POWER GXT135P Graphics PCI Adapter

Installation and Using Guide

> **Note**
>
> Before you install this product and use this information, be sure to read the product warranties and notices information included with the system unit into which you are installing the product.

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 communications lines.

Handling Static-Sensitive Devices

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

- 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 other 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

This book provides information about the POWER GXT135P Graphics PCI Adapter and its associated device driver software. Use this book together with your specific system unit and operating system documentation.

ISO 9000

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

Related Publications

The following publications contain related information:

- System unit documentation for information specific to your hardware configuration
- Operating system documentation for information specific to your software configuration
- *PCI Adapter Placement Reference Guide* (for the latest version, you may need to contact your marketing representative)

Trademarks

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- AIX

Other company, product, and service names may be trademarks or service marks of others.

Chapter 1. Overview

The POWER GXT135P Graphics PCI Adapter is a high-performance, 2-D, PCI graphics adapter that accelerates and enhances your system unit video. POWER GXT135P Graphics PCI Adapter has no hardware switches to set. Mode selection is made through the software. Connection to the video monitor is made through a high-density 15-pin D-shell connector.

Important: Retain your proof of purchase for warranty service.

Specific Hardware Characteristics

POWER GXT135P Graphics PCI Adapter
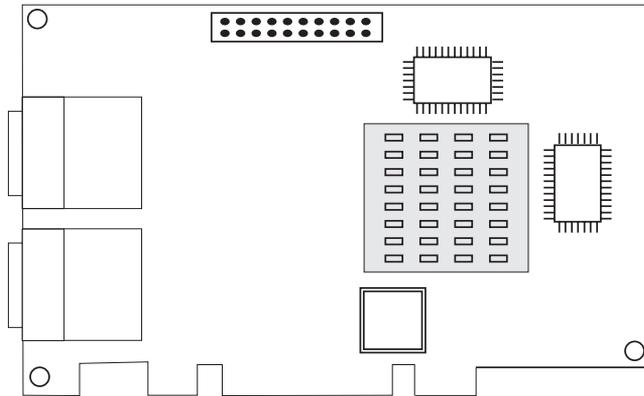
- 16 MB SDRAM
- 32-bit Universal PCI bus interface
- 8-bit or 24-bit color support
- One or two monitors (identical image) supported at resolutions:
  – 640 x 480 at 60 Hz
  – 1024 x 768 at 60 - 85 Hz
  – 1280 x 1024 at 60 - 85 Hz
- One monitor supported at resolutions:
  – 1600 x 1200 at 75 - 85 Hz
  – 2048 x 1536 at 60 - 75 Hz

Display Power Management

The POWER GXT135P Graphics PCI Adapter supports Video Electronics Standards Association (VESA), Display Power Management Signalling (DPMS).

Software Requirements

The POWER GXT135P Graphics PCI Adapter is supported on AIX 4.3 with service package 4330-10, or AIX 5.1 with service package 5110-01. If support is required on another AIX release, ensure that this adapter is supported on that release prior to installation. Contact your support representative for assistance.

Chapter 2. Preparing for Installation

This chapter helps you prepare to install the POWER GXT135P Graphics PCI Adapter.

Note: If the AIX operating system is not installed on your system unit, install your graphics adapter before you install the operating system. (See "Chapter 4. Installing the POWER GXT135P Graphics PCI Adapter" on page 7.) When you install AIX, your device driver software is automatically installed.

If AIX is operating on your system, install your device driver software before you install your graphics adapter. (See "Chapter 3. Installing Device Driver Software" on page 5.)

Checking Prerequisites

To install the POWER GXT135P Graphics PCI Adapter, make sure you have the following on hand:

- The adapter
- The operating system documentation
- The system unit installation documentation
- *PCI Adapter Placement Reference Guide*
- A flat-blade screwdriver or a 5 mm nut driver
- Media containing the device driver software
- Keyboard and mouse

Chapter 3. Installing Device Driver Software

The instructions in this chapter pertain to the AIX operating system. If you have another operating system installed, refer to your operating system documentation for information about installing the device software and configuring your system.

