

ASUS TUF-RX9070XT-O16G-GAMING

ASUS TUF Gaming Radeon RX 9070 XT OC Edition 16GB GDDR6 Graphics Card User Manual

Model: TUF-RX9070XT-O16G-GAMING

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, maintenance, and troubleshooting of your ASUS TUF Gaming Radeon RX 9070 XT OC Edition 16GB GDDR6 Graphics Card. Please read this manual thoroughly before using the product to ensure proper functionality and longevity.



Image 1.1: ASUS TUF Gaming Radeon RX 9070 XT OC Edition Graphics Card and its retail packaging.

2. PRODUCT OVERVIEW

The ASUS TUF Gaming Radeon RX 9070 XT OC Edition is a high-performance graphics card designed for demanding computing tasks and gaming. It features advanced cooling solutions and durable components to ensure stable operation.

Key Features:

- **PCIe® 5.0 Interface:** Provides high-bandwidth connectivity for optimal performance.
- **16GB GDDR6 Memory:** Ample memory for high-resolution textures and complex scenes.
- **HDMI/DP 2.1 Outputs:** Supports multiple high-resolution displays.
- **3.125-slot Design:** Robust physical design for enhanced cooling.
- **Military-Grade Components:** Ensures rock-solid power delivery and extended lifespan.
- **Protective PCB Coating:** Guards against environmental factors like moisture and dust.
- **Phase-Change GPU Thermal Pad:** Improves thermal conductivity and heat dissipation.

- **Axial-tech Fans with Dual Ball Bearings:** Enhanced airflow and durability.
- **MaxContact Design:** Increases heat spreader contact with the GPU for improved thermal transfer.
- **Vented Exoskeleton:** High-quality shroud and backplate with vents for better heat dissipation.

Component Details:

Military-Grade Components





TUF Chokes & MOSFETs

Certified military-grade TUF chokes and MOSFETs deliver rock-solid power to the GPU, which can help improve system stability.

TUF Capacitors

TUF 5K black metallic capacitors provide 52% wider temperature tolerance and a 2.5X longer lifespan than standard capacitors.

 Vibration	 High Temperature	 Low Temperature
 Temperature Shock	 Humidity	 Salt fog

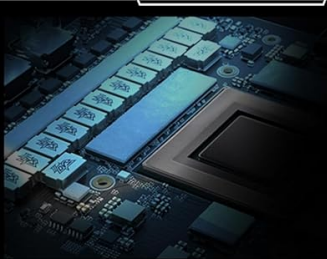
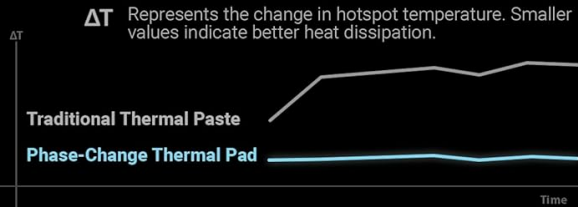
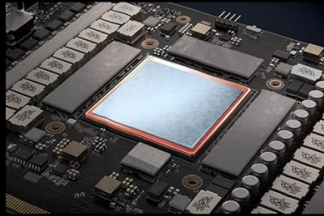
Image 2.1: Military-Grade Components. TUF Chokes and MOSFETs provide stable power, while TUF 5K metallic capacitors offer increased temperature tolerance and lifespan.

Ultimate Durability



Phase-Change GPU Thermal Pad

By melting to effectively fill the gaps between the GPU and the thermal module, a premium phase-change GPU thermal pad provides superior thermal conductivity and enhanced heat dissipation.



Protective PCB Coating

A protective conformal coating helps protect against short-circuits caused by moisture, dust or debris.



Dual Ball Fan Bearings

Offers two times extensive lifespan, ensuring long-lasting, reliable and quiet cooling.

Image 2.2: Ultimate Durability Features. The Phase-Change GPU Thermal Pad ensures optimal thermal performance, the Protective PCB Coating prevents short circuits, and Dual Ball Fan Bearings extend fan lifespan.

Cooling Mastery

TUF
GAMING
STAY TOUGH.



