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You can read the recommendations in the user guide, the technical guide or the installation guide for ASROCK FM2A55M-VG3. You'll find the answers to all your questions on the ASROCK FM2A55M-VG3 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual ASROCK FM2A55M-VG3
User guide ASROCK FM2A55M-VG3
Operating instructions ASROCK FM2A55M-VG3
Instructions for use ASROCK FM2A55M-VG3
Instruction manual ASROCK FM2A55M-VG3

ASRock

FM2A55M-VG3

User Manual

Version 1.0
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Manual abstract:

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

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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 third-party overclocking tools. Overclocking may affect your system's 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. 7 CAUTION! 1. Whether 1866/1600MHz memory speed is supported depends on the CPU you adopt. If you want to adopt DDR3 1866/1600 memory module on this motherboard, please refer to the memory support list on our website for the compatible memory modules. ASRock website <http://www.asrock.com>

asrock.com 2. Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® 8 / 7 / Vista™. For Windows® 64-bit OS with 64bit CPU, there is no such limitation. You can use ASRock XFast RAM to utilize the memory that Windows® cannot use. 3. For the discrete GPUs which support Dual Graphics technology, please refer to <http://www.amd.com/us/products/technologies/dual-graphics/Pages/dual-graphics.aspx#3> for details.

8 1.3 Unique Features ASRock Extreme Tuning Utility (AXTU) ASRock Extreme Tuning Utility (AXTU) is an all-in-one tool to ne-tune different system functions in a user-friendly interface, which includes Hardware Monitor, Fan Control, Overclocking, OC DNA, IES and XFast RAM. In Hardware Monitor, it shows the major readings of your system. In Fan Control, it shows the fan speed and temperature for you USB2.0 ports support this feature.

ASRock OMG (Online Management Guard) Administrators are able to establish an internet curfew or restrict internet access at specified times via OMG. You may schedule the starting and ending hours of internet access granted to other users. In order to prevent users from bypassing OMG, guest accounts without permission to modify the system time are required. ASRock Internet Flash ASRock Internet Flash searches for available UEFI firmware updates from our servers. In other words, the system can autodetect the latest UEFI from our servers and flash them without entering Windows® OS.

Please note that you must be running on a DHCP configured computer in order to enable this function. ASRock UEFI System Browser ASRock UEFI system browser is a useful tool included in graphical UEFI. It can detect the devices and configurations that users are currently using in their PC. With the UEFI system browser, you can easily examine the current system configuration in UEFI setup. ASRock Dehumidifier Function Users may prevent motherboard damages due to dampness by enabling "Dehumidifier Function". When enabling Dehumidifier Function, the computer will power on automatically to dehumidify the system after entering S4/S5 state. ASRock Easy RAID Installer ASRock Easy RAID Installer can help you to copy the RAID driver from a support CD to your USB storage device. After copying the RAID driver to your USB storage device, please change "SATA Mode" to "RAID", then you can start installing the OS in RAID mode. 11 ASRock Interactive UEFI ASRock Interactive UEFI is a blend of system configuration tools, cool sound effects and stunning visuals. The unprecedented UEFI provides a more attractive interface and brings a lot more amusing.

ASRock Fast Boot With ASRock's exclusive Fast Boot technology, it takes less than 1.5 seconds to logon to Windows® 8 from a cold boot. No more waiting! The speedy boot will completely change your user experience and behavior. ASRock X-Boost Brilliantly designed for combo overclocking, ASRock X-Boost Technology is able to unleash the hidden power of your CPUs. Simply press "X" when turning on the PC, X-Boost will automatically overclock the relative components to get up to 15.77% performance boost! With the smart X-Boost, overclocking CPU can become a near one-button process. ASRock Restart to UEFI Windows® 8 brings the ultimate boot up experience. The lightning boot up speed makes it hard to access the UEFI setup. ASRock Restart to UEFI technology is designed for those requiring frequent UEFI access. It is included in ASRock's exclusive all-in-one AXTU tuning program that allows users to easily enter the UEFI automatically when turning on the PC next time.

