

Overview

NVIDIA Quadro M5000 8GB Graphics M6V53AA



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INTRODUCTION

Based on the new Maxwell GPU architecture, the NVIDIA Quadro M5000 gives you true high end graphics performance and capabilities, making it faster and easier to accelerate 3D models, render complex scenes, and simulate large datasets. 8 GB of GDDR5 GPU memory with ultra-fast bandwidth allows you to create and render large, complex models and compute massive datasets. Plus, refinements in the display engine allows up to four displays natively with DisplayPort 1.2 support for ultra-high resolutions like 4096x2160 @ 60 Hz with 30-bit color. Quadro Sync (sold separately) also lets you frame-lock multiple displays together and take advantage of SDI video input/output support.

The NVIDIA Quadro M5000 is set to take on the most demanding workflows whether in product development, high end styling, near real-time photorealistic rendering, media and entertainment creations, and simulations/analysis.

PERFORMANCE AND FEATURES

Overview

- NVIDIA's most efficient Perf/Watt professional graphics in a dual slot form factor
- 8GB GDDR5 ultra-fast ECC memory supporting a wide memory path to minimize memory access performance penalties
- Display engine drives up to four displays natively with DisplayPort 1.2 supporting ultra-high resolutions like 4096x2160 @ 60 Hz with 30-bit color
- NVIDIA SYNC (sold separately) allows multiple displays to be frame-locked together and supports SDI video input/output
- Support for large-scale, ultra-high resolution visualization using the NVIDIA® SVS platform which includes NVIDIA® Mosaic, NVIDIA® Sync and NVIDIA® Warp/Blend technologies
- 2048 CUDA parallel processing cores well suited to accelerate demanding parallel computing workloads using CUDA or OpenCL
- NVIDIA® GPU Boost automatically maximizes application performance in real time while staying within the power and thermal envelope of the card.
- Comes complete with all necessary ISV application certifications

COMPATIBILITY

The NVIDIA Quadro M5000 is supported in the following HP Z Workstations:

- Z440, Z640, Z840

SERVICE AND SUPPORT

The NVIDIA Quadro M5000 has a one-year limited warranty or the remainder of the warranty of the HP product in which it is installed. Technical support is available seven days a week, 24 hours a day by phone, as well as online support forums. Parts and labor are available on-site within the next business day. Telephone support is available for parts diagnosis and installation. Certain restrictions and exclusions apply.

Technical Specifications

TECHNICAL SPECIFICATIONS

Form Factor	Dimensions: 4.4" H x 10.5" L Dual Slot, Full Height Cooling: Active Weight: 525 grams (without extender)
Graphics Controller	NVIDIA Quadro M5000 GPU: GM204 with 2048 CUDA cores Power: 150 Watts
Bus Type	PCI Express 3.0 x16
Memory	Size: 8GB GDDR5 ECC capable Memory bandwidth: 211GB/s Memory Width: 256-bit
Connectors	1 Dual Link DVI-I 4 DisplayPort 1.2a Factory configured option: No adapter included with card. After market option kit: No adaptor included with card. Additional DVI to VGA, DisplayPort to VGA, DisplayPort to DVI, and DisplayPort to Dual-Link DVI adapters available as accessories
Maximum Resolution	DisplayPort: - up to four 4096 x 2160 x 30 bpp @ 60Hz displays - up to two 5120 x 2880 @ 60Hz displays - supports High Bit Rate 2 (HBR2) and Multi-Stream Transport (MST) DL-DVI(I) output: - up to 2560 x 1600 x 32 bpp @ 60Hz Single Link-DVI(I) output: - up to 1920 x 1200 x 32 bpp @ 60Hz VGA (via adapter cable): - 2048 x 1536 x 32 bpp at 85 Hz
Image Quality Features	12-bit internal display pipeline (hardware support for 12-bit scanout on supported panels, applications and connection) NVIDIA® 3D Vision™ technology, 3D DLP, Interleaved, and other 3D stereo format support. Full OpenGL quad buffered stereo support.

Technical Specifications

Support for large-scale, ultra-high resolution visualization using the NVIDIA® SVS platform which includes NVIDIA® Mosaic, NVIDIA® Sync and NVIDIA® Warp/Blend technologies.

Display Output

Maximum number of displays
- 4 direct attached monitors
- 4 using DP 1.2a with MST and HBR2 enabled monitors

Maximum number of DisplayPort displays possible (may require MST and/or HBR2):

- 4 1920x1200
- 4 2560x1600
- 4 4096x2160
- 2 5120x2880 (requires dual DP input 5k displays)

Maximum number of monitors across all available Quadro M5000 outputs is 4.

Shading Architecture

Shader Model 5.0

Supported Graphics APIs

OpenGL 4.5
DirectX 12

API support for NVIDIA's CUDA™ C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, Fortran

Available Graphics Drivers

Microsoft Windows 10
Microsoft Windows 8.1
Microsoft Windows 8
Microsoft Windows 7
Linux - Full OpenGL implementation, complete with NVIDIA and ARB extensions

HP qualified drivers may be preloaded or available from the HP support Web site:

<http://welcome.hp.com/country/us/en/support.html>

Notes

1. Factory configured Quadro M5000 does not include a video cable adapter. Video cable adapters must be ordered separately.
2. A total maximum of 4 active monitors are supported across all display output types. This may be accomplished by using daisy chained DisplayPort 1.2 displays (displays must support MST and HBR2).
3. Configurations of a single Quadro M5000 graphics card in HP Z440 Workstation require the HP Z440 Fan and Front Card Guide Kit, configurable from the factory (CTO PN: G8T99AV) or as an Aftermarket Option (AMO PN: J9P80AA).

Summary of Changes

Date of change:	Version History:		Description of change:
	From v1 to v2		

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