**Features Benefits**

| 5th-Generation Workstation Graphics Architecture | Enables multi-threaded hardware acceleration of photo-realistic rendering, with features such as advanced lighting, material properties, and surface interactions. |
| 3rd-Generation Vertex and Pixel Programmability | Enables mathematical computations to maintain high accuracy, resulting in unmatched visual quality. |
| Full 128-bit Precision Graphics Pipeline | Enables real-time shader execution with a wide range of effects, including chromatic dispersion, refraction, reflection, and more. |
| 12-bit Subpixel Precision | 12-bit subpixel precision delivers highly accurate geometric curvature, allocating textures, and other rasterization anomalies. |
| 16x Full-Scene Antialiasing (FSAA) | Up to 16x FSAA dramatically reduces visual artifacts or “jaggies” at resolutions up to 3840x2400, resulting in highly realistic scenes. |
| NVIDIA POWERmap® | The NVIDIA patented single-system POWERmap technology allows any application to be projected on a dual-channel powerwall, with sophisticated edge-blending to achieve uniform luminosity. |
| Gamelock / Frameanch® | The NVIDIA Quadro FX 3000G allows applications to synx video刷新 and buffer exchanges across multiple systems to create scalable multi-system reality centers for collaborative engineering and design reviews. |

**NVIDIA Quadro FX Workstation GPU**
- Full 128-bit floating-point precision pipeline
- 12-bit subpixel precision
- 8 pixels per clock rendering engine
- Hardware accelerated antialiasing points & lines
- Hardware OpenGL overlay planes
- Hardware accelerated two-sided lighting
- Hardware accelerated clipping planes
- 3rd-generation occlusion culling
- 36 features per pixel
- OpenGL quad-buffered stereo (4-pin sync connector)
- AGP 6x with Fast Write and 64-bit addressing extended memory

**CINEFX Shading Architecture**
- Fully programmable GPs (OpenGL 1.5/DirectX 9.0 class)
- Long fragment programs (up to 2048 instructions)
- Long vertex programs (up to 65,536 instructions)
- Looping and subroutines (up to 256 loops per vertex program)
- Dynamic flow control
- Conditional execution

**High-Level Shader Languages**
- Optimized compiler for Microsoft HLSL
- OpenGL 1.5 and DirectX 9.0 support
- Open source compiler

**High-Resolution Antialiasing**
- 16x Full-Scene Antialiasing (FSAA): up to 2048x1536 per display or 3640x2400 for single digital display
- 12-bit subpixel sampling precision enhances AA quality

**Application Compatibility**
- Optimized and certified for all leading workstation applications
- Fully compliant with OpenGL 1.5 and DirectX 9.0

**Unified Driver Architecture**
- Single driver supports all products

**NVIDIA Quadro Application Utilities**
- PowerShape (AutoCAD)
- MathWorks (16x max)
- QuadFlow (CAD viewer)

**Operating Systems**
- Windows XP (W32b-certified)
- Windows 2000 (W32b-certified)
- Windows NT
- Windows 98, Windows 95
- Linux—Full OpenGL implementation, complete with NVIDIA and A3D extensions (complete Xfree86 drivers)

**View Architecture**
- Advanced multi-display desktop & application management seamlessly integrated into Microsoft Windows.
- Dual DVI output—Drives two independent digital displays at 3840x2400, or one at 3640x2400
dual-link TMDS—Drive one digital display up to 2048x1536 and another at 1600x1200 simultaneouly
- 400 MHz DDL—Two analog displays up to 2048x1536 @ 850MHz each
- OpenGL CSM support for resolutions up to 3840x2400

**Professional Certifications: CAD**
- Autodesk AutoCAD
- Autodesk Inventor
- Bentley Microstation®
- CO (Create™ SolidDesigner
- Dassault-CASAR
- ESSET Infra
- Helix
- ICPro/E
t- MSC Nastran/Patran
- Plant Designer/Imaginer
- PTC Pro/ENGINEER™
- PTC SolidWorks®
- SDRC I-DEAS® Master Series
- SolidWorks®
- UGS Solid Edge®
- Unigraphics®
- and many more...

**Professional Certifications: DCC**
- Alias/Wavefront Maya®
- Alias/Wavefront StudioTools®
- Discreet 3D max
- NewTek LightWave 3D™
- Side Effects Houdini™
- SOFTWARE 3D
- SOFTWARE 4D
- and many more...