AIX Device Driver Software Installation

To install the device software on an AIX system, do the following:

1. Be sure you have read "Chapter 2. Preparing for Installation" on page 3 to determine:
   - 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 the POWER GXT135P Graphics PCI Adapter" on page 7. When you install AIX, your device driver automatically installs.
2. Turn on the power to your system unit.
3. At the system prompt, log in as root user.
4. Insert the device software media (diskette or CD-ROM) into the appropriate media device.
5. To start SMIT, type:

   ```
   smitty devinst
   ```

   Press Enter.
6. The Install Additional Device Software window highlights the **INPUT device/directory for software** option.
7. Select or type the 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 a list of the device software that you can install.
10. To display the Find window, type:

    ```
    /
    ```
11. Type:

    ```
    devices.pci.14103302
    ```

    Press Enter. The system finds and highlights this device software.
12. Press F7 to select the device software, and press Enter.

13. The INSTALL ADDITIONAL DEVICE SOFTWARE window 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 window displays.

    - 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 appears 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. Go to "Chapter 4. Installing the POWER GXT135P Graphics PCI Adapter" on page 7.

Chapter 4. Installing the POWER GXT135P Graphics PCI Adapter

This chapter explains how to install the POWER GXT135P Graphics PCI Adapter. Before you begin, be sure you have read "Handling Static-Sensitive Devices" on page vii.

Attention: Do not remove the POWER GXT135P Graphics PCI Adapter from its anti-static package at this time.

Installing the Adapter

To install the adapter, do the following:

1. Be sure you have read "Chapter 2. Preparing for Installation" on page 3 to determine:.

    • If you should install your Graphics PCI Adapter hardware first, go to step 4 and continue with this section.

    • If you should install your device driver software first, go back to "Chapter 3. Installing Device Driver Software" on page 5. Return here to install your hardware.

2. Refer to the *PCI Adapter Placement Reference Guide* to identify supported installation slots for your POWER GXT135P Graphics PCI Adapter. Return here to complete the process.

    Attention: Failure to install your POWER GXT135P Graphics PCI Adapter into the correct slot can cause your adapter or system unit to function incorrectly.

3. Connect your keyboard and mouse to the system unit.

4. Some systems support the hot-plugging of adapters. To determine whether your system supports hot-plugging, refer to the installation documentation that was provided with your system. Follow the instructions in your system's installation guide to install the POWER GXT135P Graphics PCI Adapter.

    Note: If your system does support hot-plugging, and you receive a failure message when you attempt to install the adapter, shut down and restart the system. The system will then recognize the adapter.

5. After the basic installation is complete, connect your monitor cable to one of the two connectors on the Graphics PCI Adapter. If desired, attach a second monitor cable to the remaining connector on the graphics adapter. Ensure your monitor is plugged into a power source.

    Attention: Do not attach a second monitor to the POWER GXT135P Graphics PCI Adapter if you will be using resolutions higher than 1280 x 1024.

6. Turn on both your system unit and your display if they were shut down previously. Follow all instructions on the window.

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

Troubleshooting

You can often resolve initial installation problems by following a few basic troubleshooting steps in the following sequence:

1. Checking Cables
2. Checking Installed Software (lslpp)
3. Checking Console (possibly redirect)
4. Checking Installed Hardware (lsdev)

Checking 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 either a high-density 15-pin D-shell connector or a 24-pin DVI connector. (For detailed connector information, go to *Adapters, Devices, and Cable Information for Multiple Bus Systems*.)

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

3. If the login prompt still does not appear, reset your system to its original configuration and continue with the Troubleshooting verifications.

Verifying AIX Software Installation

1. Verify that the device driver for the POWER GXT135P Graphics PCI Adapter is installed as follows:

   - Log in as root user.
   - Type the following:

     ```
     lslpp -l all | grep GXT135P
     ```

     Press Enter.

