



GO FAR, GO FAST, GO EVERYWHERE

The NVIDIA® GeForce™4 Go family of mobile graphics processing units (GPUs) attacks the major concerns of today's most discriminating road warriors: battery life, display quality, performance and size.

The NVIDIA GeForce4 Go family of mobile GPUs integrates new patent-pending power management techniques; a video processing engine (VPE); revolutionary antialiasing technology for superior display quality; and an ultra efficient memory architecture to ensure mobile users of the fastest, most comprehensive and feature-rich computing experience ever realized on a mobile platform.



ADVANCED TECHNOLOGY DELIVERS LONGEST BATTERY LIFE

The NVIDIA GeForce4 Go family of mobile GPUs incorporates a variety of power saving techniques to maximize battery life while providing optimal graphics performance. NVIDIA PowerMizer™, the dynamic power management hardware and software technology that maximizes battery life, affords notebook users a full range of system power control. PowerMizer utilizes complex hardware schemes, such as dynamic gated clock design as well as dynamic voltage and frequency scaling, to achieve the lowest power dissipation. Unlike existing power management schemes,

the PowerMizer technology achieves the ideal balance between GPU and CPU operations to deliver significant system level power savings while providing a great user experience. Dedicated hardware, including the integrated VPE and 3D graphics engine, greatly reduces CPU utilization for DVD playback and 3D applications, improving application performance and extending battery life.

In addition, the advanced 0.15 micron process supports higher frequencies, delivering awesome performance while running at the industry's lowest operating voltage.

ADVANCED ANTIALIASING DESIGNED SPECIFICALLY FOR NOTEBOOKS

The majority of today's notebook PCs use XGA LCD displays (up to 15" diagonal in size) with the resultant jagged edges (aliasing) much more noticeable than on CRT displays. Until now, there has been no solution to eliminate these distracting jagged edges on a notebook PC and still provide users with powerful 3D graphics performance. These visual artifacts can be extremely distracting and are more readily apparent with moving images.

The NVIDIA Accuview Antialiasing™ technology focuses on this need for visual quality improvement by supporting higher LCD resolutions and advanced antialiasing techniques, including 2X, 4X, Quincunx and a new 4XS mode, to provide mobile users with visual quality on par with today's best desktop PCs. This quality improvement allows games and video applications to achieve superior visual quality and maintain high frame rates at the same time—without any performance degradation.



HIGHEST PERFORMANCE MOBILE GPUS WITH LIGHTSPEED MEMORY ARCHITECTURE™ (LMA) II

NVIDIA continues to raise the bar on performance for notebook PC graphics. Increased memory bandwidth, combined with vertex shader acceleration and the VPE, results in blazing 3D graphics and flawless DVD playback. The latest technology from NVIDIA for mobile PCs gives users the ultimate in mobile graphics performance, equal to today's leading desktop PCs.

HIGHLY INTEGRATED MOBILE GPU FOR EVERY NOTEBOOK PLATFORM

The NVIDIA GeForce4 Go family of mobile GPUs are the industry's most versatile and feature-rich, integrating a 2D and 3D engine with advanced transform and lighting; enhanced memory interface; 4X AGP; MPEG-2 HW playback; and support for multiple display devices, including LCDs, CRTs, TVs and Digital Flat Panels, via the NVIDIA nView™ display technology. Mobile AGP Package (MAP) technology from NVIDIA takes an additional step by squeezing a full graphics subsystem—including the GPU core and a memory frame buffer up to 64MB—into a space previously occupied by the GPU alone.

From power professionals to casual consumers, the NVIDIA GeForce4 Go family of mobile GPUs delivers on all fronts: long battery life, NVIDIA-renowned performance, high visual quality and antialiasing integrated for all notebook platforms—enabling road warriors to *Go Far, Go Fast, and Go Everywhere* with their notebook PC.

