ATI FirePro™ Graphics
Workstation Professional Graphics

User Guide | Enabling 10-bit Color for Adobe® Photoshop® CS4 and Adobe® Photoshop® CS5 with ATI FirePro™ Professional Graphics Adapters

Introduction

ATI FirePro™ professional graphics adapters provide the stability, performance, and features demanded by today's creative professional. ATI FirePro™ professional graphics products have supported true 10-bit per component color support for several generations, providing 30-bit color output to the display.*

The graphics drivers for ATI FirePro™ professional graphics offer users of both Adobe® Photoshop® CS4 and Adobe® Photoshop® CS5 the ability to render images with 10-bit per component color, helping to provide an exact representation of colors between Photoshop CS5 and their 10-bit displays.

This guide will describe how users can enable true 10-bit per component color for Adobe Photoshop CS5.[1]

Requirements

Enabling this feature requires that the user has a display that supports true 10-bit per component such as any of the following:

→ Dell UltraSharp U2711

→ Dell UltraSharp 2709W

→ Eizo ColorEdge CG223W

→ Eizo ColorEdge CG243W

→ Eizo ColorEdge CG245W

→ Eizo ColorEdge CG301W

→ Eizo FlexScan SX2262W

→ Eizo FlexScan SX2462W

→ HP DreamColor LP2480zx

→ NEC MultiSync® LCD2180WG

→ NEC MultiSync® PA241W

These displays need to be connected to the ATI FirePro™ professional graphics accelerator using either a DisplayPort or dual-link DVI, depending on the display and which of its interfaces support 10-bit input.

Note: *For dual-link DVI input*, the ATI FirePro™ graphics accelerator needs to have a DVI connector on its board. The ATI FirePro™ graphics driver must be version 8.66 or later. The ATI Catalyst™ Control Center application must be installed during the graphics driver installation process in order to enable 10-bit per component color support.

Enabling the 10-bit Color Feature for ATI FirePro™ Graphics Accelerators

To use Adobe Photoshop CS5[1] with 10-bit color support, this feature must first be enabled for the graphics accelerator. To enable the feature:

1. **Start the ATI Catalyst™ Control Center application** by either right clicking on the desktop background and selecting "Catalyst Control Center" or double clicking on the Catalyst Control Center icon in the icon tray.
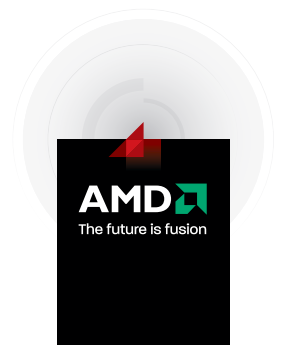
2. **In the "Graphics Setting" panel** on the left hand side of the control center window, expand the "Workstation" item by clicking on the "+" icon next to it. Then select "Settings."

3. **Under the "Graphics Adapter" selection box** under the "Settings" heading, make sure that a display capable of 10-bit per component output is listed next to your graphics adapter.

4. **Near the bottom of the panel,** check the box next to "Enable 10-bit pixel format support." Figure 1 shows the Catalyst Control Center Workstations Setting panel with this option enabled.

Figure 1

5. **Once you have checked the box** next to "Enable 10-bit per pixel format support," click "OK" and exit the Catalyst Control Center.

6. **Save your work.** It's recommended you reboot your system prior to configuring Adobe Photoshop in the next section.

Your ATI FirePro™ graphics accelerator is now configured to display 10-bit per component color on your 10-bit per component capable display.

Configuring Adobe® Photoshop® CS4 and Adobe® Photoshop® CS5

Once you have enabled 10-bit per component output for your ATI FirePro™ graphics accelerator, you must now configure Adobe Photoshop to render 10-bit per component images. To do this, you must configure Adobe Photoshop to use OpenGL rendering.

1. **On the "Preferences" dialog,** select "Performance" on the left side.
2. **On the lower right side** of the "Performance" dialog, check the box next to "Enable OpenGL Drawing." If you're using Adobe® Photoshop® CS5, click on the "Advanced Settings…" button and select "Advanced" mode. Figure 2 shows the "Performance" dialog with this feature enabled.
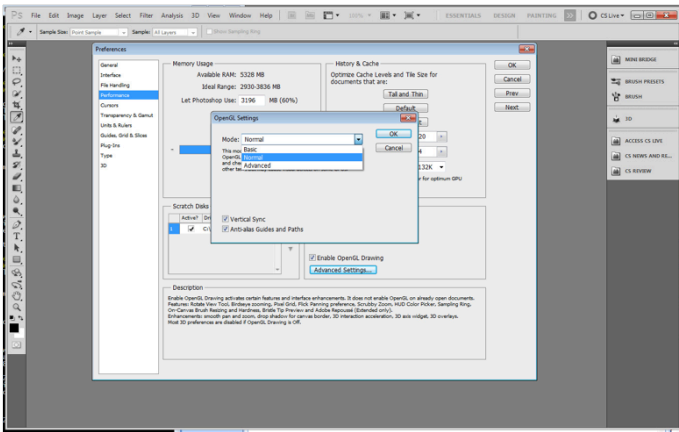

