ASUS PRIME-RX9070XT-O16G

ASUS Prime Radeon™ RX 9070 XT OC Edition Graphics Card User Manual

Model: PRIME-RX9070XT-O16G

1. Overview

The ASUS Prime Radeon™ RX 9070 XT OC Edition Graphics Card is engineered for high-performance computing and gaming. Featuring PCIe 5.0, HDMI/DP 2.1, a 2.5-slot design, axial-tech fans, dual ball fan bearings, dual BIOS, and ASUS GPU Guard, this card delivers robust performance and reliability. It is designed to provide optimal heat transfer and enhanced durability for demanding applications.

- **Axial-tech Fans:** Features a smaller fan hub for longer blades and a barrier ring to increase downward air pressure, improving cooling efficiency.
- **Phase-change GPU Thermal Pad:** Ensures optimal heat transfer by effectively filling gaps between the GPU and thermal module, lowering GPU temperatures.
- **2.5-Slot Design:** Offers broad compatibility with various PC builds while maintaining effective cooling.
- **Dual-Ball Fan Bearings:** Designed for durability, lasting up to twice as long as conventional sleeve bearings.
- **0dB Technology:** Allows for silent operation during light gaming or low-load tasks by stopping fans when GPU temperatures are below 55°C.
- **Dual BIOS:** Provides selectable performance and quiet modes for flexible operation.
- **ASUS GPU Guard:** Applies adhesive to secure all four corners of the GPU, reducing the risk of cracks.
- **Protective Backplate:** Reinforces the PCB for structural rigidity, preventing flex and protecting components.

2. Product Features

2.1 Cooling System

The graphics card incorporates advanced cooling technologies to maintain optimal temperatures and ensure stable performance.

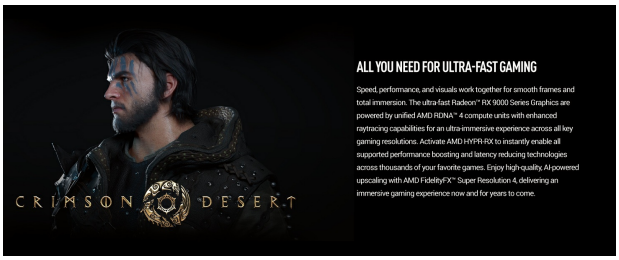

Image: Detailed view of the cooling system, highlighting the phase-change GPU thermal pad, axial-tech fan design, and 0dB technology.

Image: Front view of the graphics card, showcasing the three axial-tech fans.

- **Phase-Change GPU Thermal Pad:** This premium thermal pad melts to fill microscopic gaps between the GPU and the thermal module, maximizing thermal conductivity and heat dissipation.
- **Axial-Tech Fan Design:** The fans feature a smaller hub to accommodate longer blades and a barrier ring that concentrates air pressure downwards, enhancing airflow through the heatsink.
- **0dB Technology:** For quiet operation during less demanding tasks, the fans automatically stop when the GPU temperature is below 55°C and restart above 60°C, balancing performance and acoustics.

2.2 Robust Design & Reliability

The card's construction emphasizes durability and longevity, ensuring stable operation over time.

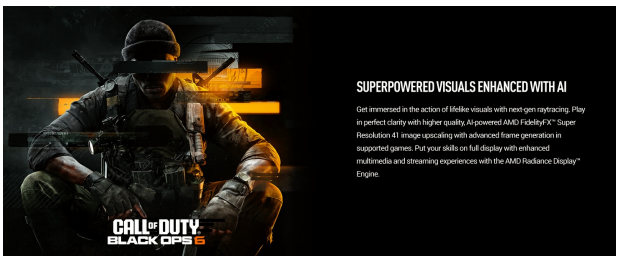

Image: Overview of reliability features, including GPU protection, the protective backplate, and dual ball fan bearings.

Image: Rear view of the graphics card, highlighting the robust protective backplate.

- **ASUS GPU Guard:** This integrated guard applies adhesive to all four corners of the GPU die, significantly reducing the risk of cracks from physical stress.
- **Protective Backplate:** A sturdy backplate reinforces the PCB, preventing flex and protecting sensitive components and trace pathways from damage.
- **Dual-Ball Fan Bearings:** These bearings offer superior durability and a longer lifespan compared to traditional sleeve bearing designs, ensuring consistent fan performance.
- **2.5-Slot Design:** The compact 2.5-slot form factor enhances compatibility with a wider range of PC cases, including small-form-factor builds, without compromising cooling performance.

