



NVIDIA NFORCE2 MCP-T SPECIFICATIONS

• NVIDIA Enhanced Communications Suite

- IEEE 1394a/FireWire
 - Fully compliant with IEEE 1394a /FireWire specification release 1.1 OHCI and with provisions of IEEE 1394-1995 and IEEE 1394-2000
 - Compatible with Microsoft Windows Plug and Play (PnP)
- USB 2.0
 - Single USB 2.0 Enhanced Host Controller Interface (EHCI)/Dual USB 1.1 Open Host Controller Interface (OHCI)
 - Support for up to 6 ports
 - Supports transfer rates at high speed (480Mbps), full speed (12Mbps), and low speed (1.2Mbps)
 - Dynamically configures slower devices for best utilization of bandwidth
 - Allows USB concurrency
- NVIDIA IEEE 802.3 MAC (Media Access Controller)
- 3Com IEEE 802.3 MAC
- NVIDIA DualNet
 - Concurrent operation of two 10/100 BaseT Ethernet/Fast Ethernet Ports
 - NVIDIA IEEE 802.3 MAC (Media Access Control)
 - Supports 10/100BASE-T Ethernet/Fast Ethernet
 - Supports HomePNA 2.0 PHYs
 - ACR and CNR Interface Support
 - 3Com IEEE 802.3 MAC
 - Supports 10/100BASE-T Ethernet/Fast Ethernet
 - 3Com commercial networking feature set for corporate environments

- StreamThru
 - Isochronous controller paired with HyperTransport results in fastest networking performance

- NVIDIA Audio Processing Unit (APU)
 - Dolby Digital Interactive Content Encoder
 - Hardware DirectX 8.0 audio processor
 - 256 total voices
 - 64 3D voices
 - Downloadable sounds level 2 acceleration (DLS2)
 - 32 bin mixer (8 voice volumes mapped to each bin)
- Dual fast Ultra ATA-133 disk drive controllers
 - Supports UltraDMA modes 6-0 (Ultra DMA133/100/66/33)
 - Industry-standard PCI bus master IDE register set
 - Separate independent IDE connections for 5V-tolerant primary and secondary interfaces
- HyperTransport
 - High speed (800MB/sec.)
 - Low voltage
 - Differential
 - Low pin count interface
 - Isochronous link between SPP/IGP and MCP
- AC '97 2.1 compliant interface
 - Supports 2, 4, or 6-channel Audio
 - Dual AC-Link – Supports up to two codecs
 - 16-bit or 20-bit stereo output and 16-bit input streams
 - Supports input, output, and GPIO channels for host-based modems
 - Separate independent functions for audio and modem
 - Supports ACR and CNR interface
 - S/PDIF-output (stereo or AC-3 output)

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- NVIDIA IEEE 802.3 MAC
- HomePNA 2.0
- NVIDIA StreamThru
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 - SPDIF output (Stereo or AC-3 output)



THE DIGITAL MEDIA PLATFORM

With the proliferation of residential gateways, DVD players, digital cameras, and broadband connectivity for high-speed Internet access, it's clear that PCs have entered the connected, digital dimension. From playing intensive 3D games, to editing home movies, to burning a collection of music MP3s, today's PCs are faced with the challenge of keeping up with life's digital demands.

NVIDIA nForce™2 platform processors bring a new level of performance and functionality to home and office desktop PCs, and serve as the foundation for exciting new digital media platforms. NVIDIA nForce2 platform processors offload processing tasks from the CPU to deliver unmatched system performance, screaming graphics, digital surround-sound 3D audio, and the ultimate in device and networking connectivity.

The NVIDIA nForce2 platform processors include: the integrated graphics processor (IGP), two system platform processors (SPP)—NVIDIA nForce2 Ultra 400 and NVIDIA nForce2 400—and media and communications processor (MCP/MCP-T), all of which give AMD® Athlon™ XP-based PCs the perfect digital boost.

