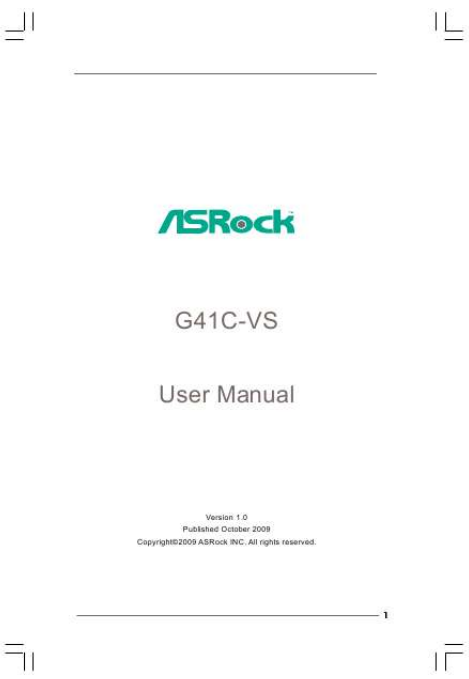

ASRock

G41C-VS

User Manual

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Manual abstract:

In no event shall ASRock, its directors, officers, employees, or agents be liable for any indirect, special, incidental, or consequential damages (including damages for loss of profits, loss of business, loss of data, interruption of business and the like), even if ASRock has been advised of the possibility of such damages arising from any defect or error in the manual or product. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. CALIFORNIA, USA ONLY The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance. "Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate" ASRock Website: http://www.asrock.
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. 50 50 50 50 50 50 4 Chapter 1 Introduction Thank you for purchasing ASRock G41C-VS motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance. In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD. Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest VGA cards and CPU support lists on ASRock website as well. ASRock website http://www.asrock.

com If you require technical support related to this motherboard, please visit our website for specific information about the model you are using. www.asrock.com/support/index.asp Pack ackage 1.1 P ack age Contents ASRock G41C-VS Motherboard (Micro ATX Form Factor: 8.8-in x 7.8-in, 22.4 cm x 19.8 cm) ASRock G41C-VS Quick Installation Guide ASRock G41C-VS Support CD Two Serial ATA (SATA) Data Cables (Optional) One I/O Panel Shield 5 1.

2 Specifications - Micro ATX Form Factor: 8.8-in x 7.8-in, 22.4 cm x 19.8 cm - LGA 775 for Intel® CoreTM 2 Extreme / CoreTM 2 Quad / CoreTM 2 Duo / Pentium® Dual Core / Celeron® Dual Core / Celeron®, supporting Penryn Quad Core Yorkfield and Dual Core Wolfdale processors - Supports FSB1333/1066/800/533 MHz - Supports Hyper-Threading Technology (see CAUTION 1) - Supports Untied Overclocking Technology (see CAUTION 2) - Supports EM64T CPU - Northbridge: Intel® G41 - Southbridge: Intel® ICH7 - Dual Channel DDR3/DDR2 Memory Technology (see CAUTION 3) - 2 x DDR3 DIMM slots - Supports DDR3 1333(OC)/1066/800 non-ECC, un-buffered memory (see CAUTION 4) - Max.
capacity of system memory: 8GB (see CAUTION 5) - 2 x DDR2 DIMM slots - Supports DDR2 800/667/533 non-ECC, un-buffered memory (see CAUTION 4) - Max. capacity of system memory: 8GB (see CAUTION 5) - 1 x PCI Express x16 slot - 1 x PCI slot - Intel® Graphics Media Accelerator X4500 - Pixel Shader 4.0, DirectX 10 - Max. shared memory 1759MB (see CAUTION 6) - Supports D-Sub with max. resolution up to 2048x1536 @ 75Hz - 5.

1 CH Windows® VistaTM Premium Level HD Audio (Realtek ALC662 Audio Codec) - Atheros® PCIEx1 LAN AR8132L - Speed: 10/100 Ethernet - Supports Wake-On-LAN I/O Panel - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x Serial Port: COM1 - 1 x VGA Port - 4 x Ready-to-Use USB 2.0 Ports Platform CPU Chipset Memory Expansion Slot Graphics Audio LAN Rear Panel I/O 6 Connector BIOS Feature Support CD Unique Feature Hardware Monitor OS Certifications - 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED) - HD Audio Jack: Line in / Front Speaker / Microphone - 2 x SATAII 3.0 Gb/s connectors (No Support for RAID and "Hot Plug" functions) (see CAUTION 7) - 1 x ATA100 IDE connector (supports 2 x IDE devices) - 1 x Print port header - CPU/Chassis FAN connector - 24 pin ATX power connector - 4 pin 12V power connector - Front panel audio connector - 2 x USB 2.0 headers (support 4 USB 2.0 ports) (see CAUTION 8) - 8Mb AMI BIOS - AMI Legal BIOS - Supports "Plug and Play" - ACPI 1.1 Compliance Wake Up Events - SMBIOS 2.3.1 Support - VCCM, NB, VTT, GTLRef Voltage Multi-adjustment - Supports Smart BIOS - Drivers, Utilities, AntiVirus Software (Trial Version), ASRock Software Suite (CyberLink DVD Suite and Creative Sound Blaster X-Fi MB) (OEM and Trial Version) - ASRock OC Tuner (see CAUTION 9) - Intelligent Energy Saver (see CAUTION 10) - Instant Boot - ASRock Instant Flash (see CAUTION 11) - ASRock OC DNA (see CAUTION 12) - Hybrid Booster: - CPU Frequency Stepless Control (see CAUTION 13) - ASRock U-COP (see CAUTION 14) - Boot Failure Guard (B.F.G.

