

Graphics Solutions for Professionals

Matrox **ATC**

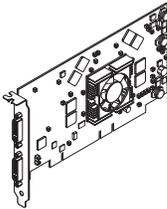
User Guide

10892-301-0210
2007.07.19

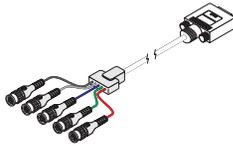
Overview

Thank you for purchasing a Matrox ATC (Air Traffic Control) graphics card. Your Matrox product is a high-performance graphics card that plugs into an expansion slot inside your personal computer. This card supports DualHead features, digital and analog monitors, and display resolutions up to 2048 × 2048 (analog or digital) or 2560 × 1600 (dual-link) for your main monitor and up to 1920 × 1200 for a secondary analog monitor.

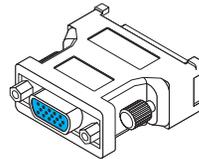
Hardware supplied



Matrox card
(PCI shown)



1 BNC cable *
(DVI to 5× BNC)



DVI-to-HD15 adapter *

* Provided with certain Matrox product.

Software supplied (for Windows 2000/XP)

- Matrox PowerDesk-SE – to use your Matrox graphics hardware
- Other software – see the CD-ROM *Readme* file

Installation overview



Note: If your Matrox product is already partially or fully installed on your computer, some or all the installation information in this guide may not apply to you. However, this information may be useful if you need to reinstall your Matrox product.

To install your Matrox product:

- 1 Install the Matrox card – see “[Hardware installation](#)”, page 3.
- 2 Connect your monitors – see “[Connection setup](#)”, page 6.
- 3 Install the software – see “[Software setup](#)”, page 9.

Hardware installation

This section describes how to install your Matrox card. For information specific to your computer, like how to remove its cover, see your system manual.



WARNING: To avoid personal injury, turn off your computer, unplug it, and then wait for it to cool before you touch any of its internal parts. Also, static electricity can severely damage electronic parts. Before touching any electronic parts, drain static electricity from your body (for example, by touching the metal frame of your computer). When handling a card, carefully hold it by its edges and avoid touching its circuitry.

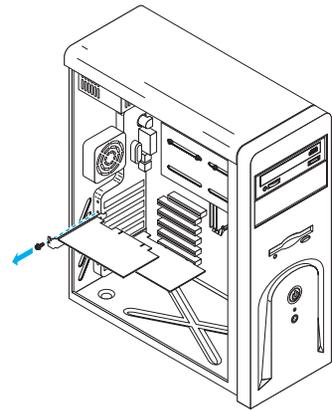
1 Open your computer and remove your existing graphics card*

If a graphics card *isn't* already installed in your computer, skip to [step 2](#).

- a Using **Add/Remove program** from the Windows **Control Panel**, remove any currently installed display drivers. Restart your computer for the changes to take effect.

After your computer restarts, you're prompted to install drivers for the new graphics hardware detected. Click **Cancel**.

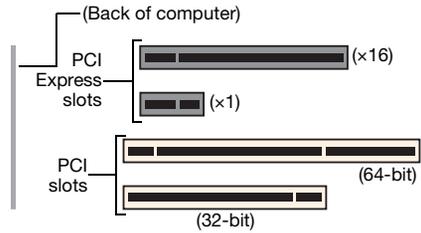
- b Turn off your computer and all peripherals such as your monitor or printer.
- c Open the computer and remove your existing graphics card. (If graphics hardware is built into the motherboard of your computer, this graphics hardware should automatically disable itself after your Matrox card is installed. For more information, see your system manual.)



* With multi-display mode, you may be able to use your existing graphics card. For Windows 2000/XP, see Windows 2000/XP online help under "Install additional monitors".

2 Choose a PCI slot

Most computers have different types of expansion slots. Choose a PCI or PCI Express ×16 (PCIe) slot, depending on the type of Matrox card you have. Your system manual should identify the location of each type of expansion slot in your computer.

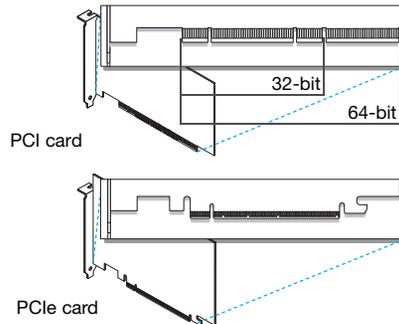


Note: If you're using a PCI graphics card in a PCI 64-bit compatible slot, your choice of PCI slot may affect your card or system performance. For more information, see your computer manual.



