



ASRock Z890M RIPTIDE WIFI PHANTOM GAMING
Intel 1851 Socket Motherboard, Micro-ATX, 4x DDR5
Slots, 3x M.2 Sockets, 2x USB-C Port, Fitted I/O Shield,
2.5GbE LAN, Wi-Fi 6E, 1x DisplayPort / 1x HDMI / 2x
USB-C (USB4)

PHANTOM GAMING - Z890M Riptide WiFi

Key Features

Supports Intel Core Ultra Processors (Series 2) (LGA1851)

16+1+1+1+1 Power Phase, 80A Dr.MOS for VCore+GT+SA

4 x DDR5 DIMMs

Supports Dual Channel, up to 9466+ (OC)

1 PCIe 5.0 x16

Graphics Output Options: 1 HDMI, 1 DisplayPort, 2 Thunderbolt 4 Type-C

Realtek ALC1220 7.1 CH HD Audio Codec, Nahimic Audio

4 SATA3

1 Blazing M.2 (PCIe Gen5 x4)

1 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)

2 USB 3.2 Gen2 Type-A (Rear)

6 USB 3.2 Gen1 (4 Rear, 2 Front)

6 USB 2.0 (2 Rear, 4 Front)

Killer 2.5G LAN

802.11ax Wi-Fi 6E + Bluetooth

Supports BIOS Flashback, Memory OC Shield, 20K Caps with 1000uF Capacitance

SPECIFICATION:

Unique Features

Superb Productivity
PCIe Gen5 (Graphics, M.2)
Dual Channel DDR5
Thunderbolt™ 4 Type-C Ports (40 Gb/s)

Rock-Solid Durability

Server-Grade Low-Loss PCB
16+1+1+1+1 Power Phase, 80A Dr.MOS for VCore+GT+SA with Enlarged Heatsink Armor
Memory OC Shield
Flexible Integrated I/O Shield
20K Long-lasting Black Caps (high quality and conductive polymer capacitors)

Ultrafast Gaming

Killer 2.5G LAN, 802.11ax Wi-Fi 6E Module
Killer DoubleShot™ Pro

EZ Update

BIOS Flashback Button
ASRock Auto Driver Installer

EZ Troubleshooter

ASRock Post Status Checker

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

Chipset

Intel® Z890

Memory

Dual Channel DDR5 Memory Technology
4 x DDR5 DIMM Slots
Supports DDR5 non-ECC, un-buffered memory up to 9466MHz+(OC)*

Supports Clocked Unbuffered DIMM (CUDIMM)

Max. capacity of system memory: 256GB

Supports Intel® Extreme Memory Profile (XMP) 3.0x

*1DPC 1R Up to 9466+ MHz (OC), 5600 MHz Natively.

1DPC 2R Up to 6800+ MHz (OC), 5600 MHz Natively.

2DPC 1R Up to 6800+ MHz (OC), 4800 MHz Natively.

2DPC 2R Up to 5800+ MHz (OC), 4400 MHz Natively.

BIOS

256Mb AMI UEFI Legal BIOS with GUI support

Graphics

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*

Intel® UHD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated.

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.

Audio

7.1 CH HD Audio (Realtek ALC897 Audio Codec)

Nahimic Audio

LAN

2.5 Gigabit LAN 10/100/1000/2500 Mb/s

Killer E3100G

Supports Killer LAN Software

Supports Killer DoubleShot™ Pro

Wireless LAN

802.11axe Wi-Fi 6E Module

Supports IEEE 802.11a/b/g/n/ac/ax/axe

Supports Dual-Band 2x2 160MHz with extended 6GHz band support*

2 antennas to support 2 (Transmit) x 2 (Receive) diversity technology

Supports Bluetooth 5.3

Supports MU-MIMO

Supports Killer LAN Software

Supports Killer DoubleShot™ Pro

*The Wi-Fi 6E module is supported by Microsoft Windows® 11 only. The availability of the 6GHz band will depend on the different regulation status of each country and region.

It will be activated (for supported countries) through Windows® Update and software updates once available.

A 6GHz compatible router is required for 6E functionality.

Slots

CPU:

1 x PCIe 5.0 x16 Slot (PCIE1), supports x16 mode*

Chipset:

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

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 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

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*

Requires additional M.2 NVMe expansion cards to support RAID 10

USB

CPU:

2 x Thunderbolt™ 4 Type-C (Rear)

Chipset:

1 x USB 3.2 Gen2x2 Type-C (Front)

2 x USB 3.2 Gen2 Type-A (Rear)

6 x USB 3.2 Gen1 (4 Rear, 2 Front)

6 x USB 2.0 (2 Rear, 4 Front)

* All USB ports support ESD Protection

Connectors

1 x Thermistor Cable Header

1 x SPI TPM Header

1 x Power LED and Speaker Header

1 x RGB LED Header*

2 x Addressable LED Headers**

2 x CPU Fan Connectors (4-pin) (Smart Fan Speed Control)***

3 x Chassis Fan Connectors (4-pin) (Smart Fan Speed Control)***

1 x AIO Pump Fan Connector (4-pin) (Smart Fan Speed Control)***

1 x Water Pump Fan Connector (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)

1 x USB 3.2 Gen1 Header (Supports 2 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_FAN1~3, AIO_PUMP and W_PUMP support the fan power up to 3A (36W).

CPU_FAN2, CHA_FAN1~3, AIO_PUMP and W_PUMP can auto detect if 3-pin or 4-pin fan is in use.

Rear Panel I/O

2 x Antenna Ports

1 x HDMI Port

1 x DisplayPort 1.4

1 x Optical SPDIF Out Port

2 x Thunderbolt™ 4 Type-C Ports (40 Gb/s for USB4 protocol; 40Gb/s for Thunderbolt™ protocol)*

2 x USB 3.2 Gen2 Type-A Ports (10 Gb/s)

4 x USB 3.2 Gen1 Ports
2 x USB 2.0 Ports
1 x RJ-45 LAN Port
1 x BIOS Flashback Button
1 x Line Out Jack (Gold Audio Jack)
1 x Microphone Input Jack (Gold Audio Jack)
* Supports USB PD 3.0 up to 5V@3A (15W) charging

Software and UEFI

Software
ASRock Motherboard Utility (Phantom Gaming Tuning)
Killer Control Center
ASRock Polychrome SYNC*

UEFI

ASRock EZ Mode
ASRock Full HD UEFI
ASRock My Favorites in UEFI
ASRock Auto Driver Installer
ASRock Instant Flash

*These utilities can be downloaded from ASRock Live Update & APP Shop.

Accessories

2 x SATA Data Cables
2 x ASRock WiFi 2.4/5/6 GHz Antennas
1 x ARGB Splitter Cable
1 x Thermistor Cable

Form Factor

Micro ATX Form Factor: 9.6-in x 9.6-in, 24.4 cm x 24.4 cm
2oz Copper PCB

OS

Microsoft Windows® 11 64-bit

Certifications

FCC, CE
ErP/EuP ready (ErP/EuP ready power supply is required)