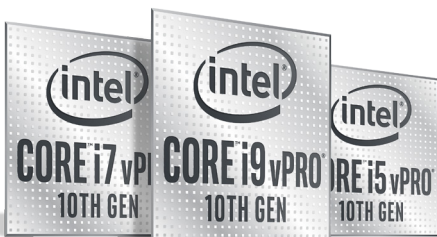intel®
experience
what's inside™

POWERING NEW BUSINESS COMPUTING EXPERIENCES

10TH GEN INTEL® CORE™ VPRO® PROCESSORS CHANGING THE GAME IN WORKER PRODUCTIVITY, PC SECURITY AND COMPUTING INNOVATION

The Intel® vPro® platform, now with 10th Gen Intel® Core™ vPro® processors, delivers uncompromised productivity, hardware-based security features, and a foundation for computing innovation. The Intel vPro platform powered by 10th Gen Intel Core vPro processors streamlines IT and gives business users what they want: fewer interruptions, built-in security features, responsive business-class performance, and fast, reliable connectivity.

A SCALABLE PROCESSOR PORTFOLIO

To meet a variety of performance and form factor needs, 10th Gen Intel Core vPro processors are offered in the U series for mainstream mobile systems, the H series for high end mobile systems and the S series for desktop and entry workstation computing. The U series is segmented into the i5 and i7 processor designators. While both S and the H series are further segmented into performance tiers identified by the i5, i7, i9 and Xeon® W processor designators.

A FOUNDATION FOR COMPUTING INNOVATION

10th Gen Intel Core vPro processors feature up to 10 processor cores, Gen 9 Intel® UHD Graphics with support for 4K content, a two-channel DDR4 memory controller, and the new Intel® 400 Series Platform Controller Hub (PCH) with support for Thunderbolt™ 3, Optane™ memory, and integrated Wi-Fi 6 802.11ax.

**POWERING INNOVATIVE EXPERIENCES
WITH THIN AND LIGHT MOBILE SYSTEMS**

10th Gen Intel Core vPro processors (U series) are offered in 2 versions for mainstream mobile systems. Processors with the i5 designator feature 4 cores, 8 threads, and an 8 MB cache with a 15-watt thermal design power (TDP) option, processors with the i7 designator support 4/6 cores, 8/12 threads, and a 12 MB cache with a 15-watt TDP. The U series 10th Gen Intel Core vPro processors are enabling our partners to deliver business-class thin and light mobile systems.

ENABLING PRODUCTIVE WORKSPACES

New 10th Gen Intel Core vPro (S series) are offered at TDP options of 35, 65 and 125 watts, enabling elegant small form factor desktops, traditional towers, and modern all-in-one touchscreen systems. 10th Gen Intel Core vPro processors with the i5 designator feature 6 cores, 12 threads and a 12 MB cache, processors with the i7 designator support 8 cores, 16 threads and a 16 MB cache. At the top of the stack, processors with the i9 designator deliver 10 cores, 20 threads, and a 16 MB cache. 10th Gen Intel® Xeon® W processors are offered at TDP options of 35, 80 and 125 watts. They feature 6/8/10 cores, 12/16/20 threads and 12/16/20 MB cache. All performance/power options support the robust set of connectivity options of the Intel 400 series PCH, including integrated Wi-Fi 6 802.11ax wireless. The improved performance of integrated Wi-Fi 6 allows desktops to be placed at any location independently of Ethernet cabling concerns.

A ROBUST SET OF CONNECTIVITY OPTIONS

DESKTOP-CALIBER PERFORMANCE FOR MOBILE WORKERS

10th Gen Intel Core vPro processors (H series) are offered in 5 versions for high-end mobile systems. Processors with the i5 designator feature 4 cores, 8 threads, and an 8 MB cache, processors with the i7 designator feature 6/8 cores, 12/16 threads, and a 12/16 MB cache, processors with the i9 designator feature 8 cores, 16 threads, and a 16 MB cache, and processors with the Xeon® W designator feature 6/8 cores, 12/16 threads and a 12/16 MB cache. All processors operate at a 45-watt TDP. i9, i7 and Xeon W processors also support Intel® Thermal Velocity Boost[3] which increases clock frequency under specific operating conditions. The Intel 400 series PCH supports integrated Wi-Fi 6 as well as 4G LTE via discrete components.