2. If the POWER GXT135P device driver is installed, the following is an example of the data that displays if you are running AIX Version 4.3 or AIX Version 5.1:

   ```
   devices.pci.14103302.X11 4.3.3.0 COMMITTED AIXwindows GXT135P Graphics
   devices.pci.14103302.diag 4.3.3.0 COMMITTED GXT135P Graphics Adapter
   devices.pci.14103302.rte 4.3.3.0 COMMITTED GXT135P Graphics Adapter
      or
   devices.pci.14103302.X11 5.1.0.0 COMMITTED AIXwindows GXT135P Graphics
   devices.pci.14103302.diag 5.1.0.0 COMMITTED GXT135P Graphics Adapter
   devices.pci.14103302.rte 5.1.0.0 COMMITTED GXT135P Graphics Adapter
   ```

3. If the POWER GXT135P Graphics PCI Adapter device driver did not install, return to "Chapter 3. Installing Device Driver Software" on page 5. For AIX 4.3 or AIX 5.1, use the *Additional Device Driver Software* CD included with your adapter.

Checking 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 instructions.

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 instructions.

Verifying AIX Hardware Installation

1. To verify that your system unit recognized the POWER GXT135P Graphics PCI Adapter, type the following:

   ```
   lsdev -Cs pci
   ```

   Press Enter.

2. If the POWER GXT135P Graphics PCI Adapter did install, the following is an example of the data that displays on your screen if you are installing the POWER GXT135P Graphics PCI Adapter:

   ```
   Lai0 Available 04-02 GXT135P Graphics Adapter
   ```

3. If the message on your screen indicates that your adapter is `Defined` instead of `Available`, shut down your machine. Check the POWER GXT135P adapter to ensure it is installed correctly.

4. If the POWER GXT135P adapter did not install, return to "Chapter 4. Installing the POWER GXT135P Graphics PCI Adapter" on page 7.

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

Chapter 5. Display Information

The POWER GXT135P Graphics PCI Adapter supports Video Electronics Standards Association (VESA), Display Power Management Signalling (DPMS).

Changing Resolution and Refresh Rates

To change the resolution and refresh rates for X or CDE sessions, do the following:

1. Turn on your system unit power.
2. Log in as root user.
3. Type the following:

   `smitty`

   Press Enter.
4. From the System Management screen, select **Devices** and press Enter.
5. Select **Graphic Displays** and press Enter.
6. Select **Select the Display Type**.
7. Select the **POWER GXT135P Graphics PCI Adapter** and press Enter.
8. Press F4 for a list of display types supported.
9. Select the `desired type` and press Enter.

   Note: When a DDC monitor is attached, the monitor type is automatically set by the system and cannot be overridden. As a result, if POWER GXT135P detects a Data Display Channel (DDC) monitor, `default` is the only SMIT screen option. Pressing F4 here results in an information message stating the popup is not available for this entry field. In this case, press F3 to return to the Graphics Display screen and continue with step 12 below.
10. In Select the Display Type screen, notice the Select Display Type field data has been updated. Press Enter.
11. Press F3 twice to return to the Graphics Display screen.
12. Select **Select the Display Resolution and Refresh Rate** and press Enter.
13. From the Graphics Adapter screen, select the **POWER GXT135P Graphics PCI Adapter** and press Enter.
14. Press F4 for a list of Resolution and Refresh Rates that are supported.
15. Select the `desired rate` and press Enter.

   Note: Your X session or CDE session will run at the rate that you specified the next time that you start one of these sessions.
16. Press F10 to exit SMIT.

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: This equipment has 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
- New Orchard Road
- Armonk, New York 10504
- Telephone: (919) 543-2193

FC

Tested to Comply
With FCC Standards

FOR HOME OR OFFICE USE

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 est conform à la norme NMB-003 du Canada.

Canadian Department of Communications Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

VCCI Statement

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　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 product is a Class B Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). This product is aimed to be used in a domestic environment. When used near a radio or TV receiver, it may becaome 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.

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

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POWER GXT135P Graphics PCI Adapter
Installation and Using Guide

Publication No. SA23-1256-00

Overall, how satisfied are you with the information in this book?

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Overall satisfaction	☐	☐	☐	☐	☐

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Easy to understand	☐	☐	☐	☐	☐
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Please tell us how we can improve this book:

Thank you for your responses. May we contact you?   ☐ Yes   ☐ No

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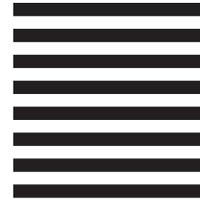
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