

# Z68 Extreme4

Intel® Z68 Chipset

**ASRock®**  
www.asrock.com



## Product Brief <<<

- ASRock DuraCaps (2.5 x longer life time), 100% Japan-made high-quality Conductive Polymer Capacitors
- Digi Power, Advanced V8 Power Phase Design
- Supports Intel® K-Series unlocked CPU
- Supports Intel® Smart Response Technology
- Supports Dual Channel DDR3 2133(OC)
- Supports ATI™ Quad CrossFireX™, 3-Way CrossFireX™ and CrossFireX™
- Supports NVIDIA® Quad SLI™ and SLI™
- Supports Intel® HD Graphics with Built-in Visuals
- Four VGA Output options: D-Sub, DVI-D, HDMI and DisplayPort
- 2 x Front USB 3.0 ports, 2 x Rear USB 3.0 ports, 4 x SATA3 connectors, 1 x eSATA3 connector
- Supports ASRock XFast USB Technology, Graphical UEFI, Lucid Virtu
- Supports ASRock Extreme Tuning Utility (AXTU), Instant Boot, Instant Flash, Good Night LED, APP Charger, SmartView
- Combo Cooler Option (C.C.O.)
- 7.1 CH HD Audio with Content Protection (Realtek ALC892 Audio Codec), THX TruStudio PRO™
- Free Bundle : 1 x Front USB 3.0 Panel, 1 x Rear USB 3.0 Bracket, 1 x 3.5mm Audio Cable

The specification is subject to change without notice. The brand and product names are trademarks of their respective companies. Any configuration other than original product specification is not guaranteed.