5 VERSIONS FOR HIGH-END MOBILE SYSTEMS

BUILT FOR BUSINESS

Computing systems that incorporate the eligible processor SKUs shown in the table on page 7 and meet the Intel vPro brand requirements are optimized for corporate environments. Technology decision makers may deploy 10th Gen Intel Core vPro processors in a wide variety of mobile and desktop form factors and manage these endpoints with a consistent set of security and maintenance policies. Systems based on the Intel vPro platform require either the Microsoft Windows* 10 Pro or Windows* 10 Enterprise OS.

SECURITY AND MANAGEABILITY FEATURES

The 10th Gen Intel Core vPro platform provides businesses with the tools to help secure computing endpoints with expanded below-the-OS and advanced threat protection features. Intel® Hardware Shield locks down system critical resources to help prevent malicious code injection from compromising the OS, helps ensure the OS runs on legitimate hardware, and delivers hardware-to-OS security reporting to enable your OS to enforce a more comprehensive security policy. It also includes advanced threat detection that offloads routine security functions for lower user impact and continued productivity.


Modern manageability with Intel® Active Management Technology (Intel® AMT) and Intel® Endpoint Management Assistant (Intel® EMA) allows hardware-based cloud manageability empowering IT to do more. Help lower incidents over the PC life cycle, improve response times, enable automated patch updates, enable same-day service and faster incident resolution via full in-band/out-of-band PC control through the cloud. The capabilities listed in the Platform Security and Manageability Features table on page 8 are designed to enable, accelerate, or complement features and services within the Windows* 10 Pro and Windows* 10 Enterprise operating systems.

FULL PLATFORM VALIDATION SUPPORT

PLATFORM STABILITY

The Intel® Stable IT Platform Program (SIPP) enables predictable transitions for businesses that test devices within their computing environment for performance, compatibility, and compliance. In combination with extensive validation by Intel and system vendors of multiple versions of the Windows 10 OS, businesses can avoid problems that may arise when deploying less stable devices not optimized for corporate buying cycles or for enterprise system validation procedures. The Intel vPro platform includes full Platform Validation support for additional (post Time To Market) Windows* 10 Enterprise SAC releases; including up to 2 previous OS releases (1809).
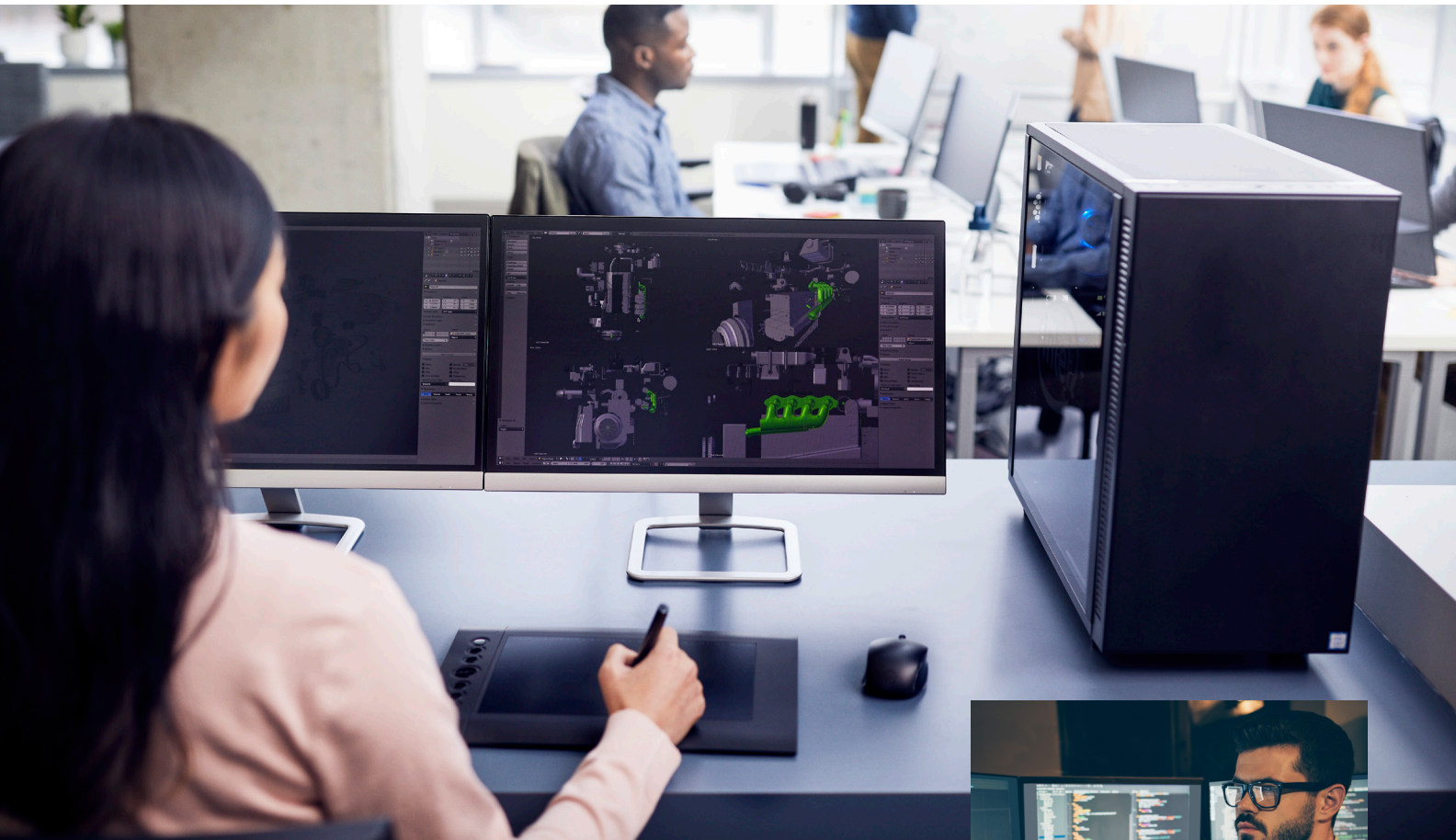
OPTIMIZED FOR DEMANDING WORKFLOWS

