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You can read the recommendations in the user guide, the technical guide or the installation guide for ASROCK 960GC-GS FX. You'll find the answers to all your questions on the ASROCK 960GC-GS FX in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual ASROCK 960GC-GS FX
User guide ASROCK 960GC-GS FX
Operating instructions ASROCK 960GC-GS FX
Instructions for use ASROCK 960GC-GS FX
Instruction manual ASROCK 960GC-GS FX

ASRock

960GC-GS FX

User Manual

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Manual abstract:

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ASRock Website: <http://www.asrock.com>
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chapter 1 and 2 contain introduction of the motherboard and stepby-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD.

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

com If you require technical support related to this motherboard, please visit our website for specific information about the model you are using. www.asrock.com/support/index.asp 1.

1 Package Contents ASRock 960GC-GS FX Motherboard (Micro ATX Form Factor) ASRock 960GC-GS FX Quick Installation Guide ASRock 960GC-GS FX Support CD 2 x Serial ATA (SATA) Data Cables (Optional) 1 x I/O Panel Shield ASRock Reminds You... To get better performance in Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit, it is recommended to set the BIOS option in Storage Configuration to AHCI mode. 5 1.2 Specifications Platform CPU Chipset Memory Expansion Slot Graphics Audio LAN - Micro ATX Form Factor - Support for Socket AM3+ processors (see CAUTION 1) - Support for Socket AM3 processors: AMD Phenom™ II X6 / X4 / X3 / X2 (except 920 / 940) / Athlon II X4 / X3 / X2 / Sempron processors - Support for Socket AM2+ / AM2 processors: AMD Phenom™ FX / Phenom / Athlon 64 FX / Athlon 64 X2 Dual-Core / Athlon X2 Dual-Core / Athlon 64 / Sempron processor - Supports 8-Core CPU - Supports AMD OverDrive™ with ACC feature (Advanced Clock Calibration) - Supports AMD's Cool 'n' Quiet™ Technology - FSB 2600 MHz (5.2 GT/s) - Supports Untied Overclocking Technology - Supports Hyper-Transport 3.0 (HT 3.0) Technology - Northbridge: AMD 760G - Southbridge: AMD SB710 - Dual Channel DDR3/DDR2 Memory Technology - 2 x DDR3 DIMM slots - Support DDR3 1866(OC)/1600(OC)/1333/1066 non-ECC, unbuffered memory (see CAUTION 2) - Max. capacity of system memory: 16GB (see CAUTION 3) - 2 x DDR2 DIMM slots - Supports DDR2 1066/800/667/533 non-ECC, unbuffered memory - Max.

capacity of system memory: 8GB (see CAUTION 3) - 1 x PCI Express 2.0 x16 slot (PCIE2 @ x16 mode) - 1 x PCI Express 2.0 x1 slot - 2 x PCI slots - Integrated AMD Radeon 3000 graphics - DX10 class iGPU, Pixel Shader 4.0 - Max. shared memory 512MB - Supports D-Sub with max. resolution up to 2048x1536 @ 60Hz - 5.1 CH HD Audio (Realtek ALC662 Audio Codec) - PCIE x1 Gigabit LAN 10/100/1000 Mb/s - Realtek RTL8111G - Supports Wake-On-LAN 6 Rear Panel I/O Storage Connector BIOS Feature Support CD Hardware Monitor - Supports LAN Cable Detection - Supports Energy Efficient Ethernet 802.3az - Supports PXE I/O Panel - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x Serial Port: COM1 - 1 x D-Sub Port - 4 x 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 - 6 x SATA2 3.0 Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 10 and JBOD), NCQ, AHCI and Hot Plug - 1 x ATA 133 IDE connector (supports 2 x IDE devices) - 1 x Floppy connector - 1 x IR header - 1 x Print Port header - 1 x Chassis Intrusion header - 1 x CPU Fan connector (4-pin) - 1 x Chassis Fan connector (3-pin) - 1 x Power Fan connector (3-pin) - 1 x 24 pin ATX power connector - 1 x 4 pin 12V power connector - 1 x CD In header - 1 x Front panel audio connector - 1 x SPDIF Out connector - 3 x USB 2.



