

NEC Display Solutions

10 bit Color Depth Demo Application

November 3, 2010

Version 101103

Description:

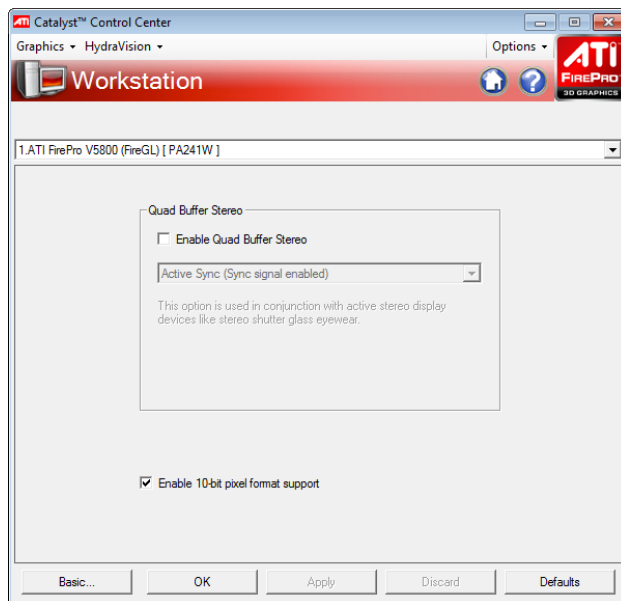
Application to test the capabilities of the video graphics system for 10 bit color support, and generate images that demonstrate the benefits of 10 bit color depth on the NEC MultiSync PA series displays when using DisplayPort video connection and a compatible video graphics card.

System requirements:

1. Microsoft Windows XP, Vista or 7.
2. Compatible video graphics card that supports 10 bit color (30 bits total).
3. NEC MultiSync PA series display connected via DisplayPort.

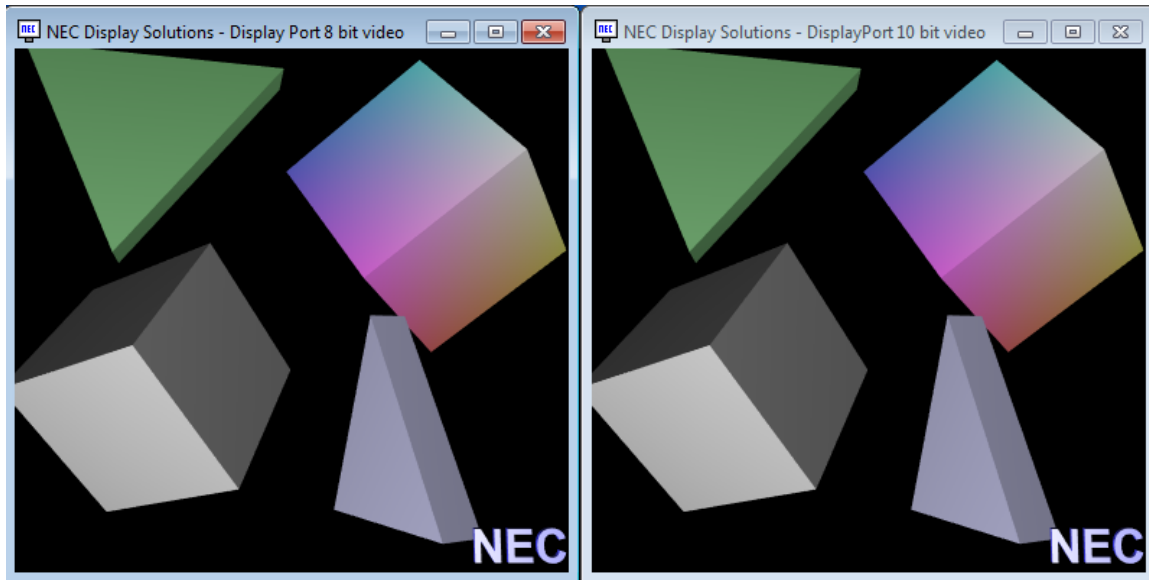
System setup:

If using an ATI video card, 10 bit support must be manually enabled:



Run the application **10bitdemo.exe**.

If 10 bit is supported and enabled, three windows will open:



The two main windows show 3D objects rendered using OpenGL. One window will use 10 bits, and the other 8 bits. As the 3D objects slowly rotate, subtle banding artifacts can be seen on the 8 bit window, but not the 10 bit window.

If 10 bit is not supported, then a message will be shown and the application will close. Check that the card supports 10 bits via DisplayPort, and is enabled in the video driver settings.

Options:

- Press P to pause the 3D object rotation.
- Press B to change the shading of the background.
- Press 1 to toggle the main lighting of the 3D objects.
- Press 2 to toggle the secondary lighting of the 3D objects.
- Press N to toggle the NEC logo.

Select different lighting and background combinations to highlight the banding artifacts on different color gradients. Pause the rotation if necessary. Resizing the 8 bit window will automatically size the 10 bit window to the same size.

Notes:

The 3D rendering does not perform any color dithering or “noise addition” so the banding artifacts on 8 bit window is very obvious. This type of banding can also be seen on many types of vector or line art applications. Banding on photographs is typically much more subtle due to noise in the image.

Using 10 bit video depends on the combination of display, video interface connection, video card, video card drivers, and application all being able to support 10 bits. Currently 10 bit support is only available on Windows with applications that use OpenGL. The application must typically be modified to request the use of 10 bits from the video card driver.

Supported Video Cards (unofficial list):

Nvidia	AMD
GT200GL	ATI FireGL™ V3600
Quadro FX 5800	ATI FireGL™ V5600
Quadro FX 4800	ATI FireGL™ V7600
Quadro CX	ATI FireGL™ V7700
Quadro FX 3800	ATI FireGL™ V8600
G94GL	ATI FireGL™ V8650
Quadro FX 1800	ATI FirePro™ V3700
G96GL	ATI FirePro™ V3750
Quadro FX 580	ATI FirePro™ V5700
	ATI FirePro™ V7750
	ATI FirePro™ V8700
	ATI FirePro™ V8750
	ATI FirePro™ V3800
	ATI FirePro™ V4800
	ATI FirePro™ V5800
	ATI FirePro™ V7800
	ATI FirePro™ V8800
	ATI FirePro™ V9800

Note: Newer models not included in this list may also support 10 bit color.

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