10th Gen Intel Core vPro processors offer a suite of power, performance and connectivity technologies that can equip workers to deal with the most demanding computing workloads. Businesses that upgrade their computing fleets to the latest technology may reap the benefits of a more productive work force. The latest generation of Intel Core vPro processor-based devices optimize the employee experience today and provide the foundation for future technology advancements.
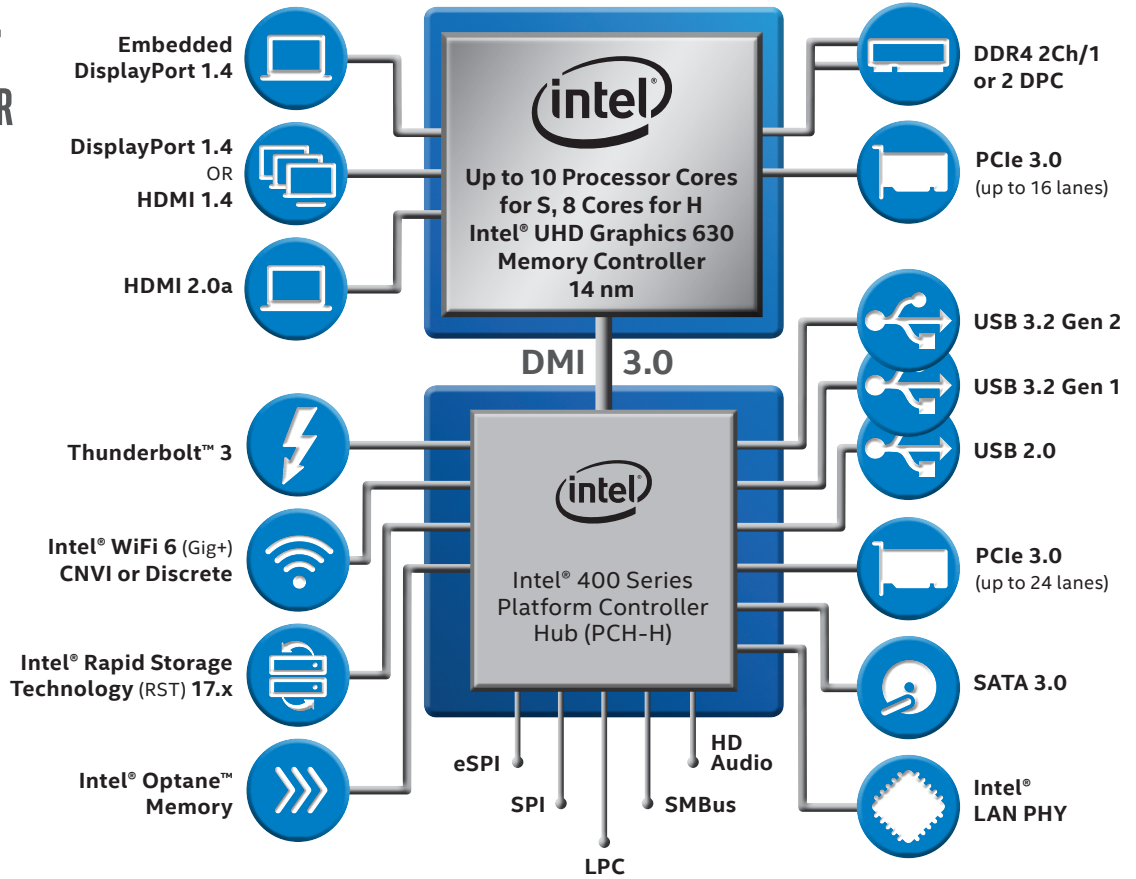
10TH GEN INTEL® CORE™ VPRO® PROCESSOR FAMILY

