### FEATURES

**Power Workstation Graphics Architecture**  
Full-featured engines, programmable pixel pipelines, and workstation-specific features result in the industry’s highest application performance and quality.

**Advanced Vertex and Pixel Programmability**  
Enables real-time shaders to simulate a wider range of physical effects and surface properties.

**Full 32-bit Precision Graphics Pipeline**  
Enables mathematical operations to maintain high accuracy, resulting in unmatched visual quality.

**32-bit Subpixel Precision**  
Supports the latest in windowed applications, including anti-aliasing, subpixel sampling, subpixel precision, and subpixel resolution.

**High Quality Full-Scene Antialiasing (FSAA)**  
Ensures smooth images, reduces jagged edges, and eliminates visual artifacts.

**High Precision Dynamic Range Imaging (HPDR) Technology**  
Sets new standards for image clarity and quality through floating-point capabilities in shading, filtering, texturing, and antialiasing.

**Hardware-Accelerated Pixel Read-Back**  
Provides up to 16× FSAA, improves visual quality and performance.

**PCI Express Support**  
Designed specifically to take advantage of the next-generation PCI Express bus architecture. This new bus doubles the bandwidth of PCI, delivering over 4GB/sec in both upstream and downstream data transfers.

**SLI/NVIDIA GDDR3 Support**  
Delivers high throughput for interactive visualization of large models and high performance processing of large textures and frames, and enables the highest quality and resolution full-scene antialiasing.

### BENEFITS

**High-Level Shader Languages**  
Optimized compilers for Cg, OpenGL shading language, and Microsoft HLSL.

**High-Resolution Antialiasing**  
Up to 240x1536 per display or 3840x2400 for single digital display.

**Memory**  
High-speed memory (up to 512MB GDDR3) enables NVIDIA Quadro FX products to be linked together via an intelligent communication protocol resulting in true graphics scaling to unprecedented levels of performance and quality.

**Unified Driver Architecture**  
Single driver supports all products.

**Operating Systems**  
Windows XP, 2000, NT, Linux—Full OpenGL implementation, complete with NVIDIA and XFree86 drivers.

**NVIDIA Architecture**  
Advanced multi-display desktop and application management seamlessly integrated into Microsoft Windows.

### NEXT GENERATION SHADING ARCHITECTURE

- Fully programmable GPU (OpenGL 3.2, Direct3D 9.0c class)
- Long fragment and vertex programs (up to 65,536 instructions)
- Looping and subroutines (up to 256 loops per vertex program)
- Dynamic flow control
- Conditional execution

### ARCHITECTURE

- x86 P6/PIII
- 128-bit floating-point precision pipelines
- 32-bit floating-point per component
- 12-bit subpixel precision pipelines
- Up to 512MB high-speed GDDR3 memory
- Up to 3508/sec. memory bandwidth
- Up to 16x FSAA
- Unlimited programmability
- 2D/3D features
- Single-system powerwall

### NVIDIA QUADRO FX WORKSTATION GPU

- Fully programmable GPU (OpenGL 3.2, Direct3D 9.0c)
- 128-bit floating-point precision pipeline
- 32-bit pixel precision
- 8 pixels per clock rendering engine
- Hardware-accelerated antialiased points and lines
- Hardware-accelerated OpenGL overlays
- Hardware-accelerated two-sided lighting
- Advanced multi-display desktop and application management seamlessly integrated into Microsoft Windows.
- Dual DW output—drives two independent digital displays at 1600x1200, or one at 3840x2400, or two analog displays up to 2048x1536@60Hz simultaneous.
- 400-MHz DRAM, two analog displays up to 2048x1536@60Hz each.

### PROFESSIONAL CERTIFICATIONS: CAD

- AutoCAD, Revit, 3ds Max, Alias, Maya, Softimage
- Autodesk Architectural Desktop, AutoCAD, Inventor, Lightwave, Maya, Maya Studio Tools, 3ds Max, 3ds Max Design, 3ds Max V-Ray, Combustion, Side Effects, Softimage (V-Ray), Softimage, etc.

