



CoreHT Server Series

User Manual

Version 1.0

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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"

The terms HDMI™ and HDMI High-Definition Multimedia Interface, and the HDMI logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.



Safety instructions

Your system is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water or a heated source such as a radiator.
- Set up the system on a stable surface.
- Openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. Never insert objects of any kind into the ventilation openings.
- Use this product in environments with ambient temperatures between 0° C and 40° C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned OFF, a small amount of electrical current still flows. Always unplug all power, modem, and network cables from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
 - The power cord or plug is damaged.
 - Liquid has been spilled into the system.
 - The system does not function properly even if you follow the operating instructions.
 - The system was dropped or the cabinet is damaged.
 - The system performance changes.

No disassembly



NOTE:

The warranty does not apply to products (including HDD, ODD, memory and warranty seal) that have been damaged as a result of attempting to disassemble/reassemble the system or modifying the hardware configuration.

Safety cautions and warnings

Optical Drive Safety Information

Optical drives sold with this system contains a CLASS 1 LASER PRODUCT.



CAUTION:

Invisible laser radiation when open. Do not stare into beam or view directly with optical instruments.



WARNING:

Making adjustments or performing procedures other than those specified in the user's manual may result in hazardous laser exposure. Do not attempt to disassemble the optical drive. For your safety, have the optical drive serviced only by an authorized service provider.

Product disposal notice



IMPORTANT:

This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.





Nordic Lithium Cautions (for lithium-ion batteries)



CAUTION!

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Installation Notices

	Do not place this product underneath heavy loads or in an unstable position.		Do not use or expose this product around magnetic fields as magnetic interference may affect the performance of the product.
	Do not expose this product to high levels of direct sunlight, high-humidity or wet conditions.		Do not block the air vents to this product or impede the airflow in any way.

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Chapter 1 Introduction

Thank you for purchasing ASRock **CoreHT Server Series**, a reliable product 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 hardware 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 hardware 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 product, please visit our website for specific information about the model you are using.
www.asrock.com/support/index.asp

1.1 Package Contents



ASRock **CoreHT Server Series**



ASRock Support CD



ASRock Quick Start Guide



One AC Power Cord



One AC/DC Adapter



One HDMI to DVI Adapter



One Anti-Slip Pad



Remote Controller



3.5mm Audio Cable

1.2 Specifications

* For barebone system, it may not contain memory, HDD or ODD.

Processor	Intel® Mobile Sandy Bridge Processor Supports 2nd Generation Intel® Core i7/i5/i3 Dual-Core Mobile Sandy Bridge Processor Family
Chipset	Mobile Intel® HM67 chipset
Memory	Supports DDR3 1600/1333/1066^{*1} MHz, 2 x SO-DIMM slots, Max. up to 16GB
VGA	Mobile Intel® HD Graphics 3000
HDD	2 x 2.5" SATA HDD (Support RAID 0 / RAID 1)
ODD	BD Combo or DVD SuperMulti
Front I/O	2 x USB 3.0, 1 x MIC, 1 x Head Phone
Rear I/O	1 x HDMI, 1 x D-Sub, 4 x USB 2.0, 5 Audio Jack with 1 x S/PDIF, 1 x eSATA3.0^{*2}, 2 x USB 3.0
Sound	7.1 Ch HD Audio with THX TruStudio Pro™
LAN	Gigabit LAN
WiFi	2T2R 802.11b/g/n wireless LAN
Remote Controller	Support MCE function
Power	90W/19V Adapter
Dimension	195mm(W)x70mm(H)x186m(L)
Volume (liters)	2.5L

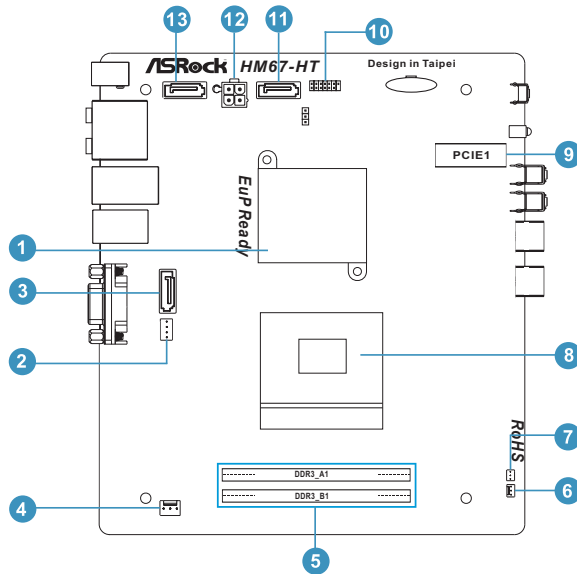
^{*1} Supports DDR3 1600MHz depends on CPU type. (eg. Core i5 series or above CPU.)

^{*2} For eSATA function, Hot Plug function is supported in AHCI mode only. IDE mode does not support Hot Plug function.

WARNING

Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, or using the third-party 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.