Just simply enable this function; the PC will be assured to access the UEFI directly in the very beginning. 12 1.4 Motherboard Layout 1 2 3 4 5 6 C11 22 1 ATXPWR1 CPU_FAN1 DDR3 SATA_4 USB 2.0 T: USB0 B: USB1 DDR3_A1 (64 bit, 240-pin module) DDR3_B1 (64 bit, 240-pin module) FSB800 SATA_3 USB 2.0 T: USB2 B: USB3 LAN Fast RAM SATA_2 X CHA_FAN1 Fast LAN SATA_1 X PS2 Keyboard PS2 Mouse ATX12V1 VGA1 SOCKET FM2 7 RJ-45 LAN 8 9 Top: LINE IN Bottom: MIC IN Center: FRONT 10 21 20 1 HD_AUDIO1 FM2A55M-VG3 RoHS CMOS BATTERY PCIE1 11 AMD A55 FCH (Hudson-D2) Chipset AUDIO CODEC 19 18 1 CLRCMOS1 Super I/O 12 64Mb BIOS 13 1 USB6_7 1 USB4_5 X 17 PC11 SPEAKER1 PANEL 1 PLED PWRBTN Fast USB 1 1 HDLED RESET 16 15 14 1 2 3 4 5 6 7 8 9 10 11 ATX 12V Power Connector (ATX12V1) CPU Fan Connector (CPU_FAN1) ATX Power Connector (ATXPWR1) CPU Socket CPU Heatsink Retention Module 2 x 240-pin DDR3 DIMM Slots (Dual Channel: DDR3_A1, DDR3_B1) SATA2 Connector (SATA_4) SATA2 Connector (SATA_3) SATA2 Connector (SATA_2) SATA2 Connector (SATA_1) PCI Express 2.

0 x16 Slot (PCIE1) 12 13 14 15 16 17 18 19 20 21 22 Southbridge Controller SPI Flash Memory (64Mb) System Panel Header (PANEL1) Chassis Speaker Header (SPEAKER1) PCI Slot (PC11) USB 2.0 Header (USB4_5) USB 2.0 Header (USB6_7) Clear CMOS Jumper (CLRCMOS1) Front Panel Audio Header (HD_AUDIO1) Chassis Fan Connector (CHA_FAN1) Chassis Intrusion Header (C11) 13 1.5 I/O Panel 1 2 3 4 5 9 1 * 2 3 ** 4 5 8 7 6 USB 2.0 Ports (USB23) USB 2.

0 Ports (USB01) D-Sub Port (VGA1) PS/2 Keyboard Port (Purple) PS/2 Mouse Port (Green) 6 LAN RJ-45 Port 7 Line In (Light Blue) 8 Front Speaker (Lime) 9 Microphone (Pink) * There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications. LAN Port LED Indications Status SPEED LED Description Activity/Link LED Status Description ACT/LINK SPEED LED LED Off No Link Blinking Data Activity On Link 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. Please refer to below steps for the software setting of Multi-Streaming. 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".



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Then reboot your system. 14 2. Installation This is a Micro ATX form factor 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.

15 2.1 CPU Installation Step 1. Unlock the socket by lifting the lever up to a 90 degree angle. Step 2. Position the CPU directly above the socket such that the CPU corner with the golden triangle matches the socket corner with a small triangle.

Step 3. Carefully insert the CPU into the socket until it fits in place. The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins. 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: STEP 4: Match The CPU Golden Triangle Push Down And Lock To The Socket Corner Small The Socket Lever Triangle 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 13, No. 2). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink. 16 2.3 Installation of Memory Modules (DIMM) This motherboard provides two 240-pin DDR3 (Double Data Rate 3) DIMM slots, and supports Dual Channel Memory Technology. For dual channel configuration, you always need to install two identical (the same brand, speed, size and chiptype) memory modules in the DDR3 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 or DDR2 memory module into DDR3 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. Step 1. Unlock a DIMM slot by pressing the retaining clips outward. Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot. 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 is 1 PCI slot and 1 PCI Express slot on this motherboard. PCI Slots: PCI slots are used to install expansion cards that have the 32-bit PCI interface. PCIE Slots: PCIE1 (PCIE x16 slot) is used for PCI Express 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 system unit cover (if your motherboard is already installed in a chassis). 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. Replace the system cover. Step 2. Step 3. Step 4. Step 5. Step 6. 18 2.

