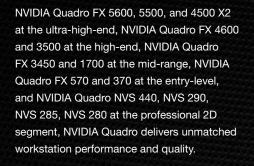# NVIDIA Quadro

NVIDIA Quadro NVS 290

Raising the Bar for Professional 2D Graphics

NVIDIA Quadro® NVS 290 graphics board brings a new level of performance, quality and stability for professional 2D multi-display environments.

Ground-breaking NVIDIA® unified architecture dynamically allocates geometry, shader, and compute processing power to efficiently deliver optimized performance. Featuring 256MB frame buffer and two single-link DVI-I connectors, NVIDIA Quadro NVS 290 offers the industry's best image quality at resolutions up to 1920 x 1200 @ 60Hz.

The NVIDIA Quadro NVS 290 is the professional 2D solution 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, 5500, and 4500 X2 at the ultra-high-end, NVIDIA Quadro FX 4600 and 3500 at the high-end, NVIDIA Quadro FX 3450 and 1700 at the mid-range, NVIDIA Quadro FX 570 and 370 at the entry-level, and NVIDIA Quadro NVS 440, NVS 290, NVS 285, NVS 280 at the professional 2D segment, NVIDIA Quadro delivers unmatched workstation performance and quality.

Product Specifications

Form Factor	Low Profile, 2.731" (H) x 6.6" (L)
Frame Buffer Memory	256MB DDR2
Memory Interface	64-bit
Memory Bandwidth	6.4GB/sec.
Max Power Consumption	21W
Graphics Bus	PCI Express x16 and x1
Display Connectors	DMS-59
Single Link DVI	Yes (2)
Auxiliary Power Connectors	No
Number of Slots	1
Thermal Solution	Passive heatsink

hp
invent

NVIDIA Quadro | **The Standard for Multi-Display Business Graphics.**

Features and Benefits

NVIDIA Unified Architecture	Industry's first unified architecture designed to dynamically allocate GPU resources to deliver optimized performance.
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 Windows Vista experience.
256MB DDR2 Frame Buffer Memory	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).
Low-Profile Form Factor	Enables support for small form factor systems.
nView Multi-Display Technology[1]	The NVIDIA nView hardware and software technology combination delivers maximum flexibility for multi-display options, and provides unprecedented end-user control of the desktop experience.
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.
GPU Computing	NVIDIA CUDA™ provides a C language environment and tool suite that unleashes new capabilities to solve complex, visualization challenges such as real-time ray tracing and interactive volume rendering.
High Performance Display Outputs	400MHz RAMDACs and two DVI-I connectors drive both analog and digital displays, with single-link TMDS transmitters supporting high-resolution digital panels (up to 1920 x 1200 @ 60Hz) — which result in amazing image quality producing detailed photorealistic images.
Ultimate Image Quality	Quadro NVS graphics products deliver the industry's best image quality, sharpness and pixel tracking for analog LCDs, DLPs and plasma displays with resolutions up to 2048 x 1536 at 85Hz.
Fanless Design	With a passive heatsink, accoustics is not a problem to achieve a quieter desktop environment.
Unified Driver Architecture[2]	The NVIDIA UDA guarantees forward and backward compatibility with software drivers. Simplifies upgrading to a new NVIDIA product because all NVIDIA products work with the same driver software.

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 290 ARCHITECTURE
- 128-bit color precision
- Unlimited fragment instruction
- Unlimited vertex instruction
- 3D volumetric texture support
- 12 pixels per clock rendering engine
- 3rd-generation occlusion culling
- 16 textures per pixel in fragment programs
- Window ID clipping functionality
- Hardware accelerated line stippling

DISPLAY RESOLUTION SUPPORT
- Two single-link DVI-I outputs drive digital displays at resolutions up to 1920 x 1200 @ 60Hz
- Internal 400 MHz DACs – Two analog displays up to 2048 x 1536 @ 85Hz

[1] NVIDIA nView will be available for Windows Vista Spring 2008
[2] Quadro NV280 PCI is supported on a seperate driver branch

To learn more about NVIDIA Quadro, go to **www.nvidia.com**