intel experience what's inside™

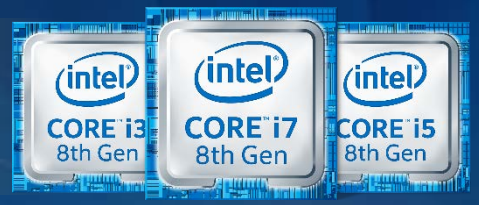
8TH GEN INTEL® CORE™ PROCESSORS

APRIL 2018

THE EVOLUTION OF 8TH GEN INTEL® CORE™

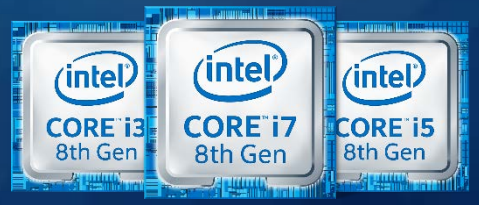
AUG.21.2017

8th Gen Intel® Core™ Family Introduction
Launched Mobile U-series Processors



OCT.05.2017

8th Gen Intel® Core™ Desktop
K SKU and Premium Consumer Processors



JAN.07.2018

8th Gen Intel® Core™ with Radeon RX Vega M
First Performance Mobile in 8th Gen Family

WHAT WE'RE ANNOUNCING IN APRIL

APR.3.2018

Mobile 8th Gen Intel® Core™ Processors
Core™ i9 and Highest-Performance Processors

8th Gen Intel® Core™ Processors
Mainstream Mobile Processors w/ Intel® Iris® Plus Graphics

8th Gen Intel® Core™ Platform Extension
Enhanced w/ Intel® Optane™ Technology

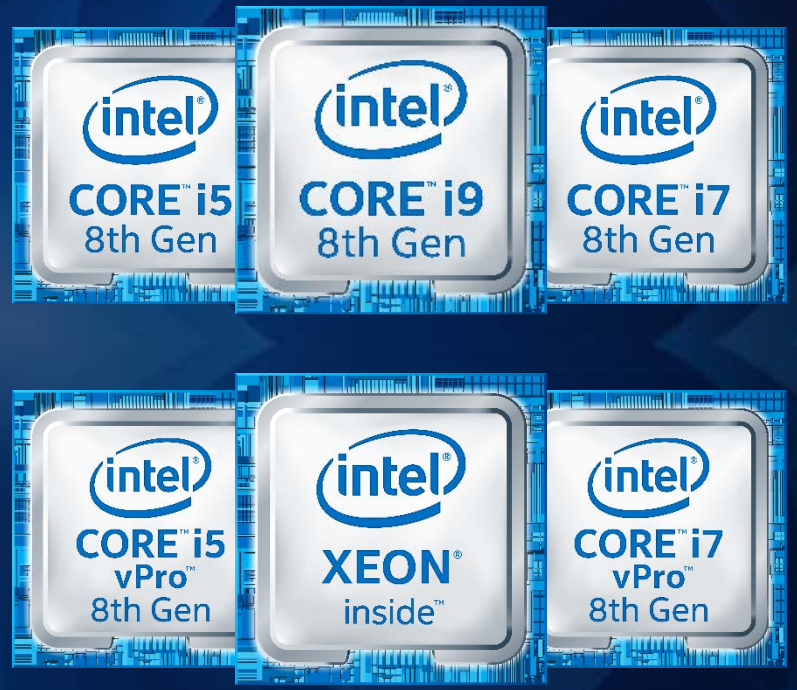
8th Gen Intel® Core™ Desktop
Broad Consumer Processors

8th Gen Intel® Core™ vPro™
Commercial Product Family & Solutions

INTRODUCING THE PERFORMANCE POWERHOUSE

8TH GEN INTEL® CORE™

MOBILE PROCESSOR FAMILY



NEW 8TH GEN INTEL® CORE™ MOBILE PERFORMANCE PROCESSOR | AUDIENCES

GAMING

45% growth in retail gaming notebook sales YoY[1]

CONTENT CREATION

Over 50 million advanced digital content creators[2]

VR / ULTRA MR

VR HMD driving new experiences and future growth

COMMERCIAL PERFORMANCE

25% average growth over past 3 years[3]

Mobile now represents 33% of the workstation market[4]

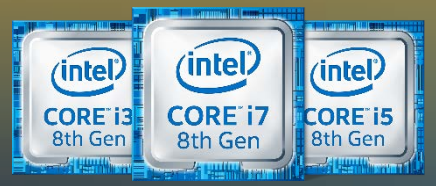
8TH GEN INTEL® CORE™ PROCESSOR MOBILE SEGMENTS

U-SERIES

H-SERIES

HARDENED SECURITY AND FLEXIBLE MANAGEMENT SOLUTIONS WITH THE INTEL® VPRO™ PLATFORM, BUILT FOR BUSINESS

MAINSTREAM PERFORMANCE & EXCELLENT MOBILITY



intel IRIS Plus GRAPHICS

THIN & LIGHT PERFORMANCE W/ DISCRETE GRAPHICS

NEW HIGHEST MOBILE PERFORMANCE FOR GAMING, VR AND CREATION

NEW ULTIMATE COMMERCIAL GRADE PERFORMANCE, SECURITY, MANAGEABILITY

NEW 8TH GEN INTEL® CORE™ PROCESSOR PERFORMANCE SEGMENTS

ENTHUSIAST GAMING AND CREATION ON THE GO

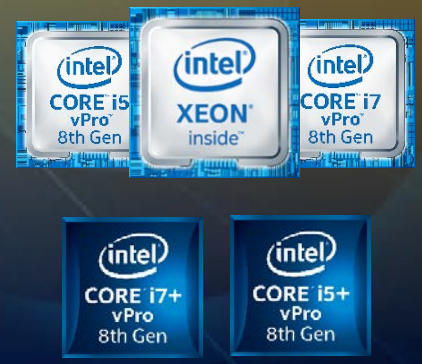
- Enthusiast-level performance that is now easy to take anywhere
- Enjoy immersive gaming and rich content creation on the go

ULTIMATE MOBILE GAMING, VR AND CREATION EXPERIENCE

- Highest-level performance with first mobile Core™ i9 for hardcore gaming, premium VR, MR Ultra and professional content creation
- Amazing level of rich visuals and responsive game play never before possible in a laptop
- Mega-tasking: game, stream and record with great playability