S SERIES DESKTOP PROCESSORS	ELIGIBLE SKU	BASE FREQ. (GHz)	CORES/ THREADS	CACHE	TDP
10th Gen Intel® Core™ i9 vPro® Processor	i9-10900K	3.7	10C/20T	20 MB	125 W
	i9-10900	2.8	10C/20T	20 MB	65 W
	i9-10900T	1.9	10C/20T	20 MB	35 W
10th Gen Intel® Core™ i7 vPro® Processor	i7-10700K	3.8	8C/16T	16 MB	125 W
	i7-10700	2.9	8C/16T	16 MB	65 W
	i7-10700T	2.0	8C/16T	16 MB	35 W
10th Gen Intel® Core™ i5 vPro® Processor	i5-10600K	4.1	6C/12T	12 MB	125 W
	i5-10600	3.3	6C/12T	12 MB	65 W
	i5-10600T	2.4	6C/12T	12 MB	35 W
	i5-10500	3.1	6C/12T	12 MB	65 W
	i5-10500T	2.3	6C/12T	12 MB	35 W
10th Gen Intel® Xeon®	W-1290P	3.7	10C/20T	20 MB	125 W
	W-1270P	3.8	8C/16T	16 MB	125 W
	W-1250P	4.1	6C/12T	12 MB	125 W
	W-1290	3.2	10C/20T	20 MB	80 W
	W-1270	3.4	8C/16T	16 MB	80 W
	W-1250	3.3	6C/12T	12 MB	80 W
	W-1290T	1.9	10C/20	20 MB	35 W

H SERIES MOBILE PROCESSORS	ELIGIBLE SKU	BASE FREQ. (GHz)	CORES/ THREADS	CACHE	TDP
10th Gen Intel® Core™ i9 vPro® Processor	i9-10885H	2.4	8C/16T	16 MB	45 W
10th Gen Intel® Core™ i7 vPro® Processor	i7-10875H	2.3	8C/16T	16 MB	45 W
	i7-10850H	2.7	6C/12T	12 MB	45 W
10th Gen Intel® Core™ i5 vPro® Processor	i5-10400H	2.6	4C/8T	8 MB	45 W
10th Gen Intel® Xeon®	W-10885M	2.4	8C/16T	16 MB	45 W
	W-10855M	2.8	6C/12T	12 MB	45 W

