3D Graphics

- 2nd generation unified architecture
    - Up to 240 processor cores[1]
    - Next generation geometry shading and stream out performance
    - Next generation dual issue
    - Next generation HW scheduler
    - NVIDIA GigaThread™ technology with increased number of threads
    - 2x registers
- Full support for Microsoft DirectX 10.0 Shader Model 4.0 and OpenGL 2.1 APIs
- Full 128-bit floating point precision through the entire rendering pipeline
- Lumenex™ Engine
    - 16× full screen antialiasing
    - Transparent multisampling and transparent supersampling
    - 16× angle independent anisotropic filtering
    - 128-bit floating point high dynamic-range (HDR) lighting with antialiasing
        - 32-bit per component floating point texture filtering and blending
    - Full speed frame buffer blending
    - Advanced lossless compression algorithms for color, texture, and z-data
    - Support for normal map compression
    - Z-cull
    - Early-Z

Video

- PureVideo HD® Technology[2]
- Dedicated on-chip video processor
- High-definition H.264, VC-1, MPEG2, and WMV9 decode acceleration
- Blu-ray dual-stream hardware acceleration (supporting HD picture-in-picture playback)
- HDCP capable up to 2560×1600 resolution[3]
- Advanced spatial-temporal de-interlacing
- Noise Reduction
- Edge Enhancement
- Bad Edit Correction
- Inverse telecine (2:2 and 3:2 pull-down correction)
- High-quality scaling
- Video color correction
- Microsoft Video Mixing Renderer (VMR) support
- Dynamic Contrast and Tone Enhancements

NVIDIA Technology

- NVIDIA 2-/3-way SLI® Technology[4]
- NVIDIA PhysX™ Technology[5]
- NVIDIA CUDA™ Technology
  - IEEE 754R double precision support

Display

- Multi-display support
- Two dual-link DVI outputs for digital flat panel display resolutions up to 2560×1600
- Dual integrated 400 MHz RAMDACs for analog display resolutions up to 2048×1536 at 85 Hz
- Integrated HDTV encoder for analog TV-output (Component/ Composite/S-Video) up to 1080i resolution
- 10-bit internal display processing
- DisplayPort output support with hardware support for 10-bit per component scanout[6]
- Incorporates HDMI technology for combine video + audio output
- Underscan/overscan compensation and HW scaling

Interfaces

- Designed for PCI Express 2.0 x16 (PCI Express 2.0 devices are backwards-compatible with PCI Express 1.x devices)
- Up to 512-bit GDDR3 memory interface[7]

Power and Thermal Technology

- Advanced power and thermal management for optimal acoustics, power, and performance based on usage
  - Dynamic clock and voltage scaling
  - Clock gating

Operating System Support

- Windows Vista 32/64-bit
- Windows XP / Windows XP 64
- Linux
- FreeBSD x86

Process Technology

- 1.4 billion transistors in 65nm process technology

1 - *The number of processor cores may vary by model.*

2 - *Feature requires supported video software. Features may vary by product.*

3 - *Playback of HDCP-protected content requires other HDCP-compatible components.*

4 - *NVIDIA SLI certified versions of GeForce PCI Express GPUs only. A GeForce GPU must be paired with an identical GPU, regardless of graphics card manufacturer. SLI requires sufficient system cooling and a compatible power supply. Visit www.slizone.com for more information and a listing of SLI-Certified components.*

5 - *Certain GeForce GPUs ship with hardware support for NVIDIA PhysX technology. NVIDIA PhysX drivers are required to experience in-game GPU PhysX acceleration. Refer to www.nvidia.com/PhysX for more information.*

6 - *Requires external DisplayPort transmitter. 10-bit per component scanout requires future GeForce driver support.*

7 - *Memory interface width may vary by model.*