NEW 10TH GEN INTEL® CORE™
H-SERIES PROCESSOR LAUNCH
FASTEST MOBILE PROCESSOR *

Up to 5.3 GHz

>60% of SKUS ≥ 5.0GHz

30+ Thin & Light

100+ Designs

*Based on Intel® Core™ i9-10980HK's highest achievable max turbo frequency of 5.3GHz, exceeding all other mobile products available as of April 2020. Includes use of Intel® Thermal Velocity Boost. User experience varies with workload. See end notes for details.

**For more complete information about performance and benchmark results, visit www.intel.com/benchmarks.
AMAZING GAMING STARTS WITH INTEL

DEFINING THIN AND LIGHT MOBILE GAMING

30+

10th Gen H-series systems at 20mm or less

GAMING LEADERSHIP AT SCALE

100+

10th Gen H-series designs across consumer, commercial and workstation

ENGINEERED TO MAXIMIZE PERFORMANCE IN ANY SITUATION

PUSHING BOUNDARIES OF PERFORMANCE

Co-engineering and driving optimizations with the leading PC makers

FORM FACTOR & INNOVATION

• Companion displays
• 2-in-1 designs
• Slim border 17"
• HDR 1000 panels and displays
• 300 Hz refresh displays

For more complete information about performance and benchmark results, visit intel.com/benchmarks.

Warning: Altering PC clock or memory frequency and/or voltage may (i) reduce system stability and use life of the system, memory 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 assumes no responsibility that the memory included if used with altered clock frequencies and/or voltages, will be fit for any particular purpose. Check with memory manufacturer for warranty and additional details.
WHY FREQUENCY MATTERS

• 10th Gen Intel® Core™ mobile H-series, the first mobile processor to break the >5GHz frequency barrier

• Games and most applications continue to depend on high frequency cores

• Better performance required to drive high framerates, a foundation element of achieving lower latency – this is where frequency matters
GAMING ADVANTAGE WITH 10TH GEN
INTEL CORE i9 VS 3 YEAR OLD LAPTOP

FPS PERCENTAGE INCREASE

- 54% for Red Dead Redemption 2 - 1080p High
- 42% for Total War Three Kingdoms - Dynasty 1080p High
- 27% for World of Tanks enCore - 1080p High
- 23% for Assassin's Creed Odyssey - 1080p High
- 23% for Far Cry: New Dawn - 1080p High

For more complete information about performance and benchmark results, visit intel.com/benchmarks.
<table>
<thead>
<tr>
<th>Game</th>
<th>FPS Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assassin's Creed Odyssey - 1080p High</td>
<td>44%</td>
</tr>
<tr>
<td>Total War Three Kingdoms - Dynasty</td>
<td>38%</td>
</tr>
<tr>
<td>F1 2019 - 1080p High</td>
<td>38%</td>
</tr>
<tr>
<td>World of Tanks enCore - 1080p High</td>
<td>31%</td>
</tr>
</tbody>
</table>

For more complete information about performance and benchmark results, visit [intel.com/benchmarks](http://intel.com/benchmarks).
MORE POWER FOR YOUR CREATIVE PROCESS

>60M
CREATORS

>30
10TH GEN DESIGN WINS
(>50% GROWTH FROM 9TH GEN)

>50%
GAMING LAPTOPS
BOUGHT TO CREATE
NEW 10TH GEN INTEL CORE i7 FOR CREATORS AND GAMERS

UP TO 5.1 GHZ

8 CORES

16 THREADS

Includes the effect of Intel Thermal Velocity Boost
Unlocked features are present with select processors
For more complete information about performance and benchmark results, visit intel.com/benchmarks.
DESKTOP CALIBER PERFORMANCE
NEW Intel® Core™ i9 mobile processor with up to 5.3GHz & 8C/16T
NEW Intel® Core™ i7 mobile processor with up to 5.1GHz & 8C/16T
NEW Intel® Core™ i5 mobile processor with up to 4.5GHz & 4C/8T
NEW Intel® Turbo Boost Max Technology 3.0
NEW Memory support up to DDR4-2933
NEW Intel® Speed Optimizer delivers simple one-click method to overclock
NEW Integrated Intel® Wi-Fi 6 AX201 (Gig+) support for high-speed, low-latency wireless performance*

Intel® Adaptix™ Dynamic Tuning Technology and Intel® Extreme Tuning Utility for intelligent performance tuning
Support for up to 128GB DDR4 memory capacity
Up to 40 platform PCIe lanes for capability expansion: graphics cards, CPU-attached storage, RAID
Thunderbolt™ 3 support with 4x more bandwidth than USB 3.1
Intel® Optane™ memory support accelerates game launch and load**
Optimized for the latest discrete graphics performance

22Based on Intel® Core™ i9-10980HK's highest achievable max turbo frequency of 5.3GHz, exceeding all other mobile products available as of April 2020. Includes use of Intel® Thermal Velocity Boost. User experience varies with workload. See end notes for details.

