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User manual ASROCK N68C-SUCC
User guide ASROCK N68C-SUCC
Operating instructions ASROCK N68C-SUCC
Instructions for use ASROCK N68C-SUCC
Instruction manual ASROCK N68C-SUCC



ASRock

***N68C-GS UCC /
N68C-S UCC***

User Manual

Version 1.1
Published March 2010
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Manual abstract:

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

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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

1.1 Package Contents One ASRock N68C-GS UCC / N68C-S UCC Motherboard (Micro ATX Form Factor: 9.6-in x 8.2-in, 24.4 cm x 20.8 cm) One ASRock N68C-GS UCC / N68C-S UCC Quick Installation Guide One ASRock N68C-GS UCC / N68C-S UCC Support CD Two Serial ATA (SATA) Data Cables (Optional) One I/O Panel Shield 5 1.2 Specifications - Micro ATX Form Factor: 9.6-in x 8.

2-in, 24.4 cm x 20.8 cm - Support for Socket AM2+ / AM2 processors: AMD Phenom™ FX / Phenom / Athlon 64 FX / Athlon 64 X2 Dual-Core / Athlon X2 Dual-Core / Athlon 64 / Sempron processor (see CAUTION 1) - Support for AM3 processors: AMD Phenom™ II X4 / X3 / X2 / Athlon II X4 / X3 / X2 / Sempron processors - Supports UCC feature (Unlock CPU Core) (see CAUTION 3) - Supports AMD's Cool 'n' Quiet™ Technology - FSB 1000 MHz (2.0 GT/s) - Supports Untied Overclocking Technology (see CAUTION 3) - Supports Hyper-Transport Technology - NVIDIA® GeForce 7025 / nForce 630a - Dual Channel DDR3/DDR2 Memory Technology (see CAUTION 4) - 2 x DDR3 DIMM slots - Support DDR3 1600/1333/1066/800 non-ECC, un-buffered memory (see CAUTION 5) - Max. capacity of system memory: 8GB (see CAUTION 6) - 2 x DDR2 DIMM slots - Support DDR2 1066/800/667/533 non-ECC, un-buffered memory (see CAUTION 7) - Max. capacity of system memory: 8GB (see CAUTION 6) - 1 x PCI Express x16 slot - 1 x PCI Express x1 slot - 2 x PCI slots - Integrated NVIDIA® GeForce 7025 graphics - DX9.0 VGA, Pixel Shader 3.0 - Max. shared memory 256MB (see CAUTION 8) - Supports D-Sub with max. resolution up to 1920x1440 @ 60Hz - 5.

1 CH HD Audio (VIA® VT1705 Audio Codec) - N68C-GS UCC Realtek Giga PHY RTL8211CL, speed 10/100/1000 Mb/s - N68C-S UCC Realtek PHY RTL8201EL, speed 10/100 Mb/s - Supports Wake-On-LAN Platform CPU Chipset Memory Expansion Slot Graphics Audio LAN 6 Rear Panel I/O Connector BIOS Feature Support CD Unique Feature I/O Panel - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x Serial Port: COM1 - 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 - 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 CAUTION 9) - 1 x ATA133 IDE connector (supports 2 x IDE devices) - 1 x Floppy connector - 1 x Print Port header - CPU/Chassis/Power FAN connector - 24 pin ATX power connector - 4 pin 12V power connector - CD in header - Front panel audio header - 3 x USB 2.0 headers (support 6 USB 2.0 ports) (see CAUTION 10) - 8Mb AMI Legal BIOS - Supports "Plug and Play" - ACPI 1.

1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.1 Support - CPU, VCCM, NB Voltage Multi-adjustment - Drivers, Utilities, AntiVirus Software (Trial Version), ASRock Software Suite (CyberLink DVD Suite and Creative Sound Blaster X-Fi MB) (OEM and Trial Version) - ASRock OC Tuner (see CAUTION 11) - Intelligent Energy Saver (see CAUTION 12) - Instant Boot - ASRock Instant Flash (see CAUTION 13) - ASRock OC DNA (see CAUTION 14) - Hybrid Booster: - CPU Frequency Stepless Control (see CAUTION 15) - ASRock U-COP (see CAUTION 16) - Boot Failure Guard (B.



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F.G.

) - ASRock AM2 Boost: ASRock Patented Technology to boost memory performance up to 12.5% (see CAUTION 17) 7 Hardware Monitor OS Certifications - CPU Temperature Sensing - Chassis Temperature Sensing - CPU/Chassis/Power Fan Tachometer - CPU Quiet Fan - Voltage Monitoring: +12V, +5V, +3.3V, Vcore - Microsoft® Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit compliant - FCC, CE, WHQL * 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 thirdparty 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. 2.