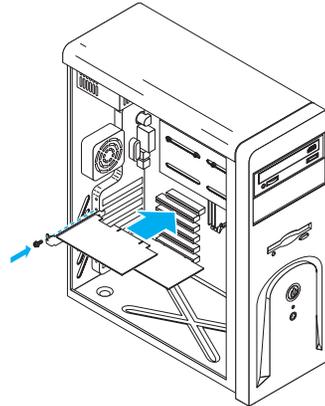
WARNING: Inserting your Matrox card into the wrong type of slot could damage your card, your computer, or both.

If you're using a 32-bit PCI slot, only part of your card's edge connector should be inserted into the PCI slot (the part closest to the back of the computer).



3 Insert your Matrox card

- a Position your Matrox card over the expansion slot you've chosen.
- b Push the card in firmly and evenly until it's fully seated in the slot.
- c Secure the bracket of your Matrox card to the computer frame.



Your Matrox card is now installed. *Before restarting your computer*, connect your monitor or monitors (see “[Connection setup](#)”, page 6). *After connecting*, restart your computer and install your Matrox software (see “[Software setup](#)”, page 9).



WARNING: If your computer doesn't restart after your graphics card is installed, turn off your computer to avoid damaging electronic parts. For troubleshooting information, see [page 10](#).

Connection setup

This section describes how to connect your monitors to your Matrox graphics card. Your connection setup depends on the connection type your main monitor supports.



WARNING: Don't change monitor connections while your computer is turned on. While your computer is turned on, it may be using monitor settings that are specific to the current monitor connections. *Some* devices may be permanently damaged if incorrect settings are used.

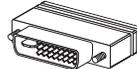


Note: To connect a *digital* monitor (a monitor that uses digital input, usually a flat panel monitor) to your Matrox product, your monitor must have a DVI connector.

Some monitors with DVI connectors support both digital and analog input. If you're using one of these monitors with your Matrox product, make sure it's configured to use the correct type of input. For more information, see your monitor documentation.



HD-15 connector
(analog)



DVI connector
(digital)



DVI connector
(analog/digital)

For a main analog monitor

If your main monitor uses 50 ohms analog input through BNC (Bayonet Neil-Concelman) connectors (such as Sony DDM, NTT-AT SI-DL4M, Barco ISIS, and similar monitors), you need to use a BNC cable.

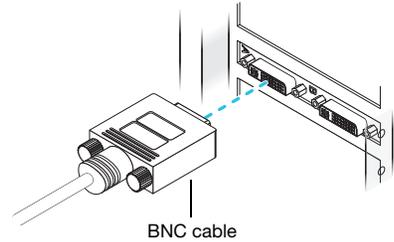


WARNING: If an unsupported monitor is used with your Matrox product, this monitor may be permanently damaged. If you're using the BNC cable to connect an analog monitor to the main connector (**A**) of your graphics card, this monitor must have RGB connectors that support 50 ohms and sync connectors that support 75 ohms. For more information, see your monitor documentation.

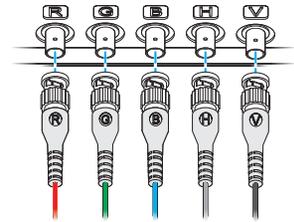
1 Connect your main monitor

Connect your BNC cable to the main connector (A) of your Matrox card.

Connect the BNC connectors on your BNC cable to your analog monitor.



i **Note:** When connecting the BNC connectors on your BNC cable to your monitor, make sure the Red (R), Green (G), Blue (B), Horizontal Sync (H – gray wire), and Vertical Sync (V – black wire) connections are firmly in place and plugged into the correct input.

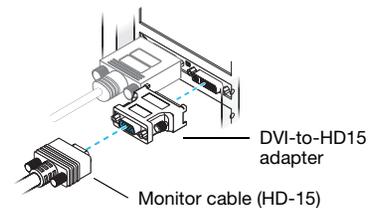
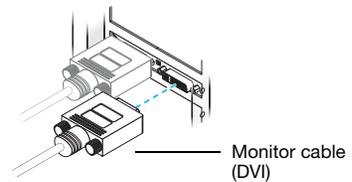


2 Connect your secondary analog monitor (optional)

Connect your analog computer monitor to the secondary connector (B) of your Matrox graphics card.

