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experience
what's inside™

UNCHAIN YOUR GAMING
THE INTEL® Z390 CHIPSET AND 9TH AND 8TH GENERATION INTEL® CORE™ DESKTOP PROCESSORS

Crush your competition with 9th and 8th Generation Intel® Core™ desktop processors and the Intel® Z390 chipset.

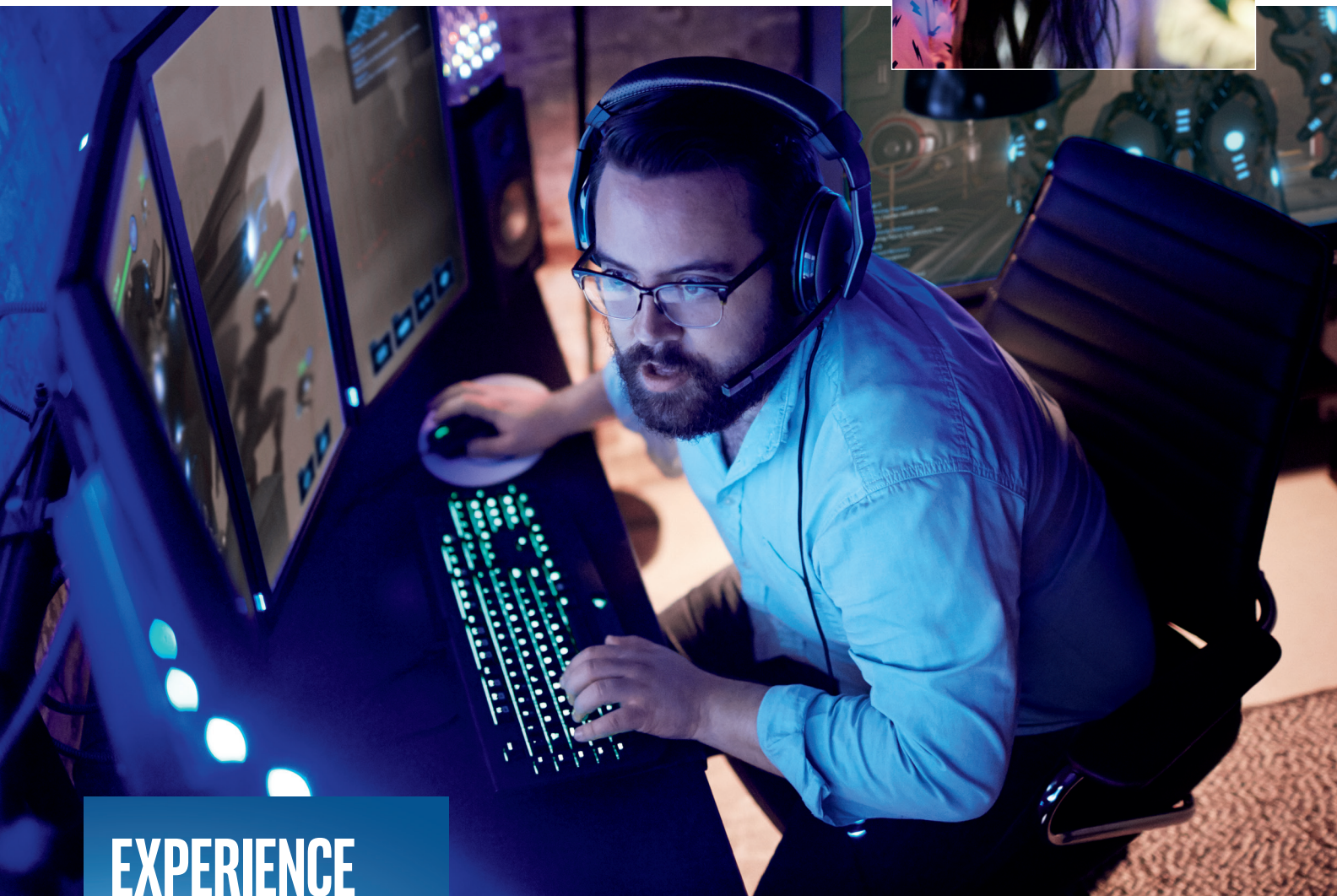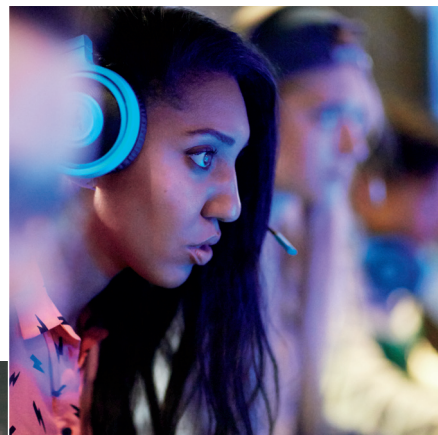### CREATE YOUR NEXT GREAT PERFORMANCE WITH THE 9TH AND 8TH GENERATION INTEL® CORE™ PROCESSOR