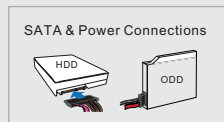
1.3 System Motherboard Components



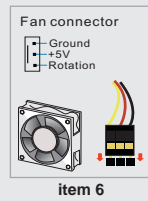
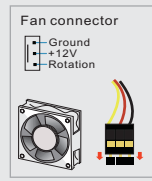
1. Northbridge heatsink
2. J1 jumper: For second HDD SATA power cable
3. SATA connector: For second HDD SATA data cable
4. Fan connector
5. Memory socket
6. Fan connector
7. Infrared module header
8. CPU socket
9. Mini-PCI Express expansion slot: For WiFi module
10. Clear CMOS jumper
11. SATA connector: For ODD SATA data cable
12. ATX5V output power connector for slim ODD & 2.5" HDD
13. SATA 3.0 connector: For HDD SATA data cable

NOTE.

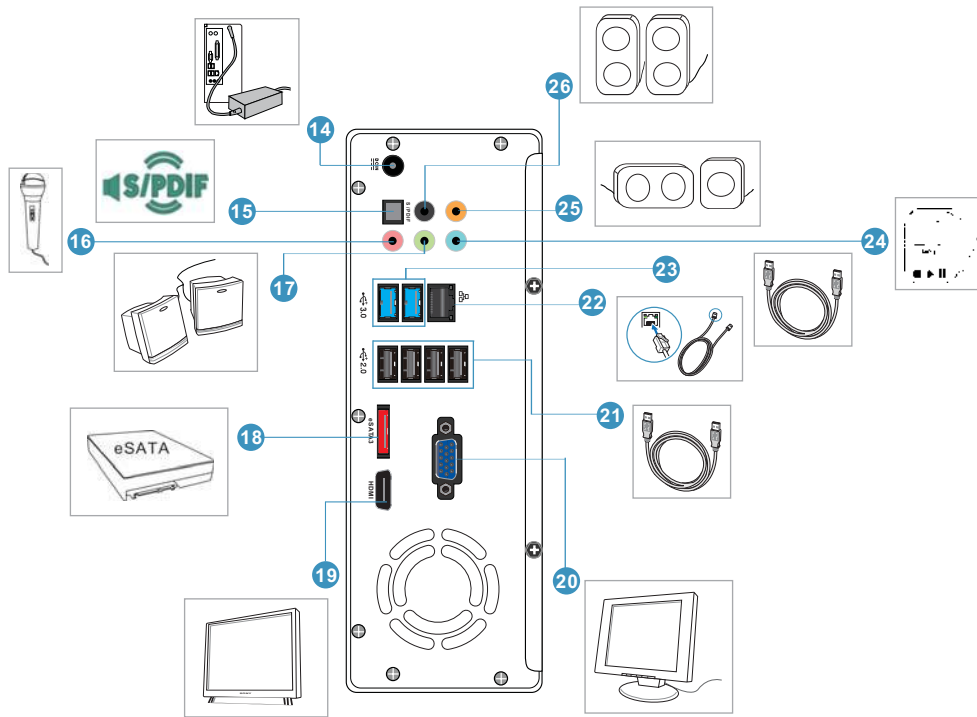
1. SATA and Power Connections



2. Fan Connection

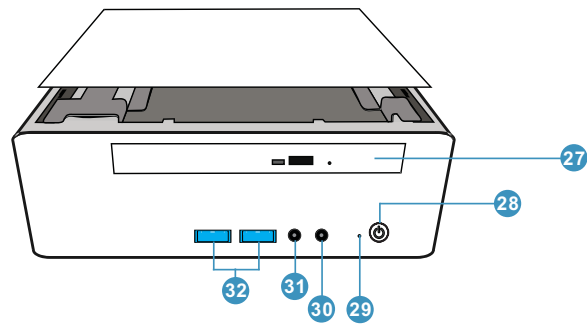


1.4 Rear Panel Connectinos



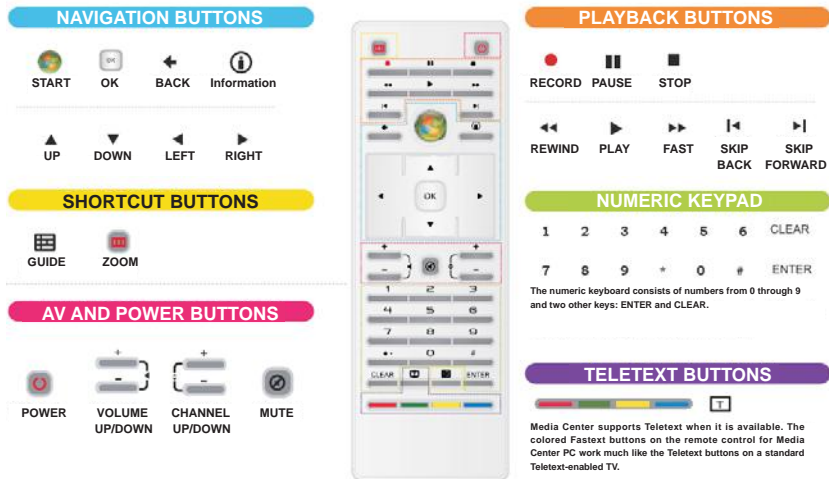
- 14. DC-In jack
- 15. Optical S/PDIF Out port
- 16. Mic In (Pink): Microphone
- 17. Front L/R Out (Lime): Stereo speakers or headphones
- 18. eSATA3 connector
- 19. HDMI connector
- 20. Display (VGA) port
- 21. USB2.0 ports: USB devices
- 22. LAN (RJ-45) port: Local Area Network
- 23. USB3.0 ports: USB devices
- 24. Line In (Blue) for 2/4/6 channel; Rear (Blue) for 8 channel
- 25. Center/LFE (Orange): Center / subwoofer speakers
- 26. Side port for side speakers

