GXT250P and GXT255P
Installation and User's Guide

> **Note**
>
> Before using this information and the product it supports, be sure to read the general information under "Product Warranties and Notices" included with your system unit.

Second Edition (November 1996)

Contents

Safety Information

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.

When adding or removing any additional devices to or from the system, ensure that the power cables for those devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.

During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communication lines.

Handling Static Sensitive Devices

Attention: Static electricity can damage this device and your system unit. To avoid damage, keep this device in its static protective bag until you are ready to install it. To reduce the possibility of electrostatic discharge, follow the precautions listed below.

Electrostatic Discharge Protection

To prevent electrostatic discharge:

- Limit your movement. Movement can cause static electricity to build up around you.

- Handle the device carefully, holding it by its edges or its frame.

- Do not touch solder joints, pins, or exposed printed circuitry.

- Do not leave the device where others can handle and possibly damage the device.

- While the device is still in its anti-static package, touch it to an unpainted metal part of the system unit for at least two seconds. (This drains static electricity from the package and from your body.)

- Remove the device from its package and install it directly into your system unit without setting it down. If it is necessary to set the device down, place it on its static-protective package. (If your device is an adapter, place it component side up.) Do not place the device on your system unit cover or on a metal table.

- Take additional care when handling devices during cold weather as heating reduces indoor humidity and increases static electricity.

About This Book

Use this book with your system unit documentation to install the POWER GXT250P or the POWER GXT255P graphics adapter and its associated device driver software.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Related Publications

This book refers to the documentation that came with your system unit and with your operating system. Additional references are made to adapter (slot) placement documentation.

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AIX is a registered trademark of International Business Machines Corporation.

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Chapter 1. Overview

The POWER GXT250P and POWER GXT255P are single card adapters. They attach to your system unit in a PCI bus graphics slot and provide 2D graphics acceleration.

Refer to the PCI Graphics Adapter Placement Reference for supported system units and supported slot locations. To install the POWER GXT250P or the POWER GXT255P graphics adapters in your system, refer to your system unit documentation.

Note:

- POWER GXT250P and POWER GXT255P do not require hardware switch settings.

- Mode selection (resolution and refresh) is made automatically via the software or is made manually via the SMIT user interface.

- Connection to the monitor is made via a high density 15 pin D-shell connector.

Specific Hardware Characteristics

The following describes the general hardware characteristics of the POWER GXT250P and POWER GXT255P.
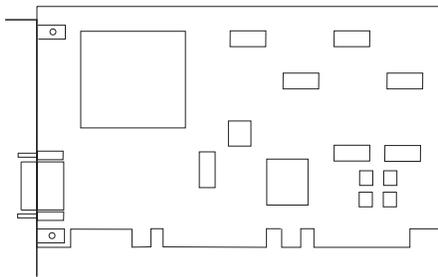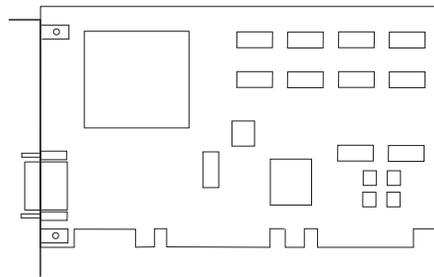
POWER GXT250P   **POWER GXT255P**

- The POWER GXT250P has 3MB VRAM

- The POWER GXT255P has 8MB VRAM total (5MB additional)

- 64-bit PCI bus interface:

    - Supports 32-bit and 64-bit data widths
    - Supports 33 Mhz and 50 Mhz operation
    - Universal 64-bit card edge allows operation in 5V and 3.3V PCI signalling environments.

- Screen resolution:

    - 1024x768 at 60 - 85 Hz vertical refresh
    - 1280x1024 at 60 - 85 Hz vertical refresh

- POWER GXT250P provides 8 bit color support up to 1280x1024 monitor resolution.

- POWER GXT255P provides 8,16 and 24 bit color support up to 1280x1024 monitor resolution.