This motherboard supports CPU up to 95W. Please refer to our website for CPU support list. ASRock website <http://www.asrock.com> UCC (Unlock CPU Core) feature simplifies AMD CPU activation. As long as a simple switch of the BIOS option "Unlock CPU Core", 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 implicated 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. 9 15. 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. 16. 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.

17. This motherboard supports ASRock AM2 Boost overclocking technology. If you enable this function in the BIOS setup, the memory performance will improve up to 12.5%, but the effect still depends on the AM2 CPU you adopt. Enabling this function will overclock the chipset/CPU reference clock. However, we can not guarantee the system stability for all CPU/DRAM configurations. If your system is unstable after AM2 Boost function is enabled, it may not be applicative to your system. You may choose to disable this function for keeping the stability of your system. 10 1.3 Motherboard Layout (N68C-GS UCC / N68C-S UCC) 1 23 4 5 20.8cm (8.2-in) PS2 Keyboard 6 7 PS2 Mouse 1 PS2_USB_PW1 CPU_FAN1 ATX12V1 Designed in Taipei DDR3_A1 (64 bit, 240-pin module) DDR3_B1 (64 bit, 240-pin module) DDR1_1 (64 bit, 240-pin module) DDR1_2 (64 bit, 240-pin module) ATXPWR1 FSB800 FSB800 USB 2.0 T: USB2 B: USB3 USB 2.0 T: USB0 B: USB1 Top: RJ-45 24.4cm (9.

6-in) COM1 VGA1 Bottom: MIC IN Center: FRONT AM2+/AM3 Phenom II 8 SOCKET AM2 DDR2 1066 DDR3 1600 Dual Channel 9 LAN PHY Top: LINE IN 30 29 Super I/O PCIE1 NVIDIA GeForce 7025 / nForce 630a PCIE2 IDE1 SATA1_1 (PORT 0.0) SATA1_3 (PORT 1.0) SATA1_2 (PORT 0.1) SATA1_4 (PORT 1.1) 10 11 12 13 14 28 PC11 RoHS CMOS BATTERY 8Mb BIOS 27 AUDIO CODEC 1 1 1 PCI2 PWR_FAN1 CLRCMOS1 USB4_5 USB8_9 USB6_7 1 CHA_FAN1 PANEL 1 LPT1 PLED PWRBTN SPEAKER1 HD_AUDIO1 CD1 FLOPPY1 15 1 1 1 HDLED RESET 1 26 25 24 23 22 21 20 19 18 17 16 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 PS2_USB_PW1 Jumper CPU Fan Connector (CPU_FAN1) ATX 12V Power Connector (ATX12V1) CPU Heatsink Retention Module AM2 940-Pin CPU Socket 2 x 240-pin DDR2 DIMM Slots (Dual Channel: DDR1_1, DDR1_2; Yellow) 2 x 240-pin DDR3 DIMM Slots (Dual Channel: DDR3_A1, DDR3_B1; Blue) ATX Power Connector (ATXPWR1) Primary IDE Connector (IDE1, Blue) Primary SATAII Connector (SATAII_1 (PORT 0.0)) Third SATAII Connector (SATAII_3 (PORT 1.0)) Fourth SATAII Connector (SATAII_4 (PORT 1.1)) Secondary SATAII Connector (SATAII_2 (PORT 0.1)) SPI Flash Memory (8Mb) USB 2.0 Header (USB8_9, Blue) 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 USB 2.

0 Header (USB6_7, Blue) USB 2.0 Header (USB4_5, Blue) Chassis Speaker Header (SPEAKER 1, White) System Panel Header (PANEL1, White) Chassis Fan Connector (CHA_FAN1) Clear CMOS Jumper (CLRCMOS1) Print Port Header (LPT1, Purple) Floppy Connector (FLOPPY1) Power Fan Connector (PWR_FAN1) Internal Audio Connector: CD1 (White) Front Panel Audio Header (HD_AUDIO1, White) PCI Slots (PC11- 2) PCI Express x16 Slot (PCIE2) PCI Express x1 Slot (PCIE1) NVIDIA GeForce 7025 / nForce 630a 11 1.4 1 I/O Panel (N68C-GS UCC) 2 3 4 5 10 9 8 6 7 8 9 10 7 6 1 2 3 4 5 PS/2 Mouse Port (Green) RJ-45 Port Line In (Light Blue) Front Speaker (Lime) Microphone (Pink) USB 2.0 Ports (USB01) USB 2.0 Ports (USB23) VGA Port COM Port PS/2 Keyboard Port (Purple) * 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 Status Description Status SPEED LED Description ACT/LINK SPEED LED LED Off No Activity Blinking Data Activity Off Orange Green 10Mbps connection 100Mbps connection 1Gbps 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. 12 1.5 1 I/O Panel (N68C-S UCC) 2 3 4 5 10 9 8 6 7 8 9 10 7 6 1 2 3 4 5 PS/2 Mouse Port (Green) RJ-45 Port Line In (Light Blue) Front Speaker (Lime) Microphone (Pink) USB 2.0 Ports (USB01) USB 2.0 Ports (USB23) VGA Port COM Port PS/2 Keyboard Port (Purple) * 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 Status Description Status SPEED LED Description ACT/LINK SPEED LED LED Off No Activity Blinking Data Activity Off 10Mbps connection Green or 100Mbps connection Orange LAN Port To enable Multi-Streaming function, you need to connect a front panel audio cable to the front panel audio header.



