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You can read the recommendations in the user guide, the technical guide or the installation guide for ASROCK N68-S. You'll find the answers to all your questions on the ASROCK N68-S in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual ASROCK N68-S
User guide ASROCK N68-S
Operating instructions ASROCK N68-S
Instructions for use ASROCK N68-S
Instruction manual ASROCK N68-S



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Manual abstract:

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ASRock Website: <http://www.asrock.com>
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0 VGA, Pixel Shader 3.0 - Max. shared memory 256MB (see CAUTION 6) - 5.1 CH Windows® Vista™ Premium Level HD Audio (ALC662 Audio Codec) - Realtek PHY RTL8201EL - Speed: 10/100 Ethernet - Supports Wake-On-LAN 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 Platform CPU Chipset Memory Expansion Slot Graphics Audio LAN Rear Panel I/O 6 Connector BIOS Feature Support CD Unique Feature Hardware Monitor OS Certifications - 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 7) - 1 x ATA133 IDE connector (supports 2 x IDE devices) - 1 x Floppy connector - 1 x Print port header - CPU/Chassis FAN connector - 24 pin ATX power connector - 4 pin 12V power connector - CD in header - Front panel audio header - 2 x USB 2.0 headers (support 4 USB 2.0 ports) (see CAUTION 8) - 4Mb AMI BIOS - AMI Legal BIOS - Supports "Plug and Play" - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.

1 Support - Supports Smart BIOS - Drivers, Utilities, AntiVirus Software (Trial Version) - ASRock OC Tuner (see CAUTION 9) - Intelligent Energy Saver (see CAUTION 10) - Instant Boot - Hybrid Booster: - CPU Frequency Stepless Control (see CAUTION 11) - ASRock U-COP (see CAUTION 12) - Boot Failure Guard (B.F.G.) - ASRock AM2 Boost: ASRock Patented Technology to boost memory performance up to 12.5% (see CAUTION 13) - CPU Temperature Sensing - Chassis Temperature Sensing - CPU Fan Tachometer - Chassis Fan Tachometer - CPU Quiet Fan - Voltage Monitoring: +12V, +5V, +3.



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3V, Vcore - Microsoft® Windows® 2000 / XP / XP 64-bit / Vista™ / Vista™ 64-bit compliant - FCC, CE * For detailed product information, please visit our website: <http://www.asrock.com> 7 **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. 3. This motherboard supports CPU up to 95W.

Please refer to our website for CPU support list. ASRock website <http://www.asrock.com> This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 28 for details.

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 14 for proper installation. 4. Whether 1066MHz memory speed is supported depends on the AM2+ CPU you adopt. If you want to adopt DDR2 1066 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> 5. Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® XP and Windows® Vista™. For Windows® XP 64-bit and Windows® Vista™ tor (SATAII_1 (PORT 1.

0)) SPI Flash Memory (4Mb) NVIDIA GeForce 7025 / nForce 630a Chassis Fan Connector (CHA_FAN1) Clear CMOS Jumper (CLRCMOS1) USB 2.0 Header (USB4_5, Blue) 15 16 17 18 19 20 21 22 23 24 25 26 27 Chassis Speaker Header (SPEAKER 1, Purple) USB 2.0 Header (USB6_7, Blue) System Panel Header (PANEL1, Orange) Print Port Header (LPT1, Purple) Floppy Connector (FLOPPY1) Internal Audio Connector: CD1 (Black) Front Panel Audio Header (HD_AUDIO1, Lime) PCI Slots (PCI1- 2) PCI Express x16 Slot (PCIE2) PCI Express x1 Slot (PCIE1) ATX 12V Power Connector (ATX12V1) CPU Heatsink Retention Module AM2 940-Pin CPU Socket 10 1.4 1 Panel I/O Panel 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) * To enable Multi-Streaming function, you need to connect a front panel audio cable to the front panel audio header. Please refer to below steps for the software setting of MultiStreaming. For Windows® XP: After restarting your computer, you will find "Mixer" tool on your system. Please select "Mixer Toolbox", click "Enable playback multi-streaming", and click "ok". Choose "2CH" or "4CH" and then you are allowed to select "Realtek HDA Primary output" to use Rear Speaker and Front Speaker, or select "Realtek HDA Audio 2nd output" to use front panel audio.

Then reboot your system. For Windows® Vista™: After restarting your computer, please double-click "Realtek HD Audio Manager" on the system tray. Set "Speaker Configuration" to "Quadraphonic" or "Stereo". Click "Device advanced settings", choose "Make front and rear output devices playbacks two different audio streams simultaneously", and click "ok". Then reboot your system.