If your monitor cable has a DVI connector, connect it directly to the secondary connector of your Matrox graphics card.

i **Note:** To use a monitor with a DVI connector as your secondary monitor, make sure it supports analog input. For more information, see your monitor documentation.



If your monitor cable has an HD-15 connector, use the DVI-to-HD15 adapter included with your Matrox product to connect your monitor to the secondary connector.

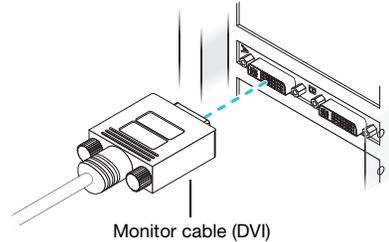
Make sure the connectors are firmly in place. Your Matrox card is now installed. Restart your computer and install your Matrox software (see “Software setup”, page 9).

For a main digital monitor

If your main monitor uses digital input through a single-link DVI connector (such as Barco digital ISIS and similar monitors) or a dual-link DVI connector (such as 30-inch Apple Cinema HD Display monitors), you can use a standard DVI cable. This cable should be provided with your monitor.

1 Connect your main monitor

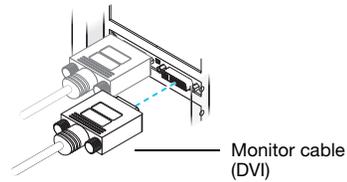
Connect your main monitor directly to the main connector (A) of your Matrox graphics card.



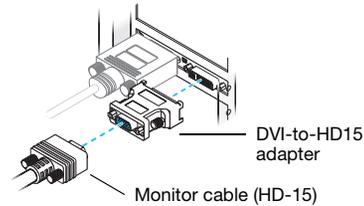
2 Connect your secondary analog monitor (optional)

Connect your analog computer monitor to the secondary connector (B) of your Matrox graphics card.

If your monitor cable has a DVI connector, connect it directly to the secondary connector of your Matrox graphics card.



Note: To use a monitor with a DVI connector as your secondary monitor, make sure it supports analog input. For more information, see your monitor documentation.



If your monitor cable has an HD-15 connector, use the DVI-to-HD15 adapter included with your Matrox product to connect your monitor to the secondary connector.

Make sure the connectors are firmly in place. Your Matrox card is now installed. Restart your computer and install your Matrox software (see “Software setup”, page 9).

Software setup

This section describes how to install Matrox software for *Windows 2000/XP*.

You may need administrator rights to install certain software. For more information, see Windows documentation.

1 Download your Matrox software package

Contact your Matrox representative to obtain the latest driver and software package for your product.

2 Install display driver

Windows detects new hardware when you restart. If Matrox display drivers haven't been previously installed, Windows prompts you to install a display driver. Click **Cancel**, then run the software package you downloaded. Follow the on-screen instructions.

3 Configure your monitor settings

To take full advantage of your graphics card, make sure you have the correct monitor settings selected in Windows for *each* of your monitors:

- a Right-click your Windows desktop background, then click **Properties** → **Settings** → **Advanced** → **Monitor**. If you're using a multi-display desktop, select a display before clicking **Advanced**.
- b If "**Hide modes that this monitor cannot display**" is available, make sure it's enabled. Under **Screen refresh rate**, select the highest refresh rate listed.
- c Click **OK** → **OK**.

For more information on Windows monitor settings, see Windows documentation.



WARNING: If incorrect software monitor settings are applied, *some* monitors can be permanently damaged. For more information, see your monitor manual.

4 Set up your display software

Use Matrox PowerDesk software to change certain display settings or access Matrox features. To access PowerDesk, double-click its icon () on your Windows taskbar. To see the PowerDesk icon in Windows XP, you may need to click the **Show hidden icons** button () on your Windows taskbar. For more information on how to use Matrox PowerDesk, see the online help.

Troubleshooting

Basic procedures

This section explains basic procedures that are referred to by some troubleshooting items in this guide.

