




8TH GEN INTEL[®] CORE[™]


AUGUST 2017




PEOPLE AND THEIR PCS

People prefer...

63% 
WANT TO MULTITASK MORE ON PC
PRODUCTIVITY

62% 
PREFER PC FOR
ENTERTAINMENT

49% 
PREFER PC FOR
CONTENT CREATION

66% 
PREFER PC FOR
SHOPPING

People say they also prefer their PCs for...



Communication



General Browsing



Gaming



Storage

Source: The Intel online survey was fielded among 2,552 Americans, 18+ in March 2017 to understand Americans' perspectives about computer usage, personal technology, smart home technology, virtual reality and gaming. The survey was fielded via Ipsos.

Source: IMRA US/PRC State of PC Ethnographic Research (June 2016)

PAVING THE WAY FOR A NEW ERA



MORE THAN 450 MILLION 5-YEAR-OLD DEVICES

Source: Intel MMBP MS&F 2017 Q2



MORE VERSATILE DEVICES TODAY

INTRODUCING 8TH GEN INTEL[®] CORE[™] PROCESSORS



A FAMILY REDEFINING A GENERATION: PERFORMANCE



Y-SERIES

Thin Fanless
Detachables,
Always Connected
PCs



U-SERIES

Thin and Light
Laptops, 2 in 1
Computers,
Convertibles
and Minis



H-SERIES

Performance
Laptops and
Mobile
Workstations



S-SERIES

Desktop
Performance
to Value, All-in-One
Computers and Minis

8TH GEN: POWER DESIGNED FOR WHAT'S NEXT



**AMAZING
PERFORMANCE
AND
RESPONSIVENESS**

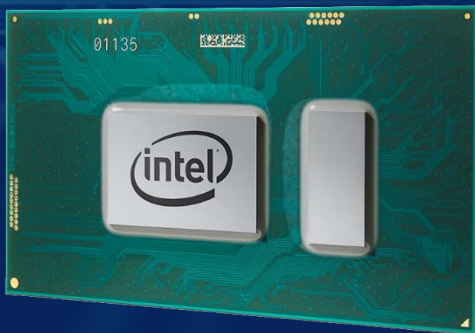


**IMMERSIVE
ENTERTAINMENT**



**SIMPLE AND
CONVENIENT**

New Generation of PERFORMANCE-CLASS 8TH GEN INTEL[®] CORE[™] PROCESSORS



Launching August 21

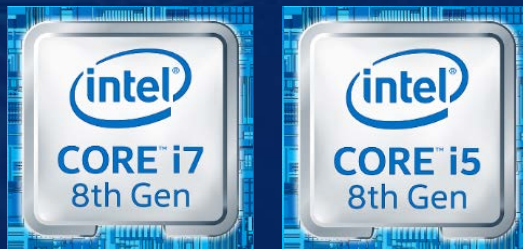
- New 8th Gen Intel[®] Core[™] i7/i5 processors from 15W
- Powering 2 in 1s and ultrathin notebooks for consumer and small business

Coming soon

- Desktop in fall
- Additional products for enterprise, workstation, and enthusiasts notebooks and desktops
- Additional form factors across hundreds of designs

AMAZING PLATFORM PERFORMANCE YOU CAN SEE AND FEEL

8th Gen Intel® Core™ i7/i5 versus 7th Gen



Up to **40%**
**PERFORMANCE
IMPROVEMENT¹**

Even While Multitasking

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 complete information visit www.intel.com/benchmarks

