NVIDIA QUADRO FX 1500

The Definition of Performance
The Standard for Quality

NVIDIA Quadro® FX 1500 graphics board is the industry leading mid-range professional graphics solution for CAD, DCC, and visualization applications.

NVIDIA Quadro FX 1500 mid-range graphics delivers unprecedented price/performance. The revolutionary new architecture increases raw geometry and fill rate performance over previous generation products and delivers 40GB/sec. memory bandwidth with support for 256MB ultra-fast GDDR3 memory. NVIDIA Quadro FX 1500 provides the optimal blend of quality, precision, performance, programmability, and price for all professional CAD, DCC, and visualization applications. Featuring HD out and two dual-link DVI connectors, NVIDIA Quadro FX 1500 offers the industry's best image quality at resolutions up to 3840 x 2400.

The NVIDIA Quadro FX family delivers on the promise of the industry's fastest PCI Express® workstation graphics solutions. Featuring NVIDIA Quadro FX 5500, FX 4500 X2, and FX 4500 at the ultra-high-end, NVIDIA Quadro FX 3500 and FX 3450 at the high-end, NVIDIA Quadro FX 1500 and FX 1400 at the mid-range, and NVIDIA Quadro FX 560, FX 550, and FX 350

at the entry-level, NVIDIA Quadro FX delivers unmatched workstation performance and quality. CAD, DCC, and visualization applications acquire 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 time to market.

PRODUCT SPECIFICATIONS

Form Factor	ATX, 4.38" x 8.0"
Frame Buffer Memory	256MB GDDR3
Memory Interface	256-bit
Memory Bandwidth	40.0GB/sec.
Max Power Consumption	65W
Graphics Bus	PCI Express x16
Display Connectors	DVI-I, DVI-I, 7-Pin HDTV Out
Dual Link DVI	Yes (2)
Auxiliary Power Connectors	Not Required
Number of Slots	1
Thermal Solution	Active Fansink

NVIDIA Quadro FX 1500 Key Features and Benefits

Highest Workstation Application Performance	Next-generation architecture enables over 2x improvement in geometry and fill rates with the industry's highest performance for professional CAD, DCC, and visualization applications
Unmatched Color Precision	Full 128-bit precision graphics pipeline enables sophisticated mathematical computations to maintain high accuracy, resulting in unmatched visual quality. Full IEEE 32-bit floating-point precision per color component (RGBA) delivers millions of color variations with the broadest dynamic range.
Next-Generation Vertex and Pixel Programmability	NVIDIA Quadro FX GPUs introduce infinite length vertex programs and dynamic flow control, removing the previous limits on complexity and structure of shader programs. With full support for Vertex and Shader Model 3.0, NVIDIA Quadro FX GPUs deliver sophisticated effects never before imagined for real-time graphics systems.
Unparalleled Subpixel Precision	12-bit subpixel precision delivers high geometric accuracy, eliminating spreckles, cracks, and other rasterization anomalies.
Hardware-Accelerated Pixel Read-Back	Greater than 2.4GB/sec., pixel read-back performance delivers massive host throughput, more that 10x the performance of previous generation graphics systems.
Rotated Grid FSAA (FSAA)	RG FSAA sampling algorithm introduces far greater sophistication in the sampling pattern, significantly increasing color accuracy and visual quality for edges and lines, reducing "jaggies" while maintaining performance.
High Precision Dynamic Range Imaging (HPDR) technology	Sets new standards for image clarity and quality through floating point capabilities in shading, filtering, texturing, and blending. Enables unprecedented rendered image quality for visual effects processing.
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.
Integrated HD Component/S-Video	7-pin HDTV out connector and break-out cable provide graphics to component (YPrPb) or S video out to enables real-time output to HDTVs, broadcast monitors, or Video recorders for digital video, medical imaging, and simulation capture. **Supported Formats:** Component Mode: YPrPB – SMPTE 1080i, 720p, 480p, 576p Composite Mode: NTSC/PAL 480i, 576i

PRODUCT SPECIFICATIONS

Supported Operating Systems
- 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)
- AMD64, Intel EM64T

NVIDIA Quadro FX 1500 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 and 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
- Fully programmable GPU (OpenGL2.0/ DirectX 9.0c 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 2.0 and DirectX 9.0c support
- Open source compiler

High-Resolution Antialiasing
- 12-bit subpixel sampling precision enhances AA quality
- Rotated Grid Full-Scene Antialiasing (RG FSAA)
- 8x 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

NVIDIA nView Architecture
- Advanced multi-display desktop & application management seamlessly integrated into Microsoft Windows.

Where to buy NVIDIA Quadro — NVIDIA Quadro is available through major US OEMs, PNY Technologies (US and Europe), Leadtek (Asia-Pac), and ELSA Japan. Please visit **www.nvidia.com/page/workstation.html** for information.