W Restarting in VGA mode

Windows 2000/XP – What follows is information on how to restart your computer in *VGA mode*.

- 1 Click **Start** → **Shut Down** → **Restart** → **OK** to restart your computer. If your primary monitor is unusable, see your system manual for information on how to restart your computer using a hardware control.
- 2 *Before* Windows starts, press [F8] for the Windows startup menu to appear. (If [F8] doesn't work, instead try pressing and holding [Ctrl] before Windows starts.)
- 3 Select "VGA mode", then press [Enter].

Main troubleshooting

This section addresses possible problems that could prevent you from using your computer.

Problem Computer doesn't display information or boot after Matrox card is installed

Cause Your Matrox card may not be properly installed.

Solution Make sure your Matrox card is properly installed. Specifically, make sure the card is firmly inserted in its expansion slot and that all connections to it are firmly in place. For more information, see "[Hardware installation](#)", page 3.

Cause There may be unsupported graphics hardware in your computer.

Solution If an unsupported graphics card is plugged into an expansion slot, remove it.

Solution If graphics hardware is built into your computer motherboard, your system may not have automatically disabled it when you inserted your Matrox card. Check your system manual for instructions on how to disable your computer's built-in graphics hardware.

Cause Your computer BIOS (Basic Input/Output System) settings may be incorrect.

Solution Change your BIOS settings. For more information on your computer BIOS, see your system manual.

Cause Your computer BIOS may not be up to date. For more information on your computer BIOS, see your system manual.

Solution Reinstall your previous graphics card and, if possible, update your computer BIOS. This can usually be done with software from the manufacturer of your computer. Contact your system vendor or manufacturer to get a BIOS update for your computer.

To get the correct BIOS update, you may need to know the serial number your computer displays when it restarts. (This number is usually in the lower-left corner of the display.)

Problem Wrong color balance, screen image off-center, or no picture at all

Cause Your monitor video controls may be improperly set.

Solution Adjust your monitor controls (brightness, contrast, and so on). For more information, see your monitor manual.

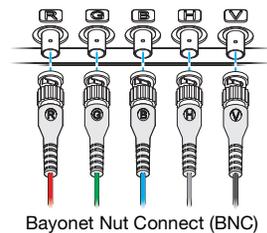
Cause Your monitor may not be properly connected.

Solution Make sure you're using the correct connectors (see "Connection setup", page 6) and that all connectors are properly fastened.

Solution Make sure the monitor power cable is firmly in place.

Solution Make sure the connection to the back of the monitor is firmly in place.

If your monitor uses BNC input, make sure the Red (**R**), Green (**G**), Blue (**B**), Horizontal Sync (**HSYNC** – white or gray wire), and Vertical Sync (**VSYNC** – black wire) connections are firmly in place and plugged into the correct input.



Cause If your monitor uses BNC input, one or more connection settings may be incorrect.

Solution If your monitor is connected to the main connector (labeled **A**) of your graphics card, set your monitor RGB inputs to 50 ohms and your sync switches (if available) to 75 ohms, with the sync set to "external". If your monitor is connected to the secondary connector (**B**) of your graphics card, set your monitor RGB inputs and sync switches (if available) to 75 ohms, with the sync set to "external". These controls are usually switches on the back of your monitor.

Cause If display problems occur after the startup screen of your operating system, your software monitor settings may be incorrect.

Solution Make sure correct software monitor settings are selected.



If your primary display is still usable, see “Configure your monitor settings”, page 9. Otherwise, see the next troubleshooting item.

Problem **After the startup screen, or after display settings are changed, the screen image is garbled or unusable**
(blank screen, rolling or overlapping screen images)

Cause The Matrox display driver may be trying to use settings your monitor doesn't support. This can happen if a monitor was never selected in the software and the display resolution was changed to one your monitor doesn't support, or if the monitor connected to your computer was changed without changing it in the software.



WARNING: If incorrect software monitor settings are applied, *some* monitors can be permanently damaged. For more information, see your monitor manual.

Solution Windows 2000/XP –



- 1 If your primary display is unusable, restart your computer in VGA mode (see “Restarting in VGA mode”, page 10).
- 2 Right-click your Windows desktop background, then click **Properties** → **Settings**.
- 3 Move the **Screen area** (Windows 2000) or **Screen resolution** (Windows XP) slider down to its lowest setting, then click **OK**.
- 4 Restart your computer normally.
- 5 Make sure the correct monitor is selected in Windows (see “Configure your monitor settings”, page 9).
- 6 Restore your original display settings (see steps 2 and 3).

