8th Gen Intel® Core™ Processors
With Radeon™ RX Vega M Graphics
January 2018
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

MAR.28.2017
EMIB innovations
@ Manufacturing Day

NOV.06.2017
Intro to new 8th Gen
Intel® Core™ processor
w/discrete GPU & HBM

JAN.07.2018
Launch: 8th Gen Intel® Core™
w/discrete GPU & HBM
New 8th Gen Intel® Core™ Processor Target Segments

**GAMING**

- 42% Growth CAGR in Retail Gaming NB Sales over the last 3 years\(^1\)

**CONTENT CREATION**

- 52M+ Advanced Digital Content Creators\(^2\)

**VR / ULTRA MR**

- VR HMD sales pass 1Mu for the first time in a single quarter\(^3\)
8th Gen Intel® Core™ Processor Mobile Positioning

Mainstream Mobility
- Thin & Light
- Immersive Entertainment
- Long battery life
- Integrated Intel® UHD Graphics

Thin & Light Performance w/ Discrete Graphics
- Intel's high performance mobile enthusiast CPU
- First Consumer EMIB, HBM2, discrete graphics on package, power sharing
- Enthusiast Gaming and VR Experience
- Advanced Content Creation
- Innovative designs

Highest Performance
- Intel's high performance mobile enthusiast CPU
- CPU-attached discrete Graphics for Consumer
- 4K Gaming
- Professional Content Creation
- Mega-Tasking

Mainstream Performance and Excellent Portability

Premium Performance for Thin & Light Enthusiasts

Ultimate Mobile Performance for Gaming, VR, and Content Creation
8th Gen Intel® Core™ with Radeon™ RX Vega M Overview

Enabling the industry to create innovative designs
- First 8th Gen Intel® Core™ H-series in market, more to come
- First implementation of power sharing across CPU & GPU
- First consumer solution to use Intel EMIB
- First consumer mobile solution to use HBM2

Next level performance in sleek, thin & light systems
- Offers overclocking on CPU, GPU and HBM
- Delivering performance at two design points: 65W & 100W

Innovative system designs coming in Q1’18
- Dell, HP and Intel® NUC
HARDWARE INNOVATION

Smaller, thinner solution through Intel EMIB
- Embedded high speed connector in package
- Reduced silicon footprint over 50%\(^4\)
- Keeps CPU and GPU z-height 1.7mm slim

Enthusiast processor adds needed connectivity
- Eight lanes of PCI Express Gen 3 connecting CPU & GPU
- Provides necessary throughput to feed intense gfx workloads
- Remaining PCIe lanes available for direct CPU access

Hardware Features
- Efficient HBM, up to 80% less power than GDDR5\(^5\)
- Intel\(^\circledR\) Graphics efficient display and Quick Sync Video capabilities available
- 9 Display outputs available for design flexibility
DESIGN FLEXIBILITY THROUGH INNOVATION

Typical Enthusiast Motherboard Design
CPU + GPU + GDDR5

1900mm² (3in²) board space savings

8th Gen Intel® Core™ Processor
THINNER DESIGNS THRU DYNAMIC POWER SHARING

TRADITIONAL PLATFORM
OEMs design to System Design Point (SDP), not combined TDP

62.5W SDP

NEW! Dynamic power sharing enables enthusiast performance in sleek systems

Intel® Dynamic Tuning

Gaming
Multi-tasking
THINNER DESIGNS THRU DYNAMIC POWER SHARING

Efficiency (Frames/Watt)

- 62.5W Design
- 45W Design

Intel® Dynamic Tuning 'OFF'
Intel® Dynamic Tuning 'ON'

Measured using identical hardware system configuration.

Up front design benefit of 17.5W
Same performance with up to 18% higher efficiency

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Benchmark results were obtained prior to implementation of recent software patches and firmware updates intended to address exploits referred to as "Spectre" and "Meltdown." Implementation of these updates may make these results inapplicable to your device or system.
Two Amazing Graphics Subsystems on One Small Package

High Bandwidth Cache Controller
- 4GB Capacity
- 1024 bit bus width
- Low power

High Bandwidth Cache
- Up to 24 Compute Units
- Asynchronous Dispatch
- Per Compute Unit Power Gating
- Vulkan® & DirectX® 12 Ready
- Supports Radeon Shader Intrinsics

Compute Units
- Up to 24 Compute Units
- Asynchronous Dispatch
- Per Compute Unit Power Gating
- Vulkan® & DirectX® 12 Ready
- Supports Radeon Shader Intrinsics

