AGP/PCI Digital TFT 2D/3D G200 P&D A/D Graphic Accelerator Adapters

User's Guide Supplement

OPTIONS
by IBM

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For all other countries, the warranty terms and conditions applicable in the country of purchase are available from IBM or your reseller.

First Edition (January 1999)

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Product registration

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Part 1: Installation Guide

About this book

This supplement provides the following information:

- Description of the product
- Preparing for installation and taking antistatic precautions
- Installing an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter
- Installing the software
- Software setup and adjustment for Windows 95/98
- Software setup and adjustment for Windows NT 4.0

Product description

The graphic accelerator adapters use a Matrox graphics engine to help your monitor provide superior performance with Windows, digital video and 3D graphics. To further accelerate 3D programs, your graphic accelerator adapters use bus mastering and have hardware-accelerated features, including texture mapping, Gouraud shading and Z-buffering. The graphic accelerator adapters also support more advanced 3D features such as alpha-blending, anti-aliasing, and MIP-mapping. Depending on the model of your graphic accelerator adapter, it supports resolutions up to 1800 x 1440 and 1920 x 1200. Your graphic accelerator adapters are VGA compatible and support all VESA standards: VBE 2.0 (Super VGA modes), DPMS (energy saving), and DDC-2B (Plug-and-Play monitors). Also, depending on the model of your graphic accelerator adapter, you can upgrade it with more graphics memory or multimedia hardware add-ons. For more information on available upgrades, see the Matrox Web site (www.matrox.com/mga).

Preparing for installation

Before you install a graphic accelerator adapter, you must take the following precautions in order to prevent static electricity from damaging electronic parts.

- Before touching any electronic parts, drain the static electricity from your body. You can do this by touching the metal frame of your computer.
- Do not remove a card from the antistatic shipping container until you are ready to install it. When you remove a card from your computer, place it back in its container.
- When handling a card, hold it by its edges, and avoid touching its circuitry.

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Before you begin installing a graphic accelerator adapter, ensure that your display driver is set to standard VGA mode (640 x 480) by following the table below.

Operating System	Procedure
Windows 95/98	No actions required.
Windows NT 4.0	1. Click **Start**, **Settings**, and then **Control Panel**. 2. Double-click the **Display** icon. 3. Click the **Settings** tab. 4. In the Desktop Area move the marker to 640 x 480. 5. Click **OK**

Installing an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter

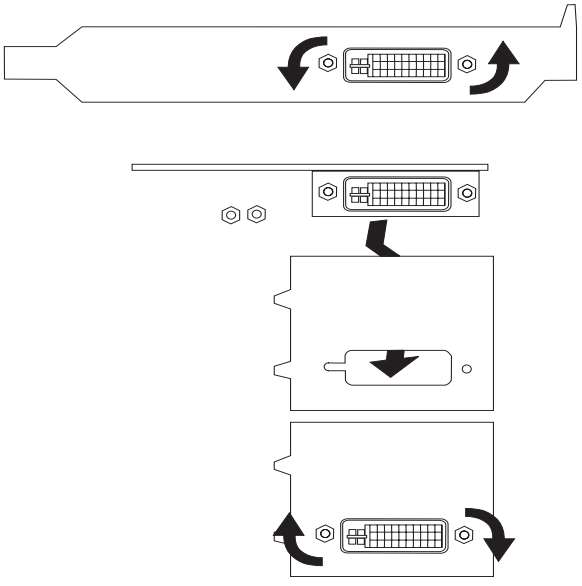
To install an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter:

1. Turn off your computer and all peripherals such as your monitor or printer and open your computer.
2. A graphics adapter is often built into your computer's motherboard so you do not need to remove any hardware. However, if there is a graphics adapter card in a separate expansion slot, you should remove it.
   Note: Inserting a graphic accelerator adapter into the wrong type of slot could damage your card, your computer, or both.
3. Most computers have different types of expansion slots. Choose an AGP or PCI slot, depending on the type of graphic accelerator adapter you have. Your system manual should identify the location of each type of expansion slot in your computer.

