

TUF GAMING Z590-PLUS_One Page Spec

Note: The specifications are subject to change without notice.

CPU	<p>Intel® Socket LGA1200 for 11th Gen Intel® Core™ processors & 10th Gen Intel® Core™, Pentium® Gold and Celeron® Processors Supports Intel® 14 nm CPU Supports Intel® Turbo Boost Technology 2.0 and Intel® Turbo Boost Max Technology 3.0** * Refer to www.asus.com for CPU support list. ** Intel® Turbo Boost Max Technology 3.0 support depends on the CPU types.</p>
Chipset	Intel® Z590 Chipset
Memory	<p>4 x DIMM, Max. 128GB, DDR4 5133(OC)/5000(OC)/4800(OC)/4700(OC)/4600(OC)/4500(OC)/4400(OC) /4266(OC)/4133(OC)/4000(OC)/3866(OC)/3733(OC)/3600(OC)/3466(OC)/3400(OC)/3333(OC)/3200/3000/2933/2800/2666/2400/2133 MHz Non-ECC, Un-buffered Memory* Dual Channel Memory Architecture Supports Intel® Extreme Memory Profile (XMP) OptiMem II * 10th Gen Intel® Core™ i7/i9 processors support 2933/2800/2666/2400/2133 natively, others will run at the maximum transfer rate of DDR4 2666MHz. * 11th Gen Intel® processors support 3200/2933/2800/2666/2400/2133 natively. * Refer to www.asus.com for the Memory QVL (Qualified Vendors Lists), and memory frequency support depends on the CPU types.</p>
Graphics	<p>1 x DisplayPort 1.4** 1 x HDMI™ 2.0*** * Graphics specifications may vary between CPU types. ** Intel® 11th & 10th processors support DisplayPort 1.4 with max. resolution of 4096 x 2304 @60Hz. Please refer to www.intel.com for any updates. *** Only Intel® 11th processors, support HDMI™ 2.0 with max. resolution of 4K@60Hz, others would only support HDMI™ 1.4 with max. resolution of 4K@30Hz. Please refer to www.intel.com for any update. **** VGA resolution support depends on processors' or graphic cards' resolution.</p>
Expansion Slots	<p>Intel® 11th & 10th Gen Processors 1 x PCIe 4.0/3.0 x16 slot* - Intel® 11th processors support PCIe 4.0 x16 - Intel® 10th processors support PCIe 3.0 x16 Intel® Z590 Chipset 1 x PCIe 3.0 x16 slot (supports x4 mode) 2 x PCIe 3.0 x1 slots * Enable RST PCIe Storage Remapping for PCH attached PCIe slots to activate Intel® Optane Memory.</p>
Storage	<p>Total supports 3 x M.2 slots and 6 x SATA 6Gb/s ports Intel® 11th Gen Processors M.2_1 slot (Key M), type 2242/2260/2280/22110 - Only Intel® 11th processors support PCIe 4.0 x4 mode, this slot will be disabled for other CPUs Intel® Z590 Chipset M.2_2 slot (Key M), type 2242/2260/2280/22110 (supports PCIe 3.0 x4 & SATA modes)*** M.2_3 slot (Key M), type 2242/2260/2280 (supports PCIe 3.0 x4 & SATA modes)**** 6 x SATA 6Gb/s ports * Raid function for PCIe mode SSD in Intel® Rapid Storage Technology is available with either 1. Intel® SSDs installed in both CPU-attached and PCH-attached slots, or 2. any other 3rd party SSDs installed in PCH-attached slots. ** To enable Intel® Optane™ Memory (Hybrid Storage device), it must be installed in PCH-attached slots with Intel® Rapid Storage Technology. *** M.2_2 shares bandwidth with SATA6G_2. When M.2_2 runs SATA mode, SATA6G_2 will be disabled. **** M.2_3 shares bandwidth with SATA6G_56. When M.2_3 is occupied, SATA6G_56 will be disabled.</p>
Ethernet	<p>1 x Intel® I225-V 2.5Gb Ethernet TUF LANGuard</p>
USB	<p>Rear USB (Total 7 ports) 1 x USB 3.2 Gen 2x2 port (1 x USB Type-C®) 2 x USB 3.2 Gen 2 ports (2 x Type-A) 2 x USB 3.2 Gen 1 ports (2 x Type-A) 2 x USB 2.0 ports (2 x Type-A) Front USB (Total 7 ports) 1 x USB 3.2 Gen 1 connector (supports USB Type-C®) 1 x USB 3.2 Gen 1 header supports additional 2 USB 3.2 Gen 1 ports 2 x USB 2.0 headers support additional 4 USB 2.0 ports</p>
Audio	<p>Realtek ALC S1200A 7.1 Surround Sound High Definition Audio CODEC* - Supports: Jack-detection, Multi-streaming, Front Panel Jack-retasking - Supports up to 24-Bit/192 kHz playback Audio Features - Audio Shielding - Rear optical S/PDIF out port - Premium Japanese audio capacitors - Dedicated audio PCB layers - Audio cover</p>
Back Panel I/O Ports	<p>1 x USB 3.2 Gen 2x2 port (1 x USB Type-C®) 2 x USB 3.2 Gen 2 ports (2 x Type-A) 2 x USB 3.2 Gen 1 ports (2 x Type-A) 2 x USB 2.0 ports (2 x Type-A) 1 x DisplayPort 1 x HDMI™ port 1 x Intel® I225-V 2.5Gb Ethernet port 5 x Audio jacks 1 x Optical S/PDIF out port 1 x PS/2 Keyboard/Mouse combo port</p>
Internal I/O Connectors	<p>Fan and Cooling related 1 x 4-pin CPU Fan header 1 x 4-pin CPU OPT Fan header 1 x 4-pin AIO Pump header 3 x 4-pin Chassis Fan headers Power related 1 x 24-pin Main Power connector 1 x 8-pin +12V Power connector 1 x 4-pin +12V Power connector Storage related 3 x M.2 slots (Key M) 6 x SATA 6Gb/s ports USB 1 x USB 3.2 Gen 1 connector (supports USB Type-C®) 1 x USB 3.2 Gen 1 header supports additional 2 USB 3.2 Gen 1 ports 2 x USB 2.0 headers support additional 4 USB 2.0 ports Miscellaneous 2 x AURA Addressable Gen 2 headers 2 x AURA RGB headers 1 x Clear CMOS header 1 x COM Port header</p>

