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NVIDIA Quadro FX 4600 (PCIe x16, 768 MB, Dual Dual-Link DVI, Stereo) Graphics Card   RV706AA

Introduction

The NVIDIA Quadro® FX 4600 professional 3D graphics card brings 128 parallel processing cores and 768 MB of video memory to high-end CAD, DCC, and visualization applications, and two can be configured in dual SLI on the HP xw9400.

Ground-breaking NVIDIA® unified architecture dynamically allocates compute, geometry, and shader processing power to deliver optimized performance. Combining NVIDIA® CUDA™ thread computing technology with the industry's most advanced feature set, including largest and fastest frame buffers, Quadro FX 4600 provides a breakthrough platform to solve the world's most complex problems. The reference standard for Shader Model 4.0, Quadro FX ultra-high-end solutions enables next generation ultra-realistic, real-time visualization applications with unprecedented image quality. As a flexible platform, Quadro FX ultra-high-end graphics cards can be paired with NVIDIA Quadro G-Sync, SDI, or SLI technology, or integrated in NVIDIA Quadro® Plex.

The NVIDIA Quadro FX 4600 graphics solution can be used alone or combined with the new generation NVIDIA Quadro G-Sync (available from a 3rd party) card for advanced multisystem visualization and multi-device film and video environments.

Performance and Features

The Quadro FX 4600 is optimized for High End 3D imaging, including CAD, DCC, medical, scientific, and oil & gas configurations. Combining revolutionary unified architecture and NVIDIA® CUDA™ GPU computing technology, NVIDIA Quadro FX 4600 graphics cards deliver optimized application performance to solve the most complex visual computing problems.

Ground-breaking NVIDIA® unified architecture efficiently delivers up to 2x the application performance

- Industry's first unified architecture designed to dynamically allocate compute, geometry, shading and pixel processing power to deliver optimized GPU performance
- Array of 128 parallel 1.35GHz processor cores harness massive floating point computing power enabling maximum application performance
- Featuring NVIDIA® CUDA™ technology to simultaneously enable high performance computing to solve complex problems

Revolutionary NVIDIA® CUDA™ technology provides a unified computing platform for data-intensive applications

- High performance GPU computing platform solves complex parallel problems 100x faster
- Provides a standard C language interface for a simplified platform to solve complex computational problems
- Featuring the CUDA SDK with industry-leading tools
  - Industry standard C compiler, standard math libraries and dedicated driver for computing on both Linux and Windows
  - Supports hardware debugging and a profiler for program optimization
- Enables new applications with a standard platform for extracting valuable information from massive data sets

The reference standard for Shader Model 4.0 and next generation operating systems enabling breakthrough ultra-realistic, real-time visualization applications

- Unmatched performance and realistic effects for all next-generation OpenGL and Microsoft DirectX 10 industry-leading professional applications
- Essential for accelerating the Windows Vista experience by offering an enriched 3D user interface, increased application performance, and the highest image quality
- Native NVIDIA® OpenGL ICD drivers are optimized for 32- and 64-bit architectures to enable the best Windows and Linux experience

Interactive visualization of massive datasets with unprecedented 32x FSAA image quality

- Massive memory bandwidth up to 67.2GB/sec. enables interactive visualization of the largest, 64-bit datasets
- Full 128-bit floating point pipeline with high dynamic range and breakthrough FSAA, sets the standard for the industry's highest workstation quality
- Dual dual-link DVI outputs enable HD output up to 2560x1600 resolution at amazing frame rates

Flexible platform to deliver CAD, DCC, and visualization professionals best-of-class solutions

- Paired with NVIDIA Quadro® G-Sync (available from a 3rd party) option delivers Frame lock/Genlock functionality for unprecedented levels of realism, visualization and collaborative capabilities
- NVIDIA Quadro® SDI (available from a 3rd party) is the industry-leading integrated graphics-to-video solution for broadcast and video professionals that delivers high performance graphics to uncompressed 12-bit HD SDI, enabling a direct connection to broadcast equipment
- Featuring NVIDIA® SLI™ technology for NVIDIA Quadro® graphics cards is a revolutionary platform innovation that enables professional users to dynamically scale graphics performance, enhance image quality, and expand display

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real estate
- Integrated in NVIDIA Quadro® Plex Visual Computing System (available from a 3rd party) delivers a quantum leap in visual computing, enabling breakthrough levels of capability and productivity from a high density, industry standards-based architecture

Compatibility

The Quadro FX 4600 is supported on the following HP Personal Workstations: xw4600, xw6600, xw8600 and xw9400.

Service and Support

The NVIDIA Quadro FX 4600 card has a one-year limited warranty or the remainder of the warranty of the HP product in which it is installed. Technical support is available seven days a week, 24 hours a day by phone, as well as online support forums. Parts and labor are available on-site within the next business day. Telephone support is available for parts diagnosis and installation. Certain restrictions and exclusions apply.

Technical Specifications

Graphics Controller	NVIDIA Quadro FX 4600 graphics card
Bus Type	PCI Express x16
Memory	768 MB GDDR3 SDRAM unified graphics memory
Connectors	2 Dual-Link DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output, DVI-I to VGA adapters included
Maximum Resolution	Dual integrated display controllers supporting up to 2560x1600 @ 60Hz (both analog and digital) on both displays
RAMDAC	Dual 400 MHz integrated
Image Quality Features	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 Output	Dual integrated display controllers supporting up to 2560x1600 @ 60Hz (both analog and digital) on both displays
Shading Architecture	Fully programmable GPU (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
Supported Graphics APIs	OpenGL 2.1 ICD with immediate mode support for all OGL primitive types DirectX 9.0c
Available Graphics Drivers	Genuine Windows Vista Business (64-bit and 32-bit) Microsoft Windows XP Professional (64-bit and 32-bit) Red Hat Enterprise Linux(RHEL) WS3, WS4 & 5 Desktop/Workstation HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html Novell SUSE Linux Enterprise drivers may be obtained from: ftp://download.nvidia.com/novell or http://www.nvidia.com
High-Resolution Antialiasing	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 nView Architecture: Advanced multi-display desktop & application management seamlessly integrated into Microsoft Windows®.
High-level Shader Languages	Optimized compiler for Cg and Microsoft® HLSL OpenGL 2.1 and DirectX 9.0c support Open source compiler