

intel®

Achieve Elite
Gaming Performance:

The Intel® Z590 Chipset & Unlocked 11th Gen Intel® Core™ Processors

Take control of your gaming experience with the Intel® Z590 Chipset and unlocked 11th Generation Intel® Core™ Processors. This chipset is expressly designed for the gamers and overclockers who demand the best—with supercharged performance, advanced overclocking capabilities, immersive visuals, and impressive connectivity and storage. The Intel® Z590 Chipset equips you with all the technologies you need to game, overclock, stream, create, and more at the highest level. Prepare to up your game, push the limits, and be elite.

Supercharge Performance, Enhance Control

The Intel® Z590 Chipset and unlocked 11th Gen Processors are loaded with technologies to control, optimize, and supercharge performance. Intel® Performance Maximizer enables you to automatically overclock your system with just a click, adding speed when you need an edge. For precise performance control, you can tap Intel® Turbo Boost Max Technology 3.0 to achieve a massive frequency boost on your fastest cores, or Intel® Hyper-Threading Technology to run multiple threads on each core for simultaneous, intensive applications. Amplify throughput and responsiveness for extreme graphics and storage speeds, enhanced bandwidth, and limited slowdowns with the 20 Processor PCIe 4.0 lanes, 2X DMI connect throughput over previous generation,¹ and USB 3.2 Gen 2x2 (20G). The Intel® Z590 Chipset enables you to expand your performance horizons for world-class gaming.