*) - CPU Temperature Sensing - Chassis Temperature Sensing - CPU Fan Tachometer - Chassis Fan Tachometer - CPU Quiet Fan - Voltage Monitoring: +12V, +5V, +3.3V, Vcore - Microsoft® Windows® 7 / 7 64-bit / VistaTM / VistaTM 64-bit / XP / XP 64-bit compliant - FCC, CE - EuP Ready (EuP ready power supply is required) (see CAUTION 15) 7 * For detailed product information, please visit our website: http://www.asrock.com WARNING Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using the thirdparty overclocking tools.*

Overclocking may affect your system stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking. CAUTION! 1. 2. 3.
About the setting of "Hyper Threading Technology", please check page 34. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 25 for details. This motherboard supports Dual Channel Memory Technology. Before you implement Dual Channel Memory Technology, make sure to read the installation guide of memory modules on page 16 for proper installation.
*4. Please check the table below for the CPU FSB frequency and its corresponding memory support frequency. CPU FSB Frequency 1333 1066 800 533 Memory Support Frequency DDR3 800, DDR3 1066, DDR3 1333 DDR2 667, DDR2 800 DDR3 800, DDR3 1066 DDR2 667, DDR2 800 DDR3 800 DDR2 667, DDR2 800 DDR3 800 DDR2 533 * DDR3 1333 memory modules will operate in overclocking mode. * When you use a FSB533-CPU on this motherboard, it will run at DDR3 533 if you adopt a DDR3 800 memory module. * If you adopt FSB1333-CPU and DDR3 1333 memory module on this motherboard, you need to adjust the jumper.*
Please refer to page 20 for 5. proper jumper settings. Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® 7 / VistaTM / XP. For Windows® OS with 64-bit CPU, there is no such limitation. 6. 7. The maximum shared memory size is defined by the chipset vendor and is subject to change. Please check Intel® website for the latest information. Before installing SATAII hard disk to SATAII connector, please read the "SATAII Hard Disk Setup Guide" on page 24 to adjust your SATAII hard disk drive to SATAII mode. You can also connect SATA hard disk to SATAII connector directly.

8. Power Management for USB 2.0 works fine under Microsoft® Windows® 7 64-bit / 7 / VistaTM 64-bit / VistaTM / XP 64-bit / XP SP1 or SP2. 8 9. It is a user-friendly ASRock overclocking tool which allows you to surveil your system by hardware monitor function and overclock your hardware devices to get the best system performance under Windows® environment. Please visit our website for the operation procedures of ASRock OC Tuner. ASRock website: http: CPU Fan Connector (CPU_FAN1) ATX Power Connector (ATXPWR1) 2 x 240-pin DDR2 DIMM Slots (Dual Channel: DDRII_1, DDRII_2; Yellow) 2 x 240-pin DDR3 DIMM Slots (Dual Channel: DDR3_A1, DDR3_B1; Blue) PCI Express x16 Slot (PCIE1) South Bridge Controller Secondary SATAII Connector (SATAII_2; Red) Primary SATAII Connector (SATAII_1; Red) IDE1 Connector (IDE1, Blue) System Panel Header (PANEL1, Orange) 13 14 15 16 17 18 19 20 21 22 23 24 Chassis Speaker Header (SPEAKER 1, Purple) USB 2.0 Header (USB4_5, Blue) USB 2.0 Header (USB6_7, Blue) Clear CMOS Jumper (CLRCMOS1) Chassis Fan Connector (CHA_FAN1) PCI Slot (PCI1) BIOS SPI Chip FSB1 Jumper EUP Audio Jumper (EUP_AUDIO1) EUP LAN Jumper (EUP_LAN1) Front Panel Audio Header (HD_AUDIO1, Lime) Print Port Header (LPT1, Purple) 10 Panel 1.4 I/O Panel 1 2 3 4 5 6 10 9 8 7 1 2 3 4 5 PS/2 Mouse Port (Green) USB 2.
*0 Ports (USB23) RJ-45 Port Line In (Light Blue) Line Out (Lime) 6 7 8 9 10 Microphone (Pink) USB 2.0 Ports (USB01) VGA Port COM Port PS/2 Keyboard Port (Purple) * To enable Multi-Streaming function, you need to connect a front panel audio cable to the front panel audio header. Please refer to below steps for the software setting of 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® 7 / VistaTM: After restarting your computer, please double-click "Realtek HD Audio Manager" on the system tray. Set "Speaker Configuration" to "Quadraphonic" or "Stereo". Click "Device advanced settings", choose "Make front and rear output devices playbacks two different audio streams simultaneously", and click "ok".
Then reboot your system. 11 Chapter 2 Installation G41C-VS is a Micro ATX form factor (8.8" x 7.8", 22.4 x 19.8 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components. 2.

1 Screw Holes Place screws into the holes indicated by circles to secure the motherboard to the chassis. Do not over-tighten the screws! Doing so may damage the motherboard. 2.2 Pre-installation Precautions Take note of the following precautions before you install motherboard components or change any motherboard settings. 1. Unplug the power cord from the wall socket before touching any component. 2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components. 3.
Hold components by the edges and do not touch the ICs. 4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component. 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.
12 2.3 CPU Installation For the installation of Intel 775-LAND CPU, please follow the steps below. 775-Pin Socket Overview Before you insert the 775-LAND CPU into the socket, please check if the CPU surface is unclean or if there is any bent pin on the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
CPU Marked Corner Step 1. Open the socket: Step 1-1. Disengaging the lever by depressing Lift Lever Up to 90° down and out on the Socket Marked Corner hook to clear retention tab. Step 1-2. Rotate the load lever to fully open position at approximately 135 degrees. Step 1-3. Rotate the load plate to fully open position at approximately 100 degrees. Step 2. Insert the 775-LAND CPU: Step 2-1. Hold the CPU by the edges where are marked with black lines.

black line black line Step 2-2. Orient the CPU with IHS (Integrated Heat Sink) up. Locate Pin1 and the two orientation key notches. Pin1 orientation key notch orientation key notch Pin1 alignment key alignment key 775-Pin Socket 775-LAND CPU 13 For proper inserting, please ensure to match the two orientation key notches of the CPU with the two alignment keys of the socket.

Step 2-3. Carefully place the CPU into the socket by using a purely vertical motion. Step 2-4. Verify that the CPU is within the socket and properly mated to the orient keys. Step 3. Remove PnP Cap (Pick and Place Cap): Use your left hand index finger and thumb to support the load plate edge, engage PnP cap with right hand thumb and peel the cap from the socket while pressing on center of PnP cap to assist in removal.
1. It is recommended to use the cap tab to handle and avoid kicking off the PnP cap. 2. This cap must be placed if returning the motherboard for after service. Step 4.
Close the socket: Step 4-1. Rotate the load plate onto the IHS. Step 4-2. While pressing down lightly on load plate, engage the load lever. Step 4-3. Secure load lever with load plate tab under retention tab of load lever. 14 2.4 Installation of CPU Fan and Heatsink This motherboard is equipped with 775-Pin socket that supports Intel 775-LAND CPU. Please adopt the type of heatsink and cooling fan compliant with Intel 775-LAND CPU to dissipate heat. Before you installed the heatsink, you need to spray thermal interface material between the CPU and the heatsink to improve heat dissipation. Ensure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU_FAN connector (CPU_FAN1, see page 10, No. 3). For proper installation, please kindly refer to the instruction manuals of your CPU fan and heatsink. Below is an example to illustrate the installation of the heatsink for 775-LAND CPU.

