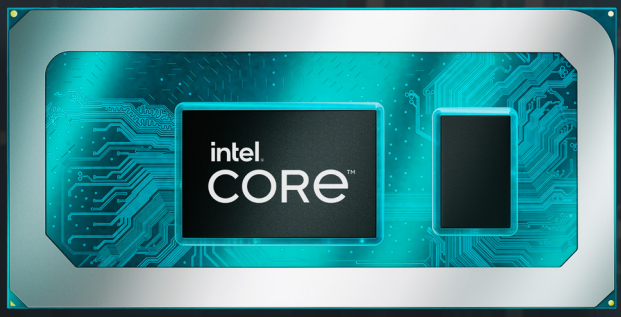


Product Brief

Intel® Core™ Processors (Series 2)

Intel® Core™ processors (Series 2) deliver performance for real-world multitasking, stunning graphics, and more reliable connectivity. They offer computing you can count on while instilling confidence that your PC will keep up with you, no matter what you're doing or where you're going.

Breakthrough Core Technology

Intel® Core™ processors feature:

- Improved performance hybrid architecture[1]
- Increased frequencies for real-world multitasking and great everyday performance
- Support for higher DDR5 and LP5/5x memory speed on thin and light laptops
- Up to 14 processor cores and 20 threads for productivity and collaborative performance
- Features that help enable long-lasting battery life

Enhanced Capabilities for Immersive Experiences

Intel® Core™ processors feature Intel® Graphics for stunning visuals with a smooth, no-lag experience while streaming videos, as well as Intel® Application Optimization for playing your favorite game with optimized performance, which is part of the Intel® Dynamic Tuning Technology framework.

Expect seamless gaming and streaming experiences with support of up to 4K HDR video in billions of colors as well as up to four 4K displays.

Accelerating Platform Innovation

Designed with industry-leading technology, Intel® Core™ processors give you the tools to stay connected with your thin and light laptop. Available with new discrete Intel® Wi-Fi 7 and Bluetooth 5.4 support, providing next-generation wireless connectivity.[3]

Additionally, Intel® Core™ processors feature higher memory clock speed support from the previous generation for a snappy and responsive user experience. Expand beyond your thin and light laptop with continued 4x Thunderbolt™ 4 technology and drop-in compatibility support for platform flexibility.

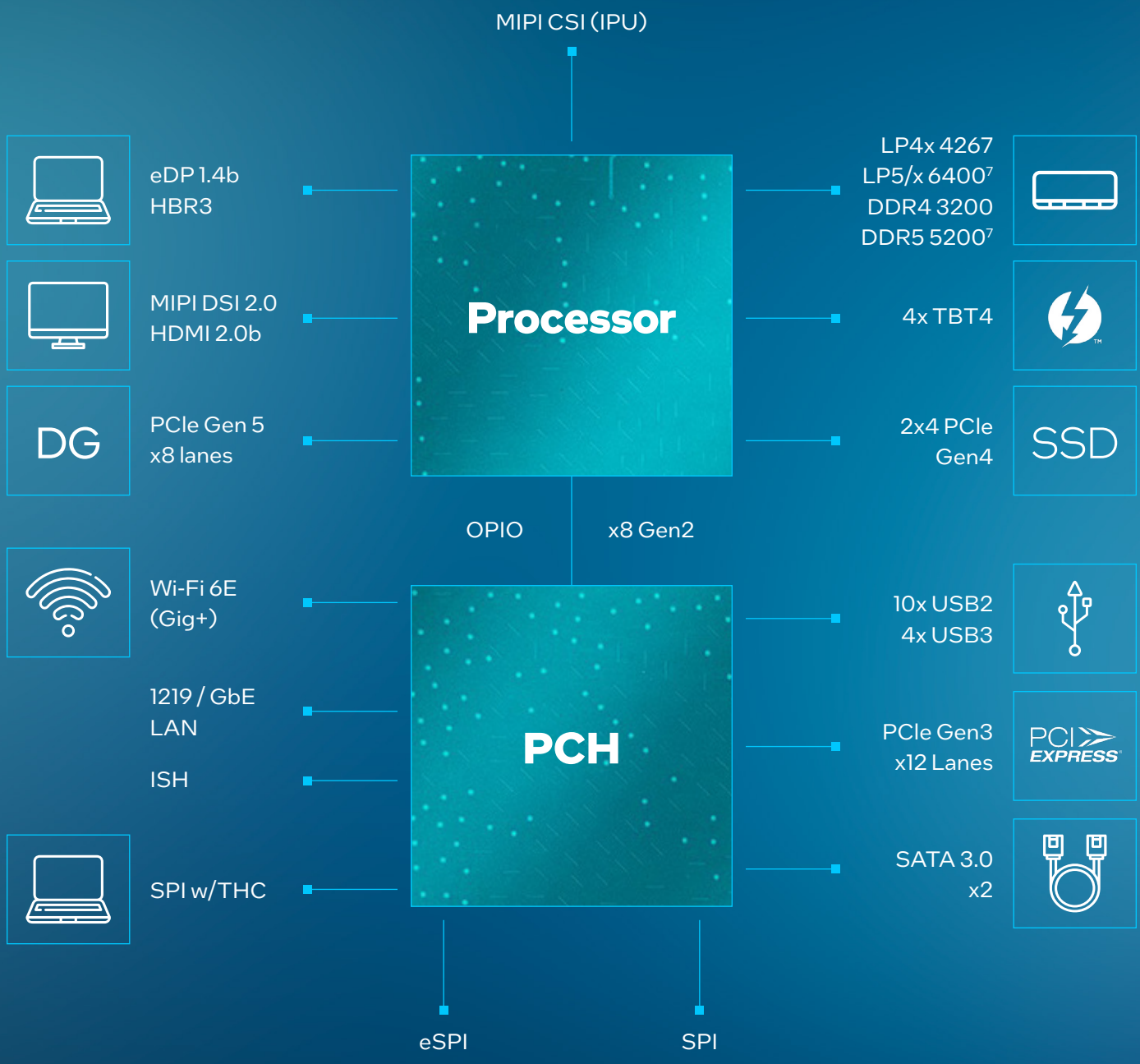
Intel® Core™ Processors (Series 2): Features at a Glance

