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ASUS 90MB1IG0-M0EAY0

ASUS ProArt X870E-CREATOR WIFI Motherboard User Manual

Model: PROART X870E-CREATOR WIFI (90MB1IG0-M0EAY0)

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your ASUS ProArt X870E-CREATOR WIFI motherboard. Designed for professionals and creators, this motherboard offers advanced features for demanding applications, including future AI processing.



Figure 1.1: The ASUS ProArt X870E-CREATOR WIFI Motherboard and its retail packaging.

This image displays the ASUS ProArt X870E-CREATOR WIFI motherboard alongside its product box and included accessories, such as the WiFi antenna. The motherboard features a black PCB with gold accents and robust heatsinks, highlighting its premium design and cooling capabilities.

2. KEY FEATURES

The ASUS ProArt X870E-CREATOR WIFI motherboard is engineered with cutting-edge technologies to deliver superior performance and reliability. Key features include:

- **Designed for AI Processing:** Optimized for future AI workloads, providing the necessary power and connectivity for demanding AI programs.
- **Intelligent Control:** Features AI ASUS Overclocking, AI Cooling II, AI Networking II, and AEMP to simplify setup and enhance system performance.
- **AMD AM5 Socket:** Compatible with AMD Ryzen 9000, 8000, and 7000 Series Desktop Processors.
- **Optimized Thermal Design:** Integrated heatsinks with I/O cover, L-shaped heat pipe, and high-conductive thermal pads for efficient heat dissipation.
- **High-Performance Network:** Built-in Wi-Fi 7 (802.11be) with ASUS WiFi Q-antenna, Intel Ethernet 2.5Gb, and Realtek Ethernet 5Gb for robust connectivity.

Intelligent AI Solutions

AI Overclocking

Maximized CPU performance, and predictions for ideal CPU and cooling settings, pushing your system to its limits.

AI Cooling II

Optimized thermals, and reduced noise via dynamic adjustment of fan speeds, based on CPU temperatures.

AI Networking II

Optimized network performance, helping to ensure seamless connectivity and maximized WiFi 7 speeds.



Figure 2.1: Overview of Intelligent AI Solutions.

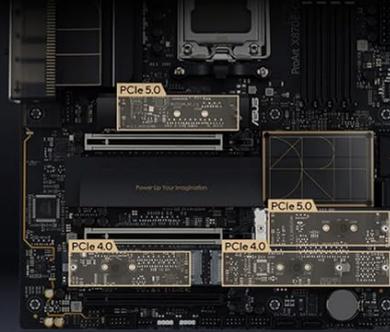
This image highlights the motherboard's intelligent AI solutions, including AI Overclocking for maximized CPU performance, AI Cooling II for optimized thermals and reduced noise, and AI Networking II for seamless connectivity and maximized WiFi 7 speeds.

Better, Faster & More

Dual USB4®
Up to 40Gbps transfer speed



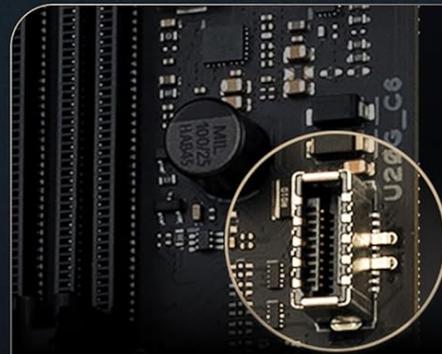
**Two PCIe 5.0 and
two PCIe 4.0 M.2 slots**



**Dual Ethernet
& WiFi 7**



**Unleash DDR5 with
AEMP**



**USB 20Gbps front-panel
connector with 30W
PD/Quick Charge 4+**

Figure 2.2: Advanced Connectivity and Expansion.