Display Power Management

The GXT250P and GXT255P support Video Electronics Standards Association (VESA) Display Power Management Signalling (DPMS) and Display Data Channel signaling (DDC2B).

Display and Adapter Cable Information

Display Type	Screen Resolution (Non-Interlaced)	Refresh Frez (Hz)	Adapter Cable Part Number
6091-16 Color POWERdisplay 16	1280 x 1024	60[1] *	39H8682
		77[2]	39H8682
6091-19i Color POWERdisplay 19	1280 x 1024	60[3] *	39H8682
		77	39H8682
1091-051 Color POWERdisplay 16S	1280 x 1024	72*	09G3588[6]
5081-16 Color	1280 x 1024	60*	39H8682
6091-19 Color	1280 x 1024	60*	39H8682
6091-23 Color	1280 x 1024	60*	39H8682
6314 Color 6317 Color[4] 6319 Color	1024 x 768	60*	Cable Included with Display
6324 Color 6325 Color 6327 Color 9524 Color 9525 Color	1024 x 768	60*	Cable Included with Display
		75.8	Cable Included with Display
	1280 x 1024	60	Cable Included with Display
7091-7S1[5]	1024 x 768	60*	11H4003 (select with 7091 order)
		75.8	11H4003 (select with 7091 order)
	1280 x 1024	60	11H4003 (select with 7091 order)
		77	11H4003 (select with 7091 order)
8508 Mono	1280 x 1024	67*	Cable Included with Display
8517 Color	1024 x 768	70*	Cable Included with Display
9521 Color 9527 Color	1024 x 768	60*	Cable Included with Display
		75.8	Cable Included with Display
	1280 x 1024	60	Cable Included with Display
		77	Cable Included with Display

Display Type	Screen Resolution (Non-Interlaced)	Refresh Frez (Hz)	Adapter Cable Part Number
POWERdisplay 17 POWERdisplay 20	1024 x 768	75.8	39H8682
	1280 x 1024	60*	39H8682
		77	39H8682
P50	1024 x 768	60*	Cable Included with Display
		85	Cable Included with Display
P70	1024 x 768	60*	96G2156
		85	96G2156
	1280 x 1024	60	96G2156
		77	96G2156
G50	1024 x 768	60*	Cable Included with Display
		70	Cable Included with Display
G70	1024 x 768	60*	Cable Included with Display
		75	Cable Included with Display
	1280 x 1024	60	Cable Included with Display
G200	1024 x 768	60*	Cable Included with Display
		85	Cable Included with Display
	1280 x 1024	60	Cable Included with Display
		75	Cable Included with Display
P200	1024 x 768	60*	96G2156
		85	96G2156
	1280 x 1024	60	96G2156
		77	96G2156
	1600 x 1280[7]	60	96G2156

Display Type	Screen Resolution (Non-Interlaced)	Refresh Frez (Hz)	Adapter Cable Part Number
P201	1024 x 768	60*	92G1712
		85	92G1712
	1280 x 1024	60	92G1712
		85	92G1712
	1600 x 1280[7]	60	96G1712
Other VESA Resolutions/Refresh Rates	1024 x 768	60	
		70	
		75	
		85	
	1280 x 1024	75	
		85	

Note:

* Default display mode. Monitors listed are selectable via the AIX utility (SMIT) except where noted.

[1] For 6091-16 Color/POWERdisplay 16 at 60 Hz, set the monitor display mode switch to `out(1)`.

[2] For 6091-16 Color/POWERdisplay 16 at 77 Hz, set the monitor display mode switch to `in(2)`.

[3] For 6091-19i Color/POWERdisplay 19 at 60 Hz, set the monitor display mode switch to `2`.

[4] The 6317 color display is not explicitly included in SMIT. To run the 6317 in a mode other than 1024 x 768 at 60 Hz, select a display type of IBM-17V in SMIT.

[5] The 7091-7S1 display is not explicitly included in SMIT. To run the 709-7S1 in a mode other than 1024 x 768 at 60 Hz, select a display type of IBM-21P in SMIT.

