



## NVIDIA QUADRO FX 5800 VISUALIZATION BEYOND 3D



QUADRO FX 5800  
DATASHEET

Whether searching for and extracting oil, designing and bringing the next luxury vehicle to market, or providing a diagnosis of a patient's condition, professionals are faced with a mountain of data that needs to be distilled into meaningful and actionable visualizations.

The size and complexity of data is growing at an exponential rate. In an increasingly competitive and high-pressure landscape, professionals need to deliver results better, faster, and more cost effectively than ever before. Traditional processing paradigms just cannot keep up.

With advances in the GPU architecture, the NVIDIA® Quadro® FX 5800 solution gives geophysicists, designers, scientists, engineers, and other technical professionals visual supercomputing from their desktops. Professional applications take advantage of the Quadro FX 5800 solution's advanced feature set, including up to 4GB of frame buffer leading to greater interactivity with large datasets, providing the right set of tools to deliver results that push visualization beyond traditional 3D.

The Quadro FX 5800 is the ultra high-end solution in NVIDIA's second generation unified-architecture professional product offerings delivering up to 50% increased performance over the first generation through 240 processor cores. The entire Quadro family takes professional visualization applications to a new

level of interactivity by enabling unprecedented programmability and precision. The industry's leading workstation applications leverage these capabilities to deliver hardware-accelerated features, performance, and quality not found in other professional graphics solutions. From Quadro FX 5800, 5600, and 4800 at the ultra-high-end, and Quadro FX 4600 and 3700 at the high-end, through Quadro FX 1700 at the mid-range, to Quadro FX 570 and 370 at the entry-level, Quadro delivers the productivity you need at every price.

### PRODUCT SPECIFICATIONS

#### FORM FACTOR

- > 4.36" H x 10.5" L Dual Slot

#### FRAME BUFFER MEMORY

- > 4 GB GDDR3

#### MEMORY INTERFACE

- > 512-bit

#### MEMORY BANDWIDTH

- > 102 GBps

#### MAX POWER CONSUMPTION

- > 189W

#### GRAPHICS BUS

- > PCI Express Gen 2 x16

#### DISPLAY CONNECTORS\*

- > Dual DVI-I, Display Port, Stereo

#### DUAL LINK DVI

- > Yes (2)

#### DISPLAY PORT

- > Yes (1)

#### AUXILIARY POWER CONNECTORS

- > Yes (2)

#### NUMBER OF SLOTS

- > 2

#### THERMAL SOLUTION

- > Active Fansink

#### G-SYNC

- > Yes (Optional)

#### SDI

- > Yes (Optional)

\* Only two (2) display connectors can be active at one time

## FEATURES AND BENEFITS

4 GB GDDR3 GPU MEMORY WITH ULTRA FAST MEMORY BANDWIDTH	Industry's first 4 GB GPU memory and massive memory bandwidth up to 102GBps 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).
NVIDIA® CUDA™ PARALLEL COMPUTING PROCESSOR	A parallel computing processor architecture exposed through a C language environment and tool suite in combination with high performance visualization, CUDA unleashes new capabilities to solve highly complex challenges such as real-time ray tracing, video encoding, and interactive volume rendering.
HIGHEST COLOR FIDELITY	10-bit per component color fidelity enables billions rather than millions of color variations for rich, vivid image quality with the broadest dynamic range.
SINGLE DISPLAYPORT DIGITAL DISPLAY CONNECTORS	DisplayPort support ultra-high-resolution panels (up to 2560 x 1600)—which result in amazing image quality producing detailed photorealistic images.
DUAL DUAL-LINK DIGITAL DISPLAY CONNECTORS	Dual dual-link TMDS transmitters support ultra-high-resolution panels (up to 2560 x 1600 @ 60Hz on each panel) —which result in amazing image quality producing detailed photorealistic images.
QUAD BUFFERED STEREO	Offers enhanced visual experience for professional applications that demand stereo viewing capability.
NVIDIA® SLI® TECHNOLOGY	A revolutionary platform innovation that enables professional users to dynamically scale graphics performance, enhance image quality, and expand display real estate.

## 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 5800 ARCHITECTURE

- > 128-bit color precision
- > 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 2.1/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 2.1 and DirectX 10 support
- > Open source compiler

### HIGH-RESOLUTION ANTIALIASING

- > Rotated Grid Full-Scene Antialiasing (RG FSAA)
- > 32x FSAA dramatically reduces visual aliasing artifacts or "jaggies" at resolution up to 1920 x 1200
- > 64x FSAA SLI Mode

### DISPLAY RESOLUTION SUPPORT

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

### NVIEW ARCHITECTURE

- > Advanced multi-display desktop & application management, seamlessly integrated into Microsoft Windows

To learn more about NVIDIA Quadro, go to [www.nvidia.com/quadro](http://www.nvidia.com/quadro)