

## 3D Graphics

- 2<sup>nd</sup> generation unified architecture
  - Up to 240 processor cores<sup>1</sup>
  - 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
  - 16x full screen antialiasing
  - Transparent multisampling and transparent supersampling
  - 16x 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<sup>2</sup>
- 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 2560x1600 resolution<sup>3</sup>
- 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<sup>4</sup>
- NVIDIA PhysX™ Technology<sup>5</sup>
- 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<sup>6</sup>
- 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<sup>7</sup>

## 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
- NVIDIA HybridPower™ Technology<sup>8</sup>

## 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



## NVIDIA GEFORCE GTX 200 GPU DATASHEET

- 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](http://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](http://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.*
- 8 - *Requires NVIDIA HybridPower™- enabled motherboard.*