

Z890 PRO RS

MOTHERBOARD



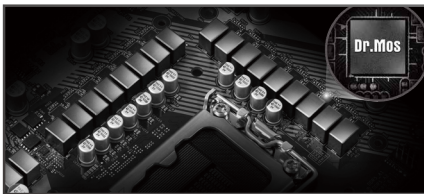
PRODUCT BRIEF :

- Supports Intel® Core™ Ultra Processors (Series 2) (LGA1851)
- 16+1+1+1+1 Power Phase, Dr.MOS for VCore+GT
- 4 x DDR5 DIMMs
Supports Dual Channel, up to 8666+ (OC)
- 1 PCIe 5.0 x16, 2 PCIe 4.0 x4, 1 PCIe 4.0 x1
- Graphics Output Options: 1 HDMI, 1 DisplayPort, 2 Thunderbolt™ 4 Type-C
- Realtek ALC897 7.1 CH HD Audio Codec, Nahimic Audio
- 4 SATA3
1 Blazing M.2 (PCIe Gen5 x4)
2 Hyper M.2 (PCIe Gen4 x4)
1 Hyper M.2 (PCIe Gen4 x4 & SATA3)
- 2 Thunderbolt™ 4 Type-C (Rear)
1 USB 3.2 Gen2x2 Type-C (Front),
1 USB 3.2 Gen2 Type-A (Rear),
6 USB 3.2 Gen1 (2 Rear, 4 Front),
8 USB 2.0 (4 Rear, 4 Front)
- Realtek 2.5G LAN
- Supports BIOS Flashback, Memory OC Shield, M.2 Bottom Heatsink



16 + 1 + 1 + 1 + 1 POWER PHASE DESIGN + DR.MOS

Vcore with Dr.MOS design, delivering smoother and neater power to the CPU.



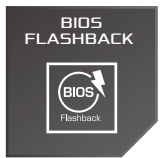
DURABLE CAPS WITH 1000µF CAPACITANCE

Featuring durable capacitors with 1000µF capacitance, ensuring stable and excellent performance.



THUNDERBOLT™ 4 TYPE-C

It enables lightning-fast data transfer up to 40Gbps and connects versatile devices with a single Thunderbolt™ 4 cable.



MEMORY OC SHIELD (PATENT PENDING)

ASRock's exclusive Memory OC Shield effectively absorbs EMI noise, enhancing memory overclocking performance and stability.



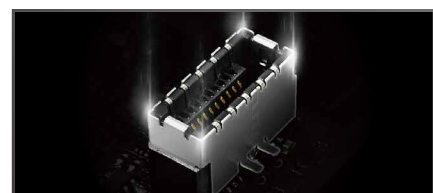
BLAZING M.2 (PCIE GEN5 x4)

Supports up to 4*NVMe M.2 SSDs and one of which is able to accommodate the latest PCI Express 5.0 standard.



FRONT USB 3.2 GEN2x2 TYPE-C

The latest USB 3.2 Gen2x2 Type-C delivers up to 20 Gbps data transfer rate which is 2x as fast as previous generation.