Step 1. Apply thermal interface material onto center of IHS on the socket surface. Step 2. Step 3. Step 4. Place the heatsink onto the socket. Ensure fan cables are oriented on side closest to the CPU fan connector on the motherboard (CPU_FAN1, see page 10, No. 3). Align fasteners with the motherboard throughholes. Rotate the fastener clockwise, then press down on fastener caps with thumb to install and lock.
Repeat with remaining fasteners. If you press down the fasteners without rotating them clockwise, the heatsink cannot be secured on the motherboard. Step 5. Step 6. Connect fan header with the CPU fan connector on the motherboard.
Secure excess cable with tie-wrap to ensure cable does not interfere with fan operation or contact other components. 15 2.5 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 (DDRII_1 and DDRII_2; Yellow slots; see p.
10 No.5), or identical DDR3 DIMM pair in Dual Channel (DDR3_A1 and DDR3_B1; Blue slots; see p.10 No.6), 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) DDRII_1 DDRII_2 (Yellow Slot) (Yellow Slot) 2 memory modules SS SS 2 memory modules DS DS Dual Channel DDR3 Memory Configurations (DS: Double Side, SS: Single Side) DDR3_A1 (Blue Slot) 2 memory modules SS 2 memory modules DS DDR3_B1 (Blue Slot) SS DS 1. If you want to install two memory modules, for optimal compatibility and reliability, it is recommended to install them in the slots of the same color. In other words, install them in the set of blue slots (DDR3_A1 and DDR3_B1), or in the set of yellow slots (DDRII_1 and DDRII_2). 2. If only one memory module is installed in the DIMM slot on this motherboard, it is unable to activate the Dual Channel Memory Technology.

It is not allowed to install a DDR3 memory module into DDR2 slot or install a DDR2 memory module into DDR3 slot; otherwise, this motherboard and DIMM may be damaged. 3. 4. DDR2 and DDR3 memory modules cannot be installed on this motherboard at the same time. 16 Installing a DIMM Please make sure to disconnect power supply before adding or removing DIMMs or the system components. Step 1. Step 2. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot. notch break notch break The DIMM only fits in one correct orientation.
It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation. Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated. 17 2.6 Expansion Slots (PCI and PCI Express Slots) There are 1 PCI slot and 1 PCI Express slot on this motherboard.
PCI slot: PCI slot is used to install expansion card that has the 32-bit PCI interface. PCIE slot: PCIE1 (PCIE x16 slot) is used for PCI Express card with x16 lane width graphics card. If you install the add-on PCI Express VGA card to PCIE1 (PCIE x16 slot), the onboard VGA will be disabled. If you install the add-on PCI Express VGA card to PCIE1 (PCIE x16 slot) and adjust the BIOS options "Primary Graphics Adapter" to [Onboard] and "Share Memory" to [Auto], then the onboard VGA will be enabled, and the primary screen will be onboard VGA. Installing an expansion card Step 1.
Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation. Remove the bracket facing the slot that you intend to use. Keep the screws for later use. Align the card connector with the slot and press firmly until the card is completely seated on the slot. Fasten the card to the chassis with screws. Step 2. Step 3. Step 4. 18 2.

7 Jumpers Setup The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "Short". If no jumper cap is placed on pins, the jumper is "Open". The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when jumper cap is placed on these 2 pins. Jumper Setting PS2_USB_PWR1 2_3 1_2 Description Short pin2, pin3 to enable (see p.10 No. 1) +5VSB (standby) for PS/2 +5V +5VSB or USB wake up events. Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply. Clear CMOS (CLRCMOS1, 2-pin jumper) (see p.10 No.
16) 2-pin jumper Note: CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short 2 pins on CLRCMOS1 for 5 seconds. EUP LAN / EUP Audio Jumper (EUP_LAN1, 3-pin jumper, see p.

10 No. 22) (EUP_AUDIO1, 3-pin jumper, see p.10 No. 21) EUP_LAN1 EUP_AUDIO1 Default (Enable EuP) Note: EUP_LAN and EUP_AUDIO jumper design decreases the power consumption of this motherboard to meet EuP standard. With an ASRock EuP ready motherboard and a power supply that the 5VSB power efficiency is higher than 50% under 100mA current consumption, your system is able to submit EuP standard.
The default setting (short pin1 and pin2) is EuP enabled. If you want to disable this power saving function, you may short pin2 and pin3. Please be noticed that when EUP_LAN jumper is set to enabled, the Wake-On-LAN function under S3 (Suspend to RAM), S4 (Suspend to Disk), and S5 (Soft Off) will be disabled. EUP_LAN1 EUP_AUDIO1 (Disable EuP) 19 FSB1 Jumper (FSB1, 3-pin jumper, see p.10 No. 20) FSB1 Default If you adopt FSB1333-CPU and DDR3 1333 memory module on this motherboard, you need to adjust the jumper. Please short pin2, pin3 for FSB1 jumper. Otherwise, the CPU and memory module may not work properly on this motherboard. Please refer to below jumper setting. FSB1 2.

8 Onboard Headers and Connectors Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard! Primary IDE connector (Blue) (39-pin IDE1, see p.10 No. 11) PIN1 IDE1 connect the black end connect the blue end to the IDE devices to the motherboard 80-conductor ATA 66/100 cable Note: Please refer to the instruction of your IDE device vendor for the details. Serial ATAII Connectors (SATAII_1: see p.10, No. 10) (SATAII_2: see p.10, No. 9) SATAII_2 SATAII_1 These Serial ATAII (SATAII) connectors support SATAII or SATA hard disk for internal storage devices.
The current SATAII interface allows up to 3.0 Gb/s data transfer rate. Either end of the SATA data cable can be connected to the SATA / SATAII hard disk or the SATAII connector on the motherboard. Serial ATA (SATA) Data Cable (Optional) 20 USB 2.0 Headers (9-pin USB6_7) (see p.
10 No. 15) 1 USB_PWR P-7 P+7 GND DUMMY GND P+6 P-6 USB_PWR Besides four default USB 2.0 ports on the I/O panel, there are two USB 2.0 headers on this motherboard. Each USB 2.
0 header can support two USB 2.0 ports. (9-pin USB4_5) (see p.10 No. 14) USB_PWR P-5 P+5 GND DUMMY 1 GND P+4 P-4 USB_PWR Print Port Header (25-pin LPT1) (see p.10 No. 24) 1 AFD# ERROR# PINIT# SLIN# This is an interface for print GND SPD7 SPD6 ACK# SPD5 BUSY SPD4 PE SPD3 SLCT SPD2 SPD1 SPD0 STB# port cable that allows convenient connection of printer devices. Front Panel Audio Header (9-pin HD_AUDIO1) (see p.10 No. 23) 1 GND PRESENCE# MIC_RET OUT_RET This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