   If you have an AGP card, do not insert the plastic tab next to the connector pins into the slot.
4. Remove the cover for the slot you intend to use. Save the screw for the mounting bracket. Position your graphic accelerator adapter over the expansion slot you have chosen. Push the card in firmly and evenly until it is fully seated in the slot. Replace

the screw to secure the bracket of your graphic accelerator adapter to the computer frame.

This adapter comes with the bracket for the ATX-type computer installed. To install the bracket in an NLX-type computer, follow the diagram below.



5. Plug one end of the monitor cable into the monitor connector on an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter. Plug the other end of the monitor cable into your monitor.

   Refer to the your monitor's installation guide to make sure that the monitor is properly set up.

For IBM systems, refer to *About Installing Options* for instructions on opening the computer cover, removing existing adapter cards, and installing adapter cards in expansion slots.

Installing the software

This section has instructions for installing the software and device drivers for an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter. Instructions are for installing the software with either Windows 95/98 or Windows NT 4.0.

1. Start your computer.

   Windows 95/98 will automatically detect your new hardware and will start the **New Hardware Wizard**. If appropriate display drivers have not been previously installed, Windows 95 reports finding a PCI adapter (even if you have an AGP card).

   If the **New Hardware Found** dialog box is displayed, click **Do not install a driver**, then click **OK**.
   If the **Update Device Driver Wizard** dialog box is displayed, click **Next**, then click **Finish**.
   If the **Add New Hardware Wizard** dialog box is displayed, click **Next** four times, then click **Finish**, and then click **Yes** to restart your computer.

2. Locate the diskettes which are labeled for your operating system. (There are two sets of diskettes, one set for Windows 95/98, and another set for Windows NT 4.0.)
3. Insert the first diskette into your diskette drive.
4. Click **Start** and then select **Run**.
5. Type SETUP.EXE in the command box and click **OK**.
6. When prompted, select the language you want to use, then click **Next**.
7. If this is a first-time installation, the setup program lists the software that needs to be installed to take advantage of your new graphic accelerator adapter hardware. To begin the software installation, click **Install**.
8. When prompted, choose an installation type:

   To install the complete MGA Matrox PowerDesk package, click **Typical**.

   To customize the package as it is installed, click **Custom**. If you click **Custom**, the setup program prompts you for a destination folder and the PowerDesk options you want to install.

   After you choose an installation type, the setup program will install the software and device drivers.
9. Change the diskette according to the on-screen instructions, and continue with the installation.
10. After installation is complete, remove the diskette from the diskette drive, and click **OK** to restart your computer.

    Your computer must be restarted for the changes to take effect.

Attention: For future software and driver updates for this product, visit the IBM support Web site, at:
http://www.pc.ibm.com/support
On this Web page, select **Options by IBM Support**. This will take you to another Web page, where you can either select a category of product, or enter the part number for which you want information. Once you have done this, you will see a list of files available for your product. Scroll down until you find the appropriate files and follow the instructions for downloading.

Software setup for Windows 95/98

To access the adapter software and online documentation, click **Start**, then select **Programs**, then select **MGA Matrox PowerDesk**. You can access commonly used PowerDesk features by right-clicking the Windows desktop background, then selecting **Matrox Display Properties**. You can also access the software by clicking on the Matrox QuickDesk icon on the Windows taskbar. The icon looks like a monitor.

Note: The Matrox display driver for Windows 95/98 supports multiple displays with Windows 98. However, Matrox PowerDesk features are disabled in multi-display mode. To change your display settings while in multi-display mode, use the Windows controls. For more information on multi-display mode, see Windows 98 online help under "Multiple Display Support."

Monitor setup

To check your monitor settings:

1. Click the **Start** button, then select **Programs**, **Matrox PowerDesk**, **Matrox Display Properties**, and **Monitor**.
2. **If you have a Plug-and-Play monitor:**

   Click the button next to **Windows monitor**, and make sure that either **Plug-and-Play Monitor**, ***or*** the model name of your monitor, appears under "Windows monitor."

   If you do not have a Plug-and-Play monitor:

   If the monitor type listed under the **Windows monitor** button is incorrect or shows **Unknown Monitor**, you need to select a monitor. Click the **Matrox Monitor** button, select your monitor by name in the list below this button, then click **OK**. If your monitor does not appear in the list, you can try the Windows method of monitor selection. For more information on monitor selection, see the Matrox PowerDesk online user's guide.