Quad Geometry Engines

Vega Pixel Engine
- Up to 16 Render Back Ends
- Up to 64 Pixels/Clock

Radeon™ Display Engine
- 6 Displays
- Up to 4K resolution
- Display Port 1.4 w/ HDR
- HDMI 2.0b with HDR10 support

Intel® Gfx Display Engine
- 3 Displays
- 4K resolution
- eDP /PSR for long battery life

Radeon™ Multimedia Engine
- 4K60 encode / decode with Radeon ReLive
- HEVC, H264 HDR enc/dec

Intel® Quick Sync Video
- VP9 & HEVC 10b HW enc/dec
- H264 HW enc/dec
INTRODUCING 8TH GEN INTEL® CORE™ PROCESSORS WITH RADEON™ RX VEGA M GRAPHICS
ADVANCEMENTS OVER 3 YEARS AGO

Example
3 Year Old System

8th Gen Intel® Core™ processors with Radeon™ RX Vega M Graphics

8th Gen Intel® Core™ processor

3 Year Old System

Mainstream Enthusiast (then)

Mainstream Enthusiast (now)

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# 8th Gen Intel® Core™ Processor with Radeon™ RX Vega M GL Graphics

**Advanced Content Creation and Gaming**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
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<tr>
<td>8th Gen Intel® Core™ Processor</td>
<td>Up to 4.1GHz, 4/8 Core/Threads, Up to 8MB Cache</td>
</tr>
<tr>
<td>Radeon™ RX Vega M GL Graphics</td>
<td>Base/Boost 931/1011 MHz, 20 Compute Units, 32 Pixels/Clock</td>
</tr>
<tr>
<td>HBM2</td>
<td>4GB Capacity, 179 GB/s Bandwidth, Ultra Low Power</td>
</tr>
<tr>
<td>Package TDP</td>
<td>65 Watts</td>
</tr>
</tbody>
</table>

**Key Features**

- **Up to 4.1GHz**
- **4/8 Core/Threads**
- **Up to 8MB Cache**
- **Base/Boost 931/1011 MHz**
- **20 Compute Units**
- **32 Pixels/Clock**
- **4GB Capacity**
- **179 GB/s Bandwidth**
- **Ultra Low Power**
- **65 Watts**

**Platforms**

- **Windows**
- **MR**
- **Gaming**
- **Advanced Content Creation**
- **Day Zero Game Support**
### 8th Gen Intel® Core™ Processor with Radeon™ RX Vega M GL Graphics

#### 8th Gen Intel® Core™ Processor

<table>
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<tr>
<th>Test</th>
<th>Result</th>
<th>Faster Than</th>
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<tr>
<td>SYSSMARK* 2014 SE</td>
<td>1.6X</td>
<td>1.6X</td>
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<tr>
<td>3DMARK* TIME SPY - GRAPHICS</td>
<td>2.3X</td>
<td>2.3X</td>
</tr>
<tr>
<td>ENTHUSIASTS GAMING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3DMARK* 11 - GRAPHICS</td>
<td>2.2X</td>
<td>2.2X</td>
</tr>
<tr>
<td>VERMINTIDE 2</td>
<td>3.0X</td>
<td>3.0X</td>
</tr>
<tr>
<td>HANDBRAKE</td>
<td>6.7X</td>
<td>6.7X</td>
</tr>
<tr>
<td>ADOBE PREMIERE PRO CREATIVE CLOUD*</td>
<td>42%</td>
<td>42%</td>
</tr>
</tbody>
</table>

**Longer bars are better**

**Shorter bars are better**

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### 8th Gen Intel® Core™ Processor with Radeon™ RX Vega M GL Graphics

<table>
<thead>
<tr>
<th>Game</th>
<th>Benchmark 1</th>
<th>Benchmark 2</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3DMark* 11 - Graphics</td>
<td>33 FPS</td>
<td>46 FPS</td>
<td>1.4x BETTER</td>
</tr>
<tr>
<td>Hitman*</td>
<td>27 FPS</td>
<td>36 FPS</td>
<td>1.3x BETTER</td>
</tr>
<tr>
<td>Deus Ex: Mankind Divided*</td>
<td>42 FPS</td>
<td>47 FPS</td>
<td>1.1x BETTER</td>
</tr>
<tr>
<td>Vermintide 2*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Higher performance than GTX 1050 (4GB)*

