GIGABYTE GV-N4090AORUSX W-24GD

GIGABYTE AORUS GeForce RTX 4090 Xtreme WATERFORCE 24G Graphics Card User Manual

Model: GV-N4090AORUSX W-24GD

Introduction | Key Features | What's in the Box | Setup | Operating | Maintenance | Troubleshooting | Specifications | Warranty & Support

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your GIGABYTE AORUS GeForce RTX 4090 Xtreme WATERFORCE 24G Graphics Card. Designed for high-performance computing, this graphics card integrates advanced cooling and powerful processing capabilities to deliver an exceptional visual experience.



Figure 1: GIGABYTE AORUS GeForce RTX 4090 Xtreme WATERFORCE 24G Graphics Card and its retail packaging.

2. Key Features

The GIGABYTE AORUS GeForce RTX 4090 Xtreme WATERFORCE 24G is engineered with cutting-edge technology to provide superior performance:

- **NVIDIA Ada Lovelace Streaming Multiprocessors:** Offers up to 2x performance and power efficiency.
- **4th Generation Tensor Cores:** Provides up to 2x AI performance.
- **3rd Generation RT Cores:** Delivers up to 2x ray tracing performance.
- **Powered by GeForce RTX 4090:** Ensures top-tier graphical processing.
- **Integrated with 24GB GDDR6X 384-bit memory interface:** Ample memory for demanding applications and high-resolution gaming.
- **WATERFORCE all-in-one Cooling System:** Features a 360mm radiator with 3x 120mm fans for efficient heat dissipation.
- **Dual BIOS:** Provides flexibility for performance or silent operation modes.
- **Protection metal back plate:** Enhances structural rigidity and heat dissipation.

- **Anti-sag bracket:** Prevents GPU sag in the PCIe slot.



Figure 2: Side view of the graphics card highlighting its compact design and connectivity ports.

3. What's in the Box

Upon opening the product packaging, verify that all listed items are present:

- GIGABYTE AORUS GeForce RTX 4090 Xtreme WATERFORCE 24G Graphics Card
- User Manual (this document)

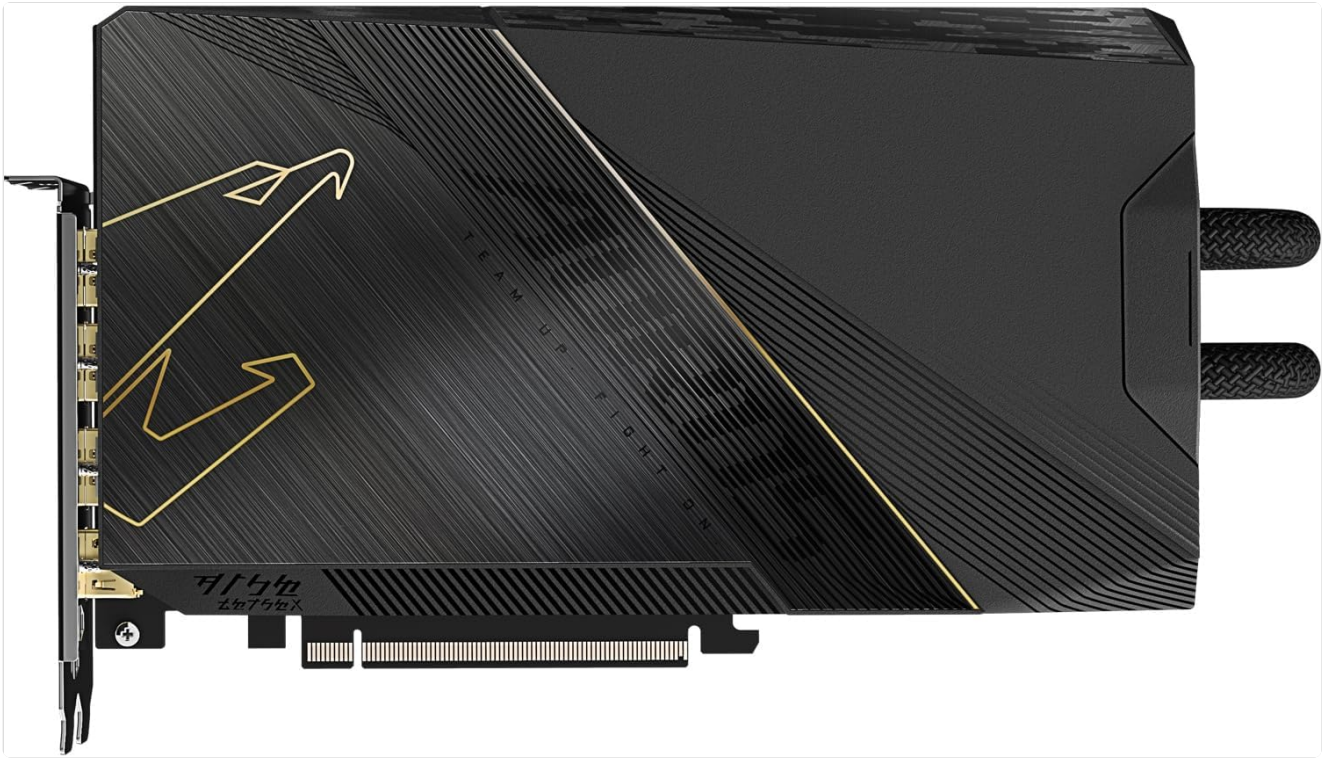


Figure 3: Top view of the graphics card, showcasing its sleek design.

4. Setup

4.1 System Requirements

- PCI Express graphics slot required.
- Microsoft Windows 10/11 64-bit or Linux 64-bit operating system required.
- One PCIe 16-pin or four PCIe 8-pin power connectors required.
- 1000W system power supply required.