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0 headers (support 6 USB 2.0 ports) - 16Mb AMI Legal BIOS - Supports "Plug and Play" - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.1 Support - CPU, VCCM, NB Voltage Multi-adjustment - Drivers, Utilities, AntiVirus Software (Trial Version), CyberLink MediaEspresso 6.5 Trial, Google Chrome Browser and Toolbar - CPU/Chassis Temperature Sensing - CPU/Chassis/Power Fan Tachometer - CPU Quiet Fan - CPU/Chassis/Power Fan Multi-Speed Control 7 OS Certifications - CASE OPEN detection - Voltage Monitoring: +12V, +5V, +3.3V, Vcore - Microsoft® Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP Media Center / XP 64-bit compliant - FCC, CE, WHQL - ErP/EuP Ready (ErP/EuP ready power supply is required) * For detailed product information, please visit our website: <http://www.asrock.com> WARNING Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using 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. CAUTION! 1. T PC enters into Standby mode (S1), Suspend to RAM (S3), hibernation mode (S4) or power off (S5). With APP Charger driver installed, you can easily enjoy the marvelous charging experience. ASRock XFast USB ASRock XFast USB can boost USB storage device performance. The performance may depend on the properties of the device. ASRock XFast LAN ASRock XFast LAN provides a faster internet access, which includes the benefits listed below. LAN Application Prioritization: You can configure your application's priority ideally and/or add new programs. Lower Latency in Game: After setting online game's priority higher, it can lower the latency in games.

Traffic Shaping: You can watch Youtube HD videos and download 10 simultaneously. Real-Time Analysis of Your Data: With the status window, you can easily recognize which data streams you are transferring currently. ASRock XFast RAM ASRock XFast RAM fully utilizes the memory space that cannot be used under Windows® OS 32-bit CPU. ASRock XFast RAM shortens the loading time of previously visited websites, making web surfing faster than ever. And it also boosts the speed of Adobe Photoshop 5 times faster. Another advantage of ASRock XFast RAM is that it reduces the frequency of accessing your SSDs or HDDs in order to extend their lifespan. ASRock X-Boost ASRock's X-Boost Technology is a smart auto-overclocking function and is brilliantly designed to unlock 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. * The functionality of "Unlock CPU Cores" feature might vary by different processors.

11 1.4 Motherboard Layout 1 2 3 4 ATX12V1 ATXPWR1 DDR3_A1 (64 bit, 240-pin module) USB 2.0 T: USB2 B: USB3 USB 2.0 T: USB0 B: USB1 Top: RJ-45 DDRII_1 (64 bit, 240-pin module) DDRII_2 (64 bit, 240-pin module) DDR3_B1 (64 bit, 240-pin module) FSB800 FSB800 PS2 Keyboard PS2 Mouse CPU_FAN1 COM1 VGA1 5 AM2/AM3/AM3+ IDE1 LAN 27 Bottom: MIC IN Top: LINE IN AUDIO CODEC Center: FRONT PCIE1 AMD 760G Chipset 960GC-GS FX 6 PWR_FAN1 CLRCMOS1 1 RoHS 7 PCIE2 Super I/O X Fast LAN X Fast USB X Fast RAM CMOS BATTERY PCII 26 CD1 HD_AUDIO1 AMD SB710 Chipset SATAII_2 (PORT 1) SATAII_4 (PORT 3) CHA_FAN1 16Mb BIOS 8 SATAII_6 (PORT 5) PCI2 CII 1 IR1 USB6_7 USB8_9 USB4_5 25 24 1 9 SATAII_5 (PORT 4) 1 1 SPDIF_OUT1 FLOPPY1 PLED PWRBTN SATAII_1 (PORT 0) SATAII_3 (PORT 2) 10 SPEAKER1 1 1 HDLED RESET LPT1 1 1 1 1 PANEL1 23 22 21 20 19 18 17 16 15 14 13 12 11 1 2 3 4 5 6 7 8 9 10 11 12 13 ATX 12V Power Connector (ATX12V1) 2 x 240-pin DDR2 DIMM Slots (Dual Channel: DDRII_1, DDRII_2) 2 x 240-pin DDR3 DIMM Slots (Dual Channel: DDR3_A1, DDR3_B1) CPU Fan Connector (CPU_FAN1) ATX Power Connector (ATXPWR1) Primary IDE Connector (IDE1) Clear CMOS Jumper (CLRCMOS1) Chassis Fan Connector (CHA_FAN1) SATA2 Connector (SATAII_6 (PORT 5)) SATA2 Connector (SATAII_5 (PORT 4)) SATA2 Connector (SATAII_4 (PORT 3)) SATA2 Connector (SATAII_3 (PORT 2)) Chassis Speaker Header (SPEAKER1) 14 15 16 17 18 19 20 21 22 23 24 25 26 27 SATA2 Connector (SATAII_1 (PORT 0)) SATA2 Connector (SATAII_2 (PORT 1)) USB 2.0 Header (USB8_9) USB 2.

