QuickSpecs

Overview

Models

NVIDIA Quadro K5000 4GB Graphics	C2J95AA

Introduction

The NVIDIA Quadro® K5000 graphics board is a PCI Express 2.0 full-height form factor graphics add-in card based on the GK104 Kepler architecture graphics processing unit (GPU). The Quadro K5000 graphics board is targeted as a high-performance workstation graphics solution for PCI Express systems and brings a whole new level of performance and features to professional graphics and GPU computing applications.

The NVIDIA® Quadro® K5000 graphics board offers 4 GB of GDDR5 memory. It supports a variety of display types including CRTs, Digital Flat Panels, Projectors, and HDTVs.

Performance and Features

Kepler generation NVIDIA CUDA™ architecture with 1536 CUDA cores available in the K5000, offering new levels of GPU computing performance in this category of graphics.

Large 4GB GDDR5 frame buffer providing ultra high memory bandwidth.

Accelerated floating point operations with full IEEE 764-2008 32-bit and 64-bit precision.
Controllable Error Correcting Codes (ECC) memory for the K5000 frame buffer memory.

NVIDIA Parallel DataCache™ hierarchy with configurable L1 and unified L2 caches.

Unified Driver Architecture (UDA)
The NVIDIA UDA guarantees forward and backward compatibility with software drivers. Simplifies upgrading to a new solution because all Quadro products work with the same driver software.

The Quadro K5000 supports up to 4 direct attach active displays via the following connectors: dual-link DVI-I, dual-link DVI-D, 2 DisplayPort. NOTE: not available for Windows XP (max number of displays is 2 for Windows XP).

30-Bit color fidelity provided through 10-bit per color internal display processing, including hardware support for 10-bit per color scan-out.

High-bandwidth digital content protection (HDCP) support up on all digital outputs.

- NVIDIA SLI™ technologies (not supported with Windows XP):
- NVIDIA SLI Frame Rendering technology transparently scales professional application performance on a single display by tapping the power of multiple SLI-enabled Quadro GPUs.
- NVIDIA SLI FSAA (Full Scene Anti Aliasing) technology drives unprecedented image quality with up to 128x Full Screen Anti-Aliasing, dramatically reducing visual aliasing artifacts.
- NVIDIA SLI Multi OS allows a user to run multiple Windows or Linux workstation applications from a single system, with each Operating System directly assigned to a Quadro graphics solution.
- NVIDIA SLI Mosaic Technology enables transparent scaling of any application, tear-free across up to four display channels, including support for 4K projection, while delivering full performance from a single SLI certified workstation.

Overview

Compatibility
The Quadro K5000 is supported on the following HP Personal Workstations:
- Z820, Z620, Z420

Service and Support
The NVIDIA Quadro K5000 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

Form Factor	4.376" H x 10.5" L Dual Slot
Graphics Controller	NVIDIA Quadro K5000 Graphics Card based on the GK104 GPU Core Count: 1536 CUDA cores Max Power: 122 Watts
Bus Type	PCI Express 2.0 x16
Memory	4GB GDDR5 173GB/s memory bandwidth
Connectors	DVI-I (1), DVI-D (1), DP (2), Optional 3D Stereo bracket with 3-pin mini-DIN connector. No adapter included with card. DVI to VGA, DisplayPort to VGA, DisplayPort to DVI, and DisplayPort to Dual-Link DVI adapters available as accessories
Image Quality Features	• DisplayPort with Multi-Stream Technology (MST) and High Bit Rate 2 (HBR2), HDMI 1.4, and HDCP support • NVIDIA 3D Vision™ technology
Display Output	400 MHz integrated RAMDAC • Maximum resolution over VGA (through DVI to VGA cable): 2048 × 1536 × 32 bpp at 85 Hz Dual-link internal TMDS (DVI 1.0) • Maximum resolution over digital port (single GPU and SLI mode): 2560 × 1600 × 32 bpp at 60 Hz (reduced blanking) Single-link internal TMDS (DVI 1.0) • Maximum resolution over digital port (single GPU and SLI mode):1920 × 1200 × 32 bpp at 60 Hz (reduced blanking) DisplayPort with MST and HBR2. • Maximum resolution: 3840 × 2160 × 36 bpp at 60Hz HDMI • Maximum resolution: 1920 × 1080 × 32 bpp at 60Hz
Shading Architecture	Shader model 5.0 Support
Supported Graphics APIs	OpenGL 4.3 DirectX 11 API support for NVIDIA's CUDA™ C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, Fortran
Available Graphics Drivers	Genuine Windows 7 Professional (64-bit and 32-bit) Genuine Windows Vista Business (64-bit and 32-bit) Microsoft Windows XP Professional (64-bit and 32-bit) Red Hat Enterprise Linux (RHEL) 5 Desktop/Workstation (64-bit and 32-bit) Red Hat Enterprise Linux (RHEL) 6 Desktop/Workstation SUSE Linux Enterprise Desktop 11 (64-bit and 32-bit) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html

Technical Specifications

Power Consumption	122 Watts
Notes	1. VGX Pass Through feature supported on NVIDIA Quadro K5000 to enable direct mapping of GPU to Virtual Machine. 2. No display output adapter included.