



Adobe® Mercury Playback Engine in Adobe Premiere Pro CS5.X

This document provides an overview of how to use the Adobe® Mercury Playback Engine in Adobe Premiere Pro CS5.X.

HP recommends Windows® 7.



What is Adobe® Mercury Playback Engine?

The Adobe Mercury Playback Engine uses CUDA from NVIDIA to accelerate effects. The GPU can afford to devote a large part of its die to calculating units, and with its highly parallel nature makes the NVIDIA Quadro GPU with CUDA technology ideal for encoding complicated effects.

How does it work?

The Adobe Mercury Playback Engine is 64-bit native, optimized for multi-core processors, and NVIDIA CUDA GPUs (graphics processing units) to provide fluid, real-time editing. The Adobe Mercury Playback Engine uses NVIDIA GPU-accelerated 32-bit color pipeline with most of the popular effects having been rewritten to take advantage of this.

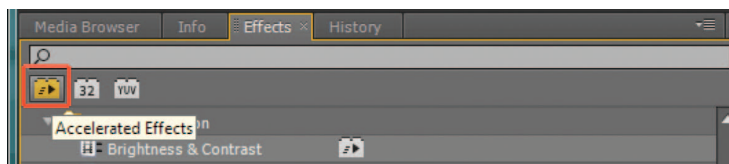
With Premiere Pro CS5.5 get even more NVIDIA GPU-accelerated effects including: fast blur, film dissolve transition and accelerated media preparation.

This technology lets video professionals maintain full frame rate, at full resolution, when applying multiple color corrections and effects across video layers. Combine thousands of clips-whether in SD, HD, 2K, or 4K on the time-line and view in real time on an external DreamColor monitor.

FIGURE 1

How to tell which effects are GPU accelerated in Adobe Premiere Pro CS5.X?

In the effects window of Adobe Premiere Pro CS5.X an effect with the icon in the red box is GPU accelerated.



How to tell if GPU acceleration is enabled in Adobe Premiere Pro CS5.X?

FIGURE 2

Timeline with GPU enabled is indicated with a yellow line at the top of the timeline.

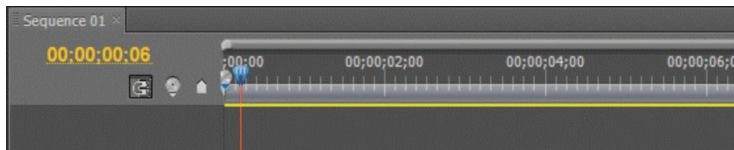


FIGURE 3

Timeline without GPU enabled is indicated with a red line at the top of the timeline.





Graphics cards supported by the Adobe® Mercury Playback Engine in Adobe CS5.5.

The Adobe Mercury Playback engine only supports the following graphics cards from NVIDIA. Adobe is planning to support additional cards in the future.

Workstation

- Quadro CX
- Quadro FX 3800
- Quadro FX 4800
- Quadro FX 5800
- Quadro 2000
- Quadro 4000
- Quadro 5000
- Quadro 6000
- (No Support for Tesla cards at this time.)

Workstation Laptops

- Quadro FX 3700M
- Quadro FX 3800M
- Quadro 2000M
- Quadro 3000M
- Quadro 4000M
- Quadro 5000M
- Quadro 5010M

NVIDIA Driver needed for Adobe CS5.5?

CUDA 3.2 is needed to run the Adobe Mercury Playback Engine in CS5.5. Use the HP Z Workstation driver 267.10 or later.

How to tell if the Graphics driver supports CUDA 3.2?

- In the following directory C:>Program Files>Adobe>Adobe Premiere Pro CS5>
- Run from the command line "GPUSniffer.exe > GPU.txt"
- In the GPU.txt file you'll find the following line.
- CUDA driver version: 3020

CPU vs. GPU Performance numbers?

There are several variables to consider when benchmarking the Adobe Mercury Playback Engine: CPU clock speed, number of CPU's and graphics card.

- CPU¹**
- The higher the clock speed on the CPU, the smaller the performance delta is.
 - This is also true when you increase the number of CPU's

- GPU²**
- The faster the graphics card the longer the performance delta is. The performance delta between (Mercury Playback Engine) GPU vs CPU using the Adobe Media Encoder with NVIDIA CUDA cards supported by Adobe and HP.
- Q2000, Q4000 and Q5000 ~3x faster than CPU only encoding.
 - Q6000 ~6x faster than CPU only encoding.

But the Adobe Mercury Playback Engine is also used in the timeline to accelerate effect in real time. The following is a guide to help you choose the right graphics cards.

- Less than 5 layers—Q2000
- 5 layers—Q4000
- 7 layers—Q5000
- 9 layers or more—Q6000

¹ Based on an internal test of three different CPU speeds, and different core sizes.

² Based on internal test clips: 5 layer test, 7 layer test and 9 layer test. The clips used in each layer contain up to 6 GPU accelerated effects, clip format is P2, 1920x1080, FPS 23.96, duration is 19 sec. Adobe Media encoder was used on all three test clips with GPU acceleration on and off. Format: H.264; Preset: HDTV 720p 29.97 HQ.