NVIDIA® G-FORCE™ 6 Series

NVIDIA® GeForce 6 Series Specifications

CINEFX 3.0 SHADING ARCHITECTURE
- Vertex Shaders
- Support for Microsoft Direct3D 9.0
- Vertex Shader 3.0
- Displacement mapping
- Geometry Instancing
- Infinite length vertex programs
- Pixel Shaders
- Support for Direct3D 9.0 Pixel Shader 3.0
- Full pixel branching support
- Support for Multiple Render Targets (MRTs)
- Infinite length pixel programs
- Next-Generation Texture Engine
- Up to 16 textures per rendering pass
- Support for 16-bit floating point format and 32-bit floating point format
- Support for non-power of two textures
- Support for S3G texture format for gamma textures
- DirectCX and STTC texture compression
- Full 128-bit studio-quality floating point precision through the entire rendering pipeline with native hardware support for 32bpp, 64bpp, and 128bpp rendering modes

64-BIT TEXTURE FILTERING AND BLENDING
- Full floating point support throughout entire pipeline
- Floating point filtering improves the quality of images in motion
- Floating point texturing drives new levels of clarity and image detail
- Floating point frame buffer blending gives detail to special effects like motion blur and explosions

INTELLISAMPLE 3.0 TECHNOLOGY
- Advanced anti-aliasing filtering
- Blurring-fixed anti-aliasing and compression performance
- New 3x-smart anti-aliasing removes jagged edges for incredible edge quality
- Support for advanced lossless compression algorithms for color, texture, and z-data at even higher resolutions and frame rates
- Fast z-clear
- High-resolution compression technology (HTC) increases performance at higher resolutions through advances in compression technology

ULTRASHADOW II TECHNOLOGY
- Designed to enhance the performance of shadow-intensive games, like Id Software’s Doom 3

TURBOCACHE TECHNOLOGY
- Shares the capacity and bandwidth of dedicated video memory and dynamically available system memory for optimal system performance

PUREVIEW TECHNOLOGY
- Adaptable programmable video processor
- High-definition H.264 hardware acceleration
- High-quality video scaling and filtering
- DVD and HD-ready MPEG-2 decoding up to 1920x1080 resolution
- Display gamma correction
- Microsoft® Video Wiring Rendezvous (VWR) supports multiple video windows with full video quality and features in each window

ADVANCED DISPLAY FUNCTIONALITY
- Dual integrated 400MHz RAMDACs for display resolutions up to and including 2048x1536 at 85Hz
- Dual DVD ports for interfacing to external PVRs, transmitters and external TV encoders
- Full NVIDIA® vinView™ multi-display technology capability

ADVANCED ENGINEERING
- Designed for PCI Express x16
- Support for AGP 8X including Fast Writes and sideband addressing
- Designed for high-speed DDR3 memory
- Advanced thermal management and thermal monitoring

NVIDIA® DIGITAL VIBRANCE CONTROL™ (DVC) 3.0
- DVC color controls
- DVC image sharpening controls

OPERATING SYSTEMS
- Windows XP
- Windows ME
- Windows 2000
- Windows 9X
- Linux
- Macintosh OS, including OS X

API SUPPORT
- Complete DirectX support, including the latest version of Microsoft Direct3D 9.0 Shader Model 3.0
- Full OpenGL support, including OpenGL 1.5