11 2. Installation This is a Micro ATX form factor (9.6-in x 7.0-in, 24.4 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. 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. 12.2.1 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 Socker 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 10, No. 2). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink. 13 2.3 Installation of Memory Modules (DIMM) N68-S motherboard provides two 240-pin DDR2 (Double Data Rate 2) 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 DDR2 DIMM slots to activate Dual Channel Memory Technology. Otherwise, it will operate at single channel mode. 1.

2. It is not allowed to install a DDR memory module into DDR2 slot; otherwise, this motherboard and DIMM may be damaged. 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.



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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. 14 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. 15 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 PCIE2 (PCIE x16 slot). Please refer to page 15 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® 2000 / 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® 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. 16 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.10, 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.10, No. 13) 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. 17 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.10 No.

19) 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.10 No. 6) 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 1.0) see p.10, No. 9) (SATAII_2 (PORT 1.1): see p.10, No.

5) (SATAII_3 (PORT 2.0): see p.10, No. 8) (SATAII_4 (PORT 2.1): see p.10, No. 7) SATAII_3 (PORT 2.0) Serial ATA (SATA) Data Cable (Optional) SATAII_4 (PORT 2.



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1) SATAII_2 (PORT 1.1) (SATAII_1 (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. Either end of the SATA data cable can be connected to the SATA / SATAII hard disk or the SATAII connector on the motherboard.

Please connect the black end of SATA power cable to the power connector on each drive. Then connect the white end of SATA power cable to the power connector of the power supply. Serial ATA (SATA) Power Cable (Optional) connect to the SATA HDD power connector connect to the power supply 18 USB 2.0 Headers (9-pin USB6_7) (see p.10 No. 16) 1 USB_PWR P-7 P+7 GND DUMMY GND P+6 P-6 USB_PWR 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.10 No. 14) USB_PWR P-5 P+5 GND DUMMY 1 GND P+4 P-4 USB_PWR Print Port Header (25-pin LPT1) (see p.10 No. 18) 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.10 No. 20) CD1 CD-L GND GND CD-R 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.10, No. 21) 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. 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. 19 E.

Enter BIOS Setup Utility. Enter Advanced Settings, and then select Chipset Configuration. Set the Front Panel Control option from [Auto] to [Enabled]. F. Enter Windows system.

Click the icon on the lower right hand taskbar to enter Realtek HD Audio Manager. For Windows® 2000 / XP / XP 64-bit OS: Click "Audio I/O", select "Connector Settings", choose "Disable front panel jack detection", and save the change by clicking "OK". For Windows® Vista™ / Vista™ 64-bit OS: Click the right-top "Folder" icon, choose "Disable front panel jack detection", and save the change by clicking "OK". G. To activate the front mic.

For Windows® 2000 / XP / XP 64-bit OS: Please select "Front Mic" as default record device. If you want to hear your voice through front mic, please deselect "Mute" icon in "Front Mic" of "Playback" portion. For Windows® Vista™ / Vista™ 64-bit OS: Go to the "Front Mic" Tab in the Realtek Control panel. Click "Set Default Device" to make the Front Mic as the default record device. System Panel Header (9-pin PANEL1) (see p.10 No. 17) 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.10 No. 15) 1 SPEAKER DUMMY DUMMY +5V Please connect the chassis speaker to this header.

Chassis Fan Connector (3-pin CHA_FAN1) (see p.10 No. 12) GND +12V CHA_FAN_SPEED Please connect a chassis fan cable to this connector and match the black wire to the ground pin. Please connect the CPU fan cable to this connector and match the black wire to the ground pin. CPU Fan Connector (4-pin CPU_FAN1) (see p.10 No. 2) 4321 GND +12V CPU_FAN_SPEED FAN_SPEED_CONTROL 20 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.10 No.

4) 12 24 Please connect an ATX power supply to this connector. 1 13 12 24 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 1 13 ATX 12V Power Connector (4-pin ATX12V1) (see p.10 No.

25) 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. 21 2.8 SAT 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. @@@@ @@@@ @@@@ @@@@ 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. 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 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. 24 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. SATA power cable 1x4-pin power connector (White) 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.