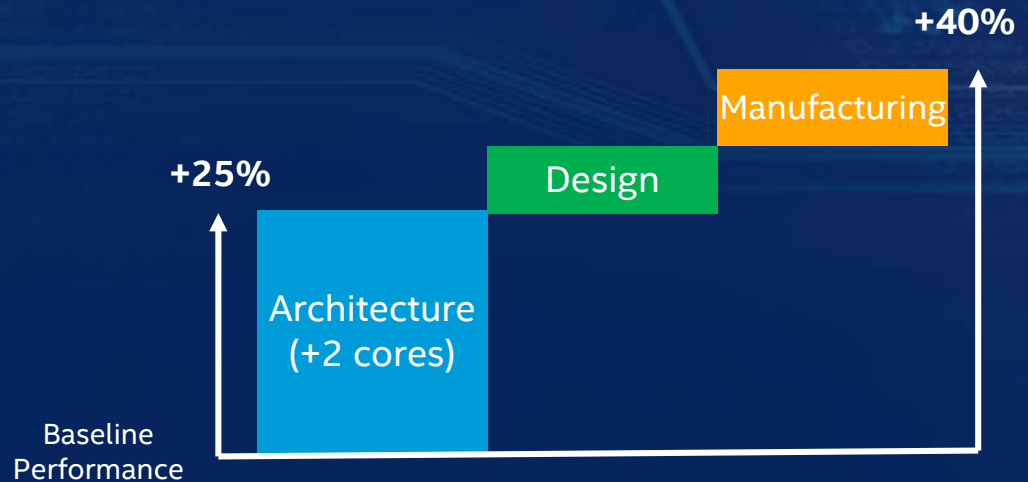
LAUNCHING FIRST ON AUGUST 21

8TH GEN INTEL[®] CORE[™] I7/I5 PROCESSORS



8th Gen Intel[®] Core[™]
mobile processors

- i7-8650U
- i7-8550U
- i5-8350U
- i5-8250U



Amazing Performance by Design

AMAZING PLATFORM PERFORMANCE YOU CAN SEE AND FEEL

8th Gen Intel® Core™ i5 versus 5-year-old PC



VS:



PERFORMANCE:

UP TO
2X

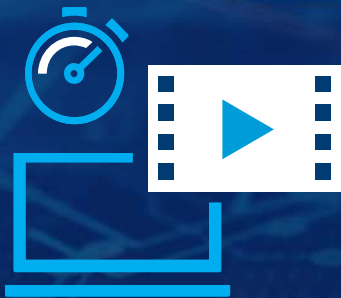
BETTER
PRODUCTIVITY
PERFORMANCE²

BROWSE:

UP TO
1.9X

BETTER
WEB
PERFORMANCE³

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CREATE A 4K VIDEO 14.7X FASTER⁴ =
3 MINUTES VS. 45 MINUTES

with 8th Gen on a 5-year-old system

EDIT IN ADOBE LIGHTROOM* UP TO
2.3X FASTER⁵ 28% FASTER⁶

versus 5-year-old system versus 7th Gen

ORGANIZE/EDIT PHOTOS TO CREATE
A SLIDESHOW UP TO
48% FASTER⁷

versus 7th Gen

PERFORMANCE: FAST CONTENT EDITING AND CREATION

- Dedicated media engine that let's you create, edit and share 4K/360 video content faster and easier
- Your favorite applications optimized for Intel® Quick Sync Video for near real-time 4K rendering
- Intel® Precise Touch Technology to provide fast and highly responsive Windows* Ink on 2 in 1s

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PERFORMANCE: OFFICE PRODUCTIVITY AND MULTITASKING

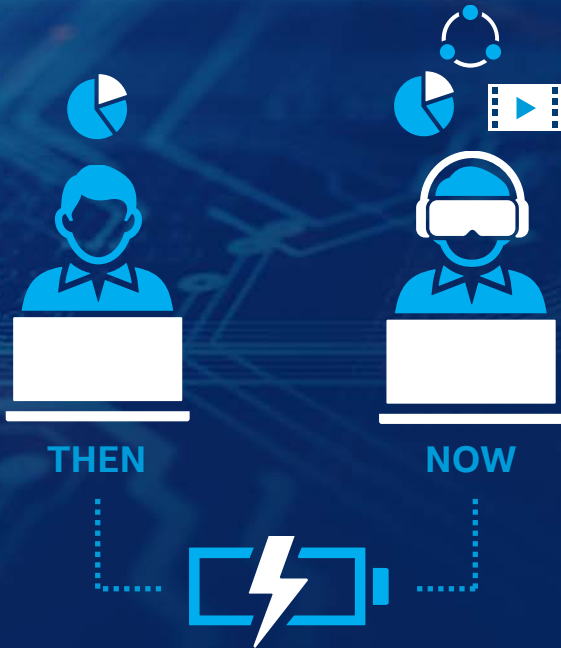
UP TO
2.3X FASTER WHILE
MULTITASKING⁸
versus a 5-year-old system



UP TO
40% FASTER WHILE
MULTITASKING¹
versus 7th Gen



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PERFORMANCE + ENERGY EFFICIENCY

Uncompromised Battery Life

- Sleek designs with up to 10 hours⁹ of battery life to do more of what you love
- Instant mobile PC resume and data ready in a flash with Windows* Modern Standby

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 complete information visit www.intel.com/benchmarks

