Features and Benefits

Full 128-Bit Precision Graphics Pipeline
Enable mathematical computations to maintain high accuracy, resulting in unmatched visual quality.

High-Quality Full-Screen Anti-Aliasing (FSA)
Up to 32x FSA dramatically reduces visual aliasing artifacts in “noisy” at resolutions up to 2560 x 1600, resulting in highly realistic scenes. New rotated-gridd FSA algorithm (RGS FSA) delivers unprecedented quality and performance.

High-Performance, High-Dynamic Range Imaging (HDR)
Sets new standards for image clarity and quality through floating point capabilities in shading, filtering, texturing, and blending. Enables unprecedented quality of rendered images for visual effects processing.

Hardware-Accelerated Pixel Read-Back
Ultra-fast pixel read-back performance delivers massive throughput, more than 10x the performance of previous generations of graphics systems.

NVIDIA CUDA Software Development Tools
• CUDA compiler for NVIDIA GPUs
• NVIDIA CUDA C and Fortran libraries
• NVIDIA CUDA Device Driver APIs
• NVIDIA CUDA SDK and Runtime

High-Level Shader Languages
• Pixel Shader 4.0
• Geometry Shader 4.0
• Hardware-accelerated pixel read-back

NVIDIA Unified Architecture
Integrates unified architecture designed to dynamically allocate geometry, shading, pixel, and compute processing power to deliver optimized GPU performance.

Dual Dual-Link Digital Display Connectors
Dual DVI-I monitors support ultra-high-resolution panels (up to 2560 x 1600 @ 60Hz on each panel)– with results in achieving image quality producing detailed photorealistiic images.

Technical Specifications

NVIDIA QUADRO WORKSTATION GPU
> 128-bit data path
> 128 texture units
> 80 vertex processors
> 40 pixel processors
> TDP 250W

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Essential for Microsoft Windows Vista
Offering an enriched 3D user interface, increased application performance, and the highest image quality. NVIDIA Quadro graphics boards and NVIDIA® OpenGL ICD drivers are optimized for 32- and 64-bit architectures to enable the best Windows Vista experience.

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The NVIDIA Quadro® family of professional solutions takes the leading professional applications to a new level of interactivity by enabling unprecedented capabilities.

The industry’s leading workstation applications leverage these solutions to enable hardware-accelerated features not found in any other professional graphics solution.

The Quadro professional products include a set of industry specialty solutions that have been architected to enable advanced imaging visualization and broadcast applications - from multi-system scalability and synchronization to uncompressed 12-bit HD-SDI video output.
The Definition of Performance. The Standard for Quality.

Ground-breaking Unified Architecture Delivers Unprecedented Performance

The latest NVIDIA Quadro architecture takes application performance to new levels by featuring the industry’s first unified architecture. Designed to dynamically allocate geometry, shading, pixel, and compute processing power, the latest NVIDIA Quadro graphics boards deliver optimized Graphics Processing Unit (GPU) performance. The GPU pipeline efficiency is further multiplied by fast 3D and large texture transfers, NVIDIA’s crossbar memory architecture, enabling occlusion culling, textureless depth 2-buffer, and color compression.

These elements combine to achieve unprecedented 3D performance: blazing geometry performance, lightning-fast line performance and massive fill rates powered by a dynamically configurable array of thread processors. With ultra-fast pixel-read-back performance, massive host throughput gains can be achieved for professional applications. However, the true measure of power is application performance and the new NVIDIA Quadro architecture doubles the performance of the previous generation.

Advanced Programmability Empowers a New Class of Applications

The latest NVIDIA Quadro FX graphics solutions are the reference standard for Shader Model 4.0 and next-generation operating systems enabling breakthrough real-time visualization applications. Shading and production rendering are integral functions of the design workflow and NVIDIA Quadro FX provides professionals the tools to shorten the production process and enable faster time to market. The major CAD and DCC application vendors can take full advantage of the programmable NVIDIA Quadro architecture by enabling sophisticated shaders to simulate a virtually unlimited range of physical characteristics, such as lighting effects (dispersion, reflection, refraction, BRDF models) and even physical surface properties (casting effects, porosity, molded surfaces). Real-time shaders allow these effects to be combined and modified interactively, something that is impossible with simple 2D static texture maps.

Full 128-bit Floating Point Precision Delivers the Industry’s Highest Workstation Quality

Sophisticated real-time effects typically involve multiple mathematical operations that demand high precision to maintain image quality. The NVIDIA Quadro architecture features true 128-bit IEEE floating point precision (32-bit fp per component) resulting in the highest level of accuracy and the ultimate in visual quality. The NVIDIA Quadro family delivers true 16-bit and 32-bit floating point formats for accurately matching visual images. All images have a smoother, more appealing variation in color density, which increases visual realism and generates photorealistic rendered images.

Certified for the Highest Quality Experience with the Most Demanding Workstation Applications

The performance and power of the NVIDIA Quadro architecture are built on a solid foundation of quality engineering. This engineering excellence is exemplified by the NVIDIA Unified Driver Architecture (UDA), which is certified for quality by the entire spectrum of CAD and DCC applications.

A QUANTUM LEAP IN VISUAL COMPUTING FOR THE GPU

The NVIDIA Quadro FX 3450 provides a C language environment and tools suite that unchains new capabilities to solve complex visualization challenges such as real-time ray tracing and interactive volume rendering.

C PROGRAMMING ENVIRONMENT FOR THE GPU

The NVIDIA CUDA™ software development kit provides a C language environment and tools suite that unchains new capabilities to solve complex visualization challenges such as real-time ray tracing and interactive volume rendering.

REVELATION ADVANCED VISUALIZATION

NVIDIA Quadro G-Sync II option can be combined with the Quadro FX 5600 or 4600, and G-Sync II can be combined with the FX 5500 to provide advanced multi-system visualization and external signal synchronization.

SCALABLE GRAPHICS PERFORMANCE

NVIDIA Quadro graphics solutions feature NVIDIA’s multi-GPU technology™. A revolutionary platform innovation, G-Sync technology enables professional users to dynamically scale graphic performance, enhance image quality, and expand display real estate by combining multiple NVIDIA Quadro graphics solutions in a single system.

UNCOMPROMISED PROFESSIONAL GRAPHICS TO GO

The NVIDIA Quadro FX professional solutions for mobile workstations deliver the fastest application performance and the highest quality graphics. The NVIDIA Quadro FX mobile solutions enable the leading CAD, DCC, and visualization applications to solve the most complex professional visual computing challenges in a mobile form factor.

INTEGRATED GRAPHICS TO VIDEO SOLUTION

The NVIDIA Quadro SDI solutions are ideal for on-air broadcast professionals across many applications, including virtual set, sports, and weather news systems. The NVIDIA Quadro SDI solution is the industry’s only fully integrated graphics to video out product, and will composite live video footage onto virtual backgrounds and send the result to live video for TV broadcast. The solution also allows film production and post-production professionals to preview the results of 3D comping, editing, and color grading in real time on HD broadcast monitors.

Available NVIDIA Quadro Solutions

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NVIDIA Quadro Family | Sep 2007

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