The Intel Z390 chipset and 9th and 8th Generation Intel Core processors give you the edge you need to successfully defeat your rivals. Quickly upload and access your favorite streams and get the gaming boost you need with Intel® Turbo Boost Technology 2.0[1] and Intel® Hyper-Threading Technology[1]. With the Intel Z390 chipset and 9th and 8th Generation Intel Core processors, you can conquer your quests with confidence.

GREAT PERFORMANCE – UNLEASHED

Release your inner gaming beast with the Intel Z390 chipset and unlocked 9th and 8th Generation Intel Core processors. Unlock your core, graphics, and memory frequencies[2] to new levels as you defeat your gaming foes. Gaming and productivity is redefined with the Intel Z390 chipset paired with new unlocked 9th and 8th Generation Intel Core processors.

FAST PC RESPONSIVENESS AT YOUR COMMAND

The Intel Z390 chipset and 9th and 8th Generation Intel Core processors enable support for Intel® Optane™ memory which speeds up access to your favorite programs and files.[3] With the fast application response times enabled by Intel Optane memory, you can quickly access your digital life. Experience immersive sound quality via Intel® High Definition Audio and enable your PC to respond to your voice commands with Intel® Smart Sound Technology.[1]

EXPERIENCE IMMERSIVE SOUND QUALITY

UNLEASH YOUR NETWORK PERFORMANCE

Achieve Gigabit wireless connections with 1st generation integrated Intel® Wireless-AC support[4]. The Intel Z390 chipset integrates an Intel wireless 802.11ac and Bluetooth* 5 solution allowing you to connect up to Gigabit Wi-Fi speeds[4] with Intel® Wireless-AC 9560. With no Ethernet cable required, your desktop will be ready for all current and future wireless use cases and has the flexibility to be located in more places within your home or office.

IMMERSIVE VISUALS WITH INTEL® UHD GRAPHICS

Intel UHD Graphics on 9th and 8th Generation Intel Core processors provide eye-popping 4K UHD resolutions. Experience more immersive gaming with High Dynamic Range (HDR) and Rec. 2020 (Wide Color Gamut) support. Playback your favorite videos with color precision via native true 10-bit graphics output. Watch the latest 4K UHD premium content on your PC from leading online providers.[1] With up to three independent, DisplayPort* and/or HDMI* displays supported with the Intel Z390 chipset, you can immerse yourself into your gaming experience.