ULTIMATE COMMERCIAL GRADE PERFORMANCE, SECURITY, MANAGEABILITY

- Ultimate tool for data analysis, business applications and engineering
- Deliver highest level of productivity and data integrity



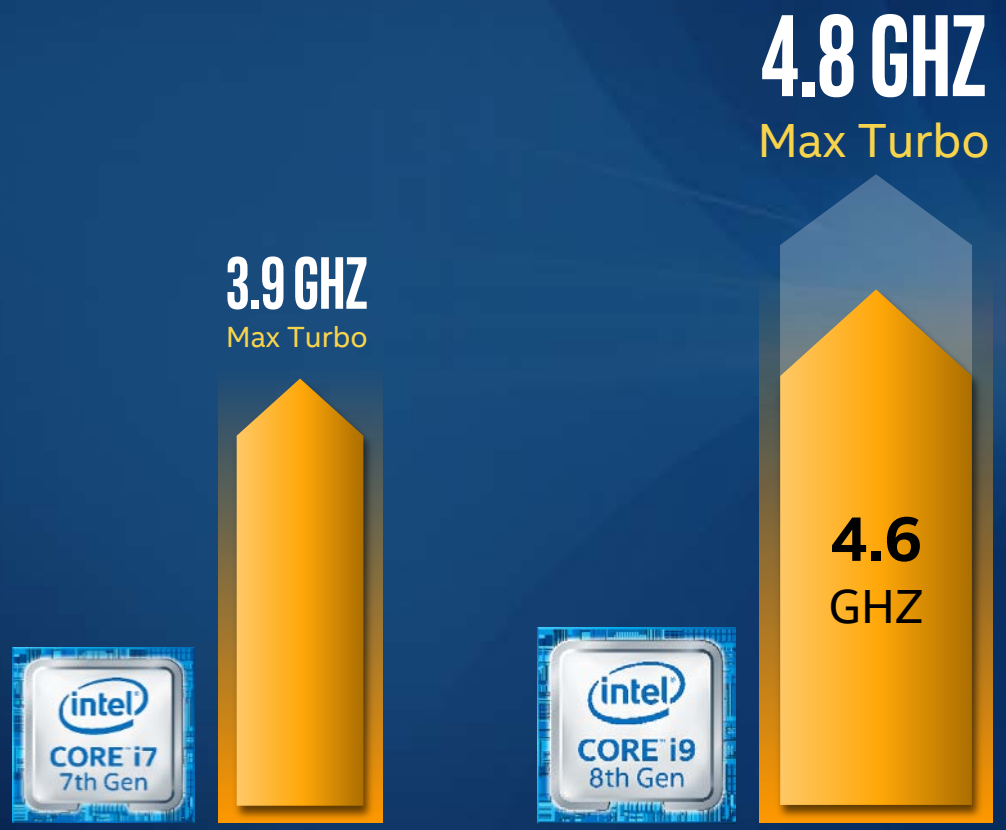
8TH GEN INTEL® CORE™ PERFORMANCE MOBILE OVERVIEW

INTRODUCING THE BEST GAMING LAPTOP PROCESSOR INTEL HAS EVER BUILT

- **FIRST** INTEL® CORE™ i9 AND 6-CORE PROCESSOR FOR LAPTOPS
- **HIGHEST** MOBILE PERFORMANCE w/ **NEW** INTEL® THERMAL VELOCITY BOOST
- **NEW** MOBILE INTEL® 300 SERIES CHIPSET WITH ENHANCED AUDIO AND I/O
- **NEW** INTEGRATED INTEL® WIRELESS-AC WITH GIGABIT THROUGHPUT
- **NEW** HIGH SPEED INTEGRATED USB 3.1 GEN2 (10 Gb/s)
- **FIRST** INTEL® OPTANE™ MEMORY LAPTOP SOLUTION
- **OPTIMIZED** FOR THE LATEST DISCRETE GRAPHICS AND THUNDERBOLT™ 3

ARCHITECTURE + DESIGN + MANUFACTURING = PREMIUM PERFORMANCE

8TH GEN INTEL® CORE™ PERFORMANCE MOBILE OVERVIEW



NEW INTEL® THERMAL VELOCITY BOOST

FIRST 6-CORE / 12-THREAD MOBILE INTEL® PROCESSOR

INTEL® TURBO BOOST TECHNOLOGY 2.0

BASE FREQUENCY (LATEST 14NM)

ARCHITECTURE + DESIGN + MANUFACTURING = PREMIUM PERFORMANCE

HIGHEST-PERFORMANCE MOBILE 8TH GEN INTEL® CORE™ PROCESSOR

ULTIMATE MOBILE PERFORMANCE

First mobile Intel® processor with up to 6 cores, 12 threads and first mobile Intel® Core™ i9, featuring new Intel® Thermal Velocity Boost[5] and a fully unlocked K SKU.

NO-COMPROMISE GAMING AND VR

New levels of single-, multi-threaded, and mega-tasking performance for the latest AAA games and VR, faster game load with Intel® Optane™ technology, and faster wireless than Gigabit Ethernet with Intel® Wireless-AC 2x2 160 MHz.[6]

NEXT-LEVEL CONTENT CREATION

Intel's most-powerful mobile platform for creators enables faster 4K video editing and faster media content loading from large HDD data drives with Intel® Optane™ memory.

HIGHEST-PERFORMANCE MOBILE 8TH GEN INTEL® CORE™ PROCESSOR

	OVERALL PERFORMANCE	ENTHUSIAST GAMING		CONTENT CREATION	
		GAME FPS	GAME+STREAM+RECORD	EDITING	
intel CORE i9 8th Gen	Up to **29%** BETTER[7]	Up to **41%** BETTER[9]	Up to **32%** BETTER[11]	Up to **59%** FASTER[13] 4K VIDEO EDITING	**vs.** 7th Gen Intel® Core™ i7 processor-based PC
intel CORE i7 8th Gen	Up to **88%** BETTER[8]	Up to **2.7x** BETTER[10]	Up to **3.3x** BETTER[12]	Up to **68%** FASTER[14] PHOTO EDITING	**vs.** 3-year-old system

Numbers without Intel® Optane™ technology

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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 about benchmarks and performance test results, go to www.intel.com/benchmarks.

WI-FI THAT SMASHES THROUGH THE GIGABIT BARRIER

Faster than a Gigabit Ethernet connection[15], Intel® Wireless-AC 2x2 160 MHz (1,733 Mbps) raises the bar on your wireless experiences.