2.3 Dual BIOS for Flexible Operation

The graphics card features a Dual BIOS switch, allowing users to select between two distinct operating modes.

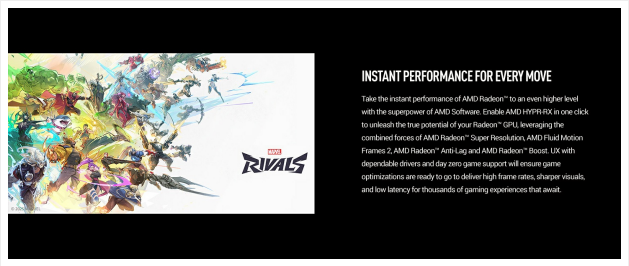

Image: Close-up of the Dual BIOS switch, indicating Performance (P) and Quiet (Q) modes.

- **Performance Mode:** Maximizes cooling potential with a more aggressive fan curve, ideal for sustained high-load scenarios.
- **Quiet Mode:** Utilizes a less aggressive fan curve for quieter operation, suitable for users prioritizing low noise levels without altering power settings.

3. Setup & Installation

Proper installation is crucial for optimal performance and system stability. Always ensure your system is powered off and unplugged before handling internal components.

3.1 System Requirements

- **Motherboard:** PCI Express 5.0 x16 slot.
- **Power Supply:** Minimum 750W recommended (refer to PSU Companion image for guidance).
- **Case:** Sufficient clearance for a 2.5-slot card (12.3 x 5.1 x 2 inches).

Image: The graphics card paired with a recommended ASUS Prime 850W/750W Gold power supply.

3.2 Physical Installation

1. Turn off your computer and unplug the power cord.
2. Open your PC case and locate the PCI Express 5.0 x16 slot on your motherboard.
3. Remove any expansion slot covers that obstruct the installation area for the graphics card.
4. Carefully insert the graphics card into the PCIe x16 slot until it is fully seated and the retention clip locks into place.
5. Secure the graphics card to the case with screws.
6. Connect the two 8-pin power connectors from your power supply to the corresponding ports on the graphics card. Ensure full insertion.
7. Close your PC case and reconnect the power cord.

3.3 Driver Installation

After physical installation, power on your computer and install the latest AMD Radeon drivers from the official ASUS support website or AMD's website for optimal performance and feature access.

4. Operating Modes

The Dual BIOS feature allows you to switch between two modes to suit your preferences for performance or acoustics.

- **Performance (P) Mode:** This mode prioritizes maximum cooling and clock speeds for the highest possible gaming and application performance. The fan curve is more aggressive to dissipate heat effectively.
- **Quiet (Q) Mode:** This mode optimizes the fan curve for reduced noise levels, providing a quieter computing experience without significantly impacting power settings.

To switch modes, locate the physical switch on the graphics card (refer to the 'Dual BIOS' image in Section 2.3). Ensure your system is powered off before changing the switch position.

5. Software & Utilities

Enhance your graphics card experience with dedicated software tools.

Image: Software ecosystem for the graphics card, featuring GPU Tweak III for tuning and a complimentary Adobe Creative Cloud membership.

- **GPU Tweak III:** This ultimate GPU tuning tool from ASUS allows for easy overclocking, cooling control, and real-time monitoring of your graphics card's performance. Download it from the official ASUS website.

- **Adobe Creative Cloud:** Eligible purchases may include a complimentary one-month membership to Adobe Creative Cloud All Apps and Adobe Substance 3D. Refer to the product packaging or ASUS website for redemption details.