For more complete information about performance and benchmark results, visit intel.com/benchmarks. Performance results are based on testing as of the date set forth in the configurations and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure. "Intel® WiFi 6 AX201 requires specific hardware configurations.
"Intel® Optane™ memory requires specific hardware and software configuration. Visit www.intel.com/OptaneMemory for configuration requirements.
NEW 10TH GEN INTEL® CORE™ i9
DESKTOP CALIBER PERFORMANCE ON-THE-GO

UP TO 5.3GHZ
8 CORES
16 THREADS

FULLY UNLOCKED
i9-10980HK

Up to 54%
MORE GAME FPS
Vs. 3YO PC

Up to 44%
BETTER OVERALL
PERFORMANCE
Vs. 3YO PC

Up to 2X
FASTER 4K VIDEO
RENDERING AND EXPORT
Vs. 3YO PC

DESIGNED TO BE AMAZINGLY FASTER VS 3-YEAR OLD ENTHUSIAST PC

For more complete information about performance and benchmark results, visit intel.com/benchmarks.
Performance results are based on testing as of the date set forth in the configurations and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

Includes the effect of Intel® Thermal Velocity Boost (Intel® TVB), a feature that opportunistically and automatically increases clock frequency above single-core and multi-core Intel® Turbo Boost Technology frequencies based on how much the processor is operating below its maximum temperature and whether turbo power budget is available. The frequency gain and duration is dependent on the workload, capabilities of the processor and the processor cooling solution.
10TH GEN INTEL® CORE™ i7-10750H

ENThusiast Gaming

GAME FPS

UP TO

44%

FASTER²

VS. 3YO PC

CONTENT Creation

EDITING

UP TO

70%

FASTER

4K VIDEO EXPORT¹⁰

VS. 3YO PC

OVERALL PERFORMANCE

PERFORMANCE

UP TO

33%

BETTER¹¹

VS. 3YO PC

FASTER GAMING AND CREATION VS 3-YEAR OLD PC

For more complete information about performance and benchmark results, visit intel.com/benchmarks.
Performance results are based on testing as of the date set forth in the configurations and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.
NEXT LEVEL WIRELESS AND CONNECTIVITY

THUNDERBOLT™ 3

MAXIMUM PERFORMANCE
Add more SSD or HDD capacity with speeds up to 3000MB/s to store game libraries and media files

UNRIVALLED SIMPLICITY
Compact and powerful Thunderbolt™ 3 MiniDocks make connecting to two 4K displays at your desk or on-the-go a snap

MORE RELIABLE
Mandatory certification for all computers, peripheral devices and cables for consistent user experience

INTEL® WI-FI 6 (GIG+)

RESPONSIVE GAMEPLAY
~75% lower latency\(^5\) for ultra-responsive gaming and real-time collaboration

DOWNLOAD QUICKLY
~3X faster\(^{14}\) with twice the bandwidth for smoother streaming and faster downloads

MORE RELIABLE
Router traffic management to deliver predictable performance and future proofs network

For more information about the data presented, visit intel.com/wifi6 DISCLAIMERs
HARDWARE BRINGS SOFTWARE TO LIFE

*Other names and brands may be claimed as the property of others.
# 10th Gen Intel® Core™ Mobile Processors

