The new Intel® Core™ i7 processor and Intel® X99 chipset create the ultimate desktop PC platform for extreme gamers, enthusiasts, and content creators. This new platform is equipped with features that maximize the capabilities and performance within the gaming, overclocking, and digital content creation space.

**Ultimate Performance**

The combination of the new Intel Core i7 processor on the LGA2011-v3 socket and the Intel X99 is the first-ever 8-core desktop processor platform, delivering up to 45 percent more multi-threaded performance over the latest Intel 4-core platform. The performance-boosting features such as Intel® Turbo Boost Technology 2.0 and Intel® Hyper-Threading Technology activate full processing power exactly where and when you need it. From quick and efficient photo and video editing to effective music creation and a visually stunning gaming experience, you will get the ultimate power and performance for all your computing needs.

**New Memory Capabilities**

The new Intel Core i7 processor and Intel X99 chipset platform introduces the first Intel® desktop quad-channel DDR4 at 2133 MHz that can support up to four unbuffered DIMMs (non-ECC) per memory channel. With a max DRAM density of 4 Gb and 8 Gb, the platform encompasses advanced memory technology to meet the enthusiast’s overclocking needs.

**Enthusiasts Platform for Gaming and Content Creation**

The platform’s enthusiast-exclusive configuration emphasizes power-packed, high-end gaming and content creation to maximize the user’s experience. With up to 40 lanes of PCI Express 3.0, the platform offers the flexibility to plug in up to four discrete graphics cards to provide high discrete graphics card performance. With all of the processor’s cores unlocked, there are more overclocking options for professional and home users. The quad-channel memory and up to 16 processing threads deliver blazingly fast performance and expandability. Intel® Rapid Storage Technology delivers new storage performance and other capabilities, which allows for improved platform responsiveness. The extensive I/O, coupled with massive storage and better responsiveness, offers the end user a high-end and exclusive PC experience.

**Maximum I/O and Storage Capabilities**

With up to 40 PCI Express (PCIe) Gen3 lanes, 10 SATA ports, 14 USB ports, and 20 MB Smart Cache, this platform offers maximum I/O capabilities and storage features for the most demanding users. The high-speed I/O interface delivers blazingly fast performance and expandability. Intel® Rapid Storage Technology delivers new storage performance and other capabilities, which allows for improved platform responsiveness. The extensive I/O, coupled with massive storage and better responsiveness, offers the end user a high-end and exclusive PC experience.
dramatically cuts down the editing time for RAW photos/HD video. The massive potential that this platform can offer within the digital content creation space is yet to be completely utilized.

**Unlocked Flexibility and Freedom**

The Intel® X99 chipset enables the performance tuning features of the new unlocked Intel® Core™ i7 processors, allowing the user to change the core and DDR4 memory frequencies without having to run any other part of the system above specifications.

**Fast and Low-Power Peripherals**

The Intel X99 chipset integrates several capabilities to provide flexibility for connecting I/O devices. Integrated USB 3.0 support helps you connect to your digital life faster. The latest Intel® Rapid Storage Technology® driver enables the full Serial ATA (SATA) interface speed of up to 10 Gb/s to support next-generation SSDs and traditional HDDs. Intel® Rapid Recover Technology helps provide a fast, easy-to-use method for the end user to recover their data and return their system to an operational status. Dynamic Storage Accelerator unleashes the performance of your SSDs. It maximizes storage I/O performance by dynamically adjusting system power management policies to deliver up to a 15 percent² performance boost compared to default power management.

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### Intel® X99 Chipset Block Diagram

- **PCI Express® 3.0**
  - Discrete Graphics Support for multi-card configurations: 2x16 and 1x8

- **14 High-Speed USB Ports**
  - (6 USB 3.0 Ports, 8 USB 2.0 Ports)
  - Dual EHCI; USB Port Disable

- **Intel® Integrated 10/100/1000 MAC**
  - PCI Express x1
  - SM Bus 2.0

- **Intel® Gigabit LAN**
  - Network Connection

- **Intel® High Definition Audio**

- **Intel® Management Engine Firmware 9.1 and BIOS Support**

- **Intel® Extreme Tuning Utility Support**

- **Intel® Gigabit LAN Network Connection**

- **DDR4 Memory**
  - Up to 5 Gb/s

- **Intel® Core™ i7 Processor**
  - LGA2011-v3 Socket
  - Up to 2133 MHz

- **Intel® X99 Chipset**
  - DMI 2.0 x4

- **10 SATA 3.0 Ports**
  - Up to 6 Gb/s

- **8 PCI Express 2.0**
  - Up to 5 Gb/s x1 (bi-directional)

- **Intel® Rapid Storage Technology® 13.1**

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- ³ 3 slots available but need additional logic onboard to support more slots. 5x8 configuration requires additional system clocks to be provided by third party components.
- ⁴ All SATA ports capable of 6 Gb/s.
## INTEL® X99 CHIPSET FEATURES AT A GLANCE

