

AOOSTAR GEM12 MAX R7 6900HX 32GB RAM 1TB SSD

AOOSTAR GEM12 MAX Mini PC User Manual

Model: GEM12 MAX R7 6900HX 32GB RAM 1TB SSD | Brand: AOOSTAR

1. INTRODUCTION

This manual provides comprehensive instructions for the setup, operation, maintenance, and troubleshooting of your AOOSTAR GEM12 MAX Mini PC. Designed for high performance, this compact system is suitable for gaming, content creation, and multitasking, offering a powerful computing experience in a small form factor.



Image: The AOOSTAR GEM12 MAX Mini PC, showcasing its compact silver design with ventilation grilles and front ports.

2. PRODUCT OVERVIEW

2.1 Key Features

- **Processor:** Equipped with an AMD Ryzen 9 6900HX processor (8 cores, 16 threads, up to 4.9 GHz), based on Zen 3+ architecture and 6nm process, ideal for demanding applications.
- **Graphics:** Integrated Radeon 680M graphics, based on RDNA 2 architecture, provides smooth visual performance.
- **Memory & Storage:** Features dual-channel DDR5 5600MHz RAM (expandable to 128GB) and dual-channel M.2 2280 NVMe PCIe4.0x4 SSD (expandable to 8TB).
- **Display Support:** Supports up to four 4K@60Hz displays simultaneously for enhanced productivity.
- **Connectivity:** Includes high-bandwidth OCuLink port (64 Gbps) for external GPU solutions, dual USB4, HDMI, Dual 2.5G LAN, Bluetooth 5.2, and Wi-Fi 6.
- **Cooling System:** Features a 75W Vapor Chamber + CPU fan for efficient dual cooling, with large ventilation holes.
- **BIOS Modes:** Three adjustable BIOS modes: Silent (45W-54W), Balanced (54W-65W), and Performance (65W-70W), with an option to adjust to 75W in BIOS.

2.2 Ports and Interfaces

The AOOSTAR GEM12 MAX Mini PC offers a comprehensive set of ports for various peripherals and connectivity needs.

- USB4: 2 ports
- USB3.2 Gen2: 2 ports
- USB2.0: 2 ports
- HDMI: 1 port
- DisplayPort (DP): 1 port
- DC Power Input: 1 port
- OCuLink: 1 port
- Audio Jack: 1 port
- 2.5G LAN: 2 ports

Full I/o ports solutions. Internet of Everything

Front

Button *1 Jack*1 USB3.2 Gen2*2 OCuLink*1 USB4*1



Back

DC*1 USB4*1 2.5G*2 DP1.4*1 HDMI 2.1*1 USB2.0*2



Image: Diagram illustrating the front and back I/O ports of the AOOSTAR GEM12 MAX Mini PC, including USB, HDMI, DP, LAN, and OCuLink.

2.3 Internal Components and Cooling

The internal design focuses on performance and thermal management.

Ryzen9 6900HX CPU, 680M graphics card featuring 8 cores and 16 threads

The processor is like the engine of a car
this computer's CPU is like a V8 engine, with astonishing speed



Image: Close-up of the AMD Ryzen 9 6900HX CPU, highlighting its 8 cores and 16 threads, with power modes indicated.

AMD Radeon 680M

The graphics card performance has improved by 50% compared to the previous generation.

2200MHz
computing unit

12CU
frequency

RDNA 2
framework

AMD RDNA 2
AMD RDNA 1

50%

Image: Visual representation of the AMD Radeon 680M integrated graphics, emphasizing its RDNA 2 architecture and performance improvements.

Dual PCIe 4.0 x4 high-speed SSDs

Using branded hard drives ensures high quality,
which in turn provides better protection for your data.

