

NVIDIA QUADRO® PLEX

A Quantum Leap In Visual Computing

With the introduction of the **NVIDIA Quadro® Plex 1000** visual computing system (VCS), NVIDIA delivers a quantum leap in visual compute density, enabling breakthrough levels of productivity and capability.

Professionals ranging from manufacturing designers and stylists to earth scientists to digital content creators can solve their most complex, graphics-intensive problems using an unconstrained dedicated visual computing system based on proven, industry standard architectures.



NVIDIA QUADRO® PLEX

A Quantum Leap In Visual Computing Enabling Breakthrough Levels Of Capability

Massive Levels Of Visual Compute Density

NVIDIA Quadro Plex 1000 represents a 20x leap in visual compute density — graphics computation per cubic inch. Its compact, ultra-quiet design can be quickly deployed in any desktop workspace or can be easily transformed to fit into any standard 19" rack environment.

Utilized as a single VCS node (two NVIDIA Quadro Plex VCSs connected to a single certified SLI-capable system) the power of up to eight GPUs can be scaled in 3U of rack space to deliver the power and capability required by even the most demanding applications. Visual compute density can further be scaled by clustering multiple VCS nodes together via NVIDIA Quadro G-Sync.



Multi-display mission critical visual simulation solution by Aechelon with NVIDIA Quadro Plex. Image courtesy Aechelon.

Configure To Meet Your Application Needs. Scale To Meet Your Performance Requirements.

Available in three distinct models, NVIDIA Quadro Plex 1000 is designed to deliver absolute maximum performance, the highest image quality, and ultimate display resolution so professionals can visualize the largest seismic datasets, create photorealistic, interactive designs or natively drive a digital 4k projection system.

For the most demanding clustered applications, NVIDIA Quadro G-Sync enables frame synchronization, genlock, and frame lock to further scale performance, quality, and resolution to near infinite levels. Professionals can now drive massive clusters of synchronized channel outputs to create truly immersive reality environments, visualize large scale scientific models, and simulate astonishing virtual environments.

Industry-based Standard Architecture

NVIDIA Quadro Plex 1000 enables the highest density SLI multi-GPU capability on any PCI Express x16 platform and is built on a foundation of proven NVIDIA Quadro graphics and NVIDIA Unified Driver Architecture (UDA).



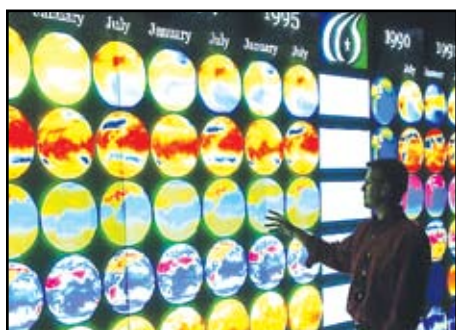
Photo-realistic, interactive automotive styling design driven by NVIDIA Quadro Plex. Image courtesy Real Time Technology.

NVIDIA Quadro Plex¹ node delivers up to:

- 64X SLI FSAA
- 16 synchronized output channels
- 8 HD SDI channels
- 60 billion pixels/sec. fill rate
- 1 billion triangles/sec. geometry performance

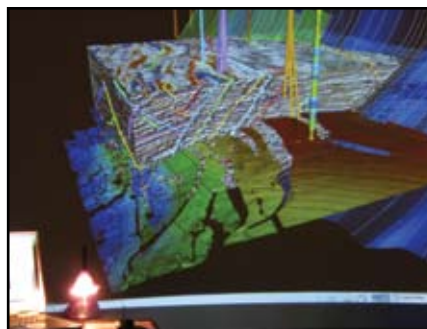
1 VCS Node is two NVIDIA Quadro Plex VCSs connected to a single certified SLI-capable system

Compatible with x86 32- and 64-bit Intel and AMD microprocessor architectures and running on Windows and Linux operating systems, NVIDIA Quadro Plex 1000 fits in any environment. In addition, NVIDIA Quadro Plex 1000 is certified on all industry-leading applications to ensure the highest levels of stability, reliability, and compatibility.



To extract insights from terabytes of research data and computations, NVIDIA Quadro Plex drives state-of-the-art powerwall displays.

Image courtesy Oak Ridge National Laboratory.



Three projection image display by Landmark GeoProbe® powered by NVIDIA Quadro Plex
Image courtesy Landmark.



