



## UNPRECEDENTED PROFESSIONAL GPU PERFORMANCE ON THE MAC PRO NVIDIA® QUADRO® K5000 FOR MAC

### The Quadro K5000 for Mac gives artists and editors new levels of power and interactivity.

From small agencies to large media conglomerates, creative pros like you using the Apple Mac Pro want tools to help bring your vision to life as fast as possible—without sacrificing quality.

With the Quadro K5000 for Mac, you can experience the world's most powerful professional-class GPU on the Apple Mac Pro platform for accelerating professional design, animation, and video applications. It's configured with 4 GB of on-board memory and delivers the power and efficiency of the NVIDIA Kepler™ GPU architecture to dramatically accelerate the creative process. With the Quadro K5000 for Mac's new display engine, content creators can process and view high-resolution cinema 4K content or drive up to four displays simultaneously.

This innovative solution's next-generation streaming multiprocessor design offers important architectural changes that can transform your workflow. These include

tremendous increases in per-clock throughput of key graphics operations for new levels of performance and power efficiency. Plus the Quadro K5000 for Mac features a large, 4 GB frame buffer that lets you work with larger scenes and improve interaction during the creation process.

Now, you can drive up to four displays simultaneously from the two DVI and two DisplayPort connections. DisplayPort 1.2 support means you get enhanced color depth, higher refresh rates, and the ability to support ultra-high resolutions of 3840x2160 @ 60Hz or 4096x2160 @ up to 48 Hz.

Designed and built specifically for professional workstations, NVIDIA Quadro GPUs currently power more than 50 professional applications in media and entertainment.



#### Product Specifications

NVIDIA® CUDA® Parallel-Processing Cores	<b>1536</b>
Frame Buffer Memory	<b>4 GB DDR5</b>
Memory Interface	<b>256-Bit</b>
Memory Bandwidth	<b>173 GB/s</b>
Max Power Consumption	<b>122 W</b>
Display Connectors <sup>1</sup>	<b>DVI-I (1), DVI-D (1), DP 1.2 (2), Optional Stereo (1)</b>
Form Factor	<b>4.376" H x 10.5" L Dual Slot</b>
Thermal Solution	<b>Active</b>

# NVIDIA® QUADRO® K5000 FOR MAC KEY FEATURES AND BENEFITS

FEATURES	BENEFITS
<b>Quad-Display Support</b>	The all-new display engine drives up to four displays simultaneously and supports the next-generation DisplayPort 1.2 features. DisplayPort 1.2 supports enhanced color depth, higher refresh rates, and increased resolutions as high as 3840x2160@60Hz or 4096x2160@ up to 48Hz to enable an expansive workspace and boost productivity.
<b>4 GB GDDR3 GPU Memory with Ultra-Fast Memory Bandwidth</b>	A massive 4 GB frame buffer and memory bandwidth up to 173 GB/s deliver high throughput for interactive visualization of large models and exceptional performance for real-time processing of large textures and frames.
<b>Fast Performance in Microsoft Windows Professional Applications</b>	Experience native Quadro GPU-accelerated 3D graphics performance and features when you're using Apple Boot Camp and running native PC applications
<b>NVIDIA CUDA® Architecture</b>	This parallel-computing architecture tightly integrates advanced visualization and compute features to significantly accelerate professional workflows.

## TECHNICAL SPECIFICATIONS

### Supported Platforms

- > Mac OS x 10.8.3 or later
- > MacPro 3,1 (Early 2008) or later
- > Microsoft Windows through Apple Boot Camp

### 3D Graphics Architecture

- > Scalable geometry architecture
- > Hardware tessellation engine
- > NVIDIA GigaThread™ engine with dual copy engines
- > Shader Model 5.0
- > Open GL 3.2<sup>2</sup>
- > Up to 16K x16K texture and render processing
- > Transparent multisampling and super sampling
- > 16x angle independent anisotropic filtering
- > 128-bit floating point performance
- > 32-bit per-component floating point texture filtering and blending
- > 64x full scene antialiasing (FSAA)
- > Decode acceleration for MPEG-2, MPEG-4 Part 2 Advanced Simple Profile, H.264, MVC, VC1, DivX (version 3.11 and later), and Flash (10.1 and later)
- > Blu-ray dual-stream hardware acceleration (supporting HD picture-in-picture playback)

### NVIDIA CUDA Parallel-Processing Architecture

- > SMX architecture (streaming multiprocessor design that delivers greater processing and efficiency)
- > API support, including:
  - > CUDA C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, and Fortran
- > NVIDIA Parallel DataCache hierarchy (configurable L1 and unified L2 caches)
- > Error-correction codes (ECC) memory<sup>3</sup>
- > 64 KB of RAM (configurable partitioning of shared memory and L1 cache)
- > Dual Warp Scheduler (schedules and dispatches simultaneously instructions from two independent warps)

### Advanced Display Features

- > 30-bit color support (10-bit per each red, green, blue channel)
- > Support for any combination of four connected displays
- > Support for Dual DisplayPort 1.2 resolutions (such as 3840x2160 @ 60 Hz)
- > Dual-link DVI-I/DVI-D outputs (up to 2560 x1600 @ 60 Hz and 1920x1200 @ 120 Hz) Internal 400 MHz DAC DVI-I output (analog display up to 2048x1536 @ 85 Hz)
- > DisplayPort to VGA, DisplayPort to DVI (single-link and dual-link) and

DisplayPort to HDMI cables (resolution support based on dongle specifications)

- > DisplayPort 1.1a, HDMI, and HDCP support
- > 10-bit internal display processing (hardware support for 10-bit scanout for both windowed desktop and full screen, only available on Windows and Linux with Aero disabled)
- > 3D DLP, interleaved, and other 3D stereo format support
- > Full OpenGL quad buffered stereo support
- > Underscan/overscan compensation and hardware scaling

### DisplayPort and HDMI Digital Audio

- > Support for the following audio modes:
  - > Dolby Digital (AC3), DTS 5.1, Multi-channel (7.1) LPCM, Dolby Digital Plus (DD+), and MPEG-2/MPEG-4 AAC
- > Data rates of 44.1 KHz, 48 KHz, 88.2 KHz, 96 KHz, 176 KHz, and 192 KHz
- > Word sizes of 16 bits, 20 bits, and 24 bits

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

<sup>1</sup> On Mac OSX, DisplayPort 1.2 multi streaming feature is currently not supported. DisplayPort 1.2 is fully supported on Windows using Apple Boot Camp

<sup>2</sup> OpenGL 3.2 on Mac OSX, OpenGL 4.3 on Windows using Apple Boot Camp

<sup>3</sup> Available on DRAM only