## Detail Specification <<<

<b>Platform</b>	- ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm - All Solid Capacitor design (100% Japan-made high-quality Conductive Polymer Capacitors)
<b>CPU</b>	- Supports 2 <sup>nd</sup> Generation Intel® Core™ i7 / i5 / i3 in LGA1155 Package - Advanced V8 Power Phase Design - Supports Intel® Turbo Boost 2.0 Technology - Supports Intel® K-Series unlocked CPU - Supports Hyper-Threading Technology
<b>Chipset</b>	- Intel® Z68
<b>Memory</b>	- Dual Channel DDR3 memory technology - 4 x DDR3 DIMM slots - Supports DDR3 2133(OC)/1866(OC)/1600/1333/1066 non-ECC, un-buffered memory - Max. capacity of system memory: 32GB - Supports Intel® Extreme Memory Profile (XMP)
<b>Expansion Slot</b>	- 3 x PCI Express 2.0 x16 slots (PCIe2/PCIe4: single at x16 or dual at x8/x8 mode; PCIe5: x4 mode) - 2 x PCI Express 2.0 x1 slots - 2 x PCI slots - Supports ATI™ Quad CrossFireX™, 3-Way CrossFireX™ and CrossFireX™ - Supports NVIDIA® Quad SLI™ and SLI™
<b>Graphics</b>	- Supports Intel® HD Graphics Built-in Visuals - Intel® Quick Sync Video, Intel® InTru™ 3D, Intel® Clear Video HD Technology, Intel® HD Graphics 2000/3000, Intel® Advanced Vector Extensions (AVX) - Pixel Shader 4.1, DirectX 10.1 - Max. shared memory 1.75MB - Four VGA Output options: D-Sub, DVI-D, HDMI and DisplayPort - Supports HDMI 1.4a Technology with max. resolution up to 1920x1200 @ 60Hz - Supports D-Sub with max. resolution up to 1920x1200 @ 60Hz - Supports D-Sub with max. resolution up to 2048x1536 @ 75Hz - Supports DisplayPort with max. resolution up to 2560x1600 @ 60Hz - Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI (Compliant HDMI monitor is required) - Supports HDCP function with DVI, HDMI and DisplayPort ports - Supports Full HD 1080p Blu-ray (BD) / HD-DVD playback with DVI, HDMI and DisplayPort ports
<b>Audio</b>	- 7.1 CH HD Audio with Content Protection (Realtek ALC892 Audio Codec) - Premium Blu-ray audio support - Supports THX TruStudio PRO™
<b>LAN</b>	- PCIe x1 Gigabit LAN 10/100/1000 Mb/s - Broadcom BCM57781 - Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports PXE
<b>Rear Panel I/O</b>	I/O Panel - 1 x PS/2 Keyboard Port - 1 x VGA/D-Sub Port - 1 x VGA/DVI-D Port - 1 x HDMI Port - 1 x DisplayPort - 1 x Optical SPDIF Out Port - 4 x Ready-to-Use USB 2.0 Ports - 1 x eSATA3 Connector - 2 x Ready-to-Use USB 3.0 Ports - 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED) - 1 x IEEE 1394 Port - 1 x Clear CMOS Switch with LED - HD Audio Jack: Rear Speaker / Central / Bass / Line In / Front Speaker / Microphone
<b>SATA3</b>	- 2 x SATA3 6.0 Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 10, RAID 5, Intel Rapid Storage and Intel Smart Response Technology), NCC, AHCI and "Hot Plug" functions - 2 x SATA3 6.0 Gb/s connectors by Marvell SE9120, support NCC, AHCI and "Hot Plug" functions (SATA3_M2 connector is shared with eSATA3 port)
<b>USB 3.0</b>	- 2 x Rear USB 3.0 ports by Etron EJ168A, support USB 1.0/2.0/3.0 up to 5Gb/s - 1 x Front USB 3.0 header (Supports 2 USB 3.0 ports) by Etron EJ168A, supports USB 1.0/2.0/3.0 up to 5Gb/s
<b>Connector</b>	- 4 x SATA2 3.0 Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 10, RAID 5, Intel Rapid Storage and Intel Smart Response Technology), NCC, AHCI and Hot Plug functions - 4 x SATA3 6.0 Gb/s connectors - 1 x Floppy connector - 1 x IR header - 1 x CIR header - 1 x COM port header - 1 x HDMI, SPDIF header - 1 x IEEE 1394 header - 1 x Power LED header - CPU/Chassis/Power FAN connector - 24 pin ATX power connector - 8 pin 12V power connector - SLI/XFire power connector - Front panel audio connector - 3 x USB 2.0 headers (Support 6 USB 2.0 ports) - 1 x USB 3.0 header (Supports 2 USB 3.0 ports) - 1 x Dr. Debug with LED
<b>Smart Switch</b>	- 1 x Power Switch with LED - 1 x Reset Switch with LED - 1 x Clear CMOS Switch with LED
<b>BIOS Feature</b>	- 64Mb AMI UEFI Legal BIOS with GUI support - Supports "Plug and Play" - ACPI 1.1 Compliance Wake Up Events - Supports Jumpfree - SMBIOS 2.3.1 Support - CPU Core, IGPU, DRAM, PCH, CPU PLL, VTT, VCCSA Voltage Multi-adjustment
<b>Support CD</b>	- Drivers, Utilities, AntiVirus Software (Trial Version), ASRock Software Suite (CyberLink DVD Suite - OEM and Trial)
<b>Unique Feature</b>	- ASRock Extreme Tuning Utility (AXTU) - ASRock Instant Boot - ASRock Instant Flash - ASRock APP Charger - ASRock SmartView - ASRock XFast USB - Lucid Virtu - ASRock On/Off Play Technology - Hybrid Booster: - CPU Frequency Stepless Control - ASRock U-COP - Boot Failure Guard (B.F.G.) - Combo Cooler Option (C.C.O.) - Good Night LED
<b>Hardware Monitor</b>	- CPU Temperature Sensing - Chassis Temperature Sensing - CPU/Chassis/Power Fan Tachometer - CPU/Chassis Quiet Fan (Allow Chassis Fan Speed Auto-Adjust by CPU Temperature) - CPU/Chassis Fan Multi-Speed Control - Voltage Monitoring: +12V, +5V, +3.3V, CPU Vcore
<b>OS</b>	- Microsoft® Windows® 7 / 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit compliant
<b>Certifications</b>	- FCC, CE, WHQL - ErP/EuP Ready (ErP/EuP ready power supply is required)
<b>Accessories</b>	- 1 x ASRock SLI_Bridge_2S Card - Quick Installation Guide, Support CD, I/O Shield - Floppy Cable - 4 x SATA Data Cables (Optional) - 2 x SATA 1 to 1 Power Cables (Optional) - 1 x 3.5mm Audio Cable (Optional) - 1 x Front USB 3.0 Panel - 4 x HDD Screws - 6 x Chassis Screws - 1 x Rear USB 3.0 Bracket