IMMERSIVE ENTERTAINMENT



Stream more of your favorite 4K content

NEW and coming soon! Amazon* Prime Video and Vudu*
Available today: Netflix*, Sony ULTRA*, FunBox UHD* and iQIYI*

Enjoy more with flexibility

Up to 10 hours⁹ of entertainment on a single charge and view
on up to three simultaneous 4K displays on Intel® UHD Graphics

Mainstream VR

Windows* Mixed Reality¹⁰ support on 8th Gen Intel® Core™
processors with Intel® UHD Graphics

SIMPLE AND CONVENIENT

 Windows 10



Natural and intuitive interactions

Touch, stylus and voice are optimized and shine through on Windows Hello*, Cortana* and Windows Ink*

Quick and easy login

A touch or look with Windows Hello* gets you in securely¹⁰ hassle free

Built-in security¹⁰ made simple

Intel® Built-in security (Intel® SGX and Intel® Online Connect) enables touch-to-pay, secure¹⁰ guest checkout, hardened password managers and built-in 2nd factor authentication

Do it all with a single compact cord

Connect to Thunderbolt™ devices, any display and numerous USB devices – all while supplying power



AMAZING NEW AND FEATURE-RICH DEVICES OF ALL SHAPES AND SIZES

MORE THAN
145 DESIGNS



4K UHD

LAUNCHING FIRST ON AUGUST 21

8TH GEN INTEL® CORE™ I7/I5 PROCESSORS



	i7-8650U	i7-8550U	i5-8350U	i5-8250U
Maximum Processor Frequency (GHz)	4.2	4.0	3.6	3.4
Base Clock Frequency (GHz)	1.9	1.8	1.7	1.6
Number of Processor Cores/Threads	4/8	4/8	4/8	4/8
Cache Size (MB)	8	8	6	6
Number of Memory Channels	2	2	2	2
Memory Type	DDR4-2400 LPDDR3-2133	DDR4-2400 LPDDR3-2133	DDR4-2400 LPDDR3-2133	DDR4-2400 LPDDR3-2133
Intel® UHD Graphics	620	620	620	620
Graphics Dynamic Frequency (MHz)	Up to 1150	Up to 1150	Up to 1100	Up to 1100

Plus, on all SKUs:

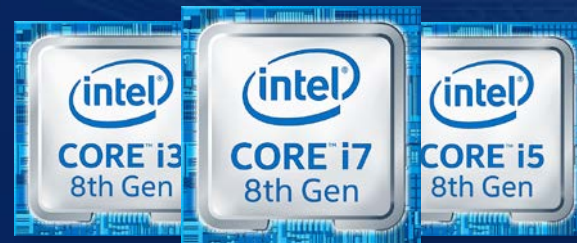
- Intel® Turbo Boost Technology 2.0
- Intel® Hyper-Threading Technology
- Intel® Smart Cache
- Intel® AES–New Instructions (AES–NI)
- Intel® Advanced Vector Extensions 2.0 (Intel® AVX 2.0)
- Intel® Optane™ Memory Ready
- Intel® Quick Sync Video
- Intel® Software Guard Extensions (Intel® SGX)
- Intel® Boot Guard
- Intel® OS Guard
- Intel BIOS Guard
- Conflict-Free

8TH GEN INTEL[®] CORE[™] PROCESSORS

FIRST TO MARKET 8th Gen Intel[®] Core[™] i7/i5 processors (U-series)

NEW DEVICES from OEMs starting in September

MORE TO COME in the fall and beyond



TUNE IN ON AUGUST 21



Amazing Happens When All Things Align
Join us as we introduce the 8th Gen Intel® Core™
processor family.

August 21 | 8:00 a.m. PDT
www.facebook.com/Intel
newsroom.intel.com

LEGAL DISCLAIMERS

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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.

¹⁰ 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].

