

## ASUS GTX650-DC-1GD5

# ASUS GTX650-DC-1GD5 Graphics Card User Manual

Model: GTX650-DC-1GD5

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## 1. INTRODUCTION

This user manual provides detailed instructions for the installation, operation, and maintenance of your ASUS GTX650-DC-1GD5 Graphics Card. Please read this manual thoroughly before installing and using the product to ensure proper functionality and to maximize its lifespan. Keep this manual for future reference.

## 2. PRODUCT OVERVIEW

The ASUS GTX650-DC-1GD5 is a high-performance graphics card designed to enhance your computing experience, particularly for gaming and multimedia applications. It features 1GB GDDR5 memory and supports DirectX® 11 & OpenGL® 4.2. Key technologies include ASUS's unique DirectCU thermal design for efficient cooling and DIGI+ VRM with Super Alloy Power for enhanced durability and overclocking stability.

### 2.1 Key Features

- **ASUS DirectCU Thermal Design:** Utilizes all-copper heat pipes that directly contact the GPU, resulting in up to 20% cooler operation compared to reference designs.
- **DIGI+ VRM with Super Alloy Power:** Delivers precise digital power control and enhanced durability, contributing to stable overclocking and a longer product lifespan.
- **Multi-Display Support:** Capable of supporting up to 4 HD displays with NVIDIA Surround technology, providing an immersive visual experience.
- **GPU Tweak Utility:** ASUS exclusive software for intuitive tweaking and monitoring of graphics card parameters.

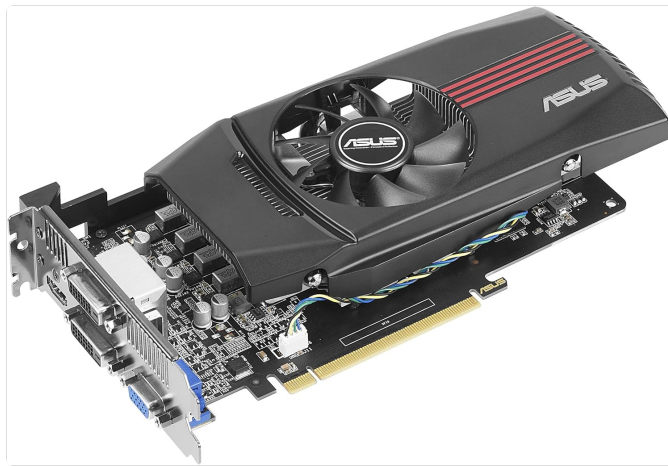


Figure 2.1: Angled view of the ASUS GTX650-DC-1GD5 Graphics Card, showcasing its cooling fan and heatsink design.

## 3. SETUP & INSTALLATION

### 3.1 Before You Begin

Ensure your system meets the minimum requirements for the graphics card. This includes a compatible motherboard with a PCI Express x16 slot, an adequate power supply unit (PSU), and sufficient space within your PC case.

- Turn off your computer and unplug the power cord from the wall outlet.
- Open your computer case.
- Ground yourself to prevent electrostatic discharge (ESD) by touching a metal part of your computer chassis.

### 3.2 Hardware Installation

1. Locate an available PCI Express x16 slot on your motherboard.
2. Remove the metal bracket cover from the back of your PC case corresponding to the chosen slot.
3. Carefully align the graphics card with the PCIe slot and press it down firmly until it is securely seated. Ensure the retention clip on the motherboard clicks into place.
4. Secure the graphics card to the case with a screw.
5. Connect any necessary PCIe power connectors from your PSU to the graphics card (refer to your PSU manual for connector types).
6. Close your computer case and reconnect the power cord and display cables.



Figure 3.1: Top-down view of the ASUS GTX650-DC-1GD5 Graphics Card, showing the fan and PCB layout, useful for identifying connection points.

### 3.3 Driver Installation

1. Boot your computer. Windows will typically install a basic display driver.
2. Insert the driver CD that came with your graphics card into your optical drive, or download the latest drivers from the official ASUS support website ([www.asus.com/support/](http://www.asus.com/support/)).
3. Follow the on-screen instructions to complete the driver installation. A restart may be required.

## 4. OPERATING INSTRUCTIONS

### 4.1 Connecting Displays

Connect your monitor(s) to the appropriate output ports on the graphics card (e.g., HDMI, DVI, VGA). The card supports multiple displays simultaneously. Refer to your monitor's manual for specific connection types.

### 4.2 Using ASUS GPU Tweak

The ASUS GPU Tweak utility allows you to monitor and adjust various parameters of your graphics card, such as clock speeds, voltage, and fan performance. This software can be downloaded from the ASUS support website. Use it to optimize performance or fine-tune settings according to your needs.

- **Monitoring:** View real-time information on GPU temperature, clock speed, fan speed, and usage.
- **Overclocking:** Adjust GPU and memory clock speeds to potentially increase performance. Exercise caution when overclocking.
- **Fan Control:** Customize fan profiles to balance cooling performance and noise levels.

## 5. MAINTENANCE

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

### 5.1 Cleaning

- Periodically clean dust from the graphics card's heatsink and fan using compressed air. Ensure the computer is powered off and unplugged before cleaning.
- Hold the fan blades gently to prevent them from spinning rapidly during cleaning, which could damage the bearings.