Cause Files on your system may have been deleted or corrupted.

Solution Uninstall, then reinstall Matrox software:



Note: Before uninstalling software, make sure you have all the necessary files to reinstall software that may still be needed.



Note: Windows 2000/XP – You may need administrator rights to remove certain software. For more information, see Windows documentation.

W

Windows 2000/XP –

- 1 If your primary display is unusable, restart your computer in VGA mode (see “Restarting in VGA mode”, page 10).
- 2 To remove Matrox software:
 - a Click **Start** → **Settings*** → **Control Panel** → **Add/Remove Programs** (double-click*) → **Matrox PowerDesk-HF and Driver** → **Change/Remove** → **Yes**. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
 - b Click **No** if you’re asked to restart your computer.
 - c Click **Matrox PowerDesk-SE** → **Change/Remove** → **Yes**.
- 3 Restart your computer for the changes to take effect.
- 4 After your computer has restarted, install the latest display driver for your Matrox graphics card. You may also need to reinstall other Matrox software.



Note: Be sure to check for any last-minute release notes at the end of this manual and in the Matrox CD-ROM *Readme* file. Also, check the Matrox Web site (www.matrox.com/mga) for the latest Matrox software, technical support, and product information.

Extra troubleshooting

Graphics

The following troubleshooting items address problems related to graphics hardware.

Problem **Can't use Windows, Windows reports a configuration error, and/or can't install or uninstall Matrox display driver**



Note: Windows 2000/XP – You may need administrator rights to install certain software. For more information, see Windows documentation.

Cause The problem may be specific to the motherboard in your computer.

Solution There may be a software update available for your motherboard. To find out what motherboard model your computer is using, see your system manual. For more information, contact the maker of your motherboard or computer. Many motherboard or computer manufacturers have software updates available on their Web site.

Cause Files on your system may have been deleted or corrupted.

Solution Remove, then restore Matrox software. For more information, see [page 12](#).

Problem **Monitor settings aren't automatically detected**



WARNING: If incorrect software monitor settings are used, your display may become unusable and *some* monitors can be permanently damaged. For more information, see your monitor manual.



Note: Settings for your analog grayscale monitor are preconfigured in the display driver. If an unsupported monitor is used with your Matrox product, it may be permanently damaged. A list of supported analog grayscale monitors is available on the Matrox Web site (www.matrox.com/mga).



Note: Windows 2000/XP – To check if your monitor settings are properly selected:

- 1 Right-click your Windows desktop background, then click **Properties** → **Settings** → **Advanced** → **Monitor**. If you're using multiple displays in *independent* mode, select a display before clicking **Advanced**.
- 2 For Plug-and-Play monitors:
 - If you see the name of your monitor or “Plug-and-Play”, your monitor settings are properly selected.
 - If you see the wrong monitor name or **Default monitor**, your monitor settings aren't properly selected.

For non Plug-and-Play monitors (monitors using BNC connectors don't support Plug-and-Play), you have to manually select your monitor settings. For more information, see “Configure your monitor settings”, page 9.

Cause Your monitor may not be Plug-and-Play. Most new monitors are Plug-and-Play but many older ones aren't. Software can't automatically detect settings for monitors that aren't Plug-and-Play.

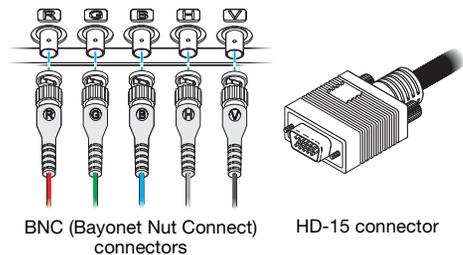
Solution Manually select your monitor settings in the software. For more information, see “Configure your monitor settings”, page 9.

Cause If a monitor was changed or added while Windows was running, the new monitor may not be detected by the software.

Solution Restart your computer. If your monitor is a Plug-and-Play monitor, it should be automatically detected by the software.

Cause You may be using BNC connectors with a Plug-and-Play monitor. The Plug-and-Play feature of a monitor can't be used with BNC connectors.