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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. 25.2.1.2 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. 2.1.3 Installing Windows® 2000 / XP / XP 64-bit / Vista™ Without Functions / Vista™ 64-bit Without RAID Functions If you just want to install Windows® 2000, Windows® XP, Windows® XP 64-bit, Windows® Vista™ or Windows® Vista™ 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® 2000, Windows® XP, Windows® XP 64-bit, Windows® Vista™ or Windows® Vista™ 64-bit on your system directly. 2.1.4 Installing Windows® 2000 / XP / XP 64-bit / Vista™ / Vista™ 64-bit With RAID Functions With Functions If you want to install Windows® 2000, Windows® XP, Windows® XP 64-bit, Windows® Vista™ or Windows® Vista™ 64-bit OS on your SATA / SATAII HDDs with RAID functions, please follow below procedures according to the OS you install. Before installing Windows® 2000 to your system, your Windows® 2000 optical disk is supposed to include SP4. If there is no SP4 included in your disk, please visit the below website for proper procedures of making a SP4 disk: http://www.microsoft.com/Windows2000/downloads/servicepacks/sp4/spdeploy.htm#the_integrated_installation_fm

2.14.1 Installing Windows® 2000 / XP / XP 64-bit With RAID Functions Functions If you want to install Windows® 2000, 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 IDE 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. (There are two ASRock Support CD in the motherboard gift box pack, please choose the one for Windows® 2000 / XP / XP 64-bit.) 26 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 [Y/N]?", press <Y>. 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 IDE 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® 2000 / Windows® XP / Windows® XP 64-bit OS on your system. You can start to install Windows® 2000 / 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. NOTE. If you install Windows® 2000 / 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 B. 2.14.2 Installing Windows® Vista™ / Vista™ 64-bit With Functions RAID Functions If you want to install Windows® Vista™ or Windows® Vista™ 64-bit on your SATA / SATAII HDDs with RAID functions, please follow below steps. 27 STEP 1: Set Up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen IDE 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® Vista™ / Windows® Vista™ 64-bit OS on your system. Insert the Windows® Vista™ / Windows® Vista™ 64-bit optical disk into the optical drive to boot your system, and follow the instruction to install Windows® Vista™ / Windows® Vista™ 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: (There are two ASRock Support CD in the motherboard gift box pack, please choose the one for Windows® Vista™ / Vista™ 64-bit.) .. \I386\ Vista (For Windows® Vista™ OS) .

.. \AMD64\ Vista64 (For Windows® Vista™ 64-bit OS) After that, please insert Windows® Vista™ / Windows® Vista™ 64-bit optical disk into the optical drive again to continue the installation. NOTE. If you install Windows® Vista™ / Windows® 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 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].



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1.

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. 28 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> 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 Smart To load the BIOS according to your requirements 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. 29 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. BIOS SETUP UTILITY Advanced H/W Monitor Boot Main Smart Security Exit System Overview System Time System Date [14:00:09] [Mon 02/16/2009] : N68-S P1.

00 : AMD Phenom (tm) II X4 940 Processor (64bit) Processor Speed : 3000MHz Microcode Update : 100F42/1000086 L1 Cache Size : 512KB L2 Cache Size : 2048KB L3 Cache Size : 6144KB BIOS Version Processor Type Total Memory DDRIII DDRII2 : 2048MB with 256MB shared memory Single-Channel Memory Mode : 2048MB/266MHz (DDRII533) : None Use [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time. +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. 30 3 . 3 Smart Screen In the Smart screen, you can load the BIOS setup according to your requirements. BIOS SETUP UTILITY H/W Monitor Boot Main Smart Advanced Security Exit Smart Settings Save Changes and Exit Load Load Load Load BIOS Defaults Performance Setup Default (IDE/SATA) Performance Setup RAID Mode Power Saving Setup Default Exit system setup after saving the changes. F10 key can be used for this operation. 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. 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. 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. 31 3.4 Advanced Screen In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, IDE Configuration, PCIPnP Configuration, Floppy Configuration, SuperIO Configuration, and USB Configuration. BIOS SETUP UTILITY H/W Monitor Boot Main Smart Advanced Security Exit Options for CPU Advanced Settings WARNING : Setting wrong values in below sections may cause system to malfunction. CPU Configuration Chipset Configuration ACPI Configuration IDE Configuration PCIPnP Configuration Floppy Configuration SuperIO Configuration USB Configuration 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. Setting wrong values in this section may cause the system to malfunction. 3 .

