



NVIDIA PureVideo

Bringing the High-Definition Home Theater Experience to Your PC

Today's consumers demand a high-definition (HD) home theater experience on their PC. They want superb picture clarity, stutter-free playback and multiple display connectivity options. The best way to achieve this is with NVIDIA® PureVideo™ technology.

Watch videos on your desktop PC, notebook PC, or HDTV without the annoying artifacts and imperfections of traditional PC based video solutions. PureVideo technology is the combination of a dedicated video processing core and software that delivers ultra smooth, high-definition H.264, VC-1, WMV, and MPEG-2 movies with minimal CPU utilization and low power consumption. And the high-precision subpixel processing enables videos to be scaled to any size, so that even small videos look like they were recorded in high resolution.

■ Spatial-Temporal De-Interlacing



ULTRA-SMOOTH HIGH DEFINITION MOVIES

NVIDIA PureVideo technology allows you to experience lifelike HD movies on your PC, notebook, or HDTV without stuttering or frame-dropping. PureVideo's dedicated video processing core accelerates H.264, VC-1, WMV, and MPEG-2 high definition and standard definition movies. Your HD movies and DVDs will come to life in detail never before possible on a PC. PureVideo technology, featured in NVIDIA graphics processing units (GPUs)*, offloads the CPU

NVIDIA PureVideo provides ultra smooth playback of H.264, VC-1, WMV and MPEG-2 HD and SD videos with minimal CPU usage.

and 3D graphics engine of complex video tasks, freeing your PC to run multiple applications simultaneously, while consuming less power. PureVideo is programmable and upgradeable, you can rest assured that a PC powered by PureVideo will keep up with the pace of tomorrow's video technologies, and continue to deliver HD content well into the future.

SUPERB PICTURE CLARITY

Using revolutionary techniques, NVIDIA's PureVideo technology corrects typical video image problems and delivers superb picture clarity, free of imperfections.

Sharp

Standard definition television content from satellite, cable, and DVDs, and even some high-definition content, is interlaced data, meaning two pictures are "weaved"—or interlaced—together to provide a complete picture or "frame." On many TVs and most PCs, interlacing causes jagged edges in the picture, giving viewers a less detailed image. The powerful PureVideo technology uses advanced algorithms to maintain a sharp, fully detailed image. Some video solutions try to remove "jaggies" from an image by combining the two pictures using more primitive de-interlacing techniques. This can sometimes cause double images to appear. PureVideo uses advanced spatial-temporal de-interlacing to deliver a crisp image closely matching the original movie content.



Clear

Most movies are shot on film at 24 frames per second. They are then converted to 25 or 30 frames per second for viewing on TVs. This conversion process is called 2:2 or 3:2 pull down, which eliminates the flickering that would be caused by the missing frames. However, sometimes the odd and even fields of the added frames are not properly matched, resulting in blurry images. NVIDIA PureVideo technology recovers the original 24 frame content to show a clear picture, frame after frame.

Crisp

When videos are edited after they have been converted from 24 to 25 or 30 frames per second, the edits can disrupt the normal 2:2 or 3:2 pulldown cadence. PureVideo uses advanced processing techniques to detect poor edits, recover the original content, and display perfect picture detail for smooth, natural looking video.

* Featured in NVIDIA® GeForce® 6 and 7 Series GPUs and select NVIDIA Quadro® graphics boards





NVIDIA PureVideo technology brings high-definition video to life and makes non-HD video crisp, clear, smooth and incredibly vibrant on any PC.



Precise, Vivid Colors on Any Display

PCs provide output to many different display types: CRTs, LCDs, projectors, conventional and plasma TVs. Each display has different light emitting characteristics and native resolutions. Therefore, a variety of color correction techniques are utilized to optimize the content for each type of display. PureVideo's color correction controls can optimize video

quality for any display. In addition to color correction, PureVideo can also match any resolution video to the native resolution of any display, precisely, without overscan or loss of perimeter objects.

PureVideo's native SD and HD output provides industry-leading support of standard definition or high definition TVs

via Composite, S-Video, Component, DVI, or HDMI connections. This delivers home theater quality high-definition movies at resolutions up to 1080p (depending on connection type and TV capability) without the expense of additional home theater devices.

FEATURES

BENEFITS

Programmable Video Processor	NVIDIA PureVideo is a programmable technology that can adapt to new video formats as they are developed, providing a future proof video solution.
Hardware Decode Acceleration	Provides ultra-smooth playback of H.264, VC-1, WMV, and MPEG-2 HD and SD videos with minimal CPU usage. <i>Requires decoder software.</i>
Spatial-Temporal De-Interlacing	Sharpens high definition and standard definition interlaced content on progressive displays, delivering a crisp, clear picture that rivals high end home theater systems.
High-Quality Scaling	Enlarges lower resolution videos and movies to fit your display, while maintaining a clear, clean image. Also provides downscaling of videos, including high definition, while preserving image detail.
Inverse Telecine (3:2 & 2:2 Pull-down Correction)	Recovers original images from films converted to video (e.g. DVDs, 1080i HD content), providing more accurate movie playback and superior picture quality. <i>Requires supported video software.</i>
Bad Edit Correction	Detects disruption of the normal 3:2 or 2:2 cadence resulting from poor edits made after a film has been converted from 24 frames to 25 or 30 frames per second video format. Uses advanced processing techniques to recover the original film content and display perfect picture detail frame after frame for smooth, natural looking movies. <i>Requires supported video software.</i>
Video Color Correction	Corrects differences in color characteristics of RGB monitors and TV monitors and ensures videos are not too dark, overly bright, or washed out regardless of the video format or display.
LCD Sharpening	Compensates for the slower response time of some LCD panels by increasing color signals, thereby automatically eliminating ghosting effects.
Integrated SD and HD TV Output	Connects to your standard definition or high-definition TV via Composite, S-Video, Component, DVI, or HDMI connections. Supports resolutions up to 1080p depending on connection type and TV capability.



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