Solution If you're using a standard analog monitor that has an HD-15 connector, use this connector instead of the BNC connectors.



Problem 3D and video programs don't work

Cause Your computer may not have given an IRQ (interrupt request) to your Matrox graphics card or may have given one used by another device in your computer. This may be because your computer's "Plug-and-Play" feature is turned off.

W **Windows 2000/XP** – To check the display adapter's IRQ:

- 1 Click **Start** → **Settings*** → **Control Panel** → **Performance and Maintenance*** → **System** (double-click*) → **Hardware** → **Device Manager**. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
- 2 Click the plus sign to the left of the **Display adapters**. An "X" through an icon means the hardware has been disabled. A circled exclamation point through the icon means the hardware has a problem.
- 3 Double-click the name of your Matrox display adapter to open a properties dialog box. The type of problem is displayed in the **General** tab → **Device status** area. Check also the **Resources** tab → **Resource type** list for an **Interrupt Request**.



Resource type	Setting
Interrupt Request	11
Memory Range	FFBEC000 - FFBEFFFF
Memory Range	FF000000 - FF7FFFFF

Solution Change settings in your computer BIOS setup utility.

If your computer has the options of enabling Plug-and-Play detection, or assigning an IRQ to a VGA adapter, make sure they're enabled. If your computer doesn't have these options, you may be able to manually assign an IRQ to your graphics card using the BIOS setup utility.

For more information on the BIOS setup utility of your computer, see your system manual or contact your system manufacturer.

Cause Your computer's other BIOS settings may be incorrect.

Solution Reset your computer BIOS settings to the factory defaults using your computer's built-in BIOS setup utility. The factory defaults are usually the "safest" settings. Check your system manual for more information.

Problem **W** Using multiple displays under Windows 2000/XP, program doesn't work with main graphics card

Cause Your main graphics card may not be controlling your primary display. The graphics card that controls your primary display is the one that first displays information when you restart your computer.

A program that doesn't recognize multiple displays may not work with a graphics card unless it's controlling your primary display.

Your computer BIOS (Basic Input/Output System) and the slot type (PCI or PCIe – see “Choose a PCI slot”, page 4) of each graphics card help determine which graphics card controls your primary display.

Solution If you're having problems with a program that can be moved on your Windows desktop, run this program on your primary display. Make sure the program window doesn't overlap any other display. If the program doesn't work with the graphics card controlling your primary display, or you want your main graphics card to control your primary display, see the other solutions.

Solution Change the configuration of your computer BIOS so that the slot type of your main graphics card has priority for becoming the primary display. For information on how to change your computer BIOS settings, see your system manual.

If your computer BIOS doesn't let you select which slot type has priority for becoming the primary display, a BIOS update may be available to let you do this. (The BIOS of most computers can be updated with software.) For a possible BIOS update for your computer, contact your system vendor.

Solution If there's a graphics controller built into the motherboard of your computer, by changing your computer BIOS settings, you may be able to change which device controls your primary display. For more information, see your system manual.

Solution If you don't need to use the graphics card that's controlling your primary display, remove it from your computer. If your primary display is controlled by the motherboard of your computer, see your system manual for information on how to disable this graphics controller.

Cause The program you're using may not work properly with systems using more than one display at a time.

Solution An update may be available for the program you're using. This update may fix problems this program has with multi-display systems. For more information, contact the software distributor for the program you're using.

Solution **Windows 2000/XP – For advanced users** – To use a program that doesn't support multi-display systems, you can disable all displays other than your primary display:

- 1 Double-click the PowerDesk icon () on your Windows taskbar to access the PowerDesk main interface. To see the PowerDesk icon in Windows XP, you may need to click the **Show hidden icons** button () on your Windows taskbar.
- 2 Click **Multi-Display Setup**. Make sure you're using **1 display**.
- 3 Click **Start** → **Settings*** → **Control Panel** → **Performance and Maintenance*** → **System** (double-click*) → **Hardware** → **Device Manager**. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
- 4 Click the plus sign to the left of the **Display adapters**.
- 5 For each display adapter, *except* for the one controlling your primary display, right-click the name of a display adapter, then click **Disable** → **Yes**.



Note: Your primary display can't be disabled.

- 6 Restart your computer for changes to take effect.