0 Header (USB6_7) USB 2.0 Header (USB4_5) System Panel Header (PANEL1) Floppy Connector (FLOPPY1) Infrared Module Header (IR1) Chassis Intrusion Header (CII) Print Port Header (LPT1) SPDIF Out Connector (SPDIF_OUT1) Front Panel Audio Header (HD_AUDIO1) Internal Audio Connector (CD1) Power Fan Connector (PWR_FAN1) 12 1.5 I/O Panel 1 2 3 4 5 10 1 * 2 3 ** 4 5 9 PS/2 Mouse Port (Green) LAN RJ-45 Port Line In (Light Blue) Front Speaker (Lime) Microphone (Pink) 8 6 7 8 9 10 7 6 USB 2.0 Ports (USB01) USB 2.0 Ports (USB23) D-Sub Port COM Port PS/2 Keyboard Port (Purple) * There are two LED next to the LAN port.

Please refer to the table below for the LAN port LED indications. LAN Port LED Indications 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. 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® 8 / 7 / 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. 13 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.



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Pre-installation Precautions Take note of the following precautions before you install motherboard components or change any motherboard settings. Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components. 1. 2. 3.

4. 5. Unplug the power cord from the wall socket before touching any component. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.

Hold components by the edges and do not touch the ICs. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard. 14 2.1 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 12, No. 4). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink. 15 2.3 Installation of Memory Modules (DIMM) This motherboard provides two 240-pin DDR2 (Double Data Rate 2) DIMM slots and two 240-pin DDR3 (Double Data Rate 3) DIMM slots, and supports Dual Channel Memory Technology. For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR2/DDR3 DIMM pair in the slots of the same color.

In other words, you have to install identical DDR2 DIMM pair in Dual Channel (DDR2_1 and DDR2_2; Yellow slots; see p.12 No.2), or identical DDR3 DIMM pair in Dual Channel (DDR3_A1 and DDR3_B1; Blue slots; see p.12 No.3), so that Dual Channel Memory Technology can be activated.

You may refer to the Dual Channel Memory Configuration Table below. Dual Channel DDR2 Memory Configurations (DS: Double Side, SS: Single Side) DDR2_1 (Yellow Slot) 2 memory modules SS 2 memory modules DS DDR2_2 (Yellow Slot) SS DS Dual Channel DDR3 Memory Configurations (DS: Double Side, SS: Single Side) DDR3_A1 (Black Slot) 2 memory modules SS 2 memory modules DS DDR3_B1 (Black Slot) SS DS 1. If you want to install two memory modules, for optimal compatibility and reliability, it is recommended to install them in the slots of the same color. In other words, install them in the set of black slots (DDR3_A1 and DDR3_B1), or in the set of yellow slots (DDR2_1 and DDR2_2). 2.

If only one memory module is installed in the DIMM slot on this motherboard, it is unable to activate the Dual Channel Memory Technology. 3. It is not allowed to install a DDR3 memory module into DDR2 slot or install a DDR2 memory module into DDR3 slot; otherwise, this motherboard and DIMM may be damaged. 4. DDR2 and DDR3 memory modules cannot be installed on this motherboard at the same time. 5. DDR3 memory module is only supported by installing AM3/AM3+ CPU. DDR2 memory module is only supported by installing AM2/AM2+/AM3 CPU. 16 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 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.

PCI Express Slots: PCIE1 (PCIE x1 slot) is used for PCI Express x1 lane width graphics cards. PCIE2 (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 Multi Monitor Feature This motherboard supports multi monitor feature. With the internal VGA output support 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 surround display environment: 1.

Install the PCI Express VGA cards on PCIE2 slot. Please refer to page 18 for proper expansion card installation procedures for details. 2. Connect D-Sub monitor cable to VGA port on the I/O panel. And connect other monitor cables to the corresponding connectors of the add-on PCI Express VGA cards on PCIE2 slot. VGA port 3. Boot your system. Press <F2> or to enter BIOS setup. Enter "Share Memory" option to adjust the memory capability to [32MB], [64MB], [128MB] [256MB] or [512MB] to enable the function of VGA. 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 VGA function when the add-on VGA card is inserted to this motherboard.



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4. Install the onboard VGA driver and the add-on PCI Express VGA card driver to your system. If you have installed the drivers already, there is no need to install them again. 5.

Set up a multi-monitor display. For Windows® XP / XP 64-bit OS: Right click the desktop, choose "Properties", and select the "Settings" tab so that you can adjust the parameters of the multi-monitor according to the steps below. A. Click the "Identify" button to display a large number on each monitor. B. Right-click the display icon in the Display Properties dialog that you wish to be your primary monitor, and then select "Primary". When you use multiple monitors with your card, one monitor will always be Primary, and all additional monitors will be designated as Secondary. C. Select the display icon identified by the number 2. 19 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® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS: Right click the desktop, choose "Personalize", and select the "Display Settings" tab so that you can adjust the parameters of the multi-monitor according to the steps below. A. Click the number "2" icon. B. Click the items "This is my main monitor" and "Extend the desktop onto this monitor". C. Click "OK" to save your change.