**NVIDIA Quadro FX Series**
- Delivers the fastest application performance and the highest quality workstation graphics.
- Raw performance and quality are only the beginning—NVIDIA Quadro FX takes the leading computer-aided design (CAD) and digital content creation (DCC) applications to a new level of interactivity by enabling unprecedented capabilities in programmability and precision.
- For the first time, styling and production rendering become integral functions of the design workflow, shortening the production process and enabling faster easy-to-market.
NVIDIA QUADRO FX ARCHITECTURE ACHIEVES UNPRECEDEDENT PERFORMANCE

The NVIDIA Quadro FX architecture takes application performance to new levels by featuring an array of parallel vertex engines, a radically new line engine, the industry’s first on-chip vertex cache, and eight fully programmable pixel pipelines coupled to a high-speed graphics DRAM bus. Graphics pipeline efficiency is magnified by NVIDIA’s next-generation crossbar memory architecture, enabling occlusion-culling, lossless depth 2-Duffler, and color compression.

These elements combine to achieve unprecedented 3D primitive performance: 100 million lit and textured triangles per second, five times faster line performance than the NVIDIA Quadro4 professional graphics solutions, and massive fill rate powered by eight pixel pipelines. But the true measure of power is performance—application performance—and the NVIDIA Quadro FX architecture delivers more than double the performance vs. the previous generation.

In addition, all NVIDIA products utilize the NVIDIA Unified Driver Architecture (UDA), which is continually optimized for professional graphics solutions, and massive fill rate powered by eight pixel pipelines. But the true measure of power is application performance—and the NVIDIA Quadro FX architecture delivers more than double the performance vs. the previous generation.

ADVANCED PROGRAMMABILITY EMPowers A NEW CLASS OF APPLICATIONS

The design cycle is a long, iterative process from concept, to modeling, to final production. This final production can require hours of offline CPU rendering. The programmability of the NVIDIA-Quadro FX architecture empowers the industry’s leading OpenGL® and Microsoft® DirectX® workstation applications to now make the production rendering process an integral part of real-time design. This reduces design cycles, increases productivity, and accelerates time to market.

Leading this change in functionality is the major CAD and DCC application vendors, including: SolidWorks®, Alias (Wavefront®, Discreet®, Softimage®) and more. End users can take full advantage of the programmable NVIDIA-Quadro FX architecture by enabling sophisticated shaders to simulate a virtually unlimited range of physical characteristics, such as lighting effects (fresnel effects, chromatic dispersion, reflection, refraction, BRDF1 models, etc.) and even physical surface properties (such as casting effects, glossy, molded surfaces, etc.).

THE DEFINITION OF PERFORMANCE

The Standard for Quality

CERTIFIED FOR THE HIGHEST QUALITY EXPERIENCE WITH THE MOST DEMANDING WORKSTATION APPLICATIONS

The performance and power of the NVIDIA Quadro FX 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

The benefits of Cg

Cg—"C" for graphics—is a high-level, open-standard programming language for OpenGL and DirectX. Leveraging the power of programmable GPUs, using Cg, CAD, and DCC applications enables the creation and integration of real-time photorealistic effects into 3D models, scenes, and designs.

Designers can now interactively modify and view surface finishes on dashboards or hand tools by modifying the staple and surface reflectance; the shear of a character’s skin can be adjusted through a dynamic range from oily to dry by interactively adjusting a few sliders; or objects can be programmed to dynamically self-shadow. Real-time shaders allow these effects to be combined and modified interactively—impossible with 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 FX features 128-bit IEEE floating-point precision, making available millions of colors in a broad dynamic range. This results in the highest level of accuracy and the ultimate in visual quality.

High subpixel precision is another major contributor to image quality, addressing visual anomalies that cause models to “spickel” or “crack.” The NVIDIA Quadro FX virtually eliminates this problem by providing 12 bits of subpixel precision—four times higher precision than the nearest competitive product. Precision continues to be a critical factor when rendering high quality antialiased images—for both line and full-scene antialiasing. The NVIDIA Quadro FX architecture accelerates antialiased points and lines in hardware, and supports up to 16x FSAA. And unlike graphics hardware, NVIDIA Quadro FX products drive up to a phenomenal 3840x2400 resolution.

THE DEFINITION OF PERFORMANCE

THE STANDARD FOR QUALITY

Productivity improvements can be achieved in two ways—through speed, or through efficiency. The right graphics hardware can enable both. Based on a foundation of quality engineering, NVIDIA Quadro FX delivers blistering application performance, unmatched features, and the industry’s highest image quality. Coupled with professional CAD and DCC applications, the NVIDIA Quadro FX makes real-time rendering an integral part of the design workflow, shortening the production process and enabling faster time to market.