



## NVIDIA PureVideo HD Technology Essential for the Ultimate HD Movie Experience

Blu-ray and HD DVD movies are bringing a new level of movie-viewing experience, with high-definition image quality far surpassing standard-definition DVDs.

To deliver the ultimate HD movie experience when playing Blu-ray and HD-DVD, NVIDIA developed **PureVideo™ HD technology**,

available with NVIDIA® GeForce® Series 7 and 8 GPUs. PureVideo HD technology features hardware acceleration, integration with leading movie players, and is designed to meet the HDCP specification for output protection management and security specifications of Blu-ray and HD DVD movie formats.

NVIDIA PureVideo HD technology delivers superb picture quality for all video formats, as well as stunning HD DVD and Blu-ray movies—with low CPU utilization and power consumption. It is the essential ingredient for the ultimate high-definition movie experience on a PC.



# NVIDIA PureVideo HD Essential for the Ultimate HD Movie Experience

## Enjoy High-definition HD-DVD and Blu-ray Movies on Your PC

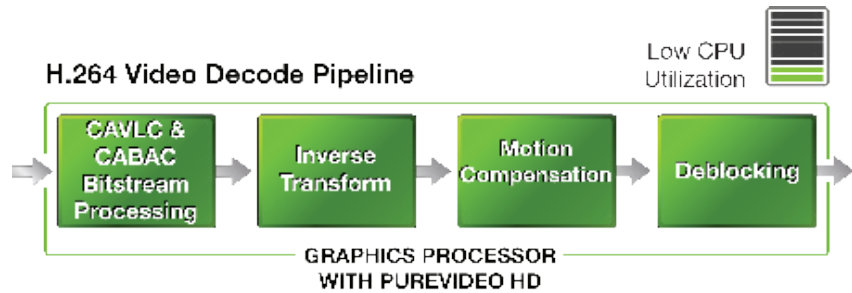
With the video processing horsepower and advanced features required for playing Blu-ray and HD DVD movies, PureVideo HD technology delivers crisp, clear, vibrant, virtually stutter-free images when playing high-definition movies.



## Revolutionary New Video Processing Architecture

NVIDIA GeForce 8400, 8500, and 8600 GPUs for Desktop and GeForce 8400M and 8600M for Notebook, incorporate a revolutionary new video processing architecture, making them the world's first GPU video processors to offload 100% of Blu-ray and HD DVD H.264 video decoding from the CPU.

### H.264 Video Decode Pipeline

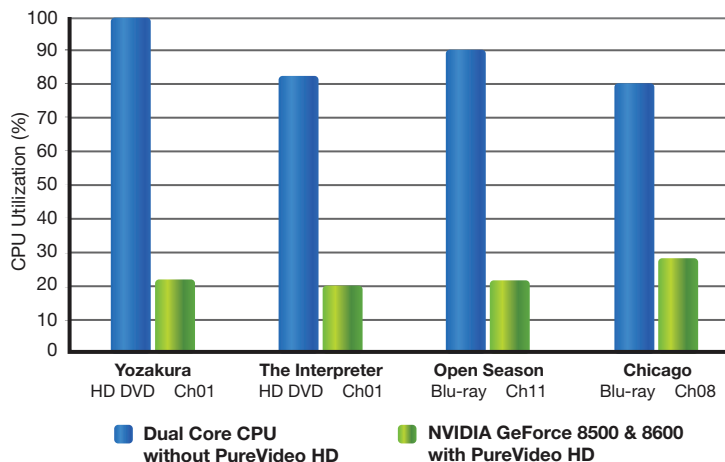


This added processing power gives PureVideo HD technology the ability to support more complex features as they are added to Blu-ray and HD DVD movies, including “picture-in-picture” movies, interactive games and menus, and higher bit-rate / higher quality movie pictures.

## Low CPU Utilization and Power Consumption

PureVideo HD technology offloads the CPU and 3D engine of the complex video decoding tasks, allowing the user to run other applications while playing a high-definition movie. Lower CPU utilization can result in reduced power consumption, heat and noise, and longer battery life.

### CPU Utilization During Blu-ray and HD DVD Movie Playback





## Superb Picture Quality

NVIDIA PureVideo HD technology delivers outstanding picture clarity, ultra-smooth video, vivid color, and precise image scaling for video and HD DVD and Blu-ray movies. PureVideo HD accelerates and enhances high-definition movies in H.264, VC-1, WMV, and MPEG-2

formats, delivering lifelike images that have up to six times the detail of standard DVD movies. High-definition post-processing features, including advanced de-interlacing, noise reduction, and edge enhancement, provide spectacular picture clarity at resolutions up to 1080p—the highest HD resolution available.