D. Repeat steps A through C for the display icon identified by the number 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. 20 2.6 Jumpers Setup The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "Short". If no jumper cap is placed on pins, the jumper is "Open".

The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when jumper cap is placed on these 2 pins. Jumper Setting Clear CMOS Jumper (CLRCMOS1) (see p.12, No. 7) Description Note: CLRCMOS1 allows you to clear the data in CMOS. 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. Please be noted that the password, date, time, user default profile, 1394 GUID and MAC address will be cleared only if the CMOS battery is removed. Default Clear CMOS If you clear the CMOS, the case open may be detected.

Please adjust the BIOS option "Clear Status" to clear the record of previous chassis intrusion status. 21 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.12 No. @@@@Serial ATA2 Connectors (SATAI1_1 (PORT 0): see p.12, No. 14) (SATAI1_2 (PORT 1): see p.12, No.

15) (SATAI1_3 (PORT 2): see p.12, No. 12) (SATAI1_4 (PORT 3): see p.12, No. 11) (SATAI1_5 (PORT 4): see p.12, No. 10) (SATAI1_6 (PORT 5): see p.12, No. @@@@18) (9-pin USB6_7) (see p.12 No.

@@@@@@@@@2. @@Connect Mic_IN (MIC) to MIC2_L. B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L. C. Connect Ground (GND) to Ground (GND). D. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel. E.

To activate the front mic. For Windows® XP / XP 64-bit OS: Select "Mixer". Select "Recorder". @@@@24) System Panel Header (9-pin PANEL1) (see p.12 No. @@Note the positive and negative pins before connecting the cables. @@@@The LED is on when the system is operating. The LED keeps blinking when the sys-tem is in S1 sleep state. @@@@The LED is on when the hard drive is reading or writing data. The front panel design may differ by chassis.

@@When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly. 24 Chassis Speaker Header (4-pin SPEAKER 1) (see p.12, No. 13) Please connect the chassis speaker to this header. Infrared Module Header (5-pin IRI1) (see p.12, No. 21) This header supports an optional wireless transmitting and receiving infrared module. Print Port Header (25-pin LPT1) (see p.12 No. 23) AFD# ERROR# PINIT# SLIN# GND 1 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.

Chassis Intrusion Header (2-pin CII) (see p.12 No. 22) Internal Audio Connectors (4-pin CD1) (CD1: see p.12 No. 26) 1 GND Signal This motherboard supports CASE OPEN detection feature that detects if the chassis cover has been removed. This feature requires a chassis with chassis intrusion detection design. 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. Please connect the fan cable to the fan connector and match the black wire to the ground pin. CD1 Chassis and Power Fan Connectors (3-pin CHA_FAN1) GND +12V (see p.12 No.

8) CHA_FAN_SPEED +12V (3-pin PWR_FAN1) (see p.12 No. 27) GND PWR_FAN_SPEED 25 CPU Fan Connector FAN_SPEED_CONTROL CPU_FAN_SPEED (4-pin CPU_FAN1) (see p.12 No. 4) +12V GND Please connect the CPU fan cable to the connector and match the black wire to the ground pin. 1 2 3 4 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.12 No. 5) 12 24 Please connect an ATX power supply to this connector. 1 13 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.



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12 20-Pin ATX Power Supply Installation 13 ATX 12V Power Connector (4-pin ATX12V1) (see p.12 No. 1) Please connect an ATX 12V power supply to this connector.

26 2.8 Serial ATA (SATA2) Hard Disks Installation This motherboard adopts AMD SB710 chipset that supports Serial ATA2 (SATA2) hard disks and RAID (RAID 0, RAID 1, RAID 10 and JBOD) functions. You may install SATA2 hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA2 hard disks. STEP 1: Install the SATA2 hard disks into the drive bays of your chassis.

STEP 2: Connect the SATA power cable to the SATA2 hard disk. STEP 3: Connect one end of the SATA data cable to the motherboard's SATA2 connector. STEP 4: Connect the other end of the SATA data cable to the SATA2 hard disk. 2.9 Hot Plug and Hot Swap Functions for Serial ATA2 (SATA2) HDDs This motherboard supports Hot Plug and Hot Swap functions for SATA2 in RAID / AHCI mode. AMD SB710 chipset provides hardware support for Advanced Host controller Interface (AHCI), a new programming interface for SATA host controllers developed thru a joint industry effort. NOTE What is Hot Plug Function? If the SATA2 HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the SATA2 HDDs while the system is still power-on and in working condition. However, please note that it cannot perform Hot Plug if the OS has been installed into the SATA2 HDD. What is Hot Swap Function? If SATA2 HDDs are built as RAID 1 then it is called "Hot Swap" for the action to insert and remove the SATA2 HDDs while the system is still power-on and in working condition. 27 2.