Note: Many Plug-and-Play monitors do not automatically report whether they are capable of 1152 x 864 or 1600 x 1200 and higher resolutions. To use these resolutions, or to use higher refresh rates than those reported by the monitor, you can use the Matrox monitor selection method. More information on the monitor selection method can be found in the Matrox PowerDesk online user's guide.

ATTENTION: Some monitors can be damaged if incorrect software monitor settings are applied. For more information, see the documentation that comes with your monitor.

Display setup

After checking your monitor's software settings, you can change your display resolution, color palette, and other settings. To change display settings, click the **Start** button, then select **Programs**, **MGA Matrox PowerDesk**, and **MGA Matrox Display Properties**. To change your display resolution or color palette, click the **Settings** tab. For more information on changing your display settings, see the online MGA Matrox PowerDesk guide.

Overview of software

MGA Matrox PowerDesk for Windows 95/98 includes:

A display driver with:

- DirectDraw and Direct3D support for direct access to hardware.
- Plug-and-Play (DDC-2B) and Energy Star (DPMS) support.

Settings property sheet, which allows you to change your display settings. Use the **Settings** property sheet to access features such as:

- Desktop mode buttons, which you can use to set up a proportional, horizontal, or vertical virtual desktop.
- Display schemes, which give you the option of choosing a predefined display setting.
- **Performance** property sheet, which you can use to change the display driver performance settings.
- **Utilities** property sheet, which you can use to configure Matrox PowerDesk options.

Monitor property sheet which informs the display driver of your monitor's capabilities. You can use this property sheet instead of using the Windows method of monitor selection.

Color property sheet, where you can change your display's color balance.

Hot Key property sheet, where you can choose keyboard shortcuts for:

- CenterWINDOW to center the view area in the active window.
- MaxVIEW to resize the active window to the size of your current display area.
- PanEND to move your display area to the right or bottom of your virtual desktop.
- PanHOME to move your display area to the left or top of your virtual desktop.
- PanLOCK to enable or disable panning.
- PixelTOUCH to magnify part of your virtual desktop area.
- Display schemes

Information property sheet, where you can find information on your display hardware and software.

Software setup for Windows NT 4.0

To access PowerDesk programs and online documentation, click the **Start** button, then select **Programs**, and **Matrox PowerDesk NT**. You can also access PowerDesk features by clicking on the Matrox QuickDesk icon in the Windows taskbar. The icon looks like a computer monitor.

Monitor setup

To check your monitor settings:

1. Click the **Start** button, then select **Programs**, **Matrox PowerDesk NT**, **Matrox Display Properties**, and **Monitor**.
2. **If you have a Plug-and-Play monitor:**

   Make sure the **Plug-and-Play (DDC) monitor** button is selected. If it is, the display driver ***automatically*** uses the correct settings for your monitor. If the button is not already selected, click it and then click **Apply**.

   If you do not have a Plug-and-Play monitor:

   See if the **Default monitor (60 Hz)** button is selected. If it is, use the Matrox monitor selection method. For more information on monitor selection, see the online Matrox PowerDesk guide.

Note: Many Plug-and-Play monitors don't automatically report whether they are capable of 1152 x 864 or 1600 x 1200 and higher resolutions. To use these resolutions, or to use higher refresh rates than those reported by the monitor, you can use the Matrox monitor selection method. More information on the monitor selection method can be found in the Matrox PowerDesk online user's guide.

ATTENTION: Some monitors can be damaged if incorrect software monitor settings are applied. For more information, see the documentation that comes with your monitor.

Display setup

After checking your monitor's software settings, you can change your display resolution, color palette, and other MGA Matrox PowerDesk settings. To access the **Matrox Display Properties** sheet, click the **Start** button, select **Programs**, then **Matrox PowerDesk NT**, then **Matrox Display Properties**. To change your display resolution or color palette, click the **Settings** tab. For more information on changing your display setings, see the MGA Matrox PowerDesk online user's guide.

Overview of software

MGA Matrox PowerDesk for Windows NT includes:

A display driver with:

- Multi-display support, so you can use up to five monitors at a time. You need one AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter in your computer for each monitor used; five monitors used would require five graphic accelerator adapters installed in your computer.
- Accelerated DirectDraw and OpenGL support, allowing direct access to hardware.
- Plug-and-Play (DDC-2B) monitor support.