### 5.2 Driver Updates

Regularly check the ASUS support website or NVIDIA's official website for the latest graphics drivers. Keeping your drivers updated can improve performance, stability, and compatibility with new games and applications.

## 6. TROUBLESHOOTING

If you encounter issues with your graphics card, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No display output	Incorrect cable connection, card not seated properly, power cable not connected.	Ensure display cable is securely connected to both monitor and graphics card. Verify the graphics card is fully seated in the PCIe slot and all power connectors are attached. Test with another monitor or cable if possible.

Problem	Possible Cause	Solution
Driver installation failure	Corrupted download, conflicting old drivers.	Download the driver again from the official ASUS or NVIDIA website. Use a driver uninstaller utility (e.g., DDU) to remove old drivers before attempting a fresh installation.
Poor gaming performance	Outdated drivers, high in-game settings, overheating.	Update graphics drivers to the latest version. Reduce in-game graphics settings. Ensure proper airflow in your PC case and clean the graphics card fan/heatsink. Monitor temperatures using GPU Tweak.
System crashes or freezes	Overheating, unstable overclock, insufficient power.	Check temperatures. If overclocking, revert to default settings. Ensure your PSU provides sufficient wattage for all components.

## 7. SPECIFICATIONS

Feature	Detail
Model Number	GTX650-DC-1GD5
Graphics Coprocessor	Nvidia GeForce
Graphics Processor Manufacturer	NVIDIA
Graphics RAM Size	1 GB GDDR5
Video Output Interface	HDMI, DVI, VGA (specific ports may vary by exact model revision)
Product Dimensions	9.65 x 1.5 x 4.72 inches
Item Weight	1.65 pounds
Date First Available	September 13, 2012
Manufacturer	ASUS

## 8. WARRANTY & SUPPORT

### 8.1 Warranty Information

ASUS products are manufactured to the highest quality standards. For detailed warranty terms and conditions specific to your region and product, please refer to the warranty card included with your product or visit the official ASUS website.

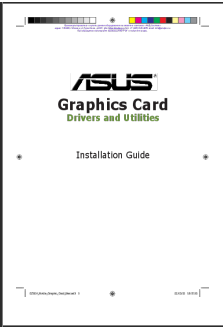
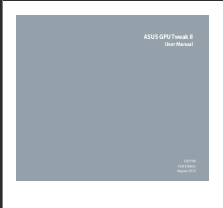
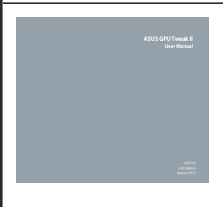

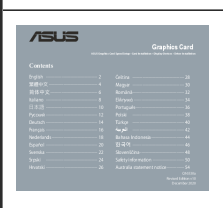
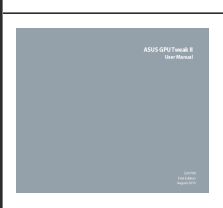
### 8.2 Technical Support

If you encounter issues that cannot be resolved using the troubleshooting guide in this manual, or require further assistance, please contact ASUS technical support. You can find contact information, FAQs, and driver downloads on the official ASUS support website:

[www.asus.com/support/](http://www.asus.com/support/)

Please have your product model number (GTX650-DC-1GD5) and serial number ready when contacting support.

Related Documents - GTX650-DC-1GD5

	<p><a href="#">ASUS Graphics Card Installation Guide: Drivers and Utilities</a></p> <p>This installation guide from ASUS provides comprehensive instructions for installing and managing drivers and utilities for ASUS graphics cards, including the GPU Tweak utility. It covers driver installation and uninstallation for various Windows versions and offers troubleshooting tips.</p>
	<p><a href="#">ASUS GPU Tweak II User Manual: Optimize Graphics Card Performance</a></p> <p>Comprehensive user manual for ASUS GPU Tweak II, detailing how to monitor, tune, and optimize your ASUS graphics card settings for enhanced gaming and performance. Learn about Simple Mode, Professional Mode, and Gaming Booster features.</p>
	<p><a href="#">ASUS GPU Tweak II User Manual: Optimize Your Graphics Card Performance</a></p> <p>Explore the ASUS GPU Tweak II User Manual to learn how to monitor and adjust settings for your ASUS graphics card. Discover Simple Mode, Professional Mode, Gaming Booster, and Live Update features for optimal performance.</p>
	<p><a href="#">ASUS GPU Tweak II User Manual - Optimize Graphics Card Performance</a></p> <p>User manual for ASUS GPU Tweak II, a utility for monitoring and optimizing ASUS graphics card settings. Features Simple Mode, Professional Mode, and Gaming Booster for enhanced gaming performance. Includes system requirements and installation guide.</p>
	<p><a href="#">ASUS Graphics Card Installation and Driver Setup Guide</a></p> <p>Comprehensive guide for installing ASUS Graphics Cards, connecting displays, and setting up drivers. Includes safety information and support links.</p>
	<p><a href="#">ASUS GPU Tweak II User Manual</a></p> <p>A comprehensive user manual for ASUS GPU Tweak II, detailing features like Simple Mode, Professional Mode, Gaming Booster, and Live Update for optimizing ASUS graphics card performance.</p>