

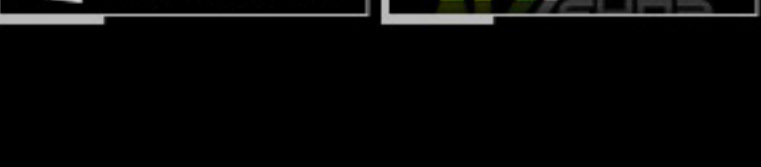
# Z590 Taichi



- Supports 10th Gen Intel® Core™ Processors and 11th Gen Intel® Core™ Processors
- 14 Phase Dr.MOS Power Design
- Supports DDR4 5000MHz (OC)
- 2 x PCIe 4.0 x16, 1 x PCIe 3.0 x16, 1 x PCIe 3.0 x1
- Graphics Output Options: HDMI, 2 x Thunderbolt™ Type-C
- 7.1 CH HD Audio (Realtek ALC1220 Audio Codec), Nahimic Audio
- 8 SATA3, 1 x Hyper M.2 (PCIe Gen4 x4) 2 x Ultra M.2 (PCIe Gen3 x4 & SATA3)
- 2 x Thunderbolt™ 4/USB 4.0 Type-C (40Gb/s)
- 1 x USB 3.2 Gen2x2 Front Type-C (20Gb/s)
- 2 x Rear USB 3.2 Gen2 Type A (10Gb/s)
- 8 x USB 3.2 Gen1 (4 x Rear, 4 x Front)
- Killer E3100G 2.5G LAN, Intel® Gigabit LAN
- Killer AX1675x 802.11ax(WiFi 6E) + BT 5.2
- Lightning Gaming Ports (Patent Pending)
- ASRock Graphics Card Holder (Patent Pending)



This model may not be sold worldwide. Please contact your local dealer for the availability of this model in your region.



Unique Feature	<b>ASRock USB 4.0</b> - ASRock USB 4.0 Thunderbolt™ 4 Type-C Port (40 Gb/s for USB 4.0 protocol; 40Gb/s for Thunderbolt™ protocol) <b>ASRock USB 3.2 Gen2</b> - ASRock Front Panel Type-C USB 3.2 Gen2x2 Header (20 Gb/s) - ASRock USB 3.2 Gen2 Type-A Port (10 Gb/s) <b>ASRock Super Alloy</b> - XXL Aluminum Alloy Heatsink - Premium 90A Power Choke - 90A SPS (Smart Power Stage) - Premium Memory Alloy Choke (Reduces 70% core loss compared to iron power choke) - Nichicon 12K Black Caps (100% Japan made high quality conductive polymer capacitors) - I/O Armor - Matte Black PCB - High Density Glass Fabric PCB - 8 Layer PCB - 2oz Copper PCB <b>Killer 2.5G LAN</b> <b>Killer 802.11ax Wi-Fi 6E</b> <b>Killer DoubleShot Pro</b> <b>ASRock Steel Slots</b> <b>ASRock Full Coverage M.2 Heatsink</b> <b>ASRock Hyper M.2</b> (PCIe Gen4x4) <b>ASRock Ultra USB Power</b> <b>ASRock Full Spike Protection</b> (for all USB, Audio, LAN Ports) <b>ASRock Live Update &amp; APP Shop</b>
CPU	- Supports 10th Gen Intel® Core™ Processors and 11th Gen Intel® Core™ Processors (LGA1200) - Digi Power design - 14 Power Phase design  - Supports Intel® Turbo Boost Max 3.0 Technology - Supports Intel® K-Series unlocked CPUs - Supports ASRock Hyper BCLK Engine III
Chipset	- Intel® Z590
Memory	- Dual Channel DDR4 Memory Technology - 4 x DDR4 DIMM Slots  - 11th Gen Intel® Core™ Processors support DDR4 non-ECC, un-buffered memory up to 5000+(OC)*  - 10th Gen Intel® Core™ Processors support DDR4 non-ECC, un-buffered memory up to 4800+(OC)* - Supports ECC UDIMM memory modules (operate in non-ECC mode) - Max. capacity of system memory: 128GB**  - Supports Intel® Extreme Memory Profile (XMP) 2.0 - 15μ Gold Contact in DIMM Slots   <small>*11th Gen Intel® Core™ (i9/i7/i5) support DDR4 3200 natively; Core™ (i3), Pentium® and Celeron® support DDR4 2666 natively. 10th Gen Intel® Core™ (i9/i7) support DDR4 2933 natively; Core™ (i5/i3), Pentium® and Celeron® support DDR4 2666 natively.  **Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® 32-bit OS. For Windows® 64-bit OS with 64-bit CPU, there is no such limitation.</small>
