GIGABYTE GV-N5080AORUS M-16GD

GIGABYTE AORUS GeForce RTX 5080 Master 16G Graphics Card User Manual

Model: GV-N5080AORUS M-16GD

1. INTRODUCTION AND OVERVIEW

This manual provides essential information for the installation, operation, and maintenance of your GIGABYTE AORUS GeForce RTX 5080 Master 16G Graphics Card. This high-performance graphics card is powered by NVIDIA's new RTX architecture, delivering stunning visuals, fast frame rates, and AI acceleration for gaming and creative applications with its enhanced RT Cores and Tensor Cores, along with 16 GB of GDDR7 memory.

Key Features:

- Powered by the NVIDIA Blackwell architecture and DLSS 4
- Integrated with 16GB GDDR7 256-bit memory interface
- WINDFORCE cooling system with Hawk Fan
- PCIe 5.0 interface for high-speed data transfer

2. PRODUCT FEATURES AND DESIGN

The GIGABYTE AORUS GeForce RTX 5080 Master 16G is engineered for optimal performance and durability. Below are visual representations and descriptions of its key components and design elements.

Figure 2.1: Front view of the GIGABYTE AORUS GeForce RTX 5080 Master 16G Graphics Card, showcasing the triple-fan WINDFORCE cooling system.
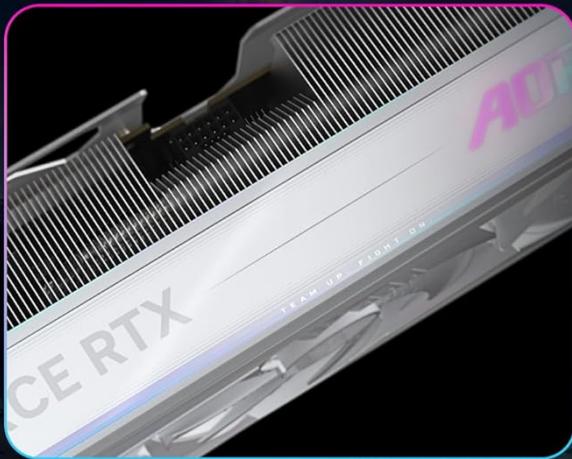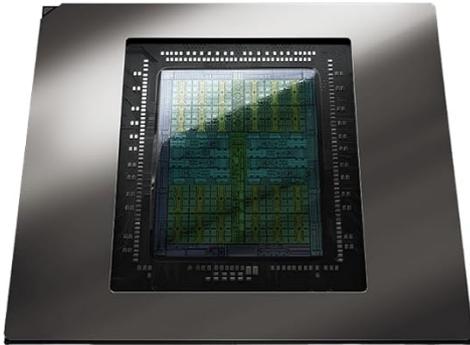
Figure 2.2: Side view of the graphics card, illustrating the robust heatsink design for efficient heat dissipation.