## ASRock XFast USB Technology - Faster Than Your Imagination!

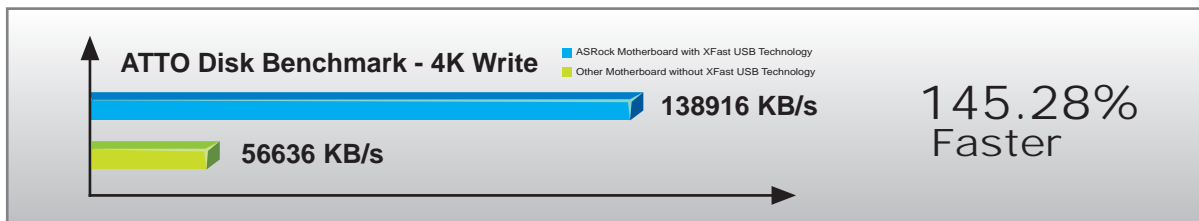
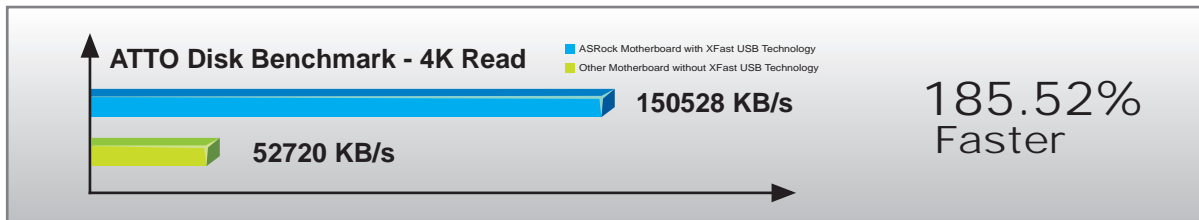


(The rear I/O photo is example only)

ASRock XFast USB Technology redefines the new standard in high performance computing. Proving once again to be the pioneer in motherboard industry, ASRock XFast USB Series Motherboards integrate with the latest XFast USB Technology which delivers the world's fastest USB data transfer speed. According to the below graph, it shows that the ASRock XFast USB technology can even boost USB 3.0 performance up to 185.52%!



### USB 3.0 Benchmark



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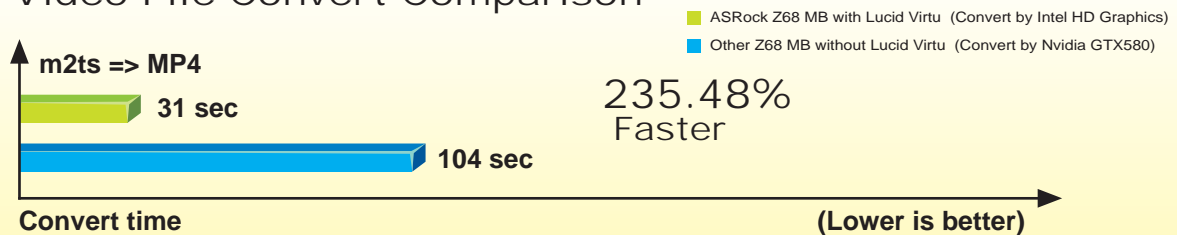
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## Lucid Virtu™



With Lucid Virtu software, next-generation PCs with 2<sup>nd</sup> Generation Intel® Core™ processor platforms will dynamically assign tasks in real time to the best available graphics resource based on power, performance and features.

### Video File Convert Comparison



#### Test Platform :

MB : ASRock Z68 Motherboard  
Other Z68 Motherboard  
CPU : Intel Core i7 2600K 3.4GHz  
DRAM : Kingston DDR3-1333 2Gx2  
HDD : WD 500GB  
VGA : Nvidia GTX580 ; Intel HD Graphics

OS : Windows 7 64bit SP1  
Lucid : Lucid VIRTU 1.0.105  
Nvidia Driver : 266.58  
Application : Cyberlink MediaEspresso 6.5  
Original File : m2ts, 1080p, 2200MB

## Free Bundle

### Cyberlink MediaEspresso 6.5 Trial



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

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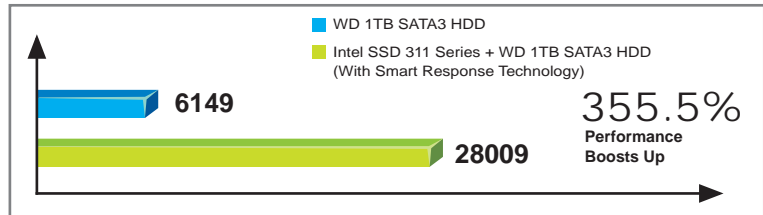
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## Intel Smart Response Technology