BIOS	- 128Mb AMI UEFI Legal BIOS with multilingual GUI support - ACPI 6.0 Compliant wake up events - SMBIOS 2.7 Support - CPU Core/Cache, CPU GT, DRAM(VCCM, VPPM, VTT), VCCSFR, VCCPLL, VCCSTG, VCCSTG_OUT, PCH Voltage, VCCIO_0, VCCIO_1_2, VCCST, VCCSA, CPU Internal PLL, GT PLL, Ring PLL, System Agent PLL, Memory Controller PLL Voltage Multi-adjustment
Graphics	- 11th Gen Intel® Core™ Processors support Intel® Xe Graphics Architecture (Gen 12), 10th Gen Intel® Core™ Processors support Gen 9 Graphics  - Three graphics output options: 1 x HDMI and 2 x Intel® Thunderbolt™ 4 - Supports Triple Monitor  - Supports Intel® Thunderbolt™ 4 with max. resolution up to 4K x 2K (4096x2160) @ 60Hz - Supports HDMI 2.0 with max. resolution up to 4K x 2K (4096x2160) @ 60Hz* - Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI 2.0 Port (Compliant HDMI monitor is required) - Supports HDCP 2.3 with HDMI 2.0 and Intel® Thunderbolt™ 4 Ports  <small>*Intel® UHD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated.  **11th Gen Intel® Core™ Processors support HDMI 2.0. 10th Gen Intel® Core™ Processors support HDMI 1.4.</small>
Audio	- 7.1 CH HD Audio with Content Protection (Realtek ALC1220 Audio Codec) - Premium Blu-ray Audio support - Supports Surge Protection - WIMA Audio Capacitors (For Front Outputs) - ESS SABRE9218 DAC for Front Panel Audio (130dB SNR) - Pure Power-In - Direct Drive Technology - PCB Isolate Shielding - Impedance Sensing on Rear Out port - Individual PCB Layers for R/L Audio Channel - Gold Audio Jacks - 15μ Gold Audio Connector - Nahimic Audio
LAN	<b>1 x 2.5 Gigabit LAN 10/100/1000/2500 Mb/s (Killer E3100G)</b> - Supports Killer LAN Software - Supports Killer DoubleShot™ Pro - Supports Wake-On-LAN - Supports Lightning/ESD Protection - Supports Energy Efficient Ethernet 802.3az - Supports PXE  <b>1 x Gigabit LAN 10/100/1000 Mb/s (Intel® I219V)</b> - Supports Wake-On-LAN - Supports Lightning/ESD Protection - Supports Energy Efficient Ethernet 802.3az - Supports PXE
Wireless LAN	- Killer AX1675x 802.11ax Wi-Fi 6E Module - Supports IEEE 802.11a/b/g/n/ax - Supports Dual-Band 2x2 160MHz with extended 6GHz band support* - 2 antennas to support 2 (Transmit) x 2 (Receive) diversity technology - Supports Bluetooth 5.2 + High speed class II - Supports MU-MIMO - Supports Killer LAN Software - Supports Killer DoubleShot™ Pro  <small>*Wi-Fi 6E (6GHz band) is not currently enabled by default due to the different regulation status of each country. It will be activated (for supported countries) through Windows® Update and software update once available. The update is expected to be in the middle of 2021.</small>
