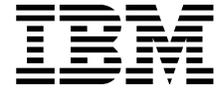


Industry-leading graphics performance



POWER GXT6500P Graphics Accelerator

Highlights

Provides 3D graphics performance leadership as measured by standard OpenGL benchmarks when coupled with IBM IntelliStation® POWER and IBM RS/6000® workstations featuring POWER3™-II microprocessors

Includes breakthrough technology optimally tuned for graphic-intensive applications, including MCAD and MCAE

Increases the productivity of designers and engineers through graphics power and performance that allows users to work at their own pace

Enables industry-leading application performance for midrange 3D graphics in a 1- or 2-way IntelliStation POWER 265 workstation

Supports enhanced graphics functions, such as dual textures, hardware occlusion culling, 3D textures and off-screen rendering.

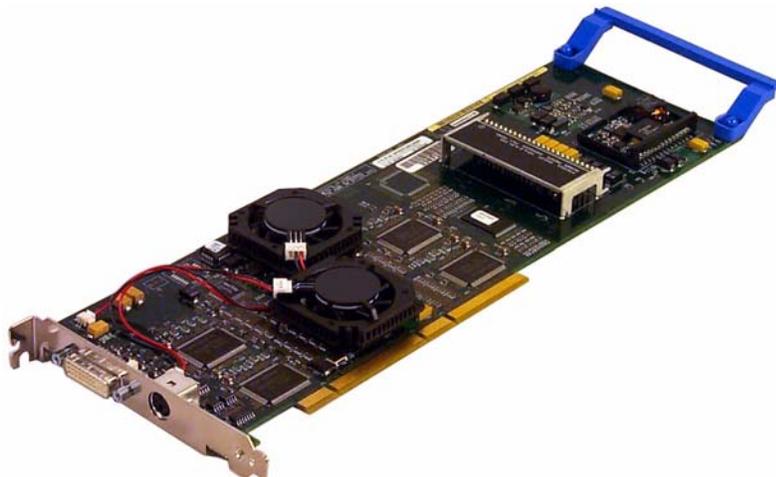
Offers popular features such as full hardware geometry acceleration, multiple color maps and up to 108MB of texture memory.

Continues industrial strength design tradition with native hardware support for both OpenGL and graPHIGS APIs

In a class by itself

As specialized industries such as aerospace and automotive endeavor to remain competitive and get to market faster, the design and analysis software used continues to grow more complex, adding new functions and demanding more power.

The POWER GXT6500P Graphics Accelerator brings a new class of function and performance to IBM UNIX® workstations to meet those needs with room to spare. It is designed to take on large MCAD models, complex simulations and the challenges of visualization that are often encountered in the most demanding applications.



Breakthrough Technology

The GXT6500P is implemented with breakthrough technology. An IBM designed single-chip hardwired geometry accelerator (ASIC) provides support for functions such as lighting, texture transformations and clipping. Another IBM designed ASIC, a single-chip raster engine, defines the pixel image using texture maps, alpha buffers, overlays, stencils, color maps and anti-aliasing. The result is a dazzling display of application data that is unmatched.

The hardware design of the GXT6500P provides native support for the primitives required by both the OpenGL application programming interface (API) and the IBM graPHIGS implementation of the PHIGS API. This means that, regardless of the API chosen by software developers to implement the graphics calls of a given application, native hardware support is available to implement the subroutine calls without any cumbersome translation libraries or software workarounds. Examples of specific API-oriented hardware include capabilities such as 3D textures and display list processing for OpenGL 1.2 and scissoring and multiple color tables for graPHIGS.

Advanced functions

When configured as a part of the IBM 64-bit IntelliStation POWER 265 workstation, the GXT6500P delivers the enhanced performance and advanced functions required by designers and engineers. The combination of the GXT6500P and RS/6000 44P Model 270 workstation, which supports a one - to four - symmetric multiprocessor (SMP), can create an analysis workstation that is second to none. It offers the memory bandwidth and floating- point performance that brings a new level of interactivity to MCAE, petroleum and scientific applications.

Designed for performance

The advanced capabilities of the GXT6500P are the result of an innovative design. The PCI bus interface accepts a high transfer rate of graphics commands and data from the CPU, supporting a 64-bit PCI bus running at speeds up to 66 MHz.

The geometry processor is hardwired; it is not a DSP requiring microcode, nor is it a generic CPU running a program that processes geometry. It is a specifically designed chip with the circuits embedded to process the geometric transformations of graphic elements, including such functions as normal calculation, texture coordinate generation, lighting, clipping, fog factor generation and perspective division.

After the graphics objects are placed, transformed, lighted and clipped, they are passed on to the other IBM-designed ASIC for rasterization. At that time, blending, shading, texturing and the effects of lighting are calculated and/or interpolated and specified for each pixel.

The elements of power

These individual elements are implemented as colored pixels into lightning-fast double-data rate SDRAM graphics memory, and then double-buffered to support the seamless appearance of movement on displays of resolution up to 2048 x 1536 pixels at a 60 Hz refresh rate, or 1920 x 1200 at 76 Hz. Advanced capabilities, such as P-buffers which are used to buffer such rendered information as print requests, images used for texture maps, or storage space for 3D images for later blending into the frame buffer are also available to the software developer.

The GXT6500P frame buffer is a unified frame buffer, which provides the ability under software control to dynamically reconfigure the buffer to support various requirements. This allows the allocation of frame buffer memory to enhance a specific function, such as higher screen resolution, greater texture memory, P-buffer memory or double-buffered stereo in preference to another function.

The GXT6500P is the right choice for users requiring exceptional graphics performance and advanced function in the same graphics accelerator. Whether designing an airfoil or a front fender, or perhaps animating a fly-through of a fuselage or an oil field, the GXT6500P provides the graphics speed and advanced function required by the most demanding users.

The IBM advantage

IBM graphics products are backed by our worldwide service and support. With our comprehensive array of products and services and unrivaled enterprise computing experience, IBM provides end-to-end support, including industry-leading hardware and software; installation, maintenance, consulting and implementation services; education and training and attractive financing

For more information

To learn more about the POWER GXT6500P Graphics Accelerator, contact your IBM representative, IBM Business Partner or visit the following Web site:

ibm.com/servers/eserver/pseries/hardware/graphics/index.html

POWER GXT6500P at a glance

Supported IBM IntelliStation and IBM RS/6000 models

- IntelliStation POWER 265 and RS/6000 44P Models 170 and 270
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Hardware Specifics**Slots needed**

- Single card – one slot

Color support

- 16.7 million concurrent colors, four independent hardware color maps

Frame buffer

- 128MB unified frame buffer with standard configuration as follows:
 - eight-or 24-bit double-buffered color
 - eight-bit double-buffered alpha
 - 24-bit Z-buffer
 - four-bit stencil planes
 - eight-bit overlay
 - eight-bit window ID
-

Advanced 3D features supported in hardware

- Advanced hardware geometry acceleration
 - Up to 108MB of texture memory
 - Gamma-corrected anti-aliased lines
 - Dual textures, 3D textures and texture color tables
 - Linear, bilinear and trilinear texture filtering
 - Hardware occlusion culling
 - Gourand shading, depth cueing/fog, transparency
 - Four hardware color maps
 - Supports screen resolution up to 2048 x 1536 at 60 Hz
 - Double-buffered stereo viewing in a window (up to 1280 x 1024)
 - DVI and DDC2B support, ISO 9241 and ISO 13406 compliant
 - P-buffer support
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Software requirements

- AIX® 5L™ Version 5.1 and AIX 4.3.3
 - OpenGL and graPHIGS APIs are included with AIX
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