Settings property sheet, which you can use to change your display settings. This sheet provides easy access to the following Matrox PowerDesk features:

- Desktop mode buttons, which you can use to choose a proportional, horizontal, or vertical *virtual desktop*.
- Display schemes which give you the option of choosing a pre-defined display setting.

Monitor property sheet, which sends information on your monitor's capabilities to the display driver.

Information property sheet, which displays hardware and software version numbers and capabilities.

Performance property sheet, which you can use to configure advanced driver performance settings.

PowerDesk property sheet with settings for:

- PixelTOUCH which allows you to zoom in and pan on your view area.
- CenterWINDOW which you can use to center windows in your view area.
- MaxVIEW which is used to maximize windows in your view area instead of on your desktop.
- CenterPOPUP which causes new windows to pop up in the center of your current view area.

Installation Guide (Translate)

About this book

This supplement provides the following information:

- Description of the product
- Preparing for installation and taking antistatic precautions
- Installing an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter
- Installing the software
- Software setup and adjustment for Windows 95/98
- Software setup and adjustment for Windows NT 4.0

Product description

The graphic accelerator adapters use a Matrox graphics engine to help your monitor provide superior performance with Windows, digital video and 3D graphics. To further accelerate 3D programs, your graphic accelerator adapters use bus mastering and have hardware-accelerated features, including texture mapping, Gouraud shading and Z-buffering. The graphic accelerator adapters also support more advanced 3D features such as alpha-blending, anti-aliasing, and MIP-mapping. Depending on the model of your graphic accelerator adapter, it supports resolutions up to 1800 x 1440 and 1920 x 1200. Your graphic accelerator adapters are VGA compatible and support all VESA standards: VBE 2.0 (Super VGA modes), DPMS (energy saving), and DDC-2B (Plug-and-Play monitors). Also, depending on the model of your graphic accelerator adapter, you can upgrade it with more graphics memory or multimedia hardware add-ons. For more information on available upgrades, see the Matrox Web site (www.matrox.com/mga).

Preparing for installation

Before you install a graphic accelerator adapter, you must take the following precautions in order to prevent static electricity from damaging electronic parts.

- Before touching any electronic parts, drain the static electricity from your body. You can do this by touching the metal frame of your computer.
- Do not remove a card from the antistatic shipping container until you are ready to install it. When you remove a card from your computer, place it back in its container.
- When handling a card, hold it by its edges, and avoid touching its circuitry.

Before you begin installing a graphic accelerator adapter, ensure that your display driver is set to standard VGA mode (640 x 480) by following the table below.

Operating System	Procedure
Windows 95/98	No actions required.
Windows NT 4.0	1. Click **Start**, **Settings**, and then **Control Panel**. 2. Double-click the **Display** icon. 3. Click the **Settings** tab. 4. In the Desktop Area move the marker to 640 x 480. 5. Click **OK**

Installing an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter

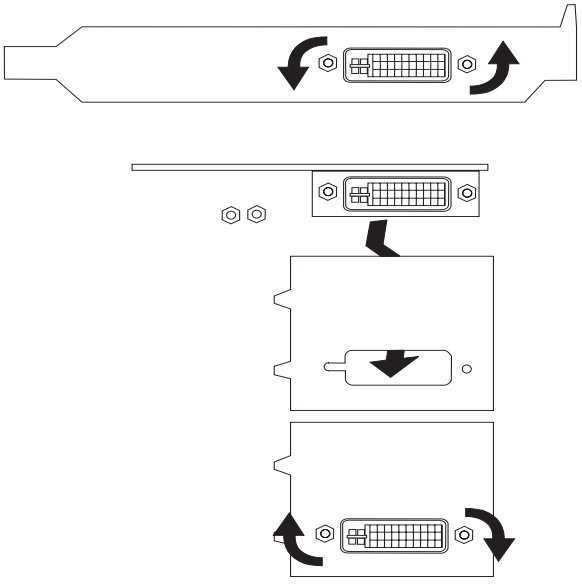
To install an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter:

1. Turn off your computer and all peripherals such as your monitor or printer and open your computer.
2. A graphics adapter is often built into your computer's motherboard so you do not need to remove any hardware. However, if there is a graphics adapter card in a separate expansion slot, you should remove it.
   Note: Inserting a graphic accelerator adapter into the wrong type of slot could damage your card, your computer, or both.
3. Most computers have different types of expansion slots. Choose an AGP or PCI slot, depending on the type of graphic accelerator adapter you have. Your system manual should identify the location of each type of expansion slot in your computer.

