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PRIME X870-P WIFI

Overview

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Model

PRIME X870-P WIFI

News & Updates

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CPU AMD Socket AM5 for AMD Ryzen™ 9000 & 8000 & 7000 Series Desktop Processors*
* Refer to <https://www.asus.com/support/download-center/> for CPU support list.

Chipset AMD X870 Chipset

Memory 4 x DIMM slots, max. 192GB, DDR5
Supports up to 8000+MT/s(OC) with Ryzen™ 9000 & 8000 & 7000 Series Processors
ECC and Non-ECC, Un-buffered DIMM*
Dual channel memory architecture
Supports AMD Extended Profiles for Overclocking (EXPO™)
ASUS Enhanced Memory Profile (AEMP)
* Adjustments will be made based on the specifications of mass-produced memory products available on the market.
* Supported memory types, data rate (speed), and number of DRAM modules vary depending on the CPU and memory configuration, for more information please refer to CPU/Memory Support list under the Support tab of product information site or visit <https://www.asus.com/support/download-center/>.
* Non-ECC, un-buffered DDR5 memory supports On-Die ECC function.

Graphics 1 x HDMI™ port**
2 x USB4® (40Gbps) ports support USB Type-C® display outputs***
* Graphics specifications may vary between CPU types. Please refer to AMD CF specifications.
** Supports 4K@60Hz as specified in HDMI 2.1.

*** Supports max. 4K@60Hz as specified in DisplayPort 1.4a.

*** VGA resolution support depends on processors' or graphic cards' resolution.

Expansion Slots

AMD Ryzen™ 9000 & 7000 Series Desktop Processors*

1 x PCIe 5.0 x16 slot (supports x16 mode)

AMD Ryzen™ 8000 Series Desktop Processors

1 x PCIe 4.0 x16 slot (supports x8/x4 mode)**

AMD X870 Chipset

3 x PCIe 4.0 x16 slots (support x1 mode)***

* Please check the PCIe bifurcation table on the support site

(<https://www.asus.com/support/FAQ/1037507/>).

** Specifications vary by CPU types.

*** PCIe16(G4)_1 shares bandwidth with M.2_2. PCIe16(G4)_1 will be disabled when M.2_2 runs.

*** PCIe16(G4)_2 and PCIe16(G4)_3 share bandwidth with M.2_3. PCIe16(G4)_2 and PCIe16(G4)_3 will be disabled when M.2_3 runs.

- To ensure compatibility of the device installed, please refer to <https://www.asus.com/support/download-center/> for the list of supported peripherals.

Storage

Supports 4 x M.2 slots and 2 x SATA 6Gb/s ports

AMD Ryzen™ 9000 & 7000 Series Desktop Processors

M.2_1 slot (Key M), type 2280 (supports PCIe 5.0 x4 mode)

AMD Ryzen™ 8000 Series Desktop Processors

M.2_1 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)

AMD X870 Chipset

M.2_2 slot (Key M), type 2242/2260/2280 (supports PCIe 4.0 x4 mode)*

M.2_3 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)**

M.2_4 slot (Key M), type 2280 (supports PCIe 3.0 x2 mode)***

2 x SATA 6Gb/s ports***

* PCIEX16(G4)_1 shares bandwidth with M.2_2. PCIEX16(G4)_1 will be disabled when M.2_2 runs.

** PCIEX16(G4)_2 and PCIEX16(G4)_3 share bandwidth with M.2_3. PCIEX16(G4)_2 and PCIEX16(G4)_3 will be disabled when M.2_3 runs.

*** M.2_4 shares bandwidth with SATA6G_1 and SATA6G_2. M.2_4 will be disabled when SATA6G_1 or SATA6G_2 runs.

AMD RAIDXpert2 Technology

Ryzen™ 9000 Series Processors: RAID 0/1/5/10

Ryzen™ 8000 Series Processors: RAID 0/1

Ryzen™ 7000 Series Processors: RAID 0/1/10

Supports 4 x M.2 slots and 2 x SATA 6Gb/s ports

AMD Ryzen™ 9000 & 7000 Series Desktop Processors

M.2_1 slot (Key M), type 2280 (supports PCIe 5.0 x4 mode)

AMD Ryzen™ 8000 Series Desktop Processors

M.2_1 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)

AMD X870 Chipset

M.2_2 slot (Key M), type 2242/2260/2280 (supports PCIe 4.0 x4 mode)*

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M.2_4 slot (Key M), type 2280 (supports PCIe 3.0 x2 mode)***

2 x SATA 6Gb/s ports***

* PCIEX16(G4)_1 shares bandwidth with M.2_2. PCIEX16(G4)_1 will be disabled when M.2_2 runs.

** PCIEX16(G4)_2 and PCIEX16(G4)_3 share bandwidth with M.2_3. PCIEX16(G4)_2 and PCIEX16(G4)_3 will be disabled when M.2_3 runs.