<table>
<thead>
<tr>
<th>Processor Number</th>
<th>Base Clock Speed (GHz)</th>
<th>Maximum Single Core Turbo Frequency (GHz)</th>
<th>Cores/Threads</th>
<th>Thermal Design Power (W)</th>
<th>Intel® Thermal Velocity Boost</th>
<th>Unlocked</th>
<th>Intel® Smart Cache (MB)</th>
<th>Memory Support</th>
<th>Intel® Optane™ Memory Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® Core™ i9-10880H</td>
<td>2.4</td>
<td>5.3</td>
<td>8/16</td>
<td>45</td>
<td>☑</td>
<td>☑</td>
<td>16 MB</td>
<td>Two channels DDR4-2933</td>
<td>☑</td>
</tr>
<tr>
<td>Intel® Core™ i7-10875H</td>
<td>2.3</td>
<td>5.1</td>
<td>8/16</td>
<td>45</td>
<td>☑</td>
<td></td>
<td>16 MB</td>
<td>Two channels DDR4-2933</td>
<td>☑</td>
</tr>
<tr>
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<td>2.7</td>
<td>5.1</td>
<td>6/12</td>
<td>45</td>
<td>☑</td>
<td>Partial</td>
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</tr>
<tr>
<td>Intel® Core™ i7-10750H</td>
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<td>5.0</td>
<td>6/12</td>
<td>45</td>
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<td></td>
<td>12 MB</td>
<td>Two channels DDR4-2933</td>
<td>☑</td>
</tr>
<tr>
<td>Intel® Core™ i5-10400H</td>
<td>2.6</td>
<td>4.6</td>
<td>4/8</td>
<td>45</td>
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<td>4.5</td>
<td>4/8</td>
<td>45</td>
<td></td>
<td></td>
<td>8 MB</td>
<td>Two channels DDR4-2933</td>
<td>☑</td>
</tr>
</tbody>
</table>

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). Includes the effect of Intel® Thermal Velocity Boost (Intel® TVB), a feature that opportunistically and automatically increases clock frequency above single-core and multi-core Intel® Turbo Boost Technology frequencies based on how much the processor is operating below its maximum temperature and whether turbo power budget is available. The frequency gain and duration is dependent on the workload, capabilities of the processor and the processor cooling solution.
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Testing concluded March 24, 2020 and may not reflect all publicly available updates. See configuration disclosure for details. No product can be absolutely secure.

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.

Fastest mobile processor: Based on Intel® Core™ i9-10980HK’s highest achievable max turbo frequency of 5.3GHz, exceeding all other mobile products available as of April 2020. Includes use of Intel® Thermal Velocity Boost. User experience varies with workload. See end notes for details

For more complete information about performance and benchmark results, visit http://www.intel.com/benchmarks

Your costs and results may vary.

Intel technologies may require enabled hardware, software or service activation.

Intel contributes to the development of benchmarks by participating in, sponsoring, and/or contributing technical support to various benchmarking groups, including the BenchmarkXPRT Development Community administered by Principled Technologies.

Warning: Altering PC clock or memory frequency and/or voltage may (i) reduce system stability and use life of the system, memory 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 assumes no responsibility that the memory, included if used with altered clock frequencies and/or voltages, will be fit for any particular purpose. Check with memory manufacturer for warranty and additional details.

Any differences in your system hardware, software or configuration may affect your actual performance.

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1. Includes the effect of Intel® Thermal Velocity Boost (Intel® TVB), a feature that opportunistically and automatically increases clock frequency above single-core and multi-core Intel® Turbo Boost Technology frequencies based on how much the processor is operating below its maximum temperature and whether turbo power budget is available. The frequency gain and duration is dependent on the workload, capabilities of the processor and the processor cooling solution.

2. Features only available on select SKUs

3. As measured by SYSMark*2018 on Intel® Core™ i9-10980HK vs. Intel® Core™ i7-7820HK

4. As measured by Red Dead Redemption 2 on Intel® Core™ i9-10980HK vs. Intel® Core™ i7-7920HQ

5. Nearly 3X Faster: ~3X Faster: Intel Wi-Fi 6 claims are based on internal Intel testing at 3M distance with Wi-Fi 6 (160MHz) average throughput of 1521Mbps verses 802.11ac (80MHz) average throughput of 541 for an improvement of 2.8X. Testing at a range of 68M yields a 4.2X improvement from 102Mbps average throughput for 802.11ac (80MHz) to 432Mbps average throughput for Wi-Fi 6 (160MHz). Throughput measured in Intel lab with a Dell* Latitude 5491 running Windows 10* on a rotating table (1 revolution per minute) taking the average throughput over multiple tests. Access points used were Asus* AX88U FW: 3.0.0.4.384_5640 (Wi-Fi 6) and Asus* AC66U FW: 3.0.0.4.382_50470. Wi-Fi 6 improvements requires use of similarly configured Wi-Fi 6 network routers.

