

IBM POWER GXT150P Graphics Adapter for the RISC System/6000 Model 40P and RISC System/6000 7020 Model D4E

The POWER GXT150P Graphics Adapter is an 8-bit, 2D graphics adapter for the RISC System/6000® Model 40P entry workstation. The POWER GXT150P offers IBM's highest level of 2D graphics performance currently available for the Model 40P. It is well suited for a variety of applications including:

- Desktop publishing
- X Window System** applications
- 2D mechanical drafting
- Electrical computer-aided design (CAD)

When coupled with IBM's Softgraphics software implementation of the OpenGL** and PEX and PHIGS** 3D Application Programming Interfaces (API), the POWER GXT150P Graphics Adapter also provides Model 40P users with IBM's lowest-priced offering for entry-level 3D graphics.

The single card POWER GXT150P Graphics Adapter attaches to the Model 40P using a peripheral component interface (PCI) expansion slot. The support of display resolutions of 1280 x 1024, 1152 x 900, and 1024 x 768 allows a wide range of monitors to be used.

Also available is a new preconfigured model of the RISC System/6000 40P, the 7020 Model D4E, which includes the POWER GXT150P Graphics Adapter, 32MB memory, and a 1GB hard disk drive.

Purchase Price:

RISC System/6000 7020 Model D4E	\$6,495
POWER GXT150P Graphics Adapter	1,095

Planned Availability Date: February 17, 1995

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IN BRIEF . . .

POWER GXT150P Graphics Adapter

- ◆ New 8-bit 2D graphics adapter for the RISC System/6000 Model 40P
- ◆ Highest level of 2D graphics performance currently available for the RISC System/6000 Model 40P
- ◆ Cost-effective entry 3D platform when coupled with IBM's Softgraphics software implementation of the OpenGL and PEX and PHIGS APIs
- ◆ PCI expansion slot attachment
- ◆ Monitor resolutions of 1280 x 1024, 1152 x 900, and 1024 x 768

Preconfigured 7020 Model D4E

- ◆ The POWER GXT150P Graphics Adapter
- ◆ 32MB Memory
- ◆ 1GB hard disk drive
- ◆ 1.44MB 3.5-inch diskette drive
- ◆ AIX® three-button mouse
- ◆ 101-key enhanced keyboard
- ◆ AIX Version 4.1.1 for Clients, pre-installed
- ◆ AIX Version 4.1.1 CD-ROM
- ◆ IBM Ultimedia® Services Version 2.1 CD-ROM

Description

POWER GTX150P Graphics Adapter

The POWER GXT150P Graphics Adapter is an 8-bit, single-buffered graphics adapter that attaches directly to the PCI bus in the RISC System/6000 Model 40P entry workstation. It offers IBM's highest level of 2D graphics performance currently available on the Model 40P and additionally supports the OpenGL and PEX and PHIGS 3D APIs through optional software.

The POWER GXT150P Graphics Adapter is a single card that allows the display of 256 simultaneous colors from a palette of approximately 16.7 million colors. It provides 1280 x 1024, 1152 x 900, and 1024 x 768 resolution support, allowing customers to choose from a wide range of monitors.

The POWER GTX150P Graphics Adapter also supports monitors that comply with Part 3 of the ISO 9241 ergonomic standard, providing users with improved viewing, reduced flicker images, minimized reflections, and sharper characters over non-ISO monitors.

AIX Version 4.1.1 is required for POWER GXT150P Graphics Adapter.

The POWER GXT150P Graphics Adapter includes:

- 3MB of VRAM
- 32-bit PCI Bus Interface
- Hardware window support (four window ID bits)
- Three hardware color maps

The POWER GXT150P Graphics Adapter supports:

- 256 simultaneous colors from a palette of 16.7 million
- Rectangular and non-rectangular clipping
- Pattern fill support
- 1280 x 1024, 1152 x 900, and 1024 x 768 monitor resolution
- 60 to 77 Hz monitor refresh rates (meets ISO 9241 Part 3 standards on appropriate monitors)

Hardware acceleration for the following 2D graphics primitives is provided:

- Points
- Lines
- Triangles
- Rectangles
- Quadrilaterals
- Bit Block Transfer

A maximum of two local bus graphics adapters per system can be installed in the Model 40P.

