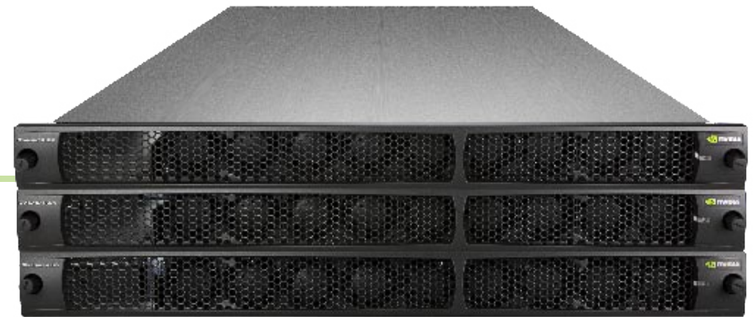
NVIDIA QUADRO® PLEX

A Quantum Leap In Visual Computing Enabling Breakthrough Levels Of Capability



Massive Levels Of Visual Compute Density

NVIDIA Quadro Plex 1000 represents a quantum leap in visual compute density — graphics computation per cubic inch. The compact deskside or rack optimized form factors can be quickly deployed in any desktop workspace or can be easily fit into any standard 19" rack environment.

The latest member of the family, the Quadro Plex 1000 Model S4 is a standard 1U form factor integrating four ultra-high end GPUs delivering the industry's most advanced visualization platform for remote graphics applications. Alternatively, the Quadro Plex 1000 deskside Models I, II, III, and IV can be utilized as a single VCS node (two Quadro Plex deskside VCSs connected to a single certified SLI-capable system) providing the power of up to eight GPUs from 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 Quadro Plex VCSs together.

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

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

Available in five distinct models, NVIDIA Quadro Plex 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.

The revolutionary unified architecture, featured in Quadro Plex Models IV and S4, is designed to dynamically allocate geometry, shading, pixel, and compute processing power to deliver optimized GPU performance. Combining the industry's most advanced feature set, including largest and fastest frame buffers, with a C programming environment, Quadro Plex Models IV and S4 provide a breakthrough platform to solve the world's most complex challenges. The reference standard for Shader Model 4.0, Models IV and S4 enables next generation ultra-realistic, real-time visualization applications with unprecedented image quality.

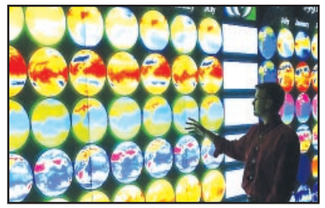
For the most demanding clustered large scale display applications, Quadro G-Sync enables frame synchronization, genlock, and frame lock to further scale performance, quality, and resolution to near infinite levels. Professionals can now drive massive clusters of synchronized channel outputs to create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

Industry-based Standard Architecture

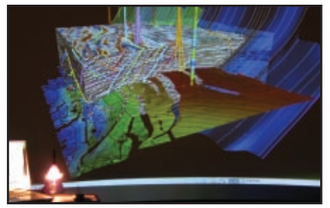
Quadro Plex 1000 enables the highest density SLI multi-GPU capability on any PCI Express x16 platform and is built on a foundation of proven NVIDIA Quadro graphics and NVIDIA Unified Driver Architecture (UDA).

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

1 VCS Node is two NVIDIA Quadro Plex VCSs connected to a single certified SLI-capable system
2 Requires optional x8 interface card