1.5 System Chassis



- 27. Optical Disc Drive
- 28. Power ON/OFF button with status indicator
- 29. Drive activity indicator
- 30. Headphone
- 31. Microphone
- 32. USB3.0 ports: USB devices

1.6 Remote Controller



Some remote controller functions listed above are only available with the relative hardware equipments. If the hardware equipments you adopt are not compatible with the system, you are not allowed to use these functions. This product is designed to meet MCE standards.

Chapter 2 System Quick Installation

1. Connecting USB Devices (USB2.0 Ports)



2. Connecting VGA Monitor (Display (VGA) Port)



3. Connecting the Network (LAN (RJ-45) Port)



4. Connecting HDMI Device (HDMI Port)



5. Connecting eSATA Device (eSATA Port)



**6. Connecting External Audio Device
(Line In Port for 2/4/6 Channel; Rear Port for 8 Channel)**



7. Connecting Stereo Speakers or Headphones (Front L/R Out Port)



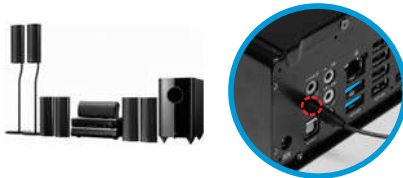
8. Connecting Microphone (Mic In Port)



9. Connecting Center / Subwoofer Speakers (Center/LEF Port)



10. Connecting Side Speakers (Side Port for 4/6/8 Channel)



11. Connecting Optical Device (Optical S/PDIF Out Port)



12. Connecting Power (DC-In Jack Port)



13. Power on the System (Power Switch)



14. Connecting Headphone / Microphone / USB3.0 Devices



Chapter 3 System Components Reinstallation

1. Remove the cover screws on the rear panel.



Note: For safety reasons, please ensure that the power cord is disconnected before opening the case.

2. Slide the side cover toward the rear panel and pull the side cover upwards.



3. To change the storage drives, you need to remove SATA and power cables from ODD / HDD first, and unscrew the screws from both side.



4. Pull ODD / HDD rack backwards and take it out from the bay.



5. Unscrew the screws from the side of ODD / HDD rack, and change your required ODD / HDD.

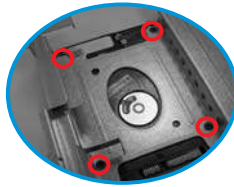


6. Refer to above steps to place the new ODD / HDD to the chassis.
Replace the side cover and fasten the screws.

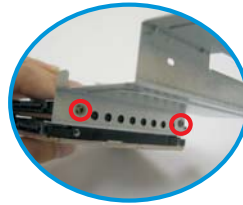
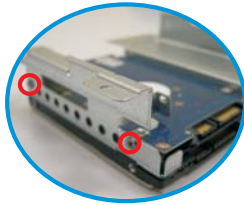


Chapter 4 Installing Second HDD

1. To install the second HDD, please follow above step 1 to 4, and remove the ODD and the first HDD in advance. Then fasten the screws of the second HDD to the rack.



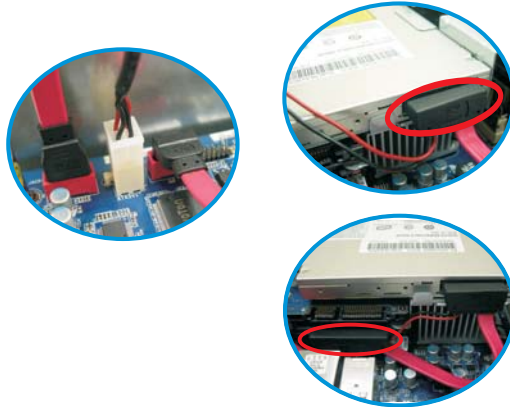
2. Place the first HDD to the rack and fasten the screws from both side.



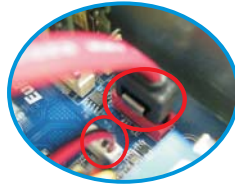
3. Place the ODD to the rack and fasten the screws from both side.
Replace the rack to the chassis.