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2. Installation This is a Micro ATX form factor (9.6-in x 8.

2-in, 24.4 cm x 20.8 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. 2. 3.

4. 5. Unplug the power cord from the wall socket before touching any component. 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. Hold components by the edges and do not touch the ICs. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component. 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. 14 2.1 Step 1.

Step 2. Step 3. CPU Installation Unlock the socket by lifting the lever up to a 90 angle. Position the CPU directly above the socket such that the CPU corner with the golden triangle matches the socket corner with a small triangle. 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. o 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.

Lever 90° Up CPU Golden Triangle Socket Corner Small Triangle 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. 15 2.3 Installation of Memory Modules (DIMM) This motherboard provides two 240-pin DDR2 (Double Data Rate 2) DIMM slots and 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 identical (the same brand, speed, size and chip-type) DDR2/DDR3 DIMM pair in the slots of the same color.

In other words, you have to install identical DDR2 DIMM pair in Dual Channel (DDR2_1 and DDR2_2; Yellow slots; see p.11 No.6), or identical DDR3 DIMM pair in Dual Channel (DDR3_A1 and DDR3_B1; Blue slots; see p.11 No.7), so that Dual Channel Memory Technology can be activated. You may refer to the Dual Channel Memory Configuration Table below. Dual Channel DDR2 Memory Configurations (DS: Double Side, SS: Single Side) DDR2_1 DDR2_2 (Yellow Slot) (Yellow Slot) 2 memory modules SS SS 2 memory modules DS DS Dual Channel DDR3 Memory Configurations (DS: Double Side, SS: Single Side) DDR3_A1 (Blue Slot) 2 memory modules SS 2 memory modules DS DDR3_B1 (Blue Slot) SS DS 1. If you want to install two memory modules, for optimal compatibility and reliability, it is recommended to install them in the slots of the same color. In other words, install them in the set of blue slots (DDR3_A1 and DDR3_B1), or in the set of yellow slots (DDR2_1 and DDR2_2). 2.

If only one memory module is installed in the DIMM slot on this motherboard, it is unable to activate the Dual Channel Memory Technology. It is not allowed to install a DDR3 memory module into DDR2 slot or install a DDR2 memory module into DDR3 slot; otherwise, this motherboard and DIMM may be damaged. 3. 4. DDR2 and DDR3 memory modules cannot be installed on this motherboard at the same time. 16 Installing a DIMM Please make sure to disconnect power supply before adding or removing DIMMs or the system components. Step 1. Step 2. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.

notch break notch break 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. 17 2.

4 Expansion Slots (PCI and PCI Express Slots) There are 2 PCI slots and 2 PCI Express slots on this motherboard. PCI slots: PCI slots are used to install expansion cards that have the 32-bit PCI interface. PCIE slots: PCIE1 (PCIE x1 slot) is used for PCI Express cards with x1 lane width cards, such as Gigabit LAN card, SATA2 card, etc. PCIE2 (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. Remove the bracket facing the slot that you intend to use. Keep the screws for later use. Align the card connector with the slot and press firmly until the card is completely seated on the slot. Fasten the card to the chassis with screws. Step 2. Step 3. Step 4. 18 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.



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Please refer to the following steps to set up a multi monitor environment: 1. Install the NVIDIA® PCI Express VGA card to PCIE2 (PCIE x16 slot). Please refer to page 18 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> 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.

19 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 PS2_USB_PW1 (see p.11, No. 1) Setting 1_2 2_3 Short pin2, pin3 to enable +5VSB (standby) for PS/2 or +5V +5VSB USB 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. 21) 1_2 2_3 Default Clear CMOS 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. 20 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! · Floppy Connector (33-pin FLOPPY1) (see p.11 No. 23) Pin1 FLOPPY1 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.