10 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. 2.11 Installing Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 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 SATA / SATA2 HDDs with RAID functions, please follow below procedures according to the OS you install. 2.11.1 Installing Windows® XP / XP 64-bit With RAID Functions If you want to install Windows® XP / XP 64-bit on a RAID disk composed of 2 or more SATA / SATA2 HDDs with RAID functions, please follow below steps. STEP 1: Set up BIOS.

A. Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [RAID]. STEP 2: Make a SATA / SATA2 Driver Diskette.

A. Insert the Support CD into your optical drive to boot your system. B. During POST at the beginning of system boot-up, press <F11> key, and then a window for boot devices selection appears. Please select CD-ROM as the boot device.

C. When you see the message on the screen, "Generate Serial ATA driver diskette [Y/N]?", press <Y>. D. Then you will see these messages, Please insert a diskette into the floppy drive. WARNING! Formatting the floppy diskette will lose ALL data in it! Start to format and copy files [Y/N]? 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 / SATA2 drivers into the floppy diskette. 28 STEP 3: 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 4: Install Windows® XP / XP 64-bit OS on your system. After step 1, 2, 3, you can start to install Windows® XP / 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 SSATA / SATA2 driver diskette containing the AMD RAID driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the OS you install. 2.11.2 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 SATA / SATA2 HDDs with RAID functions, please follow below steps.

STEP 1: Set up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [RAID].

STEP 2: Use "RAID Installation Guide" to set RAID configuration. Before you start to configure RAID function, you need to check the RAID installation guide in the Support CD for proper configuration. Please refer to the BIOS RAID installation guide part of the document in the following path in the Support CD: .. \ RAID Installation Guide STEP 3: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system.

29 2.12 Installing Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit Without RAID Functions If you want to install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit OS on your SATA / SATA2 HDDs without RAID functions, please follow below procedures according to the OS you install. 2.12.1 Installing Windows® XP / XP 64-bit Without RAID Functions If you want to install Windows® XP / XP 64-bit on your SATA / SATA2 HDDs without RAID functions, please follow below steps. Using SATA / SATA2 HDDs with NCQ and Hot Plug functions (AHCI mode) STEP 1: Set up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [AHCI].

STEP 2: Install Windows® XP / XP 64-bit OS on your system. You can start to install Windows® XP / XP 64-bit OS on your system. At the beginning of Windows® setup, press F6 to install a third-party AHCI driver. When prompted, insert the SATA / SATA2 driver diskette containing the AMD AHCI driver.

After reading the floppy disk, the driver will be presented. Select the driver to install according to the OS you install. Using SATA / SATA2 HDDs without NCQ and Hot Plug functions (IDE mode) STEP 1: Set up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [IDE]. STEP 2: Install Windows® XP / XP 64-bit OS on your system. 30 2.12.2 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 SATA / SATA2 HDDs without RAID functions, please follow below steps.



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Using SATA / SATA2 HDDs with NCQ and Hot Plug functions (AHCI mode) STEP 1: Set up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [AHCI].

STEP 2: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / VistaTM / VistaTM 64-bit OS on your system. Using SATA / SATA2 HDDs without NCQ and Hot Plug functions (IDE mode) STEP 1: Set up BIOS. A. Enter BIOS SETUP UTILITY Advanced screen Storage Configuration. B. Set the "SATA Operation Mode" option to [IDE]. STEP 2: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / VistaTM / VistaTM 64-bit OS on your system. 2.13 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 [Manual].

Therefore, CPU FSB is untied during overclocking, but PCI / PCIE buses are in the fixed mode so that FSB can operate under a more stable overclocking environment. Please refer to the warning on page 8 for the possible overclocking risk before you apply Untied Overclocking Technology. 3.1 BIOS SETUP UTILITY 3.1 Introduction This section explains how to use the BIOS SETUP UTILITY to configure your system. The SPI Memory on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> or during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines. If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen. 3.1.1 BIOS Menu Bar The top of the screen has a menu bar with the following selections: Main To set up the system time/date information OC Tweaker To set up overclocking features Advanced To set up the advanced BIOS features H/W Monitor To display current hardware status Boot To set up the default system device to locate and load the Operating System Security To set up the security features Exit To exit the current screen or the BIOS SETUP UTILITY Use < > key or < > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen. 32 3.

1.2 Navigation Keys Please check the following table for the function description of each navigation key. Navigation Key(s) // + / - <Enter> <F1> <F9> <F10> <ESC> Function Description Moves cursor left or right to select Screens Moves cursor up or down to select items To change option for the selected items To bring up the selected screen To display the General Help Screen To load optimal default values for all the settings To save changes and exit the BIOS SETUP UTILITY To jump to the Exit Screen or exit the current screen 3.2 Main Screen When you enter the BIOS SETUP UTILITY, the Main screen will appear and display the system overview. Main OC Tweaker BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit System Overview System Time System Date BIOS Version Processor Type [17:00:09] [Tue 06/11/2013] Use [Enter], [TAB] or [SHIFT-TAB] to select a field.