OUT2_L J_SENSE OUT2_R MIC2_R MIC2_L 1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instruction in our manual and chassis manual to install your system. 2. If you use AC'97 audio panel, please install it to the front panel audio header as below: A. Connect Mic_IN (MIC) to MIC2_L. B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L. C. Connect Ground (GND) to Ground (GND).
D. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel. E. Enter BIOS Setup Utility.
Enter Advanced Settings, and then select Chipset Configuration. Set the Front Panel Control option from [Auto] to [Enabled]. F. Enter Windows system. Click the icon on the lower right hand taskbar to enter Realtek HD Audio Manager.
21 For Windows® XP / XP 64-bit OS: Click "Audio I/O", select "Connector Settings" , choose "Disable front panel jack detection", and save the change by clicking "OK". For Windows® 7 / 7 64-bit / VistaTM / VistaTM 64-bit OS: Click the right-top "Folder" icon , choose "Disable front panel jack detection", and save the change by clicking "OK". G. To activate the front mic. For Windows® XP / XP 64-bit OS: Please select "Front Mic" as default record device. If you want to hear your voice through front mic, please deselect "Mute" icon in "Front Mic" of "Playback" portion. For Windows® 7 / 7 64-bit / VistaTM / VistaTM 64-bit OS: Go to the "Front Mic" Tab in the Realtek Control panel. Click "Set Default Device" to make the Front Mic as the default record device. System Panel Header (9-pin PANEL1) (see p.10 No.

12) 1 PLED+ PLEDPWRBTN# GND This header accommodates several system front panel functions. DUMMY RESET# GND HDLEDHDLED+ Chassis Speaker Header (4-pin SPEAKER 1) (see p.10 No. 13) 1 SPEAKER DUMMY DUMMY +5V Please connect the chassis speaker to this header. Chassis Fan Connector (3-pin CHA_FAN1) (see p.10 No. 17) GND +12V CHA_FAN_SPEED Please connect a chassis fan cable to this connector and match the black wire to the ground pin. Please connect a CPU fan cable to this connector and match the black wire to the ground pin. CPU Fan Connector (4-pin CPU_FAN1) (see p.10 No.
3) GND +12V CPU_FAN_SPEED FAN_SPEED_CONTROL 1234 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. @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@This section will guide you to install the SATA / SATAII hard disks. @@STEP 2: Connect the SATA power cable to the SATA / SATAII hard disk.
@@@@@@@@Please follow the order from up to bottom side to install those required drivers. Therefore, the drivers you install can work properly.
2 . 1 2 Untied Overclocking Technology 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.
25 Chapter 3: BIOS SETUP UTILITY 3.1 Introduction This section explains how to use the BIOS SETUP UTILITY to configure your system. The SPI Memory on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> or <Del> during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines. If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis.

You may also restart by turning the system off and then back on. Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen. 3 . 1 .

1 BIOS Menu Bar The top of the screen has a menu bar with the following selections: Main To set up the system time/date information OC Tweaker To set up overclocking features Advanced To set up the advanced BIOS features H/W Monitor To display current hardware status Boot To set up the default system device to locate and load the Operating System Security To set up the security features Exit To exit the current screen or the BIOS SETUP UTILITY Use < > key or < > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen. 26 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 BIOS SETUP UTILITY OC Tweaker Advanced H/W Monitor Boot Security Exit System Overview System Time System Date BIOS Version Processor Type [14:00:09] [Mon 10/26/2009] Use [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time. : G41C-VS P1.00 : Intel (R) Core (TM) 2 Duo CPU E6850 @ 3.00GHz (64bit) : 3148MHz Processor Speed Microcode Update : 6FB/B6 : 1024KB Cache Size Total Memory DDRII1 DDRII2 DDR3_1 DDR3_2 : 2048MB with 256MB shared memory and 2MB GTT memory Single-Channel Memory Mode : None : None : 2048MB/400MHz DDR3_800 : 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. 27 Tweak weaker 3.3 OC Tweak er Screen In the OC Tweaker screen, you can set up overclocking features.
Main OC Tweaker OC Tweaker Settings DRAM Frequency DRAM Command Rate DRAM Timing Configuration Unlocked Ratio Status Ratio CMOS Setting 17 Intel (R) SpeedStep (tm) tech. Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) DRAM Voltage NB Voltage VTT Voltage GTLRef Voltage 1.53V 1.23V 1.20V 0.
63Vtt [Auto] [Auto] BIOS SETUP UTILITY Advanced H/W Monitor Boot Security Exit If you adopt DDR3 1333 pls. adjust jumper set MB before apply it. For FSB1333 CPU: FSB1 = 2-3 (Min:06, Max:17) [17] [Disabled] [Auto] [200] [100] [Auto] [Auto] [Auto] [Auto] 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. DRAM Frequency If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically. You may select [400MHz DDR3_800], [533MHz DDR3_1066] or [667MHz DDR3_1333] for DDR3 or [266MHz DDR2_533], [333MHz DDR2_667] or [400MHz DDR2_800] for DDR2. The configuration options depend on the CPU and memory module you adopt on this motherboard. Please refer to page 8 for the CPU FSB frequency and its corresponding memory support frequency. DRAM Command Rate Use this item to adjust DRAM Command Rate. Configurationoptions: [1N], [2N] and [Auto].