4 . 1 CPU Configuration BIOS SETUP UTILITY Advanced CPU Configuration AM2 Boost Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) CPU/LDT Spread Spectrum PCIE Spread Spectrum SATA Spread Spectrum Boot Failure Guard Cool' n' Quiet Secure Virtual Machine Enhanced Halt State L3 Cache Allocation Processor Maximum Frequency Processor Maximum Voltage Multiplier/Voltage Change Memory Clock [Disabled] [Auto] [200] [100] [Enabled] [Enabled] [Enabled] [Enabled] [Auto] [Enabled] [Disabled] [BSP Only] x11.5 2300 MHz 1.300 V [Auto] [Auto] If AUTO, multiplier and voltage will be left at the rated frequency/voltage. If Manual, multiplier and voltage will be set based on User Selection in Setup. +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 13 on page 9 for details. Overclock Mode Use this to select Overclock Mode. The default value is [Auto].



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Configuration options: [Auto], [CPU, PCIE, Sync.], [CPU, PCIE, Async.

] and [Optimized]. 32 CPU Frequency (MHz) Use this option to adjust CPU frequency. PCIE Frequency (MHz) Use this option to adjust PCIE frequency.

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]. Boot Failure Guard Enable or disable the feature of Boot Failure Guard. 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]. 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.

33 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 Advanced CPU Configuration AM2 Boost Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) CPU/LDT Spread Spectrum PCIE Spread Spectrum SATA Spread Spectrum Boot Failure Guard Cool 'n' Quiet Secure Virtual Machine Enhanced Halt State L3 Cache Allocation Processor Maximum Frequency Processor Maximum Voltage Multiplier/Voltage Change Processor Frequency [Disabled] [Auto] [200] [100] [Enabled] [Enabled] [Enabled] [Enabled] [Auto] [Enabled] [Disabled] [BSP Only] x11.

5 2300 MHz 1.300 V [Manual] [x9.0 1800 MHz] If AUTO, multiplier and voltage will be left at the rated frequency/voltage. If Manual, multiplier and voltage will be set based on User Selection in Setup. +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. 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. 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. Memory Clock This item can be set by the code using [Auto]. You can set one of the standard values as listed: [200MHz (DDRII400)], [266MHz (DDRII533)], [333MHz (DDRII667)] and [400MHz (DDRII800)].

If you adopt Phenom CPU, there is one more option: [533MHz (DDRII1066)]. 34 Flexibility Option The default value of this option is [Disabled]. It will allow better tolerance for memory compatibility when it is set to [Enabled]. 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]. TRTP Use this to adjust TRTP values. Configuration options: [Auto], [2-4CLK] and [3-5CLK]. The default value is [Auto]. TRAS Use this to adjust TRAS values. Configuration options: [Auto], [5CLK] to [18CLK]. The default value is [Auto]. TRRD Use this to adjust TRRD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK] and [5CLK].

The default value is [Auto]. TRC Use this to adjust TRC values. Configuration options: [11CLK] to [26CLK]. 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]. TWTR Use this to adjust TWTR values. Configuration options: [Auto], [1CLK], [2CLK] and [3CLK]. 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]. 35 TRDRD This option appears only when you adopt AM2 CPU. Use this to adjust TRWTTD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK] and [5CLK]. 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]. Addr/Cmd Fine Delay Use this to adjust values for Addr/Cmd Fine Delay feature.

Configuration options: [Auto], [No Delay], [1/64CLK] to [31/64CLK]. The default value is [Auto]. CS/ODT Fine Delay Use this to adjust values for CS/ODT Fine Delay feature.



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Configuration options: [Auto], [No Delay], [1/64CLK] to [31/64CLK]. The default value is [Auto]. Bank Interleaving Interleaving allows memory accesses to be spread out over banks on the same node, or across nodes, decreasing access contention. 3 . 4 . 2 Chipset Configuration BIOS SETUP UTILITY Advanced Chipset Settings Onboard LAN Onboard HD Audio Front Panel Share Memory Primary Graphics Adapter HT Bus Speed HT Bus Width DRAM Voltage Chipset Voltage CPU Thermal Throttling [Enabled] [Auto] [Auto] [Auto] [PCI] [Auto] [Auto] [Auto] [Auto] [Enabled] +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit To set DRAM Voltage. 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]. 36 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]. HT Bus Speed This feature allows you selecting Hyper-Transport bus speed. Configuration options: [Auto], [200 MHz], [400 MHz], [600 MHz], [800 MHz] and [1000 MHz]. HT Bus Width This feature allows you selecting Hyper-Transport bus width. Configuration options: [Auto], [8 Bit] and [16 Bit]. DRAM Voltage Use this to select DRAM voltage. Configuration options: [Auto], [1.80V], [1.85V], [1.

