NVIDIA QUADRO4 XGL
THE STANDARD FOR WORKSTATION GRAPHICS

NVIDIA's **Quadro™4 XGL** series sets the standard for professional graphics by delivering breakthrough application performance, graphics programmability and multi-display productivity. No other graphics vendor is able to deliver a top-to-bottom suite of workstation products, all certified by more professional applications than any other workstation graphics solution in the industry. Every Quadro4 product also features NVIDIA's revolutionary nView™ multi-display technology—offering improved productivity for every workstation professional.

UNBEATABLE PERFORMANCE FOR EVERY USER

The **Quadro4 XGL** series of workstation GPUs achieves performance levels that far surpass the industry's latest graphics hardware. This is achieved through a combination of dynamic memory management, performance-optimized OpenGL® and DirectX® drivers, and an architecture that delivers an astonishing 60 million lit, shaded, and trilinear-textured triangles per second. Such raw power results in unprecedented performance from even the most resource-intensive professional workstation applications.

The **Quadro4 500/550 XGL** cards provide the fastest entry 3D graphics performance. The low-profile configurations combine the performance of 64MB of memory and the flexibility of dual-analog or dual-digital displays for maximum on-screen real estate and productivity.

- Quadro4 500/550 XGL GPU
- 64MB 128-bit high-speed SDRAM
- nView multi-display solution (VGA+VGA, Digital+Digital)
- Small form factor

The **Quadro4 700/750 XGL** cards offer the high-end features of the Quadro4 900 XGL at a more aggressive price for outstanding performance. Features include the programmability of NVIDIA's second-generation nfiniteFX™ II Engine, up to 128MB of fast DDR memory and the revolutionary nView multi-display solution.

- Quadro4 700/750 XGL GPU
- 64/128MB 128-bit DDR-SDRAM
- nfiniteFX II programmable graphics pipeline
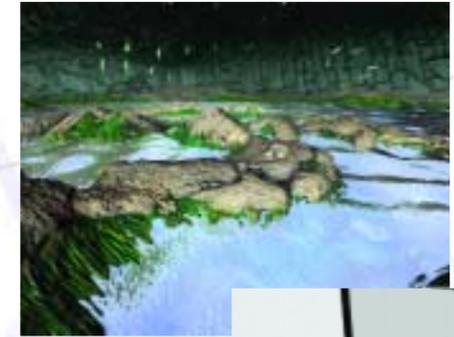- nView multi-display solution (VGA+VGA, VGA+Digital)

The **Quadro4 900 XGL** is the industry's most powerful and robust workstation graphics solution, easily surpassing the latest products on the market. The first product ever to exceed 100 in ProCDRS-03, the Quadro4 900 XGL represents a revolutionary combination of performance and features.

- Quadro4 900 XGL GPU
- 128MB 128-bit DDR-SDRAM
- nfiniteFX II programmable graphics pipeline
- nView multi-display solution (VGA+VGA, Digital+Digital, VGA + Digital)

EXCEPTIONAL FEATURES FOR EVERY APPLICATION

NVIDIA is the pioneer in programmable OpenGL and DirectX shaders, enabling procedural effects made possible in real time by NVIDIA's nfiniteFX II Engine. The latest workstation applications rely heavily on the programmability of the Quadro4 700 XGL and 900 XGL models in order to fully enable the most advanced features and effects. Exploiting these advanced application features allows workstation users to create more compelling designs with higher image quality, resulting in improved productivity.

[1] As measured for Quadro4 900 XGL by SPECglperf® for the following conditions: Triangle Strip (CallList, RGB, 5 pixel, 3D, 64x64 RGB trilinear modulated texture, smooth, 1 inf light)
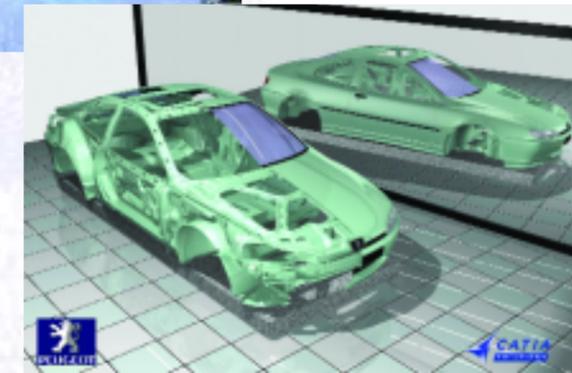
In addition, all Quadro4 XGL products feature a unified memory architecture, which dynamically allocates memory between graphics subsystems. Quadro4 products also feature NVIDIA's second-generation Lightspeed Memory Architecture™ (LMA) II, which optimally load balances across NVIDIA's patented crossbar memory controller. This results in maximum memory bandwidth utilization.

In addition to pure application and raw graphics performance, NVIDIA's suite of Quadro Application Utilities adds features and performance enhancements for key workstation applications (AutoCAD®, 3ds max™ and more).

nView—DEFINING MULTI-DISPLAY PRODUCTIVITY FOR 3D WORKSTATION APPLICATIONS

The Quadro4 family sets a new standard for productivity by supporting multiple displays for every product in the family. Our commitment to multi-display productivity is exemplified by NVIDIA's patented nView multi-display software—the most intuitive multi-display user interface on the market.