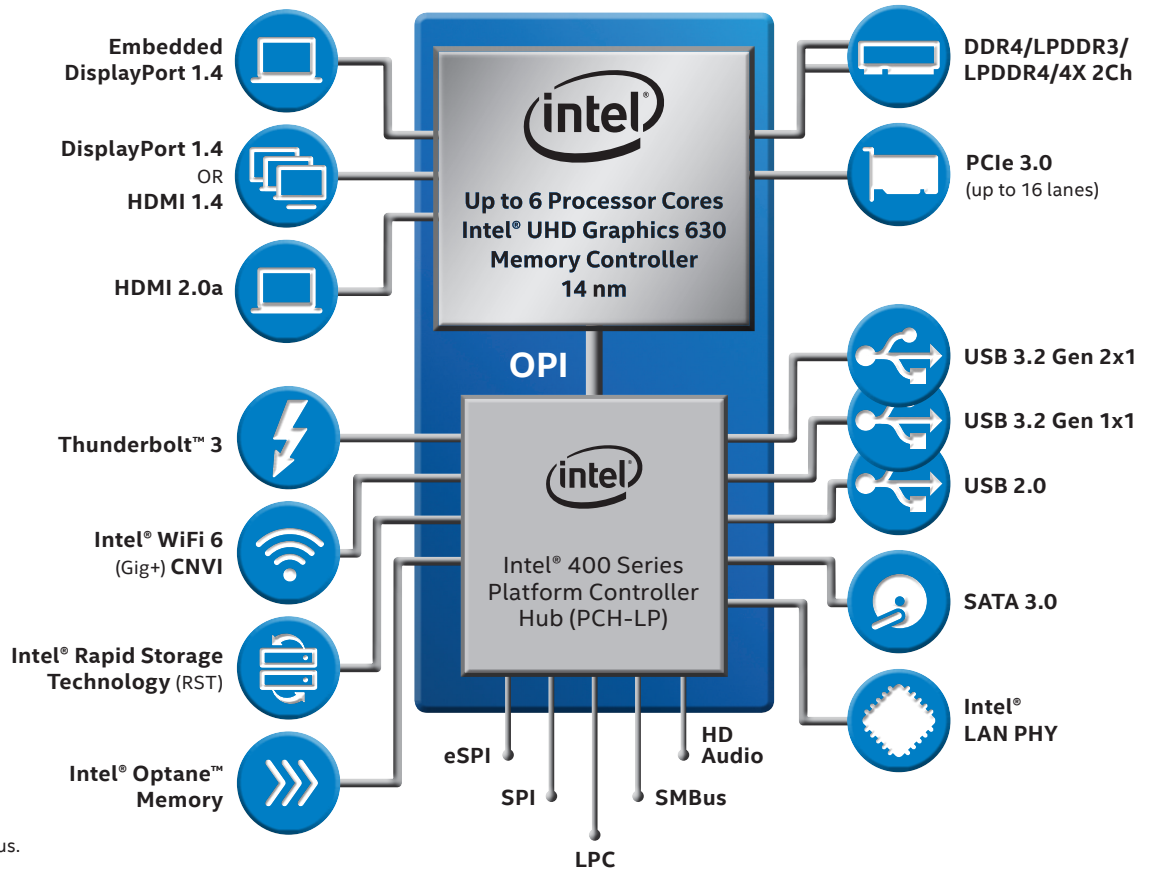| U SERIES MOBILE PROCESSORS	ELIGIBLE SKU	BASE FREQ. (GHz)	CORES/ THREADS	CACHE	TDP
10th Gen Intel® Core™ i7 vPro® Processor	i7-10810U	1.1	6C/12T	12 MB	15 W
	i7-10610U	1.8	4C/8T	6 MB	15 W
10th Gen Intel® Core™ i5 vPro® Processor	i5-10310U	1.7	4C/8T	6 MB	15 W

10TH GEN INTEL® CORE™ VPRO® PROCESSORS FEATURES AT A GLANCE

PLATFORM SECURITY & MANAGEABILITY	BENEFITS
Intel® Active Management Technology	Remote out-of-band management for efficient proactive and reactive system maintenance.
Intel® Endpoint Management Assistant	Remotely and securely manage devices beyond the firewall from the cloud
Intel® Hardware Shield	A set of configurable platform protection technologies.
Intel® Runtime BIOS Resilience	Intel Hardware Shield technology that hleps protect system firmware.
Intel® Trusted Execution Technology	Intel Hardware Shield technology providing hardware root-of-trust for critical software.
Intel® System Security Report	Communicates the current Intel Hardware Shield configuration to the OS.
Intel® System Resource Defense	Intel® Hardware Shield technology providing hardened protection for system I/O and CPU registers.
Intel® Threat Detection Technology	Intel® Hardware Shield technology providing advanced threat detection with memory scanning off-loaded to integrated GPU.
Intel® Virtualization Technology	Enables a variety of OS security services.
Intel® Transparent Supply Chain	Mechanism for confirming authenticity of system components.