NVIDIA Quadro Plex 1000

		Model I	Model II	Model III
NVIDIA Quadro		NVIDIA Quadro FX 5500 (2)	NVIDIA Quadro FX 4500 X2 (2)	NVIDIA Quadro FX 5500 SDI (2)
# NVIDIA Quadro GPUs		2	4	2
Total Frame Buffer		2GB (1GB/GPU)	2GB (512MB/GPU)	2GB (1GB/GPU)
Option		NVIDIA Quadro G-Sync	NVIDIA Quadro G-Sync	NVIDIA Quadro SDI
Channels		4 dual-link DVI	8 dual-link DVI	2 dual-link DVI + 4 single-link HD SDI or 2 dual-link DVI + 2 dual-link HD SDI
Genlock/frame lock		Y	Y	Y
Frame Synchronization		Y	Y	N
HD SDI		N	N	Y
FSAAs (Max per Channel)		32x SLI FSAAs	64x SLI FSAAs	32x SLI FSAAs
USB		2 Front		
Host Connection		PCI Express x16, Small Form Factor, Passive (10W) 2M (6.5 foot) NVIDIA Quadro Plex Interconnect Cable		
Power		480W Max 110/240 VAC autosensing worldwide power supply		
Acoustics		40db		
Form Factor		Tower Desktop (9.49" H x 5.94" W x 20.55" D) or Rack Mount (3U H x 8.5" W x 20.55" D)		

Features

Benefits

512MB – 1GB GDDR Frame Buffer per GPU	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). (1GB per GPU available on Model I and III; 512MB per GPU available on Model II)
Breakthrough Visual Compute Density	Unmatched graphics compute per cubic centimeter provides highest visual compute density enabling breakthrough levels of capability and productivity.
Flexible Form Factor	Compact design can be easily deployed in a desktop workspace or can be transformed to fit any standard 19" 3U rack environment.
Frame Lock/Genlock	Also known as "house sync." Genlock allows the graphics output to synchronize to an external source, typical for film and broadcast video applications.
Frame Synchronization	Allows the display channels from multiple workstations to be synchronized, thus creating one large "virtual display" that can be driven by a multisystem cluster for performance scalability. (Model I and II only)
Full-Scene Antialiasing (FSAA)	Up to 64x SLIAA (on Model II at 1280x1024, up to 32x SLIAA on Models I and III at 1920x1200) dramatically reduces visual aliasing artifacts or "jaggies" resulting in highly realistic scenes.
2 to 8 Dual-Link Digital Display Connectors	Full 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. (Up to 8 on Model II, 4 on Model I, and 2 on Model III)
Ultra Quiet Design	Sub 40db delivers acoustics lower than most desktop workstations to maintain a quiet and productive environment.
Unified Driver Architecture (UDA)	The NVIDIA UDA guarantees forward and backward compatibility with all applications.
Uncompressed 8-, 10-, or 12-Bit SDI Output (Model III only)	<p>The programmable GPU architecture and the NVIDIA Quadro SDI specific graphic user interface enable configurability of: video channels, color space conversion, and gamma correction.</p> <p>A video backend unit provides full support for outputs in 2K, HD, and SD SMPTE formats through 4 video channels with support for either 4 distinct channels of fill or 2 channel of fill and 2 channel of key.</p>

NVIDIA Quadro Plex Technical Specifications

Supporting Platform

- NVIDIA Quadro® Plex officially certified system or platform
- Microsoft® Windows® XP (64-bit and 32-bit)
- Microsoft Windows 2000 (32-bit)
- Linux® - Hardware OpenGL® implementation
 - NVIDIA and ARB extensions (64-bit and 32-bit)

NVIDIA Quadro GPU Architecture

- 128-bit color precision (IEEE fp32-bit per component)
- 3D volumetric texture support
- Fully programmable GPU (OpenGL2.0/DirectX 9.0c class)

Display Resolution Support

- Analog displays up to 2048x1536 @ 85 Hz
- Dual-link DVI-I outputs - drive digital displays at resolutions up to 3840 x 2400 @ 24Hz
- Native DVI and SDI support for Sony 4K SXRD™ large venue projector

SDI Modes (Model III Only)

- Transparent Mode - work with any existing application using clone and dualview modes
 - 2 channel fill
 - RGB 4:4:4
 - YCrCb 4:2:2 or 4:4:4
 - 8-bit
 - RGB 4:4:4
 - YCrCb 4:2:2 or 4:4:4

- Extended Mode - Integrate into applications using the NVIDIA SDI API
 - 4 channel fill or 2 channel fill + 2 channel key
 - 8-, 10-, 12-bit
 - RGB 4:4:4
 - YCrCb 4:2:2 or 4:4:4
 - 2x YCrCb 4:2:2 + 4:2:2
 - YCrCbA 4:2:2:4
 - RGBA 4:4:4:4 (8-bit only)



NVIDIA Quadro Plex 1000
Model I



NVIDIA Quadro Plex 1000
Model II



NVIDIA Quadro Plex 1000
Model III



Where to Buy | www.nvidia.com/quadroplex

© 2006 NVIDIA Corporation. NVIDIA, the NVIDIA logo, NVIDIA Quadro are trademarks or registered trademarks of NVIDIA Corporation. All rights reserved. All company and product names are trademarks or registered trademarks of the respective owners with which they are associated. Features, pricing, availability, and specifications are all subject to change without notice.