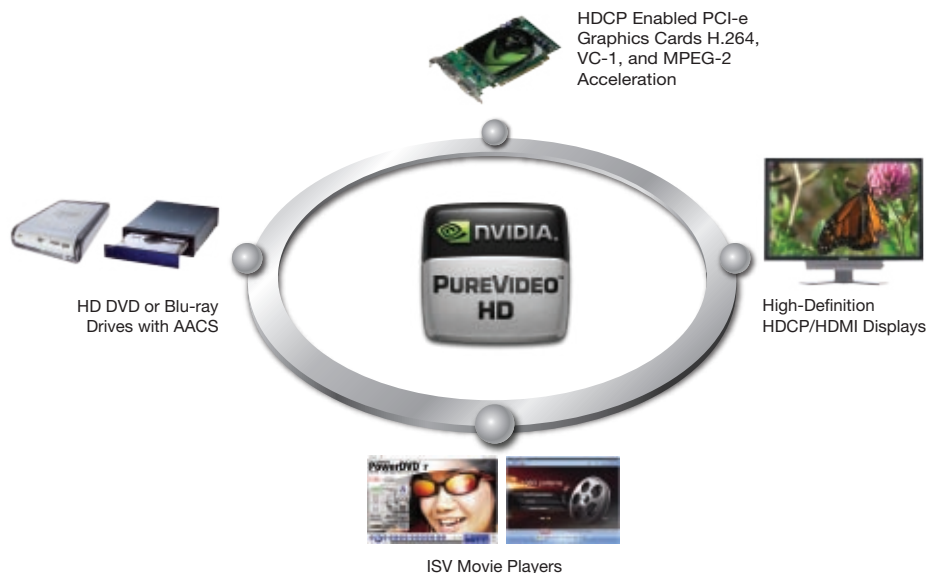
Without PureVideo

With PureVideo

## The Core of a Complete Blu-ray/HD DVD Solution

Featuring hardware acceleration, post-processing, HDCP circuitry, and integration with leading HD movie software players, PureVideo HD technology is a core ingredient for delivering a visually stunning movie viewing experience on a PC. NVIDIA is working closely with software developers, graphics cards manufacturers, and optical disk drive manufacturers, to help PC manufacturers build the ultimate PC for high-definition movie playback. Leading OEMs including Dell, HP, Toshiba and Acer have adopted NVIDIA GeForce® GPUs with PureVideo HD technology to power their Blu-ray and HD DVD PCs.

### The PureVideo Ecosystem





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### Features and Benefits

<b>Discrete, Programmable Video Processor</b>	NVIDIA PureVideo HD technology is a discrete programmable processing core in certain NVIDIA GeForce GPUs that provides superb picture quality and ultra-smooth movies with low CPU utilization and power consumption.
<b>Hardware Decode Acceleration<sup>1</sup></b>	Provides ultra-smooth playback of H.264, VC-1, WMV and MPEG-2 HD and SD movies. Hardwired acceleration for all processing-intensive multimedia and security functions.
<b>HDCP Capable<sup>2</sup></b>	Designed to meet the output protection management (HDCP) and security specifications of Blu-ray Disc and HD DVD formats, allowing playback of encrypted movie content with HDCP-compliant displays.
<b>Advanced Spatial-Temporal De-Interlacing</b>	Sharpens interlaced content on progressive displays, delivering a crisp, clear picture that rivals high-end home-theater systems
<b>High-Quality Scaling</b>	Enlarges lower resolution movies and videos to HDTV resolutions, up to 1080i, while maintaining a clear image. Also provides downscaling of videos, while preserving image detail.
<b>Inverse Telecine (3:2 &amp; 2:2 Pulldown Correction)</b>	Recovers original film images from films-converted-to-video (DVDs, 1080i HD content), providing more accurate movie playback and superior picture quality
<b>Bad Edit Correction</b>	When videos are edited, the edits can disrupt the pulldown cadence. PureVideo technology uses advanced processing techniques to detect poor edits, recover the original content, and display improved picture detail frame after frame for smooth video.
<b>Video Color Correction</b>	NVIDIA Color Correction Controls let you compensate for the different color characteristics of various RGB monitors and TVs so that movies are not too dark, overly bright, or washed out, regardless of the video format or display type.
<b>Integrated SD and HD TV Output</b>	World-class TV-out functionality via Composite, S-Video, Component, DVI or HDMI connections. Supports resolutions up to 1080i/1080p, depending on connection type and TV capability.
<b>Noise Reduction</b>	Improves movie image quality by removing unwanted artifacts
<b>Edge Enhancement</b>	Sharpens movie images by providing higher contrast around lines and objects
<b>HD Movie Player Integration</b>	NVIDIA PureVideo HD technology powers some of the world's leading HD movie player software applications, providing the ultimate HD DVD and Blu-ray Disc movie experience.

<sup>1</sup> Feature requires supported video software. Features may vary by product.

<sup>2</sup> Requires other HDCP-compatible component

### System Requirements

For the ultimate HD DVD or Blu-ray movie experience on a PC:

- A PCI Express graphics card with NVIDIA GeForce 7 or 8 Series HDCP-capable GPU, secure HDCP CryptoROM, and 256MB graphics memory
- NVIDIA ForceWare® featuring NVIDIA PureVideo HD technology (greater than or equal to Microsoft® Windows® XP

driver version 158.22 for GeForce 8800 and GeForce 7 series GPUs or greater than or equal to Microsoft Windows Vista™ driver version 158.18 for all GeForce 7 or 8 series GPUs)

- Optical disc drive supporting Blu-ray and/or HD DVD movie playback
- Blu-ray or HD DVD movie player software with PureVideo HD hardware acceleration of H.264, VC-1, and MPEG-2 high-definition content

Also recommended:

- A dual-core CPU for GeForce 8800 and GeForce 7 series GPUs, or a fast single core for GeForce 8600, 8500 and 8400 series
- 1GB of RAM minimum, 2GB recommended
- Microsoft Windows XP or Windows Vista for the GeForce 8800 and GeForce 7 series GPUs, currently Microsoft Vista only for the GeForce 8600 and 8500 series GPUs

To learn more about NVIDIA PureVideo HD technology, go to [www.nvidia.com/purevideohd](http://www.nvidia.com/purevideohd)