28 DRAM Timing Configuration BIOS SETUP UTILITY OC Tweaker DRAM Timing Control DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM tCL tRCD tRP tRAS tRFC tWR tWTR tRRD tRTP DRAM tCL Value DDR2 Min = 3 Max = 7 DDR3 Min = 5 Max = 10 Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit 6 6 6 15 44 6 4 3 4 [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] +F1 F9 F10 ESC v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. DRAM tCL This controls the number of DRAM clocks for TCL. For DDR3, Min: 5. Max: 10. For DDR2, Min: 3. Max: 7. The default value is [Auto]. DRAM tRCD This controls the number of DRAM clocks for TRCD. Min: 3. Max: 10. The default value is [Auto]. DRAM tRP This controls the number of DRAM clocks for TRP. Min: 3. Max: 10.
The default value is [Auto]. DRAM tRAS This controls the number of DRAM clocks for TRAS. Min: 9. Max: 24. The default value is [Auto].
DRAM tRFC This controls the number of DRAM clocks for TRFC. Min: 15. Max: 78. The default value is [Auto]. DRAM tWR This controls the number of DRAM clocks for TWR. Min: 3. Max: 15. The default value is [Auto]. DRAM tWTR This controls the number of DRAM clocks for TWTR. Min: 2.

Max: 15. The default value is [Auto]. DRAM tRRD This controls the number of DRAM clocks for TRRD. Min: 2. Max: 15. The default value is [Auto]. DRAM tRTP This controls the number of DRAM clocks for TRTP. Min: 2. Max: 13. The default value is [Auto].
29 Ratio Status This is a read-only item, which displays whether the ratio status of this motherboard is "Locked" or "Unlocked". If it shows "Unlocked", you will find an item Ratio CMOS Setting appears to allow you changing the ratio value of this motherboard. Ratio CMOS Setting If the ratio status is unlocked, you will find this item appear to allow you changing the ratio value of this motherboard. If the CPU you adopt supports EIST (Intel (R) SpeedStep(tm) tech.), and you plan to adjust the ratio value, please disable the option " Intel (R) SpeedStep(tm) tech.
" in advance. Intel (R) SpeedStep(tm) tech. Intel (R) SpeedStep(tm) tech. is Intel's new power saving technology. Processor can switch between multiple frequency and voltage points to enable power savings.
The default value is [Auto]. Configuration options: [Auto], [Enabled] and [Disabled]. If you install Windows® XP and select [Auto], you need to set the "Power Schemes" as "Portable/Laptop" to enable this function. If you install Windows® VistaTM and want to enable this function, please set this item to [Enabled]. This item will be hidden if the current CPU does not support Intel (R) SpeedStep(tm) tech.. Please note that enabling this function may reduce CPU voltage and lead to system stability or compatibility issue with some power supplies. Please set this item to [Disable] if above issue occurs. Overclock Mode Use this to select Overclock Mode. The default value is [Auto].

Configuration options: [Auto], [Manual] and [Optimized]. CPU Frequency (MHz) Use this option to adjust CPU frequency. PCIE Frequency (MHz) Use this option to adjust PCIE frequency.

DRAM Voltage Use this to select DRAM Voltage. Configuration options for DDR3: [Auto], [1.48V] to [2.40V]. Configuration options for DDR2: [Auto], [1.80V] to [2.73V].
The default value of this feature is [Auto]. NB Voltage Use this to select NB Voltage. Configuration options: [Auto], [1.05V] to [1.30V].
The default value of this feature is [Auto]. VTT Voltage Use this to select VTT Voltage. Configuration options: [Auto], [1.10V] and [1.20V].
The default value of this feature is [Auto]. 30 GLTREF Voltage Use this to select GLTREF Voltage. Configuration options: [Auto], [0.67 x Vtt], [0.65 x Vtt], [0.63 x Vtt] and [0.615 x Vtt]. The default value of this feature 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. 31 3.

4 Advanced Screen In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, Storage Configuration, PCIPnP Configuration, SuperIO Configuration, and USB Configuration. BIOS SETUP UTILITY Boot OC Tweaker Advanced H/W Monitor Main Security Exit Advanced Settings WARNING : Setting wrong values in below sections may cause system to malfunction. CPU Configuration Chipset Configuration ACPI Configuration Storage Configuration PCIPnP Configuration SuperIO Configuration USB Configuration BIOS Update Utility ASRock Instant Flash Options for CPU Enter F1 F9 F10 ESC Select Screen Select Item Go to Sub Screen General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. Setting wrong values in this section may cause the system to malfunction. 32 3.4.1 CPU Configuration BIOS SETUP UTILITY Advanced CPU Configuration Overclock Mode CPU Frequency (MHz) PCIE Frequency (MHz) Boot Failure Guard Spread Spectrum Ratio Status Ratio CMOS Setting [Auto] [200] [100] [Enabled] [Auto] Select the over clock mode. Unlocked (Min:06, Max:17) [17] 17 [Disabled] [Enabled] [Enabled] [Disabled] [Auto] [Auto] Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit Enhanced Halt State Intel (R) Virtualization tech. CPU Thermal Throttling No-Execute Memory Protection Intel (R) SpeedStep (tm) tech.
On-Demand Clock Modulation +F1 F9 F10 ESC v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. Overclock Mode Use this to select Overclock Mode. The default value is [Auto]. Configuration options: [Auto], [Manual] and [Optimized].
CPU Frequency (MHz) Use this option to adjust CPU frequency. PCIE Frequency (MHz) Use this option to adjust PCIE frequency. Boot Failure Guard Enable or disable the feature of Boot Failure Guard. Spread Spectrum This item should always be [Auto] for better system stability. Ratio Status This is a read-only item, which displays whether the ratio status of this motherboard is "Locked" or "Unlocked".
If it shows "Unlocked", you will find an item Ratio CMOS Setting appears to allow you changing the ratio value of this motherboard. Ratio CMOS Setting If the ratio status is unlocked, you will find this item appear to allow you changing the ratio value of this motherboard. If the CPU you adopt supports EIST (Intel (R) SpeedStep(tm) tech.), and you plan to adjust the ratio value, please disable the option " Intel (R) SpeedStep(tm) tech." in advance. Enhance Halt State 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. 33 Intel (R) Virtualization tech. When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology.

