Hardware
Announcement

IBM United States

May 24, 1994

IBM POWER GXT150M Graphics Adapter

The POWER GXT150M™ is an 8-bit 2D single-buffered color graphics adapter that offers X11 10-pixel line performance with over three million vectors/second. This adapter is ideally suited to X-Window System applications such as mechanical drafting and electrical CAD that primarily require fast 2D line performance.

Complementing this is equally strong Softgraphics performance for those with 3D requirements at a near entry-level 2D adapter price.

The POWER GXT150M supports a display resolution of 1,280 x 1,024. When it is used with an appropriate monitor, the adapter complies with ISO 9241 Part 3 of the International Organization for Standardization Ergonomic Display Standard for reduced flicker displays, providing a more comfortable and productive working environment.

Purchase Price: $2,195

Planned Availability Date: June 10, 1994

IN BRIEF . . .

- Provides high-performance 2D X11 10-pixel lines at 3.7-million vectors/second for the RISC System/6000®
- Uses one Micro Channel® slot
- Provides full-function, low-priced 3D graphics capability on a 2D base with the AIXwindows® 3D feature and Softgraphics support
- Complies with ISO 9241 Part 3 for a reduced flicker display

Description

Performance

The POWER GXT150M is a 2D color graphics adapter that delivers a high level of X11 10-pixel line performance with over three million vectors/second. The adapter is targeted to applications such as 2D mechanical drafting, electrical CAD, X-Window, desktop publishing, and CASE that require fast 2D line performance. The POWER GXT150M has a single 8-bit frame buffer that allows the display of 256 simultaneous colors and provides support for two hardware color maps. Hardware acceleration, with a 32-bit graphics dedicated processor, is provided for:

- Points
- Lines
- Arcs
- Circles
- Rectangles
- Fonts
- Bit-block transfer

The adapter also provides hardware support for cursor (cross hair cursor and image cursor - 64 x 64) and window IDs.

The POWER GXT150M supports a display resolution of 1280 x 1024 from 60Hz to 77Hz and complies with the ISO 9241 Part 3 ergonomic standard when used with the appropriate monitor. This compliance provides users with improved viewing and physical comfort, flicker-free images, minimized reflections, and sharper characters. The POWER GXT150M attaches to the workstation via a single Micro Channel slot.

Integration of Business Solutions

The POWER GXT150M is a graphics adapter for the RISC System/6000 designed for 2D applications including: desktop publishing, X applications, 2D mechanical drafting, CASE, chemical and biological applications, and electrical CAD. The POWER GXT150M is ideally suited for environments where high performance of applications using the X-Window system is important.

Strategic Architectures — Industry Standards: ISO standards are being adopted worldwide by government, corporations, and labor unions. Compliance with ISO Standard 9241 may become required by laws governing work places in many countries. IBM is in the forefront in providing displays and adapters, which meet this standard. The POWER GXT150M will help companies meet these ongoing requirements for a comfortable, productive, and quality work environment.

The POWER GXT150M supports the following standard graphics application programming interfaces (APIs) with software supporting the APIs:

- Xlib
- OpenGL**
- PEX
- graPHIGS™

Support of these standard APIs means that investment in current applications and future applications is protected.

** Product or company name is a trademark or registered trademark of its respective holder.

Product Positioning

IBM offers several choices for Micro Channel 2D graphics acceleration. The current line up consists of the POWER Gt3i™ and POWER GXT150M™.

The GXT150M offers the highest overall performance of available IBM 2D Micro Channel adapters. Among these, the GXT105M Xperformance results are the highest. The 2D 10-pixel lines performance is well above three million per second.

The GXT150M should readily meet the performance needs of most user applications. Recognizing that overall performance is always application specific, the target application should be benchmarked before a final proposal is made.

The range of 2D adapters for direct-bus attachment and Micro Channel attachment made IBM the clear performance and price/performance leader in 2D graphical workstations.

Publications

Information for this product is included in the publications shipped with the IBM POWER GXT150M Graphics Adapter.

Technical Information

Specified Operating Environment

Hardware Requirements: One Micro Channel slot is required.

Software Requirements: AIX/6000™ Version 3.2.5 for RISC System/6000 with APAR IX42626 or AIX/6000 shipped on or after June 3, 1994, and AIXwindows Environment/6000 (5601-257) Version 1.2.5, or later. If 3D capability is desired, the AIXwindows 3D feature is also required. This feature provides 3D function through software via the Softgraphics included in the AIXwindows 3D feature. Softgraphics is a complete software implementation of OpenGL**, PEX and PHIGS.

Limitations: A Micro Channel slot must be available for the installation of the POWER GXT150M. A maximum of two POWER GXT150M adapters is allowed per system.

ISO Compliance: ISO issues technical standards for materials and products traded worldwide. Adherence to these standards is required by an increasing number of customers to establish and maintain quality products. Acceptance of ISO standards is the result of agreement by ISO members, leading to adoption worldwide by participating countries. ISO is a Geneva-based agency created under the auspices of the United Nations.

ISO Standard 9241 encompasses hardware and software in the user′s work environment. Part 3 of this standard covers Visual Display Unit (VDU) fonts, text colors, physical design and front of screen display, which includes flicker, jitter, glare and contrast.

The POWER GXT150M supports screen refresh rates of 60Hz to 77Hz. Supporting these rates allows the POWER GXT150M to be used with ISO Standard 9241 Part 3 compliant displays. This provides users with improved viewing, reduced flicker minimized reflections, and sharper characters, for a more comfortable and productive working environment.

