unplug a SATA / SATAII HDD:

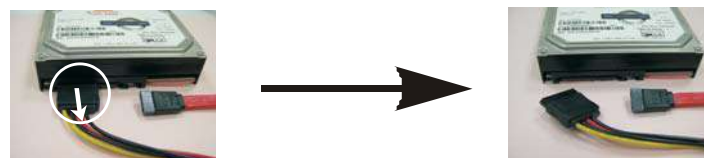
Points of attention, before you process the Hot Unplug:

Please do follow below instruction sequence to process the Hot Unplug, improper procedure will cause the SATA / SATAII HDD damage and data loss.

**Step 1** Unplug SATA data cable from SATA / SATAII HDD side.



**Step 2** Unplug SATA 15-pin power cable connector (Black) from SATA / SATAII HDD side.



---

## 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 Installing Windows® 7 / 7 64-bit / Vista™ /

### Vista™ 64-bit / XP / XP 64-bit Without RAID Functions

If you just want to install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit on your SATA / SATAII HDDs without RAID functions, you don't have to make a SATA / SATAII driver diskette. Besides, there is no need for you to change the BIOS setting. You can start to install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit on your system directly.

## 2.14 Installing Windows® 7 / 7 64-bit / Vista™ /

### Vista™ 64-bit With RAID Functions

If you want to install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your SATA / SATAII HDDs with RAID functions, please follow below procedures according to the OS you install.

#### STEP 1: Set Up BIOS.

- A. Enter BIOS SETUP UTILITY → Advanced screen → Storage Configuration.
- B. Set the "SATA Operation Mode" option to [RAID].

#### STEP 2: Use "RAID Installation Guide" to set RAID configuration.

Before you start to configure RAID function, you need to check the RAID installation guide in the Support CD for proper configuration. Please refer to the BIOS RAID installation guide part of the document in the following path in the Support CD:

.. \ RAID Installation Guide

#### STEP 3: Install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system.

NOTE. If you install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit on IDE HDDs and want to manage (create, convert, delete, or rebuild) RAID functions on SATA / SATAII HDDs, you still need to set up "SATA Operation Mode" to [RAID] in BIOS first. Then, please set the RAID configuration by using the Windows RAID installation guide in the following path in the Support CD:

.. \ RAID Installation Guide

NOTE. For Windows® 7 / 7 64-bit users, you do not need to load RAID driver from ASRock support CD. Please use the native driver to install Windows® 7 / 7 64-bit OS, and then install ASRock All-in-1 driver.



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## 2.15 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 / 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 8 for the possible overclocking risk before you apply Untied Overclocking Technology.



---

## 3. BIOS SETUP UTILITY

### 3.1 Introduction

This section explains how to use the BIOS SETUP UTILITY to configure your system. The SPI Memory on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> or <Del> 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
- OC Tweaker** To set up overclocking features
- Advanced** To set up the advanced BIOS features
- H/W Monitor** To display current hardware status
- Boot** To set up the default system device to locate and load the Operating System
- Security** To set up the security 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.

#### N68-VGS3 UCC

BIOS SETUP UTILITY		
Main	OC Tweaker	Advanced H/W Monitor Boot Security Exit
<b>System Overview</b>		
System Time	[ 1 :00:09]	Use [Enter], [TAB] or [SHIFT-TAB] to select a field.
System Date	[Tue 02/08/2011]	Use [+] or [-] to configure system Time.
BIOS Version	: N68-VGS3 UCC P1.00	
Processor Type	: AMD Athlon (tm) II X2 265 Processor (64bit)	
Processor Speed	: 3300MHz	
Microcode Update	: 100F63/10000B6	
L1 Cache Size	: 256KB	
L2 Cache Size	: 2048KB	
Total Memory	: 2048MB	-- Select Screen
	Dual-Channel Memory Mode	Select Item
DDR3_A1	: 1024MB/533MHz DDR3_1066	+ Change Field
DDR3_B1	: 1024MB/533MHz DDR3_1066	Tab Select Field
		F1 General Help
		F9 Load Defaults
		F10 Save and Exit
		ESC Exit
v02.54 (C) Copyright 1985-2005, American Megatrends, Inc.		

