INTEL NEWS FACT SHEET

The New Intel® Core™ i7 Processor Extreme Edition: Intel's Most Powerful Desktop Processor Ever

Ultimate Platform for Gaming and Content Creation

May 30, 2016 — Designed for the extreme performance needs of enthusiasts, the Intel® Core™ i7 processor Extreme Edition delivers with up to 10 cores and 20 threads, 40 PCIe* lanes, and a new Intel® Turbo Boost Max Technology 3.0 to tame the most demanding workloads. When game and content creators need incredible performance, they turn to Extreme Edition.

Gamers today do more than just gameplay; they're playing in 4K, they live-stream, record, edit and upload their highlights online, and communicate in real time with their eSports team or competitors. We call this mega-tasking, when simultaneous, compute-intensive, multi-threaded workloads are needed. The Intel Core i7 processor Extreme Edition has up to 35 percent better 3D rendering performance[1] for vivid 4K gameplay while accomplishing other compute-intensive tasks in the background. A new era in virtual reality has also begun and achieving the premium VR experiences delivered by the leading head-mounted displays on the market requires powerful PCs for both consuming and creating VR content.

Content creators also mega-task: They are editing, creating visual effects and composing music simultaneously. Creators also want to see the end result as they're in the process of creating it, so with the ability to support multiple 4K displays along with the threads and performance to handle all of the simultaneous applications, Intel Core i7 processor Extreme Edition helps people spend more of their time creating and less time waiting.

Intel Core i7 processor Extreme Edition opens up new levels of performance and capability enthusiasts never thought possible. Forty PCIe lanes connected directly into the CPU allow for system expansion with fast SSDs, up to four discrete GFX cards and ultra-fast Thunderbolt™ 3.0 technology. Massive Intel® Smart Cache of up to 25MB and quad-channel memory improves responsiveness and decreases startup time when working with large files and applications. The new Intel® Turbo Boost Max Technology 3.0 steers applications to the highest-performing core, improving single-threaded performance by up to 15 percent[2]. The Intel® Core™ i7-69xx/68xx processor family is also unlocked, an important feature for enthusiasts who want the extra headroom and tools to push their system to the limit[3].

With this revolution in performance and flexibility, Intel's first ever 10-core desktop consumer processor delivers the cores and threads to handle the mega-tasking workloads of today's gamers and creators.

Key Features:

- 10-, 8- or 6-core options
- New! Intel® Turbo Boost Max Technology 3.0
- Up to 40 PCI Express* 3.0 lanes
- 4 channel DDR4-2400 memory support

- Fully unlocked for performance tuning
- Up to 25 MB Intel® Smart Cache
- Intel® Hyper-Threading Technology
- Supports LGA 2011-v3 socket
- Intel® Ready Mode Technology
- Intel® X99 Chipset compatibility

Availability

- Systems and boxed processors are available at launch via online retail and through channel partners in all geographies.

Family Lineup

Processor Name	Intel® Core™ i7-6950X Processor Unlocked	Intel® Core™ i7-6900K Processor Unlocked	Intel® Core™ i7-6850K Processor Unlocked	Intel® Core™ i7-6800K Processor Unlocked
Cores/ Threads	10/20	8/16	6/12	6/12
Base Clock Speed (GHz)	3.0	3.2	3.6	3.4
Intel® Turbo Boost Max Technology 3.0	Enabled	Enabled	Enabled	Enabled
Intel® Turbo Boost Technology 2.0 Frequency (GHz)[1]	Up to 3.5	Up to 3.7	Up to 3.8	Up to 3.6
Cache	25MB	20MB	15MB	15MB
Memory Support	4 channels DDR4-2400	4 channels DDR4-2400	4 channels DDR4-2400	4 channels DDR4-2400
PCIe Lanes off of CPU	40	40	40	28
TDP	140W	140W	140W	140W
Socket (LGA)	2011-v3	2011-v3	2011-v3	2011-v3

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. For more information go to http://www.intel.com/performance.

FTC Optimization Notice

Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.

General Performance Disclaimer / "Your Mileage May vary" / Benchmark
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.

Estimated Results Benchmark Disclaimer
Results have been estimated based on internal Intel analysis and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.

Processor Numbering Notice
Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. Go to: http://www.intel.com/products/processor_number/

Benchmark information
Compute Intensive Application Performance. SPEC* CPU2000/2006 is a benchmark from the SPEC consortium that measures device performance and throughput using compute intensive application subtests. SPECint*_base2000/2006 measures how fast a device completes a single integer compute task. SPECint*_rate_base2000/2006 measures throughput, or how many integer compute tasks a device can accomplish in a given amount of time. OS support: Desktop Windows*, UNIX*/Linux* and Mac* OS.

CINEBENCH* R11.5 and R15 is a benchmark from MAXON Computer that measures the performance of desktop OpenGL* 3D modeling applications.

System Configurations
Intel® Core™ i7-6950X Processor (3.0GHz up to 3.5GHz, 10C/20T, 25MB, 140W TDP) measured on - Motherboard: Gigabyte X99 Designare, Memory: 8x8GB DDR4-2133MHz, Storage: Intel 750 PCIe SSD -400GB, OS: Windows* 10 (TH2) , Graphics: Nvidia GTX 980Ti (Driver v364.51), BIOS:BIOS D10, Intel® Turbo Boost Max Driver Beta Version1.0.0.1025, System Power Management Policy: Balanced. All data measured on Beta version: v1.0.0.1025 driver software and subject to change

Intel® Core™ i7-5960X Processor (3.0GHz up to 3.5GHz, 8C/16T, 20MB, 140W TDP) measured on - Motherboard: Gigabyte X99 SOC Champion , Memory: 4x4GB DDR4-2133MHz, Storage: Intel 750 PCIe SSD -400GB , OS: Windows 10 (TH2), Graphics: Nvidia GTX 980Ti (Driver v364.51), BIOS: BIOS F21A, System Power Management Policy: High Performance

[1] Based on measured Cinebench* R15 (Intel® Core™ i7-6950X Processor vs. Intel® Core™ i7-5960X processor).
[2] Based on measured SPECint_base2006 (Intel® Core™ i7-6950X Processor vs. Intel® Core™ i7-5960X processor).
[3] 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 https://www-ssl.intel.com/content/www/us/en/gaming/overclocking-intel-processors.html.
[4] Refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology 2.0.

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