

### Overview

## NVIDIA Quadro4 980 XGL Graphics Card

### Models

AA623A – For HP xw series workstations

A9655A – For HP zx series workstations

---

### Introduction

The new mid-range NVIDIA Quadro4 980 XGL Graphics Controller offers ultimate workstation performance and features at an affordable price. With programmable shaders, dual DVI-I display support and the new nView software, the Quadro4 980 XGL is the most powerful and robust mid-range 3d workstation graphics solution on the market. The Quadro4 980 XGL represents a revolutionary combination of performance and features, including 128-MB DDR memory, nfiniteFX II programmable graphics pipeline and performance optimized OpenGL and DirectX drivers. Features also include a unified memory architecture, which dynamically allocates memory between graphics subsystems, Lightspeed Memory Architecture (LMA) II, which optimally load balances across NVIDIA's patented crossbar memory controller, resulting in maximum memory bandwidth utilization. The Quadro4 980 XGL Graphics Controller is a perfect solution for the mid-range CAD and professional DCC user communities requiring breakthrough application performance.

---

### Key Benefits

- Hardware overlays
  - Hardware accelerated antialiased points and lines
  - Two-sided lighting
  - Occlusion culling
  - Advanced scene antialiasing
  - OpenGL quad-buffered stereo
  - Optimized and certified for OpenGL 1.3 and DirectX 8
  - Multi-display productivity
- 

### Performance

The NVIDIA Quadro4 980 XGL is optimized for professional mid-range 3D, CAD and DCC configurations.

---

### Compatibility

The NVIDIA Quadro4 980 XGL is compatible with HP Workstations zx2000, xw4100, zx6000, xw6000, xw8000.

---

### Service and Support

The NVIDIA Quadro4 980 XGL 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

<b>Form Factor</b>	ATX
<b>Graphics Controller</b>	NVIDIA NV18GL GPU
<b>Bus Type</b>	AGP 8x Version 3.0 compliant AGP 4x/2x Version 2.0 compliant
<b>RAMDAC</b>	Dual 350 MHz integrated
<b>Memory</b>	128MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
<b>Connectors</b>	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
<b>Dimensions</b>	AGP full height ATX card. 4.25 x 6.875 in/10.8 x 17.46 cm
<b>Multi-monitor support</b>	Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays
<b>Additional product features</b>	<p>128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage</p> <p>128 KB BIOS 3.3V Flash ROM reprogrammable by SW</p> <p>Hardware Overlay Planes</p> <p>Hardware two-sided lighting</p> <p>Hardware accelerated antialiased points and lines</p> <p>Quad-buffered Stereo</p> <p>Diamond exit rule line rasterization for improved line quality</p> <p>3D Texture support</p> <p>Occlusion Culling</p> <p>Frame synchronization</p> <p>Compliant with Microsoft®/Intel® PC2001 Workstation requirements</p> <p>Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications</p> <p>DDC2B Monitor support on all OS platforms</p> <p>ACPI Version 1.0b Power Management support (all modes)</p>
<b>AGP 8x Version 3.0 compliant and 2x/4x Version 2.0 compliant including</b>	<p>Sideband Addressing</p> <p>AGP Texturing (Execute Mode)</p> <p>Fast writes support</p>
<b>NV28GL GPU featuring:</b>	<p>300 MHz engine clock rate</p> <p>325 MHz memory clock rate</p> <p>128-bit memory interface</p> <p>VGA controller</p> <p>4 parallel pixel pipelines</p> <p>2 parallel geometry engines</p> <p>nfiniteFX II programmable vertex and pixel shader technology</p>
<b>Supported graphics APIs</b>	<p>OpenGL 1.3 (and OpenGL 2.0 when available) ICD with immediate mode support for all OGL primitive types</p> <p>DirectX 8 and above</p>
<b>Available graphics drivers</b>	<p>Windows® 2000</p> <p>Windows XP Professional</p> <p>Windows XP 64-Bit Edition 2003</p> <p>Linux (1st Calendar Quarter 2003)</p> <p>HP qualified drivers may be preloaded or available from the HP support Web site:  <a href="http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeld=12454&amp;prodCatId=296719&amp;locale=en_US&amp;taskId=135">http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeld=12454&amp;prodCatId=296719&amp;locale=en_US&amp;taskId=135</a></p>

### Technical Specifications

NVIDIA Quadro4 980XGL Graphics Card display resolutions & refresh rates	MONITOR 1, 2 ANALOG/DIGITAL		
	Resolution	Maximum Refresh Rate	Bits per Pixel
	640x480	240Hz/240Hz	8, 16, 24, 32
	800x600	240Hz/200Hz	8, 16, 24, 32
	1024x768	170Hz/140Hz	8, 16, 24, 32
	1152x864	170Hz/100Hz	8, 16, 24, 32
	1280x720	150Hz/120Hz	8, 16, 24, 32
	1280x960	150Hz/85Hz	8, 16, 24, 32
	1280x1024	150Hz/75Hz	8, 16, 24, 32
	1600x900	120Hz/75Hz/ NoDigitalDisplaySupport	8, 16, 24, 32
	1600x1024	100Hz/72Hz/ NoDigitalDisplaySupport	8, 16, 24, 32
	1600x1200	120Hz/60Hz/ NoDigitalDisplaySupport	8, 16
	1600x1200	100Hz/60Hz/ NoDigitalDisplaySupport	24, 32
	1920x1080	100Hz/NoDigitalDisplaySupport	8, 16
	1920x1080	85Hz/NoDigitalDisplaySupport	24, 32
	1920x1200	100Hz/NoDigitalDisplaySupport	8, 16
	1920x1200	85Hz/NoDigitalDisplaySupport	24, 32
	1920x1440	85Hz/NoDigitalDisplaySupport	8, 16
	1920x1440	75Hz/NoDigitalDisplaySupport	24, 32
	2048x1536	75Hz/NoDigitalDisplaySupport	8, 16
	2048x1536	60Hz/NoDigitalDisplaySupport	24, 32

© Copyright 2003 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft and Windows are US registered trademarks of Microsoft Corporation. Intel is a US registered trademark of Intel Corporation.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.