

Empowered PC RTX PRO 6000

NVD RTX PRO 6000 Blackwell Professional Workstation Edition Graphics Card User Manual

Model: RTX PRO 6000

INTRODUCTION

The NVD RTX PRO 6000 Blackwell is a state-of-the-art professional workstation graphics card engineered for demanding applications in artificial intelligence, complex design, advanced simulation, and high-end engineering. Featuring 96GB of GDDR7 ECC memory, 4th Gen RT Cores, and 5th Gen Tensor Cores, this GPU delivers unparalleled performance and efficiency for critical workloads.

SETUP GUIDE

1. Unpacking and Inspection

Carefully remove the graphics card from its packaging. Inspect the card for any visible damage. Ensure all accessories, if any, are present. This product is supplied in bulk OEM packaging.

2. System Requirements

- PCIe Gen 5 x16 slot on your motherboard.
- Power supply unit capable of delivering sufficient power, supporting up to 600W for the graphics card.
- Compatible operating system (e.g., Windows 10/11, Linux).
- Sufficient case airflow for optimal cooling.

3. Physical Installation

1. Power off your computer and disconnect the power cable.
2. Open your computer case.
3. Locate an available PCIe Gen 5 x16 slot.
4. Remove the necessary expansion slot covers from your case.
5. Carefully align the graphics card with the PCIe slot and press down firmly until it is securely seated. Ensure the retention clip on the motherboard clicks into place.
6. Secure the graphics card to the case with screws.
7. Connect the required power cables from your power supply to the graphics card. The RTX PRO 6000 Blackwell requires significant power; ensure all necessary connectors are used.
8. Close your computer case.

4. Connecting Displays

The RTX PRO 6000 Blackwell features DisplayPort 2.1 outputs. Connect your monitors to the DisplayPort outputs on the graphics card. This interface supports high resolutions up to 8K at 240 Hz and 16K at 60 Hz.



Figure 1: Angled view of the NVD RTX PRO 6000 Blackwell Graphics Card, highlighting the DisplayPort 2.1 outputs for high-resolution display connections.

5. Driver Installation

1. Power on your computer.
2. Download the latest drivers for the NVD RTX PRO 6000 Blackwell from the official NVD website.
3. Follow the on-screen instructions to complete the driver installation. A system restart may be required.

OPERATING THE GRAPHICS CARD

Once installed and drivers are updated, the RTX PRO 6000 Blackwell is ready for operation. This card is optimized for professional applications requiring significant computational power.

Key Features and Performance

- **NVIDIA Blackwell Streaming Multiprocessor (SM):** Features increased processing throughput and neural shaders for advanced AI and graphics rendering.
- **DLSS 4:** Utilizes Multi Frame Generation for ultra-smooth frame pacing, ideal for lifelike simulations.
- **5th Gen Tensor Cores:** Delivers up to 3X performance improvement over previous generations, with FP4 precision

support for faster AI model processing and reduced memory usage, enabling local fine-tuning of LLMs and generative AI.

- **4th Gen Ray Tracing Cores:** Doubles the ray-triangle intersection rate, enabling photorealistic, physically accurate scenes and immersive 3D designs with RTX Mega Geometry, supporting up to 100X more ray-traced triangles.
- **96 GB GDDR7 ECC Memory:** Provides 1.8 TB/s bandwidth, allowing the card to handle massive 3D and AI projects, fine-tune AI models locally, explore large-scale VR environments, and manage extensive multi-application workflows.
- **Universal MIG (Multi-Instance GPU):** Allows a single RTX PRO 6000 Blackwell to be divided into multiple isolated instances, each with dedicated resources. This enables concurrent execution of multiple workloads, optimized GPU utilization, and secure isolation for different applications or users.

Cooling System

The RTX PRO 6000 Blackwell incorporates a Double-Flow-Through cooling design. This design optimizes efficiency and airflow to maintain peak performance, even under sustained 600W power loads. Ensure adequate case ventilation to support this cooling system.



Figure 2: Side view of the NVD RTX PRO 6000 Blackwell Graphics Card, showcasing its Double-Flow-Through cooling design with dual fans.



Figure 3: Front view of the NVD RTX PRO 6000 Blackwell Graphics Card, highlighting the efficient dual fan cooling system.



Figure 4: Top view of the NVD RTX PRO 6000 Blackwell Graphics Card, clearly displaying the 'RTX PRO 6000' model designation.



Figure 5: An example workstation setup demonstrating the NVD RTX PRO 6000 Blackwell Graphics Card integrated into a high-performance computing environment.

MAINTENANCE

To ensure the longevity and optimal performance of your RTX PRO 6000 Blackwell graphics card, regular maintenance is recommended.

- **Dust Removal:** Periodically clean dust from the fans and heatsink using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Airflow:** Ensure your computer case has good airflow to prevent heat buildup. Keep the area around your computer clear of obstructions.
- **Driver Updates:** Regularly check the official NVD website for the latest driver updates to ensure compatibility and performance improvements.

TROUBLESHOOTING

No Display Output

- Verify that the monitor cables are securely connected to the graphics card and the monitor.
- Ensure the graphics card is fully seated in the PCIe slot.
- Confirm that all necessary power cables are connected to the graphics card from the power supply.
- Check if your monitor is set to the correct input source.
- Try connecting to a different display output on the card or a different monitor if available.

Performance Issues / Overheating

- Ensure your system drivers are up to date.
- Check for dust buildup on the graphics card fans and heatsink. Clean if necessary.
- Verify that your computer case has adequate ventilation and that case fans are functioning correctly.
- Monitor GPU temperatures using system monitoring software. If temperatures are consistently high, consider improving case airflow or professional assistance.
- Ensure your power supply unit meets the recommended wattage for your system, especially under load.

SPECIFICATIONS

Feature	Specification
Graphics Coprocessor	RTX PRO 6000 Blackwell
Chipset Brand	NVD
Graphics Card RAM Size	96 GB
Graphics RAM Type	GDDR7
Hardware Platform	PC
Item Weight	4 pounds
Package Dimensions	15 x 7 x 5 inches
Video Output Interface	DisplayPort 2.1
Power Consumption (Max)	Up to 600W

Feature	Specification
PCIe Interface	PCIe Gen 5

WARRANTY INFORMATION

The NVD RTX PRO 6000 Blackwell Graphics Card comes with a **3-Year Manufacturer's Warranty**. Please retain your proof of purchase for warranty claims. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by accident, misuse, unauthorized modification, or improper installation.

SUPPORT

For technical support, driver downloads, or further assistance, please visit the official NVD website or contact Empowered PC customer service. Ensure you have your product model and serial number available when seeking support.