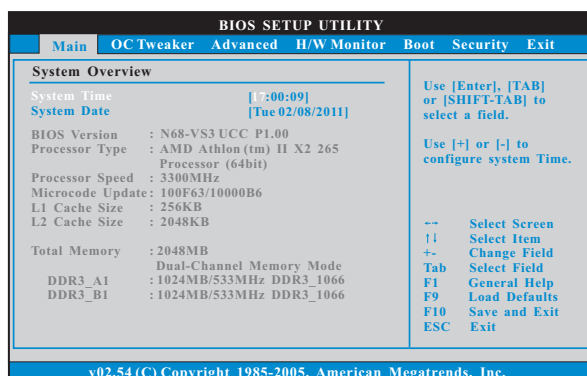
#### System Time [Hour:Minute:Second]

Use this item to specify the system time.

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

Use this item to specify the system date.

## N68-VS3 UCC



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

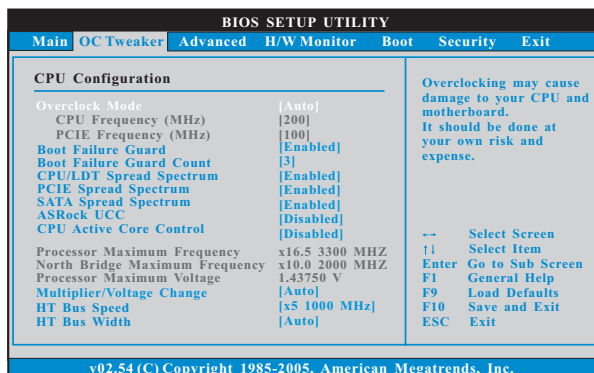
Use this item to specify the system time.

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

Use this item to specify the system date.

## 3.3 OC Tweaker Screen

In the OC Tweaker screen, you can set up overclocking features.



### CPU Configuration

#### Overclock Mode

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

#### CPU Frequency (MHz)

Use this option to adjust CPU frequency.

#### PCIE Frequency (MHz)

Use this option to adjust PCIE frequency.



---

**Boot Failure Guard**

Enable or disable the feature of Boot Failure Guard.

**Boot Failure Guard Count**

Enable or disable the feature of Boot Failure Guard Count.

**CPU/LDT Spread Spectrum**

This feature will be set to [Enabled] as default. Configuration options: [Disabled] and [Enabled].

**PCIE Spread Spectrum**

This feature will be set to [Enabled] as default. Configuration options: [Disabled] and [Enabled].

**SATA Spread Spectrum**

This feature will be set to [Enabled] as default. Configuration options: [Disabled] and [Enabled].

**ASRock UCC**

ASRock UCC (Unlock CPU Core) feature simplifies AMD CPU activation. As long as a simple switch of the BIOS option "ASRock UCC", you can unlock the extra CPU core to enjoy an instant performance boost. When UCC feature is enabled, the dual-core or triple-core CPU will boost to the quad-core CPU, and some CPU, including quad-core CPU, can also increase L3 cache size up to 6MB, which means you can enjoy the upgrade CPU performance with a better price. Please be noted that UCC feature is supported with AM3 CPU only, and in addition, not every AM3 CPU can support this function because some CPU's hidden core may be malfunctioned.

**CPU Active Core Control**

This allows you to adjust CPU Active Core Control feature. The configuration options depend on the CPU core you adopt. The default value is [Disabled].

**Processor Maximum Frequency**

It will display Processor Maximum Frequency for reference.

**North Bridge Maximum Frequency**

It will display North Bridge Maximum Frequency for reference.

**Processor Maximum Voltage**

It will display Processor Maximum Voltage for reference.