6. Technical Specifications

Feature	Specification
Max Screen Resolution	7680x4320 Pixels
Memory Speed	4000 MHz
Graphics Coprocessor	AMD RX9070
Chipset Brand	AMD
Card Description	AMD Radeon RX 9070 XT with 16GB GDDR6, 4000MHz boost clock
Graphics Card Ram Size	16 GB
Brand	ASUS
Series	PRIME-RX9070XT-O16G
Item model number	PRIME-RX9070XT-O16G
Item Weight	3.31 pounds
Product Dimensions	12.3 x 5.1 x 2 inches
Color	BLACK
Manufacturer	ASUS
ASIN	B0DRRMZDH6
Date First Available	March 6, 2025
Video Output Interface	Native DisplayPort 2.1a x 3, Native HDMI 2.1b

7. Troubleshooting

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

- **No Display/Black Screen:** Ensure the graphics card is fully seated in the PCIe slot and all power connectors are securely attached. Verify your monitor is connected to the graphics card and not the motherboard's integrated graphics ports.
- **Driver Issues:** Uninstall existing graphics drivers using a utility like Display Driver Uninstaller (DDU) in Safe Mode, then perform a clean installation of the latest drivers from the ASUS support website.
- **Performance Problems:** Check for adequate system cooling and ensure your PC case has good airflow. Monitor GPU temperatures using software like GPU Tweak III. Ensure your power supply meets the recommended wattage.
- **Fan Noise:** If fan noise is excessive, consider switching to Quiet Mode via the Dual BIOS switch (ensure PC is off). Adjust fan curves using GPU Tweak III for a custom balance of cooling and acoustics.
- **System Instability/Crashes:** Ensure all system components (CPU, RAM, motherboard) are compatible and drivers are up-to-date. Check for BIOS updates for your motherboard.

8. Warranty & Support

Your ASUS Prime Radeon™ RX 9070 XT OC Edition Graphics Card comes with a manufacturer's warranty. For detailed warranty information, please refer to the documentation included in your product packaging or visit the official ASUS support website.

- **Included in the Box:** PRIME-RX9070XT-O16G, Thank you card, Speedsetup Manual.
- **Online Support:** For the latest drivers, FAQs, and troubleshooting guides, visit the ASUS support website.

9. Visual Guide

9.1 Product Images

Image: Angled view of the ASUS Prime Radeon RX 9070 XT graphics card, showcasing its sleek design.

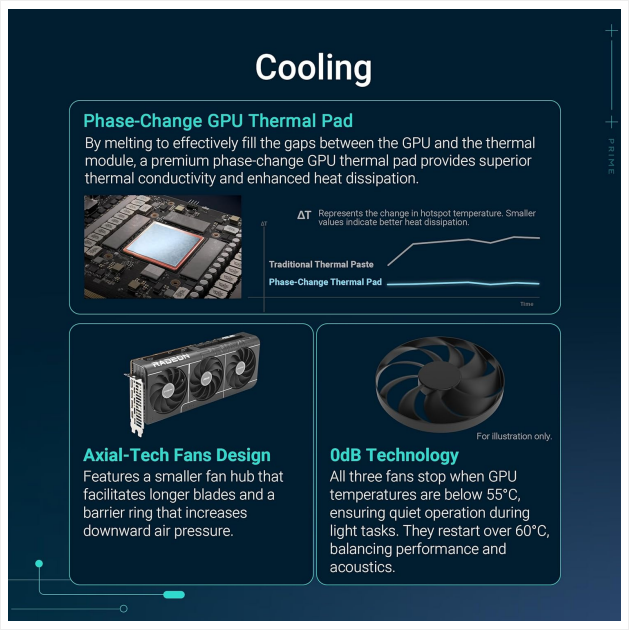

Image: Angled top-down view of the graphics card, highlighting the fan array and shroud details.

Image: Angled view from the front-bottom, showing the heatsink fins and fan blades.

Image: Top view of the graphics card, displaying the 'RADEON' and 'PRIME' branding.

Image: Angled back view, emphasizing the protective backplate and GPU mounting bracket.

Image: Side view of the graphics card, clearly showing the dual 8-pin power connectors.

Image: Rear I/O panel, detailing the DisplayPort 2.1a and HDMI 2.1b output ports.

9.2 Official Product Videos

Video: "Prime Radeon RX 9070" - An official video from ASUS Computer International Direct showcasing the Prime Radeon RX 9070 graphics card.

Video: "Prime Radeon RX 9070 XT" - An official video from ASUS Computer International Direct highlighting the features of the Prime Radeon RX 9070 XT.