BLAZINGLY FAST DATA TRANSFERS

MASSIVE STORAGE CAPABILITIES

Expand your storage capabilities with the Intel Z390 chipset and 9th and 8th Generation Intel Core processors. Boost your media transfer speeds with the integrated USB 3.1 Gen 2 support of the Intel Z390 chipset. Create fast storage volumes and back-up your media and critical information via RAID support with Intel processor and chipset-connected PCI Express* SSDs[1]. Expand your storage with up to 6 SATA 6 Gb/s ports. Enable blazingly fast data transfers to your favorite devices with PCI Express* 3.0.
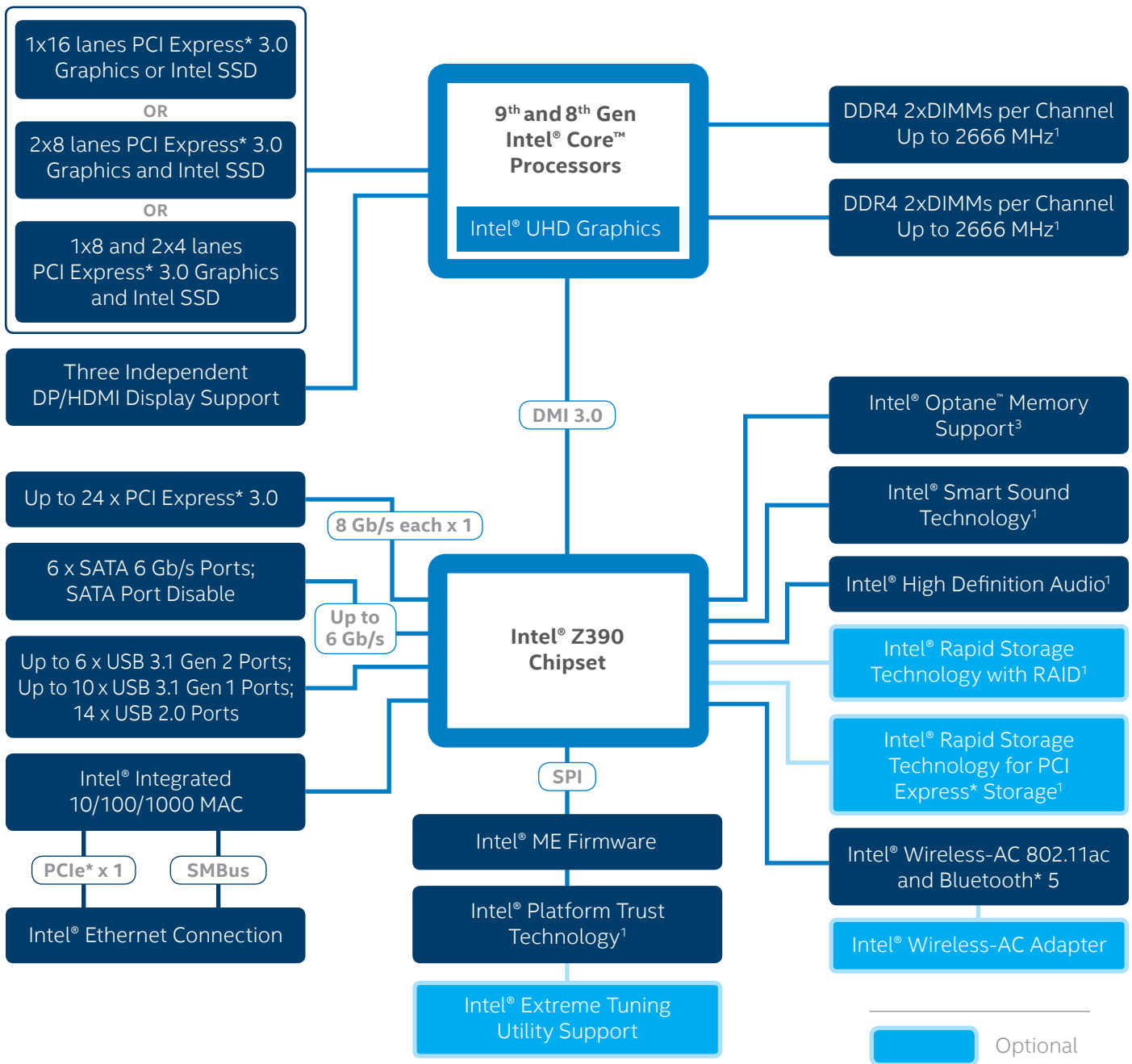
INTEL® Z390 CHIPSET FEATURES AT A GLANCE