This option will be hidden if the installed CPU does not support Intel (R) Virtualization Technology. CPU Thermal Throttling You may select [Enabled] to enable P4 CPU internal thermal control mechanism to keep the CPU from overheated. This option will be hidden if the current CPU does not support CPU Thermal Throttling. No-Excute Memory Protection No-Execution (NX) Memory Protection Technology is an enhancement to the IA-32 Intel Architecture. An IA-32 processor with "No Execute (NX) Memory Protection" can prevent data pages from being used by malicious software to execute code. This option will be hidden if the current CPU does not support No-Excute Memory Protection. Hyper Threading Technology To enable this feature, it requires a computer system with an Intel Pentium® 4 processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP. Set to [Enabled] if using Microsoft® Windows® XP, or Linux kernel version 2.4.18 or higher.
This option will be hidden if the installed CPU does not support Hyper-Threading technology. Intel (R) SpeedStep(tm) tech. Intel (R) SpeedStep(tm) tech. is Intel's new power saving technology. Processor can switch between multiple frequency and voltage points to enable power savings.
The default value is [Auto]. Configuration options: [Auto], [Enabled] and [Disabled]. If you install Windows® XP and select [Auto], you need to set the "Power Schemes" as "Portable/Laptop" to enable this function. If you install Windows® VistaTM and want to enable this function, please set this item to [Enabled]. This item will be hidden if the current CPU does not support Intel (R) SpeedStep(tm) tech.
. Please note that enabling this function may reduce CPU voltage and lead to system stability or compatibility issue with some power supplies. Please set this item to [Disable] if above issue occurs. On-Demand Clock Modulation This provides the On-Demand Clock Modulation duty cycle. It indicates the clock on to clock off interval ratio. For example, if you set this option to [75.0% On], your processor will work normally 75% of the time, and spend the other 25% slacking off. Configuration options: [Auto], [Disabled], [12.5% On], [25.0% On], [37.

5% On], [50.0% On], [62.5% On], [75.0% On] and [87.5% On]. The default value is [Auto]. 34 3.4.2 Chipset Configuration BIOS SETUP UTILITY Advanced Chipset Settings DRAM RCOMP and tRD Configuration DRAM DLL SKEW Configuration Fixed Mode Operation Intelligent Energy Saver Primary Graphics Adapter Shared Memory PAVP Mode DVMT Mode Select DVMT/FIXED Memory Onboard HD Audio Front Panel OnBoard Lan [Enabled] [Disabled] [PCI] [Auto] [Disabled] [DVMT Mode] [Maximum DVMT] [Auto] [Enabled] [Enabled] +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.
DRAM RCOMP and tRD Configuration BIOS SETUP UTILITY Advanced DRAM RCOMP STRENGTH Settings DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH1 CH1 CH1 CH1 CH1 CH1 CH1 CH1 RCOMP Settings : 54-0-11-6-6-6-6 RCOMP ODT [Auto] [Auto] G0 (Data) [Auto] G1 (Command) [Auto] G2 (Control1) [Auto] G3 (Control2) [Auto] G4 (Clocks1) [Auto] G5 (Clocks2) RCOMP Settings : 54-0-8-8-0-8-0 [Auto] RCOMP ODT [Auto] G0 (Data) [Auto] G1 (Command) [Auto] G2 (Control1) [Auto] G3 (Control2) [Auto] G4 (Clocks1) [Auto] G5 (Clocks2) DRAM CH0 RCOMP ODT Value Min = 1 Max = 63 +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. DRAM CH0 RCOMP ODT This controls the number of DRAM CH0 RCOMP ODT. Min: 1. Max: 63.
The default value is [Auto]. DRAM CH0 G0 (Data) This controls the number of DRAM CH0 G0 (Data). Min: 1. Max: 15. The default value is [Auto]. DRAM CH0 G1 (Command) This controls the number of DRAM CH0 G1 (Command). Min: 1. Max: 15. The default value is [Auto]. DRAM CH0 G2 (Control1) This controls the number of DRAM CH0 G2 (Control1). Min: 1. Max: 15. The default value is [Auto]. 35 DRAM CH0 G3 (Control2) This controls the number of DRAM CH0 G3 (Control2). Min: 1.

Max: 15. The default value is [Auto]. DRAM CH0 G4 (Clocks1) This controls the number of DRAM CH0 G4 (Clocks1). Min: 1. Max: 15. The default value is [Auto]. DRAM CH0 G5 (Clocks2) This controls the number of DRAM CH0 G5 (Clocks2). Min: 1. Max: 15. The default value is [Auto].
DRAM CH1 RCOMP ODT This controls the number of DRAM CH1 RCOMP ODT. Min: 1. Max: 63. The default value is [Auto]. DRAM CH1 G0 (Data) This controls the number of DRAM CH1 G0 (Data).
Min: 1. Max: 15. The default value is [Auto]. DRAM CH1 G1 (Command) This controls the number of DRAM CH1 G1 (Command). Min: 1.
Max: 15. The default value is [Auto]. DRAM CH1 G2 (Control1) This controls the number of DRAM CH1 G2 (Control1). Min: 1. Max: 15. The default value is [Auto]. DRAM CH1 G3 (Control2) This controls the number of DRAM CH1 G3 (Control2). Min: 1. Max: 15. The default value is [Auto].

DRAM CH1 G4 (Clocks1) This controls the number of DRAM CH1 G4 (Clocks1). Min: 1. Max: 15. The default value is [Auto]. DRAM CH1 G5 (Clocks2) This controls the number of DRAM CH1 G5 (Clocks2). Min: 1. Max: 15. The default value is [Auto]. DRAM CH0 tRD This controls the number of DRAM CH0 tRD. Min: 0.
Max: 30. The default value is [Auto]. DRAM CH1 tRD This controls the number of DRAM CH1 tRD. Min: 0. Max: 30.
The default value is [Auto]. 36 DRAM DLL SKEW Configuration BIOS SETUP UTILITY Advanced DRAM DLL SKEW Settings DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM DRAM CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CH0 CLKSET0 SKEW Info:0-0-0-0-0-0 [Auto] CLKSET0 SKEW CLKSET1 SKEW Info:0-0-0-0-0-0 [Auto] CLKSET1 SKEW CMD SKEW Info :0-0-0-0-0-0-0 [Auto] CMD SKEW CTRL0 SKEW Info :0-0-0-0-0-0-0 [Auto] CTRL0 SKEW CTRL1 SKEW Info :0-0-0-0-0-0-0 [Auto] CTRL1 SKEW CTRL2 SKEW Info :0-0-0-0-0-0-0 [Auto] CTRL2 SKEW CTRL3 SKEW Info :0-0-0-0-0-0-0 [Auto] CTRL3 SKEW DRAM CH1 CLKSET0 SKEW Info:1-5-1-1-0-128 +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. DRAM CH0 CLKSET0 SKEW This controls the number of DRAM CH0 CLKSET0 SKEW. The default value is [Auto].
DRAM CH0 CLKSET1 SKEW This controls the number of DRAM CH0 CLKSET1 SKEW. The default value is [Auto]. DRAM CH0 CMD SKEW This controls the number of DRAM CH0 CMD SKEW. The default value is [Auto]. DRAM CH0 CTRL0 SKEW This controls the number of DRAM CH0 CTRL0 SKEW. The default value is [Auto]. DRAM CH0 CTRL1 SKEW This controls the number of DRAM CH0 CTRL1 SKEW. The default value is [Auto]. DRAM CH0 CTRL2 SKEW This controls the number of DRAM CH0 CTRL2 SKEW. The default value is [Auto].