9) PIN1 IDE1 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. 10) (SATAII_2 (PORT 0.1): see p.11, No. 13) (SATAII_3 (PORT 1.0): see p.11, No. 11) (SATAII_4 (PORT 1.1): see p.11, No. 12) SATAII_2 (PORT 0.1) SATAII_4 (PORT 1.

1) SATAII_1 (PORT 0.0) SATAII_3 (PORT 1.0) 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. 21 USB 2.0 Headers (9-pin USB8_9) (see p.11 No. 15) 1 USB_PWR P-9 P+9 GND DUMMY GND P+8 P-8 USB_PWR USB_PWR P-7 P+7 GND DUMMY 1 GND P+6 P-6 USB_PWR USB_PWR P-5 P+5 GND DUMMY 1 GND P+4 P-4 USB_PWR Besides four default USB 2.

0 ports on the I/O panel, there are three USB 2.0 headers on this motherboard. Each USB 2.0 header can support two USB 2.0 ports. (9-pin USB6_7) (see p.11 No. 16) (9-pin USB4_5) (see p.11 No. 17) Print Port Header (25-pin LPT1) (see p.

11 No. 22) 1 AFD# ERROR# PINIT# SLIN# GND SPD7 SPD6 ACK# SPD5 BUSY SPD4 PE SPD3 SLCT SPD2 SPD1 SPD0 STB# This is an interface for print port cable that allows convenient connection of printer devices. Internal Audio Connectors (4-pin CD1) (CD1: see p.11 No. 25) CD-L GND GND CD-R CD1 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. This is an interface for the front panel audio cable that allows convenient connection and control of audio devices. Front Panel Audio Header (9-pin HD_AUDIO1) (see p.11, No. 26) 1 GND PRESENCE# MIC_RET OUT_RET OUT2_L J_SENSE OUT2_R MIC2_R MIC2_L 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.



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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. 22 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].

System Panel Header (9-pin PANEL1) (see p.11 No. 19) 1 PLED+ PLEDPWRBTN# GND This header accommodates several system front panel functions. DUMMY RESET# GND HDLEDHDLED+ Chassis Speaker Header (4-pin SPEAKER 1) (see p.11 No.

18) 1 SPEAKER DUMMY DUMMY +5V Please connect the chassis speaker to this header. Chassis and Power Fan Connectors (3-pin CHA_FAN1) (see p.11 No. 20) GND +12V CHA_FAN_SPEED Please connect the fan cables to the fan connectors and match the black wire to the ground pin. (3-pin PWR_FAN1) (see p.11 No. 24) GND +12V PWR_FAN_SPEED CPU Fan Connector (4-pin CPU_FAN1) (see p.11 No. 2) 4321 GND +12V CPU_FAN_SPEED FAN_SPEED_CONTROL 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. 8) 12 24 Please connect an ATX power supply to this connector. 1 13 23 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 12 24 1 13 ATX 12V Power Connector (4-pin ATX12VI) (see p.11 No. 3) 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.

24 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 7 8 5 6 3 4 1 2 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 7 8 5 6 3 4 1 2 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. 25 2.

9 AT (SAT AT (SAT 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. @@This section will guide you to install the SATA / SATAII hard disks. @@STEP 2: Connect the SATA power cable to the SATA / SATAII hard disk. @@@@A. 7-pin SATA data cable B. SATA power cable with SATA 15-pin power connector interface A. SATA data cable (Red) B. @@@@2. @@@@3. @@@@5.

@@@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 TM / Vista TM 64-bit / XP / XP 64-bit Without RAID Functions If you just want to install Windows® 7 / 7 64-bit / Vista TM / Vista TM 64-bit / XP / XP 64bit 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 TM / Vista TM 64-bit / XP / XP 64-bit on your system directly. 2.14 Installing Windows® 7 / 7 64-bit / Vista TM / Vista TM 64-bit / XP / XP 64-bit With RAID Functions If you want to install Windows® 7 / 7 64-bit / Vista TM / Vista TM 64-bit / XP / XP 64-bit OS on your SATA / SATAII HDDs with RAID functions, please follow below procedures according to the OS you install. 2.14.

1 Installing Windows® XP / XP 64-bit With RAID Functions If you want to install Windows® XP or Windows® XP 64-bit on your SATA / SATAII HDDs with RAID functions, please follow below steps. STEP 1: Set Up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [IDE]. STEP 2: Make a SATA / SATAII Driver Diskette. A. Insert the ASRock Support CD into your optical drive to boot your system. B.