**Multiplier/Voltage Change**

This item is set to [Auto] by default. If it is set to [Manual], you may adjust the value of Processor Frequency and Processor Voltage. However, it is recommended to keep the default value for system stability.

BIOS SETUP UTILITY						
Main	OC Tweaker	Advanced	H/W Monitor	Boot	Security	Exit
<b>CPU Configuration</b>			Overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense.			
Overclock Mode		[Auto]				
CPU Frequency (MHz)		[200]				
PCIe Frequency (MHz)		[100]				
Boot Failure Guard		[Enabled]				
Boot Failure Guard Count		[3]				
CPU/LDT Spread Spectrum		[Enabled]				
PCIe Spread Spectrum		[Enabled]				
SATA Spread Spectrum		[Enabled]				
ASRock UCC		[Disabled]				
CPU Active Core Control		[Disabled]				
Processor Maximum Frequency	x16.8	3300 MHz	--	Select Screen		
North Bridge Maximum Frequency	x10.0	2000 MHz	F1	Select Item		
Processor Maximum Voltage		1.43750 V	Enter	Go to Sub Screen		
Multiplier/Voltage Change		[Manual]	F1	General Help		
CPU Frequency Multiplier		[x0.5 100 MHz]	F9	Load Defaults		
Processor Voltage		[0.6000 V]	F10	Save and Exit		
			ESC	Exit		
v02.54 (C) Copyright 1985-2005, American Megatrends, Inc.						

### CPU Frequency Multiplier

For safety and system stability, it is not recommended to adjust the value of this item.

### Processor Voltage

It allows you to adjust the value of processor voltage. However, for safety and system stability, it is not recommended to adjust the value of this item.

### NB Frequency Multiplier

For safety and system stability, it is not recommended to adjust the value of this item.

### HT Bus Speed

This feature allows you selecting Hyper-Transport bus speed. Configuration options: [Auto], [x1 200 MHz] to [x5 1000 MHz].

### HT Bus Width

This feature allows you selecting Hyper-Transport bus width. Configuration options: [Auto], [8 Bit] and [16 Bit].

### Memory Configuration

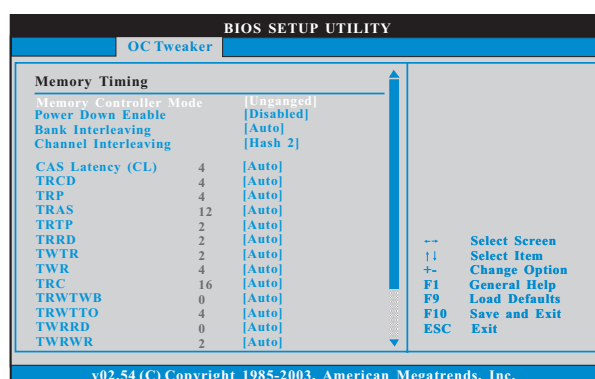
#### Memory Clock

This item can be set by the code using [Auto]. You can set one of the standard values as listed: [400MHz DDR3\_800], [533MHz DDR3\_1066], [667MHz DDR3\_1333] and [800MHz DDR3\_1600].

#### DRAM Voltage

Use this to select DRAM voltage. The default value is [Auto].

## Memory Timing



### Memory Controller Mode

This option appears only when you adopt Phenom CPU. It allows you to adjust the memory controller mode. Configuration options: [Unganged] and [Ganged]. The default value is [Unganged].

### Power Down Enable

Use this item to enable or disable DDR power down mode.

### Bank Interleaving

Interleaving allows memory accesses to be spread out over banks on the same node, or across nodes, decreasing access contention.

### Channel Interleaving

This allows you to enable Channel Memory Interleaving. The default value is [Hash 2].

### CAS Latency (CL)

Use this item to adjust the means of memory accessing. The default value is [Auto].

### TRCD

Use this to adjust TRCD values. The default value is [Auto].

### TRP

Use this to adjust TRP values. The default value is [Auto].

### TRAS

Use this to adjust TRAS values. The default value is [Auto].