90V], [1.95V], [2.05V], [2.10V], [2.15V] and [2.20V]. The default value is [Auto]. Chipset Voltage Use this to select chipset voltage. Configuration options: [Auto], [1.25V], [1.

30V], [1.35V] and [1.40V]. The default value is [Auto]. CPU Thermal Throttle Use this to enable CPU internal thermal control mechanism to keep the CPU from overheated.

The default value is [Enabled]. 37 3 . 4 . 3 ACPI Configuration BIOS SETUP UTILITY Advanced ACPI Settings Suspend To RAM 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 [Disabled] [Disabled] [Power Off] [Disabled] [Disabled] [Disabled] [Disabled] [Disabled] [Auto] Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit Select auto-detect or disable the STR feature. +F1 F9 F10 ESC 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. Repost Video on STR Resume This feature allows you to repost video on STR resume. (STR refers to suspend to RAM.) 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. 38 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]. 3 . 4 . 4 IDE Configuration BIOS SETUP UTILITY Advanced IDE 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 ENABLED: enables the integrated IDE Controller. DISABLED: disables the integrated IDE Controller.

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. 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. 39 BIOS SETUP UTILITY Advanced IDE Master Device Vendor Size LBA Mode Block Mode PIO Mode Async DMA Ultra DMA S.M.A.

R.T. :Hard Disk :MAXTOR 6L080J4 :80.0 GB :Supported :16Sectors :4 :MultiWord DMA-2 :Ultra DMA-6 :Supported [Auto] [Auto] [Auto] [Auto] [Auto] [Disabled] [Disabled] Select the type of device connected to the system. Type LBA/Large Mode Block (Multi-Sector Transfer) PIO Mode DMA Mode S.M.A.R.T. 32Bit Data Transfer +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. 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.



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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. 40 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 BIOS SETUP UTILITY Advanced PCI / PnP Settings PCI Latency Timer PCI IDE BusMaster [32] [Enabled] Value in units of PCI clocks for PCI device latency timer register. +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. 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. 41 3 . 4 . 6 Floppy Configuration In this section, you may configure the type of your floppy drive.

BIOS SETUP UTILITY Advanced Floppy Configuration Floppy A [1.44 MB 31 2"] Select the type of floppy drive connected to the system. +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. 3 . 4 .

7 Super IO Configuration BIOS SETUP UTILITY Advanced Configure Super IO Chipset OnBoard Floppy Controller Serial Port Address Parallel Port Address Parallel Port Mode EPP Version ECP Mode DMA Channel Parallel Port IRQ [Enabled] [3F8 / IRQ4] [378] [ECP + EPP] [1.9] [DMA3] [IRQ7] Allow BIOS to Enable or Disable Floppy Controller. +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.

OnBoard Floppy Controller Use this item to enable or disable floppy drive controller. Serial Port Address Use this item to set the address for the onboard serial port or disable it. Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4], [2E8 / IRQ3]. Parallel Port Address Use this item to set the address for the onboard parallel port or disable it. Configuration options: [Disabled], [378], and [278]. 42 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]. 43 3 . 4 . 8 USB Configuration BIOS SETUP UTILITY Advanced USB Configuration USB Controller USB 2.

0 Support Legacy USB Support [Enabled] [Enabled] [BIOS Setup Only] To enable or disable the onboard USB controllers. +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. 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 [BIOS Setup Only].

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. @@@@ @@@@ 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]. 45 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. Main Smart BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit Boot Settings Boot Settings Configuration 1st Boot Device 2nd Boot Device 3rd Boot Device 4th Boot Device Hard Disk Drives Removable Drives CD/DVD Drives [1st Floppy Device] [HDD: PM - HDS722580VL] [CD / DVD: 3S - CD - ROM C] [USB] Configure Settings during System Boot. 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. 3 . 6 . 1 Boot Settings Configuration BIOS SETUP UTILITY Boot Boot Settings Configuration Boot From Onboard LAN Bootup Num-Lock [Disabled] [On] To enable or disable the boot from network 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. 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. 46 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. BIOS SETUP UTILITY Advanced H/W Monitor Boot Main Smart Security Exit Security Settings Supervisor Password User Password : Not Installed : Not Installed Install or Change the password. Change Supervisor Password Change User Password Enter F1 F9 F10 ESC Select Screen Select Item Change General Help Load Defaults Save and Exit Exit v02.



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