Detail Specification

Platform	- ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm - 2oz Copper PCB	USB	CPU: - 2 x Thunderbolt™ 4 Type-C (Rear) Chipset: - 1 x USB 3.2 Gen2x2 Type-C (Front) - 1 x USB 3.2 Gen2 Type-A (Rear) - 6 x USB 3.2 Gen1 (2 Rear, 4 Front) - 8 x USB 2.0 (4 Rear, 4 Front) * All USB ports support ESD Protection
Unique Feature	Superb Productivity - PCIe Gen5 (Graphics, M.2) - Dual Channel DDR5 - Thunderbolt™ 4 Type-C Ports (40 Gb/s) Rock-Solid Durability - 16+1+1+1+1 Power Phase, Dr. MOS for VCore+GT with Enlarged Heatsink Armor - Memory OC Shield - Flexible Integrated I/O Shield Ultrafast Connectivity - 2.5G LAN EZ Update - BIOS Flashback Button - ASRock Auto Driver Installer EZ Troubleshooter - ASRock Post Status Checker	Rear Panel I/O	- 2 x Antenna Mounting Points - 1 x HDMI Port - 1 x DisplayPort 1.4 - 2 x Thunderbolt™ 4 Type-C Ports (40 Gb/s for USB4 protocol; 40Gb/s for Thunderbolt protocol)* - 1 x USB 3.2 Gen2 Type-A Port (10 Gb/s) - 2 x USB 3.2 Gen1 Ports - 4 x USB 2.0 Ports - 1 x RJ-45 LAN Port - 1 x BIOS Flashback Button - HD Audio Jacks: Line in / Front Speaker / Microphone * Supports USB PD 3.0 up to 5V@3A (15W) charging
CPU	- Supports Intel® Core™ Ultra Processors (Series 2) (LGA1851RL-ILM) - Supports Intel® Hybrid Technology - Supports Intel® Turbo Boost Max 3.0 Technology - Supports Intel® Thermal Velocity Boost (TVB) - Supports Intel® Adaptive Boost Technology (ABT) - Integrated NPU for dedicated AI acceleration	Storage	CPU: - 1 x Blazing M.2 Socket (M2_1, Key M), supports type 2280 PCIe Gen5x4 (128 Gb/s) mode* - 1 x Hyper M.2 Socket (M2_2, Key M), supports type 2280 PCIe Gen4x4 (64 Gb/s) mode* Chipset: - 1 x Hyper M.2 Socket (M2_3, Key M), supports type 2280 PCIe Gen4x4 (64 Gb/s) mode* - 1 x Hyper M.2 Socket (M2_4, Key M), supports type 2230/2242/2260/2280 SATA3 6.0 Gb/s & PCIe Gen4x4 (64 Gb/s) modes* - 4 x SATA3 6.0 Gb/s Connectors * Supports Intel® Volume Management Device (VMD) * Supports NVMe SSD as boot disks
Chipset	- Intel® Z890	RAID	- Supports RAID 0, RAID 1, RAID 5 and RAID 10 for SATA storage devices - Supports RAID 0, RAID 1, RAID 5 and RAID 10 for M.2 NVMe storage devices
Memory	- Dual Channel DDR5 Memory Technology - 4 x DDR5 DIMM Slots - Supports DDR5 non-ECC, un-buffered memory up to 8666+(OC)* 1DPC 1R Up to 8666+ MHz (OC), 5600 MHz Natively. 1DPC 2R Up to 6800+ MHz (OC), 5600 MHz Natively. 2DPC 1R Up to 6533+ MHz (OC), 4800 MHz Natively. 2DPC 2R Up to 5600+ MHz (OC), 4400 MHz Natively. - Max. capacity of system memory: 256GB - Supports Intel® Extreme Memory Profile (XMP) 3.0x * Please refer to Memory Support List on ASRock's website for more information. (http://www.asrock.com/)	Connector	- 1 x SPI TPM Header - 1 x Power LED and Speaker Header - 1 x RGB LED Header* - 3 x Addressable LED Headers** - 2 x CPU Fan Connectors (4-pin) (Smart Fan Speed Control)*** - 5 x Chassis Fan Connectors (4-pin) (Smart Fan Speed Control)*** - 1 x AIO Pump Fan Connector (4-pin) (Smart Fan Speed Control)*** - 1 x 24 pin ATX Power Connector - 2 x 8 pin 12V Power Connectors (Hi-Density Power Connector) - 1 x Front Panel Audio Connector - 2 x USB 2.0 Headers (Support 4 USB 2.0 ports) - 2 x USB 3.2 Gen1 Headers (Support 4 USB 3.2 Gen1 ports) - 1 x Front Panel Type C USB 3.2 Gen2x2 Header (20 Gb/s) * Supports in total up to 12V/3A, 36W LED Strip ** Support in total up to 5V/3A, 15W LED Strip *** CPU_FAN1 supports the fan power up to 1A (12W). *** CPU_FAN2, CHA_FAN1-5 and AIO_PUMP support the fan power up to 3A (36W). *** CPU_FAN2, CHA_FAN1-5 and AIO_PUMP can auto detect if 3-pin or 4-pin fan is in use.
Expansion Slot	CPU: - 1 x PCIe 5.0 x16 Slot (PCIe1), supports x16 mode* Chipset: - 2 x PCIe 4.0 x4 Slots (PCIe3 and PCIe4), support x4 mode* - 1 x PCIe 4.0 x1 Slot (PCIe2)* - 1 x M.2 Socket (Key E), supports type 2230 WiFi/BT PCIe WiFi module and Intel® CNVio/CNVio2 (Integrated WiFi/BT) * PCIe1 supports PCIe riser cards to extend one x16 slot to x8/x8 or x8/x4/x4 slots. * Supports NVMe SSD as boot disks	BIOS Feature	- 256Mb AMI UEFI Legal BIOS with GUI support
Graphics	* Intel® UHD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated. - Intel® Xe™ LPG Graphics Architecture - 1 x HDMI 2.1 TMDS/FRL 8G Compatible, supports HDR, HDCP 2.3 and max. resolution up to 4K 120Hz - 1 x DisplayPort 1.4 with DSC (compressed), supports HDCP 2.3 and max. resolution up to 8K 60Hz / 5K 120Hz - 2 x Intel® Thunderbolt™ 4, support HDCP 2.3 and max. resolution up to 8K 60Hz / 5K 120Hz* * Supports two 4K displays or one 8K display * Only the CPU's embedded graphics can be displayed through Thunderbolt ports. If you want to display to a Thunderbolt monitor, please use CPU models with embedded graphics.	Software and UEFI	Software - ASRock Motherboard Utility (A-Tuning) - ASRock Dragon 2.5G LAN Software - ASRock Polychrome SYNC * These utilities can be downloaded from ASRock Live Update & APP Shop. UEFI - ASRock EZ Mode - ASRock Full HD UEFI - ASRock My Favorites in UEFI - ASRock Auto Driver Installer - ASRock Instant Flash
Audio	- 7.1 CH HD Audio (Realtek ALC897 Audio Codec) - Nahimic Audio	OS	- Microsoft® Windows® 11 64-bit
LAN	- 2.5 Gigabit LAN 10/100/1000/2500 Mb/s - Dragon RTL8125BG - Supports Dragon 2.5G LAN Software - Smart Auto Adjust Bandwidth Control - Visual User Friendly UI - Visual Network Usage Statistics - Optimized Default Setting for Game, Browser, and Streaming Modes - User Customized Priority Control	Certifications	- FCC, CE - ErP/EuP ready (ErP/EuP ready power supply is required)
		Accessories	- 2 x SATA Data Cables - 2 x Screws for M.2 Sockets - 1 x Standoff for M.2 Socket