### TRTP

Use this to adjust TRTP values. The default value is [Auto].

### TRRD

Use this to adjust TRRD values. The default value is [Auto].

### TWTR

Use this to adjust TWTR values. The default value is [Auto].

### TWR

Use this to adjust TWR values. The default value is [Auto].

---

**TRC**

Use this to adjust TRC values. The default value is [Auto].

**TRWTWB**

Use this to adjust TRWTWB values. The default value is [Auto].

**TRWTTO**

Use this to adjust TRWTTO values. The default value is [Auto].

**TWRRD**

Use this to adjust TWRRD values. The default value is [Auto].

**TWRWR**

Use this to adjust TWRWR values. The default value is [Auto].

**TRDRD**

Use this to adjust TRWTTD values. The default value is [Auto].

**TRFC0**

Use this to adjust TRFC0 values. The default value is [Auto].

**MA Timing**

Use this to adjust values for MA timing. Configuration options: [Auto], [2T], [1T]. The default value is [Auto].

**CHA ADDR/CMD Delay**

Use this to adjust values for CHA ADDR/CMD Delay feature. The default value is [Auto].

**CHA ADDR/CMD Setup**

Use this to adjust values for CHA ADDR/CMD Setup feature. The default value is [Auto].

**CHA CS/ODT Delay**

Use this to adjust values for CHA CS/ODT Delay feature. The default value is [Auto].

**CHA CS/ODT Setup**

Use this to adjust values for CHB CS/ODT Setup feature. The default value is [Auto].

**CHB ADDR/CMD Delay**

Use this to adjust values for CHB ADDR/CMD Delay feature. The default value is [Auto].

**CHB ADDR/CMD Setup**

Use this to adjust values for CHB ADDR/CMD Setup feature. The default value is [Auto].

**CHB CS/ODT Delay**

Use this to adjust values for CHB CS/ODT Delay feature. The default value is [Auto].

**CHB CS/ODT Setup**

Use this to adjust values for CHB CS/ODT Setup feature. The default value is [Auto].

---

**CHA CKE Drive**

Use this to adjust values for CHA CKE Drive. The default value is [Auto].

**CHA CS/ODT Drive**

Use this to adjust values for CHA CS/ODT Drive. The default value is [Auto].

**CHA ADDR/CMD Drive**

Use this to adjust values for CHA ADDR/CMD Drive. The default value is [Auto].

**CHA CLK Drive**

Use this to adjust values for CHA CLK Drive. The default value is [Auto].

**CHA DATA Drive**

Use this to adjust values for CHA DATA Drive. The default value is [Auto].

**CHA DQS Drive**

Use this to adjust values for CHA DQS Drive. The default value is [Auto].

**CHA Processor ODT**

Use this to adjust values for CHA Processor ODT. The default value is [Auto].

**CHB CKE Drive**

Use this to adjust values for CHB CKE Drive. The default value is [Auto].

**CHB CS/ODT Drive**

Use this to adjust values for CHB CS/ODT Drive. The default value is [Auto].

**CHB ADDR/CMD Drive**

Use this to adjust values for CHB ADDR/CMD Drive. The default value is [Auto].

**CHB CLK Drive**

Use this to adjust values for CHB CLK Drive. The default value is [Auto].

**CHB DATA Drive**

Use this to adjust values for CHB DATA Drive. The default value is [Auto].

**CHB DQS Drive**

Use this to adjust values for CHB DQS Drive. The default value is [Auto].

**CHB Processor ODT**

Use this to adjust values for CHB Processor ODT. The default value is [Auto].