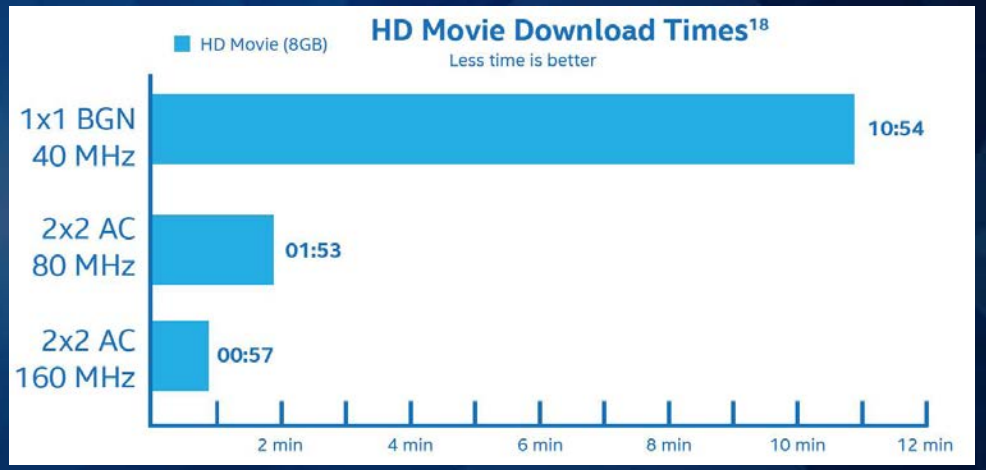
INTEL® WIRELESS-AC 2X2 160 MHZ IMPROVES...

STREAMING

CONFERENCING

GAMING

- Up to 12x faster[16] than baseline 1x1 802.11BGN 40 MHz (150 Mbps)
- Up to 2X faster[16] than standard 2x2 802.11AC 80 MHz (867 Mbps)
- Future-proof your digital experiences by ensuring your next PC comes equipped with an 8th Generation Intel® Core processor and Intel® Wireless-AC 2x2 160 MHz.[17]



DISCOVER MORE AT INTEL.COM/WIRELESS

PREMIUM GAMING & CREATION*

LONE ECHO
ECHO ARENA

TOTAL WAR WARHAMMER
THE LABORATORY

CONQUEROR'S BLADE

Pr

Lr

EVASION

ASSASSIN'S CREED ORIGINS

WORLD OF TANKS 1.0

SPRINT VECTOR

MORTAL BLITZ

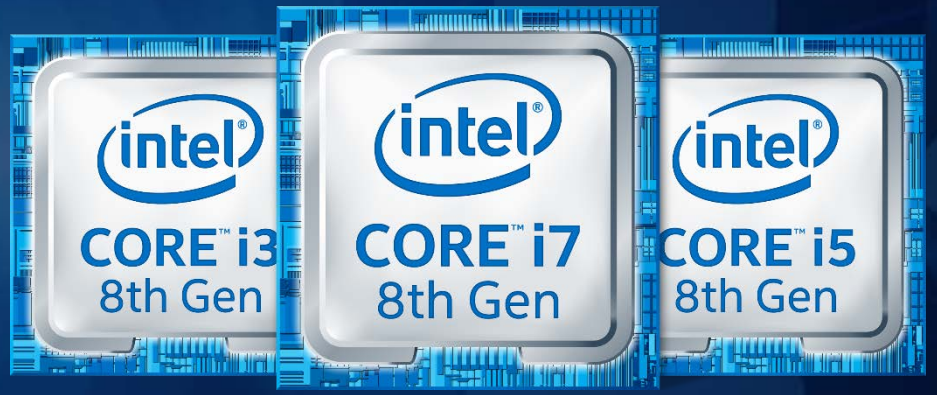
*Other names and brands may be claimed as the property of others.

NEW 8TH GEN INTEL® CORE™ PERFORMANCE MOBILE PROCESSORS

Processor number	Base clock speed (GHz)	Intel® Turbo Boost Technology 2.0 maximum single core turbo frequency (GHz)	Cores/ Threads	Thermal Design Power	Unlocked[20]	Intel® Smart Cache	Memory support	Intel® Optane™ Memory Support[22]	Intel® vPro™ Technology Eligible[45]
Intel® Core™ i9-8950HK	2.9	4.8[19]	6/12	45	√	12 MB	Two channels DDR4-2666[21]	√	
Intel® Xeon® E-2186M	2.9	4.8[19]	6/12	45		12 MB	Two channels DDR4-2666[21], ECC	√	√
Intel® Xeon® E-2176M	2.7	4.4	6/12	45		12 MB	Two channels DDR4-2666[21], ECC	√	√
Intel® Core™ i7-8850H	2.6	4.3	6/12	45	Partial	9 MB	Two channels DDR4-2666[21]	√	√
Intel® Core™ i7-8750H	2.2	4.2	6/12	45		9 MB	Two channels DDR4-2666[21]	√	
Intel® Core™ i5-8400H	2.5	4.2	4/8	45		8 MB	Two channels DDR4-2666[21]	√	√
Intel® Core™ i5-8300H	2.3	4.0	4/8	45		8 MB	Two channels DDR4-2666[21]	√	

Intel® processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families.
All processors are lead-free (per EU RoHS directive July 2006) and halogen free (residual amounts of halogens are below November 2007 proposed IPC/JEDEC J-STD-709 standards)
All processors support Intel® Virtualization Technology (Intel® VT-x)

INTRODUCING NEW ADDITIONS TO 8TH GEN INTEL® CORE™ MAINSTREAM MOBILE PROCESSORS



NEW 8TH GEN INTEL® CORE™ MOBILE PROCESSORS

U-SERIES PROCESSORS WITH INTEL® IRIS® PLUS GRAPHICS

- UP TO 4 CORES, 8 THREADS
- INTEL® IRIS® PLUS GRAPHICS
- **NEW** MOBILE INTEL® 300 SERIES CHIPSET WITH ENHANCED AUDIO AND I/O
- **NEW** INTEGRATED INTEL® WIRELESS-AC WITH GIGABIT THROUGHPUT
- **NEW** HIGH SPEED INTEGRATED USB 3.1 GEN2 (10 Gb/s)
- **FIRST** INTEL® OPTANE™ MEMORY LAPTOP SOLUTION
- **MORE** ON-PACKAGE eDRAM (128MB)