NVIDIA Blackwell Architecture

THE ULTIMATE PLATFORM FOR GAMERS AND CREATORS

Fifth-Gen Tensor Cores
Max AI performance with FP4 and DLSS 4

New Streaming Multiprocessors
Optimized for neural shaders

Fourth-Gen Ray Tracing Cores
Built for Mega Geometry

AI-Enhanced Graphics and Performance
NVIDIA DLSS 4 with Multi Frame Generation

Game-Winning Responsiveness
NVIDIA Reflex 2 with Frame Warp

True-to-Life Graphics
Full ray tracing with neural rendering

Digital Humans and AI Assistants
NVIDIA ACE

Accelerate Your Creativity
NVIDIA Studio creator tools and technology

Enhance Any Video with AI
NVIDIA Broadcast and ninth-gen NVIDIA Encoder

Performance and Reliability
NVIDIA app with Game Ready and Studio Drivers

The Ultimate Gaming Display Technologies
NVIDIA G-SYNC

Figure 2.3: Rear view of the card, showing the protective metal backplate with AORUS branding.
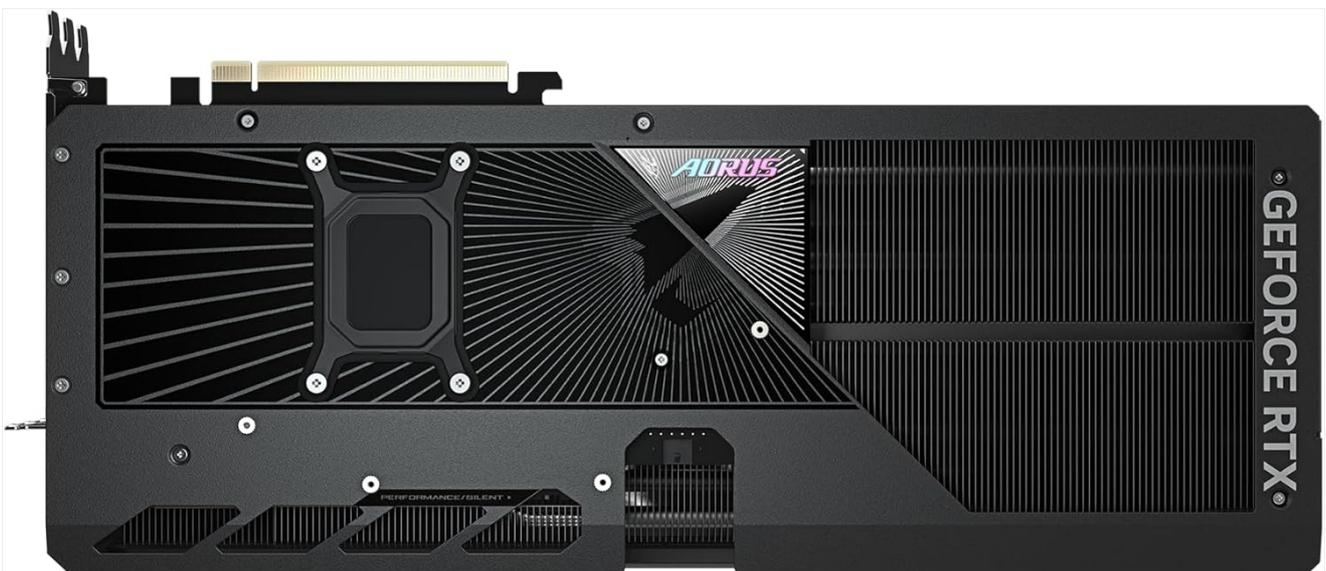
Figure 2.4: Detailed view of the display output ports, including DisplayPort 2.1b and HDMI 2.1b.
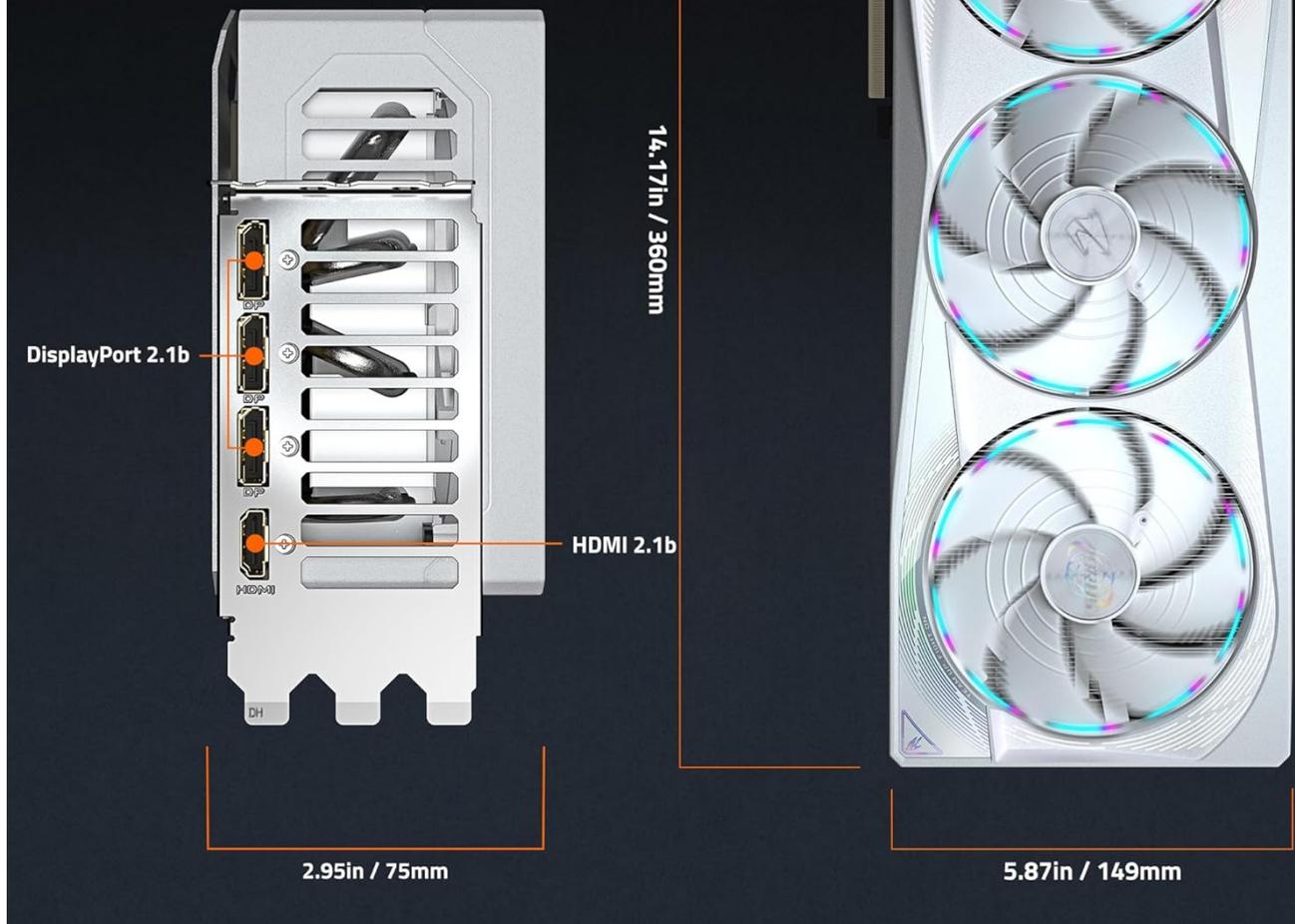
Figure 2.5: Product dimensions, indicating the card's length, width, and height for compatibility checks.