This visual details the motherboard's advanced connectivity options, such as Dual USB4 with up to 40Gbps transfer speed, two PCIe 5.0 and two PCIe 4.0 M.2 slots, 10Gb and 2.5Gb Dual Ethernet, WiFi 7, DDR5 support with AEMP, and a USB 20Gbps front-panel connector with 30W PD/Quick Charge 4+.

Robust Power Design

16(80A)+2(80A)+2(80A) power stages



**Eight-Layer
PCB Design**



**ProCool II
Connectors**



**Superior
Chokes &
Capacitors**



**Digi+ VRM
Control**

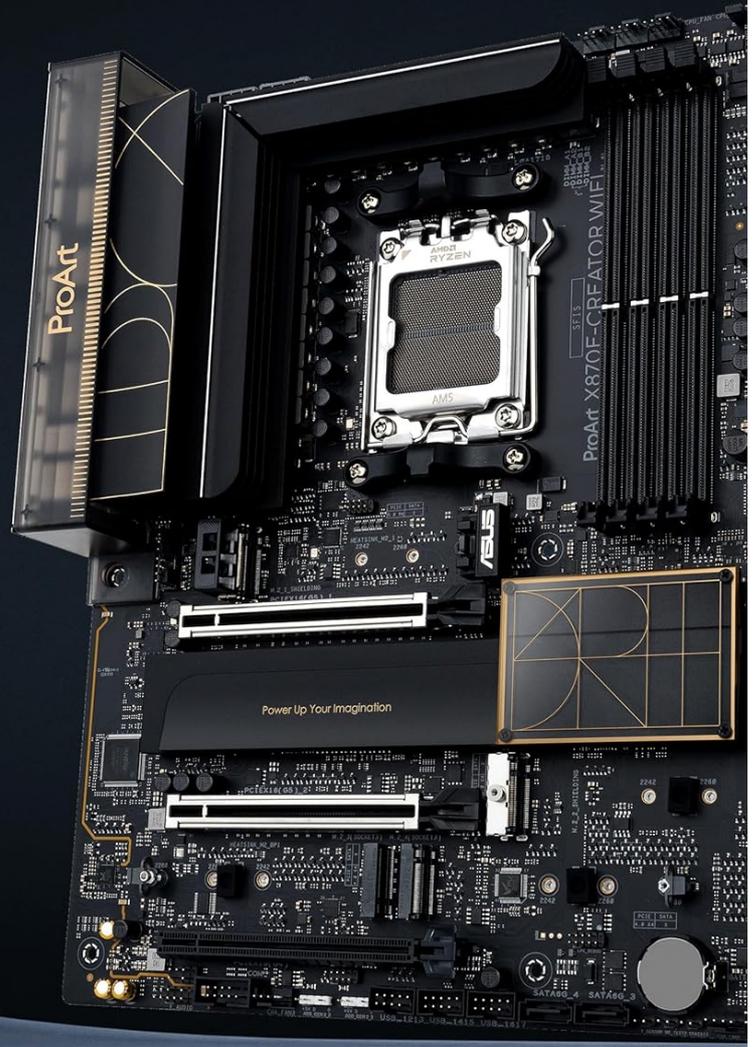


Figure 2.3: Robust Power Delivery System.

This image illustrates the robust power design, featuring 16+2+2 (80A) power stages, an eight-layer PCB design, Solid Pin ProCool II Connectors, superior chokes and capacitors, and Digi+ VRM Control, ensuring stable and efficient power delivery to critical components.

3. WHAT'S IN THE BOX

Upon unboxing your ASUS ProArt X870E-CREATOR WIFI motherboard, please verify that all the following components are present:

Three Months of Free Adobe Creative Cloud

Valued at **USD\$488.91**

Get complimentary membership to Adobe Creative Cloud all Apps with the purchase of selected ASUS products



Figure 3.1: Included Accessories.

This image displays the full contents of the product box, including the ASUS ProArt X870E-CREATOR WIFI motherboard, a WiFi 7 antenna, SATA cables, rubber for M.2 screws, an ASUS Control Center Express activation key card, a DP to DP cable, a ProArt ruler, Q-slide, and a Q-Connector.