### PROFESSIONAL CERTIFICATIONS: DCC

- Adobe After Effects, Premier
- Apple Shake
- Avid Xpress, Xpress DV, Xpress Pro
- Combustion, Maya, Softimage
- Avid Xpress, Xpress DV, Xpress Pro
- Autodesk, Combustion, Side Effects, Softimage

### PROFESSIONAL CERTIFICATIONS: 3D

- Alias Maya, StudioTools
- Apple Shake
- Avid Xpress
- Autodesk Architectural Desktop, AutoCAD, Inventor, Lightwave, Maya, Maya Studio Tools, 3ds Max, 3ds Max Design, 3ds Max V-Ray, Combustion, Side Effects, Softimage (V-Ray), Softimage, etc.
- AutoCAD, Revit, 3ds Max, Alias, Maya, Softimage
- Autodesk Architectural Desktop, AutoCAD, Inventor, Lightwave, Maya, Maya Studio Tools, 3ds Max, 3ds Max Design, 3ds Max V-Ray, Combustion, Side Effects, Softimage (V-Ray), Softimage, etc.
- Autodesk, Combustion, Side Effects, Softimage (V-Ray), Softimage, etc.

### PROFESSIONAL CERTIFICATIONS: Scientific

- NVIDIA Quadro FX 3000 supports a combination of VGA, DVI, SDI, and TV out
- NVIDIA Quadro FX Go 1400 supports a combination of VGA, DVI, SDI, and TV out
- NVIDIA Quadro FX Go 1400 supports a combination of VGA, DVI, SDI, and TV out

### NVIDIA QUADRO PCI EXPRESS | Product Overview | APRIL2005 | v03
NVIDIA Scalable Link Interface (SLI) capability for multiple NVIDIA GPUs, combined with the NVIDIA Quadro FX architecture, enables faster time to market. For the first time, styling and production rendering become integral to CAD and DCC processes.

**CLASS OF APPLICATIONS**

Advanced programmability empowers a new class of applications.

**Certified for the Highest Quality Experience with the Most Demanding Workstation Applications**

The performance and power of the NVIDIA Quadro FX architecture are built on a solid foundation of quality engineering. This engineering excellence is exemplified by the NVIDIA Unified Driver Architecture (UDA), which is certified for quality by the entire spectrum of CAD and DCC applications. The true power of UDA lies in the breadth of supported products and its long-term delivery of quality and performance. All NVIDIA Quadro products, including previous generations, are continually tested and certified. This rigorous testing process results in the industry’s highest quality hardware and drivers, even with applications released long after an NVIDIA Quadro product may have shipped.

**Increased Productivity for End-Users**

Seamlessly integrated within the familiar Microsoft® Windows® environment, NVIDIA nView multi-display technology offers a robust set of features to maximize productivity. For example, the Application Extensions feature allows applications such as Microsoft Internet Explorer to take full advantage of multiple displays.

**IT Friendly Solutions with Industry’s Best Support**

NVIDIA Quadro NVS solutions are built not only with the user’s productivity in mind, but also to streamline and enhance deployment and maintenance. The nView Profiles feature allows IT managers to create custom desktop settings for all their users. These settings can then be globally applied to multiple systems using nView IT Management tools.