Official Product Overview:

Video 2.1: Official Trailer for GIGABYTE GeForce RTX 50 Series Graphics Cards, highlighting key features and design.

3. TECHNICAL SPECIFICATIONS

Feature	Specification
Graphics Coprocessor	NVIDIA GeForce RTX 5080
Graphics Card RAM Size	16 GB GDDR7
Memory Speed	2366 MHz
Max Screen Resolution	7680x4320 Pixels
Video Output Interface	DisplayPort, HDMI (3x DisplayPort 2.1b, 1x HDMI 2.1b)

PCIe Version	PCIe 5.0
Item Weight	4.47 pounds
Product Dimensions	14.17 x 5.87 x 2.95 inches
Recommended PSU	850 W (minimum)

4. SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and longevity of your graphics card. Follow these steps carefully.

4.1. Preparation

- Ensure your computer is powered off and unplugged from the wall outlet.
- Open your PC case.
- Discharge any static electricity by touching a grounded metal object.
- Identify an available PCIe 5.0 x16 slot on your motherboard.
- Remove any expansion slot covers that correspond to the graphics card's size (typically 3 slots).

4.2. Graphics Card Installation

Carefully align the graphics card with the PCIe slot and press down firmly until it is securely seated. Ensure the retention clip on the PCIe slot locks into place.

Video 4.1: Unboxing and installation guide for the RTX 5080, including close-up views and specifications. Provided by Knowledge Sharing Tech.

Video 4.2: Step-by-step process of installing an NVIDIA GeForce RTX graphics card into a PC build. Provided by Aaron Gets to the Point.

4.3. Connect Power Cables

Connect the 16-pin power cable from your power supply unit (PSU) to the graphics card. Ensure the connection is firm and fully seated to prevent power delivery issues.

4.4. Secure the Graphics Card

Use the provided screws to secure the graphics card to the PC case's expansion slots. If included, install the anti-sag bracket to provide additional support for the card and prevent GPU sag.

4.5. Install Drivers

After physical installation, close your PC case, reconnect all peripherals, and power on your system. Download and install the latest graphics drivers from the official GIGABYTE or NVIDIA website for optimal performance and stability. NVIDIA Driver Download

5. OPERATING YOUR GRAPHICS CARD

Once installed and drivers are updated, your GIGABYTE AORUS GeForce RTX 5080 Master 16G Graphics Card is ready for use.

5.1. Software Configuration

Utilize GIGABYTE's AORUS Engine software to monitor GPU status, adjust clock speeds, fan curves, and customize RGB

lighting effects. This software allows for fine-tuning your card's performance to match your needs.

5.2. Performance Monitoring

Regularly monitor your GPU's temperature and usage during demanding tasks (gaming, content creation) using tools like AORUS Engine or other third-party monitoring software to ensure stable operation.

Video 5.1: A detailed look at RTX 5080 benchmarks, discussing its performance in gaming and for content creators. Provided by Knowledge Sharing Tech.

6. MAINTENANCE

To ensure the longevity and optimal performance of your graphics card, regular maintenance is recommended.

- **Dust Cleaning:** Periodically clean dust from the heatsink and fans using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Driver Updates:** Keep your graphics drivers updated to the latest version. New drivers often include performance improvements, bug fixes, and compatibility updates for new games and applications.
- **Temperature Monitoring:** Monitor GPU temperatures regularly. High temperatures can indicate insufficient cooling or excessive dust buildup.

7. TROUBLESHOOTING

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

- **No Display Output:**
    - Ensure all power cables (16-pin and PCIe) are securely connected to the GPU and PSU.
    - Verify that your monitor cable is connected to the graphics card's output ports, not the motherboard's integrated graphics ports.
    - Try a different display cable or monitor.

- **Performance Issues (Low FPS, Stuttering):**
    - Ensure your graphics drivers are up to date.
    - Check GPU temperatures to rule out thermal throttling.
    - Verify that your system meets the game/application's minimum requirements.
    - Close unnecessary background applications.

- **Overheating:**
    - Clean dust from the GPU fans and heatsink.
    - Ensure adequate airflow within your PC case.
    - Check fan speeds using AORUS Engine software.

8. WARRANTY AND SUPPORT

Your GIGABYTE AORUS GeForce RTX 5080 Master 16G Graphics Card comes with a manufacturer's warranty. Please refer to the warranty card included in your product packaging for specific terms and conditions.
For technical support, driver downloads, and further assistance, please visit the official GIGABYTE support website:
GIGABYTE Support