


intel®

Elite Performance for
Gamers and Enthusiasts

The Intel® Z690 Chipset with Unlocked 12th Gen Intel® Core™ Desktop Processors

Game, stream, and record with the Intel® Z690 Chipset and unlocked 12th Gen Intel® Core™ desktop processors. For the first time, this chipset supports Intel's performance hybrid architecture: Performance-cores (P-cores) to drive the most advanced gaming with single and lightly threaded performance, and Efficient-cores (E-cores) to enable simultaneous streaming, recording, and multitasking with highly threaded workloads. Together with the Z690 Chipset, you can now tap into elite throughput and responsiveness, enhanced memory and overclocking,¹ ultra-fast Wi-Fi connectivity and speed, stunning graphics, and next-generation storage to elevate gaming, streaming, recording, and more.



Experience a New Approach to Performance—Overclocking and Throughput

The Intel® Z690 Chipset and Unlocked 12th Gen Intel® Core™ desktop processors allow for enhanced overclocking capabilities allowing fine tuning of both compute power and performance.¹ The latest Z690 Chipset technologies maximize responsiveness, with support for up to 28 PCIe Gen 4.0 and PCIe Gen 3.0 lanes, increased DMI throughput from 3.0 to 4.0, and increased bandwidth with USB 3.2 Gen 2x2 (20G).



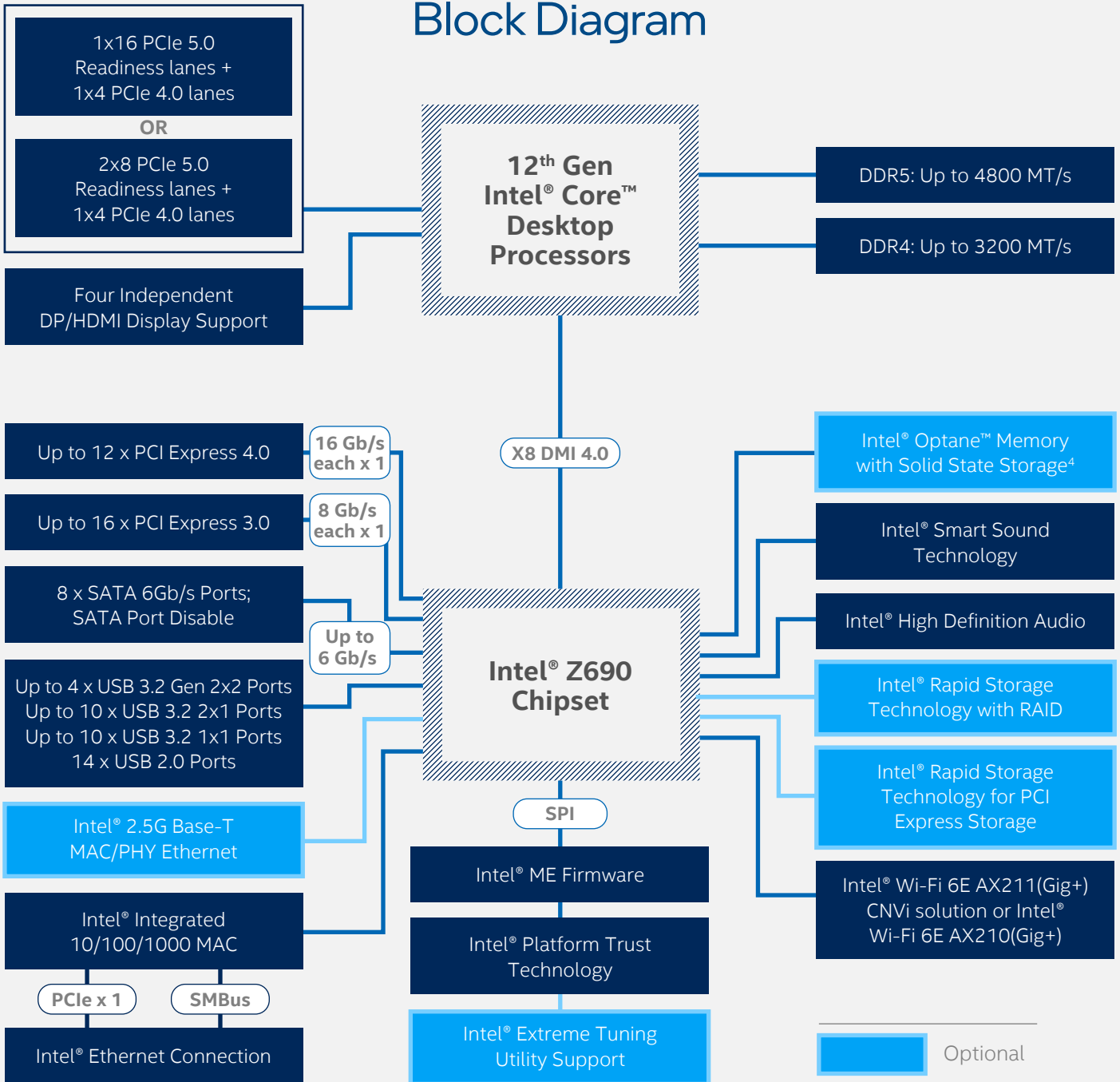
Enjoy a New Level of Immersion—Connectivity, Storage, and Media