   If you have an AGP card, do not insert the plastic tab next to the connector pins into the slot.
4. Remove the cover for the slot you intend to use. Save the screw for the mounting bracket. Position your graphic accelerator adapter over the expansion slot you have chosen. Push the card in firmly and evenly until it is fully seated in the slot. Replace

the screw to secure the bracket of your graphic accelerator adapter to the computer frame.

This adapter comes with the bracket for the ATX-type computer installed. To install the bracket in an NLX-type computer, follow the diagram below.



5. Plug one end of the monitor cable into the monitor connector on an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter. Plug the other end of the monitor cable into your monitor.

   Refer to the your monitor's installation guide to make sure that the monitor is properly set up.

For IBM systems, refer to *About Installing Options* for instructions on opening the computer cover, removing existing adapter cards, and installing adapter cards in expansion slots.

Installing the software

This section has instructions for installing the software and device drivers for an AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter. Instructions are for installing the software with either Windows 95/98 or Windows NT 4.0.

1. Start your computer.

   Windows 95/98 will automatically detect your new hardware and will start the **New Hardware Wizard**. If appropriate display drivers have not been previously installed, Windows 95 reports finding a PCI adapter (even if you have an AGP card).

   If the **New Hardware Found** dialog box is displayed, click **Do not install a driver**, then click **OK**.
   If the **Update Device Driver Wizard** dialog box is displayed, click **Next**, then click **Finish**.
   If the **Add New Hardware Wizard** dialog box is displayed, click **Next** four times, then click **Finish**, and then click **Yes** to restart your computer.

2. Locate the diskettes which are labeled for your operating system. (There are two sets of diskettes, one set for Windows 95/98, and another set for Windows NT 4.0.)
3. Insert the first diskette into your diskette drive.
4. Click **Start** and then select **Run**.
5. Type SETUP.EXE in the command box and click **OK**.
6. When prompted, select the language you want to use, then click **Next**.
7. If this is a first-time installation, the setup program lists the software that needs to be installed to take advantage of your new graphic accelerator adapter hardware. To begin the software installation, click **Install**.
8. When prompted, choose an installation type:

   To install the complete MGA Matrox PowerDesk package, click **Typical**.

   To customize the package as it is installed, click **Custom**. If you click **Custom**, the setup program prompts you for a destination folder and the PowerDesk options you want to install.

   After you choose an installation type, the setup program will install the software and device drivers.
9. Change the diskette according to the on-screen instructions, and continue with the installation.
10. After installation is complete, remove the diskette from the diskette drive, and click **OK** to restart your computer.

    Your computer must be restarted for the changes to take effect.

Attention: For future software and driver updates for this product, visit the IBM support Web site, at:
http://www.pc.ibm.com/support
On this Web page, select **Options by IBM Support**. This will take you to another Web page, where you can either select a category of product, or enter the part number for which you want information. Once you have done this, you will see a list of files available for your product. Scroll down until you find the appropriate files and follow the instructions for downloading.

Software setup for Windows 95/98

To access the adapter software and online documentation, click **Start**, then select **Programs**, then select **MGA Matrox PowerDesk**. You can access commonly used PowerDesk features by right-clicking the Windows desktop background, then selecting **Matrox Display Properties**. You can also access the software by clicking on the Matrox QuickDesk icon on the Windows taskbar. The icon looks like a monitor.

Note: The Matrox display driver for Windows 95/98 supports multiple displays with Windows 98. However, Matrox PowerDesk features are disabled in multi-display mode. To change your display settings while in multi-display mode, use the Windows controls. For more information on multi-display mode, see Windows 98 online help under "Multiple Display Support."