FEATURES

GO FAR—ULTIMATE POWER MANAGEMENT

- PowerMizer hardware and software technology for maximum performance and long battery life
 - Extensive clock gating
 - Dynamic clock control
 - Dynamic voltage adjustment
 - AC detect
 - CPU load limiting
- Industry-low operating voltage
- 0.15um process
- Fully compatible with Intel® SpeedStep™ and AGP_STOP_ /AGP_BUSY_ protocol, including all Pentium® III and Pentium 4 versions
- ACPI 2.0 compliant

GO FAST—ULTIMATE MOBILE PERFORMANCE

- Integrated transform and lighting (T&L) engines
 - 256-bit graphics engine
 - 4 texture-mapped, filtered, lit texels per clock cycle
 - 32-bit color
 - 32-bit Z/stencil buffer
 - NVIDIA Shading Rasterizer (NSR)
 - Up to 16 texture and lighting operations per clock
 - Single-pass multi-texturing
 - Cube environment mapping
 - DirectX® and S3TC texture compression
- High performance 256-bit 2D engine
 - Optimized for multiple color depths including 32-, 24-, 16-, 15-, and 8-bits per pixel
 - True color hardware cursor

- Multibuffering (double, triple, quad) for smooth animation and video playback
- Lightspeed Memory Architecture (LMA) II
 - Supports 128-bit DDR, 64-bit DDR, and 32-bit DDR SDRAM
 - Up to 8GB/sec. memory bandwidth
 - Z-cull support for hidden surface removal
- AGP 4X with Fast Writes
- Accuview high-resolution AA engine
 - Support for Quincunx
 - Support for 2X, 4X, and 4XS AA modes

GO EVERYWHERE—ULTIMATE FLEXIBILITY

- nView display technology
 - Dual independent display controllers support:
 - Showing the same material on both displays for presentations
 - Showing different material on each display for an enlarged Windows desktop
 - Simultaneous display on different devices:
 - LCD and CRT
 - LCD and TV
 - LCD and DVI panels or projectors
 - CRT and DVI
 - CRT and TV
 - DVI and TV
 - Separate color, brightness, gamma and hue control for every output
 - Separate Gamma control for video overlay
 - Digital Vibrance Control with independent control for each display
 - Crystal clear visual output to every display
 - Integrated dual LVDS transmitter supporting LCD panel resolutions up to 2048x1536

- Smooth scaling for LCD for source material up to 1600x1200
- Advanced dithering support to enhance color fidelity on LCD
 - Integrated 350 MHz Palette-DAC supporting analog VGA monitor resolutions up to 2048x1536
 - Integrated NTSC/PAL TV encoder with precision 10-bit DAC supporting resolutions up to 1024x768
- Integrated TMDS transmitter for Digital Visual Interface (DVI)
- Advanced window management
- Video Processing Engine
 - Industry's most complete hardware MPEG2 decoder offloads CPU for reduced power and longer playback on battery
 - VPE for full-screen, full frame rate HDTV/DVD playback. Supports up to 1920x1080i ATSC format
 - Inverse Quotient, (IQ)
 - Inverse Discrete Cosine Transform (IDCT)
 - Motion Compensation and
 - Color space conversion
- MAP - Mobile AGP Technology
 - Pin compatible solutions
 - 16MB
 - 64MB
 - 32MB

QUALITY NVIDIA SOFTWARE

- NVIDIA Unified Driver Architecture (UDA)
- Complete Microsoft® DirectX® 8.0, 7.0, 6.0, and 5.0 (IDCT) support
- Fully compliant support for OpenGL® 1.3 for all Windows® operating systems and Linux
- WHQL-certified Windows XP, Windows 2000, Windows NT®, Windows Me, Windows 98, and Windows 95

PRODUCT	GEFORCE4 460 GO	GEFORCE4 440 GO	GEFORCE4 440 GO 64MB	GEFORCE4 420 GO	GEFORCE4 420 GO 32MB	GEFORCE4 410 GO 16MB
ON-CHIP MEMORY	EXTERNAL	EXTERNAL	64MB	EXTERNAL	32MB	16MB
MAX MEMORY	64MB	64MB	64MB	32MB	32MB	16MB
MAX MEMORY BANDWIDTH	8.0GB/SEC.	7.0GB/SEC.	6.0GB/SEC.	3.0GB/SEC.	3.0GB/SEC.	1.5GB/SEC.
PACKAGE TYPE	DISCRETE	DISCRETE	MAP	DISCRETE	MAP	MAP
PACKAGE SIZE	31MM x 31MM	31MM x 31MM	31MM x 31MM	23MM x 23MM	31MM x 31MM	31MM x 31MM



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