Planning Information

Cable Orders: No special cables are provided.

Supported IBM Displays and Cables Required: The tables below show supported IBM displays. The appropriate IBM cable feature number should be ordered when attaching displays to the POWER GXT150M Graphics Adapter. Refer to the following tables to determine the appropriate IBM cable feature number to order. Interlaced display modes are not supported by these graphics adapters.

Display	Type	Resolution	Refresh Hz	Cable Feature Number
6091-023	Color	1280 x 1024	60	4214
The 6091-023 display (featuring a Trinitron** CRT) has a fixed image size of 21.4 inches/544mm measured diagonally.				
6091-019	Color	1280 x 1024	60	4214
The 6091-019 display (featuring a Trinitron CRT) has a fixed image size of 17.3 inches/439mm measured diagonally.				
6091-19i	Color	1280 x 1024	77	4214
The 6091-19i display (featuring a Trinitron CRT) has a fixed image size of 17.3 inches/439mm measured diagonally.				
POWERdisplay 20	Color	1280 x 1024	77	4214
The POWERdisplay 20 (featuring a Trinitron CRT) has a fixed image size of 19.1 inches/486mm measured diagonally.				
POWERdisplay 19	Color	1280 x 1024	77	4214
The POWERdisplay 19 (featuring a Trinitron CRT) has a maximum viewable image size of 17.3 inches/439mm measured diagonally.				
POWERdisplay 17	Color	1280 x 1024 1280 x 1024	77 60	4214
The POWERdisplay 17 (featuring a Trinitron CRT) has a maximum viewable image size of 16.1 inches/409mm measured diagonally.				
6091-016	Color	1280 x 1024	77	4214
The 6091-016 display (featuring a Trinitron CRT) has a fixed image size of 14.8 inches/375mm measured diagonally.				
POWERdisplay 16	Color	1280 x 1024	77	4214
The POWERdisplay 16 (featuring a Trinitron CRT) has a fixed image size of 14.8 inches/375mm measured diagonally.				
1091-051 (16)	Color	1280 x 1024	72	4229
The 1091-051 display (featuring a Trinitron CRT) has a fixed image size of 14.8 inches/376mm measured diagonally.				
5081-016	Color	1280 x 1024	60	4214
The 5081-016 display (featuring a Trinitron CRT) has a fixed image size of 14.8 inches/375mm measured diagonally.				
9524-014	Color	1280 x 1024	60	4213
The 9524 display (featuring a CRT) has a maximum viewable image size of 13.03 inches/331mm measured diagonally.				
9525-015	Color	1280 x 1024	60	4213
The 9525 display (featuring a FST** CRT) has a maximum viewable image size of 13.7 inches/348mm measured diagonally.				
9527-017	Color	1280 x 1024	60	4213
The 9527 display (featuring a Trinitron CRT) has a maximum viewable image size of 13.7 inches/348mm measured diagonally.				
9521-021	Color	1280 x 1024	77	4213
The 9521 display (featuring a CRT) has a maximum viewable size of 19.1 inches/485mm measured diagonally.				

Cables Required for Use with Other Displays: The appropriate IBM cable feature number should be ordered when attaching displays to the POWER GXT150M Graphics Adapter. Refer to the following table to determine the appropriate IBM cable feature number to order. Interlaced display modes are not supported by these graphics adapters.

Display	Type	Resolution	Refresh Hz	Cable Feature Number
Mitsubishi Model HL6915	Color	1280 x 1024	60	4214
NEC 5D	Color	1280 x 1024	60	4214
SONY GDM1953	Color	1280 x 1024	60	4214
SONY GDM1606	Color	1280 x 1024	60	4214
Mitsubishi Model HL/FL6615	Color	1280 x 1024	60	4214
NEC 5FG/6FG	Color	1280 x 1024	74	4214

Security, Auditability and Control

This product uses the security and auditability features of system hardware, system software and 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

MES Discount Applicable: The feature discount will be equal to the discount percent associated with the current volume commitment of the category of the machine type on which the feature is installed.

Field Installable Feature: Yes

Warranty Period: One year

Customer Setup: No, except for machine type 7006

All other terms and conditions are the same as those applicable to the IBM RISC System/6000 Machine in which the feature is installed.

Charges

Description	Feature Number	Purchase Price	Monthly Minimum Maintenance Charge	Feature Removal Charge
RISC System/6000 Machine Type				
7006 Model 41T, 41W 7009 Model C10 7011 Model 250, 25S, 25T, 25W				
POWER GXT150M	2650	$2,195	$ 22	
7012 Model 34H, 355, 360, 365, 370, 375, 36T, 37T, 380, 390 7013 Model 550, 560, 55L, 570 580, 58H, 57F, 58F, 590, 59H				
POWER GXT150M	2650	2,195	22	$116
7030 Model 3AT, 3BT				
POWER GXT150M	9650	0	0	116
RISC System/6000 Machine Type				
7006 Model 41T, 41W 7009 Model C10 7012 Model 34H, 355, 360, 365, 36T, 370, 375, 37T, 380, 390 7030 Model 3AT, 3BT 7013 Model 550, 55L, 560, 570, 57F, 58F, 580, 58H, 590, 59H				
POWER GT1X to 15-Pin D-Shell Converter Cable	4213	100	0	0
POWER GT1X to 6091 Display Cable	4214	105	0	0
Sun Compatible Display Converter Cable	4227	100	0	0
POWER GT1X to POWERdisplay 16S Display Cable	4229	165	0	0