- ASUS ProArt X870E-CREATOR WIFI Motherboard
- WiFi 7 Antenna
- SATA Cables (quantity may vary)
- Rubber for M.2 Screw (for M.2 Key E)
- ASUS Control Center Express Activation Key Card
- DP to DP Cable
- ProArt Ruler
- Q-Slide
- Q-Connector
- User Manual (this document)

4. SETUP AND INSTALLATION

Before beginning installation, ensure your workspace is clean, well-lit, and static-free. It is recommended to wear an anti-static wrist strap.

4.1. Motherboard Preparation

1. **Unpack:** Carefully remove the motherboard from its anti-static bag.
2. **CPU Installation:** Open the CPU socket lever, align the CPU with the triangle marker on the socket, gently place the CPU, and close the lever to secure it.
3. **CPU Cooler Installation:** Install your compatible CPU cooler according to its manufacturer's instructions.
4. **RAM Installation:** Open the DIMM slot clips, align the DDR5 memory modules with the slots, and press down firmly until the clips snap into place. Refer to the motherboard's silkscreen for proper dual-channel configuration.
5. **M.2 SSD Installation:** Utilize the convenient M.2 Q-Release and Q-Slide mechanisms for easy installation of M.2 solid-state drives.



Easy PC DIY



PCIe Slot Q-Release Slim

Simply tilt the card toward the latching mechanism to automatically unlock it from the PCIe slot.



M.2 Q-Release

A convenient switch helps to quickly remove the heatsink.



M.2 Q-Slide

The sliding M.2 latch design supports sizes 2242, 2260 and 2280 for easy device installation.



Q-Antenna

Attach a WiFi antenna in a snap.

Figure 4.1: Easy PC DIY Features.

This image demonstrates the user-friendly features for PC assembly, including the PCIe Slot Q-Release Slim for easy GPU removal, M.2 Q-Release for quick heatsink removal, M.2 Q-Slide for convenient SSD installation, and the Q-Antenna for snap-on WiFi antenna

4.2. Case Installation and Connections

1. **Install I/O Shield:** If your case requires it, install the I/O shield into the case's rear opening.
2. **Mount Motherboard:** Carefully place the motherboard into the PC case, aligning it with the standoffs. Secure it with screws.
3. **Power Connections:** Connect the 24-pin ATX power connector and the 8-pin (and/or 4-pin) CPU power connector from your power supply to the motherboard.
4. **Front Panel Connections:** Connect the case's front panel headers (power button, reset button, USB ports, audio jacks) to the corresponding pins on the motherboard. Use the Q-Connector for easier front panel hookup.
5. **Storage Devices:** Connect SATA data cables from your storage drives (HDDs/SSDs) to the SATA ports on the motherboard. Connect power cables from the PSU to the drives.
6. **Graphics Card (GPU):** Insert your graphics card into the primary PCIe 5.0 x16 slot. Ensure it clicks into place and secure it with the case screw. Connect PCIe power cables from the PSU to the GPU if required.
7. **WiFi Antenna:** Attach the included WiFi 7 antenna to the designated connectors on the rear I/O panel.

5. OPERATING INSTRUCTIONS

5.1. First Boot and BIOS Setup

1. **Power On:** After all connections are secure, power on your system.
2. **Access BIOS/UEFI:** During startup, repeatedly press the **DEL** key or **F2** key to enter the BIOS/UEFI setup utility.
3. **Initial Configuration:**
 - Set the correct date and time.
 - Configure boot order to prioritize your operating system installation media (USB drive or DVD).
 - Enable or disable specific features as needed (e.g., virtualization technology).
4. **Save and Exit:** Save your changes and exit the BIOS. The system will restart.