4. Connect one end of SATA and power cables to the ODD and the other end to the bottom HDD.



5. Connect the other SATA and power cables to SATA2_2 and J1 connectors on the motherboard.



6. Connect the other end to the top HDD.

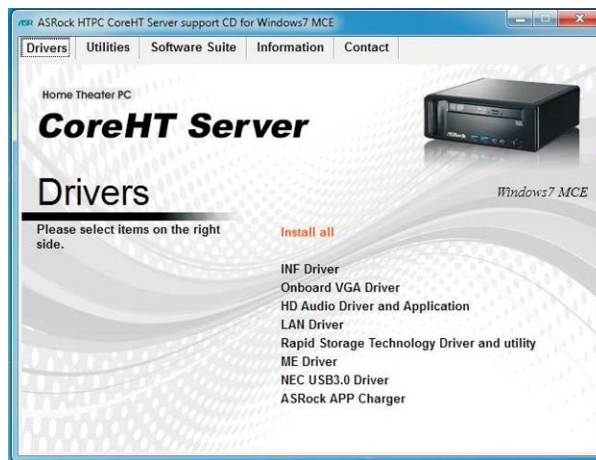


7. Replace the side cover and fasten the screws.



Chapter 5 Driver Installation

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.



Chapter 6 Utility Menu

The utilities menu shows the applications and other software that this product supports.

6.1 Instant Boot

6.1.1 Introduction

Instant Boot, a user-friendly tool that allows you to turn on your PC in just a few seconds, provides a much more efficient way to save energy, time, money, and improves system running speed for your system *. It is applicable to Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit.

Instant Boot leverages the S3 and S4 ACPI (Advanced Configuration and Power Interface) features which normally enable the Sleep/Standby and Hibernation modes in Windows® to shorten boot up time. By calling S3 and S4 at specific timing during the shutdown and startup process, Instant Boot allows you to enter your Windows® desktop in a few seconds.

There are two modes of Instant Boot available: Fast Mode and Regular Mode. In Fast Mode, it uses S3 and takes only a few seconds for OS to resume to working state, which is 10 times faster than traditional boot up time (50 to 60 seconds). Even the Regular Mode is 3 times faster than traditional boot up time.

Instant Boot guarantees a clean Windows® boot to consume less power, time and money without any accumulated garbage data, and you can still keep your data safe even there is a power cut. Also, the Windows® update speed will become faster.

* This function is applicable ONLY to single user that does not secure ID and Password to their systems.

* The boot up time depends on the hardware configuration.

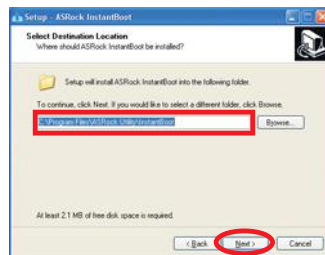
6.1.2 Installation

Please read below procedures carefully before you install Instant Boot.

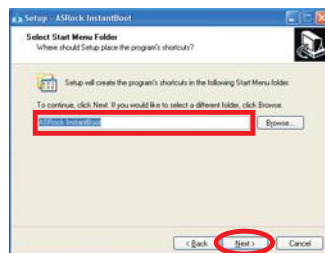
- A. Install Instant Boot driver from ASRock support CD, or you may click following link to get the latest utility and BIOS:
<http://www.asrock.com/feature/InstantBoot/download.asp>
- B. Execute the Instant Boot installation program under Windows®. Please follow the instructions on Instant Boot setup page.
 - a. Click “Next” to continue.



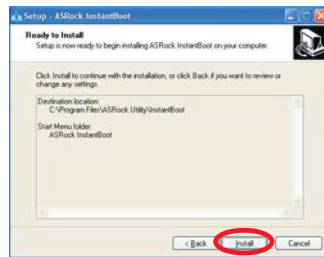
- b. Select destination location. You may choose a different folder if you need, and click “Next”.



- c. Select the start menu folder. You may choose a different folder if you need, and click “Next”.



d. Click "Install" to begin installing Instant Boot driver.



e. Click "Finish" to complete and exit the setup.



C. After the installation is completed, you will find an ASRock Instant Boot icon on the Windows® desktop.



D. Double click ASRock Instant Boot icon on the desktop, then Instant Boot main menu will pop up.



E. On Instant Boot main menu, you can choose "Fast Mode", "Regular Mode" or "Disable Instant Boot". After that, please click "Apply" to save the change.

Please notice that you need to keep AC power on if you select "Fast Mode".

F. When you want to shut down the computer, please simply select "Shut Down" from Windows® "Start menu".

G. Now, the system will restart once automatically. After reentering into OS, the system will shutdown again.

H. Next time when you turn on your system, you can enjoy the benefit of Instant Boot.

6.2 ASRock EXTREME TUNING UTILITY

6.2.1 Introduction

ASRock Extreme Tuning Utility (AXTU) is an all-in-one tool to fine-tune different system functions in a user-friendly interface, which is including Hardware Monitor, Fan Control, Overclocking and OC DNA. In Hardware Monitor, it shows the major readings of your system. In Fan Control, it shows the fan speed and temperature for you to adjust. In Overclocking, you are allowed to overclock CPU frequency for optimal system performance. In OC DNA, you can save your OC settings as a profile and share with your friends. Your friends then can load the OC profile to their own system to get the same OC settings.