5 AMD Dual Graphics Operation Guide This motherboard supports AMD Dual Graphics feature. AMD Dual Graphics brings multi-GPU performance capabilities by enabling an AMD A55 FCH (Hudson-D2) integrated graphics processor and a discrete graphics processor to operate simultaneously with combined output to a single display for blisteringly-fast frame rates. Currently, AMD Dual Graphics Technology is only supported with Windows® 8 / 7 OS, and is not available with Windows® Vista™ OS. What does an AMD Dual Graphics system include? An AMD Dual Graphics system includes an AMD Radeon HD 7000 graphics processor and a motherboard based on an AMD A55 FCH (Hudson-D2) integrated chipset, all operating in a Windows® 8 / 7 environment. Please refer to AMD website for further information.

Enjoy the benefit of AMD Dual Graphics Step 1. Please keep the default UEFI setting of "Dual Graphics" option on [Auto]. Step 2. Install one AMD RADEON PCI Express graphics card to PCIE1 slot. Step 3.

Connect the monitor cable to the onboard VGA port. Please be noted that the current VGA driver / VBIOS can allow Dual Graphics output from onboard display only. For any future update, please refer to our website for further information. Step 4. Boot into OS. Please remove the AMD driver if you have any VGA driver installed in your system. Step 5. Install the onboard VGA driver from our support CD to your system for both the onboard VGA and the discrete graphics card. Step 6. Restart your computer.

Right-click the desktop. Click "AMD VISION Engine Control Center" to enter AMD VISION Engine Control Center. 19 Step 7. You can also click "AMD VISION Engine Control Center" on your Windows® taskbar to enter AMD VISION Engine Control Center. AMD VISION Engine Control Center Step 8. In AMD VISION Engine Control Center, please choose "Performance". Click "AMD CrossFire™". Step 9. Click "Enable CrossFire™" and click "Apply" to save your change.



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28 2.11 SATA2 HDD Hot Plug Feature and Operation Guide This motherboard supports Hot Plug feature for SATA2 HDD in RAID / AHCI mode. Please read below operation guide of Hot Plug feature carefully. Before you process the SATA2 HDD Hot Plug, please check below cable accessories from the motherboard gift box pack. A. 7-pin SATA data cable B. SATA power cable with SATA 15-pin power connector interface A.

SATA data cable (Red) B. SATA power cable SATA 7-pin connector The SATA 15-pin power connector (Black) connect to SATA2 HDD Caution 1x4-pin conventional power connector (White) connect to power supply 1. Without SATA 15-pin power connector interface, the SATA2 Hot Plug cannot be processed.

2. Even some SATA2 HDDs provide both SATA 15-pin power connector and IDE 1x4-pin conventional power connector interfaces, the IDE 1x4-pin conventional power connector interface is definitely not able to support Hot Plug and will cause the HDD damage and data loss.

Points of attention, before you process the Hot Plug: 1. Below operation procedure is designed only for our motherboard, which supports SATA2 HDD Hot Plug. * The SATA2 Hot Plug feature might not be supported by the chipset because of its limitation, the SATA2 Hot Plug support information of our motherboard is indicated in the product spec on our website: www.asrock.com 2.

Make sure your SATA2 HDD can support Hot Plug function from your dealer or HDD user manual. The SATA2 HDD, which cannot support Hot Plug function, will be damaged under the Hot Plug operation. 3. Please make sure the SATA2 driver is installed into system properly. The latest SATA2 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.

29 How to Hot Plug a SATA2 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 SATA2 HDD damage and data loss. Step 1 Please connect SATA power cable 1x4-pin Step 2 Connect SATA data cable to end (White) to the power supply 1x4-pin the motherboard's SATA2 cable. connector. SATA power cable 1x4-pin power connector (White) Step 3 Connect SATA 15-pin power cable connector (Black) end to SATA2 HDD. Step 4 Connect SATA data cable to the SATA2 HDD. How to Hot Unplug a SATA2 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 SATA2 HDD damage and data loss. Step 1 Unplug SATA data cable from SATA2 HDD side. Step 2 Unplug SATA 15-pin power cable connector (Black) from SATA2 HDD side. 30 2.12 Driver Installation Guide To install the drivers to your system, please insert the support CD to your optical drive first. Then, the drivers compatible to your system can be auto-detected and listed on the support CD driver page. Please follow the order from up to bottom side to install those required drivers. Therefore, the drivers you install can work properly. 2.13 Installing Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit With RAID Functions If you want to install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit on a RAID disk composed of 2 or more SATA2 HDDs with RAID functions, please follow below steps.