Immerse in the latest gaming titles with ultra-fast connectivity, advanced visuals, and fast, reliable storage. The Intel® Z690 Chipset supports integrated Intel® Wi-Fi 6E (Gig+) solutions, faster and more reliable² connections across new 6 GHz Wi-Fi channels. Intel® UHD graphics featuring Xe^e architecture enables you to view stunning, up to 5K60 HDR Video in billions of colors across up to four simultaneous 4K60 displays. Plus, deploy next-generation storage with Intel® VMD—Volume Management Device—an easy way to manage your storage devices. The Intel® Z690 Chipset supports unbelievable responsiveness with support for Intel® Optane SSDs for storage demanding workloads.³

INTEL® Z690 CHIPSET FEATURES AT A GLANCE

FEATURE	BENEFIT
Support for 12 th Gen Intel® Core™ desktop processors	Supports 12 th Gen Intel® Core™ desktop processors.
Intel® Volume Management Device	User-friendly way to manage your storage devices that allows direct control and management of NVMe SSDs from the PCIe bus without additional hardware adaptors.
Intel® Rapid Storage Technology for SATA storage	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, 5, and 10 with PCI Express-based NVMe SSDs connected via 12 th Gen Intel® Core™ desktop processors and the Intel® Z690 chipset.
Intel® Optane™ Memory H20 with SSD Support ⁴	Provides performance improvements as well as fast app response times for system acceleration and responsiveness when paired with an Intel® Optane memory module.
Intel® Wi-Fi 6E Support	Integrated Intel® Wi-Fi 6E AX211(Gig+) CNVi solution or Intel® Wi-Fi 6E AX210(Gig+) solution allowing you to connect up to Gigabit Wi-Fi speeds.
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 16 PCI Express 3.0 lanes, configurable as x1, x2, and x4 depending on desktop motherboard designs.
PCI Express 4.0 Interface	Offers up to 16 GT/s for fast access to peripheral devices and networking with up to 12 PCI Express 4.0 lanes, configurable as x1, x2, and x4 depending on desktop motherboard designs.
12 th Generation Intel® Core™ desktop processor PCI Express 4.0 Interface	Intel® Z690 chipset-based platforms enable the processor PCI Express 4.0 lanes to be configurable as 1x4 depending on desktop motherboard designs.
Intel® Integrated 10/100/1000 MAC	Support for the Intel® Ethernet Connection I219-V.

Intel® Z690 Chipset Block Diagram



Product Brief The Intel® Z690 Chipset with Unlocked 12th Gen Intel® Core™ Desktop Processors

Notices & Disclaimers

¹Altering 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.

²Visit www.intel.com/performanceindex where additional details about wifi claims are posted.

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

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.

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.

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