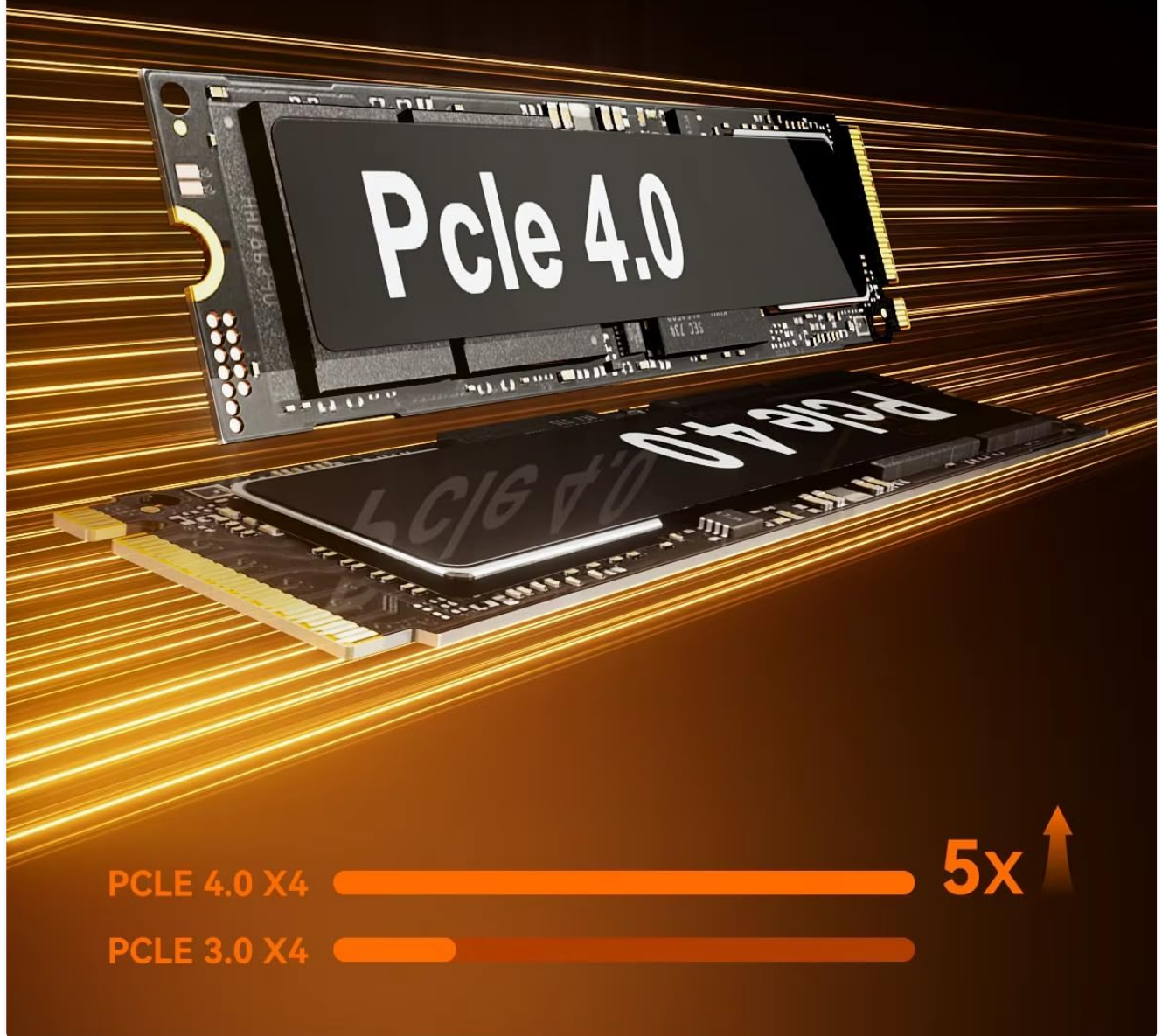


Image: Illustration of dual PCIe 4.0 x4 high-speed SSDs, indicating their role in data protection and fast storage.

Dual-channel DDR5 memory from a first-tier brand

Memory is the engine of the graphics card;
high-quality memory can greatly enhance computer performance