UNMATCHED PERFORMANCE

PC systems and graphics and performance motherboards designed with NVIDIA nForce2 platform processors have the power to deliver an amazing digital media experience. NVIDIA nForce2 Ultra 400 incorporates dual 400MHz DDR memory controllers delivering twice the bandwidth of typical DDR chipsets, an optimized 128-bit architecture reducing overall system memory latency, and 400MHz frontside bus (FSB) support for unparalleled performance. With its efficient memory design, and support for a staggering 3GB of

high-speed 400MHz DDR memory, NVIDIA nForce2 platform processors eliminate system bottlenecks and speed up everyday media-rich applications to help you work and play faster. NVIDIA nForce2 IGP uses the same 128-bit DualDDR architecture with 333MHz DDR to enable the industry's best graphics motherboard performance. NVIDIA nForce2 400 relies on a single 64-bit memory channel to deliver 400MHz FSB and 400MHz DDR performance to the mainstream.

SCREAMING GRAPHICS

Graphics motherboards featuring NVIDIA® GeForce™4 MX graphics* deliver the industry's fastest graphics performance and the most comprehensive set of features.

The GeForce4 MX features the NVIDIA® Accuview Antialiasing™ (AA) engine, delivering the best performance, compatibility, and visual quality at all native resolutions; plus a dedicated video processing engine (VPE) providing the highest quality, full-frame rate DVD playback. The NVIDIA® nView™ hardware and software technology combination delivers multi-display functionality and allows for the connection of multiple configurations of CRTs, LCDs and TVs, without requiring any additional hardware. Upgrading to a high-performance graphics processor is easy with the additional AGP 8X slot—the fastest graphics interface available today.

DIGITAL 3D AUDIO



Only NVIDIA nForce2 provides users with a full range of audio solutions including the value-conscious integrated AC '97 audio, the NVIDIA nForce audio processing unit (APU)* or the state-of-the-art NVIDIA SoundStorm™* audio solution. The integrated NVIDIA nForce APU performs the world's most advanced 3D-positional audio functions and



delivers cutting-edge audio features normally associated with costly add-in sound cards, without consuming valuable CPU resources. For

stunning, immersive experiences, the NVIDIA APU plays back 64 3D and 256 2D simultaneous audio streams and fully supports the latest 3D audio standards. For digital music enthusiasts, the NVIDIA SoundStorm audio solution also incorporates the industry's only real-time Dolby® Digital encoder that can take any 2D or 3D audio source and output it digitally, through a single cable, to your home theater system, providing flexible connectivity to a variety of digital audio devices including speakers, headphones, mini-disc players, and home theater systems.

THE ULTIMATE IN CONNECTIVITY

The NVIDIA nForce2 platform processors also deliver the industry's fastest and most versatile suite of networking and connectivity solutions. With support for up to six USB 2.0 ports, Ultra ATA-133 for ultra-fast hard drive throughput, and FireWire®* for super fast digital video and editing capabilities, NVIDIA nForce2 offers the most complete digital device support available today. From digital video cameras, to scanners, to optical keyboards and mice, only NVIDIA nForce2 provides dedicated pipelines for the ultimate in digital connectivity. NVIDIA nForce2 also features NVIDIA® DualNet™* technology. DualNet integrates both the industry-standard 3Com networking and NVIDIA networking technologies—that can be accessed independently or simultaneously for the fastest networking experience possible—creating the ultimate small office/home office gateway.

The NVIDIA nForce2 platform processors provide a resoundingly fast, more efficient, and more robust digital media experience—without sacrificing the latest features, affordability, or future upgradeability. Systems and motherboards incorporating the power of the NVIDIA nForce2 platform processors provide the best PC value and deliver stunning levels of system performance and the cutting-edge features today's users demand.

* Optional features – Check PC specifications for exact NVIDIA nForce2 features.



nFORCE 2 Digital Media Platform

With an NVIDIA nForce2 platform processor-based system powering your office, family room or entertainment center, you can have the ultimate digital media experience—complete with enhanced audio, networking, and enhanced connectivity for today's latest digital devices.