[6] When installing cable P/N 09G3599, the black leaded BNC connector (labeled "V") *must* be connected to the "VD" sync out connector on the back of the display.

[7] GXT255P at part numbers 93H2395 or 93H2396 does not support this resolution.

Software Requirements

The POWER GXT250P and the POWER GXT255P are supported on AIX Version 4.1.5. If support is required on an AIX release other than AIX 4.1.5, please ensure this adapter is supported on that release of AIX prior to install. Contact your support representative for assistance.

This adapter is supported on Windows NT (PowerPC Edition) 4.0.

OpenGL and GL 3.2 requires the OpenGL and GL 3.2. for AIX, Version 4.1.5 Licensed Program Product (5696-939). If support is required on an AIX release other than AIX 4.1.5, please ensure this adapter is supported on that release of AIX prior to install. Contact your support representative for assistance.

PEX and graPHIGS requires the PEX and PHIGS for AIX, Version 4.1.5 Licensed Program Product (5696-907). If support is required on an AIX release other than AIX 4.1.5, please ensure this adapter is supported on that release of AIX prior to install. Contact your support representative for assistance.

Chapter 2. Preparing for Installation

This section outlines the installation procedure for the POWER GXT250P or the POWER GXT255P device driver and graphics adapter.

The process includes:

- An inventory of installation materials.

- The installation of your device driver software.

- The installation of your graphics adapter.

   Note: If AIX is not installed on your system unit, install your graphics adapter before you install the operating system. (See Chapter 4, "Installing Hardware" on page 4-1.) When you install AIX, your device driver software will automatically install.

   If AIX is operating on your system, install your device driver software prior to installing your graphics adapter. (See Chapter 3, "Installing Device Driver Software" on page 3-1.)

Inventory

To install the POWER GXT250P or the POWER GXT255P, you need:

- The adapter.

- This document, *GXT250P and GXT255P Installation and User's Guide*.

- The system unit User's Guide.

- The operating system documentation.

- *PCI Graphics Adapter Placement Reference*.

- A flat-blade screw driver or a 5mm nut driver.

- Media containing device driver software.

Chapter 3. Installing Device Driver Software

This section explains how to install device driver software.

Device Driver Software Installation

1. Be sure you have read Chapter 2, "Preparing for Installation" on page 2-1.

   - Determine if you should install your device driver software first.

   - Determine if you should install your graphics adapter hardware first.

   - If you should install your device driver software first, go to step 2 and continue with this section.

   - If you should install your hardware first, go to Chapter 4, "Installing Hardware" on page 4-1. When you install AIX, your graphics adapter device driver automatically installs.

2. Turn the system unit power on.

3. Log in as **root**.

4. Insert the media containing the device driver software (example: CD-ROM) into the appropriate media device.

5. Type the following

   ```
   smit devinst
   ```

   and press Enter.

6. The Install Additional Device Software screen highlights the **"INPUT device/directory for software"** option.

7. Select or type *your input device*:

   - Press **F4** to display the input device list. Select the *name of the device* (example: CD-ROM) that you are using and press Enter.

         -- or --

   - In the Entry Field, type the *name of the input device* you are using and press Enter.

8. The Install Additional Device Software window highlights the **SOFTWARE to install** option.

9. Press **F4** to display the SOFTWARE to install window.

10. Type the following to display the Find window:

    /

11. Type the following

    `devices.pci.14103c00`

    and press Enter. (The system finds and highlights this device driver software.)

12. Press **PF7** to select the highlighted device driver software and press Enter.

13. The Install Additional Device Software screen displays. Entry data fields are automatically updated. Press Enter to accept the data.

14. The ARE YOU SURE window displays. Press Enter to accept the data.

15. The **COMMAND STATUS** screen appears.

    • The term `RUNNING` is highlighted to indicate that the install and configure command is in progress.

    • When `RUNNING` changes to `OK`, scroll down to the bottom of the page and locate the Installation Summary.

    • After a successful installation, `SUCCESS` will appear in the Result column of the summary at the bottom of the page.