During POST at the beginning of system boot-up, press <F11> key, and then a window for boot devices selection appears. Please select CD-ROM as the boot device. C. When you see the message on the screen, "Generate Serial ATA driver diskette [YN]?", press <Y>. 29 D. Then you will see these messages, Please insert a blank formatted diskette into floppy drive A: press any key to start Please insert a floppy diskette into the floppy drive, and press any key. E. The system will start to format the floppy diskette and copy SATA / SATAII drivers into the floppy diskette. STEP 3: Set Up BIOS. A.

Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [RAID]. STEP 4: 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 in the following path in the Support CD: .. \ RAID Installation Guide STEP 5: Install Windows® XP / XP 64-bit OS on your system. You can start to install Windows® XP / Windows® XP 64-bit OS on your system. At the beginning of Windows® setup, press F6 to install a third-party RAID driver.

When prompted, insert the SATA / SATAII driver diskette containing the NVIDIA® RAID driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the mode you choose and the OS you install.



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NOTE. If you install Windows® XP / Windows® XP 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 2.14.2 Installing Windows ® 7 / 7 64-bit / Vista TM / Vista TM 64-bit With RAID Functions If you want to install Windows® 7 / 7 64-bit / VistaTM / VistaTM 64-bit on your SATA / SATAII HDDs with RAID functions, please follow below steps.

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 30 STEP 3: Install Windows® 7 / 7 64-bit / VistaTM / VistaTM 64-bit OS on your system.

Insert the Windows® 7 / 7 64-bit / VistaTM / VistaTM 64-bit optical disk into the optical drive to boot your system, and follow the instruction to install Windows® 7 / 7 64-bit / VistaTM / VistaTM 64-bit OS on your system. When you see "Where do you want to install Windows?" page, please insert the ASRock Support CD into your optical drive, and click the "Load Driver" button on the left on the bottom to load the NVIDIA® RAID drivers. NVIDIA® RAID drivers are in the following path in our Support CD: .. \I386 (For Windows® VistaTM OS) .

. \AMD64 (For Windows® VistaTM 64-bit OS) After that, please insert Windows® VistaTM / VistaTM 64-bit optical disk into the optical drive again to continue the installation. NOTE. If you install Windows® 7 / 7 64-bit / VistaTM / VistaTM 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. Technology 2 . 1 5 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.

31 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 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 Main OC Tweaker Advanced H/W Monitor Boot screen has a menu bar with the following selections: To set up the system time/date information To set up overclocking features To set up the advanced BIOS features To display current hardware status 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. 32 3 . 1 . 2 Navigation Keys Please check the following table for the function description of each navigation key.

Navigation Key(s) // +/<Enter> <F1> <F9> <F10> <ESC> 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 To bring up the selected screen To display the General Help Screen To load optimal default values for all the settings To save changes and exit the BIOS SETUP UTILITY 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. N68C-GS UCC OC Tweaker BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit Main System Overview System Time System Date BIOS Version Processor Type [17:00:09] [Fri 02/12/2010] Use [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time. : N68C-GS UCC P1.

00 : AMD Athlon (tm) 64 X2 Dual Core Processor 4000+ (64bit) Processor Speed : 2000MHz Microcode Update : 40F32/62 : 256KB L1 Cache Size : 2048KB L2 Cache Size Total Memory DDRII_1 DDRII_2 : 1024MB with 128MB shared memory Single-Channel Memory Mode : 1024MB/266MHz DDR2_533 : None +Tab F1 F9 F10 ESC Select Screen Select Item Change Field Select Field General Help Load Defaults Save and Exit 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. 33 N68C-S UCC BIOS SETUP UTILITY Advanced H/W Monitor Main OC Tweaker Boot Security Exit System Overview System Time System Date BIOS Version Processor Type [17:00:09] [Fri 02/12/2010] Use [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time. : N68C-S UCC P1.00 : AMD Athlon (tm) 64 X2 Dual Core Processor 4000+ (64bit) Processor Speed : 2000MHz Microcode Update : 40F32/62 : 256KB L1 Cache Size : 2048KB L2 Cache Size Total Memory DDRII_1 DDRII_2 : 1024MB with 128MB shared memory Single-Channel Memory Mode : 1024MB/266MHz DDR2_533 : None +Tab F1 F9 F10 ESC Select Screen Select Item Change Field Select Field General Help Load Defaults Save and Exit Exit v02.



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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. 34 Tweak weaker 3.3 OC Tweak er Screen In the OC Tweaker screen, you can set up overclocking features. Main OC Tweaker EZ Overclocking Load Optimized CPU OC Setting [Press Enter] BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit CPU Configuration Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) Boot Failure Guard CPU/LDT Spread Spectrum PCIE Spread Spectrum SATA Spread Spectrum Processor Maximum Frequency Processor Maximum Voltage Multiplier/Voltage Change HT Bus Speed HT Bus Width [Auto] [200] [100] [Enabled] [Enabled] [Enabled] [Enabled] x10.5 2100 MHz 1.2500 V [Auto] [Auto] [Auto] Overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense. Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. EZ Overclocking Load Optimized CPU OC Setting You can use this option to load the optimized CPU overclocking setting.