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INNOVATION IN DESKTOP

3 Year Old Desktop

- >33 Liters
- 400+ Watts (System)
- >210W CPU/GPU/Gfx Memory

New Intel® NUC

- 1.2 Liters
- 230 Watts (System)
- 100W CPU/GPU/Gfx Memory
- Quiet
- Portable
8th Gen Intel® Core™ Processor

Radeon RX Vega M GH Graphics

HBM2

Package TDP

VR and MR

Enthusiast Gaming

Unlocked CPU / GPU / HBM2

Day Zero Game Support
8TH GEN INTEL® CORE™ PROCESSOR WITH RADEON™ RX VEGA M GH GRAPHICS

SYSMARK* 2014 SE

3DMARK* TIME SPY - GRAPHICS

3DMARK* 11 - GRAPHICS

HITMAN*

VERMINTIDE 2*

TOTAL WAR: WARHAMMER*

RISE OF THE TOMB RAIDER*

1.6X BETTER PRODUCTIVITY16

2.4X BETTER17

2.7X BETTER18

22 FPS

62 FPS

24 FPS

64 FPS

34 FPS

70 FPS

31 FPS

62 FPS

Great 1080p High 60FPS Gaming

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8th Gen Intel® Core™ Processor with Radeon™ RX Vega M GH Graphics

3DMark* 11 - Graphics

<table>
<thead>
<tr>
<th>Software and Workloads</th>
<th>i7-7700HQ with Nvidia GTX 1060 Max-Q Graphics</th>
<th>8th Gen Intel® Core™ Processor with Radeon™ RX Vega M GH Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>57 FPS</td>
<td>1.07 X BETTER²³ FPS 23</td>
<td></td>
</tr>
<tr>
<td>62 FPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43 FPS</td>
<td>1.13 X BETTER²³ FPS 23</td>
<td></td>
</tr>
<tr>
<td>49 FPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64 FPS</td>
<td>1.09 X BETTER²³ FPS 23</td>
<td></td>
</tr>
<tr>
<td>70 FPS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Higher performance than GTX 1060 Max-Q (6GB)

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Great experiences with Oculus* VR and Windows Mixed Reality*

System qualification may vary based on configuration.
LATEST SOFTWARE FEATURES & COMMUNITY SUPPORT

Radeon™ Adrenalin Edition
- Radeon Chill
- Radeon ReLive
- Radeon FreeSync

Overclocking Utilities
- Intel® XTU
- Radeon WattMan

Game Focus
- Day Zero Drivers
- Gameplay.Intel.com
WORK AND PLAY

INTEL® NUC 8 ENTHUSIAST

PLAY, STREAM, AND RECORD

Amazing 8th Gen Intel® Core™ i7 Performance with Radeon™ RX Vega M Graphics

CREATE, EDIT, AND SHARE

Finely tuned for productivity and advanced content creation in a highly portable mini-PC supporting 6 displays

UNLOCKED PROCESSOR

Take control with an 8th Gen Intel® Core™ i7-8809G processor unlocked for performance tuning.

PORTABLE

1.2L

CONNECT TO EVERYTHING

Dual Thunderbolt™ 3
Dual m.2
Dual HDMI (Front and Rear)
Dual Display Ports
Dual Gbe LAN
7 USB + SDXC + Toslink

Immerse yourself in VR & travel to far away destinations or play your favorite high-resolution games

Finely tuned for productivity and advanced content creation in a highly portable mini-PC supporting 6 displays

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Dual Thunderbolt™ 3
Dual m.2
Dual HDMI (Front and Rear)
Dual Display Ports
Dual Gbe LAN
7 USB + SDXC + Toslink

Space Saving & Portable

Ultra HD
INNOVATIVE CLOUD GAMING

- Gamestream and Artesyn will deliver a remote gaming service using the new 8th Gen Intel® Core™ processors with Radeon™ RX Vega M Graphics
- Excellent gaming experience on current games at high game settings running 1080p60 on remote system
- Realizing better server density and lower power than their currently deployed solutions
## 8th Gen Intel® Core™ i7/i5 Processors

