NVIDIA® QUADRO® FX 580
BIG ON PERFORMANCE. EASY ON YOUR BUDGET.

QUADRO® FX 580 DATASHEET

To maintain maximum productivity, design professionals have had to sacrifice their ability to interact with intuitive and realistic 3D designs, relying on simplified representations.

As a result, design decisions are often made based on less precise information. Today, DCC and CAD software vendors, such as Autodesk, are shifting their applications to incorporate the addition of 3D features into previously 2D applications, making it more critical for professionals to future proof their platform. The Quadro FX 580 entry-level professional-class GPU enables designers to leverage the 3D capabilities of applications to create and interact with more complex product designs, achieving maximum productivity without sacrificing visual quality.

Big on performance and easy on your budget, Quadro FX 580 offers the best value, professional-class graphics solution. Enabling EnergyStar compliance, Quadro FX 580 provides extreme power efficiency from a solution with 30-bit color fidelity. Certified on all industry-leading applications and featuring automatic configuration of display settings, Quadro FX 580 delivers optimal performance for maximum productivity.

The entire Quadro family takes the leading professional 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, performance, and quality not found in any other professional graphics solutions. From Quadro FX 5800 at the ultra-high-end, and Quadro FX 4800 and 3800 at the high-end, through Quadro FX 1800 at the mid-range, to Quadro FX 580, 380, and 370 Low Profile at the entry-level, Quadro delivers the productivity you need at every price point and form factor.

PRODUCT SPECIFICATIONS

FORM FACTOR
> 4.376" H x 6.875" L Single Slot

FRAME BUFFER MEMORY
> 512 MB GDDR3

MEMORY INTERFACE
> 128-bit

MEMORY BANDWIDTH
> 25.6 GBps

MAX POWER CONSUMPTION
> 40W

GRAPHICS BUS
> PCI Express Gen 2 x16

DISPLAY CONNECTORS
> 2 DisplayPorts, 1 Dual Link DVI

DUAL LINK DVI
> Yes (1)

NUMBER OF SLOTS
> 1

THERMAL SOLUTION
> Variable speed active fansink

Image Courtesy of: AutoDesk, Modo image created by Muharraqi-Studios (Khalid Al-muharraqi), and NVIDIA Corporation.

NVIDIA® QUADRO® FX 580

Features	Benefits
512 MB GDDR3 GPU Memory with Ultra-Fast Memory Bandwidth	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).
30-Bit Color Fidelity	30-Bit color fidelity (10 bits per color) enables billions rather than millions of color variations for rich, vivid image quality with the broadest dynamic range.
NVIDIA Unified GPU Architecture	Industry's first unified architecture designed to dynamically allocate compute, geometry, shading and pixel processing power to deliver optimized GPU performance.
NVIDIA CUDA Architecture	NVIDIA® CUDA™ is a revolutionary parallel computing architecture for Quadro professional GPUs enabling breakthrough performance in areas such as video encoding, image processing, and accurate physics.
PCI Express 2.0 Compliant	Doubles the data transfer rate up to 5 GT/sec per lane for an aggregate bandwidth of 16 GB/sec bi-directional (8 GB/sec in each direction).
Dual DisplayPort Digital Display Connectors	Dual DisplayPort connectors support ultra-high-resolution panels (up to 2560 x 1600), which results in amazing image quality producing detailed photorealistic images.

TECHNICAL 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
- PCI Express 2.0 Support

NVIDIA QUADRO FX 580 ARCHITECTURE

- 128-bit color precision
- 10-bit per color display pipeline
- Unlimited fragment instruction
- Unlimited vertex instruction
- 3D volumetric texture support
- Hardware-accelerated, antialiased points & lines
- Hardware OpenGL overlay planes
- Hardware-accelerated, two-sided lighting
- Hardware-accelerated clipping planes
- 3rd-generation occlusion culling
- Window ID clipping functionality
- Hardware-accelerated line stippling

SHADING ARCHITECTURE

- Full Shader Model 4.0 (OpenGL 3.0/DirectX 10 class)
- Long fragment programs (unlimited instructions)
- Long vertex programs (unlimited instructions)
- Looping and subroutines (up to 256 loops per vertex program)
- Dynamic flow control
- Conditional execution

HIGH LEVEL SHADER LANGUAGES

- Optimized compiler for Cg and Microsoft HLSL
- OpenGL 3.0 and DirectX 10 support
- Open source compiler

HIGH-RESOLUTION ANTIALIASING

- Rotated Grid Full-Scene Antialiasing (RG FSAA)
- 16x FSAA dramatically reduces visual aliasing artifacts or "jaggies" at resolution up to 1920 x 1200

DISPLAY RESOLUTION SUPPORT

- Dual DisplayPort support—ultra-high resolution panels (up to 2560 x 1600 @60Hz)
- Single dual-link DVI-I output drives digital displays at resolutions up to 2560 x 1600 @ 60Hz
- Internal 400 MHz DACs—One analog display up to 2048 x 1536 @ 85Hz

NVIEW ARCHITECTURE

- The nView Display Management Software, seamlessly integrated into Microsoft Windows, delivers maximum flexibility and productivity for single large display or multi-display setups

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

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