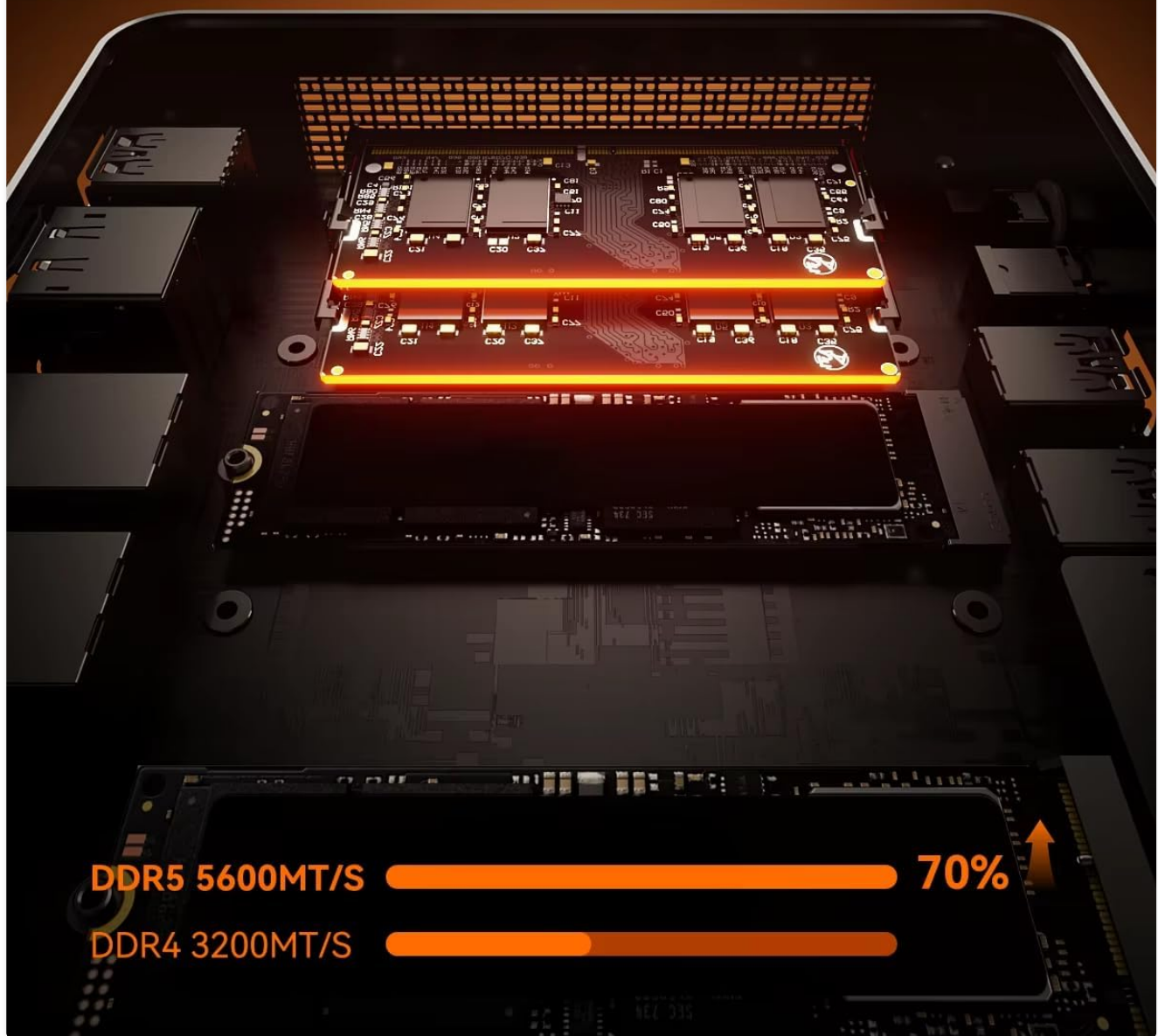


Image: Depiction of dual-channel DDR5 memory modules, highlighting their contribution to enhanced computer performance.

After 16 experiments, it offers an ultimate silent user experience

If you are not satisfied with the noise during use we promise to accept returns for this reason.



Image: A graph showing noise levels (dB) at different TDPs, illustrating the effectiveness of the VC Graphene Heat Sink in reducing fan speed and noise.

TDP 75W

New generation cooling solution,
the current record holder for mini-computer cooling limits

VC Graphene Heat Sink

The heat dissipation efficiency is 1.4 times that of a copper pipe
heat sink, ensuring that the computer operates quietly

Image: An X-ray view of the Mini PC's internal cooling system, featuring a 75W Vapor Chamber design for optimal heat dissipation.

2.4 Product Video

Your browser does not support the video tag.

Video: An official product video showcasing the AOOSTAR GEM12 MAX R9 6900HX Mini PC's features, design, and connectivity options.

3. SETUP

3.1 Unboxing and Initial Inspection

Carefully remove all components from the packaging. Verify that all items listed in the package contents are present and undamaged. The package includes: 1 x AOOSTAR GEM12 8845HS Mini PC, 1 x VESA mount, 1 x mounting screw, 1 x HDMI cable, 1 x SSD Cooling Pad, 1x 120W 19V 6.32A Type-C power supply.