STEP 1: Set up UEFI. A. Enter UEFI SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA 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® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system. Use the option "Easy RAID Installer" in UEFI setup utility to copy the RAID drivers to your USB flash disk. Insert the Windows® OS optical disk into the optical drive to boot your system, and follow the instruction to install OS on your system. When you see "Where do you want to install Windows?" page, please insert your USB flash disk to your system, and click the "Load Driver" button to load the RAID drivers. After that, you can continue the OS installation. 31 2.

14 Installing Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit Without RAID Functions If you want to install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit on your SATA2 HDDs without RAID functions, please follow below steps. Using SATA2 HDDs with NCQ and Hot Plug functions (AHCI mode) STEP 1: Set up UEFI. A. Enter UEFI SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Mode" option to [AHCI]. STEP 2: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system. Using SATA2 HDDs without NCQ and Hot Plug functions (IDE mode) STEP 1: Set up UEFI. A. Enter UEFI SETUP UTILITY Advanced screen Storage Configuration.

B. Set the "SATA Mode" option to [IDE]. STEP 2: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system. 32 3. UEFI SETUP UTILITY 3.

1 Introduction ASRock Interactive UEFI is a blend of system configuration tools, cool sound effects and stunning visuals. Not only will it make BIOS setup less difficult but also a lot more amusing. This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer.

Please press <F2> or <Delete> during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherwise, POST will continue with its test routines. If you wish to enter the UEFI 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 UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen. 3.1.1 UEFI Menu

Bar The top of the screen has a menu bar with the following selections: Main For setting system time/date information OC Tweaker For overclocking configurations Advanced For advanced system configurations Tool Useful tools H/W Monitor Displays current hardware status Boot For configuring boot settings and boot priority Security For security settings Exit Exit the current screen or the UEFI SETUP UTILITY Use < > key or < > key to choose among the selections on the menu bar, and use < > key or < > key to move the cursor up or down to select items, then press <Enter> to get into the sub screen.



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You can also navigate with a mouse. 33 3.1.

2 Navigation Keys Please check the following table for the function description of each navigation key. Navigation Key(s) // + / - <Tab> <Enter> <PGUP> <PGDN> <HOME> <END> <F1> <F7> <F9> <F10> <F12> <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 Switch to next function To bring up the selected screen Go to the previous page Go to the next page Go to the top of the screen Go to the bottom of the screen To display the General Help Screen Discard changes and exit the UEFI SETUP UTILITY Load optimal default values for all the settings Save changes and exit the UEFI SETUP UTILITY Print screen Jump to the Exit Screen or exit the current screen

3.2 Main Screen When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview. Active Page on Entry This allows you to select the default page when entering UEFI setup utility. 34 3.3 OC Tweaker Screen In the OC Tweaker screen, you can set up overclocking features. EZ OC Mode You can use this option to adjust EZ overclocking setting. Please note that overcloing may cause damage to your components and motherboard. It should be done at your own risk and expense. CPU Configuration Overclock Mode Use this to select Overclock Mode.

Configuration options: [Auto] and [Manual]. The default value is [Auto]. Spread Spectrum This item should always be [Auto] for better system stability. AMD Turbo Core Technology This item appears only when the processor you adopt supports this feature. Use this to select enable or disable AMD Turbo Core Technology.

Configuration options: [Enabled] and [Disabled]. The default value is [Enabled]. AMD Application power Management Application Power Management (APM) ensures that average power consumption over a thermally significant time period remains at or below the TDP for the CPU mode being used. If [Enabled] is selected, the power consumption is reduced when overclocking. Processor Maximum Frequency It will display Processor Maximum Frequency for reference.

Processor Maximum Voltage It will display Processor Maximum Voltage for reference. 35 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. Boost Frequency Multiplier For safety and system stability, it is not recommended to adjust the value of this item. CPU Frequency Multiplier For safety and system stability, it is not recommended to adjust the value of this item. CPU Voltage It allows you to adjust the value of CPU voltage. However, for safety and system stability, it is not recommended to adjust the value of this item. CPU Voltage Offset It allows you to adjust the value of CPU voltage offset. However, for safety and system stability, it is not recommended to adjust the value of this item.