6.2.2 Installation

When you install all-in-one driver to your system from ASRock support CD, ASRock Extreme Tuning Utility (AXTU) will be auto-installed as well. After installation, you will find the icon "ASRock eXtreme Tuner" on your desktop.

Double-click "ASRock eXtreme Tuner" icon, AXTU main menu will pop up.



6.2.3 Function

Please be noted that there is a button "Auto run when windows start" on the lower right corner. If you click this button, every time you turn on your system and enter Windows®, the system will automatically start AXTU.

Auto run when windows start

There are four sections in AXTU main menu: Hardware Monitor, Fan Control, Overclocking and OC DNA.



Hardware Monitor

In the Hardware Monitor section, it shows the major readings of your system. The main readings include Clock, Fan & Temperature, and Voltage. In Clock, there are CPU speed and CPU ratio. In Fan & Temperature, there are CPU temperature and CPU fan speed. You may find out if there's any abnormal situation occurs to your system's temperature. In Voltage, there are many respective voltages.



Fan Control

In the Fan Control section, there are two major chapters: Temperature and CPU/Chassis/Power Fan. In Temperature, it shows the major readings of CPU and motherboard temperature. In CPU/Chassis/Power Fan, it shows the fan target speed and temperature, and you are able to adjust the setting by clicking the "+/-" and confirm by "APPLY" afterward.



Overclocking

In the Overclocking section, there are Clock and Voltage chapters for parameter settings adjustment in pursuit of optimal system performance. You are able to fine-tune the CPU ratio, CPU frequency, and respective voltages by clicking the "+/-" at the display panel. After confirmation of the settings, please click on the "APPLY" button.



Overclocking and over-voltage may affect your system stability, or even cause damage to your hardware devices. It should be done at your own risk and expense. ASRock is not responsible for possible damage caused by overclocking and overvoltage. If system hangs after overclocking, please remove AC power cord and plug AC power cord again before you power on your system.



OC DNA

OC DNA provides a convenient way to record the OC settings and share with others. It helps you to save your overclocking record under the operating system and simplifies the complicated recording process of overclocking settings. With OC DNA, you can save your OC settings as a profile and share with your friends. Your friends then can load the OC profile to their own system to get the same OC settings as yours. Please be noticed that the OC profile can only be shared and worked on the same motherboard.

6.3 CyberLink DVD Suite free bundle (Trial version, including PowerDVD, PowerDirector, etc)



CyberLink DVD Suite includes five softwares: **PowerDVD**, **PowerBackup**, **PowerDirector**, **Power2Go** and **MediaShow**. Please read below description for details.

PowerDVD

World-renowned and award-winning PowerDVD delivers the ultimate DVD and high-definition movie experience on the PC. Feature-rich navigation controls enhance and personalize the movie experience. Moreover, the latest version comes with leading video and audio technologies to deliver an exceptional level of viewing and listening quality. PowerDVD is the obvious choice for anyone looking to enjoy DVDs and high-definition Discs on the PC.

* The bundled PowerDVD is PowerDVD 8 DTS trial version, which only supports DVD playback with DTS function. To play back other media such as Blu-ray or Dolby disc, please download PowerDVD 9 trial version from CyberLink website: www.cyberlink.com

PowerBackup

PowerBackup is a powerful yet practical tool for protecting essential data, offering a step-by-step approach to saving data onto a disc, a local hard drive, or via a network.

PowerDirector

CyberLink PowerDirector provides cool features to ensure editing movies is fun and fast! Whether you are an advanced or entry-level video editor, PowerDirector lets you enhance your camcorder videos and produce professional home movies. PowerDirector offers a dual mode editing interface, comprehensive production tools, technologies that save time and maintain your video quality, and a built-in CD/DVD authoring program. It is your total video editing solution!

Power2Go

CyberLink Power2Go features two easy interfaces for handling all kinds of content. Express mode allows simple drag-and-drop burning of Data, Music, and Video files, as well as double-click activation of copying personal discs. Power2Go advanced mode allows configuration of burning and copying settings, in addition to utilities for tasks such as ripping files and erasing discs.

MediaShow

MediaShow is an advanced software that lets you create, present and share multimedia slide shows. It allows you to incorporate images, videos, audio clips and even PowerPoint slides and add loads of transition effects, titling effects, background music to create a dazzling slide show.