GEFORCE 6 SERIES GPU FEATURES COMPARISON

<table>
<thead>
<tr>
<th>Feature</th>
<th>GeForce 6800 Models</th>
<th>GeForce 6600 Models</th>
<th>GeForce 6200 Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM 5.0</td>
<td>GeForce 6800 Ultra, 6800 GT, and 6600 GT only.</td>
<td>GeForce 6600 Ultra, 6800 GT, and 6600 GT only.</td>
<td>GeForce 6200 Ultra, 6800 GT, and 6600 GT only.</td>
</tr>
<tr>
<td>SM 3.0</td>
<td>GeForce 6800 Ultra, 6800 GT, and 6600 GT only.</td>
<td>GeForce 6600 Ultra, 6800 GT, and 6600 GT only.</td>
<td>GeForce 6200 Ultra, 6800 GT, and 6600 GT only.</td>
</tr>
<tr>
<td>SM 1.2</td>
<td>GeForce 6800 Ultra, 6800 GT, and 6600 GT only.</td>
<td>GeForce 6600 Ultra, 6800 GT, and 6600 GT only.</td>
<td>GeForce 6200 Ultra, 6800 GT, and 6600 GT only.</td>
</tr>
<tr>
<td>Graphics Box Technology</td>
<td>AGP 8X/PCI Express</td>
<td>AGP 8X/PCI Express</td>
<td>PCI Express</td>
</tr>
<tr>
<td>NVIDIA® Intellisample™ Technology</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Anisotropic Texture Filtering and Blending</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NVIDIA® ULT™ Technology</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NVIDIA® TurboCache™ Technology</td>
<td>256-Bit</td>
<td>128-Bit</td>
<td>64-Bit/128-Bit</td>
</tr>
<tr>
<td>Effective Memory Interface</td>
<td>8192-bit</td>
<td>5120-bit</td>
<td>4096-bit</td>
</tr>
<tr>
<td>Memory</td>
<td>2GB/2048MB DDR</td>
<td>1GB/1024MB DDR</td>
<td>512MB/512MB</td>
</tr>
<tr>
<td>Process</td>
<td>0.13µm</td>
<td>0.11µm</td>
<td>0.11µm</td>
</tr>
<tr>
<td>RAMDACs</td>
<td>400 MHz</td>
<td>600 MHz</td>
<td>600 MHz</td>
</tr>
</tbody>
</table>

1. GeForce 8800 GTS and 8800 G80 models only.
2. GeForce 8800 GTS and 8800 G80 models only.
3. Available on NVIDIA® GeForce 8800 Ultra, 8800 GTS Ultra, 8800 G80 models only. Graphics cards sold by the same manufacturer and sold under different trade names may require NVIDIA® display driver updates. Graphics cards sold by third parties may require NVIDIA® display driver updates.
4. GeForce 8800 Ultra, 8800 GTS Ultra, 8800 G80 models only.

Pricing and availability may vary. For a complete list of supported systems, please visit www.geforce.com. NVIDIA® GeForce® 6 Series GPUs are compatible with Windows® 98SE, Windows® 2000, Windows® XP, and Linux operating systems only. NVIDIA® ForceWare is available for Windows® XP, Windows® 2000, and Linux operating systems only.

Graphics to Drench Your Senses

PC graphics such as photos, videos, and games require a lot of processing power. Without any help, the CPU must handle all of the system and graphics processing which can result in decreased system performance. The addition of a second processor in your PC dedicated to handling graphics—a graphics processing unit (GPU)—offloads the work from the CPU for dramatically improved system performance and stunning photos, videos, and games.

The groundbreaking NVIDIA® GeForce® 6 Series GPUs and their revolutionary technologies power the most vibrant, lifelike graphics, ever experienced on a PC and set new standards for performance, visual quality, realism, and video functionality. The GeForce 6 Series GPUs deliver powerful, elegant graphics to drench your senses, immersing you in unparalleled worlds of visual effects for the ultimate PC experience.
SUPERCHARGING PERFORMANCE

The GeForce 6 Series GPUs are built to supercharge PC performance. Featuring groundbreaking technology innovations such as support for Microsoft® DirectX® 9.0 Shader Model 3.0, the GeForce 6 Series GPUs are built for screaming frame rates on next-generation games like Ubisoft’s Far Cry and GSC Game’s S.T.A.L.K.E.R.: Shadow of Chernobyl. The GeForce 6 Series GPUs also feature NVIDIA® UltraShadow II technology to deliver 4x the shadow processing power of previous generation products and accelerate the performance of shadow-intensive games like id® Software’s Doom 3. With a supercalar architecture and support for the world’s fastest GDDR3 memory, these powerful GPUs arm you with everything you need to tear through your favorite games and applications at unbelievable frame rates.