6. As measured by Power Director 4K video export workload RUG 1006 on Intel® Core™ i9-10980HK vs. Intel® Core™ i7-7820HK

7. As measured by Adobe Lightroom Classic workload RUG 1010 on Intel® Core™ i9-10980HK vs. Intel® Core™ i7-7920HQ

8. As measured by PUBG mega-tasking workload on Intel® Core™ i9-10980HK vs. Intel® Core™ i7-7920HQ

9. As measured by Assassin's Creed Odyssey on Intel® Core™ i7-10750H vs. Intel® Core™ i7-7820HQ

10. As measured by Power Director 4K video export workload RUG 1006 on Intel® Core™ i7-10750H vs. Intel® Core™ i7-7700HQ

11. As measured by SYSMark*2018 on Intel® Core™ i7-10750H vs. Intel® Core™ i7-7700HQ

12. As compared to other PC I/O connection technologies including eSATA, USB, and IEEE 1394 Firewire*. Performance will vary depending on the specific hardware and software used. Must use a Thunderbolt™-enabled device.

13. Best in Class Wi-Fi 6: Intel® Wi-Fi 6 (Gig+) products support optional 160 MHz channels, enabling the fastest possible theoretical maximum speeds (2402 Mbps) for typical 2x2 802.11 AX PC Wi-Fi products. Premium Intel® Wi-Fi 6 (Gig+) products enable 2-4X faster maximum theoretical speeds compared standard 2x2 (1201 Mbps) or 1x1 (600 Mbps) 802.11 AX PC Wi-Fi products, which only support the mandatory requirement of 80 MHz channels. Gigabit Wi-Fi: To achieve speed of over 1Gbps requires Gig internet service, router/gateway with either Wi-Fi 6 or 11ac with 160 MHz channel support, and PC with Intel Wireless 9260/9560 or Intel Wi-Fi 6 AX200/AX201.

14. 75% Latency reduction: is based on Intel simulation data (79%) of 802.11ax with and without OFDMA using 9 clients. Average latency without OFDM is 36ms, with OFDMA average latency is reduced to 7.6ms. Latency improvement requires that the 802.11ax (Wi-Fi 6) router and all clients support OFDMA.

15. 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.
Performance Disclaimers

16. As measured by PCMark 10 Quick System Drive on Intel® Core™ i9-10980HK with Intel® Optane™ Memory H10 With Solid State Storage vs. Intel® Core™ i9-10980HK with 760p SSD®.

17. As measured by Photoshop launch with file copy RUG1040 on Intel® Core™ i9-10980HK with Intel® Optane™ Memory H10 With Solid State Storage vs. Intel® Core™ i9-10980HK with 760p SSD®.

18. As measured by Adobe Premier Pro launch with file copy RUG1033 on Intel® Core™ i9-10980HK with Intel® Optane™ Memory H10 With Solid State Storage vs. Intel® Core™ i9-10980HK with 760p SSD®.

19. Intel® technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. Check with your system manufacturer or retailer or learn more at intel.com.

20. As measured by Blender RUG 1013 on Intel® Core™ i9-10980HK vs. Intel® Core™ i7-7820HK.

21. As measured by SYSMark*2018 on Intel® Core™ i9-10980HK vs. Intel® Core™ i7-7820HK.

22. Based on Intel® Core™ i9-10980HK's highest achievable max turbo frequency of 5.3GHz, exceeding all other mobile products available as of April 2020. Includes use of Intel® Thermal Velocity Boost. User experience varies with workload. See end notes for details.

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**SYSTEM CONFIGURATIONS**

**Testing by Intel as of March 27, 2020**

**Launch Product:**

For Responsiveness Testing:


**7th Gen:**
Processor: Intel® Core™ i7-7820HK processor (CML-H) PL1=45W TDP, 4C8T, Memory: 16 GB DDR4-2400 DDR4 SDRAM, Storage: Samsung SSD 970 EVO Plus 500GB, Display Resolution: 1920x1080, OS: Microsoft Windows 10 10.0.18363.657, Graphics card: NVIDIA GeForce GTX 1080, Graphics driver: 23.21.13.8863 - NVIDIA ForceWare 388.63 41.74 measured on MSI GT75VR TITAN PRO system

**WORKLOAD AND BENCHMARK DETAILS**

**SYSmark** 2018 is a benchmark from the BAPCo* consortium that measures the performance of Windows* platforms. SYSmark 2018 tests three usage scenarios: Productivity, Creativity and Responsiveness. SYSmark contains real applications from Independent Software Vendors such as Microsoft* and Adobe*.

**WebXPRT 3** is a benchmark from Principled Technologies that measures JavaScript/HTML5 performance using web applications based on real world usages, like Photo Enhancement, Organize Album Using AI, Stock Option Pricing, Encrypt Notes and OCR Scan, Sales Graphs, and Online Homework. It produces results for each of the test scenarios plus an overall score.