Figure 2

3. **Once you have enabled OpenGL** drawing, click "OK."
4. **You must now exit Adobe Photoshop** and restart it in order for the switch to OpenGL rendering to take effect. ***Make sure to save any work before exiting!*** Once Adobe Photoshop is restarted, images will be rendered with 10-bits per component.

To test that your installation is successful, go to the tools section at www.amd.com/firepro/tools. Download the package in the Adobe 10-bit section that is an Adobe Photoshop image file called "ramp.psd." This image consists of a gray-scale color ramp. For 8-bit per component rendering, distinct banding is noticeable in the image. Once 10-bit per component rendering is enabled in Photoshop, color transitions are smooth with no visible banding.

Troubleshooting

If you loaded the sample image, "ramp.psd" into Adobe Photoshop CS5 and are still seeing color banding, try repeating the steps outlined in the previous sections, and double check that the "OpenGL Setting" is set to "Advanced" mode. If you're using Adobe® Photoshop® CS4, and the image is still not displayed correctly, you may need to disable color matching.

To do this, go to the "Performance" preferences as shown in Figure 2. Beneath the "Enable OpenGL Drawing" check box, click on the "Advanced Settings…" button. This will bring up the "GL Settings" panel as shown in Figure 3.
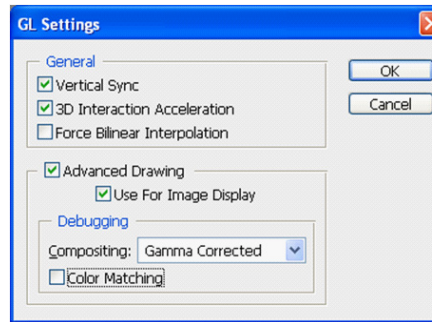

Figure 3

Settings panel, then click "OK" on the preferences panel. Exit and restart Adobe Photoshop, then reload the sample image to verify that 10-bit per component output is being displayed correctly.

If the sample image still shows banding, make sure you are using version 8.66 or later of the ATI FirePro™ driver, that your monitor is capable of 10-bit per component input, and that the connection between the graphics adapter is using either a DisplayPort or dual-link DVI connection.

Caveats and Limitations

This feature is available with version 8.66 and later graphics drivers and ATI FirePro™ graphics adapters. Adobe does not provide support for 10-bit image display for Adobe Photoshop CS5.

Frequently Asked Questions

What's the benefit of this new capability?

This offers Adobe Photoshop CS5 users an end-to-end 10-bit color management workflow, where they can display their deep bit-depth images at full 10-bit color without compromise, in combination with a 10-bit display, providing a representation of colors between Photoshop and the display.

Why is 10-bit color important?

10-bit color presents a palette of 1.07 billion colors, which is 64 times more than the typical 16.7 million colors that many displays are capable of showing.[2]

Which ATI FirePro™ graphics accelerators support this capability?

Support for this capability is available on the following ATI Professional Graphics products, and is planned for future products from the same family: ATI FirePro™ V8800, ATI FirePro™ V8750, ATI FirePro™ V8700, ATI FirePro™ V7800, ATI FirePro™ V7750, ATI FirePro™ V5800, ATI FirePro™ V5700, ATI FirePro™ V4800, ATI FirePro™ V3800, ATI FirePro™ V3750, ATI FirePro™ V3700, ATI FireGL™ V8650, ATI FireGL™ V8600, ATI FireGL™ V7700, ATI FireGL™ V7600, ATI FireGL™ V5600, and ATI FireGL™ V3600.

On which OS is this capability supported?

It's currently supported on Microsoft® Windows® XP, Windows Vista®, and Windows® 7.

Which driver release do I need?

Support for this capability is available on the ATI FirePro™ driver release 8.66 or later.

Which Adobe Photoshop product is supported?

Currently, Adobe Photoshop CS4 and Adobe Photoshop CS5 are supported.