<table>
<thead>
<tr>
<th>8th Gen Intel Core processor numbers</th>
<th>i7-8809G</th>
<th>i7-8709G</th>
<th>i7-8706G</th>
<th>i7-8705G</th>
<th>i5-8305G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Processor Frequency (GHz)</td>
<td>4.2</td>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
<td>3.8</td>
</tr>
<tr>
<td>Base Clock Frequency (GHz)</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
<td>2.8</td>
</tr>
<tr>
<td>Number of Processor Cores/Threads</td>
<td>4/8</td>
<td>4/8</td>
<td>4/8</td>
<td>4/8</td>
<td>4/8</td>
</tr>
<tr>
<td>Cache Size (MB)</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Number of Memory Channels</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Memory Type</td>
<td>DDR4-2400</td>
<td>DDR4-2400</td>
<td>DDR4-2400</td>
<td>DDR4-2400</td>
<td>DDR4-2400</td>
</tr>
<tr>
<td>Fully Unlocked CPU, GPU and HBM</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Discrete Graphics</td>
<td>Radeon™ RX Vega M GH</td>
<td>Radeon™ RX Vega M GH</td>
<td>Radeon™ RX Vega M GL</td>
<td>Radeon™ RX Vega M GL</td>
<td>Radeon™ RX Vega M GL</td>
</tr>
<tr>
<td>Intel® HD Graphics</td>
<td>630</td>
<td>630</td>
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<td>630</td>
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<tr>
<td>Graphics Dynamic Frequency (MHz)</td>
<td>Up to 1100</td>
<td>Up to 1100</td>
<td>Up to 1100</td>
<td>Up to 1100</td>
<td>Up to 1100</td>
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<tr>
<td>Package Type</td>
<td>BGA</td>
<td>BGA</td>
<td>BGA</td>
<td>BGA</td>
<td>BGA</td>
</tr>
<tr>
<td>Intel® vPro™ Technology</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### 8th Gen Intel Core processor numbers

| Architecture                      | Vega M | Vega M |
| Compute Units                     | 24 | 20 |
| Stream Processors                 | 1536 | 1280 |
| Base GPU Clock                    | 1063 MHz | 931 MHz |
| Boost GPU Clock                   | 1190 MHz | 1011 MHz |
| Memory Bandwidth                  | 204.8 GB/s | 179.2 GB/s |
| Peak SP Performance               | Up to 3.7 TFLOPS | Up to 2.6 TFLOPS |
| ROPs                              | 64 pix/clk | 32 pix/clk |
| High Bandwidth Cache              | 4GB HBM2 | 4GB HBM2 |
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.

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Performance Configurations

8th Gen
Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GH, OS: Windows® 10
Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10

Refresh Systems
Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus®, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus®, Memory: 8GB DDR3, Storage: 1TB HDD 5400RPM, Graphics: NVIDIA® GTX950M, OS: Windows® 10

7th Gen Systems
Intel® Core™ i7-7700HQ Processor, PL1=45W TDP, 4C8T, Turbo up to 3.8GHz, on Dell 15.6"**, Memory: Single Channel 16GB DDR4 2400, Storage: 256GB SSD, 1 TB HDD 5400 RPM, Graphics: NVIDIA® GTX 1060 6GB GDDR5, OS: Windows® 10
Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, on Asus 17"**, Memory: Dual Channel 16GB DDR4 2400, Storage: 256GB SSD, 1TB HDD 5400RPM, Graphics: NVIDIA® GTX 1050 4GB GDDR5, OS: Windows® 10

Battery Life Configurations

4K Battery Life Configs
• 8th Gen: Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M graphics, OS: Windows® 10, Screen: 4K, Battery Size: 75WHr
**BENCHMARK 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.

**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.

As Measured by 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.
Workloads

4K to 1080p H.264 Transcode Workload: Using Handbrake v1.0.7, 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 ~1480 MB, 1920x858, ~17.1 Mbps, 24fps, H.264, .mp4 video file.

Adobe Premier Pro CC 2018 (12.0.0.224) Workload: The workload is a project created in Adobe Premiere Pro CC 2018 consisting of several H.264, 3840 x 2160, 60 fps videos. An intro title, transitions effects, timecode overlay, and audio background track are added. The output target is a 1 minute, H.264, 3840 x 2160, .mp4 video file using the "YouTube 2160p" profile rendered with OpenCL/CUDA acceleration on supported devices.

Hitman Gaming Workload: v1.13.2 Benchmark mode used on DX12 1920x1080 High Settings and average FPS measured

Total War: Warhammer Workload: v1.6.0 Build 14562.115.9262 Benchmark mode used on 1920x1080 DX12 High Settings and average FPS measured on 8th Gen Intel® processors, other systems tested using 1920x1080 DX11 High Settings and average FPS measured due to lack of DX12 Async Compute support.