6.4 Symantec Norton AntiVirus Software free bundle
(Trial version)



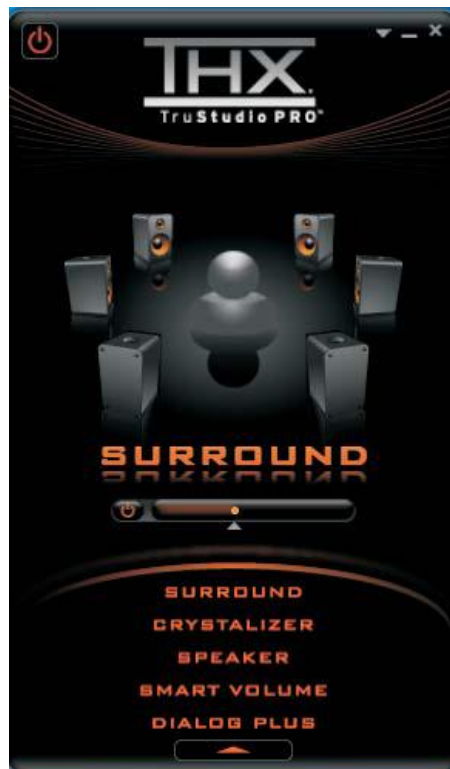
Protect your PC with Norton Internet Security, the fastest virus, spyware, Internet protection. Norton Internet Security can stop online identity theft, viruses, spyware, bots and more, stop attacks before they get on your PC, deliver clear threat and performance explanations, identify unsafe web sites right in your search results, and use intelligence-driven Norton Insight Network for faster, fewer, shorter scans.

6.5 THX TruStudio PRO Software free bundle

After you install THX audio driver from our support CD, there will be a shortcut shown on the desktop. Please double-click this icon to install THX audio driver to your system. Please make sure to connect your system to the internet during installation process. Then your system will automatically connect to THX's website to activate. After the installation completes, the shortcut will be auto-removed. You will find the THX icon on the Windows® task bar.



Click the THX icon on the Windows® task bar, you will see THX TruStudio PRO software application as below, which provides Surround /Crystalizer/Speaker/ Smart volume/Dialog plus functions for you. Therefore, you can adjust your required function and freely enjoy the benefit of THX TruStudio PRO.


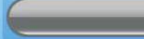


6.6 The best Apple charge companion
- ASRock APP Charger



Fast Charge & Charge Anytime!

If you desire a faster, less restricted way of charging your Apple devices, such as iPhone/iPod/iPad Touch, ASRock has prepared a wonderful solution for you μ V ASRock App Charger. Simply installing the App Charger driver, it makes your iPhone charged much quickly from your computer and up to 40% faster than before*. ASRock App Charger allows you to quickly charge many Apple devices simultaneously and even supports continuous charging when your 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 than ever.

Charge Way	PC Status					Charge time (Lower is Better)
	Working (S0)	Standby (S1)	Suspend to RAM (S3)	Hibernation (S4)	Shutdown (S5)	
ASRock App Charger	YES	YES**	YES**	YES**	YES**	 Up to 40%* Faster
Traditional Design	No	No	No	No	No	

6.7 CyberLink MediaEspresso 6.5 (Trial version)



CyberLink MediaEspresso 6.5 trial now supports Intel® Quick Sync Video hardware transcoding and is optimized for second generation Core i7, i5, and i3 processors to accelerated conversion of all your favorite media files for your favorite portable players. Now you can easily display your favorite movies, songs and photos on iPhone, iPad, PSP, Xbox, Youtube, Facebook etc. Compile, convert and enjoy images and songs as much as you want and enhance your videos to new levels with TrueTheater Technology. Try it today!

Limitations:

30-day trial limitation

Convert videos to the H.264 format 50 times

6.8 ASRock MAGIX Multimedia Suite

- Exclusive download software for ASRock customers

MAGIX is a leading international provider of high-quality software, online services and digital content for multimedia communications. Since 1993, MAGIX has developed leading technologies for creating, editing, managing and presenting photos, graphics, videos and music.

MAGIX operates internationally from branches in the USA, Canada, the UK, France, Italy, Spain and the Netherlands. The product range is targeted towards both laymen and professionals alike, going beyond the PC platform to include seamlessly integrated online and mobile applications.

According to its retail sales figures, MAGIX leads in the multimedia software sector in many important European markets, and is one of the most successful competitors in the USA. Fifteen years of market presence and over a thousand awards worldwide testify to the company's power of innovation.



mufin player

The next generation music player plays all standard audio formats, manages large music collections, helps you discover music, offers a free online hard drive and more.



Music Maker Silver

The easiest way to arrange, remix, record and create your own music. Develop your musical style now - without any prior skills.



Video easy SE

With this program you can easily edit your movies, add transitions, text and background music, and even quickly enhance image and sound quality.



Photo Manager 10

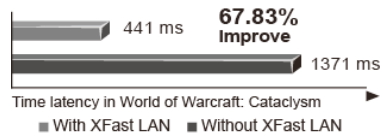
Put an end to your digital photo chaos and organize photo collections with ease. The program is fully equipped for fast import, photo and video clip management, photo editing and presentation.

6.9 ASRock XFast LAN - Faster Internet Access



LAN Application Prioritization

You can configure your application priority ideally and/or add new programs.



Lower Latency in Game

After setting online game priority higher, it can lower the latency in game.



Traffic Shaping

You can watch Youtube HD video and download files simultaneously.



Real-Time Analysis of Your Data

With the status window, you can easily recognize which data streams you are currently transferring.

Chapter 7: UEFI SETUP UTILITY

7.1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.



Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

7.1.1 UEFI 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 UEFI 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 UEFI 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. You can also use the mouse to click your required item.

7.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	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
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the UEFI SETUP UTILITY
<ESC>	To jump to the Exit Screen or exit the current screen

7.2 Main Screen

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



7.3 OC Tweaker Screen

In the OC Tweaker screen, you can set up overclocking features.



CPU Control

Load GPU EZ OC Setting

You can use this option to load GPU EZ overclocking setting. Please note that overclocking may cause damage to your GPU and motherboard. It should be done at your own risk and expense.

CPU Ratio Setting

Use this item to change the ratio value of this motherboard.

GT Over Clock

This item appears only when you set "Load GPU EZ OC Setting" to [Disabled]. Use this to enable or disable GT Over Clock by Internal Graphics Device. The default value is [Disabled].

Intel SpeedStep Technology

Intel SpeedStep technology is Intel's new power saving technology. Processor can switch between multiple frequency and voltage points to enable power savings. The default value is [Enabled]. 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® Vista™ / 7 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 SpeedStep technology.



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.

Intel Turbo Boost Technology

Use this item to enable or disable Intel Turbo Boost Technology. Turbo Boost allows processor cores to run faster than marked frequency in specific condition. The default value is [Enabled].

Turbo Boost Power Limit

Use this item to adjust Turbo Boost power limit. Configuration options: [Auto] and [Manual]. The default value is [Auto].

DRAM Timing Control**Load XMP Setting**

Use this to load XMP setting. Configuration options: [Auto], [Profile 1] and [Profile 2]. The default value is [Auto].

DRAM Frequency

If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically.

CAS# Latency (tCL)

Use this item to change CAS# Latency (tCL) Auto/Manual setting. The default is [Auto].

RAS# to CAS# Delay (tRCD)

Use this item to change RAS# to CAS# Delay (tRCD) Auto/Manual setting. The default is [Auto].

Row Precharge Time (tRP)

Use this item to change Row Precharge Time (tRP) Auto/Manual setting. The default is [Auto].

RAS# Active Time (tRAS)

Use this item to change RAS# Active Time (tRAS) Auto/Manual setting. The default is [Auto].

Command Rate (CR)

Use this item to change Command Rate (CR) Auto/Manual setting. Min: 1N. Max: 2N. The default is [Auto].

Write Recovery Time (tWR)

Use this item to change Write Recovery Time (tWR) Auto/Manual setting. The default is [Auto].

Refresh Cycle Time (tRFC)

Use this item to change Refresh Cycle Time (tRFC) Auto/Manual setting. The default is [Auto].

RAS to RAS Delay (tRRD)

Use this item to change RAS to RAS Delay (tRRD) Auto/Manual setting. The default is [Auto].

Write to Read Delay (tWTR)

Use this item to change Write to Read Delay (tWTR) Auto/Manual setting. The default is [Auto].

Read to Precharge (tRTP)

Use this item to change Read to Precharge (tRTP) Auto/Manual setting. The default is [Auto].

Four Activate Window (tFAW)

Use this item to change Four Activate Window (tFAW) Auto/Manual setting. The default is [Auto].

Memory Power Down Mode

Use this item to adjust DDR power down mode. Configuration options: [Auto], [Slow] and [Fast]. The default value is [Auto].

Voltage Control**DRAM Voltage**

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

User Default

In this option, you are allowed to load and save three user defaults according to your own requirements.

7.4 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, North Bridge Configuration, South Bridge Configuration, Storage Configuration, Super IO Configuration, ACPI Configuration and USB Configuration.



Setting wrong values in this section may cause the system to malfunction.

ASRock Instant Flash

ASRock Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new UEFI file to your USB flash drive, floppy disk or hard drive, then you can update your UEFI only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute ASRock Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after UEFI update process completes.

7.4.1 CPU Configuration



Intel Hyper-Threading Technology

To enable this feature, it requires a computer system with an Intel processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP / Vista™ / 7. Set to [Enabled] if using Microsoft® Windows® XP, Vista™, 7, or Linux kernel version 2.4.18 or higher. This option will be hidden if the installed CPU does not support Hyper-Threading technology.

Active Processor Cores

Use this item to select the number of cores to enable in each processor package. Configuration options: [All] and [1]. The default value is [All].

Hardware Prefetcher

Use this item to turn on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

Use this item to turn on/off prefetching of adjacent cache lines.

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 C3 State Support

Use this to enable or disable CPU C3 (ACPI C2) report to OS.

CPU C6 State Support

Use this to enable or disable CPU C6 (ACPI C3) report to OS.

Package C State Support

Selected option will program into C State package limit register. The default value is [Auto].

CPU Thermal Throttling

You may select [Enabled] to enable CPU internal thermal control mechanism to keep the CPU from overheated.

Intel Virtualization Technology

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 Virtualization Technology.

No-Execute 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-Execute Memory Protection.

7.4.2 North Bridge Configuration



VT-d

Use this to enable or disable Intel® VT-d technology (Intel® Virtualization Technology for Directed I/O). The default value of this feature is [Disabled].

