NVIDIA Quadro FX 4600

The Revolutionary Visual Computing Solution

NVIDIA Quadro® FX 4600 ultra-high-end graphics solution delivers unprecedented CAD, DCC, and visualization application capabilities.

Ground-breaking NVIDIA® unified architecture dynamically allocates compute, geometry, and shader processing power to efficiently deliver optimized performance. Featuring a 768MB frame buffer with massive memory bandwidth up to 57.6GB/sec., Quadro FX 4600 enables interactive visualization of the largest, 64-bit datasets. Revolutionary NVIDIA® CUDA™ technology provides a simplified computing platform for data-intensive applications using a standard C language interface to solve complex computational problems. The reference standard for Shader Model 4.0, Quadro FX 4600 solution enables next generation ultra-realistic, real-time visualization applications with unprecedented image quality. With two dual-link DVI connectors, NVIDIA Quadro FX 4600 offers the industry's best image quality at resolutions up to 3840 x 2400.

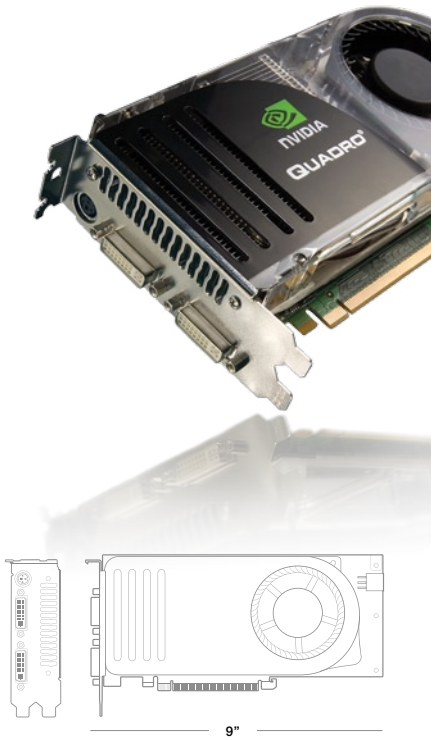
In addition, as a flexible platform, Quadro FX 4600 graphics boards can be paired with NVIDIA Quadro G-Sync and SDI, or integrated in NVIDIA Quadro Plex visual computing system (VCS) to offer best-in-class industry solutions.

The NVIDIA Quadro FX 4600 is the ultra-high-end choice from a wide range of product offerings. The entire NVIDIA Quadro family takes the leading computer-aided design (CAD), digital content creation (DCC), and visualization applications to a new level of interactivity by enabling unprecedented capabilities in programmability and precision. The industry's leading workstation applications leverage this architecture to enable hardware-accelerated features not found in any other professional graphics solution. Featuring NVIDIA Quadro FX 5600, 4600, 5500, 4500 X2, and 4500 at the ultra-high-end, NVIDIA Quadro FX 3500 at the high-end, NVIDIA Quadro FX 3450, 1500, and 1400 at the mid-range, and NVIDIA Quadro FX 560, 550 and 350 at the entry-level, NVIDIA Quadro delivers unmatched workstation performance and quality.

Product Specifications

Form Factor	ATX, 4.38"x 9.0"
Frame Buffer Memory	768MB GDDR3
Memory Interface	384-bit
Memory Bandwidth	57.6GB/sec.
Max Power Consumption	134W
Graphics Bus	PCI Express x16
Display Connectors	DVI-I, DVI-I, Stereo
Dual Link DVI	Yes (2)
Auxiliary Power Connectors	Yes (1)
Number of Slots	2
Thermal Solution	Active Fansink
Genlock/Framelock	Optional
HD SDI	Optional
NVIDIA® SLI™ Technology	Yes

NVIDIA Quadro FX 4600 Key Features and Benefits



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

NVIDIA CUDA GPU computing technology
An innovative combination of GPU computing features that is accessible through a standard C language unleashing entirely new capabilities to solve complex, data intensive problems.

Next-Generation Vertex and Pixel Programmability Shader Model 4.0
Reference standard for shader model 4.0 enabling a higher level of performance and ultra-realistic effects for next generation OpenGL and DirectX 10 industry-leading professional applications.

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.

768MB GDDR3 Frame Buffer with ultra-fast memory bandwidth
Delivers high throughput for interactive visualization of large models and high-performance for real time processing of large textures and frames and enables the highest quality and resolution full-scene antialiasing (FSAA).

Fast 3D Textures
Fast transfer and manipulation of 3D textures resulting in more interactive visualization of large volumetric dataset.

Jumbo 8K Textures Processing
Faster processing of very large textures resulting in higher performances when zooming and panning through high resolution images.

NVIDIA PureVideo Technology
NVIDIA® PureVideo™ technology is the combination of high-definition video processors and software that delivers unprecedented picture clarity, smooth video, accurate color, and precise image scaling for SD and HD video content. Features include, high-quality scaling, spatial temporal de-interlacing, inverse telecine, and high quality HD video playback from DVD.

Dual Dual-Link Digital Display Connectors
Dual dual-link TMDS transmitters support ultra-high-resolution panels (up to 3840 x 2400 @ 24Hz on each panel) -- which result in amazing image quality producing detailed photorealistic images.

NVIDIA SLI Technology
NVIDIA® SLI™ technology enables dynamically scalable graphics performance, enhanced image quality, and expanded display real-estate.

Product Specifications

SUPPORTED PLATFORMS
- > Microsoft® Windows® Vista™ (64-bit and 32-bit)
- > Microsoft Windows XP (64-bit and 32-bit)
- > Microsoft Windows 2000 (32-bit)
- > Linux® - Full OpenGL® implementation, complete with NVIDIA and ARB extensions (64-bit and 32-bit)
- > Solaris®
- > AMD64, Intel EM64T

NVIDIA QUADRO FX 4600 ARCHITECTURE
- > 128-bit color precision
- > Unlimited fragment instruction
- > Unlimited vertex instruction
- > 3D volumetric texture support
- > Single-system powerwall
- > 12 pixels per clock rendering engine
- > Hardware accelerated antialiased points & lines
- > Hardware OpenGL overlay planes
- > Hardware accelerated two-sided lighting
- > Hardware accelerated clipping planes
- > 3rd-generation occlusion culling
- > 16 textures per pixel in fragment programs
- > Window ID clipping functionality
- > Hardware accelerated line stippling

SHADING ARCHITECTURE
- > Full Shader Model 4.0 (OpenGL 2.1/DirectX 10 class)
- > Long fragment programs (unlimited instructions)
- > Long vertex programs (unlimited instructions)
- > Looping and subroutines (up to 256 loops per vertex program)
- > Dynamic flow control
- > Conditional execution

HIGH LEVEL SHADER LANGUAGES
- > Optimized compiler for Cg and Microsoft® HLSL
- > OpenGL 2.1 and DirectX 10 support
- > Open source compiler

HIGH-RESOLUTION ANTIALIASING
- > 12-bit subpixel sampling precision enhances AA quality
- > Rotated Grid Full-Scene Antialiasing (RG FSAA)
- > 16x FSAA dramatically reduces visual aliasing artifacts or “jaggies” at resolution up to 1920x1200

DISPLAY RESOLUTION SUPPORT
- > Dual dual-link DVI-I outputs drive two digital displays at resolutions up to 3840 x 2400 @ 24Hz
- > Internal 400 MHz DACs – Two analog displays up to 2048x1536 @ 75 Hz

NVIEW ARCHITECTURE
- > Advanced multi-display desktop & application management seamlessly integrated into Microsoft Windows.

For more information about NVIDIA Quadro by PNY, visit http://www.pny.com/products/quadro/
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