**NVIDIA Quadro FX Product Specifications**

<table>
<thead>
<tr>
<th>BOARD FEATURES</th>
<th>NVIDIA Quadro FX 4400</th>
<th>NVIDIA Quadro FX 4400G</th>
<th>NVIDIA Quadro FX 3400</th>
<th>NVIDIA Quadro FX 3400G</th>
<th>NVIDIA Quadro FX 34000</th>
<th>NVIDIA Quadro FX 34000G</th>
<th>NVIDIA Quadro FX 2400</th>
<th>NVIDIA Quadro FX 2400G</th>
<th>NVIDIA Quadro FX 24000</th>
<th>NVIDIA Quadro FX 24000G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory Interface</td>
<td>256-bit</td>
<td>256-bit</td>
<td>128-bit</td>
<td>128-bit</td>
<td>256-bit</td>
<td>256-bit</td>
<td>128-bit</td>
<td>128-bit</td>
<td>256-bit</td>
<td>256-bit</td>
</tr>
<tr>
<td>Memory Bandwidth</td>
<td>19.2 GB/sec.</td>
<td>19.2 GB/sec.</td>
<td>3.2 GB/sec.</td>
<td>3.2 GB/sec.</td>
<td>17.6 GB/sec.</td>
<td>17.6 GB/sec.</td>
<td>8.8 GB/sec.</td>
<td>8.8 GB/sec.</td>
<td>17.6 GB/sec.</td>
<td>17.6 GB/sec.</td>
</tr>
<tr>
<td>Genlock/Framelock</td>
<td>Yes (1x)</td>
<td>Yes (1x)</td>
<td>Yes (2x)</td>
<td>Yes (2x)</td>
<td>Yes (2x)</td>
<td>Yes (2x)</td>
<td>Yes (2x)</td>
<td>Yes (2x)</td>
<td>Yes (2x)</td>
<td>Yes (2x)</td>
</tr>
<tr>
<td>Shader Model</td>
<td>2.0</td>
<td>2.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>End support</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3D Support</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3D PRIMITIVE FERT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Triangle/vertex</td>
<td>4.8</td>
<td>4.2</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Frac/vex. pix. rate (%)</td>
<td>5.2</td>
<td>1.0</td>
<td>1.2</td>
<td>2.8</td>
<td>6.6</td>
<td>6.6</td>
<td>6.4</td>
<td>6.4</td>
<td>6.4</td>
<td>6.4</td>
</tr>
<tr>
<td>3D RELATIVE APPLICATION FERT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Triangle/vertex</td>
<td>1.0x</td>
<td>1.0x</td>
<td>2.0x</td>
<td>2.0x</td>
<td>3.0x</td>
<td>3.0x</td>
<td>4.0x</td>
<td>4.0x</td>
<td>4.0x</td>
<td>4.0x</td>
</tr>
</tbody>
</table>

**The Benefits of PCI Express**

Workstations with PCI Express deliver the highest performance in video, graphics, multimedia and other professional applications.

These elements combine to achieve unprecedented 3D primitive performance: blazing geometry performance, lightning fast line performance, and massive fill rates powered by superscalar pixel pipelines. But the true measure of power is application performance—and the NVIDIA Quadro FX architecture delivers more than double the performance versus the previous generation. With a theoretical pixel readback performance of greater than 4 GB/sec., massive host throughput gains can be achieved for OpenGL applications. In addition, NVIDIA Quadro FX graphics products enable true graphics scaling to unprecedented levels of performance and scalability via an intelligent communication protocol—NVIDIA Scalable Link Interface (SLI) technology.

**Advanced Programmability Empowers a New Class of Applications**

For the first time, styling and production rendering become integral to CAD and DCC processes. The true power of UDA lies in the breadth of supported products and its long-term delivery of quality and performance. All NVIDIA Quadro products, including previous generations, are continually tested and certified. This rigorous testing process results in the industry’s highest quality hardware and drivers, even with applications released long after an NVIDIA Quadro product may have shipped.

**Business professionals who spend their days in front of a workstation understand the importance and value of a solution that helps them work more efficiently. Whether it’s tracking securities across multiple displays or managing multiple desktop applications, corporate users are looking for the right solution to fit their business requirements. The NVIDIA Quadro NVS series of graphics boards delivers the capability, quality, and performance that corporate users demand. From small businesses to enterprise-level corporations, the NVIDIA Quadro NVS series features products to fit every user’s needs.**

**Features and Benefits of the NVIDIA Quadro NVS Solutions include:**

- Dual 150MHz RAMDACs delivers INDUSTRY’S BEST IMAGE QUALITY
- Integrated TMON transmitters
- High-density DMS-59 connectors
- Low-profile form factor provides a cost effective and compact solution
- Passive heatink provides a silent cooling solution

**Increased Productivity for End-Users**

Seamlessly integrated within the familiar Microsoft® Windows® environment, NVIDIA nView multi-display technology offers a robust set of features to maximize productivity. For example, the Application Extensions feature allows applications such as Microsoft Internet Explorer to take full advantage of multiple displays.

**IT Friendly Solutions with Industry’s Best Support**

NVIDIA Quadro NVS solutions are built not only with the user’s productivity in mind, but also to streamline and enhance deployment and maintenance. The nView Profiles feature allows IT managers to create custom desktop settings for all their users. These settings can then be globally applied to multiple systems using nView IT Management tools.