BUSINESS PRODUCTIVITY & TECHNOLOGIES	BENEFITS
Intel® UHD Graphics	9th Gen Intel graphics with up to 24 Execution Units.
Intel® Hyperthreading Technology	Delivers two processing threads per core so threaded applications can get more work done in parallel.
Intel® Smart Cache Technology	Dynamically allocates shared cache to each processor core based on workload.
Intel® Turbo Boost Technology 2.0[2]	Dynamically increases the processor's frequency, as needed, by taking advantage of thermal and power headroom when operating below specified limits.
Intel® Speed Shift Technology with Energy-Performance Preference	Improves responsiveness for single-threaded transient workloads by allowing the processor to more quickly select its best operating frequency and voltage for optimal performance and power efficiency.
Intel® Thermal Velocity Boost[3]	Increases clock frequency in select processors based on specific operating conditions.
Integrated Memory Controller	Improves memory read/write performance through efficient pre-fetching algorithms, lower latency, and higher memory bandwidth (DDR4 up to 2666).
Serial ATA (SATA)	High speed storage interface supporting up to 6 Gb/s transfer rates for optimal data access (up to 3 SATA ports).
PCI Express (PCIe) 3.0 Interface	Offers up to 8 GT/s for fast access to peripheral devices and networking.
Intel® Rapid Storage Technology	Offers excellent levels of performance for SATA/PCIe storage components and Intel® Optane Memory.
Universal Serial Bus (USB) 3.1	Integrated USB Gen 1 and Gen 2 supports enhanced performance with a design data rate of up to 10 Gb/s.
Thunderbolt™ 3 controller support	Support for Intel Thunderbolt 3 controllers (up to 40 Gb/s transfer rates) and advanced single-cable docking solutions.
Integrated 10/100/1000 MAC	Support for Intel® Ethernet Connection I219LM.
Integrated Wireless	Integrated 802.11ax Wi-Fi and Bluetooth* 5.0.

10TH GEN INTEL® CORE™ VPRO™ S/H PROCESSOR BLOCK DIAGRAM

Embedded DisplayPort 1.4

DisplayPort 1.4 OR HDMI 1.4

HDMI 2.0a

Up to 10 Processor Cores for S, 8 Cores for H Intel® UHD Graphics 630 Memory Controller 14 nm

DDR4 2Ch/1 or 2 DPC

PCIe 3.0 (up to 16 lanes)

DMI 3.0

Thunderbolt™ 3

Intel® WiFi 6 (Gig+) CNVI or Discrete

Intel® Rapid Storage Technology (RST) 17.x

Intel® Optane™ Memory

Intel® 400 Series Platform Controller Hub (PCH-H)

USB 3.2 Gen 2

USB 3.2 Gen 1

USB 2.0

PCIe 3.0 (up to 24 lanes)

SATA 3.0

Intel® LAN PHY

eSPI

SPI

LPC

HD Audio

SMBus

10TH GEN INTEL® CORE™ VPRO™ U PROCESSOR BLOCK DIAGRAM

Embedded DisplayPort 1.4

DisplayPort 1.4 OR HDMI 1.4

HDMI 2.0a

Up to 6 Processor Cores Intel® UHD Graphics 630 Memory Controller 14 nm

DDR4/LPDDR3/ LPDDR4/4X 2Ch

PCIe 3.0 (up to 16 lanes)

OPI

Thunderbolt™ 3

Intel® WiFi 6 (Gig+) CNVI

Intel® Rapid Storage Technology (RST)

Intel® Optane™ Memory

Intel® 400 Series Platform Controller Hub (PCH-LP)

USB 3.2 Gen 2x1

USB 3.2 Gen 1x1

USB 2.0

SATA 3.0

Intel® LAN PHY

eSPI

SPI

LPC

HD Audio

SMBus

LPDDR4 are available on select skus.

To learn more about the 10th Gen Intel® Core™ vPro® platform, please visit **www.intel.com/vpro.**

1 Not a complete list. Based on 10th Gen Intel® Core™ vPro™ processor with Intel® 400 Series PCH.

2 Intel® Turbo Boost Technology requires a PC with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software, and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel Turbo Boost Technology. For more information, see http://www.intel.com/technology/turboboost

3 Intel® Thermal Velocity Boost 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.

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.

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.

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