16. Remove the installation media from the drive.

17. Press **F10** to exit SMIT.

18. Reference your system unit documentation to shutdown your system unit.

19. Go to graphics adapter install procedure, Chapter 4, "Installing Hardware" on page 4-1.

NT Device Driver Software Installation

Prior to initiating this installation, refer to Windows NT 4.0 Release Notes for any special instructions regarding this adapter.

1. Double-click on the **My Computer** icon.

2. Double-click on the **Control Panel** icon.

3. Double-click on the **Display** icon.

4. Select **Settings**.

5. Select **Change Display Type**.

6. Select **IBM** from the manufacturer's list.

7. Select either **POWER GXT250P** or **POWER GXT255P**

8. Select **OK**.

9. If necessary, you will be prompted to insert your Windows NT CD-ROM.

10. Click on **OK** when the device driver installation is complete.

11. Close all windows.

12. Shutdown and restart your system unit to accept the new settings.

Chapter 4. Installing Hardware

This section provides the guidance necessary to install a graphics adapter. Before you begin, be sure you have read "Handling Static Sensitive Devices" on page vii.

Attention: Do not remove the POWER GXT250P or POWER GXT255P from its anti-static package at this time.

Installing the Adapter with AIX

1. Be sure you have read Chapter 2, "Preparing for Installation" on page 2-1.

   * Determine if you should install your graphics adapter hardware first.

   * Determine if you should install your device driver software first.

   * If you should install your graphics adapter hardware first, go to step 2 and continue with this section.

   * If you should install your device driver software first, go to Chapter 3, "Installing Device Driver Software" on page 3-1. Return here to install your hardware.

2. Refer to the User's Guide that shipped with your system unit to perform the following:

   * Shutdown your system unit.

   * Install the graphics adapter in your system unit.

     – Refer to the *PCI Graphics Adapter Placement Reference* to identify supported installation slots for a POWER GXT250P or POWER GXT255P. Return here to complete the process.

     – **Attention:** Failure to install your graphics adapter in the correct slot may cause your adapter or system unit to function incorrectly.

3. After the basic installation is complete, connect your keyboard and mouse to the system unit and connect your video cable to the graphics adapter.

4. Turn on both your system unit and your display. Follow any instructions on the screen.

5. A **select display** (console) **icon** appears on your screen. Press the number key (for example, 1 or 2) on your keyboard of the monitor you want to be your default display.

Note: If you are planning to run applications such as PEX, OpenGL, GL 3.2, or graPHIGS, be sure to install the appropriate level LPP after you install the POWER GXT250P or POWER GXT255P Adapter.

Troubleshooting

Initial installation problems are often resolved using a few basic troubleshooting steps:

- Check Cables
- Check Installed Software (lslpp)
- Check Console (possibly redirect)
- Check Installed Hardware (lsdev)

Check Cables

1. Ensure your cables are connected to the correct adapter.

   - If you have more than one display adapter, be sure that each adapter is connected to a display.

   - Verify the cable connection to your video monitor is made through a 13W3 connector. (For detailed connector information, go to *Adapters, Devices, and Cable Information for Multiple Bus Systems* if you received this book with your system unit.)

2. If no login prompt appears, restart your system unit.

3. If still no login appears, reset your system to its original configuration and continue with the Troubleshooting verifications.

Verify AIX Software Installation

1. Verify the device driver for the POWER GXT250P or POWER GXT255P is installed.

   - Login as **root**.

   - Type:

     ```
     lslpp -l all | grep GXT250P
     ```

     and press Enter.

2. If the POWER GXT250P device driver is installed, the following is an example of the data that appears if you are running AIX Version 4.1.5.

```
devices.pci.14103c00.X11 4.1.5.0 COMMITTED AIXwindows GXT250P/GXT255P
devices.pci.14103c00.diag 4.1.5.0 COMMITTED GXT250P/GXT255P Graphics
devices.pci.14103c00.rte 4.1.5.0 COMMITTED GXT250P/GXT255PGraphics
```

3. If the POWER GXT250P or POWER GXT255P device driver did not install, return to Chapter 3, "Installing Device Driver Software" on page 3-1.