**Chipset Settings**

**Chipset Voltage**

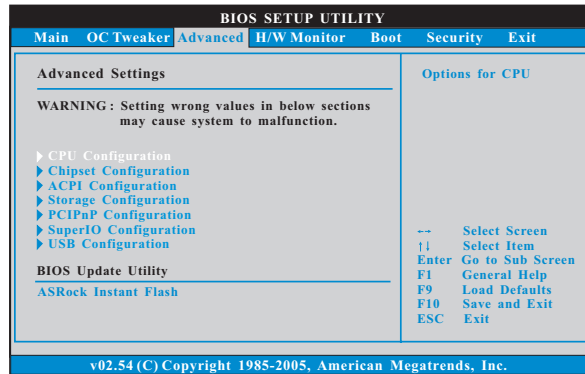
Use this to select chipset voltage. The default value is [Auto].

**Would you like to save current setting user defaults?**

In this option, you are allowed to load and save three user defaults according to your own requirements.

### 3.4 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, Storage Configuration, PCIPnP Configuration, SuperIO Configuration, and USB Configuration.

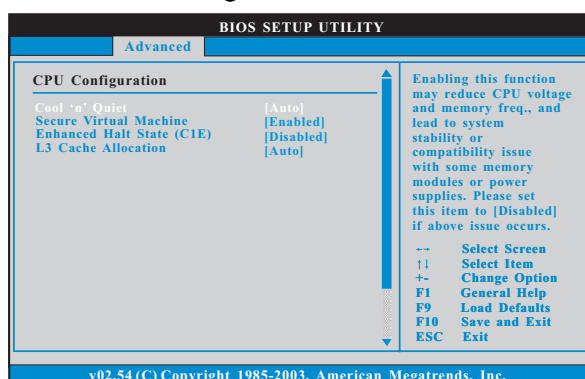


Setting wrong values in this section may cause the system to malfunction.

#### ASRock Instant Flash

ASRock Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute ASRock Instant Flash utility, the utility will show the BIOS files and their respective information. Select the proper BIOS file to update your BIOS, and reboot your system after BIOS update process completes.

### 3.4.1 CPU Configuration



#### Cool 'n' Quiet

Use this item to enable or disable AMD's Cool 'n' Quiet™ technology. The default value is [Auto]. Configuration options: [Auto], [Enabled] and [Disabled]. If you install Windows® 7 / Vista™ and want to enable this function, please set this item to [Enabled]. Please note that enabling this function may reduce CPU voltage and memory frequency, and lead to system stability or compatibility issue with some memory modules or power supplies. Please set this item to [Disable] if above issue occurs.

#### Secure Virtual Machine

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by AMD-V. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled].

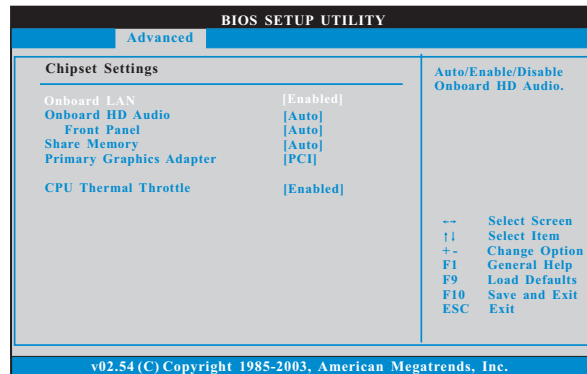
#### Enhance Halt State (C1E)

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.

#### L3 Cache Allocation

The default value is [Auto]. Configuration options: [Auto], [BSP Only] and [All Cores].

### 3.4.2 Chipset Configuration



#### Onboard LAN

This allows you to enable or disable the onboard LAN feature.

#### 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

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

#### Share Memory

This allows you to set share memory feature. The default value is [Auto]. Configuration options: [Auto], [32MB], [64MB], [128MB] and [256MB].