Image 2.3: Cooling Mastery. MaxContact Design enhances heat transfer, Axial-tech fans improve airflow, and the Vented Exoskeleton aids heat dissipation.

3. SETUP AND INSTALLATION

Proper installation is crucial for the performance and stability of your graphics card. Always ensure your system is powered off and unplugged before beginning installation.

3.1 System Requirements

- PCI Express® 5.0 compliant motherboard with one x16 graphics slot.
- Minimum 750W power supply unit (PSU) recommended. For optimal performance and stability, a TUF Gaming Gold 850W PSU is suggested.
- Sufficient space within your PC case for a 3.125-slot graphics card.
- Compatible operating system (e.g., Windows 10/11 64-bit).

Perfect PSU Companion

TUF Gaming Gold 850W/750W



Built with high-quality components and military-grade capacitors, the TUF Gaming Gold Series PSUs are perfect for TUF Gaming Radeon RX 9000 Series graphics cards, offering exceptional durability and reliable power delivery.



Image 3.1: The graphics card paired with a recommended TUF Gaming Gold PSU for reliable power delivery.

3.2 Physical Installation

1. **Prepare Your System:** Power off your computer and unplug all cables. Open your PC case.
2. **Locate PCIe Slot:** Identify an available PCI Express x16 slot on your motherboard.
3. **Remove Slot Covers:** Remove the necessary expansion slot covers from your PC case.
4. **Insert Graphics Card:** 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 engages.
5. **Secure the Card:** Fasten the graphics card to the PC case using screws. Due to the card's size and weight, it is highly recommended to use the included **TUF Gaming Graphics Card Holder** or a third-party sag bracket to prevent GPU sag.
6. **Connect Power Cables:** Connect the required PCIe power cables from your power supply to the graphics card's power connectors. Refer to Image 3.2 for connector locations.



Image 3.2: Power connector locations on the graphics card.

3.3 Connecting Displays

Connect your display cables (HDMI or DisplayPort) to the corresponding ports on the graphics card. This card supports Native DisplayPort 2.1a x 3 and Native HDMI 2.1b.