CPU NB Frequency Multiplier For safety and system stability, it is not recommended to adjust the value of this item. CPU NB/GFX Voltage It allows you to adjust the value of CPU NB/GFX voltage. However, for safety and system stability, it is not recommended to adjust the value of this item. APU Load-line Calibration APU Load-line Calibration helps prevent APU voltage droop when the system is under heavy load. GFX Engine Clock Use this to adjust GFX Engine Clock. The default value is [Auto]. GFX Engine Voltage Use this to adjust GFX Engine voltage. The default value is [Auto]. DRAM Timing Configuration DRAM Frequency If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically. 36 DRAM Timing Control DRAM Slot Use this item to view SPD data.

DRAM Timing Control Use this item to control DRAM timing. 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. Channel Interleaving It allows you to enable Channel Memory Interleaving. Configuration options: [Disabled], [Auto].

The default value is [Auto]. Voltage Configuration DRAM Voltage Use this to select DRAM Voltage. The default value is [Auto]. SB Voltage Use this to select SB Voltage. The default value is [Auto].

37 3.4 Advanced Screen In this section, you may set the configurations for the following items: CPU Configuration, Nouth Bridge Configuration, South Bridge Configuration, Storage Configuration, ACPI Configuration and USB Configuration. Setting wrong values in this section may cause the system to malfunction. 38 3.4.1 CPU Configuration Core C6 Mode Use this item to enable or disable Core C6 mode. The default value is [Enabled]. Package C6 Mode This item appears only when you enable the item "Core C6 Mode". Use this item to enable or disable Package C6 mode. The default value is [Disabled].

Cool 'n' Quiet Use this item to enable or disable AMD's Cool 'n' Quiet™ technology. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled]. If you install Windows® 8 / 7 / Vista™ and want to enable this function, please set this item to [Enabled]. Please note that enabling this function may reduce CPU voltage and memory frequency, and lead to system stability or compatibility issue with some memory modules or power supplies. Please set this item to [Disable] if above issue occurs. SVM 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]. CPU Thermal Throttle Use this item to enable CPU internal thermal control mechanism to keep the CPU from overheated. The default value is [Auto]. 39 3.4.2 North Bridge Configuration 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 Express]. Configuration options: [Onboard], [PCI] and [PCI Express]. Share Memory This allows you to set the share memory feature. The default value is [Auto]. Configuration options: [Auto], [32MB], [64MB], [128MB], [256MB] [512MB], [1GB] and [2GB].

Dual Graphics This item appears only when you install AMD RADEON graphics card on this motherboard. Use this to enable or disable Dual Graphics feature. If you enable this option, the primary monitor will be onboard VGA. If you select [Auto], Dual Graphics function will be automatically enabled when you install AMD RADEON graphics card. The default value is [Auto]. 40 3.4.3 South Bridge Configuration Onboard HD Audio Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature.



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

Onboard LAN This allows you to enable or disable the onboard LAN feature. **Good Night LED** Enable this option to turn off Power LED when the system is power on. The keyboard LED will also be turned off in S1, S3 and S4 state. The default value is [Auto]. 41 **3.4.4 Storage Configuration SATA Controller** Use this item to enable or disable the "SATA Controller" feature. **SATA Mode** Use this item to adjust SATA Mode. The default value of this option is [AHCI Mode]. Configuration options: [AHCI Mode], [RAID Mode] and [IDE Mode].

Easy RAID Installer Easy RAID Installer can help you to copy the RAID driver from a support CD to your USB storage device. After copying the RAID driver to your USB storage device, please change "SATA Mode" to "RAID", then you can start installing the OS in RAID mode. **AMD AHCI BIOS ROM** Use this item to enable or disable AMD AHCI BIOS ROM. The default value of this option is [Disabled]. **Hard Disk 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]. 42 **3.4.5 ACPI Configuration Suspend to RAM** Use this item to select whether to auto-detect or disable the Suspend-toRAM feature. Select [Auto] will enable this feature if the OS supports it.

Check Ready Bit Use this item to enable or disable the feature Check Ready Bit. **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. **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. **PCI Devices Power On** Use this item to enable or disable PCI devices 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. **USB Keyboard/Remote Power On** Use this item to enable or disable USB Keyboard/Remote to power on the system. 43 **ACPI HPET table** Use this item to enable or disable ACPI HPET Table.