Note: To restore display adapters, repeat steps 3–5, but click **Enable** in step 5.

Problem **Not all graphics cards in the computer are fully supported**
(Software doesn't work with a certain graphics card, or another graphics card doesn't work at all)

Cause If you have different models of graphics cards in your computer, your Matrox display driver may not support all the graphics cards in your computer.

Solution **W** Under Windows 2000/XP, a display driver may support one or more graphics cards. If a display driver doesn't support a certain card, a different display driver must be used for that card. Software that depends on a certain display driver may not work with a graphics card that's not using the same display driver.



Note: A Matrox driver package that supports multiple graphics cards may be available. For more information, see the Matrox Web site (www.matrox.com/mga).

Solution If a graphics card isn't supported, you may need to remove it. If there's graphics hardware built into the motherboard of your computer that's not supported by your software, see your system manual for information on how to disable this graphics hardware.

Cause Windows 2000/XP – If the Windows method for display driver installation was used (instead of running the setup program included with your Matrox display driver), the driver may not be installed for all the graphics cards it supports.

Solution Run the setup program included with the Matrox display driver. The setup program automatically installs the display driver for each Matrox graphics card it supports.

Problem **In multi-display mode, displays aren't numbered consecutively** **W**

Cause If you have more than one graphics card in your computer, the display numbering may not be consecutive for the displays of a multiple-display card (for example, a DualHead supporting card). Display numbering depends on the types of expansion slots used in your computer (AGP and PCI) and the BIOS settings of your computer.



Solution Windows* 2000/XP – Move the displays in Windows.
(* Only while using multiple displays in *independant* mode. For more information, see PowerDesk help.)

- 1 Right-click your Windows desktop background, then click **Properties** → **Settings**.
- 2 Select a display and move it according to the physical position of the monitor it's associated with.



Note: In multi-display mode, you may have limited control over the arrangement of your displays. For more information, see Matrox PowerDesk documentation.

Problem **Screen image defects appear, program doesn't run properly, or Windows doesn't work properly** **W** (example: mouse pointer not drawn properly)

Cause Some programs may not work properly with some Matrox acceleration.

Solution Disable Windows effects:

Windows 2000 –

- 1 Right-click your Windows desktop background, then click **Properties** → **Effects**.
- 2 Disable one or more features under **Visual effects**.

Windows XP –

- 1 Right-click your Windows desktop background, then click **Properties** → **Appearance** → **Effects**.
- 2 Disable one or more features.

Solution If possible, update your Matrox display driver. Matrox makes new display drivers available on the Matrox Web site (www.matrox.com/mga).



Note: If your Matrox product was provided by the manufacturer of your computer, check the Web site of that manufacturer for the latest display driver. A display driver provided by the manufacturer of your computer is more likely to be tested with your computer model.

Solution **Windows 2000/XP** – Disable Matrox hardware acceleration:

- 1 Right-click your Windows desktop background, then click **Properties** → **Settings** → **Advanced** → **Troubleshooting**.
- 2 Move the **Hardware acceleration** slider to **None**.
- 3 Click **OK** → **OK** to accept the changes.



Note: If you identify a program that doesn't work well with Matrox acceleration, please contact Matrox technical support ([see page 27](#)) and describe the problem. This information may help us come up with a fix or work-around in a future driver release.

Problem Program window or dialog box doesn't appear on screen

Cause Another window or dialog box may be covering the window or dialog box you want to see.

Solution Move, close, or minimize any window or dialog box that may be covering the window or dialog box you want to see.

Cause If you're using multi-display mode, the program window or dialog box may be in a display or on a monitor that's unusable. (For example, your monitor may not be properly connected or configured.)

Solution Make sure all the displays and monitors you want to use are usable. For more information, see other troubleshooting items in this guide.

Cause The software may be using a display you didn't intend to use or the software may be configured to use more displays than the actual number of monitors you have. (For example, you may be in DualHead Multi-Display mode but you only have one monitor.)

Solution Disable the display:



Windows 2000/XP * –

(* Only while using multiple displays in *independent* mode. For more information, see PowerDesk help.)

- 1 Right-click your Windows desktop background, then click **Properties** → **Settings**.

- 2 Select the display you want to disable, then clear the **Extend my Windows desktop onto this monitor** check box.

Cause **W**

The program window or dialog box may be somewhere off-screen.