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



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.*

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

NVIDIA Quadro Plex 1000

	Model I	Model II	Model III	Model IV	Model S4
NVIDIA Quadro	**NVIDIA Quadro FX 5500**	**NVIDIA Quadro FX 4500 X2**	**NVIDIA Quadro FX 5500 SDI**	**NVIDIA Quadro FX 5600**	**Quadro FX 5600**
# NVIDIA Quadro GPUs	2	4	2	2	4
Form Factor	Deskside or 3U Rackmount Kit	Deskside or 3U Rackmount Kit	Deskside or 3U Rackmount Kit	Deskside or 3U Rackmount Kit	1U Server
Total Frame Buffer	2GB (1GB/GPU)	2GB (512MB/GPU)	2GB (1GB/GPU)	3GB (1.5GB/GPU)	6 GB (1.5GB/GPU)
Option	Quadro G-Sync	Quadro G-Sync	Quadro SDI	Quadro G-Sync II	N/A
Display Channels	4 dual-link DVI	8 dual-link DVI	2 dual-link DVI + 4 single-IDI or 2 dual-link DVI + 2 dual-link HD SDI	4 dual-link DVI	N/A - high performance readback to host
Key Features					
Shader Model	3.0	3.0	3.0	4.0	4.0
C Programming Environment	N	N	N	Y	Y
Genlock/frame lock	Y	Y	Y	Y	N/A
Frame Synchronization	Y	Y	N	Y	N/A
HD SDI	N	N	Y	N	N/A
FSAA (Max per Channel)	32x SLI FSAA	32x SLI FSAA	32x SLI FSAA	64x SLI FSAA	32x SLI FSAA
Product Specifications					
USB	2 Front				N/A
Host Connection	PCI Express x16 or x8[2], Small Form Factor, Passive (10W), 2M (6.5 foot) NVIDIA Quadro Plex Interconnect Cable				
Power	480W Max				1200W Max
	110/240 VAC autosensing worldwide power supply				
Acoustics	40db				~83dB
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)				1U Rack Mount (1.75"H x 17.4"W x 31.0" D)
Weight*	18.6lb	18.6lb	18.9lbs	19.8lbs	~40.0lbs

Features	Benefits
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 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. *Available only on Models I, II and IV.*
C Programming Environment	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. (Model IV only)
NVIDIA Unified Architecture	Industry’s first unified architecture designed to dynamically allocate compute, geometry, shading and pixel processing power to deliver optimized GPU performance. (Model IV only)
NVIDIA SLI Technology	NVIDIA SLI™ technology enables intelligent and transparent scaling of professional application performance. *Available only on Models I, II, III, and IV*.
Uncompressed 8-, 10-, or 12-Bit SDI Output (Model III only)	The programmable GPU architecture and the NVIDIA Quadro SDI specific graphic user interface enable configurability of: video channels, color space conversion, and gamma correction. 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.
Standard 1U Server Form Factor (Model S4 only)	Industry standard form factor optimized for large scale server deployments. Four Quadro GPUs in a high density 1U chassis offer the highest performance for remote graphics applications. Performance optimized and power optimized products cover the range of IT server room requirements. *Available only on Model S4.*

NVIDIA Quadro Plex Technical Specifications

Supporting Platforms

- 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)
- Solaris x86

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/DirectX10*)
- Shader Model 4.0*
- C Programming Environment*

Display Resolution Support**

- Analog displays up to 2560 x 1600 @ 60Hz
- Dual-link DVI-I outputs - drive digital displays at resolutions up to 2560 x 1600 @ 60Hz
- Native 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
  - 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)

Product Details

- Quadro Plex Deskside VCS (Model I, II, III, IV)
  - Quiet operation (40dB) suitable for office environment
  - Connects to host via cabling to a low power PCI Express x8** or x16 adapter card
  - Optional rack mount kit
- Quadro Plex Rack Mount Graphics Server (Model S4)
  - Standard 19”, 1U rack-mount chassis
  - Connects to host via cabling to a low power PCI Express x8** or x16 adapter card
  - Standard configuration: 1 PCI Express connector driving 4 GPUs
  - Optional configuration: 2 PCI Express connectors driving 2GPUs each

*Available on Model IV
** Available only on Models I, II, III, and IV

NVIDIA Quadro Plex 1000 **Model I**

NVIDIA Quadro Plex 1000 **Model II**

NVIDIA Quadro Plex 1000 **Model III**

NVIDIA Quadro Plex 1000 **Model S4**

NVIDIA Quadro Plex 1000 **Model IV**

Where to Buy | www.nvidia.com/quadroplex

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.