The default value is [Enabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® certification. **CSM** Please disable CSM when you enable Fast Boot option. The default value is [Enabled]. 44 3.

4.6 USB Configuration USB 2.0 Controller Use this item to enable or disable the use of USB 2.0 controller. **Legacy USB Support** Use this option to select legacy support for USB devices.

There are four configuration options: [Enabled], [Auto], [Disabled] and [UEFI Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options: [Enabled] - Enables support for legacy USB. [Auto] - Enables legacy support if USB devices are connected. [Disabled] - USB devices are not allowed to use under legacy OS and UEFI setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS. [UEFI Setup Only] - USB devices are allowed to use only under UEFI setup and Windows / Linux OS. 45 3.5

Tool Sound Effect Enable or disable sound effects in the setup utility. **System Browser** System Browser can let you easily check your current system configuration in UEFI setup.

OMG(Online Management Guard) Administrators are able to establish an internet curfew or restrict internet access at specified times via OMG. You may schedule the starting and ending hours of internet access granted to other users. In order to prevent users from bypassing OMG, guest accounts without permission to modify the system time are required. **UEFI Update Utility Instant Flash** Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows®. Just save the new UEFI file to your USB flash drive, floppy disk or hard drive and launch this tool, then you can update your UEFI 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 Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after the UEFI update process is completed. 46 **Internet Flash** Internet Flash searches for available UEFI firmware updates from our servers.

In other words, the system can auto-detect the latest UEFI from our servers and flash them without entering Windows OS. Please note that you must be running on a DHCP configured computer in order to enable this function. **Network Configuration Internet Setting** Use this item to set up the internet connection mode. Configuration options: [DHCP (Auto IP)] and [PPPOE]. **UEFI Download Server** Use this item to select UEFI firmware download server for Internet Flash.

Configuration options: [Asia], [Europe], [USA] and [China]. **Dehumidifier Function** Users may prevent motherboard damages due to dampness by enabling "Dehumidifier Function". When enabling Dehumidifier Function, the computer will power on automatically to dehumidify the system after entering S4/S5 state. **Dehumidifier Period** This allows users to configure the period of time until the computer powers on and enables "Dehumidifier" after entering S4/S5 state. **Dehumidifier Duration** This allows users to configure the duration of the dehumidifying process before it returns to S4/S5 state.

Dehumidifier CPU Fan Setting Use this setting to configure CPU fan speed while "Dehumidifier" is enabled. 47 **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. 48 **3.6 Hardware Health Event Monitoring Screen** In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage. **CPU Fan 1 Setting** This allows you to set the CPU fan 1 speed. Configuration options: [Full On] and [Automatic Mode]. The default is value [Full On]. **Chassis Fan 1 Setting** This allows you to set the chassis fan 1 speed. Configuration options: [Full On], [Manual Mode] and [Automatic Mode]. The default is value [Full On].

Over Temperature Protection Use this item to enable or disable Over Temperature Protection. The default value is [Enabled]. **Case Open Feature** This allows you to enable or disable case open detection feature.



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The default is value [Enabled]. Clear Status This option appears only when the case open has been detected. Use this option to keep or clear the record of previous chassis intrusion status. 49 3.7 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. Fast Boot Fast Boot minimizes your computer's boot time. There are three configuration options: [Disabled], [Fast] and [Ultra Fast].

The default value is [Disabled]. Please refer to below descriptions for the details of these three options: [Disabled] - Disable Fast Boot. [Fast] - The only restriction is you may not boot by using an USB flash drive. [Ultra Fast] - There are a few restrictions. 1. Only supports Windows® 8 UEFI operating system. 2. You will not be able to enter BIOS Setup (Clear CMOS or run utility in Windows® to enter BIOS Setup). 3. If you are using an external graphics card, the VBIOS must support UEFI GOP in order to boot.

Boot From Onboard LAN Use this item to enable or disable the Boot From Onboard LAN feature. Setup Prompt Timeout This shows the number of seconds to wait for setup activation key. Bootup Num-Lock If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up. 50 Full Screen Logo Use this item to enable or disable OEM Logo. The default value is [Enabled]. AddOn ROM Display Use this option to adjust AddOn ROM Display. If you enable the option "Full Screen Logo" but you want to see the AddOn ROM information when the system boots, please select [Enabled]. Configuration options: [Enabled] and [Disabled]. The default value is [Enabled]. Boot Failure Guard Enable or disable the feature of Boot Failure Guard.