The GeForce 6 Series GPUs also feature the revolutionary new NVIDIA® SLI platform, which creates a new class of high-end gaming PCs. With NVIDIA SLI, gamers can combine two PCI Express®-based GeForce 6 Series GPUs in a single system to scale the PCI Express bus architecture—to 8GB/sec. of raw graphics performance—NVIDIA SLI features an intelligent hardware and software solution that allows multiple GPUs to efficiently work together to deliver earth-shattering performance. With NVIDIA SLI, PC gaming will never be the same.

For entry-level PCs, the innovative NVIDIA® TurboCache™ technology utilizes PCI Express to share the capacity and bandwidth of dedicated video memory and dynamically available system memory for turbocharged performance and larger total graphics memory.

ULTRA-REALISTIC GAMES

Powered by the proven NVIDIA® CineFX® 3.0 engine, the GeForce 6 Series GPUs enable unlimited programmability and infinite program length, allowing developers to create a new class of advanced visual effects. In addition, features such as displacement mapping enable the creation of unique 3D characters and objects, allowing developers to alter a 3D model’s appearance on an individual vertex basis. Through this technique, developers can create ultra-realistic models that fully interact with the unique lighting of a particular environment. Through Microsoft DirectX 9.0 Shader Model 3.0 and the advanced CineFX 3.0 engine, game developers can also create complex lighting effects like skin, hair, and shadows that fool the eye of even the most discriminating enthusiast. These incredible effects can all be experienced in real time—at blazing speeds—thanks to the power of the GeForce 6 Series GPUs.

BRINGING FILM RENDERING TECHNIQUES TO THE PC

The GeForce 6 Series GPUs are the first to implement 64-bit floating point texture filtering and blending technology, taking 3D graphics one step closer to film quality. Fully compatible with the OpenEXR standard used by Industrial Light & Magic, NVIDIA’s 64-bit texture implementation brings professional film rendering techniques—like full-speed, high dynamic-range (HDR) lighting effects—to today’s games.

This new technology delivers full-floating point support throughout the entire pipeline—including floating point filtering, floating point texturing, and floating point blending. Additionally, the new rotated-grid anisotropic technique removes jagged edges from images by providing more subsample coverage values in both the vertical and horizontal direction. Further, 16x anisotropic filtering adds clarity to geometry, allowing more texture samples to be applied to each pixel of an extreme polygon. All of these features raise the bar for image quality, clarity, and detail.

UNMATCHED VIDEO FUNCTIONALITY

Watching TV, DVDs, and high-definition video on the PC is quickly becoming commonplace amongst PC users. In addition to providing the horsepower and advanced features for an amazing gaming experience, the GeForce 6 Series GPUs also deliver unmatched video features and functionality through NVIDIA® PureVideo® technology.

The combination of a hardware video processor and video decode software, NVIDIA PureVideo technology delivers stunning video to any display. NVIDIA PureVideo supercharges your PC experience with high-definition video and crystal-clear picture quality. Integrated HDTV-output allows you to connect your PC to a high-definition TV for direct-to-TV playback, turning your PC into a high-end home theater system. Further, the GeForce 6 Series GPUs accelerate applications such as video editing thanks to the increased bandwidth—over 4GB per second in both upstream and downstream data transfers—of the new PCI Express bus architecture.

A NO-COMPROMISE EXPERIENCE

The GeForce 6 Series GPUs leverage the NVIDIA® ForceWare™ unified software environment (USE) to unleash the full potential of your PC games and graphics experience while delivering industry-renowned stability and reliability. Boasting a cutting-edge software feature set, ForceWare delivers advanced graphics features including application profiles for creating custom image quality and performance settings for games and applications. Built on the foundation of the proven NVIDIA® Unified Driver Architecture (UDA), ForceWare delivers unmatched compatibility with the widest range of games and applications for the ultimate “install-and-play” experience. Equip yourself with an NVIDIA GeForce 6 Series GPU so you can play your game the way it’s meant to be played.