NEW 8TH GEN INTEL® CORE™ MOBILE PROCESSORS

Processor number	Base clock speed (GHz)	Intel® Turbo Boost Technology 2.0 maximum single core turbo frequency (GHz)	Cores/ Threads	Thermal Design Power	Intel® Smart Cache	Memory support	Intel® Optane™ Memory Support[22]
Intel® Core™ i7-8559U	2.7	4.5	4/8	28	8 MB	Two channels DDR4-2400[23]	√
Intel® Core™ i5-8269U	2.6	4.2	4/8	28	6 MB	Two channels DDR4-2400[23]	√
Intel® Core™ i5-8259U	2.3	3.8	4/8	28	6 MB	Two channels DDR4-2400[23]	√
Intel® Core™ i3-8109U	3.0	3.6	2/4	28	4 MB	Two channels DDR4-2400[23]	√

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INTEL® OPTANE™ MEMORY

8TH GEN INTEL® CORE™ MOBILE AND DESKTOP

INTEL® OPTANE™ MEMORY
SMART, ADAPTABLE SYSTEM ACCELERATOR

WORK
EVERYDAY TASKS UP TO

2.1X [24]

2.2X [25]

FASTER

PLAY
LOAD LEVELS UP TO

3.9X [26]

4.7X [27]

FASTER

CREATE
OPEN LARGE MEDIA FILES UP TO

3.0X [28]

1.7X [29]

FASTER

Now on 8th Gen Intel® Core™ Mobile and Desktop Platforms

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Intel® Optane™ memory requires specific hardware and software configuration. Visit www.intel.com/OptaneMemory for configuration requirements.

INTEL® OPTANE™ MEMORY: DATA DRIVE ACCELERATION

SSD BOOT (C:/) DRIVE

Intel® Optane™ memory accelerated HDD Data (D:/) Drive

HIGH PERFORMANCE, RESPONSIVENESS WITHOUT FILE MANAGEMENT

- BLAZING GAME PLAY
- FASTER MEDIA LOADS

PLAY LOAD LEVELS UP TO **4.7X FASTER**[30]

CREATE LOAD MEDIA UP TO **1.7X FASTER**[31]

Accelerate Your Game Play and Creativity

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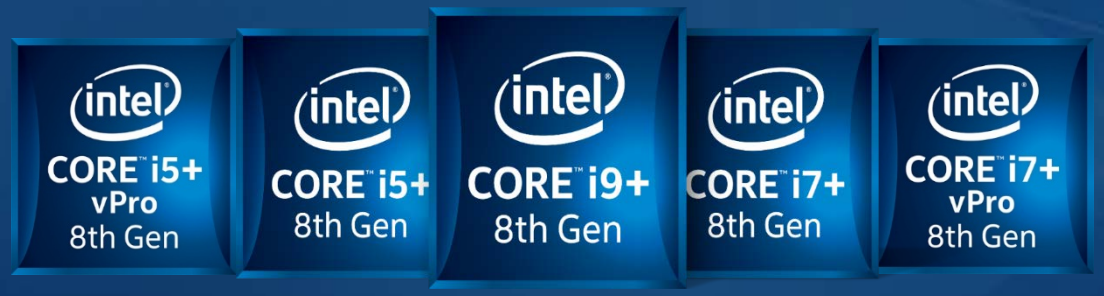
Intel® Optane™ memory requires specific hardware and software configuration. Visit www.intel.com/OptaneMemory for configuration requirements.

NEW 8TH GEN INTEL® CORE™ PLATFORM EXTENSION



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8th Gen Intel® Core™ Processor Performance

+

Intel® Optane™ Technology Responsiveness

Your Computer's Performance, Optimized for You

NEW ADDITIONS TO 8TH GEN INTEL® CORE™ DESKTOP PROCESSOR FAMILY AND INTEL® 300 SERIES CHIPSETS

8TH GEN INTEL® CORE™ PROCESSORS FOR THE EVERYDAY CONSUMER

PERFORMANCE YOU CAN SEE & FEEL...

5-year-old system Intel® Core™ i5+ 8400

BETTER PRODUCTIVITY

SYSTEM RESPONSIVENESS	2.5X BETTER[34]	
OFFICE* PRODUCTIVITY	2.1X FASTER[35]	

BETTER GAMING

LOAD LEVELS	4.3X FASTER[36]	
GAME LAUNCH	2.2X FASTER[37]	

BETTER CONTENT CREATION

MEDIA PROJECT LOAD	3.8X FASTER[38]	
EDIT MEDIA	1.6X FASTER[39]	

Wide Range of Performance Options for Every Consumer

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NEW USAGES WITH 8TH GEN INTEL® CORE™ DESKTOP PLATFORM

TRANSFORM YOUR PC WITH MODERN STANDBY, AMBIENT COMPUTING AND ENHANCED INTEL® OPTANE™ MEMORY

MODERN STANDBY

Fast Resume
Responsive instant-on experience

Wake-on-Voice
Always listening with wake-on-voice and far-field microphone

Energy Efficiency
Energy efficiency while still remaining connected and data fresh

AMBIENT COMPUTING

Voice-First Interaction
Rich, crystal-clear audio

Multiple Personal Assistants
Alexa on Windows* and Cortana* on PC*

Near Field & Far Field Support
Wakes PC while in Screen-Off or Modern Standby state

INTEL® OPTANE™ MEMORY

Responsiveness
Add Intel® Optane™ memory for an intelligent, amazingly responsive computing experience

Data Drive Acceleration
Accelerate frequently used games, files and applications on a data drive

Low Power Support[40]
Modern Standby support for energy efficiency

NEW 8TH GEN INTEL® CORE™ DESKTOP PROCESSORS

Processor number	Base clock speed (GHz)	Intel® Turbo Boost Technology 2.0 maximum single core turbo frequency (GHz)	Cores/ Threads	Thermal Design Power	Intel® Smart Cache	Memory support	Intel® Optane™ Memory Support[22]	Intel® vPro™ Technology Eligible[45,46]	RCP pricing (USD 1K)
Standard Power									
Intel® Core™ i5-8600	3.1	4.3	6 / 6	65	9M	Two channels DDR4-2666[41]	√	√	$213
Intel® Core™ i5-8500	3	4.1	6 / 6	65	9M	Two channels DDR4-2666[41]	√	√	$192
Intel® Core™ i3-8300	3.7	N/A	4 / 4	62	8M	Two channels DDR4-2400[42]	√		$138
Low Power									
Intel® Core™ i7-8700T	2.4	4	6 / 12	35	12M	Two channels DDR4-2666[41]	√	√	$303
Intel® Core™ i5-8600T	2.3	3.7	6 / 6	35	9M	Two channels DDR4-2666[41]	√	√	$213
Intel® Core™ i5-8500T	2.1	3.5	6 / 6	35	9M	Two channels DDR4-2666[41]	√	√	$192
Intel® Core™ i5-8400T	1.7	3.3	6 / 6	35	9M	Two channels DDR4-2666[41]	√		$182
Intel® Core™ i3-8300T	3.2	N/A	4 / 4	35	8M	Two channels DDR4-2400[42]	√		$138
Intel® Core™ i3-8100T	3.1	N/A	4 / 4	35	6M	Two channels DDR4-2400[42]	√		$117