Boot Failure Guard Count Enable or disable the feature of Boot Failure Guard Count. 51 3.8 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. Secure Boot Use this to enable or disable Secure Boot. The default value is [Disabled]. 52 3.9 Exit Screen Save Changes and Exit When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the UEFI SETUP UTILITY. Discard Changes and Exit When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the UEFI SETUP UTILITY without saving any changes. Discard Changes When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load UEFI Defaults Load UEFI default values for all the setup questions. F9 key can be used for this operation. 53 4. Software Support 4.1 Install Operating System This motherboard supports various Microsoft® Windows® operating systems: 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit.

Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information. 4.2 Support CD Information The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features. 4.

2.1 Running The Support CD To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. @@@@Please follow below procedure to install the operating system. 1. @2. Press <F2> or <Delete> at system POST. Set AHCI Mode in UEFI Setup Utility > Advanced > Storage Configuration > SATA Mode. 3. Choose the item "UEFI:xxx" to boot in UEFI Setup Utility > Boot > Boot Option #1.

("xxx" is the device which contains your Windows® installation files. Normally it is an optical drive.) You can also press <F11> to launch boot menu at system POST and choose the item "UEFI:xxx" to boot. 4. Start Windows® installation. 55 Installing OS on a HDD Larger Than 2TB in RAID Mode This motherboard is adopting UEFI BIOS that allows Windows® OS to be installed on a large size HDD (>2TB). Please follow below procedure to install the operating system. 1. @2. Press <F2> or <Delete> at system POST.

Set RAID Mode in UEFI Setup Utility > Advanced > Storage Configuration > SATA Mode. 3. Choose onboard RAID 3TB+ unlocker > UEFI Mode For GPT partition. Press <F10> to save the change and exit. 4.

Press <F11> to enter Boot Manual. Choose UEFI : Built - in EFI Shell. 5. Key in drvcfg, for example you will see below: Drv[4E] Ctrl[B5] Lang[eng] 6. Key in dh [Drv number], for example: key in dh 4E.

56 7. And then key in drvcfg -s [Drv number] [Ctrl number] to enter Raid Utility. For example: key in drvcfg -s 4E B5. 8. Choose Logical Drive Main Menu to set up Raid Drive. 9. Choose Logical Drive Create Menu to create a Raid Drive. 10. Choose Usable Physical Drive List to select Raid HDD. 57 11.

Press Space on keyboard to toggle checkbox. 12. Choose Ld Size setting, and key in the Raid size. 13. After set up Raid size, please click Start to Create. 14. Press <F10> to exit Utility. 15. During reboot, please press <F11> to enter Boot Manual. Choose UEFI: SCSI CD/DVD Drive.

* This option only shows on Windows® 8 64-bit, 7 64-bit and Vista™ 64-bit OS. 58 16. Follow Windows® Installation Guide to install OS. If you install Windows® 8 64-bit / 7 64-bit / Vista™ 64-bit in a large hard disk (ex. Disk volume > 2TB), it may take more time to boot into Windows® or install driver/utilities.

If you encounter this problem, you will need to following instructions to fix this problem. Windows® Vista™ 64-bit: Microsoft® does not provide hotfix for this problem. Below steps are Microsoft® suggested solution: A. Disable System Restore. a.

Type "systempropertiesprotection" in the Start Menu. Then press "Enter". b. De-select Local Disks for System Restore. Then Click "Turn System Restore Off" to confirm. Then Press "Ok". 59 B. Disable "Volume Shadow Copy" service. a. Type "computer management" in the Start Menu, then press "Enter".

b. Go to "Services and Applications>Services"; Then double click "Volume Shadow Copy". c. Set "Startup type" to "Disable" then Click "OK". 60 C. Reboot your system. D. After reboot, please start to install motherboard drivers and utilities. Windows® 8 64-bit / 7 64-bit: A. Please request the hotfix KB2505454 thru this link: <http://support.microsoft.com/kb/2505454/>

B. After installing Windows® 8 64-bit / 7 64-bit, install the hotfix kb2505454. (This may take long time; >30 mins.) C. Reboot your system. (It may take about 5 mins to boot.) D. The Windows® will install this hotfix then reboot by itself.



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