FEATURE-RICH GRAPHICS DRIVE AN INTERACTIVE EXPERIENCE

Experience truly immersive PC gaming right on your TV with powerful GeForce4 MX graphics. Whether playing your favorite 3D game, exploring interactive applications or surfing the Web, GeForce4 MX delivers stunning 3D entertainment and smooth DVD playback.

NVIDIA NFORCE2 DIGITAL MEDIA PLATFORM FEATURES

- DualDDR Architecture
- NVIDIA SoundStorm
- NVIDIA GeForce4 MX
- NVIDIA DualNet
- FireWire and USB 2.0

HIGH-SPEED NETWORKING FOR FAST AND EASY STREAMING MEDIA

NVIDIA nForce2 provides the fastest, most robust and efficient technology for streaming media from the Internet. With NVIDIA® StreamThru™ technology, watch jitter-free movie trailers, full-length feature films, or other streaming media without sacrificing PC performance.

STUNNING DIGITAL AUDIO FOR MOVIES AND MUSIC

By connecting your home theater to an NVIDIA nForce2-based PC, you have the ability to playback favorite MP3 tunes, or watch DVDs in full Dolby Digital 5.1 surround sound using the NVIDIA SoundStorm audio solution.

HOME MEDIA SERVER

Create and share all of your favorite music, videos, and pictures. The NVIDIA nForce2 connectivity and networking features allow you to connect all of your digital media devices to your PC and access content from anywhere in your house. NVIDIA nForce2 is the hub of today's digital home.

nFORCE 2 Gaming Platform

Combining NVIDIA nForce2 platform processors with the latest NVIDIA-based graphics card provides the most tricked-out PC delivering mind-blowing graphics, audio, and system performance for 3D games and multimedia applications.

UNCOMPROMISED SYSTEM PERFORMANCE

NVIDIA nForce2-based systems and performance motherboards deliver blistering platform performance through patent-pending system technologies, dual 400MHz DDR memory controllers, and high-bandwidth connectivity solutions.

UPGRADE ABILITY

NVIDIA nForce2 supports AGP 8X for future generations of GPUs allowing you to easily upgrade your graphics board to the latest NVIDIA GPU technology. The NVIDIA nForce2 USB 2.0 and FireWire connections allow you to attach the latest digital cameras, devices and game controllers.

IMMERSIVE SURROUND SOUND

Enhance your gaming experience with an immersive surround sound environment. Hear the roar of a Formula One racing car or the footsteps of your enemy creeping up behind you with the NVIDIA SoundStorm audio solution. With the ability to encode audio in Dolby Digital 5.1 format for full surround sound effects, and processing of up to 256 simultaneous audio streams, you truly hear what you can't see.

AMAZING ONLINE EXPERIENCES

Whether playing your favorite game online with friends or having an all-out "frag-fest" in your home, NVIDIA nForce2 is the platform for you. Featuring NVIDIA DualNet technology, PCs equipped with NVIDIA nForce2 deliver high-speed networking for no-lag gaming, plus the ability to share music, video and photos easily.

NVIDIA NFORCE2 GAMING PLATFORM FEATURES

- 400MHz DualDDR Architecture
- AGP 8X
- FireWire and USB 2.0
- NVIDIA SoundStorm
- NVIDIA DualNet

nFORCE 2 Business Platform

By delivering a complete suite of advanced functionality, increased system performance, streamlined management features and a versatile multi-display desktop, the NVIDIA nForce2 platform processors make hard work easy.

ROBUST FEATURES

NVIDIA nForce2 is the perfect office PC solution— combining performance graphics and audio capabilities with nView multi-display features, simplified driver upgrades, and industry-standard 3Com networking support.

INCREASED SYSTEM PERFORMANCE

By combining GeForce4 MX graphics with a second-generation memory architecture, including support for DualDDR memory, the NVIDIA nForce2 Business Platforms are able to achieve unmatched system and graphics performance.

COMMUNICATE

View the latest Web-cast, participate in a videoconference, or catch a company meeting without leaving your desk. With an onboard 3Com 10/100 Ethernet controller and NVIDIA StreamThru technology, nForce-based PCs allow executives and managers to easily integrate rich media into the corporate environment.