DRAM CH0 CTRL3 SKEW This controls the number of DRAM CH0 CTRL3 SKEW. The default value is [Auto]. DRAM CH1 CLKSET0 SKEW This controls the number of DRAM CH1 CLKSET0 SKEW. The default value is [Auto]. DRAM CH1 CLKSET1 SKEW This controls the number of DRAM CH1 CLKSET1 SKEW. The default value is [Auto]. 37 DRAM CH1 CMD SKEW This controls the number of DRAM CH1 CMD SKEW. The default value is [Auto]. DRAM CH1 CTRL0 SKEW This controls the number of DRAM CH1 CTRL0 SKEW. The default value is [Auto].
DRAM CH1 CTRL1 SKEW This controls the number of DRAM CH1 CTRL1 SKEW. The default value is [Auto]. DRAM CH1 CTRL2 SKEW This controls the number of DRAM CH1 CTRL2 SKEW. The default value is [Auto]. DRAM CH1 CTRL3 SKEW This controls the number of DRAM CH1 CTRL3 SKEW. The default value is [Auto]. 38 Flex Mode Operation This allows you to enable or disable flex mode operation feature. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled]. Intelligent Energy Saver Intelligent Energy Saver is a revolutionary technology that delivers unparalleled power savings.
The default value is [Disabled]. Configuration options: [Enabled] and [Disabled]. If you want to enable this function, please set this item to [Enabled]. Besides the BIOS option, you can also choose our Intelligent Energy Saver utility to enable this function. Primary Graphics Adapter This allows you to select [Onboard], [PCI] or [PCI Express] as the boot graphic adapter priority. The default value is [PCI]. Share Memory This allows you to set share memory feature. The default value is [Auto]. Configuration options: [Auto], [32MB], [64MB], [128MB] and [256MB]. PAVP Mode Use this option to adjust PAVP mode.

Configuration options: [Disabled] and [Lite]. The default value is [Disabled]. PAVP is the new graphics feature in Intel® 4 Series Express chipset family to support increased content protection and robustness requirements for premium content playback (Bluray disc). [Lite] mode is the encryption of compressed video buffer and is hardware-based 128-bit AES decryption. DVMT Mode Select Use this option to adjust DVMT mode. The default value is [DVMT Mode]. DVMT (Dynamic Video Memory Technology) is an architecture that offers breakthrough performance for the motherboard through efficient memory utilization. In DVMT mode, the graphics driver allocates memory as needed for running graphics applications and is cooperatively using this memory with other system components. This item will not be used under Windows® VistaTM OS because the driver will intelligently detect physical memory available and allocate necessary video memory. DVMT/FIXED Memory You are allowed to adjust the shared memory size in this item if you set DVMT Mode Select as [DVMT Mode].
Configuration options: [128MB], [256MB] and [Maximum DVMT]. The option [Maximum DVMT] only appears when you adopt the memory module with 1024MB or above. Onboard HD Audio Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged. Front Panel Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio Front Panel.
39 OnBoard Lan This allows you to enable or disable the "OnBoard Lan" feature. 3.4.3 ACPI Configuration BIOS SETUP UTILITY Advanced ACPI Configuration Suspend To RAM 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 [Disabled] [Power Off] [Disabled] [Disabled] [Disabled] [Disabled] [Disabled] +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit Select auto-detect or disable the STR feature. v02.
54 (C) Copyright 1985-2005, 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. If you set this item to [Disabled], the function "Repost Video on STR Resume" will be hidden. Check Ready Bit Use this item to enable or disable the feature Check Ready Bit. 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. 40 ACPI HPET Table Use this item to enable or disable ACPI HPET Table. The default value is [Disabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® VistaTM certification. 3.4.4 Storage Configuration BIOS SETUP UTILITY Advanced Storage Configuration ATA/IDE Configuration SATAII_1 SATAII_2 IDE1 Master IDE1 Slave [Enhanced] [Hard Disk] [Not Detected] [Not Detected] [Not Detected] Set [Compatible] when Legacy OS (MS-DOS, Win NT) device is used. Set [Enhanced] when Native OS (Win2000 / XP) is used. +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. ATA/IDE Configuration Please select [Compatible] when you install legacy OS (Windows® NT). If native OS (Windows® 7 / VistaTM / XP) is installed, please select [Enhanced]. When [Compatible] is selected Combined Option It allows you to select between [SATA 1, SATA 2], [SATA 1, IDE 1], and [PATA Only]. If it is set to [SATA 1, IDE 1], then SATAII_2 will not work.
Likewise, if it is set to [PATA Only], then SATAII_1 and SATAII_2 will not work. Because Intel ® ICH7 south bridge only supports two IDE devices under legacy OS (Windows NT), you have to choose [SATA 1, SATA2], [SATA 1, IDE 1], or [PATA Only] when the installed device is used with legacy OS. [SATA 1, SATA 2] Master SATAII 1, SATAII 2 [SATA 1, IDE 1] SATAII 1 [PATA Only] IDE1 IDE Device Configuration You may set the IDE configuration for the device that you specify. We will use the "Primary IDE Master" as the example in the following instruction. 41 BIOS SETUP UTILITY Advanced Primary IDE Master Device Vendor Size LBA Mode Block Mode PIO Mode Async DMA Ultra DMA S.
M.A.R.T. Type LBA/Large Mode Block (Multi-Sector Transfer) PIO Mode DMA Mode S.M.A.R.T. 32Bit Data Transfer :Hard Disk :ST340014A :40.