4.2 Installation Steps

1. **Prepare Your System:** Power off your computer and disconnect all cables. Open your computer case.
2. **Locate PCIe Slot:** Identify an available PCI Express x16 slot on your motherboard.
3. **Install Graphics Card:** Carefully align the graphics card with the PCIe slot and press down firmly until it is securely seated. Ensure the anti-sag bracket is properly utilized if included.
4. **Connect Power:** Connect the required PCIe power connectors from your power supply to the graphics card. For this model, one 16-pin or four 8-pin PCIe power connectors are needed.
5. **Install Radiator:** Mount the 360mm radiator with its three 120mm fans to an appropriate location in your PC case, ensuring optimal airflow. Connect the fan and pump cables to your motherboard or a dedicated fan controller.
6. **Secure Card:** Secure the graphics card to the case with screws.
7. **Close Case and Connect Peripherals:** Close your computer case, reconnect all cables, and connect your display to the graphics card's output ports (DisplayPort or HDMI).
8. **Install Drivers:** Power on your computer. Once the operating system loads, download and install the latest NVIDIA drivers from the official GIGABYTE or NVIDIA website.



Figure 4: The graphics card connected to its 360mm radiator and three 120mm fans, part of the WATERFORCE cooling system.

5. Operating the Graphics Card

5.1 Driver Installation and Updates

For optimal performance and stability, always ensure you have the latest graphics drivers installed. Visit the official NVIDIA website or GIGABYTE's product support page to download the most current drivers for your operating system. Regular driver updates can provide performance enhancements, bug fixes, and compatibility with new games and applications.

5.2 Software Utilities

GIGABYTE provides utility software to help you manage and optimize your graphics card. These tools may include:

- **AORUS ENGINE:** For overclocking, fan control, and RGB lighting customization.
- **NVIDIA GeForce Experience:** Optimizes game settings, records gameplay, and keeps drivers up to date.

5.3 Dual BIOS Switch

Your graphics card features a Dual BIOS switch, allowing you to select between two BIOS modes: OC (Overclocking) and Silent. The OC mode typically offers higher clock speeds for maximum performance, while the Silent mode prioritizes lower noise levels by adjusting fan curves and power limits. Switch between modes based on your preference for performance or acoustics.



Figure 5: The Dual BIOS switch, allowing selection between OC and Silent modes.

6. Maintenance

Proper maintenance ensures the longevity and optimal performance of your graphics card:

- **Dust Removal:** Regularly clean dust from the radiator fins and fans using compressed air. Ensure the system is powered off before cleaning.
- **Cable Management:** Ensure all power and data cables are neatly routed and do not obstruct airflow within your PC case.
- **Temperature Monitoring:** Use monitoring software (e.g., AORUS ENGINE, HWMonitor) to keep an eye on GPU temperatures, especially during heavy loads. Maintain good case airflow to assist the WATERFORCE cooling system.
- **Software Updates:** Keep your graphics drivers and utility software updated to benefit from performance improvements and bug fixes.

7. Troubleshooting

If you encounter issues with your graphics card, consider the following common troubleshooting steps:

- **No Display Output:**
    - Ensure the display cable is securely connected to both the graphics card and the monitor.
    - Verify that the graphics card is fully seated in the PCIe slot.
    - Check that all required power connectors are properly attached to the graphics card.
    - Test with a different display cable or monitor if possible.
- **System Instability or Crashes:**
    - Ensure your power supply meets the minimum 1000W requirement.
    - Update your graphics drivers to the latest version.
    - Monitor GPU temperatures to ensure it's not overheating. Improve case airflow if necessary.
    - If overclocked, revert to default settings to check for stability.
- **Poor Performance in Games/Applications:**
    - Verify that the latest drivers are installed.
    - Check in-game settings; ensure they are not excessively high for your desired frame rate.
    - Ensure your CPU and RAM are not bottlenecking the GPU.
    - Confirm that the Dual BIOS switch is set to OC mode if maximum performance is desired.
- **Fan Noise:**

- Check for dust buildup on the fans and radiator.
- Ensure the Dual BIOS switch is set to Silent mode if reduced noise is preferred.
- Adjust fan curves using GIGABYTE's utility software.

- **AORUS RTX 4090 Gaming Box eGPU Specific Issues (if applicable):**
  - Ensure internal power cables are securely connected to the GPU within the eGPU enclosure.
  - Verify Thunderbolt 3/4 or USB4 port connectivity and driver installation for the eGPU.
  - Check that the eGPU is recognized by Windows Thunderbolt Control Panel.

8. Specifications

Feature	Detail
Brand	GIGABYTE
Model Number	GV-N4090AORUSX W-24GD
Graphics Coprocessor	NVIDIA GeForce RTX 4090
Graphics Card RAM Size	24 GB GDDR6X
Memory Speed	21000 MHz
GPU Clock Speed	2565 MHz
Max Screen Resolution	7680x4320
Video Output Interface	DisplayPort, HDMI
Item Weight	4.03 pounds
Product Dimensions (LxWxH)	9.37 x 5.55 x 1.57 inches
Cooling System	WATERFORCE all-in-one Cooling System (360mm radiator with 3x 120mm fans)

9. Warranty & Support

GIGABYTE products are designed for reliability and performance. For detailed warranty information, please refer to the warranty card included with your product or visit the official GIGABYTE website. Keep your proof of purchase for warranty claims.
For technical support, driver downloads, and FAQs, please visit the GIGABYTE support website. You can also contact GIGABYTE customer service for assistance with product-related inquiries.
GIGABYTE Support Website: https://www.gigabyte.com/support

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