EXPAND YOUR DESKTOP

Maximize your productivity and flexibility with nView multi-display technology for advanced desktop and application management.

ONE DRIVER, ALL SYSTEMS

Driver upgrades are simple with the NVIDIA Unified Driver Architecture (UDA), because all NVIDIA solutions require only one driver. The NVIDIA Unified Driver Architecture is forward and backwards compatible across all NVIDIA solutions, simplifying enterprise updates.

NVIDIA NFORCE2 BUSINESS PLATFORM FEATURES

- DualDDR Architecture
- NVIDIA GeForce4 MX
- 3Com Networking
- NVIDIA nView
- NVIDIA Unified Driver Architecture (UDA)

NVIDIA NFORCE2 SPP/IGP SPECIFICATIONS

• NVIDIA DualDDR Memory Architecture

- Two independent 64-bit memory controllers (NVIDIA nForce2 400 has one 64-bit memory controller)
 - 3 separate address busses
 - 2 separate data busses
- Supports 64-bit or 128-bit memory busses
- Concurrent simultaneous accesses optimized for system and graphics performance
- Supports DDR400/333/266/200 SDRAMs (SPP; IGP supports DDR333/266/200)
 - Supports 2.5V 166/133/100 DDR SDRAMs
 - Supports 2.6/2.65V 200 DDR SDRAMs
 - Supports 64MB, 128MB, 256MB, 512MB, and 1.0GB modules
- Support for up to 3.0GB Memory

• GeForce4 MX GPU (IGP)

- 256-bit 3D and 2D graphics accelerator
- NVIDIA Shading Rasterizer with 24 of 26 DX8 pixel shading functions and full set of OpenGL® 1.3 pixel combiner operations
- 32-bit color with 32-bit z-stencil
- NVIDIA Digital Vibrance Control™
- nView multi-display technology

- Resolution support up to 1920x1440, 75Hz (2048x1536, 60Hz)
- Integrated NTSC/PAL TV encoder supporting resolutions up to 1024x768
- DVD-ready and HDTV-ready MPEG-2 decoding up to 1920x1080i ATSC Format
- MPEG-2 hardware decode, including inverse discrete cosine transform and motion compensation
- **AGP 8X Interface**
 - Compliant with AGP 3.0 8X and 4X, with Fast Write data transfers
 - Supports AGP 2.0 for 4X, 2X, and 1X modes
 - Multiplexed with external DVI interface signals
- **Integrated TV Encoder (IGP)**
 - Support for various worldwide formats
 - Composite and S-video output modes
 - Display resolution up to 1024x768
 - Full Macrovision™ 7.1L1 encoding for DVD compatibility
 - Fully programmable 5-tap horizontal and vertical upscaling and downscaling to TV resolutions
- **External DVI Interface (IGP)**
 - Clock speeds up to full DVI specification of 165MHz (up to 1600x1200 at 60MHz in single link

- mode, up to 330 megapixels/sec. in dual-link mode)
 - Multiplexed with AGP 8X interface
- **Integrated Clock Synthesizer**
 - Supports all FSB and memory bus asynchronous frequency combinations
 - Independent overlocking of CPU, MEM, and AGP clocks
- **Power Management**
 - POS or ACPI S1
 - Suspend to DRAM or ACPI S3
 - Suspend to disk (STD) or ACPI S4/S5
 - Supports C0 and C1 states
 - Support for shut down of internal DAC
 - ACPI 2.0 compliant
- **HyperTransport™ Technology**
 - High speed (800MB/sec.)
 - Low voltage
 - Differential
 - Low pin count interface
 - Isochronous link between SPP/IGP and MCP
- **CPU Interface**
 - Supports AMD Athlon/Duron CPU
 - 400/333/266/200 MHz FSB clock (IGP supports 333/266/200MHz FSB Clock)
 - FSB clock and memory clock can be operated asynchronously
 - DDR400/333/266/200 support 64-byte (cache line) data burst transfers (IGP supports DDR333/266/200)