Slots	<b>11th Gen Intel® Core™ Processors</b> - 3 x PCI Express x16 Slots (PCIe1/PCIe2/PCIe4: single at Gen4x16 (PCIe1); dual at Gen4x8 (PCIe1) / Gen4x8 (PCIe2); triple at Gen4x8 (PCIe1) / Gen4x8 (PCIe2) / Gen3x4 (PCIe4))*  <b>10th Gen Intel® Core™ Processors</b> - 3 x PCI Express x16 Slots (PCIe1/PCIe2/PCIe4: single at Gen3x16 (PCIe1); dual at Gen3x8 (PCIe1) / Gen3x8 (PCIe2); triple at Gen3x8 (PCIe1) / Gen3x8 (PCIe2) / Gen3x4 (PCIe4))*  - 1 x PCI Express 3.0 x1 Slot - Supports AMD Quad CrossFireX™, 3-Way CrossFireX™ and CrossFireX™ - 1 x Vertical M.2 Socket (Key E) with the bundled WiFi-802.11ax module (on the rear I/O) - 15μ Gold Contact in VGA PCIe Slot (PCIe1)  <small>*Supports NVMe SSD as boot disks</small>
Storage	- 6 x SATA3 6.0 Gb/s Connectors* - 2 x SATA3 6.0 Gb/s Connectors by ASMedia ASM1061* - 1 x Hyper M.2 Socket (M2_1), supports M Key type 2280 M.2 PCI Express module up to Gen4x4 (64 Gb/s) (with 11th Gen Intel® Core™ Processors) or Gen3x4 (32 Gb/s) (with 10th Gen Intel® Core™ Processors)** - 1 x Ultra M.2 Socket (M2_2), supports M Key type 2260/2280 M.2 SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen3 x4 (32 Gb/s)** - 1 x Ultra M.2 Socket (M2_3), supports M Key type 2230/2242/2260/2280/22110 M.2 SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen3 x4 (32 Gb/s)**  <small>*M2_2, SATA3_0 and SATA3_1 share lanes. If either one of them is in use, the others will be disabled. M2_3, SATA3_4, SATA3_5 and PCIe4 share lanes. If either one of them is in use, the others will be disabled.  **Supports Intel® Optane™ Technology (M2_2 and M2_3 only) Supports NVMe SSD as boot disks Supports ASRock U.2 Kit</small>
RAID	- Supports RAID 0, RAID 1, RAID 5 and RAID 10 for SATA storage devices - Supports RAID 0 and RAID 1 for M.2 NVMe storage devices*  <small>*RAID function for PCIe mode SSD in M2_1 is only available with Intel® SSD installed.</small>
Connector	- 1 x SPI TPM Header - 1 x Power LED and Speaker Header - 2 x RGB LED Headers* - 2 x Addressable LED Headers** - 1 x CPU Fan Connector (4-pin)*** - 1 x CPU/Water Pump Fan Connector (4-pin) (Smart Fan Speed Control)**** - 6 x Chassis/Water Pump Fan Connectors (4-pin) (Smart Fan Speed Control)***** - 1 x 24 pin ATX Power Connector (Hi-Density Power Connector) - 2 x 8 pin 12V Power Connectors (Hi-Density Power Connector) - 1 x Front Panel Audio Connector (15μ Gold Audio Connector) - 2 x USB 2.0 Headers (Support 4 USB 2.0 ports) (Supports ESD Protection) - 2 x USB 3.2 Gen1 Headers (Support 4 USB 3.2 Gen1 ports) (ASMedia ASM1074 hub) (Supports ESD Protection) - 1 x Front Panel Type C USB 3.2 Gen2x2 Header (20 Gb/s) (Supports ESD Protection) - 1 x Clear CMOS Button - 1 x Dr. Debug with LED - 1 x Power Button with LED - 1 x Reset Button with LED  <small>*Support in total up to 12V/3A, 36W LED Strip  **Support in total up to 5V/3A, 15W LED Strip  ***The CPU Fan Connector supports the CPU fan of maximum 1A (12W) fan power.  ****CPU_FAN2/WP_3A supports the water cooler fan of maximum 3A (36W) fan power.  *****The Chassis/Water Pump Fan supports the water cooler fan of maximum 2A (24W) fan power. CPU_FAN2/WP_3A, CHA_FAN1/WP, CHA_FAN2/WP, CHA_FAN3/WP, CHA_FAN4/WP, CHA_FAN5/WP and CHA_FAN6/WP can auto detect if 3-pin or 4-pin fan is in use.</small>
Rear Panel I/O	- 2 x Antenna Ports - 1 x HDMI Port - 1 x Optical SPDIF Out Port - 2 x USB 4.0 Thunderbolt™ 4 Type-C Port (40 Gb/s for USB 4.0 protocol; 40Gb/s for Thunderbolt™ protocol) (Supports ESD Protection)* - 2 x USB 3.2 Gen2 Type-A Ports (10 Gb/s) (ReDriver) (Supports ESD Protection)** - 4 x USB 3.2 Gen1 Type-A Ports (Supports ESD Protection)** - 2 x RJ-45 LAN Ports with LED (ACT/LINK LED and SPEED LED) - 1 x BIOS Flashback Button - HD Audio Jacks: Rear Speaker / Central / Bass / Line in / Front Speaker / Microphone (Gold Audio Jacks)  <small>*Supports USB PD 2.0 up to 9V@3A (27W) / 5V@3A (15W) charging  **USB3_5_6 is from Intel® Z590; USB3_1 is from ASMedia ASM1042A; USB3_2, USB3_3 and USB3_4 are from ASMedia ASM1074 hub. Ultra USB Power is supported on USB3_3 port. ACPI wake-up function is not supported on USB3_3 port.</small>
Software and UEFI	<b>Software</b> - ASRock Motherboard Utility (A-Tuning) - Killer Control Center - ASRock Polychrome SYNC*  <b>UEFI</b> - ASRock EZ Mode - ASRock Full HD UEFI - ASRock My Favorites in UEFI - ASRock Instant Flash - ASRock Internet Flash - ASRock Easy RAID Installer  <small>*These utilities can be downloaded from ASRock Live Update &amp; APP Shop.</small>
Support CD	- Drivers, Utilities, AntiVirus Software (Trial Version), Google Chrome Browser and Toolbar
Accessories	- Quick Installation Guide, Support CD - 4 x SATA Data Cables - 1 x Graphics Card Holder - 1 x Wireless Dongle USB Bracket - 1 x 3010 Cooling Fan with Bracket and Screw Package - 1 x 4010 Cooling Fan Bracket and Screw Package - 2 x ASRock WiFi 2.4/5/6 GHz Antennas - 1 x ASRock Screwdriver - 3 x Screws for M.2 Sockets - 2 x Standoffs for M.2 Sockets
Hardware Monitor	- Fan Tachometer: CPU, CPU/Water Pump, Chassis/Water Pump Fans - Quiet Fan (Auto adjust chassis fan speed by CPU temperature): CPU, CPU/Water Pump, Chassis/Water Pump Fans - Fan Multi-Speed Control: CPU, CPU/Water Pump, Chassis/Water Pump Fans - Voltage monitoring: +12V, +5V, +3.3V, CPU Vcore, DRAM, PCH, VCCSA, VCCIO_0, VCCIO_1_2, VCCFSR_OC
Form Factor	- ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm - 8 Layer PCB - 2oz Copper PCB
OS	- Microsoft® Windows® 10 64-bit
Certifications	- FCC, CE - ErP/EuP ready (ErP/EuP ready power supply is required) - CEC Tier II ready