Rise of the Tomb Raider Workload: v1.0 build 770.1_64 Benchmark mode used on with DX12 1920x1080 High Settings and average FPS measured

Vermintide 2 Workload: Build ID 78534ff47870 Honduras Benchmark mode used on DX12 1920x1080 High Settings and average FPS measured

Deus Ex: Mankind Divided Workload: v1.19 build 801.0 Benchmark mode used on DX12 1920x1080 High Settings and average FPS measured
1. NPD & GFK Retail Sales. Assumptions: Performance CPUs (Intel: Core i5 and i7 H-series Mobile, AMD: FX); 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
4. Board space savings calculated by comparing the 8th Gen Intel® Core™ processor with Radeon™ RX Vega M graphics and 7th Gen Intel® Core™ H processor with discrete graphics and 4GB of GDDR5 down on the motherboard, includes PCIe trace length savings.
5. Graphics memory power savings compares the power consumption of 4GB of HBM2 and 4GB of GDDR5 running 3DMark 11 GT1 subtest; 1.3 Watts and 10.9 Watts respectively.
7. As Measured by Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10, Battery: 56WHR, Screen: 15” 1080P
8. As measured by Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10, Battery: 60WHR, Screen: 4K Panel
10. As measured by 3DMark® Time Spy Graphics on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10, 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 8GB DDR3, Storage: 1TB HDD 5400RPM, Graphics: NVIDIA® GTX950M, OS: Windows® 10
11. As measured by 3DMark11® – Graphics on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10, 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 8GB DDR3, Storage: 1TB HDD 5400RPM, Graphics: NVIDIA® GTX950M, OS: Windows® 10
12. As measured by Vermintide 2 on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10, 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 8GB DDR3, Storage: 1TB HDD 5400RPM, Graphics: NVIDIA® GTX950M, OS: Windows® 10
13. As measured by HEVC Handbrake Transcode Workload (QSV on for 8th Gen Intel® Core™ i7-8705G Processor, QSV Fails on 3YO, HEVC transcode workload ran in software on 3YO Intel® Core™ i7-4720HQ Processor) on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10, 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 8GB DDR3, Storage: 1TB HDD 5400RPM, Graphics: NVIDIA® GTX950M, OS: Windows® 10
14. As measured by Adobe Premier Pro CC 2018 Workload on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus®, Memory: 8GB DDR3, Storage: 1TB HDD 5400RPM, Graphics: NVIDIA® GTX950M, OS: Windows® 10
15. As measured by 3DMark11® Graphics, Hitman*, Deus Ex: Mankind Divided* and Vermintide 2* Workloads on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8705G Processor, PL1=65W TDP, 4C8T, Turbo up to 4.1GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GL, OS: Windows® 10; Intel® Core™ i7-8550U Processor, PL1=15W TDP, 4C8T, Turbo up to 4.0GHz, on Asus 17**, Memory: Dual Channel 16GB DDR4 2400, Storage: 256GB SSD, 1TB HDD 5400RPM, Graphics: NVIDIA® GTX 1050 4GB GDDR5, OS: Windows® 10
16. As measured by 3DMark11* Strings (Second Edition) on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GH, OS: Windows® 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus®, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
17. As measured by 3DMark* Time Spy Graphics on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GH, OS: Windows® 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
18. As measured by 3DMark11* Graphics on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon* RX Vega M GH, OS: Windows* 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
19. As measured by Hitman Gaming Workload on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GH, OS: Windows® 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
20. As measured by Vermintide 2 Workload on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GH, OS: Windows® 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
21. As measured by Total War: Warhammer Workload on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GH, OS: Windows® 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
22. As measured by Rise of the Tomb Raider Workload on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon® RX Vega M GH, OS: Windows® 10; 3 year old: Intel® Core™ i7-4720HQ Processor, PL1=47W TDP, 4C8T, Turbo up to 3.6GHz, on Asus*, Memory: 16GB DDR3, Storage: 1TB HDD 7200RPM, Graphics: NVIDIA® GTX960M, OS: Windows® 10
23. As measured by 3DMark11* Graphics, Hitman*, Deus Ex: Mankind Divided* and Total War: Warhammer* Workloads on Intel Reference Platform: 8th Gen: Intel® Core™ i7-8809G Processor, PL1=100W TDP, 4C8T, Turbo up to 4.2GHz, Memory: 16GB, Storage: SSD, Graphics: Radeon* RX Vega M GH, OS: Windows® 10; Intel® Core™ i7-7700HQ Processor, PL1=45W TDP, 4C8T, Turbo up to 3.8GHz, on Dell 15.6”*, Memory: Single Channel 16GB DDR4 2400, Storage: 256GB SSD, 1 TB HDD 5400 RPM, Graphics: NVIDIA® GTX 1060 6GB GDDRS, OS: Windows® 10