ENJOY THE VIEWS

NOW AVAILABLE WITH AGP8X

The NVIDIA® GeForce™4 MX graphics processing unit (GPU) brings a new level of graphics performance and display flexibility to the mainstream desktop PC. By incorporating the innovative NVIDIA nView™ multi-display technology, highly efficient NVIDIA Lightspeed Memory Architecture (LMA) II, advanced NVIDIA Accuview Antialiasing™ techniques, and support for AGP 8X, the GeForce4 MX GPU is the most feature-rich, cost-effective, and highly integrated GPU available for the mainstream market.

HIGHEST LEVEL OF INTEGRATION

The GeForce4 MX GPU is a cost-effective, high-performance GPU, and is the only mainstream GPU to integrate the most comprehensive set of features on a single processor, including:

- Integrated Dual 350MHz DACs – driving dual independent displays with crisp and clear image quality at 2048x1536 resolution at 75MHz.

- Integrated Dual-Channel TMDS Transmitters – enabling two independent Digital Flat Panels (DFP) displays at resolutions up to 1280x1024.

- Integrated TV Encoder – providing best-of-class TV-out functionality up to 1024x768 resolutions.

- Integrated Video Processing Engine (VPE) – allowing for the highest quality, full-frame rate, and full-screen HDTV and DVD playback.

AGP 8X SUPPORT

Now available with support for AGP 8X, the GeForce4 MX brings the latest graphics technology to the mainstream desktop PC. Providing double the bandwidth of AGP 4X—2.1GB/sec. vs. 1.1GB/sec.—AGP 8X enables the most realistic visual environments on the 3D games and applications of today and tomorrow. Further, increased graphics performance allows users to enjoy smoother video streaming and seamless game play.

nVIEW MULTI-DISPLAY TECHNOLOGY

NVIDIA's nView hardware and software technology combination leverages the company's industry-leading design expertise to deliver multi-display functionality of immense flexibility. nView incorporates built-in attribute and performance tuning for each of the different display devices—including CRTs, televisions, and flat panel LCDs—and provides for completely intuitive and flexible work environments. nView also includes support for:

- Windows® XP native multi-display mode

- Up to nine simultaneous displays through Microsoft Control Panel

- Enhanced Window Management, including enhanced windows and dialog-box positioning flexibility; windows and menus transparency capabilities; and thumbnail zooms for quick visibility of hidden windows within a cluttered desktop

- Comprehensive hotkeys support, offering unlimited flexibility in binding actions to hotkeys

- Up to 32 completely different working environments saved as separately named desktops

LIGHTSPEED MEMORY ARCHITECTURE (LMA) II

To drive all of this integration, the GeForce4 MX GPU incorporates NVIDIA's Lightspeed Memory Architecture (LMA) II technology to boost effective memory bandwidth by up to 300% and improve overall memory efficiency. Radical new technologies—including a 128-bit DDR memory interface, Z-occlusion culling, fast Z-clear, and auto precharge—effectively multiply the memory bandwidth to ensure fluid frame rates for the latest 3D and 2D games and applications.

ACCUVIEW ANTIALIASING ENGINE

The GeForce4 MX GPU's patent-pending Accuview Antialiasing technology delivers the best performance, compatibility, and visual quality without the dreaded "jaggies." By integrating a variety of hardware-implemented, high-resolution antialiasing multisampling techniques, including 2x, 4x, Quincunx, and a new 4XS mode, the GeForce4 MX GPU delivers up to five times the antialiased performance of the GeForce2 MX GPU, while delivering superior visual quality and no performance degradation.

The GeForce4 MX GPU continues NVIDIA's rich tradition of bringing leading-edge technology to the mainstream market, with a cost-effective, highly integrated, high-performance, single chip solution.

FEATURES

- nView multi-display technology
  - nView delivers the maximum flexibility and control in display options
  - Allows for multiple configurations of CRTs and digital flat panels
  - Multi-desktop integration
  - Advanced window management
  - Individual application control
- NVIDIA Lightspeed Memory Architecture (LMA) II technology radically boosts memory efficiency
  - 128-bit DDR
  - Z-occlusion culling
  - Fast Z-clear
  - MX memory crossbar architecture
  - Auto precharge
- Accuview Antialiasing—high-resolution antialiasing
  - Accuview Antialiasing technology delivers highest performance and no-penalty Quincunx AA quality
  - Dedicated multisample Accuview hardware ensures rock-solid compatibility
  - New sub pixel sample locations provide improved AA quality
  - High quality 4XS mode for incredible image quality
- Integrated hardware transform and lighting engines

- 256-bit graphics engine
- 4 texture-mapped, filtered, lit texels per clock cycle
- 32-bit color, Z/stencil buffering
- Advanced per-pixel lighting, texturing, and shading
- Cube environment mapping
- DirectX® and S3 texture compression
- Support for AGP 8X
- NVIDIA Shading Rasterizer (NSR)
- High performance 256-bit 2D rendering engine
  - Optimized for 32-, 24-, 16-, 15-, and 8bpp modes
  - True color hardware cursor with alpha
  - Multibuffering (double, triple, quad) for smooth animation and video playback
- NVIDIA video processing engine (VPE) delivers the highest quality video and mulimedia capabilities
  - Integrated TV encoder at 1024x768 resolution
  - Integrated full hardware MPEG-2 decoder
  - Motion compensation and IDCT
  - HDTV ready
  - Independent hardware color controls for video overlays

- Hardware color space conversion (YUV 4:2:2 and 4:2:0)
- 5-tap horizontal and 3-tap vertical filtering
- 8:1 up/down scaling
- Per pixel color keying
- DVD sub-picture alpha-blended compositing
- Operating Systems
  - Windows® XP
  - Windows 2000
  - Windows Me
  - Windows NT® (all)
  - Windows 98, Windows 95
  - Linux compatible
  - Mac® OS compatible
- API support
  - Complete DirectX® support, including DirectX 8.1
  - Full OpenGL® 1.3 support

COMPATIBILITY

- NVIDIA Unified Driver Architecture (UDA)
- Fully compliant professional OpenGL 1.3 API with NVIDIA extensions, on all Linux and Windows operating systems
- WHQL-certified for Windows XP, Windows Me, Windows 2000, Windows NT, and Windows 98

PERFORMANCE

SPECIFICATIONS/PERFORMANCE	GEFORCE4 MX 460	GEFORCE4 MX 440 WITH AGP 8X	GEFORCE4 MX 440	GEFORCE4 MX 420
FILL RATE (TEXELS/SEC.)	1.2 BILLION	1.1 BILLION	1.1 BILLION	1 BILLION
TRIANGLES/SEC.	38 MILLION	34 MILLION	34 MILLION	31 MILLION
MEMORY BANDWIDTH	8.8GB/SEC.	8.0GB/SEC.	6.4GB/SEC.	2.7GB/SEC.
MAX MEMORY	64MB	128MB	64MB	64MB
AGP	4X	8X	4X	4X

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