Use [+] or [-] to configure system Time. : 960GC-GS FX P1.00 : AMD Phenom(tm) 9550 Quad-Core Processor (64bit) Processor Speed : 2200MHz Microcode Update : 100F23/0 : 512KB L1 Cache Size : 2048KB L2 Cache Size : 2048KB L3 Cache Size Total Memory DDRII_A1 DDRII_A2 : 1024MB with 128MB shared memory Single-Channel Memory Mode : 1024MB/266MHz DDR2_533 : None +Tab F1 F9 F10 ESC Select Screen Select Item Change Field Select Field General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. System Time [Hour:Minute:Second] Use this item to specify the system time. System Date [Day Month/Date/Year] Use this item to specify the system date. 33 3.3 OC Tweaker Screen In the OC Tweaker screen, you can set up overclocking features. Main OC Tweaker CPU Configuration Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) Spread Spectrum Boot Failure Guard Boot Failure Guard Count Advanced Clock Calibration Processor Maximum Frequency North Bridge Maximum Frequency Processor Maximum Voltage Multiplier/Voltage Change HT Bus Speed HT Bus Width Memory Configuration Memory Clock [Auto] [Auto] [400] [100] [Auto] [Enabled] [3] [Disabled] x31.5 6300 MHZ x31.

0 62 00 MHz 1.5500 V [Auto] [Auto] [Auto] BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit Overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense. Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. CPU Configuration Overclock Mode Use this to select Overclock Mode. The default value is [Auto]. Configuration options: [Auto], [CPU, PCIE, Sync.], [CPU, PCIE, Async.] and [Optimized].

CPU Frequency (MHz) Use this option to adjust CPU frequency. PCIE Frequency (MHz) Use this option to adjust PCIE frequency. 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.

Boot Failure Guard Count Enable or disable the feature of Boot Failure Guard Count. Advanced Clock Calibration This allows you to adjust Advanced Clock Calibration feature. The default value is [Disabled]. Configuration options: [Disabled], [Auto], [All Cores] and [PerCore]. If you select [All Cores], you will see the option "Value (All Cores)".

Configuration options: [+12%] to [-12%]. If you select [Per Core], you will see the options "Value (Core 0)", "Value (Core 1)", "Value (Core 2)" and "Value (Core 3)". Configuration options: [+12%] to [-12%]. Processor Maximum Frequency It will display Processor Maximum Frequency for reference. 34 North Bridge Maximum Frequency It will display North Bridge Maximum Frequency for reference. Processor Maximum Voltage It will display Processor Maximum Voltage for reference. Multiplier/Voltage Change This item is set to [Auto] by default. If it is set to [Manual], you may adjust the value of Processor Frequency and Processor Voltage. However, it is recommended to keep the default value for system stability. Main OC Tweaker CPU Configuration Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) Spread Spectrum Boot Failure Guard Boot Failure Guard Count Advanced Clock Calibration Processor Maximum Frequency North Bridge Maximum Frequency Processor Maximum Voltage Multiplier/Voltage Change HT Bus Speed HT Bus Width Memory Configuration Memory Clock [Auto] [Auto] [400] [100] [Auto] [Enabled] [3] [Disabled] x31.



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5 6300 MHz x31.0 62 00 MHz 1.5500 V [Manual] [Auto] [Auto] BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit Overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense. Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. CPU Frequency Multiplier For safety and system stability, it is not recommended to adjust the value of this item. Processor Voltage It allows you to adjust the value of processor voltage. However, for safety and system stability, it is not recommended to adjust the value of this item. NB Frequency Multiplier For safety and system stability, it is not recommended to adjust the value of this item.

HT Bus Speed This feature allows you selecting Hyper-Transport bus speed. HT Bus Width This feature allows you selecting Hyper-Transport bus width. Memory Configuration Memory Clock This item can be set by the code using [Auto]. You can set one of the standard values as listed for DDR2 memory modules: [200MHz DDR2_400], [266MHz DDR2_533], [333MHz DDR2_667] and [400MHz DDR2_800]. If you adopt Phenom CPU, there is one more option: [533MHz DDR2_1066].