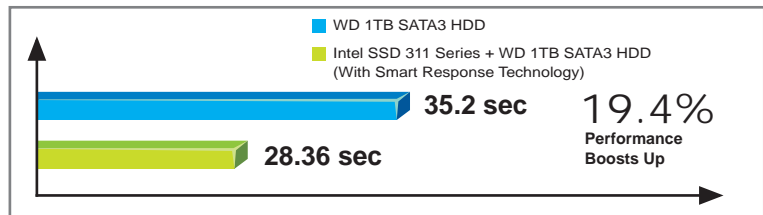


For users who are tempted to connect the SSD and HDD on ASRock Z68 Extreme4 motherboard, the Intel Smart Response Technology can make the SSD become the "Cache of the HDD" to boost up the HDD access speed.

### PCMark 05 HDD Score



### Boot time



#### System Configuration:

MB : Z68 Extreme4  
BIOS : L0.33  
CPU : i7-2600K 3.4G  
DRAM : Kingston DDR3-1333 2Gx2

SSD : Intel SSD 311 Series  
HDD : WD 1TB SATA3 HDD  
OS : Windows 7 64bit SP1 on WD 1TB SATA3 HDD

## On/Off Play Technology



**Free Bundle**  
3.5mm Audio Cable

Even when the system is power off (in ACPI S5 mode), On/Off Play Technology still allows users to enjoy the great audio experience from the portable audio devices through the PC speaker.

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## Graphical UEFI BIOS Interface



\*Windows Vista-64bit or Windows 7-64bit OS is required

Unified Extensible Firmware Interface (UEFI) is a revolutionary BIOS utility which offers tweak-friendly options in an advanced viewing interface. Compared with traditional BIOS design, the latest UEFI utility provides lots improved functions. The major features of UEFI include:

1. Graphical Visual Experience – UEFI provides an improved visual interface with colorful icons and makes your computing environment more versatile to replace the traditional dull BIOS page.
2. Mouse Enabling – Besides keyboard control, you can freely use mouse to select your ideal settings in UEFI as well.
3. Supports 3TB bootable HDD\* - UEFI breaks the limitations of 2TB bootable HDD on traditional BIOS. With UEFI, you can enjoy 3TB bootable HDD size.

## AXTU - The All-in-1 Tuning Software



ASRock Extreme Tuning Utility (AXTU) is an all-in-one software to fine-tune different features in a user-friendly interface, which includes Hardware Monitor, Fan Control, Overclocking, OC DNA and IES. 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 the GT frequency which helps to boost up the graphics performance and some voltage settings 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. In IES (Intelligent Energy Saver), the voltage regulator can reduce the number of output phases to improve efficiency when the CPU cores are idle without sacrificing computing performance.

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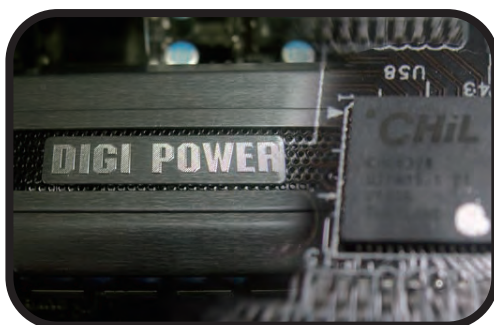
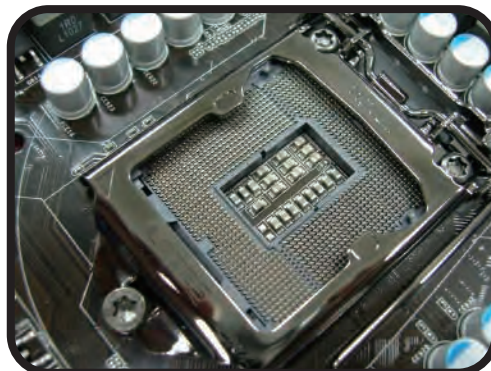
## DuraCap

100% Japan-made high-quality  
Conductive Polymer Capacitors



## Support Intel®

K-Series unlocked CPU



## Digi Power

By adopting digital Pulse-width modulation (PWM), the Z68 Extreme4 motherboard can provide CPU Vcore voltage more efficiently and smoothly. Compared to analog PWM, digital PWM can optimize the CPI power solution and provide a proper and stable Vcore for the processor.