Configuration options: [Press Enter], [Default], [5% (2520MHz)] to [40% (3360MHz)]. Please note that overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense. 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. 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]. 35 Processor Maximum Frequency It will display Processor Maximum Frequency for reference. North Bridge Maximum Frequency This option appears only when you adopt Phenom CPU. 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. Main OC Tweaker EZ Overclocking Load Optimized CPU OC Setting [Press Enter] BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit CPU Configuration Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) Boot Failure Guard CPU/LDT Spread Spectrum PCIE Spread Spectrum SATA Spread Spectrum Processor Maximum Frequency Processor Maximum Voltage Multiplier/Voltage Change Processor Multiplier Processor Voltage [Auto] [200] [100] [Enabled] [Enabled] [Enabled] [Enabled] x10.5 2100 MHz 1.2500 V [Manual] [x10.5 2100 MHz] [1.2500 V] Overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense.

Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. Processor Frequency This option appears only when you adopt AM2 CPU. This item will show when "Multiplier/Voltage Change" is set to [Manual]; otherwise, it will be hidden. The range of the value depends on the CPU you adopt on this motherboard.

However, for system stability, it is not recommended to adjust the value of this item. Processor Voltage This option appears only when you adopt AM2 CPU. This item will show when "Multiplier/Voltage Change" is set to [Manual]; otherwise, it will be hidden. The range of the value depends on the CPU you adopt on this motherboard. However, for safety and system stability, it is not recommended to adjust the value of this item.

CPU Frequency Multiplier This option appears only when you adopt Phenom CPU. However, for safety and system stability, it is not recommended to adjust the value of this item. 36 NB Frequency Multiplier This option appears only when you adopt Phenom CPU. However, 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], [x2 400 MHz], [x3 600 MHz], [x4 800 MHz] and [x5 1000 MHz]. HT Bus Width This feature allows you selecting Hyper-Transport bus width. Configuration options: [Auto], [8 Bit] and [16 Bit]. Unlock CPU Core UCC (Unlock CPU Core) feature simplifies AMD CPU activation. As long as a simple switch of the BIOS option "Unlock CPU Core", 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 AM2+ / AM3 CPU only, and in addition, not every AM2+ / AM3 CPU can support this function because some CPU's hidden core may be malfunctioned. Memory Configuration Memory Clock This item can be set by the code using [Auto]. You can set one of the standard values as listed for DDR2 memory modules: [200MHz DDR2_400], [266MHz DDR2_533], [333MHz DDR2_667] and [400MHz DDR2_800]. If you adopt Phenom CPU, there is one more option: [533MHz DDR2_1066]. You can set one of the standard values as listed for DDR3 memory modules: [400MHz DDR3_800], [533MHz DDR3_1066], [667MHz DDR3_1333] and [800MHz DDR3_1600]. DRAM Voltage Use this to select DRAM voltage. Configuration options: [Auto], [1.794V] to [2.201V].

The default value is [Auto]. 37 Memory Timing BIOS SETUP UTILITY OC Tweaker Memory Timing Memory Controller Mode Power Down Enable Bank Interleaving Channel Interleaving CAS Latency (CL) TRCD TRP TRAS TRTP TRRD TWTR TWR TRC TRWTWB TRWTO TWRRD TWRWR 4 4 4 12 2 2 2 4 16 0 4 0 2 [Unganged] [Enabled] [Auto] [Hash 1] [Auto] +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc.

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 accross nodes, decreasing access contention.



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Channel Interleaving This option appears only when you adopt Phenom CPU.

It allows you to enable Channel Memory Interleaving. The default value for DDR2 is [Hash 1]. The default value for DDR3 is [Hash 2]. CAS Latency (CL) Use this item to adjust the means of memory accessing. Configuration options: [Auto], [3CLK], [4CLK], [5CLK] and [6CLK]. The default value is [Auto]. TRCD Use this to adjust TRCD values. Configuration options: [Auto], [3CLK], [4CLK], [5CLK] and [6CLK]. The default value is [Auto]. TRP Use this to adjust TRP values.

Configuration options: [Auto], [3CLK], [4CLK], [5CLK] and [6CLK]. The default value is [Auto]. TRAS Use this to adjust TRAS values. Configuration options: [Auto], [5CLK] to [18CLK]. The default value is [Auto]. TRTP Use this to adjust TRTP values. Configuration options: [Auto], [2-4CLK] and [3-5CLK]. The default value is [Auto]. 38 TRRD Use this to adjust TRRD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK] and [5CLK]. The default value is [Auto]. TWTR Use this to adjust TWTR values. Configuration options: [Auto], [1CLK], [2CLK] and [3CLK]. The default value is [Auto]. TWR Use this to adjust TWR values.