#### Primary Graphics Adapter

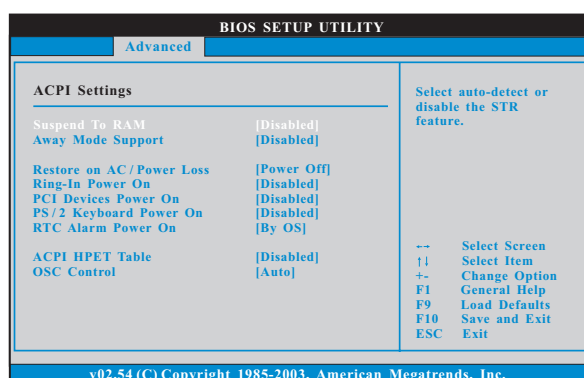
This item will switch the PCI Bus scanning order while searching for video card. It allows you to select the type of Primary VGA in case of multiple video controllers. The default value of this feature is [PCI]. Configuration options: [PCI], [Onboard] and [PCI Express].

#### CPU Thermal Throttle

Use this to enable CPU internal thermal control mechanism to keep the CPU from overheated. The default value is [Enabled].



### 3.4.3 ACPI Configuration



#### Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it. If you set this item to [Disabled], the function "Repost Video on STR Resume" will be hidden.

#### Away Mode Support

Use this item to enable or disable Away Mode support under Windows® XP Media Center OS. The default value is [Disabled].

#### 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.

#### ACPI HPET Table

Use this item to enable or disable ACPI HPET Table. The default value is [Disabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® Vista™ certification.



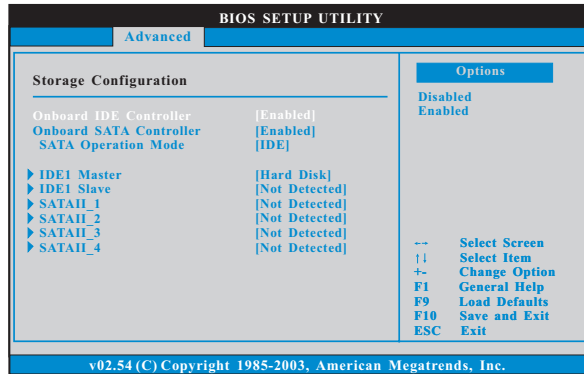
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### **OSC Control**

Use this item to enable or disable OSC control. Configuration options: [Auto], [Enabled] and [Disabled]. The default value is [Auto].



### 3.4.4 Storage Configuration



#### Onboard IDE Controller

Use this item to enable or disable the “Onboard IDE Controller” feature.

#### Onboard SATA Controller

Use this item to enable or disable the “Onboard SATA Controller” feature.

#### SATA Operation Mode

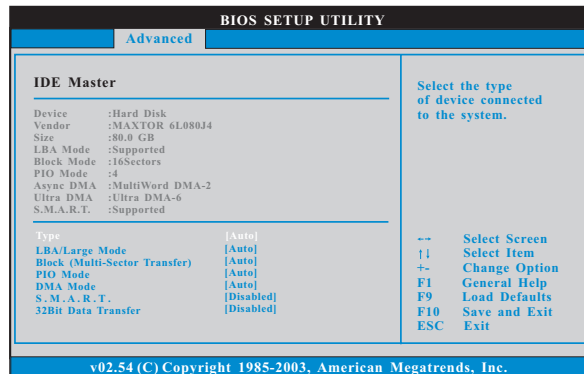
Use this item to adjust SATA Operation Mode. The default value of this option is [IDE]. If you want to operate RAID function on SATA / SATAII HDDs, please select [RAID]. Configuration options: [IDE] and [RAID].

\* If you select [RAID] mode, SATA / SATAII HDDs can not be accessed until you finish configuring RAID functions in NVIDIA BIOS / Windows RAID Utility.

\* If you install OS on SATA / SATAII HDDs, please do not change the setting of this item after OS installation.

#### IDE Device Configuration

You may set the IDE configuration for the device that you specify. We will use the “IDE1 Master” as the example in the following instruction, which can be applied to the configurations of “IDE1 Slave” as well.