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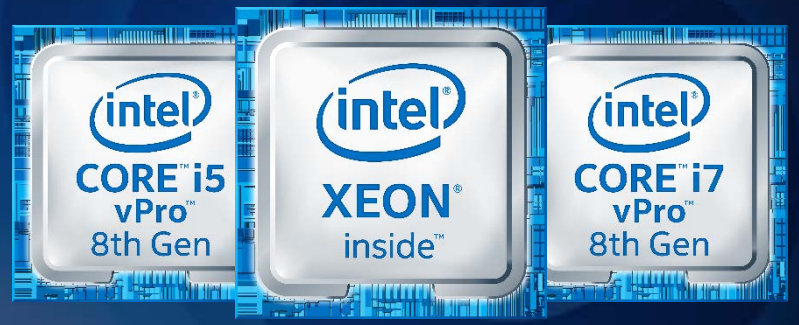
NEW INTEL® 300 SERIES CHIPSETS

Chipset Name	Intel® ME 12 Firmware SKU	Maximum High Speed I/O Lanes	Total USB Ports (Maximum USB 3.1)[43]	Maximum USB 3.1 Ports: Gen 2 (10 Gb/s) / Gen 1 (5 Gb/s)[43]	Maximum SATA 3.0 Ports (6 Gb/s)[43]	Maximum PCI Express* 3.0 lanes[43]	Maximum Intel® RST for PCIe Storage Ports (x2 M.2 or x4 M.2)[43]	Intel® Optane™ Memory Support[22]	Integrated Intel® Wireless-AC Support	Intel® Smart Sound Technology[44]	Intel® vPro™ Technology Eligible[45]
Intel® H370 Chipset	Consumer / Corporate	30	14 (8)	4 / 8	6	20	2	√	√	√	
Intel® H310 Chipset	Consumer	14	10 (4)	0 / 4	4	6 (Gen 2.0 only)	0		√		
Intel® Q370 Chipset	Corporate	30	14 (10)	6 / 10	6	24	3	√	√	√	√
Intel® B360 Chipset	Consumer / Corporate	24	12 (6)	4 / 6	6	12	1	√	√	√	

INTRODUCING THE

8TH GEN INTEL® CORE™

VPRO™ PLATFORM & SOLUTIONS



8TH GEN INTEL® CORE™ VPRO™ PLATFORM DESIGNED FOR BUSINESS

Businesses rely on a computing environment to help:

GENERATE RESULTS

Increased Performance:

New 8th Gen Intel® Core™ vPro™ processor with 4 cores for mainstream mobile devices

New 8th Gen Intel® Core™ vPro™ processor with 6 cores for desktops, performance notebooks and mobile workstations

Intel® Optane™ Memory

Smart, adaptable system accelerator enabling uncompromising responsiveness

Thunderbolt™ 3

Fastest most versatile USB-C connection – Enterprise Thunderbolt™ docking, dual 4K display

PROTECT THE BUSINESS

Intel® Authenticate

Hardened multifactor authentication for identity protection – now adding face as a factor

Intel® Runtime BIOS Resilience

Improving BIOS security, minimizing the risk of below the OS software attacks

MANAGE COSTS

Intel® Transparent Supply Chain

Provide the tractability of system components from the OEM with Intel® Transparent Supply Chain

Intel® Active Management Technology

Remote management to better discover, activate and help protect a PC - independent of its power state

- New capabilities added to Intel Manageability Commander, a freely available tool, as part of AMT, to help simplify PC management for IT

LEGAL DISCLAIMER

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Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.

Altering clock frequency or voltage may damage or reduce the useful life of the processor and other system components, and may reduce system stability and performance. Product warranties may not apply if the processor is operated beyond its specifications. Check with the manufacturers of system and components for additional details.

Intel is a sponsor and member of the BenchmarkXPRT Development Community, and was the major developer of the XPRT family of benchmarks. Principled Technologies is the publisher of the XPRT family of benchmarks. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases.

PCMark* Vantage HDD Suite is a benchmark from Futuremark Corporation (now UL), and is a stand-alone HDD test scenario which was developed to target common usages of HDD's in everyday home PC's. The HDD suite are a combination of tests that are perfectly suitable for testing any writable local storage device ranging from USB drives to HDD's and SSD's by selectingthe HDD suite target in the benchmark settings.

Because it is out-of-date and was originally designed for Windows Vista, Intel does not recommend PCMark Vantage for performance evaluations of modern hardware platforms. That said, the PCMark Vantage HDD Suite continues to be used by the storage industry and technical press because the tests can show differentiation within a single class of storage media (HDD or SSD). For this reason, Intel continues to discreetly use PCMark Vantage to showcase Intel® Optane™ performance relative to similar storage alternatives.

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*Other names and brands may be claimed as the property of others.