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PERFORMANCE DISCLAIMERS

1. As measured by Office Productivity and Multitasking Workload on Intel Reference Platform: Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10; versus previous generation: Intel® Core™ i7-7500U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.5GHz, Memory: 8GB DDR4-2133, Storage: Intel 600p SSD, Intel HD Graphics 620, OS: Windows* 10.
2. As measured by SYSmark* 2014 SE (Second Edition) on Intel Reference Platform on Intel Reference Platform Intel® Core™ i5-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10 versus 5 year old: Intel® Core™ i5-3317U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.6GHz, on Dell* XPS 12, Memory: 8GB DDR3, Storage: SSD, Intel HD Graphics 4000, OS: Windows* 10.
3. As measured by WebXPRT* 2015 on Intel Reference Platform. Measured on New: Intel® Core™ i5-8250U Processor, PL1=15W TDP, 4C8T, Turbo up to 3.4GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10 versus 5 year old: Intel® Core™ i5-3317U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.6GHz, on Dell* XPS 12, Memory: 8GB DDR3, Storage: SSD, Intel HD Graphics 4000, OS: Windows* 10.
4. As measured by PowerDirector Ultra HD HEVC Video Creation on Intel Reference Platform. Measured on Intel Reference Platform: Intel® Core™ i5-8250U Processor, PL1=15W TDP, 4C8T, Turbo up to 3.4GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10 versus 5 year old PC: Intel® Core™ i5-3317U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.6GHz, on Dell* XPS 12, Memory: 8GB DDR3, Storage: SSD, Intel HD Graphics 4000, OS: Windows* 10.
5. As measured by Adobe Photoshop Lightroom Workload on Intel Reference Platform. New: Intel® Core™ i5-8250U Processor, PL1=15W TDP, 4C8T, Turbo up to 3.4GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10 versus 5 year old: Intel® Core™ i5-3317U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.6GHz, on Dell* XPS 12, Memory: 8GB DDR3, Storage: SSD, Intel HD Graphics 4000, OS: Windows* 10.

PERFORMANCE DISCLAIMERS - CONTINUED

6. As measured by Adobe Photoshop Lightroom Workload on Intel Reference Platform: Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10; versus previous generation: Intel® Core™ i7-7500U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.5GHz, Memory: 8GB DDR4-2133, Storage: Intel 600p SSD, Intel HD Graphics 620, OS: Windows* 10.
7. As measured by Content Creation Multitasking Workload on Intel Reference Platform: Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10; versus previous generation: Intel® Core™ i7-7500U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.5GHz, Memory: 8GB DDR4-2133, Storage: Intel 600p SSD, Intel HD Graphics 620, OS: Windows* 10.
8. As measured by Office Productivity and Multitasking 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 .xslm macro-enabled worksheet that is recalculated. Measured on Intel Reference Platform Intel® Core™ i5-8250U Processor, PL1=15W TDP, 4C8T, Turbo up to 3.4GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10 versus 5 year old: Intel® Core™ i5-3317U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.6GHz, on Dell* XPS 12, Memory: 8GB DDR3, Storage: SSD, Intel HD Graphics 4000, OS: Windows* 10.
9. As projected on Intel Reference Platform using a 40Whr battery and 25x14 Panel on Windows 10* 1080p 24fps Local Video Playback: Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10, Battery Size: 40Whr, Screen: 25x14 12", Windows 10 Power Slider – Better Performance.

BENCHMARK/WORKLOAD DESCRIPTIONS

SYSmark* 2014 SE (Second Edition) is a benchmark from the BAPCo* consortium that measures the performance of Windows* platforms. SYSmark tests the usage scenarios: Office Productivity, Media Creation, Responsiveness and Data/Financial Analysis. SYSmark contains real applications from Independent Software Vendors such as Microsoft* and Adobe*. Reported metrics: SYSmark 2014 SE Rating and a rating for each scenario result (higher is better for all). Scaling efficiencies: CPU dominant, sensitive to frequency, core count and memory. QSV enabled.

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. Scaling efficiencies: QSV enabled. OS support: Desktop Windows.

TouchXPRT* 2016 is a benchmark from Principled Technologies* that measures light media editing performance. TouchXPRT has five usage case categories: Beautify Photos, Blend Photos, Convert Videos for Sharing, Create Music Podcast, Create Slideshow from Photos. Reported metrics: Overall score, beautify photos, blend photos, convert videos for sharing, create music podcast, create slideshow from photos subscores

WebXPRT* 2015 is a benchmark from Principled Technologies* that measures the performance of web applications using six usage scenarios: Photo Enhancements, Organize Album, Local Notes, Stock Option Pricing, Sales Graphs, and Explore DNA Sequencing. WebXPRT tests modern browser technologies such as HTML5 Canvas 2D, HTML5 Table, HTML5 Local Storage, as well as JavaScript*. **Reported metrics:** elapsed time in seconds (lower is better) for each scenario, plus an overall score (higher is better). **Scaling efficiencies:** CPU dominant (newer browsers are GPU accelerated), sensitive to frequency. WebXPRT is very sensitive to browser type and version. **OS support:** Any OS that supports an HTML5 browser.