Configuration options: [Auto], [3CLK], [4CLK], [5CLK] and [6CLK]. The default value is [Auto]. TRC Use this to adjust TRC values. Configuration options: [11CLK] to [26CLK]. The default value is [Auto]. TRWTWB Use this to adjust TRWTWB values. Configuration options: [3CLK] to [10CLK]. The default value is [Auto]. TRWTTD This option appears only when you adopt AM2 CPU. Use this to adjust TRWTTD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK], [5CLK], [6CLK], [7CLK], [8CLK] and [9CLK]. The default value is [Auto]. TWRRD This option appears only when you adopt AM2 CPU. Use this to adjust TWRRD values. Configuration options: [Auto], [0CLK], [1CLK], [2CLK] and [3CLK].

The default value is [Auto]. TWRWR This option appears only when you adopt AM2 CPU. Use this to adjust TWRWR values. Configuration options: [Auto], [1CLK], [2CLK] and [3CLK]. The default value is [Auto]. TRDRD This option appears only when you adopt AM2 CPU. Use this to adjust TRDRD values.

Configuration options: [Auto], [2CLK], [3CLK], [4CLK] and [5CLK]. The default value is [Auto]. TRFC0 Use this to adjust TRFC0 values. Configuration options: [Auto], [75ns], [105ns], [127.5ns], [195ns] and [327.5ns]. The default value is [Auto]. TRFC1 Use this to adjust TRFC1 values. Configuration options: [Auto], [75ns], [105ns], [127.5ns], [195ns] and [327.5ns]. 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]. 39 CHA ADDR/CMD Delay Use this to adjust values for CHA ADDR/CMD Delay feature. Configuration options: [Auto], [No Delay], [1/64CLK] to [31/64CLK]. The default value is [Auto]. CHA ADDR/CMD Setup Use this to adjust values for CHA ADDR/CMD Setup feature. Configuration options: [Auto], [1/2CLK] and [1CLK]. The default value is [Auto]. CHA CS/ODT Delay Use this to adjust values for CHA CS/ODT Delay feature. Configuration options: [Auto], [No Delay], [1/64CLK] to [31/64CLK].

The default value is [Auto]. CHA CS/ODT Setup Use this to adjust values for CHB CS/ODT Setup feature. Configuration options: [Auto], [1/2CLK] and [1CLK]. The default value is [Auto]. CHB ADDR/CMD Delay Use this to adjust values for CHB ADDR/CMD Delay feature. Configuration options: [Auto], [No Delay], [1/64CLK] to [31/64CLK]. The default value is [Auto]. CHB ADDR/CMD Setup Use this to adjust values for CHB ADDR/CMD Setup feature. Configuration options: [Auto], [1/2CLK] and [1CLK]. The default value is [Auto].

CHB CS/ODT Delay Use this to adjust values for CHB CS/ODT Delay feature. Configuration options: [Auto], [No Delay], [1/64CLK] to [31/64CLK]. The default value is [Auto]. CHB CS/ODT Setup Use this to adjust values for CHB CS/ODT Setup feature. Configuration options: [Auto], [1/2CLK] and [1CLK]. The default value is [Auto]. CHA CKE Drive Use this to adjust values for CHA CKE Drive. Configuration options: [Auto], [1.00x], [1.25x], [1.50x] and [2.00x]. The default value is [Auto]. CHA CS/ODT Drive Use this to adjust values for CHA CS/ODT Drive. Configuration options: [Auto], [1.00x], [1.25x], [1.50x] and [2.00x]. The default value is [Auto].

CHA ADDR/CMD Drive Use this to adjust values for CHA ADDR/CMD Drive. Configuration options: [Auto], [1.00x], [1.25x], [1.50x] and [2.00x]. The default value is [Auto]. CHA CLK Drive Use this to adjust values for CHA CLK Drive. Configuration options: [Auto], [0.75x], [1.00x], [1.25x] and [1.50x]. The default value is [Auto]. 40 CHA DATA Drive Use this to adjust values for CHA DATA Drive. Configuration options: [Auto], [0.75x], [1.00x], [1.25x] and [1.50x].

The default value is [Auto]. CHA DQS Drive Use this to adjust values for CHA DQS Drive. Configuration options: [Auto], [0.75x], [1.00x], [1.25x] and [1.50x]. The default value is [Auto]. CHA Processor ODT Use this to adjust values for CHA Processor ODT. Configuration options: [Auto], [300 ohms], [150 ohms] and [75 ohms].