SOURCE AND PERFORMANCE DISCLAIMERS

1. NPD & GFK 2016 vs. 2017 Retail Sales. Assumptions: Performance CPUs (Intel: Core i5 and i7 H-series Mobile, AMD: FX and A10); Discrete graphics at 3D Mark score of ≥2000 (approx. Nvidia GTX level); Windows OS
2. IMRA Digital Content Creators Market Sizing and Polling Report 2015. US/UK/China only. Population size numbers are rounded. PRC population figure consists of Tier 1 and 2 only
3. 25% overall for commercial + mobile workstation Intel billings from 2015-2017."
4. Jon Peddie Research Q3'17 Workstation report
5. The Intel® Thermal Velocity Boost feature is supported on Intel® Core™ i9-8950HK and Intel® Xeon® Processor E-2186M and is designed to increase performance of both multi-threaded and single-threaded workloads. The maximum Core Frequency is achieved while the processor is at a temperature of 50°C or lower and turbo power budget is available. Frequencies may reduce over time as processor temperature increases.
6. Under industry recognized ideal conditions for both Wi-Fi and wired connections.
7. As measured by SYSmark* 2014 SE comparing 8th Gen Intel® Core™ i9-8950HK vs. 8th Gen Intel® Core™ i7-7820HK
8. As measured by SYSmark* 2014 SE comparing 8th Gen Intel® Core™ i7-8750H vs. 8th Gen Intel® Core™ i7-4720HQ
9. As measured by Total War: Warhammer II Workload comparing 8th Gen Intel® Core™ i9-8950HK vs. 8th Gen Intel® Core™ i7-7820HK
10. As measured by Total War: Warhammer II Workload comparing 8th Gen Intel® Core™ i7-8750H vs. 8th Gen Intel® Core™ i7-4720HQ
11. As measured by Mega-tasking Gaming Scenario on Playerunknown's Battleground comparing 8th Gen Intel® Core™ i9-8950HK vs. 8th Gen Intel® Core™ i7-7820HK
12. As measured by Mega-tasking Gaming Scenario on Playerunknown's Battleground comparing 8th Gen Intel® Core™ i7-8750H vs. 8th Gen Intel® Core™ i7-4720HQ
13. As measured by Adobe Premiere Pro Video Editing Workload comparing 8th Gen Intel® Core™ i9-8950HK vs. 8th Gen Intel® Core™ i7-7820HK
14. As measured by Lightroom Workload comparing 8th Gen Intel® Core™ i7-8750H vs. 8th Gen Intel® Core™ i7-4720HQ
15. Under industry recognized ideal conditions for both Wi-Fi and wired connections.
16. 802.11ac 2x2 160 MHz enables 1733 Mbps maximum theoretical data rates, 2x faster than standard 802.11ac 2x2 80 MHz (867 Mbps) and nearly 12x faster than baseline 1x1 BGN (150 Mbps) Wi-Fi as documented in IEEE 802.11 wireless standard specifications, and requires the use of similarly configured 802.11ac wireless network routers or better. To achieve Gigabit wireless speeds, the network requires a wireless router/access point that supports 160 MHz channels.
17. Intel® Wireless Adapters supporting Gigabit Wi-Fi available on select 8th Generation Intel® Core™ processors.
18. Estimates for Wi-Fi download times are calculations based upon real-world, single client, best-case throughput speed assumptions of approximately 70% of IEEE 802.11 specification theoretical maximum data rates to account for networking overhead. Actual performance may vary based on system design, network configuration, and wireless environment. HD movie download calculation based on 802.11 BGN 40 MHz 150 Mbps Theoretical Maximum data rate and expected Maximum Throughput of 105 Mbps resulting in an 8GB movie download time of 10:54 seconds and 802.11AC 160Mhz 1733 Mbps Theoretical Maximum data rate and expected Maximum Throughput of 1213 Mbps resulting in a movie download time of 57 seconds.
19. Includes the effect of Intel® Thermal Velocity Boost feature which opportunistically and automatically increases clock frequency by up to 200 MHz if the processor is at a temperature of 50°C or lower and turbo power budget is available. The frequency gain and duration is dependent on the workload (best for bursty workloads), capabilities of the individual processor, and the processor cooling solution. Frequencies may reduce over time and longer workloads may start at the max frequency but drop as processor temperature increases.
20. See overclocking disclaimer
21. Suport is SoDIMM DDR4-2666 1 DPC, DDR4 2400 2 DPC.
22. Intel® Optane™ memory requires specific hardware and software configuration. Visit www.intel.com/Optanememory for configuration requirements.
23. Support is SODIMM is DDR4-2400 1 DPC.

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24. As measured by SYSmark* 2014 SE Responsiveness Subscore comparing 8th Gen Intel® Core™ i7+ 8700 processor (32GB Intel® Optane™ memory module) vs. 8th Gen Intel® Core™ i7-8700 Processor (HDD Only)
25. As measured by SYSmark* 2014 SE Responsiveness Subscore comparing 8th Gen Intel® Core™ i7+ 8750H processor (32GB Intel® Optane™ memory module) vs. 8th Gen Intel® Core™ i7-8750H Processor (HDD Only)
26. As measured by Game Level Load Workload comparing 8th Gen Intel® Core™ i7+ 8700 processor (32GB Intel® Optane™ memory module) vs. 8th Gen Intel® Core™ i7-8700 Processor (HDD Only)
27. As measured by Game Level Load Workload comparing 8th Gen Intel® Core™ i7+ 8750H processor (32GB Intel® Optane™ memory module) vs. 8th Gen Intel® Core™ i7-8750H Processor (HDD Only)
28. As measured by Media Project Load Workload comparing 8th Gen Intel® Core™ i7+ 8700 processor (32GB Intel® Optane™ memory module) vs. 8th Gen Intel® Core™ i7-8700 Processor (HDD Only)
29. As measured by Media Project Load Workload comparing 8th Gen Intel® Core™ i7+ 8750H processor (32GB Intel® Optane™ memory module) vs. 8th Gen Intel® Core™ i7-8750H Processor (HDD Only)
30. As measured by Game Level Load Workload comparing 8th Gen Intel® Core™ i7+ 8750H (32GB Intel® Optane™ memory module) + 256GB PCIe SSD + 1TB HDD vs. 8th Gen Intel® Core™ i7-8750H + 256GB PCIe SSD + 1TB HDD
31. As measured by Media Project Load Workload comparing 8th Gen Intel® Core™ i7+ 8750H (32GB Intel® Optane™ memory module) + 256GB PCIe SSD + 1TB HDD vs. 8th Gen Intel® Core™ i7-8750H + 256GB PCIe SSD + 1TB HDD
32. As measured by PCMark* Vantage (HDD Suite) comparing 8th Gen Intel® Core™ i9+ 8950HK (118GB Intel® Optane™ 800P SSD) + 1TB HDD vs. 8th Gen Intel® Core™ i9-8950HK + 1TB HDD + 256GB PCIe SSD
33. As measured by PCMark* Vantage (HDD Suite) comparing 8th Gen Intel® Core™ i7+ 8700K (280GB Intel® Optane™ 900P SSD) + 1TB HDD vs. 8th Gen Intel® Core™ i7-8700K + 1TB HDD + 256GB PCIe SSD
34. As measured by SYSmark* 2014 SE Responsiveness Subscore comparing 8th Gen Intel® Core™ i5+ 8400 (16GB Intel® Optane™ memory module) vs. Intel® Core™ i5-3330 (HDD Only)
35. As measured by Office Productivity Multitasking Workload comparing 8th Gen Intel® Core™ i5+ 8400 (16GB Intel® Optane™ memory module) vs. Intel® Core™ i5-3330 (HDD Only)
36. As measured by Game Level Load Workload comparing 8th Gen Intel® Core™ i5+ 8400 (16GB Intel® Optane™ memory module) vs. Intel® Core™ i5-3330 (HDD Only)
37. As measured by Game Launch Workload comparing 8th Gen Intel® Core™ i5+ 8400 (16GB Intel® Optane™ memory module) vs. Intel® Core™ i5-3330 (HDD Only)
38. As measured by Media Project Load Workload comparing 8th Gen Intel® Core™ i5+ 8400 (16GB Intel® Optane™ memory module) vs. Intel® Core™ i5-3330 (HDD Only)
39. As measured by HDXPRT* 2014 comparing 8th Gen Intel® Core™ i5+ 8400 (16GB Intel® Optane™ memory module) vs. Intel® Core™ i5-3330 (HDD Only)
40. With Intel® Optane™ memory SKUs that have the L1.0, L1.2 features based on Stony Beach 2
41. Support is UDIMM DDR4-2666 1 and 2 DPC, SODIMM DDR4-2666 1 DPC
42. Support is UDIMM DDR4-2400 1 and 2 DPC, SODIMM DDR4-2400 1 DPC
43. Maximum lanes/port counts available may vary depending on platform implementation
44. Certain features may not be present in all SKUs
45. Intel SIPP, Intel vPro™, & Intel AMT support requires select 8th Gen Intel® Core™ processors and select Intel® 300 series chipsets
46. The previously launched Intel® Core™ i7-8700K, Intel® Core™ 7-8700 and Intel® Core™ i5-8600K now also become Intel vPro technology eligible