Check Console

1. If you continue to experience problems, it may be necessary to redirect the device console to the new adapter using the *chdisp* command. Refer to your operating system documentation for directions.

2. If you have checked your cables, tried the *chdisp* command and continue to experience problems, run diagnostics. Refer to your operating system documentation for directions.

Verify AIX Hardware Installation

1. To verify your system unit recognizes the POWER GXT250P or POWER GXT255P adapter:

   - Type:

     ```
     lsdev -Cs pci
     ```

     and press Enter.

2. If the POWER GXT250P or POWER GXT255P adapter did install, the following is an example of the data that appears on your screen:

   ```
   b10 Available 04-02 GXT250P Graphics Adapter
   ```

3. If the message on your screen indicates your adapter is Defined instead of Available, shut down your machine. Check the POWER GXT250P or POWER GXT255P adapter to insure it is installed correctly.

4. If the POWER GXT250P or POWER GXT255P adapter did not install, return to Chapter 4, "Installing Hardware" on page 4-1.

If you continue to experience problems, it may be necessary to call your system support organization. Refer to your operating system documentation for directions.

Chapter 5. System Considerations

The purpose of this chapter is to define X server configurations available when the POWER GXT250P or the POWER GXT255P adapter is added to a system. Included are the commands a user would type to implement these X server functions. Some familiarity with X Windows and related X Windows terminology is assumed.

Defining Overlay and Color Plane Visuals

The X server can create windows in a separate set of frame buffer planes called overlays. The X server supports this by defining distinct visuals for the overlay and color planes if the user explicitly requests this support. During X server initialization a default visual is used to create the root window, and this visual becomes the default for all child windows of the root. The POWER GXT250P and POWER GXT255P X server runs by default in the color planes, meaning the root window and all windows created with the default visual reside in the color planes. This differs from default visual placement on some other graphics adapters.

The `-layer n` parameter for xinit provides the ability to select overlay support and to which hardware frame buffer planes the X server renders. A value of:

   0 indicates the color plane (default)

   1 indicates the overlay plane

These are the only valid values for the layer parameter. Note that double buffer capability is not supported in the overlay planes.

Example 1: Starting the X server in the color planes with overlay plane support

    xinit -- -layer 0 <other flags>

Example 2: Starting the X server in the overlay planes

    xinit -- -layer 1 <other flags>

The X server support for the POWER GXT250P and POWER GXT255P is designed
to give the user maximum flexibility in the configuration of various capabilities of the
POWER GXT250P and POWER GXT255P adapters. Listed below are the server
configurations available on the POWER GXT250P and POWER GXT255P. For each
configuration, the resolution, the command used to start the X server and supported
visuals are given.

The supported visuals for each example are referred to by reference numbers. For a
description of each of the reference numbers, refer to Table 5-1 on page 5-4. For
example, reference number 1 indicates the visual class is pseudo color, the visual
depth is 8 bit, the layer is color planes, and the double buffer support is hard.

DEFAULT SERVER CONFIGURATIONS

- POWER GXT250P (8Mb card) running 1280x1024, Ref Num 21,22,23,24,25,26, 27,28,29,30
    ```
    xinit
    ```
- POWER GXT250P (3Mb card) running 1280x1024, Ref Num 21,22,23,24,25,26
    ```
    xinit
    ```