**PCMark 10 Quick System Drive** is a benchmark from PCMark10 using relevant real-world traces from popular applications common tasks to full test the performance of the latest modern drives.
WORKLOAD AND BENCHMARK DETAILS

Adobe Lightroom Classic (RUG 1010) workload measures the time it takes Adobe Lightroom Classic to export 50 photos at a reduced file size in a jpeg format. The workload consists of 50 .jpeg photos shot on a Nikon D800 camera ranging in size of 11.3 MB – 29.8 MB.

Adobe Photoshop (RUG 1089) workload measures the total time it takes to apply the “Colored Pencil” artistic filter and 2 adjustments on a 36.3 Megapixel file (~20MB). The following times will be recorded:

- Time to apply the “Colored Filter” filter using default settings
- Time to adjust and preview the effect’s width variable
- Time to adjust and preview the effect’s brightness variable

PowerDirector PIP Encode (RUG 1006) measures the time it takes to export a project containing 4K 360 video using PowerDirector 365. The exported video is a 4K, HEVC, 30p, MP4 @ 37Mbps using the CPU only. It does NOT use HW acceleration to complete the render. This source material is 4K 360° video footage from a Nikon KeyMission 360 camera edited into an HEVC/H.265 1080P 2D PIP movie. The 2D PIP video is an ideal way to show two different time correlated portions of the 360° video that will be of interest to the viewing audience.

Blender (RUG 1013) workload measures the time to Render scene 2472 from the Gooseberry Project, which is a 230MB file provided by the Blender* Foundation for benchmarking. Blender is the free and open source 3D creation suite. It supports the entirety of the 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, even video editing and game creation.
**WORKLOAD AND BENCHMARK DETAILS**

Outlook launch with file copy RUG1029 measures the time it takes to launch a ~888MB PST file.

Adobe Premier Pro launch with file copy RUG1033 measures the time it takes to launch an Adobe Premiere Pro CC project file while copying an 18GB video file.

Photoshop launch with file copy RUG1040 measures the time it takes to launch a ~300MB Adobe Photoshop CC project file while copying an 18GB video file.

Launch of League of Legends RUG1259 measures time to launch League of Legends. League of Legends is a fast-paced, competitive online game that blends the speed and intensity of an RTS with RPG elements. Two teams of powerful champions, each with a unique design and playstyle, battle head-to-head across multiple battlefields and game modes. With an ever-expanding roster of champions, frequent updates and a thriving tournament scene, League of Legends offers endless replay ability for players of every skill level.
**WORKLOAD AND BENCHMARK DETAILS**

**World of Tanks enCore** is a demo and a graphics benchmark at the same time of the brand new graphics engine for the game World of Tanks.

**Red Dead Redemption 2** is a 2018 action-adventure game developed and published by Rockstar Games. The game is the third entry in the Red Dead series and is a prequel to the 2010 game Red Dead Redemption.

**Total War: THREE KINGDOMS** is the first in the award-winning series to recreate epic conflict across ancient China. Combining a gripping turn-based campaign of empire-building & conquest with stunning real-time battles, THREE KINGDOMS redefines the series in an age of heroes & legends.

**Assassin's Creed** is an action-adventure video game developed by Ubisoft Montreal and published by Ubisoft. It is the first installment in the Assassin's Creed series.

**Far Cry New Dawn** is a 2019 first-person shooter developed by Ubisoft Montreal and published by Ubisoft. The game is a spin-off of the Far Cry series and a narrative sequel to Far Cry 5.

**F1® 2019** challenges you to defeat your rivals in the most ambitious F1® game in Codemasters’ history. F1® 2019 features all the official teams, drivers and all 21 circuits from the season.

**PLAYER UNKNOWN’S BATTLEGROUNDS (PUBG) mega-tasking** workload uses a “SOLO | TPP” game mode on the ‘Erangel’ map to create a replay that is used to evaluate game performance while streaming to Twitch using OBS and recording gameplay using OBS; with the “Software(x264)” and “veryfast” presets. FPS is recorded using PresentMon. This workload will report: 1. The average FPS of gameplay as reported by PresentMon. 5min of the game replay is captured with PresentMon using this workload. 2. Version number used of both PUBG & OBS Studio. **PUBG** is a battle royale shooter that pits 100 players against each other in a struggle for survival. Gather supplies and outwit your opponents to become the last person standing.