THE INDUSTRY'S MOST ROBUST CERTIFIED WORKSTATION GRAPHICS

Quadro products are the world's most successful workstation graphics brand, relied upon to drive critical applications by the largest installed base of professionals in the industry. This success is a testament to the quality of Quadro products. This quality is also evident in the fact that Quadro products are certified by more applications than any other workstation graphics in the industry.

This quality is further magnified by NVIDIA's patented Unified Driver Architecture (UDA), which allows every generation of Quadro products to use any certified NVIDIA driver. UDA's continuous development impacts all NVIDIA GPUs, improving performance throughout the life of each product. Finally, the UDA model allows a single graphics driver update to be applied across a mixed installation of NVIDIA products, reducing the burden on IT resources.

The Quadro4 XGL series provides engineers, designers and animators the premier workstation graphics solution they've been looking for. No other workstation graphics vendor delivers so much power and so many features.

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THE STANDARD FOR WORKSTATION GRAPHICS

FEATURES	BENEFITS
QUADRO4 XGL – WORKSTATION GRAPHICS ARCHITECTURE	The Quadro4 XGL architecture integrates workstation-specific functionality to accelerate OpenGL® and DirectX® professional applications. This results in the industry's fastest application performance and highest image quality.
nfiniteFX™ II ENGINE – APPLICATION PROGRAMMABILITY	The latest workstation applications rely heavily on the programmability of the Quadro4 700 XGL and 900 XGL in order to fully enable the most advanced features and effects. Exploiting these application features increases image quality, realism and productivity.
LIGHTSPEED MEMORY ARCHITECTURE (LMA) II – PERFORMANCE MEMORY MANAGEMENT	Quadro4 XGL products support up to 128MB DDR unified graphics memory. This memory is dynamically allocated between graphics subsystems for maximum memory utilization. Furthermore, LMA II intelligently optimizes data transfer across NVIDIA's patented crossbar memory controller, delivering blistering sustained data rates.
nView– MULTI-DISPLAY SOFTWARE	Quadro4's multi-display nView solution sets a new standard in workstation productivity by delivering unprecedented stability, image quality and performance. No other solution features rock-solid stability with productivity-enhancing functionality, all seamlessly integrated into the Windows® environment.
QUADRO4 XGL – WORKSTATION SOFTWARE ARCHITECTURE	Quadro workstation graphics are certified by more professional applications than any other product in the industry. NVIDIA's Unified Driver Architecture ensures that certifications, feature enhancements and performance tuning automatically benefit past and present Quadro products, resulting in performance enhancements throughout the life of the product.

PERFORMANCE SPECIFICATIONS		Memory	Triangles/sec.*	MedMCAD-01	ProCDRS-03
HIGH-END	QUADRO4 900 XGL	128MB DDR	60 Million	96 fps	103 fps
MID-RANGE	QUADRO4 750 XGL	128MB DDR	54 Million	89 fps	93 fps
	QUADRO4 700 XGL	64MB DDR	54 Million	89 fps	93 fps
ENTRY	QUADRO4 550 XGL	64MB DDR	34 Million	43 fps	49 fps
	QUADRO4 500 XGL	64MB SDR	31 Million	31 fps	34 fps

* As measured by SPECglperf® for the following conditions: Triangle Strip (CallList, RBG, 5 pixel, 3D, 64x64 RBG trilinear modulated texture, smooth, 1 inf light). Note: Tested on 2.0 GHz Pentium4, 512MB RAM, Driver version 27.40

XGL FEATURES
- Hardware overlay
- Hardware antialiased lines
- Two-sided lighting
- Full-scene antialiasing
- 2nd-generation occlusion culling
- Lightspeed Memory Architecture (LMA) II
- 2048x1536 per display (dual 350MHz RAMDACs)

- OpenGL quad-buffered stereo
- VESA 3-pin stereo synch connector
- Optimized and certified for OpenGL 1.3 and DirectX 8 applications

OPERATING SYSTEMS
- Windows® XP (WHQL Certified)
- Windows 2000 (WHQL Certified)
- Windows NT® (WHQL Certified)
- Windows 98, Windows 95 (WHQL Certified)
- Full OpenGL 1.3 Linux implementation, complete
- with NVIDIA and ARB extensions

QUADRO APPLICATION UTILITIES
- POWERdraft (AutoCAD®)
- MAXtreme (3dsmax)
- QuadroView (CAD viewer)

PROFESSIONAL CERTIFICATIONS: CAD
- Ansys®
- Autodesk AutoCAD
- Bentley Microstation®
- Co|Create™ SolidDesigner
- Dassault CATIA®
- ESRI ArcInfo
- Helix
- MSC Nastran/Patran
- Plant Designer/Imagineer
- PTC® Pro/Engineer™
- PTC 3Dpaint™
- SDRC I-DEAS® Master Series
- SolidWorks®
- UGS® Solid Edge™
- Unigraphics®
- and many more...

PROFESSIONAL CERTIFICATIONS: DCC
- Alias|Wavefront™ Maya®
- Alias|Wavefront StudioTools®
- Discreet® 3ds max
- Newtek Lightwave 3D™
- SOFTIMAGE®|3D
- SOFTIMAGE|XSI
- and many more...

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