3.2 Connecting Peripherals

1. **Power Connection:** Connect the 120W 19V 6.32A Type-C power supply to the DC input port on the Mini PC and then to a power outlet.
2. **Display Connection:** Connect your monitor(s) to the HDMI or DisplayPort (DP) outputs. The Mini PC supports up to four displays.
3. **Keyboard and Mouse:** Connect your USB keyboard and mouse to the available USB ports.
4. **Network Connection:** For wired internet, connect an Ethernet cable to one of the 2.5G LAN ports. For wireless, ensure Wi-Fi 6 is enabled in the operating system.
5. **Audio:** Connect speakers or headphones to the audio jack if desired.

HDMI 2.1 interface, capable of playing 8K videos, about to launch a visual feast

It can support up to four screens, meeting the needs for work or gaming



Image: A setup demonstrating the AOOSTAR GEM12 MAX Mini PC connected to multiple monitors, highlighting its 4K@144Hz 4-screen display capability.

3.3 First Boot and Operating System Setup

Press the power button on the front of the Mini PC. The system comes with Windows 11 Pro pre-installed. Follow the on-screen prompts to complete the initial operating system setup, including language, region, and user account creation.

4. OPERATING INSTRUCTIONS

4.1 Power Management

- **Power On:** Press the power button once.
- **Sleep Mode:** Short press the power button or select "Sleep" from the operating system's power options.
- **Shut Down:** Select "Shut down" from the operating system's power options.
- **Restart:** Select "Restart" from the operating system's power options.

4.2 BIOS Settings and Performance Modes

To access the BIOS settings, press the **Del** key repeatedly during startup. Within the BIOS, you can adjust the power settings to optimize performance or reduce noise.

- **Silent Mode:** (45W-54W TDP) For quiet operation during light tasks.
- **Balanced Mode:** (54W-65W TDP) A good balance between performance and noise for everyday use.
- **Performance Mode:** (65W-70W TDP) Maximizes CPU performance for demanding applications and gaming.
- To adjust the BIOS to 75W TDP, this setting must be configured directly within the BIOS interface.

4.3 Storage Expansion

The Mini PC supports additional storage expansion. It features two M.2 2280 PCIe4.0 SSD slots. To install additional SSDs, you will need to open the chassis. Refer to the detailed instructions on the manufacturer's website or contact support for guidance on hardware upgrades.



Image: Diagram illustrating the internal layout for storage expansion, showing support for two M.2 2280 PCIe4.0 SSDs.

5. MAINTENANCE

5.1 Cleaning

Regularly clean the exterior of the Mini PC with a soft, dry cloth. Use compressed air to clear dust from the ventilation grilles to ensure optimal airflow and cooling performance. Do not use liquid cleaners directly on the device.

5.2 Software Updates

Keep your operating system and drivers updated to ensure system stability, security, and optimal performance. Check the AOOSTAR official website for the latest driver releases for your specific model.

5.3 Storage Management

Periodically manage your storage by deleting unnecessary files, uninstalling unused programs, and defragmenting your hard drive (for HDDs, not necessary for SSDs). This helps maintain system responsiveness.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with your AOOSTAR GEM12 MAX Mini PC.

6.1 No Display Output

- Ensure the monitor is powered on and correctly connected to the Mini PC's HDMI or DP port.
- Try a different display cable or monitor to rule out cable/monitor issues.
- Verify the Mini PC is receiving power and the power indicator light is on.

6.2 System Slowdown or Unresponsiveness

- Check for excessive background processes in Task Manager (Windows).
- Ensure sufficient free space on your SSD.
- Verify that the cooling vents are not obstructed and the fan is operating. Overheating can lead to performance throttling.
- Consider adjusting the BIOS to a higher performance mode if you are running resource-intensive applications.

6.3 Fan Noise

- Fan noise can increase under heavy load due to the cooling system working to dissipate heat. This is normal.
- If fan noise is consistently high during light use, check the BIOS settings and ensure it's not set to a constant high-performance mode. Adjust to "Silent" or "Balanced" mode.
- Ensure the Mini PC is placed in a well-ventilated area and that its vents are not blocked by objects.

6.4 Bluetooth Connectivity Issues

- Ensure your Bluetooth device is charged and in pairing mode.
- Try moving the Bluetooth device closer to the Mini PC to improve signal strength.
- Update your Bluetooth drivers from the AOOSTAR official website.