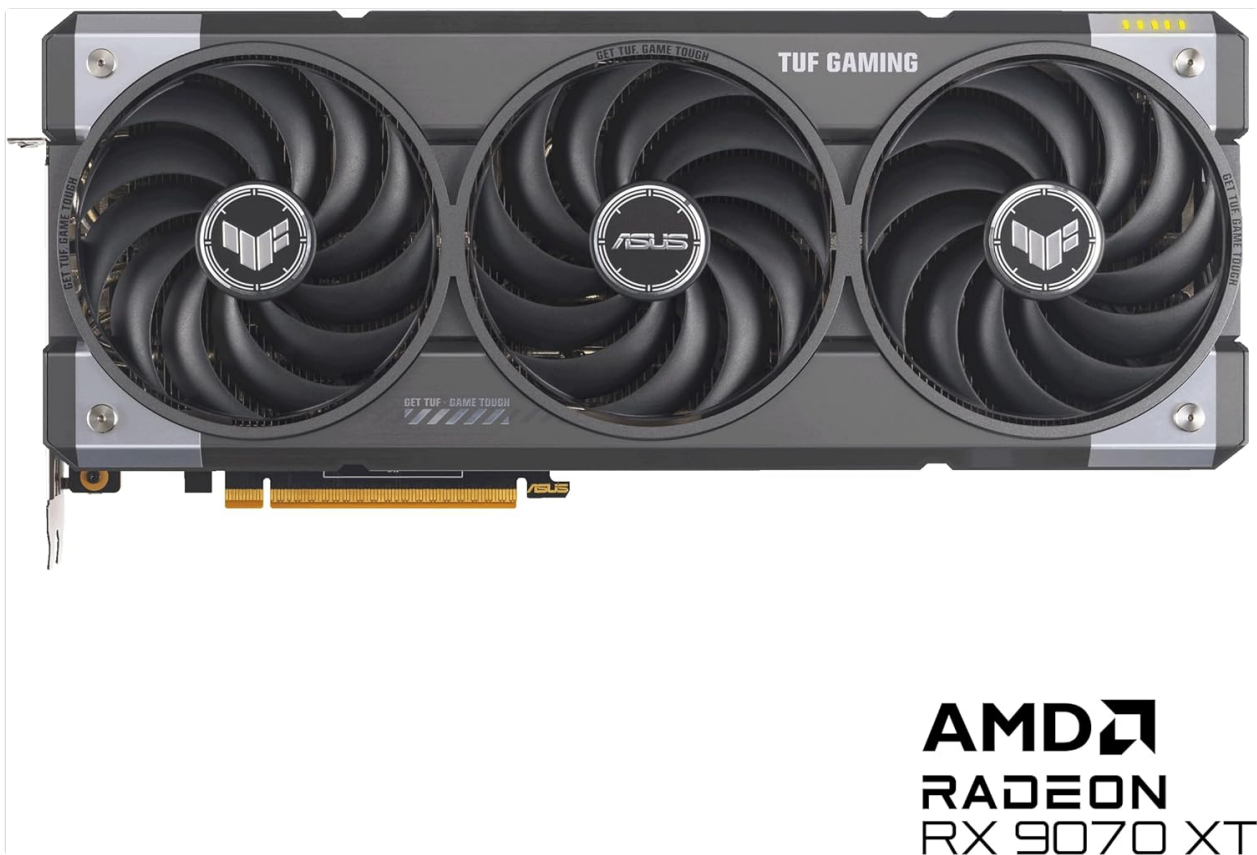


Image 3.3: Display output ports (HDMI and DisplayPort) on the graphics card.

4. OPERATING INSTRUCTIONS

After physical installation, software setup is required to utilize your graphics card fully.

4.1 Driver Installation

1. **Power On:** Close your PC case, plug in all cables, and power on your computer.
2. **Initial Boot:** Your system may boot using generic display drivers.
3. **Download Drivers:** Visit the official ASUS support website (www.asus.com/support/). Navigate to 'Graphics Cards', select your model (TUF-RX9070XT-O16G-GAMING), and download the latest AMD Radeon drivers for your operating system.
4. **Install Drivers:** Run the downloaded driver installer and follow the on-screen prompts. A system restart

may be required.

4.2 Software Utilities

ASUS provides software to enhance your graphics card experience:

- **GPU Tweak III:** This utility allows for monitoring, overclocking, and fine-tuning of your graphics card's performance, cooling, and power settings.
- **AMD Adrenaline Software:** Provides comprehensive control over your AMD Radeon graphics card, including game optimization, display settings, and advanced features like AMD FidelityFX Super Resolution and AMD HYPR-RX.



The image is a promotional graphic for ASUS software utilities. It features a dark background with a large, stylized 'Software' title in white. Below the title, a tagline reads: 'Hardware and software come together to let you full customize your experience and get the most out of your graphics card.' On the right side, there is a detailed image of an ASUS TUF Gaming Radeon graphics card, showing its triple-fan design and 'RADEON' branding. On the left side, there are two callout boxes. The top box is for 'GPU Tweak III', described as the 'Ultimate GPU Tuning tool to make overclocking, cooling control and monitoring your graphics card even easier.' The bottom box is for 'One Month of Free Adobe Creative Cloud', offering a complimentary membership to Adobe Creative Cloud apps and Adobe Substance 3D with the purchase of selected ASUS products. Logos for 'GT III' and '1 MONTHS FREE Adobe Creative Cloud' are also present.

Software

Hardware and software come together to let you full customize your experience and get the most out of your graphics card.

GPU Tweak III

Ultimate GPU Tuning tool to make overclocking, cooling control and monitoring your graphics card even easier .

One Month of Free Adobe Creative Cloud

Get complimentary membership to Adobe Creative Cloud all Apps and Adobe Substance 3D with the purchase of selected ASUS products.

1 MONTHS FREE
Adobe Creative Cloud

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STAY TOUGH.

RADEON

Image 4.1: Software integration for customization and enhanced functionality.

5. MAINTENANCE

Regular maintenance helps ensure optimal performance and extends the lifespan of your graphics card.

- **Dust Removal:** Periodically clean dust from the fans and heatsink using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Fan Inspection:** Check the axial-tech fans for any obstructions or unusual noises. The dual ball bearings

are designed for long-lasting, reliable operation.