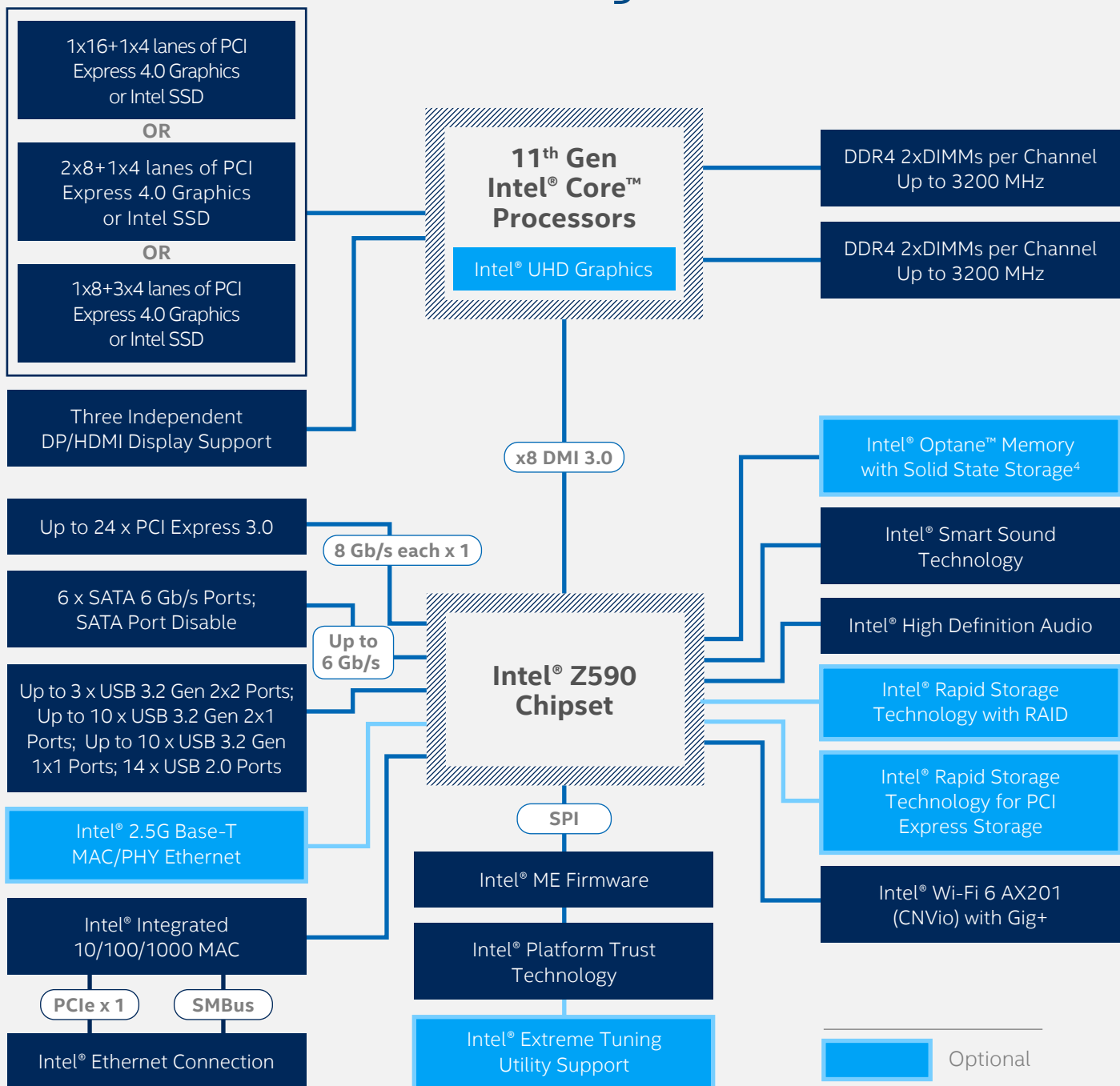
Do It All—Fast

The Intel® Z590 Chipset unlocks an unbelievably responsive computing experience with advanced connectivity and storage. Intel® Wi-Fi 6 (GIG+) ensure blazing fast, ultra-responsive gaming—nearly 3X faster vs. standard 802.11ac 2x2² with nearly 40% higher peak data rates vs. dual spatial stream 802.11ac.³ Intel® Optane™ SSDs make it easy to dive into your favorite titles, delivering fast application-loading and boot times, plus optimized performance for storage-demanding workloads.⁴ By bringing together these platform technologies, the Intel® Z590 Chipset makes sure your experience is fast, seamless, and always connected.

INTEL® Z590 CHIPSET FEATURES AT A GLANCE

FEATURE	BENEFIT
Support for 11 th and 10 th Generation Intel® Core™ Desktop Processors	Supports 11 th and 10 th Generation Intel® Core™ Processors, Intel® Pentium® Processors, and Intel® Celeron® Processors.
Intel® Rapid Storage Technology	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	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® Z590 Chipset.
Intel® Optane™ Memory H20 with SSD (Pyramid Glacier) Support ⁴	Provides performance improvements as well as fast app response times for system acceleration and responsiveness when paired with an Intel® Optane™ Memory with Solid State Storage.
Intel® Wi-Fi 6 Support	Integrated Intel® Wi-Fi 6 AX201(Gig+) CNVi solution or Intel® Wi-Fi 6 AX200(Gig+) solution allowing you to connect up to Gigabit Wi-Fi speeds. ⁵
Intel® Smart Sound Technology	Integrated digital signal processor (DSP) for audio offload and audio/voice features.
Intel® High Definition Audio	Integrated audio support enables premium digital surround sound and delivers advanced features such as multiple audio streams and jack re-tasking.
USB 3.2 Gen 2x2	Integrated USB 3.2 Gen 2x2 support provides data transfer performance with a design data rate of up to 20 Gb/s.
USB 3.2 Gen 2x1	Integrated USB 3.2 Gen 2x1 support provides data transfer performance with a design data rate of up to 10 Gb/s.
USB 3.2 Gen 1x1	Integrated USB 3.2 Gen 1x1 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	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.
11 th Generation Intel® Core™ Processor PCI Express 4.0 Interface	Intel® Z590 Chipset-based platforms enable the processor PCI Express 4.0 lanes to be configurable as 1x16+1x4, 2x8+1x4, or 1x8+3x4 depending on desktop motherboard designs.
Intel® Integrated 10/100/1000 MAC	Support for the Intel® Ethernet Connection I219-V.

Intel® Z590 Chipset Block Diagram



Product Brief The Intel® Z590 Chipset & Unlocked 11th Gen Intel® Core™ Processors

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

For more information about the data presented, visit www.intel.com/wifi6disclaimers

No product or component can be absolutely secure.

Your costs and results may vary.

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

Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details.

¹Versus previous generation.

²802.11ax 2x2 160MHz enables 2402Mbps maximum theoretical data rates, ~3X (2.8X) faster than standard 802.11ac 2x2 80MHz (867Mbps) as documented in IEEE 802.11 wireless standard specifications, and require the use of similarly configured 802.11ax wireless network routers.

³Intel® Wireless-AX claims are based on the comparison (39%) of the expected maximum theoretical data rates for dual spatial stream 802.11ax 80 MHz (1201 Mbps) vs. dual spatial stream 802.11ac 80 MHz (867 Mbps) Wi-Fi solutions as documented in IEEE 802.11ax draft 2.0 spec and IEEE 802.11 wireless standard specifications, and require the use of similarly configured 802.11ax wireless network routers.

⁴Intel® Optane™ memory requires specific hardware and software configuration.
Visit www.intel.com/OptaneMemory for configuration requirements.

⁵Gigabit Wi-Fi speeds based on IEEE theoretical maximum bandwidth enabled by 2x2 802.11ac 160MHz (1.733Mbps) and requires the use of similarly configured router.



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

Printed in USA · 12/20/JC/SR · Please Recycle · 332787-001US