ALTERNATE SERVER CONFIGURATIONS

- POWER GXT255P (8Mb card) running 1280x1024, Ref Num 1,2,3,4,5,6,7,8,9,10
    ```
    xinit -- -x dbe
    ```
- POWER GXT255P (8Mb card) running 1280x1024, Ref Num 1,2,3,4,5,6,7,8,11,12
    ```
    xinit -- -x dbe -layer 0
    ```
- POWER GXT255P (8Mb card) running 1024x768, Ref Num 1,2,3,4,5,6,7,8,9,10
    ```
    xinit -- -x dbe
    ```
- POWER GXT255P (8Mb card) running 1024x768, Ref Num 1,2,3,4,5,6,7,8,11,12
    ```
    xinit -- -x dbe -layer 0
    ```
- POWER GXT250P (3Mb card) running 1280x1024, Ref Num 15,16,17,18,19,20
    ```
    xinit -- -x dbe
    ```
- POWER GXT250P (3Mb card) running 1280x1024, Ref Num not supported (not enough memory for this configuration)
    ```
    xinit -- -x dbe -layer 0
    ```
- POWER GXT250P (3Mb card) running 1024x768, Ref Num 1,2,3,4,5,6
    ```
    xinit -- -x dbe
    ```
- POWER GXT250P (3Mb card) running 1024x768, Ref Num 1,2,3,4,5,6,13,14
    ```
    xinit -- -x dbe -layer 0
    ```

Table 5-1. Supported Visuals and Depths				
REF NUM	**VISUAL CLASS**	**VISUAL DEPTH**	**LAYER**	**DOUBLE BUFFER SUPPORT**
1	PseudoColor	8bit	color planes	HARD
2	GrayScale	8bit	color planes	HARD
3	StaticColor	8bit	color planes	HARD
4	StaticGray	8bit	color planes	HARD
5	TrueColor	8bit	color planes	HARD
6	DirectColor	8bit	color planes	HARD
7	TrueColor	16bit	color planes	SOFT
8	DirectColor	16bit	color planes	SOFT
9	TrueColor	24bit	color planes	SOFT
10	DirectColor	24bit	color planes	SOFT
11	GrayScale	8bit	overlays	SOFT
12	PseudoColor	8bit	overlays	SOFT
13	GrayScale	4bit	overlays	SOFT
14	PseudoColor	4bit	overlays	SOFT
15	PseudoColor	8bit	color planes	SOFT
16	GrayScale	8bit	color planes	SOFT
17	GrayScale	8bit	color planes	SOFT
18	StaticColor	8bit	color planes	SOFT
19	TrueColor	8bit	color planes	SOFT
20	DirectColor	8bit	color planes	SOFT
21	PseudoColor	8bit	color planes	NONE
22	GrayScale	8bit	color planes	NONE
23	StaticColor	8bit	color planes	NONE
24	StaticGray	8bit	color planes	NONE
25	TrueColor	8bit	color planes	NONE
26	DirectColor	8bit	color planes	NONE
27	TrueColor	16bit	color planes	NONE
28	DirectColor	16bit	color planes	NONE
29	TrueColor	24bit	color planes	NONE
30	DirectColor	24bit	color planes	NONE

Starting the X server for the 3D API's

The 3D application programming interfaces (APIs) require additional xinit options to take advantage of the hardware capabilities. The following procedures describe how to start the X server using these options. Additional information on the xinit command can be found in the *AIX Commands Reference* manual.

Starting the X server for the PEX API

Starting the X server for the PEX API requires a parameter `-x pex`. For example:

```
xinit --  -x pex <other flags>
```

Starting the X server for the OpenGL API

Starting the X server for the OpenGL API requires parameters `-x abx -x dbe -x GLX`. These flags must be specified in this order. For example:

```
xinit -- -x abx -x dbe -x GLX <other flags>
```

Starting the X server for the graPHIGS API

Using the visual associated with the window, graPHIGS supports creating gP windows as 8-bit Indexed, 24-bit TrueColor, or 24-bit DirectColor. Additionally, the gP window **must** be created in the color planes and the X server must be started such that there are overlay planes available. In support of echoes, graPHIGS on behalf of the application will create a child window in the overlay planes.

The gP window may be created as follows:

- By the application, who subsequently passes the window id to graPHIGS via the **XWINDID** processing option.
- By graPHIGS on behalf of the application when the workstation is created.

The visual associated with the gP window when it is created is selected as follows:

- The visual may be specifically selected by the application from the supported visuals for the color planes via the **XGetVisualInfo** function and then passed to the **XCreateWindow** function to create the gP window in the color planes.