Monitor setup

To check your monitor settings:

1. Click the **Start** button, then select **Programs**, **Matrox PowerDesk**, **Matrox Display Properties**, and **Monitor**.
2. **If you have a Plug-and-Play monitor:**

   Click the button next to **Windows monitor**, and make sure that either **Plug-and-Play Monitor**, ***or*** the model name of your monitor, appears under "Windows monitor."

   If you do not have a Plug-and-Play monitor:

   If the monitor type listed under the **Windows monitor** button is incorrect or shows **Unknown Monitor**, you need to select a monitor. Click the **Matrox Monitor** button, select your monitor by name in the list below this button, then click **OK**. If your monitor does not appear in the list, you can try the Windows method of monitor selection. For more information on monitor selection, see the Matrox PowerDesk online user's guide.

Note: Many Plug-and-Play monitors do not automatically report whether they are capable of 1152 x 864 or 1600 x 1200 and higher resolutions. To use these resolutions, or to use higher refresh rates than those reported by the monitor, you can use the Matrox monitor selection method. More information on the monitor selection method can be found in the Matrox PowerDesk online user's guide.

ATTENTION: Some monitors can be damaged if incorrect software monitor settings are applied. For more information, see the documentation that comes with your monitor.

Display setup

After checking your monitor's software settings, you can change your display resolution, color palette, and other settings. To change display settings, click the **Start** button, then select **Programs**, **MGA Matrox PowerDesk**, and **MGA Matrox Display Properties**. To change your display resolution or color palette, click the **Settings** tab. For more information on changing your display settings, see the online MGA Matrox PowerDesk guide.

Overview of software

MGA Matrox PowerDesk for Windows 95/98 includes:

A display driver with:

- DirectDraw and Direct3D support for direct access to hardware.
- Plug-and-Play (DDC-2B) and Energy Star (DPMS) support.

Settings property sheet, which allows you to change your display settings. Use the **Settings** property sheet to access features such as:

- Desktop mode buttons, which you can use to set up a proportional, horizontal, or vertical virtual desktop.
- Display schemes, which give you the option of choosing a predefined display setting.
- **Performance** property sheet, which you can use to change the display driver performance settings.
- **Utilities** property sheet, which you can use to configure Matrox PowerDesk options.

Monitor property sheet which informs the display driver of your monitor's capabilities. You can use this property sheet instead of using the Windows method of monitor selection.

Color property sheet, where you can change your display's color balance.

Hot Key property sheet, where you can choose keyboard shortcuts for:

- CenterWINDOW to center the view area in the active window.
- MaxVIEW to resize the active window to the size of your current display area.
- PanEND to move your display area to the right or bottom of your virtual desktop.
- PanHOME to move your display area to the left or top of your virtual desktop.
- PanLOCK to enable or disable panning.
- PixelTOUCH to magnify part of your virtual desktop area.
- Display schemes

Information property sheet, where you can find information on your display hardware and software.

Software setup for Windows NT 4.0

To access PowerDesk programs and online documentation, click the **Start** button, then select **Programs**, and **Matrox PowerDesk NT**. You can also access PowerDesk features by clicking on the Matrox QuickDesk icon in the Windows taskbar. The icon looks like a computer monitor.

Monitor setup

To check your monitor settings:

1. Click the **Start** button, then select **Programs**, **Matrox PowerDesk NT**, **Matrox Display Properties**, and **Monitor**.
2. **If you have a Plug-and-Play monitor:**

   Make sure the **Plug-and-Play (DDC) monitor** button is selected. If it is, the display driver ***automatically*** uses the correct settings for your monitor. If the button is not already selected, click it and then click **Apply**.

   If you do not have a Plug-and-Play monitor:

   See if the **Default monitor (60 Hz)** button is selected. If it is, use the Matrox monitor selection method. For more information on monitor selection, see the online Matrox PowerDesk guide.

Note: Many Plug-and-Play monitors don't automatically report whether they are capable of 1152 x 864 or 1600 x 1200 and higher resolutions. To use these resolutions, or to use higher refresh rates than those reported by the monitor, you can use the Matrox monitor selection method. More information on the monitor selection method can be found in the Matrox PowerDesk online user's guide.

ATTENTION: Some monitors can be damaged if incorrect software monitor settings are applied. For more information, see the documentation that comes with your monitor.