Onboard VGA Share Memory

This allows you to set onboard VGA share memory feature. The default value is [Auto]. Configuration options: [Auto], [32MB], [64MB], [128MB], [256MB] and [512MB].

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® Vista™ / 7 OS because the driver will intelligently detect physical memory available and allocate necessary video memory.

DVMT Memory

You are allowed to adjust the shared memory size in this item. Configuration options: [128MB], [256MB] and [Maximum]. The option [Maximum] only appears when you adopt the memory module with 1024MB or above.

7.4.3 South Bridge Configuration



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.

Deep S4

Configuration options: [Auto] and [Enabled]. If [Auto] is selected, the system will enter Deep S4 for S4 state if onboard Lan and USB wake up capability are disabled in OS. Otherwise the system will enter normal S4 state. If [Enabled] is selected, the system will enter Deep S4 for S4 state and only Power button, RTC event and remote controller can wake up the system from Deep S4 state. The default value is [Auto]. This item will be hidden if On/Off Play is set to [Enabled].

Deep S5

Configuration options: [Disabled] and [Auto]. If [Disabled] is selected, user can use USB connector to charge under S5 state. If [Auto] is selected, system will enter Deep S5 for S5 state if On/Off Play, Onboard Lan Power On and USB KB/MS Power On are all disabled. The default value is [Auto].

Onboard LAN

This allows you to enable or disable the "Onboard LAN" feature.

Onboard HD Audio

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

Front Panel

Select [Auto] or [Disabled] for the onboard HD Audio Front Panel.

On/Off Play

Use this item to enable or disable On/Off Play Technology. The default value is [Enabled]. When On/Off Play is enabled, Deep Sx will be disabled. If you want to enable Deep Sx, please disable On/Off Play first.

Onboard HDMI HD Audio

This allows you to enable or disable the "Onboard HDMI HD Audio" feature.

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® Vista™ certification.

Good Night LED

Enable this option to turn off Power LED and Port80 LED when the system is power on. The keyboard LED will also be turned off in S1, S3 and S4 state. The default value is [Auto].

7.4.4 Storage Configuration



SATA Mode

Use this to select SATA mode. Configuration options: [IDE Mode], [AHCI Mode], [RAID Mode] and [Disabled]. The default value is [AHCI Mode].



AHCI (Advanced Host Controller Interface) supports NCQ and other new features that will improve SATA disk performance but IDE mode does not have these advantages.

SATA Controller 0

Please select **[Compatible]** when you install legacy OS. If native OS (Windows® XP / Vista™ / 7) is installed, please select **[Enhanced]**.

SATA Controller 1

Please select **[Compatible]** when you install legacy OS. If native OS (Windows® XP / Vista™ / 7) is installed, please select **[Enhanced]**.

Hard Disk S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled] and [Enabled].

7.4.5 Super IO Configuration



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].

7.4.6 ACPI Configuration



Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it.

Check Ready Bit

Use this item to enable or disable the feature Check Ready Bit.

Onboard LAN Power On

Use this item to enable or disable onboard LAN to power on the system.

RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

USB Keyboard/Remote Power On

Use this item to enable or disable USB keyboard/remote to power on the system.

USB Mouse Power On

Use this item to enable or disable USB mouse to power on the system.

7.4.7 USB Configuration



Front USB 3.0 Controller

Use this item to enable or disable the use of front USB 3.0 controller.

Rear USB 3.0 Controller

Use this item to enable or disable the use of rear USB 3.0 controller.

Legacy USB Support

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

[Enabled] - Enables support for legacy USB.

[Auto] - Enables legacy support if USB devices are connected.

[Disabled] - USB devices are not allowed to use under legacy OS and UEFI setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS.

[UEFI Setup Only] - USB devices are allowed to use only under UEFI setup and Windows / Linux OS.

7.5 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.



CPU Fan 1 Setting

This allows you to set the CPU fan 1 speed. Configuration options: [Full On], [Automatic Mode] and [SMART FAN Manual]. The default is value [Automatic Mode].

Chassis Fan 1 Setting

This allows you to set the chassis fan 1 speed. Configuration options: [Full On], [Automatic Mode] and [SMART FAN Manual]. The default is value [Automatic Mode].

7.6 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.



Setup Prompt Timeout

This shows the number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup Num-Lock

If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

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.

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.

7.7 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.



7.8 Exit Screen



Save Changes and Exit

When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load UEFI Defaults

Load UEFI default values for all the setup questions. F9 key can be used for this operation.

Chapter 8 Software Support

8.1 Install Operating System

This system supports various Microsoft® Windows® operating systems: 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit. Refer to your OS documentation for more information.

8.2 Support CD Information

The Support CD contains necessary drivers and useful utilities that enhance the system features.

8.2.1 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.

8.2.2 Drivers Menu

The Drivers Menu shows the available devices drivers if the system detects installed devices. Please install the necessary drivers to activate the devices.

8.2.3 Utilities Menu

The Utilities Menu shows the applications software that the system supports. Click on a specific item then follow the installation wizard to install it.

8.2.4 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.