*** M.2_4 shares bandwidth with SATA6G_1 and SATA6G_2. M.2_4 will be disabled when SATA6G_1 or SATA6G_2 runs.

AMD RAIDXpert2 Technology

Ryzen™ 9000 Series Processors: RAID 0/1/5/10

Ryzen™ 8000 Series Processors: RAID 0/1

Ryzen™ 7000 Series Processors: RAID 0/1/10

Ethernet

1 x Realtek 2.5Gb Ethernet
ASUS LANGuard

Wireless & Bluetooth

Wi-Fi 7*

2x2 Wi-Fi 7 (802.11be)

Supports 2.4/5/6GHz frequency band**

Supports Wi-Fi 7 160MHz bandwidth, up to 2.9Gbps transfer rate.

Bluetooth® v5.4***

*Wi-Fi features may vary depending on the operating system

For Windows 11, Wi-Fi 7 will require 24H2 or later version for full functions, Windows 11 21H2/22H2/23H2 only support Wi-Fi 6E.

For Windows 10, please note that no driver is available, please refer to the Wi-Fi chipset vendor's website for details.

** Wi-Fi 6GHz frequency band and bandwidth regulatory may vary between countries.

*** The Bluetooth® version may vary, please refer to the Wi-Fi module manufacturer's website for the latest specifications.

USB

Rear USB (Total 10 ports)

2 x USB4[®] (40Gbps) ports (2 x USB Type-C[®])

1 x USB 10Gbps port (1 x Type-A)

3 x USB 5Gbps ports (3 x Type-A)

4 x USB 2.0 ports (4 x Type-A)

Front USB (Total 7 ports)

1 x USB 10Gbps connector (supports USB Type-C[®])

1 x USB 5Gbps header supports 2 additional USB 5Gbps ports

2 x USB 2.0 headers support 4 additional USB 2.0 ports

* USB Type-C[®] power delivery output: max. 5V/3A

Audio

Realtek 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

- Premium audio capacitors

- Dedicated audio PCB layers

* A chassis with an HD audio module in the front panel is required to support 7.1 Surround Sound audio output.

Back Panel I/O Ports

2 x USB4[®] (40Gbps) ports (2 x USB Type-C[®])

1 x USB 10Gbps port (1 x Type-A)

3 x USB 5Gbps ports (3 x Type-A)

4 x USB 2.0 ports (4 x Type-A)

1 x HDMI[™] port

1 x Wi-Fi module

1 x Realtek 2.5Gb Ethernet port
3 x Audio jacks
1 x BIOS FlashBack™ button

Internal I/O Connectors

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
4 x 4-pin Chassis Fan headers

Power Related

1 x 24-pin Main Power connector
2 x 8-pin +12V CPU Power connectors

Storage Related

4 x M.2 slots (Key M)
2 x SATA 6Gb/s ports

USB

1 x USB 10Gbps connector (supports USB Type-C®)
1 x USB 5Gbps header supports 2 additional USB 5Gbps ports
2 x USB 2.0 headers support 4 additional USB 2.0 ports

Miscellaneous

3 x Addressable Gen 2 headers
1 x Clear CMOS header
1 x COM Port header
1 x Front Panel Audio header (F_AUDIO)
1 x S/PDIF Out header
1 x SPI TPM header (14-1 pin)
1 x 10-1 pin System Panel header

Special Features

ASUS 5X PROTECTION III

- DIGI+ VRM (- Digital power design with DrMOS)
- LANGuard
- Overvoltage protection
- SafeSlot
- Stainless-steel back I/O

ASUS Q-Design

- M.2 Q-Latch
- PCIe Slot Q-Release
- Q-Antenna
- Q-Dashboard
- Q-DIMM
- Q-LED Core
- Q-Slot

ASUS Thermal Solution

- Flexible M.2 heatsink
- VRM heatsink design

ASUS EZ DIY

- BIOS FlashBack™ button
- BIOS FlashBack™ LED
- ProCool
- Pre-mounted I/O shield
- SafeSlot

Aura Sync

- Addressable Gen 2 headers

Software Features

ASUS Exclusive Software

- Armoury Crate
- Aura Creator
 - Aura Sync

- Fan Xpert 4 (with AI Cooling II)
- Power Saving
- ASUS DriverHub
- ASUS GlideX
- TurboV Core
- ASUS CPU-Z
- Norton 360 Deluxe (60 Days Free Trial)
- WinRAR (40 Days Free Trial)

UEFI BIOS

- ASUS EZ DIY
- ASUS CrashFree BIOS 3
- ASUS EZ Flash 3
- ASUS UEFI BIOS EZ Mode
- ASUS MyHotkey

BIOS

256 Mb Flash ROM, UEFI AMI BIOS

Manageability

WOL by PME, PXE

Accessories**Cables**

2 x SATA 6Gb/s cables

Miscellaneous

1 x ASUS WiFi Q-Antenna

1 x M.2 rubber package

2 x Screw packages for M.2 SSD

Documentation

1 x Quick start guide

Operating System

Windows 11

Form Factor

ATX Form Factor

12 inch x 9.6 inch (30.5 cm x 24.4 cm)



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