0 GB :Supported :16Sectors :4 :MultiWord DMA-2 :Ultra DMA-5 :Supported [Auto] [Auto] [Auto] [Auto] [Auto] [Disabled] [Enabled] Select the type of device 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 1985-2005, American Megatrends, Inc. TYPE Use this item to configure the type of the IDE device that you specify. Configuration options: [Not Installed], [Auto], [CD/DVD], and [ARMD]. [Not Installed]: Select [Not Installed] to disable the use of IDE device. [Auto]: Select [Auto] to automatically detect the hard disk drive. After selecting the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format the new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.
[CD/DVD]: This is used for IDE CD/DVD drives. [ARMD]: This is used for IDE ARMD (ATAPI Removable Media Device), such as MO. LBA/Large Mode Use this item to select the LBA/Large mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Disabled] to disable the LBA/Large mode. Block (Multi-Sector Transfer) The default value of this item is [Auto]. If this feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.
PIO Mode Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing. DMA Mode DMA capability allows the improved transfer-speed and data-integrity for compatible IDE devices. 42 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]. 32-Bit Data Transfer Use this item to enable 32-bit access to maximize the IDE hard disk data transfer rate.

3.4.5 PCIPnP Configuration BIOS SETUP UTILITY Advanced 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 1985-2005, American Megatrends, Inc. 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. 43 3.4.
6 Super IO Configuration BIOS SETUP UTILITY Advanced Configure Super IO Chipset Serial Port Address Parallel Port Address Parallel Port Mode EPP Version ECP Mode DMA Channel Parallel Port IRQ [3F8 / IRQ4] [378] [ECP + EPP] [1.9] [DMA3] [IRQ7] Allow BIOS to Enable or Disable Floppy Controller. +F1 F9 F10 ESC Select Screen Select Item Change Option General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc. Serial Port Address Use this item to set the address for the onboard serial port or disable it.
Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4], [2E8 / IRQ3]. Parallel Port Address Use this item to set the address for the onboard parallel port or disable it. Configuration options: [Disabled], [378], and [278]. Parallel Port Mode Use this item to set the operation mode of the parallel port. The default value is [ECP+EPP].
If this option is set to [ECP+EPP], it will show the EPP version in the following item, "EPP Version". Configuration options: [Normal], [Bi-Directional], and [ECP+EPP]. EPP Version Use this item to set the EPP version. Configuration options: [1.9] and [1.7]. ECP Mode DMA Channel Use this item to set the ECP mode DMA channel. Configuration options: [DMA0], [DMA1], and [DMA3]. Parallel Port IRQ Use this item to set the IRQ for the parallel port. Configuration options: [IRQ5] and [IRQ7].

44 3.4.7 USB Configuration BIOS SETUP UTILITY Advanced USB Configuration USB Controller USB 2.0 Support Legacy USB Support [Enabled] [Enabled] [Enabled] 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 Controller Use this item to enable or disable the use of USB controller. USB 2.0 Support Use this item to enable or disable the USB 2.0 support.

Legacy USB Support Use this option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [BIOS Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options: [Enabled] - Enables support for legacy USB. [Auto] - Enables legacy support if USB devices are connected.

[Disabled] - USB devices are not allowed to use under legacy OS and BIOS setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS. [BIOS Setup Only] - USB devices are allowed to use only under BIOS setup and Windows® / Linux OS. 45 3.5 Hardware Health Event Monitoring Screen In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.

BIOS SETUP UTILITY Advanced H/W Monitor Boot Main OC Tweaker Security Exit Hardware Health Event Monitoring CPU Temperature M / B Temperature CPU Fan Speed Chassis Fan Speed Vcore + 3.30V + 5.00V + 12.00V CPU Quiet Fan : 37 C / 98 F : 31 C / 87 F : 3400 RPM : N/A : : : : 1.629V 3.306V 5.067V 11.890V [Disabled] Enable/Disable CPU Quiet Fan Function. F1 F9 F10 ESC Select Screen Select Item General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2003, American Megatrends, Inc.

CPU Quiet Fan This item allows you to identify the temperature of CPU fan. If you set this option as [Disabled], the CPU fan will operate in full speed. If you set this option as [Enabled], you will find the items "Target CPU Temperature" and "Target Fan Speed" appear to allow you adjusting them. The default value is [Disabled]. You are allowed to enable this function only when you install 4-pin CPU fan. Target CPU Temperature The target temperature will be between 45 C/113 F and 65 C/149 F. The default value is [50 C/122 F]. Target Fan Speed Use this option to set the target fan speed. You can freely adjust the target fan speed according to the target CPU temperature that you choose. The default value is [Fast].

Configuration options: [Fast], [Middle] and [Slow]. 46 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 3rd Boot Device Hard Disk Drives Removable Drives CD/DVD Drives [1st Floppy Device] [HDD: PM - HDS722580VL] [CD / DVD: 3S - CD - ROM C] 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 Logo Boot From Onboard LAN Bootup Num-Lock [Enabled] [Enabled] [Auto] [Disabled] [On] Disabled: Displays normal POST messages. @@The default value is [Enabled].

AddOn ROM Display Use this option to adjust AddOn ROM Display. @@Configuration options: [Enabled] and [Disabled]. @@@@Configuration options: [Auto], [EuP], [Scenery] and [ASRock]. The default value is [Auto]. Currently, the option [Auto] is set to Aircraft. Boot From Onboard LAN Use this item to enable or disable the Boot From Onboard LAN feature. Boot Up Num-Lock If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up. 3.7 Security Screen In this section, you may set or change the supervisor/user password for the system. For the user password, you may also clear it.

BIOS SETUP UTILITY Advanced H/W Monitor Boot Main OC Tweaker Security Exit Security Settings Supervisor Password User Password : Not Installed : Not Installed Install or Change the password. Change Supervisor Password Change User Password Enter F1 F9 F10 ESC Select Screen Select Item Change General Help Load Defaults Save and Exit Exit v02.54 (C) Copyright 1985-2005, American Megatrends, Inc. 48 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 (IDE/SATA) 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 (IDE/SATA) This performance setup default may not be compatible with all system configurations. If system boot failure occurs after loading, please resume optimal default settings.

F5 key can be used for this operation. Load Power Saving Setup Default Load power saving setup default. F6 key can be used for this operation. 49 Software Support Chapter 4 Sof tware Suppor t 4 . 1 Install Operating System This motherboard supports various Microsoft® Windows® operating systems: 7 / 7 64-bit / VistaTM / VistaTM 64-bit / XP / XP 64-bit.

Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information. 4 . 2 Support CD Information The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features. 4 . 2 . 1 Running The Support CD To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASSETUP.EXE" from the BIN folder in the Support CD to display the menus.