35 You can set one of the standard values as listed for DDR3 memory modules: [400MHz DDR3_800], [533MHz DDR3_1066], [667MHz DDR3_1333] and [800MHz DDR3_1600]. DRAM Voltage Use this to select DRAM voltage. The default value is [Auto]. Memory Timing BIOS SETUP UTILITY OC Tweaker Memory Timing Power Down Enable Bank Interleaving Channel Interleaving CAS Latency (CL) TRCD TRP TRAS Command Rate TRC TWR TRFC TRRD TWTR TRTP [Enabled] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit +F1 F9 F10 ESC v02.54 (C) Copyright 1985-2003, American Megatrends, Inc.

Power Down Enable Use this item to enable or disable DDR power down mode. Bank Interleaving Interleaving allows memory accesses to be spread out over banks on the same node, or across nodes, decreasing access contention. Channel Interleaving It allows you to enable Channel Memory Interleaving. The default value for DDR2 is [Hash 1]. The default value for DDR3 is [Hash 2]. CAS Latency (CL) Use this item to adjust the means of memory accessing. The default value is [Auto]. TRCD Use this to adjust TRCD values. The default value is [Auto]. TRP Use this to adjust TRP values.

The default value is [Auto]. TRAS Use this to adjust TRAS values. The default value is [Auto]. Command Rate Use this item to change Command Rate Auto/Manual setting. Min: 1N. Max: 2N. The default is [Auto]. 36 TRC Use this to adjust TRC values. The default value is [Auto]. TWR Use this to adjust TWR values.

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

TWTR Use this to adjust TWTR values. The default value is [Auto]. TRTP Use this to adjust TRTP values. The default value is [Auto]. Chipset Settings NB Voltage Use this to select NB voltage.

The default value is [Auto]. SB Voltage Use this to select SB voltage. The default value is [Auto]. +1.8V Voltage Use this to select +1.8V voltage. The default value is [Auto]. Would you like to save current setting user defaults? In this option, you are allowed to load and save three user defaults according to your own requirements. 37 3.4 Advanced Screen In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, Storage Configuration, PCIPnP Configuration, Floppy Configuration, Super IO Configuration and USB Configuration.

Main BIOS SETUP UTILITY Boot OC Tweaker Advanced H/W Monitor Security Exit Advanced Settings WARNING : Setting wrong values in below sections may cause system to malfunction. CPU Configuration Chipset Configuration ACPI Configuration Storage Configuration PCIPnP Configuration Floppy Configuration SuperIO Configuration USB Configuration BIOS Update Utility Instant Flash Options for CPU Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. Setting wrong values in this section may cause the system to malfunction. Instant Flash Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the BIOS files and their respective information. Select the proper BIOS file to update your BIOS, and reboot your system after BIOS update process completes.

38 3.4.1 CPU Configuration BIOS SETUP UTILITY Advanced CPU Configuration Cool' n' Quiet Secure Virtual Machine Enhanced Halt State(C1E) CPU HTC CPU Thermal Throttle [Enabled] [Enabled] [Disabled] [Enabled] [Auto] +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. 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.

Secure Virtual Machine When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by AMD-V. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled]. Enhance Halt State (C1E) All processors support the Halt State (C1). The C1 state is supported through the native processor instructions HLT and MWAIT and requires no hardware support from the chipset. In the C1 power state, the processor maintains the context of the system caches. 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 Chipset Configuration BIOS SETUP UTILITY Advanced Chipset Settings Onboard HD Audio Front Panel Onboard Lan Primary Graphics Adapter [Auto] [Auto] [Enabled] [PCI] +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.



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54 (C) Copyright 1985-2003, American Megatrends, Inc. Onboard HD Audio Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged. Front Panel Select [Auto] or [Disabled] for the onboard HD Audio Front Panel. Onboard Lan This allows you to enable or disable the onboard Lan feature. 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: [Onboard], [PCI] and [PCI Express].

40 3.4.3 ACPI Configuration BIOS SETUP UTILITY Advanced ACPI Settings Suspend To RAM Check Ready Bit Away Mode Support Restore on AC / Power Loss Ring-In Power On PCI Devices Power On PS / 2 Keyboard Power On RTC Alarm Power On ACPI HPET Table [Auto] [Auto] [Disabled] [Power Off] [Disabled] [Disabled] [Disabled] [By OS] [Enabled] +F1 F9 F10 ESC Select auto-detect or disable the STR feature. Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc.

Suspend to RAM Use this item to select whether to auto-detect or disable the Suspend-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. 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. 41 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.

42 3.4.4 Storage Configuration BIOS SETUP UTILITY Advanced Storage Configuration Onboard SATA Controller SATA Operation Mode SATA IDE Combined Mode IDE1 Master IDE1 Slave SATAII_1 SATAII_2 SATAII_3 SATAII_4 SATAII_5 SATAII_6 [Enabled] [AHCI] [Enabled] [Hard Disk] [Not Detected] [Not Detected] [Not Detected] Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit Configure onboard serial ATA controller. +F1 F9 F10 ESC v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. Onboard SATA Controller Use this item to enable or disable the "Onboard SATA Controller" feature. SATA Operation Mode Use this item to adjust Onboard SATA Operation Mode. The default value of this option is [AHCI]. Configuration options: [AHCI], [IDE] and [RAID]. If you set this item to RAID mode, it is suggested to install SATA ODD driver on SATAII_5 (PORT 4) and SATAII_6 (PORT 5) ports.