---

## 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.

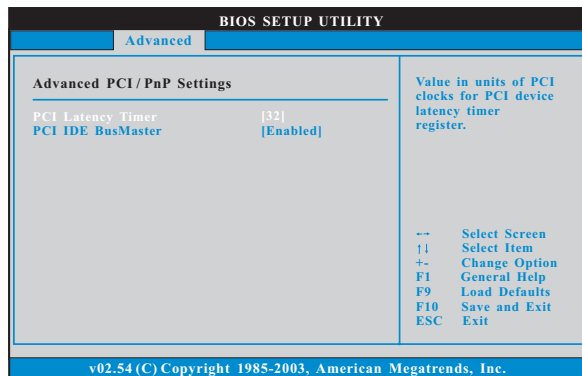
## S.M.A.R.T.

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].

## 32Bit Data Transfer

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

### 3.4.5 PCIPnP Configuration



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

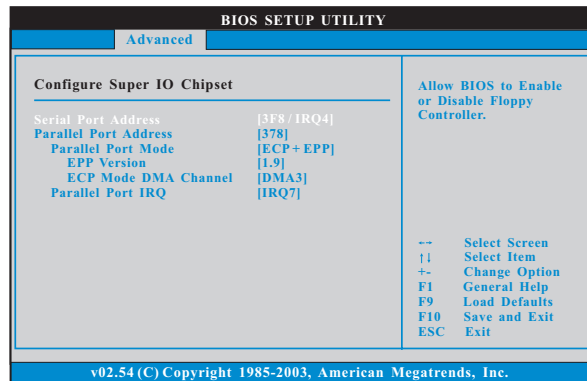
#### PCI Latency Timer

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.

### 3.4.6 Super IO Configuration



#### 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].

#### 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].

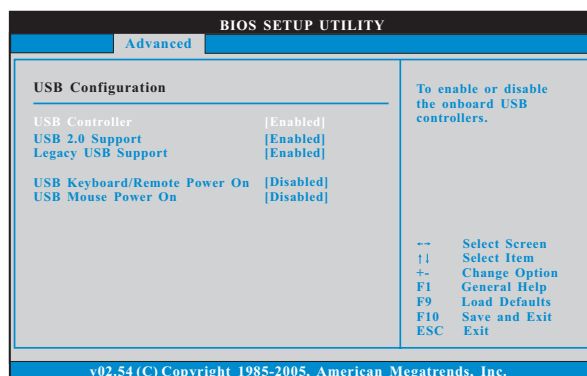
#### ECP Mode DMA Channel

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].

### 3.4.7 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 option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [BIOS Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options:

[Enabled] - Enables support for legacy USB.

[Auto] - Enables legacy support if USB devices are connected.

[Disabled] - USB devices are not allowed to use under legacy OS and BIOS setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS.

[BIOS Setup Only] - USB devices are allowed to use only under BIOS setup.

#### USB Keyboard/Remote Power On

Use this item to enable or disable USB Keyboard/Remote Power On on the system.

#### USB Mouse Power On

Use this item to enable or disable USB Mouse Power On on the system.

### 3.5 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	OC Tweaker	Advanced	H/W Monitor	Boot	Security	Exit
<b>Hardware Health Event Monitoring</b>				Enable/Disable CPU Quiet Fan Function.		
CPU Temperature	:	37°C / 98°F				
M/B Temperature	:	27°C / 80°F				
CPU Fan Speed	:	4722 RPM				
Chassis Fan Speed	:	N/A				
Vcore	:	1.216V				-- Select Screen
+ 3.30V	:	3.248V				] Select Item
+ 5.00V	:	5.136V				F1 General Help
+ 12.00V	:	12.091V				F9 Load Defaults
CPU Quiet Fan	:	[Disabled]				F10 Save and Exit
						ESC Exit
v02.54 (C) Copyright 1985-2003, American Megatrends, Inc.						

#### CPU Quiet Fan

This item allows you to control the CPU fan speed and fan noise. 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" and "Target 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

The target temperature will be between 45°C/113°F and 65°C/149°F. The default value is [50°C/122°F].