5.2. Operating System and Driver Installation

1. **OS Installation:** Follow the on-screen prompts to install your preferred operating system (e.g., Windows 11).
2. **Driver Installation:** After OS installation, install the latest drivers for your motherboard components. These can be found on the ASUS support website for your specific model. Key drivers include:
 - Chipset Drivers
 - LAN Drivers (Intel 2.5Gb, Realtek 5Gb)
 - Wi-Fi 7 Drivers
 - Audio Drivers
 - USB Drivers

5.3. Utilizing AI Features

The ASUS ProArt X870E-CREATOR WIFI motherboard integrates several AI-powered features to optimize system performance and user experience:

- **AI Overclocking:** Automatically analyzes your CPU and cooling system to predict optimal voltage and frequency settings, allowing for stable performance boosts. Access this feature through the ASUS AI Suite software or BIOS.

- **AI Cooling II:** Dynamically adjusts fan speeds based on real-time CPU temperatures and system load, reducing noise while maintaining optimal thermal performance. Configure fan profiles via ASUS Fan Xpert software.
- **AI Networking II:** Optimizes network traffic for smoother online experiences, prioritizing bandwidth for critical applications. Manage settings through the ASUS Armoury Crate software.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your motherboard and PC system.

- **Dust Removal:** Periodically clean dust from inside your PC case, especially from heatsinks and fans, using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS/UEFI Updates:** Check the ASUS support website regularly for the latest BIOS/UEFI updates. Updates can improve stability, compatibility, and performance. Follow the provided instructions carefully when updating the BIOS.
- **Driver Updates:** Keep your motherboard drivers updated to ensure compatibility with new software and hardware, and to benefit from performance improvements and bug fixes.
- **Cable Management:** Ensure internal cables are neatly managed to improve airflow and prevent interference.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For more detailed troubleshooting, refer to the ASUS support website or contact technical support.

7.1. Common Issues and Solutions

Problem	Possible Cause	Solution
System does not power on.	Loose power cables, faulty PSU, incorrect front panel connections.	Check all power connections (24-pin, 8-pin CPU). Ensure front panel power switch is correctly connected. Test PSU if possible.
No display on monitor.	GPU not seated correctly, faulty display cable, monitor input not selected.	Reseat GPU. Check display cable connections. Ensure monitor is on correct input. Test with another display or GPU if available.
System boots but no OS loads.	Incorrect boot order, corrupted OS, faulty storage drive.	Check BIOS boot order. Attempt OS repair or reinstallation. Verify storage drive connections.
Network connectivity issues (LAN/Wi-Fi).	Missing/outdated drivers, loose cable, incorrect Wi-Fi antenna connection.	Install/update LAN/Wi-Fi drivers. Ensure Ethernet cable is securely connected. Verify Wi-Fi antenna is properly attached.

If issues persist, consider resetting the CMOS (Clear Complementary Metal-Oxide-Semiconductor) by removing the motherboard battery for a few minutes or using the designated CMOS clear jumper/button, if available.

8. SPECIFICATIONS

Below are the detailed technical specifications for the ASUS ProArt X870E-CREATOR WIFI Motherboard:

Feature	Detail
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Feature	Detail
Brand	ASUS
Model Name	PROART X870E-CREATOR WIFI
Item Model Number	90MB1IG0-M0EAY0
CPU Socket	Socket AM5
Compatible Processors	AMD Ryzen 9000 Series, AMD Ryzen 8000 Series, AMD Ryzen 7000 Series
Chipset Type	AMD X870E
RAM Memory Technology	DDR5
Memory Storage Capacity	192 GB (Max)
Product Dimensions	12.01 x 9.61 x 0.39 inches
Item Weight	3.52 pounds
Platform	Windows 11
Date First Available	December 1, 2024

9. WARRANTY AND SUPPORT

For warranty information, technical support, and additional resources, please visit the official ASUS support website. You can find drivers, FAQs, and contact information for customer service.

ASUS Support Website: <https://www.asus.com/support/>

For product registration and to activate any included software, please refer to the instructions provided with your product or visit the ASUS website.