7. SPECIFICATIONS

Component	Detail
Processor	AMD Ryzen 9 6900HX (8C/16T, up to 4.9GHz)

Component	Detail
Graphics Coprocessor	Radeon 680M (RDNA 2 architecture)
RAM	32GB DDR5 5600MHz (Expandable to 128GB)
Storage	1TB PCIe4.0 SSD (Dual M.2 2280 NVMe, Expandable to 8TB)
Operating System	Windows 11 Pro (Pre-installed)
Display Output	HDMI 2.1, DisplayPort (DP), Dual USB4 (Supports 4K@60Hz, up to 4 screens)
Network	Dual 2.5G LAN, Wi-Fi 6, Bluetooth 5.2
Ports (Front)	USB3.2 Gen2*2, USB2.0*2, USB4*2, OCuLink*1, Audio Jack*1, Power Button*1
Ports (Rear)	DC*1, USB4*1, 2.5G LAN*2, DP1.4*1, HDMI 2.1*1, USB2.0*2
Cooling System	75W Vapor Chamber + CPU fan
Dimensions (LxWxH)	5.12 x 5.12 x 2.36 inches (13 x 13 x 6 cm)
Weight	1.46 pounds (0.66 Kg)

8. WARRANTY AND SUPPORT

AOOSTAR is committed to providing excellent customer service and support for your Mini PC.

8.1 Warranty Information

Your AOOSTAR GEM12 MAX Mini PC comes with a **3-year service warranty**. Please retain your proof of purchase for warranty claims.

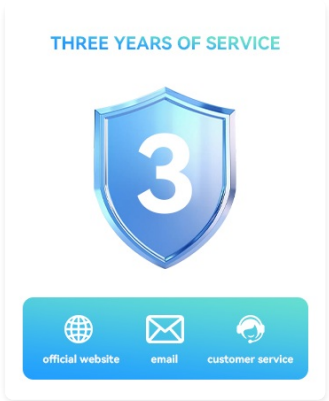


Image: A shield icon with the number '3', signifying the three-year service warranty provided by AOOSTAR.

8.2 Contacting Support

For any questions, technical assistance, or warranty claims, please use one of the following methods:

- **Via Amazon:** Log in to your Amazon account, check your order, and click "Get Help" to request support for

this product.

- **Via Email:** Send your questions toaoostar-shop@outlook.com.
- **Online Customer System:** Contact us using the desktop client. If the after-sales service system is not installed, please reach out via email or Amazon, and we will provide the client.

3 AFTER-SALES SERVICE METHODS




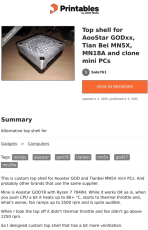
Please contact us on AMAZON
Log in with your Amazon account to check your order and click "Get Help." Here, you can request support for this product.

Please contact us via the after-sales email
Please send your questions to the following email address:
aoostar-shop@outlook.com

Communication through the online customer system
Please contact us using the desktop client. If the after-sales service system is not installed, please reach out via email or Amazon, and we will send you the client.

Image: Icons representing official website, email, and customer service, indicating various ways to contact AOOSTAR support.

Related Documents - GEM12 MAX R7 6900HX 32GB RAM 1TB SSD

	<p>AOOSTAR GEM12 Max Mini PC User Manual & Specifications</p> <p>Comprehensive user manual for the AOOSTAR GEM12 Max Mini PC (R7 8845HS). This guide provides detailed information on unpacking, product interfaces, operating environment, important precautions, troubleshooting slow boot issues, and warranty terms.</p>
	<p>AOOSTAR MN78 Mini PC User Manual</p> <p>Comprehensive user manual for the AOOSTAR MN78 Mini PC, covering setup, operation, environment, installation, and warranty information.</p>
	<p>AOOSTAR MACO Mini PC User Manual and Specifications</p> <p>User manual and technical specifications for the AOOSTAR MACO Mini PC, including operation instructions, installation guide, warranty information, and FCC compliance.</p>
	<p>Custom 3D Printable Top Shell for AooStar and Tian Bei Mini PCs</p> <p>Enhance the cooling performance of your AooStar GODxx, Tian Bei MN5X, MN18A, and clone mini PCs with this custom 3D printable top shell. Designed to improve ventilation and reduce thermal throttling, it offers various height and cutout options for optimal airflow and quieter operation.</p>

[Aoostar T8 Mini-PC im Test: Kompakter Rechner mit Intel N100](#)

Umfassender Testbericht zum Aoostar T8 Mini-PC. Erfahren Sie mehr über die kompakte Bauweise, die Ausstattung und die Leistung des Intel N100 Prozessors.