SATA IDE Combined Mode This item is for SATAII_5 (PORT 4) and SATAII_6 (PORT 5) ports. Use this item to enable or disable SATA IDE combined mode. The default value is [Enabled]. If you want to build RAID on SATAII_5 (PORT 4) and SATAII_6 (PORT 5) ports, please disable this item. 43 3.

4.5 PCIPnP Configuration BIOS SETUP UTILITY Advanced 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. 44 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 [Disabled] 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. 45 3.

4.7 Super IO Configuration BIOS SETUP UTILITY Advanced Configure Super IO Chipset OnBoard Floppy Controller Serial Port Address Infrared Port Address [Disabled] [3F8/IRQ4] [Disabled] 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. Configuration options: [3F8 / IRQ4] and [3E8 / IRQ4]. Infrared Port Use this item to enable or disable the onboard infrared port. Infrared Port Address Use this item to set the address for the onboard infrared port. Configuration options: [2F8 / IRQ3] and [2E8 / IRQ3].

46 3.4.8 USB Configuration BIOS SETUP UTILITY Advanced USB Configuration USB 2.0 Controller USB 2.0 Support Legacy USB Support USB Keyboard/Remote Power On USB Mouse Power On [Enabled] [Enabled] [Enabled] [Disabled] [Disabled] 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 1985-2005, American Megatrends, Inc. USB 2.0 Controller Use this item to enable or disable the use of USB 2.0 controller.

USB 2.0 Support Use this option to enable or disable support for USB 2.0 devices. The default value is [Enabled]. Legacy USB Support Use this option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [BIOS Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options: [Enabled] - Enables support for legacy USB. [Auto] - Enables legacy support if USB devices are connected. [Disabled] - USB devices are not allowed to use under legacy OS and BIOS setup when [Disabled] is selected.

If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS. [BIOS Setup Only] - USB devices are allowed to use only under BIOS setup and Windows / Linux OS. USB Keyboard/Remote Power On Use this item to enable or disable the system to wake from S5 using USB Keyboard/Remote.



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@@ Configuration options: [Full On] and [Automatic Mode]. The default is value [Full On]. @@@@The default is value [Full On]. @@The default is value [Disabled]. 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. 48 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 OC Tweaker BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit Boot Settings Boot Settings Configuration 1st Boot Device 2nd Boot Device Hard Disk Drives Removable Drives [1st Floppy Device] [HDD: PM - HDS722580VL] 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 Full Screen Logo AddOn ROM Display Boot From Onboard LAN Bootup Num-Lock [Enabled] [Enabled] [Disabled] [ON] Disabled: Displays normal POST messages. Enabled: Displays OEM Logo instead of POST messages. +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.

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 From Onboard LAN Use this item to enable or disable the Boot From Onboard LAN feature. Bootup Num-Lock If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up. 49 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. Main OC Tweaker BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit Security Settings Supervisor Password : Not Installed User Password : Not Installed Change Supervisor Password Change User Password Install or Change the password.

Enter F1 F9 F10 ESC Select Screen Select Item Change General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. 50 3.8 Exit Screen Main OC Tweaker BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit Exit system setup after saving the changes. F10 key can be used for this operation. Exit Options Save Changes and Exit Discard Changes and Exit Discard Changes Load BIOS Defaults Load Performance Setup Default Load Power Saving Setup Default 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.

Discard Changes and Exit When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the BIOS SETUP UTILITY without saving any changes. Discard Changes When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes. Load BIOS Defaults Load BIOS default values for all the setup questions. F9 key can be used for this operation. Load Performance Setup Default 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 Power Saving Setup Default Load power saving setup default. F6 key can be used for this operation. 51 4.

Software Support 4.1 Install Operating System This motherboard supports various Microsoft® Windows® operating systems: 8 / 8 64-bit / 7 / 7 64-bit / VistaTM / VistaTM 64-bit / XP / XP Media Center / XP 64-bit. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information. 4.2 Support CD Information The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features. 4.2.1 Running The Support CD To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer.

If the Main Menu did not appear automatically, locate and double click on the file "ASSETUP.EXE" from the BIN folder in the Support CD to display the menus. 4.2.2 Drivers Menu The Drivers Menu shows the available devices drivers if the system detects the installed devices. Please install the necessary drivers to activate the devices. 4.2.3 Utilities Menu The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

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

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