SYSTEM CONFIGURATIONS

8th Generation Intel® Core™ Mobile Processors

8th Generation Intel® Core™ vs. 7th Generation Intel® Core™

Intel® Core™ i9-8950K Processor, PL1=45W TDP, 6C12T, Turbo up to 4.8GHz on Pre-production OEM System, Graphics: NVIDIA GTX 1080, Memory: 2x4GB DDR4, Storage: 256GB Intel® 760P SSD (PCIe), OS: Windows* 10 RS3 Build 1709, MCU 0x84 (Reference Disclaimer 19)

Intel® Core™ i7-7820HK Processor, PL1=45W TDP, 6C12T, Turbo up to 4.6GHz on MSI System, Graphics: NVIDIA GTX 1080, Memory: 2x4GB DDR4, Storage: 256GB Intel® 760P SSD (PCIe), OS: Windows* 10 RS3 Build 1709, MCU 0x84

8th Generation Intel® Core™ vs. 4th Generation Intel® Core™ (3YO)

Intel® Core™ i7-8750H Processor, PL1=45W TDP, 6C12T, Turbo up to 4GHz on Pre-production OEM System, Graphics: NVIDIA GTX 1070, Memory: 2x4GB DDR4, Storage: 256GB Intel® 760P SSD (PCIe), OS: Windows* 10 RS3 Build 1709, MCU 0x84

Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz on ASUS System, Graphics: NVIDIA 960M, Memory: 2x4GB DDR4, Storage: HDD, OS: Windows* 10 RS3 Build 1709, MCU 0x24

Intel® Optane™ memory Configurations

Intel® Core™ i7+ 8750H Processor, PL1=45W TDP, 6C12T, Turbo up to 4GHz on Pre-production OEM System, Graphics: NVIDIA GTX 1070, Memory: 2x4GB DDR4, Storage: 1TB HDD + 32GB Intel® Optane memory, OS: Windows* 10 RS3 Build 1709, MCU 0x84

Intel® Core™ i7-8750H Processor, PL1=45W TDP, 6C12T, Turbo up to 4GHz on Pre-production OEM System, Graphics: NVIDIA GTX 1070, Memory: 2x4GB DDR4, Storage: 1TB HDD, OS: Windows* 10 RS3 Build 1709, MCU 0x84

SYSTEM CONFIGURATIONS

8th Generation Intel® Core™ Mobile Processors

Intel® Optane™ Data Drive Acceleration Configurations

Intel® Core™ i7+ 8750H Processor, PL1=45W TDP, 6C12T, Turbo up to 4GHz on Pre-production OEM System, Graphics: NVIDIA GTX 1070, Memory: 2x4GB DDR4, Storage: 256GB 760P SSD (PCIe) + 1TB HDD + 32GB Intel® Optane memory, OS: Windows* 10 RS3 Build 1709, MCU 0x84

Intel® Core™ i7-8750H Processor, PL1=45W TDP, 6C12T, Turbo up to 4GHz on Pre-production OEM System, Graphics: NVIDIA GTX 1070, Memory: 2x4GB DDR4, Storage: 256GB 760P SSD (PCIe) + 1TB HDD, OS: Windows* 10 RS3 Build 1709, MCU 0x84

Intel® Optane™ SSD Configurations

(Intel Reference Platform) Intel® Core™ i9+ 8950HK Processor, PL1=45W TDP, 6C12T, Turbo up to 4.6GHz on Pre-production OEM System, Graphics: Intel UHD Graphics, Memory: 2x4GB DDR4, Storage: 118GB Intel® Optane™ 800P SSD + 1TB HDD, OS: Windows* 10 RS3 Build 1709, MCU 0x84 (Reference TVB Disclaimer 19)

(Intel Reference Platform) Intel® Core™ i9-8950K Processor, PL1=45W TDP, 6C12T, Turbo up to 4.6GHz on Pre-production OEM System, Graphics: Intel UHD Graphics, Memory: 2x4GB DDR4, Storage: 256GB 760P SSD (PCIe) + 1TB HDD, OS: Windows* 10 RS3 Build 1709, MCU 0x84

SYSTEM CONFIGURATIONS

8th Gen Intel® Core™ Desktop Processors

Intel® Optane™ memory Configurations

Intel® Core™ i7+ 8700 Processor, PL1=65W TDP, 6C12T, Turbo up to 4.6GHz, Motherboard: ASUS Prime Z370A, Graphics: NVIDIA GTX 1080Ti, Memory: 2x4GB DDR4, Storage: 1TB Western Digital WD1003F2EX 7200RPM + 32GB Intel® Optane™ memory, OS: Windows* 10 RS3 Build 1709, BIOS Version 609 with MCU 0x84

