DO MORE, FASTER
NVIDIA® QUADRO® 4000 FOR MAC

If you're an artist, designer or video professional with a Mac Pro, accelerate your entire workflow with the NVIDIA® Quadro® 4000 for Mac graphics solution.

Delivering excellent graphics performance across a broad range of design, animation and video applications, Quadro 4000 for Mac allows you to do more, faster. NVIDIA professional software technologies such as CUDA™ and optimized drivers enable Quadro GPUs to dramatically accelerate applications such as Premier Pro CS5, allowing you to streamline your production workflow by previewing and editing multiple layers of high definition video in real-time.

With professional applications such as Apple Final Cut Pro, Adobe Photoshop, DaVinci Resolve, Autodesk Smoke and Mathworks Matlab available on the Mac, Quadro 4000 for Mac enables you to deliver higher quality results faster.

The Quadro 4000 for Mac is based on the award-winning NVIDIA Fermi architecture. Featuring 256 CUDA parallel processing cores, it delivers the best-in-class performance for graphics and compute intensive applications. Also, fast double precision enables accurate results critical to CAE and scientific applications.

In addition, with Apple Boot Camp, you can experience the full features and accelerated performance of native Quadro professional 3D graphics when running Windows applications.

Designed, tested and built by NVIDIA for the Mac Pro, Quadro 4000 for Mac gives professionals the highest performance in its class, most advanced capabilities and greatest reliability. With Quadro your work flows - design, iterate and deliver higher quality results in less time.

PRODUCT SPECIFICATIONS

CUDA PARALLEL PROCESSING CORES
> 256

FRAME BUFFER MEMORY
> 2 GB GDDR5

MEMORY INTERFACE
> 256-bit

MEMORY BANDWIDTH
> 89.6 GB/s

DISPLAY CONNECTORS
> DVI-I (1), DP (1), Stereo (1) *optional*

MAX POWER CONSUMPTION
> 142 W

GRAPHICS BUS
> PCI Express 2.0 x16

FORM FACTOR
> 4.376" H x 9.50" L Single slot

THERMAL SOLUTION
> Active

3D STEREO
> Support via 3 pin mini DIN (optional)

NVIDIA® QUADRO® 4000 for Mac

GPU Features	Benefits
NEXT-GENERATION NVIDIA® CUDA™ ARCHITECTURE	Breakthrough NVIDIA Fermi architecture incorporates CUDA parallel computing capabilities and advanced visualization to accelerate professional workflows.
NVIDIA® SCALABLE GEOMETRY ENGINE™	Dramatically improves geometry performance across a broad range of CAD, DCC and scientific applications, enabling you to work interactively with models and scenes that are an order of magnitude more complex than ever before.
2 GB GDDR5 FRAMEBUFFER MEMORY WITH ULTRA-FAST BANDWIDTH	Large GPU memory with fast bandwidth for faster display of complex models and scenes, as well as computation of large datasets.
ACCELERATED PERFORMANCE FOR MICROSOFT WINDOWS PROFESSIONAL APPLICATIONS	Experience native Quadro® GPU accelerated 3D graphics performance and features when using Apple Boot Camp and running native PC applications.
FAST 64-BIT FLOATING POINT PRECISION	Industry's fastest double precision floating point performance enables accurate results on mission-critical applications, including CAD, finite element analysis and computational fluid dynamics.

TECHNICAL SPECIFICATIONS

SUPPORTED PLATFORMS

- Mac OS X 10.6.5 or later with MacPro3,1 (Early 2008), MacPro4,1 (Early 2009) or MacPro5,1 (Mid-2010)
- Microsoft Windows through Boot Camp

3D GRAPHICS ARCHITECTURE

- Scalable geometry architecture
- Hardware tessellation engine
- NVIDIA® GigaThread™ engine with dual copy engines
- Shader Model 5.0
- OpenGL 4.1*
- DirectX 11
- Optimized compiler for Cg and Microsoft HLSL
- 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) on Windows through Bootcamp, and up to 8x FSAA on OSX
- 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

- API support includes: CUDA C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, and Fortran
- NVIDIA® Parallel DataCache™ hierarchy (configurable L1 and unified L2 caches)
- 64 KB of RAM (configurable partitioning of shared memory and L1 cache)
- Full IEEE 754-2008 - 32-bit and high performance 64-bit double precision
- Dual Warp Scheduler (schedules and dispatches simultaneously instructions from two independent warps)

ADVANCED DISPLAY FEATURES

- Support for any combination of two displays
- Single DisplayPort (up to 2560 x 1600 @ 60Hz or 1920x1200 @ 120Hz)
- Single Dual-link DVI-I output (up to 2560 x 1600 @ 60Hz or1920x1200 @ 120Hz)
- Internal 400 MHz DAC DVI-I output (analog display up to 2048 x 1536 @ 85Hz)
- 10-bit internal display processing
- 3D DLP, Interleaved, and other 3D stereo format support
- Full OpenGL quad buffered stereo support
- Underscan/overscan compensation and hardware scaling

SUPPORTED CABLES AND SPECIFICATIONS

- DisplayPort to mini-DisplayPort, DisplayPort to VGA, DisplayPort to DVI (single-link or dual-link), DVI to VGA, and DisplayPort to HDMI cables (resolution support based on cable specifications
- DisplayPort 1.1a, HDMI 1.3a, and HDCP support

DISPLAYPORT AND DIGITAL AUDIO

- Support for the following audio modes: > Dolby Digital (AC3), DTS 5.1, Multi-channel (7.1) LPCM, Dolby Digital Plus (DD+), andMPEG-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-bit, 20-bit, and 24-bit

To learn more about NVIDIA Quadro, go to **www.nvidia.com/quadro**
Follow Quadro on Twitter **@NVIDIAQuadro.**

*Open GL 3.1 on Mac OSX, Open GL 4.1 on Windows using Bootcamp.

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