7020 Model D4E

Model D4E is a new pre-configured model that includes the POWER GXT150P Graphics Adapter.

Description	Model/Type	GEMS Order Number
RISC System/6000 40P 32MB Memory (one 32MB SIMMs) 1GB Hard Disk Drive IBM POWER GXT150P Graphics Adapter (cable required)		

Description

Model/Type

Number

1.44MB 3.5-inch Diskette Drive
AIX Mouse (three-button)
101-key Enhanced Keyboard
(U.S. English)
AIX Version 4.1.1 for Clients,
pre-installed
AIX Version 4.1.1 CD-ROM
IBM Ultimedia Services
Version 2.1 CD-ROM
Documentation and other
shipment group items

7020/D4E

7020D4E

Product Positioning

The POWER GXT150P Graphics Adapter is a 2D graphics adapter that provides the highest level of 2D graphics performance currently available for the RISC System/6000 Model 40P entry workstation. The POWER GXT150P Graphics Adapter is based on the same technology as IBM's leadership POWER GXT150L™ Graphics Adapter. It further extends IBM's family of industry-leading, 2D graphics adapters for RISC System/6000 workstations. The POWER GXT150P Graphics Adapter attaches to the Model 40P via the PCI bus, requiring only one PCI slot.

The POWER GXT150P Graphics Adapter supports IBM's Softgraphics software implementation of the OpenGL and PEX and PHIGS 3D APIs. This provides customers with a cost effective entry-level platform, allowing the support of 3D applications on a 2D graphics adapter. The POWER GXT150P Graphics Adapter provides multiple hardware color maps, a feature that is required by most popular 3D applications.

The POWER GXT150P Graphics Adapter is well suited for a wide variety of 2D applications including:

- Desktop publishing
- X Window System applications
- 2D mechanical drafting
- Electrical CAD

Application performance will vary and applications should be benchmarked on the target systems to determine actual application performance before a final selection is made.

Publications

The *IBM POWER GXT150P Graphics Adapter Installation Instructions* (19H1242) hardware publication is shipped with the POWER GXT150P Graphics Adapter.

The *Hardware Maintenance Manual* (S83G-7698, 83G7698) is available to Model 40P authorized maintenance providers.

Technical Information

Specified Operating Environment

Physical Specifications: The POWER GXT150P Graphics Adapter is a peripheral component interconnect (PCI) card.

- Width: 4.2 inches
- Depth: 6.875 inches
- Height: .7 inches
- Weight: 8 ounces
- Power Requirement: 5 volts

Hardware Requirements

- Workstations supported: RISC System/6000 Model 40P
- Frame buffer: Single 8-bit (one 8-bit buffer)
- Z-Buffer: None
- Advanced Hardware Functions: Three color palettes, hardware window support Xlib**, GKS, Display PostScript**, OpenGL, graPHIGS™, and PEXlib
- Maximum adapters per system: Two
- Options: None

IBM Monitors Supported (Compliant with ISO 9241 Part 3):