  In this case, start the X server as follows:

  ```
  xinit -- -x dbe -layer 0
  ```

  and within your application, select the desired visual and pass it to the **XCreateWindow** function.

This method allows you the best performance. If your application is not currently written to select a visual, this will require a change to your application.

A sample program, **windsamp**, and a **README** are available to show how an application selects the desired visual and creates a gP window. They are located in the **/usr/lpp/graPHIGS/samples/windsamp** directory.

- If the visual is not specified by the application on the **XCreateWindow** function, it will default to using the visual associated with the root window (the window created when the X server was started).

In this case, the X server must be started so it will render in the color planes and select the 8-bit visual for the root window:

```
xinit -- -x dbe -layer 0
```

If the application chooses to create its own window and it is not the top level window, then a Window Manager Install property must be added when creating the window. This property allows a color map to be installed for the graPHIGS child window in the overlays, which is created to support echoes.

For GXT250P and GXT255P graPHIGS API only:

The GXT250P and GXT255P provides 24-bit single buffered, 16-bit single buffered or 8-bit double buffered color plane support. graPHIGS does not provide XDWA programming support for the 24-bit or 16-bit single buffered color planes. To ensure that applications such as CATIA select the correct X visual on the POWER GXT250P or POWER GXT255P, it is necessary to set an environment variable (ONLY8BIT) before starting the X server:

```
export ONLY8BIT=TRUE
```

This forces the application to select the 8-bit index visual. Applications that select the correct visual via the graPHIGS Escape function 1018 - Inquire X Visual List Information do not require the ONLY8BIT variable. See the graPHIGS subroutine GPES (Escape) for more details.

Attention: The ONLY8BIT is needed for graPHIGS applications only. Once this variable is set, it applies to all applications currently running on the system. To run OpenGL applications, type the unset ONLY8BIT and reset this environment variable.

If you are using a desktop environment such as CDE, the variable needs to be defined before the CDE manager starts the X-server. You will need to do the following:

1. Copy the file /usr/dt/config/Xconfig to /etc/dt/config/Xconfig

   Note: The file /usr/dt/config/Xconfig **must have a file permission of READ-ONLY or the file will be deleted when the desktop is restarted.**

2. Add ONLY8BIT to the export list (Dtlogin.exportList)

3. Add ONLY8BIT=TRUE to the environment list (Dtlogin.environment)

4. Reboot the system.

Appendix A. Communications Statements

The following statement applies to this product. The statement for other products intended for use with this product appears in their accompanying documentation.

Federal Communications Commission (FCC) Statement

Note: The &typemod. been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from authorized dealers. Neither the provider nor the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:

    International Business Machines Corporation
    Old Orchard Road
    Armonk, New York 10504
    Telephone: (919) 543-2193

European Union (EU) Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. The manufacturer cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of option cards supplied by third parties. Consult with your dealer or sales representative for details on your specific hardware.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with IEC Standard 950.

United Kingdom Telecommunications Safety Requirements

This equipment is manufactured to the International Safety Standard EN60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.

The network adapter interfaces housed within this equipment are approved separately, each one having its own independent approval number. These interface adapters, supplied by the manufacturer, do not use or contain excessive voltages. An excessive voltage is one which exceeds 70.7 V peak ac or 120 V dc. They interface with this equipment using Safe Extra Low Voltages only. In order to maintain the separate (independent) approval of the manufacturer's adapters, it is essential that other optional cards, not supplied by the manufacturer, do not use main voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by the manufacturer.

Avis de conformité aux normes du ministère des Communications du Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilleur du Canada.

Canadian Department of Communications Compliance Statement

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

VCCI Statement

> 　この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に
> 基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的
> としていますが、この装置がラジオやテレビジョン受信機に近接して使用される
> と、受信障害を引き起こすことがあります。
> 　取扱説明書に従って正しい取り扱いをして下さい。

The following is a summary of the VCCI Japanese statement in the box above.

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

When used near a radio or TV receiver, it may become the cause of radio interference.

Read the instructions for correct handling.

Radio Protection for Germany

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG–Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Germany.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

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