3DMark* is a benchmark from Futuremark* that measures DX* 9 / OpenGL* ES 2.0, DX 10 and DX 11 gaming performance. There are three main tests: "Ice Storm" for DX 9 / OpenGL ES 2.0, "Cloud Gate" for DX 10, "Sky Diver" for DX11 and "Fire Strike" for DX 11 graphics. **Reported metrics:** Graphics Score (GPU), Physics Score (CPU), Combined Score (GPU & CPU) and an overall 3DMark Score (higher is better for all Scores). **Scaling efficiencies:** Graphics tests are GPU dominant, sensitive to graphics and CPU frequency, core count and memory. **OS support:** Desktop Windows*, Android*, iOS* and Windows RT.

Windows 10* 1080p 24fps Local Video Playback Component Average Power Disconnect all USB devices, connect to a local WiFi access point and set the screen brightness to 200 nits (disable DPST, set brightness to 200 nits on a white background and enable DPST). Wait for 10 mins for the OS to completely idle. Launch Tears of Steel (1080p H264 10MBps 24fps) video using the Windows Movie & TV App. Measure and calculate average power for the duration of the video. Report 3 run median.

Windows 10* 4K 24fps 10bit HEVC Local Video Playback Component Average Power Disconnect all USB devices, connect to a local WiFi access point and set the screen brightness to 200 nits (disable DPST, set brightness to 200 nits on a white background and enable DPST). Wait for 10 mins for the OS to completely idle. Launch Tears of Steel (4K H265 24fps) video using the Windows Movie & TV App. Measure and calculate average power for the duration of the video. Report 3 run median.

BENCHMARK/WORKLOAD DESCRIPTIONS

Office Productivity and Multitasking 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.

Content Creation Multitasking Workload: The workload set consists of a mix of 80 photos shot on a DSLR and point-and-shoot camera. The photos are imported into Adobe Elements Organizer and scanned for facial analysis. While the media analysis is being performed, 1) ten photos are opened in Adobe Premiere Elements 15 to create a video slideshow project with the timeline preview rendered and 2) five photos are opened in Adobe Photoshop Elements 15 and auto smart fix is applied.

4K to 1080p HEVC Transcode Workload: Using Handbrake, the workload video file is a ~6.27 GB, 3840 x 1714, 73.4 Mbps, 24fps, H.264, .mov video file that is transcoded to a ~1920x1080, ~3.5 Mbps, 24fps, HEVC, .mkv video file.

PowerDirector Ultra HD HEVC Video Creation: The workload is a video project containing a 3840x2160, H.264, .mp4 file (shot on a GoPro HERO4 Black action camera) with added text overlays and video effects. The output file is a 1 min. 46 sec., 3840x2160, ~35Mbps, HEVC, ~440MB, .mp4 video file.

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.

MAGIX Fastcut Video Create Workload: The workload video is a 9 min. 21 sec., 3840x2160, ~59.9Mbps, H.264, 3.89GB, .mp4 file. The “A Cold Place” template is applied and is exported using the Full HD setting. The output video is a 38 sec., 1920x1080, ~20Mbps, H.264, ~93MB, .mp4 file.

Netflix 4K Streaming Workload: Measure time to rundown battery while streaming 4K Netflix content (HEVC 10-bit decode)

4K VP9 Streaming Workload: Measure time to rundown battery while streaming 4K content from YouTube website: <https://youtu.be/-3nXNnBwl6w> (VP9 decode)

SYSTEM CONFIGURATIONS

Performance Configurations

Gen-1:

Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10

Intel® Core™ i7-7500U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.5GHz, Memory: 8GB DDR4-2133, Storage: Intel 600p SSD, Intel HD Graphics 620, OS: Windows* 10

Vs. 5YO:

Intel® Core™ i5-8250U Processor, PL1=15W TDP, 4C8T, Turbo up to 3.4GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10

Intel® Core™ i5-3317U Processor, PL1=15W TDP, 2C4T, Turbo up to 3.6GHz, on Dell* XPS 12, Memory: 8GB DDR3, Storage: SSD, Intel HD Graphics 4000, OS: Windows* 10

Battery Life Configurations

4K Battery Life Configurations:

Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10, Battery Size: 70WHr, Screen: 4K, Windows 10 Power Slider – Better Performance

1080p Battery Life Configurations:

Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, Memory: 8GB DDR4-2400, Storage: Intel 600p SSD, Intel UHD Graphics 620, OS: Windows* 10, Battery Size: 40WHr, Screen: 25x14 12", Windows 10 Power Slider – Better Performance