Description	Machine Type/Model	Monitor Part Number	Required Cable Part Number	Maximum Viewable Screen Size, Measured Diagonally
IBM 17S/S Sight and Sound Monitor	7091/7S1	70917S1	88G3097*	15.9-inch/ 404 mm
POWERdisplay 17	----	52G4179	11H6470	16.1-inch/ 406 mm
POWERdisplay 20	----	52G4458	11H6470	19.1-inch/ 486 mm
IBM 14V Color Monitor	6324/001	6324001	11H6469	13.0-inch/ 330 mm
IBM 15V Color Monitor	6325/001	6325001	11H6469	13.7-inch/ 347 mm
IBM 17V Color Monitor	6327/023	6327023	11H6469	15.8-inch/ 401 mm
IBM 21P Color Monitor	9521/001	9521021	11H6469	19.1-inch/ 486 mm
IBM 14P Color Monitor	9524/001	9524001	11H6469	13.0-inch/ 330 mm
IBM 15P Color Monitor	9525/001	9525001	11H6469	13.7-inch/ 347 mm
IBM 17P Color Monitor	9527/011	9527011	11H6469	15.8-inch/ 401 mm

* Cable included with monitor order.

Customers utilizing monitors that support 1024 x 768 resolution, and who have applications that support this resolution, can also take advantage of increased performance for the OpenGL 3D API (available through optional software support). The performance increase is made possible through the hardware double-buffered DFA interface that provides hardware acceleration points, lines, and flat shaded, non-Z-buffered primitives. A performance improvement for all other OpenGL primitives will also be gained. This OpenGL 3D acceleration is supported only when using a display resolution of 1024 x 768. A number of IBM monitors support multiple display resolutions, alternate resolutions can easily be selected by a system management interface tool (SMIT).

Software Requirements: The AIX Version 4.1.1 operating system is included in the Model 40P and is required for the POWER GXT150P Graphics Adapter.

The following licensed program products are available as an option with the POWER GXT150P Graphics Adapter to provide an entry 3D platform:

- For customers requiring 3D software support for OpenGL, OpenGL, and GL 3.2 Version 4.1 for AIX is required (5696-939).
- For customers requiring 3D software support for PEX and PHIGS, PEX and PHIGS Version 4.1 for AIX is required (5696-907). PEX support requires the addition of APAR IX48594, available March 31, 1995.

Note: Refer to Order Exception for IBM Licensed Programs for the RISC System/6000 7020 Processor in Remarketer Announcement 594-077, dated November 1, 1994, to order.

Compatibility: Model 40P is designed to maintain compatibility with adapters and devices, which fully support both the industry standard architecture (ISA) and Peripheral Component Interconnect (PCI) interfaces.

Limitations: The POWER GXT150P Graphics Adapter does not support VGA resolutions. Supported resolutions are 1280 x 1024, 1152 x 900, and 1024 x 768.

Planning Information

Customer Responsibilities: The POWER GXT150P Graphics Adapter is designated as a unit for customer setup. Customer setup, service, and programming publications are available.

Cable Orders: The appropriate IBM cable should be ordered when attaching monitors to the POWER GXT150P Graphics Adapter. Interlaced display modes are not supported by the POWER GXT150P Graphics Adapter.

Cables:

- 13W3 to 15-Pin D-Shell Converter Cable allows a standard 15-pin monitor cable to be connected to the POWER GXT150P Graphics Adapter. This cable is normally needed for use with monitors that have an integrated (captured) cable with a 15-pin D-Shell connector.
- 13W3 to POWERdisplay Cable provides three separate BNC connectors to allow many IBM and non-IBM monitors to attach to the POWER GXT150P Graphics Adapter.
- 13W3 to 13W3 Display Converter Cable provides a method of attaching many non-IBM monitors to the POWER GXT150P Graphics Adapter. The cable converter is 12-inches long. Since this cable is not intended to be the primary connection between the adapter and the display, the original display cable is also required. The connector on the POWER GXT150P Graphics Adapter is a 13W3 plug with a 13W3 receptacle at the display end.

Problem Determination: The Customer Problem Analysis and Resolution (CPAR) guides contain self-test and diagnostic procedures, which assist the customer in isolating a defective machine element. During the warranty period, the failing element will be replaced on-site. An IBM Service Agreement is recommended outside of the warranty period.