	<p>1 x Front Panel Audio header (AAFP) 1 x 20-3 pin System Panel header with Chassis intrude function 1 x Thunderbolt™ header</p>
Special Features	<p>ASUS TUF PROTECTION - DIGI+ VRM (- Digital power design with DrMOS) - Enhanced DRAM Overcurrent Protection - TUF LANGuard - Overvoltage Protection</p> <p>ASUS Q-Design - M.2 Q-Latch - Q-DIMM - Q-LED (CPU [red], DRAM [yellow], VGA [white], Boot Device [yellow green]) - Q-Slot</p> <p>ASUS Thermal Solution - M.2 heatsink - VRM heatsink design</p> <p>ASUS EZ DIY - ProCool - Pre-mounted I/O shield - SafeSlot</p> <p>AURA Sync - AURA RGB headers - Addressable Gen 2 RGB headers</p>
Software Features	<p>ASUS Exclusive Software Armoury Crate - AURA Creator - AURA Sync - Two-Way AI Noise Cancellation AI Suite 3 - Performance And Power Saving Utility TurboV EVO EPU Digi+ VRM Fan Xpert 4 - EZ update TUF GAMING CPU-Z AI Charger ASUS Turbo LAN DAEMON Tools DTS Custom for GAMING Headsets Norton Anti-virus software (Free Trial version) WinRAR</p> <p>UEFI BIOS ASUS EZ DIY - ASUS CrashFree BIOS 3 - ASUS EZ Flash 3 - ASUS UEFI BIOS EZ Mode</p>
BIOS	192 (128+64) Mb Flash ROM, UEFI AMI BIOS
Manageability	WOL by PME, PXE
Accessories	<p>Cables 2 x SATA 6Gb/s cables</p> <p>Miscellaneous 2 x M.2 Rubber Packages 1 x M.2 SSD screw package 1 x TUF Gaming sticker</p> <p>Installation Media 1 x Support DVD</p> <p>Documentation 1 x TUF Certification card 1 x User manual</p>
Operating System	Windows® 10 64-bit
Form Factor	ATX Form Factor 12 inch x 9.6 inch (30.5 cm x 24.4 cm)