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<th>FEATURES</th>
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<tr>
<td>Supports Intel® Core™ i7 processors in the LGA2011-v3 socket</td>
<td>Supports Intel® Core™ i7 processors with Intel® Turbo Boost Technology 2.0.2</td>
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<td>Overclocking&lt;sup&gt;6&lt;/sup&gt;</td>
<td>The Intel® X99 chipset enables overclocking features of new unlocked Intel Core i7 processors.</td>
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<td>Intel® Rapid Storage Technology&lt;sup&gt;4&lt;/sup&gt;</td>
<td>With additional hard drives added, helps provide quicker access to digital photo, video, and data files, and greater data protection against an HDD failure with RAID 0, 1, 5, and 10.</td>
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<td>Intel® Rapid Recover Technology</td>
<td>Intel’s latest data protection technology helps provide a recovery point that can be used to quickly recover a system should a hard drive fail, or there is data corruption. The clone can also be mounted as a read-only volume to allow a user to recover individual files.</td>
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<tr>
<td>Intel® High Definition Audio&lt;sup&gt;8&lt;/sup&gt;</td>
<td>Integrated audio support enables premium digital surround sound and delivers advanced features such as multiple audio streams and jack re-tasking.</td>
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<tr>
<td>Intel® Smart Response Technology&lt;sup&gt;9&lt;/sup&gt;</td>
<td>Implements storage I/O caching for fast response times of application startup and quick access to user data.</td>
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<td>Universal Serial Bus 3.0</td>
<td>Integrated USB 3.0 support helps provide greater enhancement in performance with a design data rate of up to 5 Gb/s with up to six USB 3.0 ports.</td>
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<td>High-speed USB 2.0 support with a design data rate of up to 480 Mb/s with up to 14 USB 2.0 ports.</td>
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<td>Serial ATA (SATA) 6 Gb/s</td>
<td>Next-generation high-speed storage interface supporting up to 6 Gb/s transfer rates for optimal data access with up to ten SATA ports.</td>
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<td>eSATA</td>
<td>SATA interface designed for use with external SATA devices. Provides a link for 3 Gb/s data speeds to eliminate bottlenecks found with current external storage solutions.</td>
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<td>SATA Port Disable</td>
<td>Enables individual SATA ports to be enabled or disabled as needed. This feature helps provide added protection of data by preventing malicious removal or insertion of data through SATA ports. Especially targeted for eSATA ports.</td>
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<tr>
<td>PCI Express&lt;sup&gt;*&lt;/sup&gt; 2.0 Interface</td>
<td>Offers up to 5 GT/s for fast access to peripheral devices and networking with up to eight PCI Express&lt;sup&gt;*&lt;/sup&gt; 2.0 x1 ports, configurable as x2, x4, and x8 depending on desktop motherboard designs.</td>
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<td>Intel Core i7 processor, PCI Express 3.0 Interface</td>
<td>Intel X99 chipset-based platforms enable the processor PCI Express 3.0 port to be configurable as a 2x16 and 1x8 or 5x8.&lt;sup&gt;50&lt;/sup&gt;</td>
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<tr>
<td>USB Port Disable</td>
<td>Enables individual USB ports to be enabled or disabled as needed. This feature helps provide added protection of data by preventing malicious removal or insertion of data through USB ports.</td>
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<td>Intel® Integrated 10/100/1000 MAC</td>
<td>Support for the Intel® Ethernet Connection I218-LM.</td>
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<td>Green Technology</td>
<td>Manufactured with lead-free and halogen-free&lt;sup&gt;11&lt;/sup&gt; component packages.</td>
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1 Estimated performance projection shown are based on Intel® Core® i7-5960X processor Extreme Edition (8C) vs. Intel Core® i7-4790K processor (4C) and are preliminary and subject to change. Results have been simulated and are provided for informational purposes only. Results were derived using simulations run on an architecture simulator or model. Any difference in system hardware or software design or configuration may affect actual performance.

2 Requires a system with Intel® Turbo Boost Technology. Intel Turbo Boost Technology and Intel Turbo Boost Technology 2.0 are only available on select Intel® processors. Consult your PC manufacturer. Performance varies depending on hardware, software, and system configuration. For more information, visit http://www.intel.com/go/turbo.

3 Requires an Intel® HT Technology-enabled system. Consult your PC manufacturer. Performance will vary depending on the specific hardware and software used.

4 Available on select Intel® Core™ processors. Requires an Intel® HT Technology-enabled system. Consult your PC manufacturer. Performance will vary depending on the specific hardware and software used.


6 Intel® RST requires the computer to have an Intel® RST-enabled Intel® chipset, the RAID controller in the BIOS enabled, and the Intel RST software driver installed. Please consult your system vendor for more information.

7 Subject to availability.

8 WARNING: Altering clock frequency and/or voltage may: (i) reduce system stability and useful life of the system and processor; (ii) cause the processor and other system components to fail; (iii) cause reductions in system performance; (iv) cause additional heat or other damage; and (v) affect system data integrity. Intel has not tested, and does not warranty, the operation of the processor beyond its specifications. Intel assumes no responsibility that the processor, including if used with altered clock frequencies and/or voltages, will be fit for any particular purpose. For more information, visit http://www.intel.com/content/www/us/en/chipsets/performance-chipsets/laptop-desktop-performance-chipsets.html

9 Applications described may require optimization to achieve best performance.

10 Applied only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709A requirements.

11 Intel® Smart Response Technology requires a select Intel® Core™ processor, an enabled chipset, Intel® Rapid Storage Technology software, and a properly configured hybrid drive (HDD + small SSD). Depending on system configuration, your results may vary. Contact your system manufacturer for more information.

12 Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

13 MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

14 Available on select Intel® Core™ processors. Requires an Intel® HT Technology-enabled system. Consult your PC manufacturer. Performance will vary depending on the specific hardware and software used.

15 Available on select Intel® Core™ processors. Requires an Intel® Turbo Boost Technology-enabled system. Consult your PC manufacturer. Performance will vary depending on the specific hardware and software used.

16 In system performance; (iv) cause additional heat or other damage; and (v) affect system data integrity. Intel has not tested, and does not warranty, the operation of the processor beyond its specifications. Intel assumes no responsibility that the processor, including if used with altered clock frequencies and/or voltages, will be fit for any particular purpose. For more information, visit http://www.intel.com/content/www/us/en/chipsets/performance-chipsets/laptop-desktop-performance-chipsets.html

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