- **Software Updates:** Keep your graphics drivers and utility software (e.g., GPU Tweak III, AMD Adrenaline) updated to benefit from performance improvements and bug fixes.
- **Environmental Protection:** The protective PCB coating helps guard against moisture and dust, but avoid exposing the card to extreme conditions.

6. TROUBLESHOOTING

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

- **No Display Output:**
 - Ensure the monitor is connected to the graphics card, not the motherboard's integrated graphics.
 - Verify all power cables are securely connected to the graphics card and PSU.
 - Reseat the graphics card in its PCIe slot.
 - Test with a different display cable or monitor.
- **Driver Issues:**
 - Perform a clean installation of the latest graphics drivers from the ASUS support website.
 - If issues persist, try an older, stable driver version.
- **Overheating:**
 - Ensure adequate airflow within your PC case.
 - Clean dust from the graphics card's fans and heatsink.
 - Monitor temperatures using GPU Tweak III or AMD Adrenaline software.
- **System Instability/Crashes:**
 - Ensure your power supply unit meets the recommended wattage.
 - Check for system memory (RAM) stability.
 - If overclocked, revert to default settings.

For further assistance, please contact ASUS customer support or visit their official support website.

7. SPECIFICATIONS

Feature	Specification
Model Number	TUF-RX9070XT-O16G-GAMING
Graphics Coprocessor	AMD RX9070
Chipset Brand	AMD
Graphics Card RAM Size	16 GB GDDR6
Memory Speed	4000 MHz
Max Screen Resolution	7680x4320 Pixels
Video Output Interface	Native DisplayPort 2.1a x 3, Native HDMI 2.1b

Item Weight	5.66 pounds
Package Dimensions	16.85 x 9.06 x 5 inches
Color	BLACK

8. WARRANTY AND SUPPORT

Your ASUS TUF Gaming Radeon RX 9070 XT OC Edition Graphics Card comes with a **TUF Certificate of Reliability**, signifying its adherence to stringent quality standards.




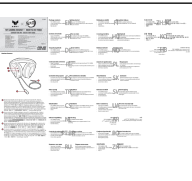


For warranty information, technical support, driver downloads, and software updates, please visit the official ASUS support website:

www.asus.com/support/

Please have your product model number (TUF-RX9070XT-O16G-GAMING) and serial number ready when contacting support.



Image 8.1: Included accessories, including the TUF Certificate of Reliability and Speedsetup Manual.

	<p>ASUS TUF Gaming GeForce RTX 3070 Ti OC Edition Graphics Card - Product Information</p> <p>Detailed information about the ASUS TUF Gaming GeForce RTX 3070 Ti OC Edition Graphics Card, including specifications, features, and product details. Learn about its NVIDIA Ampere architecture, Axial-tech fan design, and military-grade components.</p>
	<p>ASUS TUF Gaming Power Supply Unit Quick Start Guide</p> <p>Quick start guide for the ASUS TUF Gaming Power Supply Unit, detailing installation, product overview, and safety information. Available in multiple languages.</p>
	<p>ASUS TUF Gaming GeForce RTX 3060 Ti Graphics Card - Built TUF</p> <p>Explore the ASUS TUF Gaming GeForce RTX 3060 Ti graphics card, featuring NVIDIA Ampere architecture, advanced cooling, and robust components for superior gaming and creative performance. Detailed specifications and features.</p>
	<p>ASUS TUF Gaming H1 Headset X Kimetsu no Yaiba - Quick Start Guide</p> <p>Quick start guide for the ASUS TUF Gaming H1 headset, covering package contents, setup instructions, headset features, regulatory compliance, disposal, and support information.</p>
	<p>ASUS TUF Gaming Power Supply Unit Quick Start Guide</p> <p>This guide provides essential information for the ASUS TUF Gaming Power Supply Unit, covering product overview, installation steps, and safety precautions for a smooth and secure setup.</p>
	<p>ASUS TUF GAMING Z490-PLUS Motherboard User Manual</p> <p>Detailed user manual for the ASUS TUF GAMING Z490-PLUS motherboard, covering product introduction, basic installation, BIOS and RAID support, specifications, package contents, and safety information. Includes hardware setup procedures and component details.</p>