The default value is [Auto]. CHB CKE Drive Use this to adjust values for CHB CKE Drive. Configuration options: [Auto], [1.00x], [1.25x], [1.50x] and [2.00x]. The default value is [Auto]. CHB CS/ODT Drive Use this to adjust values for CHB CS/ODT Drive. Configuration options: [Auto], [1.00x], [1.25x], [1.50x] and [2.00x]. The default value is [Auto].

CHB ADDR/CMD Drive Use this to adjust values for CHB ADDR/CMD Drive. Configuration options: [Auto], [1.00x], [1.25x], [1.50x] and [2.00x]. The default value is [Auto]. CHB CLK Drive Use this to adjust values for CHB CLK Drive. Configuration options: [Auto], [0.75x], [1.00x], [1.25x] and [1.50x]. The default value is [Auto]. CHB DATA Drive Use this to adjust values for CHB DATA Drive.

Configuration options: [Auto], [0.75x], [1.00x], [1.25x] and [1.50x]. The default value is [Auto]. CHB DQS Drive Use this to adjust values for CHB DQS Drive. Configuration options: [Auto], [0.75x], [1.00x], [1.25x] and [1.50x]. The default value is [Auto]. CHB Processor ODT Use this to adjust values for CHB Processor ODT. Configuration options: [Auto], [300 ohms], [150 ohms] and [75 ohms].

The default value is [Auto]. Chipset Settings Chipset Voltage Use this to select chipset voltage. Configuration options: [Auto], [1.262V] to [1.423V]. 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. 41 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, Floppy Configuration, SuperIO Configuration, and USB Configuration. BIOS SETUP UTILITY Boot OC Tweaker Advanced H/W Monitor Main Security Exit Advanced Settings WARNING : Setting wrong values in below sections may cause system to malfunction. CPU Configuration Chipset Configuration ACPI Configuration Storage Configuration PCIPnP Configuration Floppy Configuration SuperIO Configuration USB Configuration BIOS Update Utility ASRock Instant Flash Options for CPU Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.



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54 (C) Copyright 1985-2005, American Megatrends, Inc. 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. 42 3.4.1 CPU Configuration BIOS SETUP UTILITY Advanced CPU Configuration

AM2 Boost Cool 'n' Quiet Secure Virtual Machine [Disabled] [Auto] [Enabled] Options Enabled Disabled +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. AM2 Boost This option appears only when you adopt AM2 CPU. If you set this option to [Enabled], you will enable ASRock AM2 Boost function, which will improve the memory performance.

The default value is [Disabled]. Please refer to caution 17 on page 10 for details. 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® 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 This option appears only when you adopt AM2 CPU. 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 This option appears only when you adopt Phenom CPU. 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 This option appears only when you adopt Phenom CPU. The default value is [BSP Only]. Configuration options: [BSP Only] and [All Cores]. 43 3 .

4 . 2 Chipset Configuration BIOS SETUP UTILITY Advanced Chipset Settings Onboard LAN Onboard HD Audio Front Panel Share Memory Primary Graphics Adapter CPU Thermal Throttle [Auto] [Auto] [Enabled] [Auto] [PCI] [Enabled] Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit Auto/Enable/Disable Onboard HD Audio. +F1 F9 F10 ESC v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 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], [Enabled] 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]. 44 3.4.3 ACPI Configuration BIOS SETUP UTILITY Advanced ACPI Settings Suspend To RAM Check Ready Bit Away Mode Support Restore on AC / Power Loss Ring-In Power On PCI Devices Power On PS / 2 Keyboard Power On RTC Alarm Power On ACPI HPET Table OSC Control [Auto] [Enabled] [Disabled] [Power Off] [Disabled] [Disabled] [Disabled] [Disabled] [Disabled] [Auto] Select auto-detect or disable the STR feature.

+F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 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. Check Ready Bit Use this item to enable or disable the feature Check Ready Bit. 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. 45 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. OSC Control Use this item to enable or disable OSC control. Configuration options: [Auto], [Enabled] and [Disabled]. The default value is [Auto]. 46 3.4.4 Storage Configuration BIOS SETUP UTILITY Advanced Storage Configuration Onboard IDE Controller Onboard SATA

Controller SATA Operation Mode IDE1 Master IDE1 Slave SATAII_1 SATAII_2 SATAII_3 SATAII_4 [Enabled] [Enabled] [IDE] [Hard Disk] [Not Detected] [Not Detected] [Not Detected] [Not Detected] [Not Detected] +F1 F9 F10 ESC Options Disabled Enabled Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 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.



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