**C.C.O.**



## Combo Cooler Option

C.C.O. provides the flexible option to adopt three different CPU cooler types, Socket LGA 775\*, LGA 1155 and LGA 1156\*\*

\*C.C.O. may not be compatible with all Socket 775 CPU coolers.

\*\*O is for Socket 1155 and Socket 1156 CPU cooler.

## THX TruStudio PRO™

THX TruStudio PRO™ is specially designed to bring the same great audio experience found in live performances, films, and recording studios - to the PC. THX TruStudio PRO™ provides the latest groundbreaking technologies that are products of years of collective experience. These technologies deliver the fullest audio experience for music, movies and games, while remaining true to the source and intention of the artists who created it

**THX**  
TruStudio PRO™

## Intel® HD Graphics Built-in Visuals



### Intel® Quick Sync Video

Intel® Quick Sync Video saves valuable time for PC users who want to create and edit video, synchronize it with other devices, and share it—at home and on the internet. Intel Quick Sync Video uses hardware on the processor, instead of software, to accelerate video encoding.



### Intel® InTru™ 3D

Enjoy the ultimate 3D visual experiences—seamlessly—from your PC. Now you can watch your favorite 3D movies with Blu-ray Stereo 3D playback using active shutter 3D glasses. It delivers it all in 1080p full, high-definition resolution on your TV over HDMI 1.4.



### Intel® Clear Video HD Technology

Intel® Clear Video HD Technology (Intel® CVT HD) enables rich media experiences with picture perfect images by using a host of advanced graphics technologies that support optimized, high-definition video playback and sharp image quality.



### Intel® HD Graphics 2000/3000

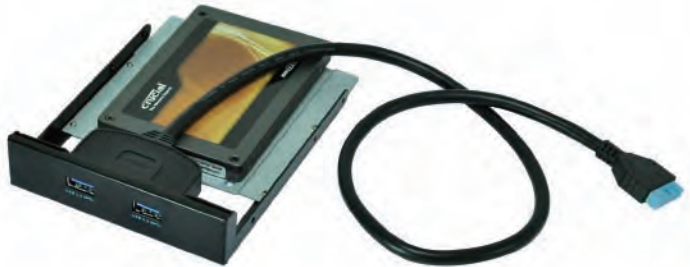
Intel® HD Graphics is now built right into the processor! This integration means lower latencies and leads to superior mainstream gaming and enhanced 3D experiences.



### Intel® Advanced Vector Extensions (AVX)

Intel® Advanced Vector Extensions (Intel® AVX) gives more computing power to application developers with a new, 256 bit instruction set extension to Intel® SSE.

## Front USB 3.0 Panel



The Front USB 3.0 Panel supports 2 x USB 3.0 ports and provides a 2.5" SSD/HDD rack.



1. Prepare a 2.5" HDD/SSD and place it on the Front USB 3.0 Panel.



2. Screw the 2.5" HDD/SSD to the Front USB 3.0 Panel with four HDD screws.



3. Intall the Front USB 3.0 Panel into the 2.5" drive bay of the chassis.



4. Screw the Front USB 3.0 Panel to the drive bay with six chassis screws.



5. Plug the Front USB 3.0 cable into the USB 3.0 header on the motherboard.



6. The Front USB 3.0 Panel is ready to use.

\*HDD/SSD is not included in motherboard retail package.

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**CyberLink**

## CyberLink Power2Go 6.1 LE OEM

Power2Go 6 lets you burn and backup videos, photos, music and data onto Blu-ray Discs and DVDs.

## CyberLink MediaShow 4.1 SE OEM

Photo and video management software MediaShow edits videos and photos instantly, creates slideshow, and allows publishing directly to YouTube and Flickr.

## CyberLink PowerDVD 8.0 DTS Trial

World-renowned PowerDVD 8 DTS delivers outstanding DVD movie playback quality on your PC.

## CyberLink PowerDirector 8.0 Trial

PowerDirector - Video Editing software – edits high-definition videos including AVCHD, allows output to PSP iPod and Blu-ray Disc.

## CyberLink PowerBackup 2.5 Trial

PowerBackup backups valuable data on your PC.