IBM Support Services: Ongoing technical support services for this product are available for a fee on an hourly or subscription basis from the AIX Support Family of services. These technical support services include operational assistance, remote and on-site consulting, system planning and design, project management, and implementation. For additional information, contact your IBM representative or authorized remarketer, or call 800-CALLAIX (255-5249). Refer to Support Family

Enhancements and New Technical Support Structure in Services Announcement 694-018, dated July 26, 1994, for further details.

Security, Auditability, and Control

This product uses the security and auditability features of host hardware, host software, and/or application software.

User management is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

Terms and Conditions

This product is available for purchase under the terms of the IBM Customer Agreement (ICA).

IBM Credit Corporation Financing: Term leases and installment payment plans are available for commercial and state and local government customers.

Warranty Period:

- One year IBM On-site Repair (IOR)
- Optional features:

The warranty period of IBM Optional Features is the stated warranty period, or the remaining warranty of the IBM system in which the optional feature is installed, if purchased new during the IBM system warranty.

- Media (diskettes and CD-ROMs) — three months

Program Warranty:

- Central Service will be available until May 2, 1996.

Program services offers a method of reporting code-related problems for AIX Version 4.1.1. The base set of program services is provided as part of the IBM basic software license agreement. Problems may be reported via e-mail, facsimile, or U.S. Mail, and will be responded to by using the same method as submitted. IBM will respond to customer inquiries within two business days of e-mail or facsimile receipt and seven days of U.S. Mail receipt, advising of the problem disposition. If the problem reported is not known to be a code-related problem, the customer will be informed that IBM will continue to work on it for a fee if the customer does not have a support contract. If the problem is determined to be caused by an error in IBM code, the fee will be waived.

Licensing: The program in this announcement is licensed under the terms of the IBM License Agreement for Programs or the ICA.

- Program Warranted: Yes
- Variable Charges Apply: No
- Distributed Features Apply: No
- Usage Restriction Applies: Yes

The customer cannot exceed the maximum number of system users.

Hardware Warranty Service: The warranty is 24 hours, seven days a week — same day service.

Alternative Service: None

Maintenance Service: IBM On-Site Repair (IOR)

IBM Hourly Service Rate Classification: One. IBM Warranty Service, Maintenance Service or IBM Hourly Service may be obtained by calling 800-IBM-SERV (426-7378). IBM Hourly Service is available at the applicable rate and terms, including element exchange price if applicable.

Product Availability Status: New product available

Field Installable Features: No

Model Conversions: No

Customer Setup: Yes

Licensed Internal Code: No

National Education Price (NEP): A NEP is available under the terms and conditions of the NEP list. The NEP price, which represents 5% discount from the single unit purchase price, is not subject to any further discount or allowance. The machines in this announcement are included in the NEP list.

Charges

Preconfigured Model (GEMS Product)

Description	Machine Type/Model	Part Number	Purchase Price	Annual MMC
RISC System/6000 40P	7020/D4E	7020D4E	\$6,495	\$600

MMC = Minimum Maintenance Charge

Options Available for Later Purchase

Description	Part Number	Purchase Price
IBM POWER GXT150P Graphics Adapter	8185425	\$1,095
Graphics Cable — 13W3 to 15Pin D-shell	11H6469	90
Graphics Cable — 13W3 to 3BNC	11H6470	90

Hardware Compatibility: The RISC System/6000 Model 40P entry workstation is designed to maintain compatibility with adapters and devices, which fully support both the industry standard architecture (ISA) and Peripheral Component Interconnect (PCI) interfaces.

For additional information regarding the RISC System/6000 Model 40P, refer to Hardware Announcement 194-338, dated October 4, 1994.

Software Compatibility: AIX Version 4.1.1 for Clients supports the full range of applications on the Model 40P. As a general guide, applications requiring 3-D features, server functions, and communication hardware that are not available with the Model 40P should not be executed, as well as any applications that exceed the physical limits of available memory and storage. Attachment of external SCSI devices can be used to extend the capability of the Model 40P workstation.

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