Feature	Benefit
Performance Hybrid Architecture[1]	Integrates two all-new core microarchitectures into a single die, prioritizing and distributing workloads to optimize performance.
Intel® Thread Director[2]	Optimizes workloads by helping the OS scheduler intelligently distribute workloads to the optimal cores.
Intel® Smart Cache	CPU memory caching method for sharing among P-cores, E-cores, and processor graphics if applicable.
Intel® Graphics	Intel® Graphics powers everyday media and display capabilities of mobile systems.
Intel® Application Optimization	A new policy within Intel® Dynamic Tuning Technology framework that determines and directs application resource optimization in real-time.
Intel® Deep Learning Boost	Intel® Deep Learning Boost significantly accelerates inference performance for deep-learning workloads optimized to use VNNI.
Intel® Wi-Fi 6E (Gig+)	Integrated wireless for 6 GHz connections. Wi-Fi 6E-enabled devices can take advantage of the newer 6 GHz frequency band for further improved connectivity.
Intel® Wi-Fi 7 (5 Gig)[3]	The next step in the evolution of wireless connectivity, helping provide extreme speed, responsiveness, and reliability.
Thunderbolt™ 4 Technology	Universal cable connectivity for a simple, reliable connection that provides incredible performance.

Intel® Core™ Processors (H-Series)

Processor Number[4]		Intel® Core™ 9 Processor 270H	Intel® Core™ 7 Processor 250H	Intel® Core™ 7 Processor 240H	Intel® Core™ 5 Processor 220H	Intel® Core™ 5 Processor 210H
Processor Cores (P-cores + E-cores)[5]		14 (6+8)	14 (6+8)	10 (6+4)	12 (4+8)	8 (4+4)
Processor Threads		20	20	16	16	12
Intel® Smart Cache (LLC)		24 MB	24 MB	24 MB	18 MB	12 MB
Max Turbo Frequency[6]	P-core	Up to 5.8 GHz	Up to 5.4 GHz	Up to 5.2 GHz	Up to 4.9 GHz	Up to 4.8 GHz
	E-core	Up to 4.1 GHz	Up to 4.0 GHz	Up to 4.0 GHz	Up to 3.7 GHz	Up to 3.6 GHz
Base Frequency[6]	P-core	Up to 2.7 GHz	Up to 2.5 GHz	Up to 2.5 GHz	Up to 2.7 GHz	Up to 2.2 GHz
	E-core	Up to 2.0 GHz	Up to 1.8 GHz	Up to 1.8 GHz	Up to 2.0 GHz	Up to 1.6 GHz
Graphics Max Frequency		Up to 1.55 GHz	Up to 1.55 GHz	Up to 1.55 GHz	Up to 1.5 GHz	Up to 1.4 GHz
Processor Graphics		Intel® Graphics				
Total PCIe Lanes		2x4 Gen 4 + 1x8 Gen 5 (CPU), x12 Gen 3 (PCH)				
Max Memory Speed[7]		DDR5 – 5600, LPDDR5/x – 6400 DDR4 – 3200 LPDDR4x – 4267			DDR5 – 5200 LPDDR5/x – 6400 DDR4 – 3200 LPDDR4x – 4267	DDR5 – 5200 LPDDR5/x – 5200 DDR4 – 3200 LPDDR4x – 4267
Maximum Memory Capacity		96 GB				
Processor Base Power		45 W				
Maximum Turbo Power		115 W				

Intel® Core™ Processors (H-Series)



Notices & Disclaimers

1. **Performance Hybrid Architecture:**
   Performance hybrid architecture combines two core microarchitectures, Performance-cores (P-cores) and Efficient-cores (E-cores), on a single processor die first introduced on 12th Gen Intel® Core™ processors. Select 12th Gen and newer Intel® Core™ processors do not have performance hybrid architecture, only P-cores, and have same cache size as prior generation. See ark.intel.com for SKU details.

2. **Intel® Thread Director:**
   Built into the hardware, Intel® Thread Director is provided only in performance hybrid architecture configurations of 12th Gen or newer Intel® Core™ processors; OS enablement is required. Available features and functionality vary by OS.

3. **Intel® Wi-Fi 7:**
   Wi-Fi 7 is subject to regional availability and operation requires use of Intel® Wi-Fi 7 (5 Gig) products in conjunction with operating systems and routers/APs/Gateways that support Wi-Fi. Learn more at https://www.intel.com/performance-wireless.

4. **Processor Numbers:**
   Intel® processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families.

5. **P-cores + E-cores:**
   Processor cores listed first are the total number of cores in the processor. The number of Performance-cores and the number of Efficient-cores are listed in parentheses (P+E).

6. **Core Frequencies:**
   The frequency of cores and core types varies by workload, power consumption, and other factors. See ark.intel.com for SKU details.

7. **Memory Speed:**
   DDR5 top speed enabled with specific DIMMs (1 SPC,1 DPC, 1R). Other DIMMs may operate with one speed bin lower and different SAGV points. For SKU level memory support see ark.intel.com.

Performance varies by use, configuration, and other factors. Learn more at www.Intel.com/PerformanceIndex.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

Your costs and results may vary.

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

© Intel Corporation. Intel, the Intel logo, Intel Core, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.