NVIDIA QUADRO MOBILE FEATURES AND BENEFITS

Products Names:

NVIDIA® Quadro® K5000M
NVIDIA® Quadro® K4000M
NVIDIA® Quadro® K3000M
NVIDIA® Quadro® K2000M
NVIDIA® Quadro® K1000M
NVIDIA® Quadro® K500M

GPU Features

NVIDIA® CUDA® architecture
Parallel-computing architecture that tightly integrates advanced visualization and compute features to significantly accelerate professional workflows.

NVIDIA® Scalable Geometry Engine
Dramatically improves geometry performance across a broad range of CAD, DCC, and medical applications. This enables you to work interactively with models and scenes that are an order of magnitude more complex than ever before.

Large Framebuffers with Ultra-Fast Bandwidth
Large GPU memory with fast bandwidth for display of complex models and scenes, as well as computation of large datasets.

NVIDIA® Parallel DataCache™
Supports a true cache hierarchy combined with on-chip shared memory. L1 and L2 caches drive exceptional throughput, accelerating features such as real-time ray tracing, physics, and texture filtering.

NVIDIA® GigaThread™ Engine
Provides up to 10x faster context switching compared to previous-generation architectures, concurrent kernel execution, and improved thread block scheduling.

Fast 3D Texture Transfer
Allows fast transfer and manipulation of 3D textures, resulting in more interactive visualization of large volumetric datasets.

Hardware 3D Window Clipping
Enables hardware-accelerated clip regions for faster data transfer between a window and the frame buffer to improve overall graphics performance.

Unified Driver Architecture (UDA)
Guarantees forward and backward compatibility with software drivers. Simplifies upgrading to a new solution because all Quadro-based products work with the same driver software.

Image Quality

Full-Scene Antialiasing (FSAA)
Up to 64X FSAA (up to 128x with SLI) for dramatically reducing visual aliasing artifacts or "jaggies," resulting in unparalled image quality and highly realistic scenes.

GPU Tessellation with Shader Model 5.0
Quadro Tessellation Engines automatically generate finely detailed geometry, for cinematic quality environments and scenes, without sacrificing performance.

16K Texture and Render Processing
Provides the ability to texture from and render to 16K x 16K surfaces. Beneficial for applications that demand the highest resolution and quality image processing.

NVIDIA High-Precision High Dynamic Range (HDR) Technology
Sets new standards for image clarity and quality through floating-point capabilities in shading, filtering, texturing, and blending. Enables unprecedented rendered image quality for visual-effects processing.

Display Features

30-Bit Color Fidelity
(10 bits per color). Enables billions of color variations for rich, vivid image quality with the broadest dynamic range.

NVIDIA 3D Vision® and 3D Vision Pro
Advanced active shutter glasses that deliver crystal-clear stereoscopic 3D visualization for the most immersive experience. Infrared (3D Vision) or RF (3D Vision Pro) technology enable a range of immersive environments from your desktop workstation to collaborative work spaces. 3D Vision and 3D Vision Pro are sold separately.

OpenGL Quad Buffered Stereo Support
Provides a smooth and immersive 3D Stereo experience for professional applications.

Software Support

CUDA Parallel Computing Architecture
NVIDIA Quadro solutions leverage general-purpose GPU computing using standard programming languages like C/C++ and Fortran, and emerging APIs such as OpenCL and Direct Compute. This broad adoption of CUDA accelerates techniques like ray tracing, video and image processing, and computation fluid dynamics.

Cg Programming
Cg high-level, open-standard shading language for programmable GPUs that enables the creation and integration of real-time photorealistic effects into 3D models, scenes, and designs.

Microsoft Windows® 7 Support
Leverages compelling new features included with Windows 7 for unprecedented application

performance, advanced visual realism, and premium reliability with superior application compatibility on mobile and desktop workstations.

Microsoft Windows Server 2008 R2 Support
Leverages compelling new features included with Windows 2008 R2, delivering unprecedented application performance, advanced visual realism, and premium reliability with superior application compatibility on servers.

Shader Model 5.0 Programmability
Infinite-length vertex programs and dynamic flow control remove the previous limits on OpenGL and DirectX shader programs, delivering sophisticated effects never before imagined.

NVIDIA Application Acceleration Engines Support
Supercharges application performance and capabilities with highly optimized software modules, including SceniX, OptiX, and CompleX, for advanced creative and investigative possibilities.

NVIDIA Application Acceleration Engines Support
Supercharges application performance and capabilities with highly optimized software modules, including SceniX and OptiX for advanced creative and investigative possibilities.

NVIDIA® Optimus™ Technology
Second generation of NVIDIA's advanced hardware power-management technology that intelligently adapts to the user's need for longer battery life and improved performance by dynamically reducing notebook power consumption and heat generation for the graphics subsystem

Industry Standard

Compatibility with Industry-Standard Architectures
Compatible with Microsoft and Linux operating systems, and Intel and AMD x86 32- and 64-bit microprocessor architectures.

PCI Express 2.0 Compliance
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)

PCI Express 3.0 Compliance[1]
Enables data transfer rate up to 8 GT/sec per lane for an aggregate bandwidth of 32 GB/sec bi-directional (16 GB/sec in each direction)

[1] Check with your workstation OEM vendor for system specific configurations and available bandwidth.