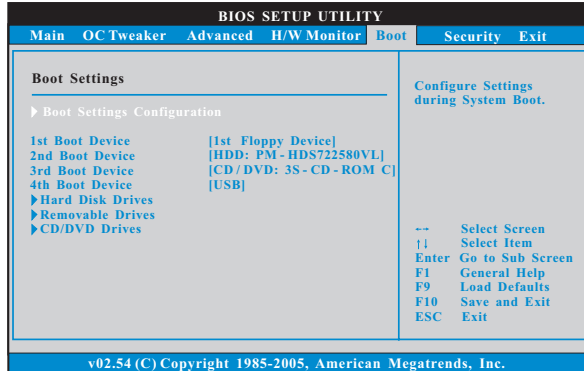
#### Target Fan Speed

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].

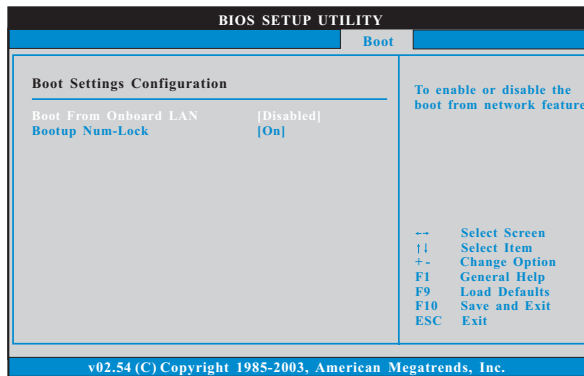


### 3.6 Boot Screen

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



#### 3.6.1 Boot Settings Configuration



##### Boot From Onboard LAN

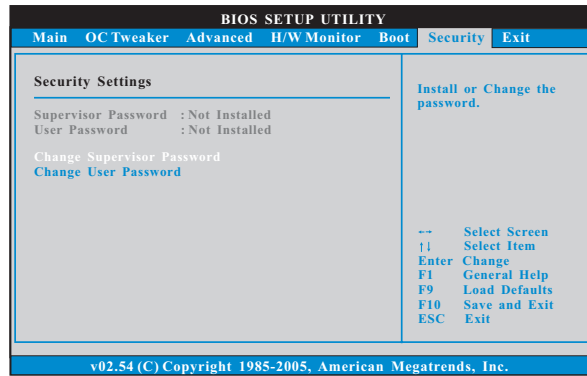
Use this item to enable or disable the Boot From Onboard LAN feature.

##### Boot Up Num-Lock

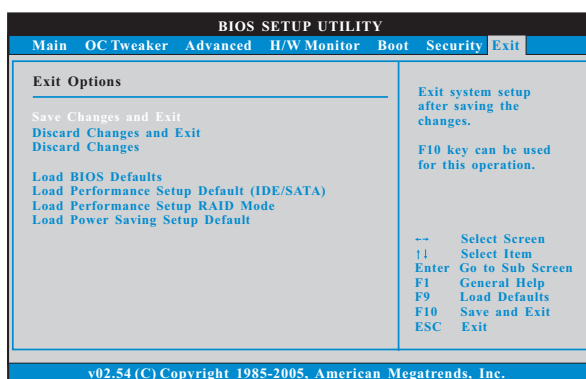
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

### 3.7 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.



### 3.8 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 BIOS Defaults

Load BIOS default values for all the setup questions. F9 key can be used for this operation.

#### Load Performance Setup Default (IDE/SATA)

This performance setup default may not be compatible with all system configurations. If system boot failure occurs after loading, please resume optimal default settings. F5 key can be used for this operation.

#### Load Performance Setup RAID Mode

This performance setup RAID mode may not be compatible with all system configurations. If system boot failure occurs after loading, please resume optimal default settings. F4 key can be used for this operation.

#### Load Power Saving Setup Default

Load power saving setup default. F6 key can be used for this operation.

---

## **4. Software Support**

### **4.1 Install Operating System**

This motherboard supports various Microsoft® Windows® operating systems: 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 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 the 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 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.