Intel® Core™ i7-8700 Processor, PL1=65W TDP, 6C12T, Turbo up to 4.6GHz, Motherboard: ASUS Prime Z370A, Graphics: NVIDIA GTX 1080Ti, Memory: 2x4GB DDR4, Storage: 1TB Western Digital WD1003F2EX 7200RPM, OS: Windows* 10 RS3 Build 1709, BIOS Version 609 with MCU 0x84

Intel® Optane™ SSD Configurations

Intel® Core™ i7+ 8700K Processor, PL1=95W TDP, 6C12T, Turbo up to 4.7GHz, Motherboard: ASUS Prime Z370A, Graphics: NVIDIA GTX 1080Ti, Memory: 2x4GB DDR4, Data Drive: 1TB Western Digital WD1003F2EX 7200RPM, Boot Drive: 280GB Intel® Optane™ 900P SSD, OS: Windows* 10 RS3 Build 1709, BIOS Version 609 with MCU 0x84

Intel® Core™ i7-8700K Processor, PL1=95W TDP, 6C12T, Turbo up to 4.7GHz, Motherboard: ASUS Prime Z370A, Graphics: NVIDIA GTX 1080Ti, Memory: 2x4GB DDR4, Data Drive: 1TB Western Digital WD1003F2EX 7200RPM, Boot Drive: 256GB Intel® 760P SSD (PCIe), OS: Windows* 10 RS3 Build 1709, BIOS Version 609 with MCU 0x84

8th Generation Intel® Core™ vs. 3rd Generation Intel® Core™ (5YO)

Intel® Core™ i5+ 8400 Processor, PL1=65W TDP, 6C6T, Turbo up to 4GHz, Motherboard: ASUS Z370A, Graphics: NVIDIA GTX 1080Ti, Memory: 2x4GB DDR4-2666, Storage: Western Digital HDD Black 1TB + 16GB Intel® Optane™ memory, OS: Windows* 10 RS3 Build 1709, BIOS Version 609 with MCU 0x84

Intel® Core™ i5-3330 Processor, PL1=77W TDP, 4C4T, Turbo up to 3.2GHz, Motherboard: Intel DH77KC Graphics: NVIDIA GTX 1080Ti , Memory: 2x4GB DDR3-1600, Storage: Western Digital HDD Black 1TB, OS: Windows* 10 RS3 Build 1709, BIOS Version 1029 with MCU 0x1E

TEST DETAILS

SYSmark* 2014 SE - benchmark from the BAPCo* consortium that measures the performance of Windows* platforms. SYSmark* tests four usage scenarios: Office Productivity, Media Creation, Data/Financial Analysis, and Responsiveness. SYSmark* contains real applications from Independent Software Vendors such as Microsoft* and Adobe*

PCMark* Vantage - Benchmark from Futuremark* that measures Windows* everyday computing performance. PCMark Vantage is made up of several benchmarking suites: PCMark Suite (produces "PCMark" Score), Memories Suite, TV and Movies Suite, Gaming Suite, Music Suite, Communications Suite, Productivity Suite and HDD Suite. The HDD Suite contains an operating system start-up workload that is sensitive to HDD versus SSD boot devices

HDXPRT* 2014, or the High Definition Experience & Performance Ratings Test, is a benchmark from Principled Technologies* that measures Windows* media editing performance. HDXPRT has three usage case categories: Edit Photos, Convert Videos and Edit Music. It uses mainstream media applications to test the performance of the system. Reported metrics: Overall score, edit photos, convert video, and edit music subscores .

Office Productivity Multi-tasking Workload Slack is open in the background while a 2.28 MB, Microsoft PowerPoint .ppt presentation is exported as a 1920x1080 H.264 .mp4 video presentation. While the video presentation is being created 1) a 6.49 MB, 844 page, Microsoft Word .docx document is converted to a 7.98 MB, PDF file and 2) a 70.4 MB, .Microsoft Excel .xlsm macro-enabled worksheet that is recalculated.;

Mega-tasking Workload Playerunknowns Battleground's FPS while playing, streaming, recording via OBS and Twitch

Game FPS Workload – Average game FPS of Total War: Warhammer II Build: 5577.0 Benchmark mode

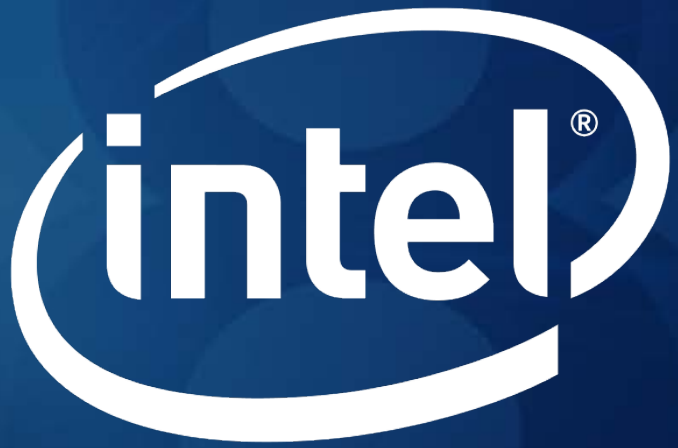
Game Launch Workload - Workload developed by Intel® measuring the time elapsed to launch Total War: Warhammer II Build: 5577.0 and reach the Main Menu with intro videos disabled (Launch)

Game Level Load Workload - Workload developed by Intel® measuring the time elapsed from the Main Menu to completion of level loading (Level Load) on Total War: Warhammer II Build: 5577.0

Media Project Load Workload - Time elapsed to load a 500MB video project file in Adobe* Premiere Pro (CS6) – Reboot between runs – MEDIAN

Adobe Photoshop Lightroom Workload: The workload consists of 50 .jpeg photos shot on a Nikon D800 camera ranging in size of 11.3 MB – 29.8 MB. This scenario measures the time to export the photos at a reduced file size for sharing/upload to social networks.

Adobe Premiere Pro Video Editing Workload The project contains seven clips totaling 2 minute and 21 seconds of 4K H.264 MP4 footage recorded at a bitrate of approximately 80 Mbps. The input file sizes total 1.90 GB. The video stream is 3840x2160 (4K) in H.264 format with a framerate of 29.97 FPS. The audio stream is 1536 Kbps, 48.0 KHz, 16 bit Stereo in WAV format. The performance test measures the time to export the entire clip to a 4K H.264 MP4 format. The output is a high quality 4K video file.


intel