Display setup

After checking your monitor's software settings, you can change your display resolution, color palette, and other MGA Matrox PowerDesk settings. To access the **Matrox Display Properties** sheet, click the **Start** button, select **Programs**, then **Matrox PowerDesk NT**, then **Matrox Display Properties**. To change your display resolution or color palette, click the **Settings** tab. For more information on changing your display setings, see the MGA Matrox PowerDesk online user's guide.

Overview of software

MGA Matrox PowerDesk for Windows NT includes:

A display driver with:

- Multi-display support, so you can use up to five monitors at a time. You need one AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphics Accelerator Adapter in your computer for each monitor used; five monitors used would require five graphic accelerator adapters installed in your computer.
- Accelerated DirectDraw and OpenGL support, allowing direct access to hardware.
- Plug-and-Play (DDC-2B) monitor support.

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PowerDesk property sheet with settings for:

- PixelTOUCH which allows you to zoom in and pan on your view area.
- CenterWINDOW which you can use to center windows in your view area.
- MaxVIEW which is used to maximize windows in your view area instead of on your desktop.
- CenterPOPUP which causes new windows to pop up in the center of your current view area.

Product service and warranty information

For technical support, support hours, and warranty terms and conditions, see the enclosed inserts (flyer or diskette), or contact your IBM reseller or IBM marketing representative.

Part 2: Appendixes

Product warranty and notices

The following warranty information applies to products purchased in the United States, Canada, and Puerto Rico. For warranty terms and conditions for products purchased in other countries, see the enclosed Warranty insert, or contact your IBM reseller or IBM marketing representative.

International Business Machines Corporation Armonk, New York, 10504

Statement of Limited Warranty

The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. If you have any questions, contact IBM or your reseller.

Machine: AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphic Accelerator Adapters

Warranty Period*: One Year

**Contact your place of purchase for warranty service information.*

Production Status
Each Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

The IBM Warranty for Machines
IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

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During the warranty period IBM or your reseller, if authorized by IBM, will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

For IBM or your reseller to provide warranty service for a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many of these transactions involve the removal of parts and their return to IBM. You represent that all removed parts are genuine and unaltered. A part that replaces a removed part will assume the warranty service status of the replaced part.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair it or replace it with one that is at least functionally equivalent, without charge. The replacement may not be new, but will be in good working order. If IBM or your reseller is unable to repair or replace the Machine, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user. However, for Machines which have a life-time warranty, this warranty is not transferable.

Warranty Service

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States, call IBM at **1-800-772-2227**. In Canada, call IBM at **1-800-565-3344**. You may be required to present proof of purchase.

IBM or your reseller will provide certain types of repair and exchange service, either at your location or at IBM's or your reseller's service center, to restore a Machine to good working order.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service. You also agree to ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange.

You agree to:

1. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
2. where applicable, before service is provided —
   a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,
   b. secure all programs, data, and funds contained in a Machine, and
   c. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Extent of Warranty
IBM does not warrant uninterrupted or error-free operation of a Machine.

The warranties may be voided by misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, removal or alteration of Machine or parts identification labels, or failure caused by a product for which IBM is not responsible.

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1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages or loss, up to the greater of U.S. $100,000 or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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Electronic emission notices

AGP/PCI Digital TFT 2D/3D P&D A/D G200 Graphic Accelerator Adapters

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 IBM 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 IBM authorized dealers. IBM is not 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, NY 10504
Telephone: 1-919-543-2193

Industry Canada Class B emission compliance statement

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

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe B est conform à la norme NMB-003 du Canada.

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

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 UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

European Union - emission directive

This product is in conformity with the protection requirements of EU Council Directive 89/366/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

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.

Union Européenne - Directive Conformité électromagnétique

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de CISPR22 / Standard européen EN 55022. Les conditions pour l'équipement de Classe B ont été définies en fonction d'un contexte résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

Unione Europea - Directiva EMC (Conformidad électromagnética)

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislatura de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar CISPR22 y el Estándar Europeo EN 55022. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

Union Europea - Normativa EMC

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/336/CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

IBM non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da IBM.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le le apparecchiature di informatica Classe B ai sensi del CISPR 22 / Norma Europea EN 55022. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

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