FEATURES	BENEFITS
Support for 9th and 8th Generation Intel® Core™ desktop processors	Supports 9th and 8th Generation Intel® Core™ processors, Intel® Pentium® processors, and Intel® Celeron® processors.
Overclocking[2]	The Intel® Z390 chipset enables overclocking features of unlocked 9th and 8th Generation Intel Core processors.
Intel® Rapid Storage Technology[1]	With additional SSDs and hard drives added, helps provide quick access to digital photo, video, and data files, and data protection against a hard disk drive failure with RAID 0, 1, 5, and 10.
Intel® Rapid Storage Technology for PCI Express* Storage[1]	Enables Intel® Rapid Storage Technology features such as RAID 0, 1, and 5 with Intel PCI Express*-based NVMe SSDs connected via Intel processors and the Intel Z390 chipset
Intel® Optane™ Memory Support[3]	Provides performance improvements as well as fast app response times for system acceleration and responsiveness when paired with an Intel Optane memory module.
Intel® Wireless-AC Support	Integrated Intel wireless 802.11ac and Bluetooth* 5 solution allowing you to connect up to Gigabit Wi-Fi speeds[4] with Intel® Wireless-AC 9560.
Intel® Smart Sound Technology[1]	Integrated digital signal processor (DSP) for audio offload and audio/voice features.
Intel® High Definition Audio[1]	Integrated audio support enables premium digital surround sound and delivers advanced features such as multiple audio streams and jack re-tasking.
USB 3.1 Gen 2	Integrated USB 3.1 Gen 2 support provides data transfer performance with a design data rate of up to 10 Gb/s.
USB 3.1 Gen 1	Integrated USB 3.1 Gen 1 support provides data transfer performance with a design data rate of up to 5 Gb/s.
USB 2.0	High-Speed USB 2.0 support with a design data rate of up to 480 Mb/s.
USB Port Disable	Enables individual USB ports to be enabled or disabled as needed. This feature helps provide added protection of data by preventing malicious removal or insertion of data through USB ports.
Serial ATA (SATA) 6 Gb/s	High-speed storage interface supporting up to 6 Gb/s transfer rates for optimal data access.
SATA Port Disable	Enables individual SATA ports to be enabled or disabled as needed. This feature helps provide added protection of data by preventing malicious removal or insertion of data through SATA ports.
Intel® Platform Trust Technology[1]	Integrated chipset hardware and firmware solution that delivers a trusted element of the platform execution to provide enhanced security by verifying the boot portion of the boot sequence which helps protect against viruses and malicious SW attacks.
PCI Express 3.0 Interface	Offers up to 8 GT/s for fast access to peripheral devices and networking with up to 24 PCI Express 3.0 lanes, configurable as x1, x2, and x4 depending on desktop motherboard designs.
9th and 8th Generation Intel® Core™ processor PCI Express 3.0 Interface	Intel® Z390 chipset-based platforms enable the processor PCI Express 3.0 lanes to be configurable as 1x16, 2x8, or 1x8 and 2x4 depending on desktop motherboard designs.
Intel® Integrated 10/100/1000 MAC	Support for the Intel® Ethernet Connection I219-V.

INTEL® Z390 CHIPSET BLOCK DIAGRAM

Intel® Z390 Chipset Block Diagram

- 1x16 lanes PCI Express* 3.0 Graphics or Intel SSD

  OR

- 2x8 lanes PCI Express* 3.0 Graphics and Intel SSD

  OR

- 1x8 and 2x4 lanes PCI Express* 3.0 Graphics and Intel SSD

- Three Independent DP/HDMI Display Support

9th and 8th Gen Intel® Core™ Processors

Intel® UHD Graphics

- DDR4 2xDIMMs per Channel Up to 2666 MHz[1]
- DDR4 2xDIMMs per Channel Up to 2666 MHz[1]

DMI 3.0

- Up to 24 x PCI Express* 3.0

8 Gb/s each x 1

- 6 x SATA 6 Gb/s Ports; SATA Port Disable

Up to 6 Gb/s

- Up to 6 x USB 3.1 Gen 2 Ports; Up to 10 x USB 3.1 Gen 1 Ports; 14 x USB 2.0 Ports

- Intel® Integrated 10/100/1000 MAC

PCIe* x 1   **SMBus**

- Intel® Ethernet Connection

Intel® Z390 Chipset

SPI

- Intel® ME Firmware
- Intel® Platform Trust Technology[1]
- Intel® Extreme Tuning Utility Support

- Intel® Optane™ Memory Support[3]
- Intel® Smart Sound Technology[1]
- Intel® High Definition Audio[1]
- Intel® Rapid Storage Technology with RAID[1]
- Intel® Rapid Storage Technology for PCI Express* Storage[1]
- Intel® Wireless-AC 802.11ac and Bluetooth* 5
- Intel® Wireless-AC Adapter

☐ Optional

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1 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 www.intel.com.

2 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.

3 Intel® Optane memory requires specific hardware and software configuration. Visit www.intel.com/OptaneMemory for configuration requirements.

4 Gigabit WiFi speeds based on IEEE theoretical maximum bandwidth enabled by 2x2 802.11ac 160MHz (1.733Mbps) and requires the use of similarly configured router.

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