Solution

If the program window you want to see is named on the Windows taskbar, right-click on it and select **Maximize**. (If you click **Restore** the program window goes back to its previous position. To fix this problem, see the other solutions.)

Solution

Manually move the program window or dialog box:

- 1 Press [Alt]+[Space].
- 2 If you see a pop-up menu, click **Move**. If you don't see a pop-up menu, press [M] (for **Move**).
- 3 Press on one of the arrow keys once and move your mouse pointer to where you want the window or dialog box to appear, then click. The program window or dialog box should appear where you clicked.

Solution

Windows 2000/XP –

- 1 Double-click the PowerDesk icon () on your Windows taskbar to access the PowerDesk main interface. To see the PowerDesk icon in Windows XP, you may need to click the **Show hidden icons** button () on your Windows taskbar.
- 2 Click **Desktop Management**.
- 3 Enable one or more of the following features:
 - **Center dialog boxes and message boxes**
 - **Open program windows**
 - **Maximize windows**
- 4 Choose where you want the program window or dialog box to appear.

For more information, see Matrox PowerDesk help.

Problem **Display on digital monitor appears blurry or uses only a portion of the screen**

Cause

You may be using a lower display resolution than what your digital monitor supports. If your monitor supports display scaling, the image on your screen may appear blurry. If display scaling isn't supported, the display may use only a portion of your screen.

Solution Select the highest display resolution available. This generally results in better image quality. (While using two digital monitors at the same time, certain limitations may apply. For more information, [see page 23.](#))

Display information

- Your Matrox graphics card is 100% VGA compatible and supports all VESA standards: VBE 2.0 (Super VGA modes), DPMS (energy saving), and DDC-2B (Plug-and-Play monitor).
- Your Matrox product supports DualHead features. *DualHead* features control 2 displays at a time.
- To get the most of your Matrox product, we recommend using the highest color palette setting (a 32-bit color palette) for all your displays.
- 3D acceleration is only available with a 16- or 32-bit color palette.
- The display resolutions and refresh rates available depend on your Matrox graphics card, display driver, software monitor settings, and monitor. For information on the capabilities of your monitor, see your monitor documentation.
- The highest display resolution supported by your main display is 2560 × 1600 (dual-link only) or 2048 × 2048 (analog, dual-link). The highest display resolution for your secondary display is 1920 × 1200 (analog).
- While using 2 displays at a time, each monitor has its own monitor settings (refresh rates).
- While using 2 displays at a time *both* at the highest display resolution, certain display limitations may apply. (For example, video playback may be limited.)
- If you're using BNC connectors with a Plug-and-Play monitor, the Plug-and-Play feature of your monitor can't be used. To use the Plug-and-Play feature of your monitor, instead of the BNC connectors, use the 15-pin connector at the back of your monitor.

Supported VESA modes (main display)

In the table below, VESA modes supported by your Matrox graphics card are indicated by a VESA mode number. Many Super VGA DOS programs use VESA modes.

Display resolution	16 colors	256 colors	32 K colors	64 K colors	16 M colors
640 × 400	—	100	—	—	—
640 × 480	(VGA)	101	110	111	112
800 × 600	—	103	113	114	115
1024 × 768	—	105	116	117	118
1280 × 1024	—	107	119	11A	11B
1600 × 1200	—	11C	11D	11E	11F

Hardware information

Specifications

	Matrox ATC PCI	Matrox ATC PCIe
Main RAMDAC	400 MHz	400 MHz
Secondary RAMDAC	400 MHz	400 MHz
Memory	256 MB	128 MB
Memory type	DDR (Double Data Rate) SDRAM	DDR (Double Data Rate) SDRAM
Main connectors	DVI-I (Dual-link DVI, single-link DVI, or RGB 50 ohm)	DVI-I (Dual-link DVI, single-link DVI, or RGB 50 ohm)
Secondary connectors	DVI-I (Analog RGB 75 ohm)	DVI-I (Analog RGB 75 ohm)
Card type	PCI* 64-bit, 66 MHz	PCIe x16
Form factor	ATX	ATX

* Compatible with 32-bit, 33 MHz PCI slots, with 3.3V or 5V PCI slots, and with PCI-X slots. While using a PCI-X slot, the clock speed used is 66 MHz.

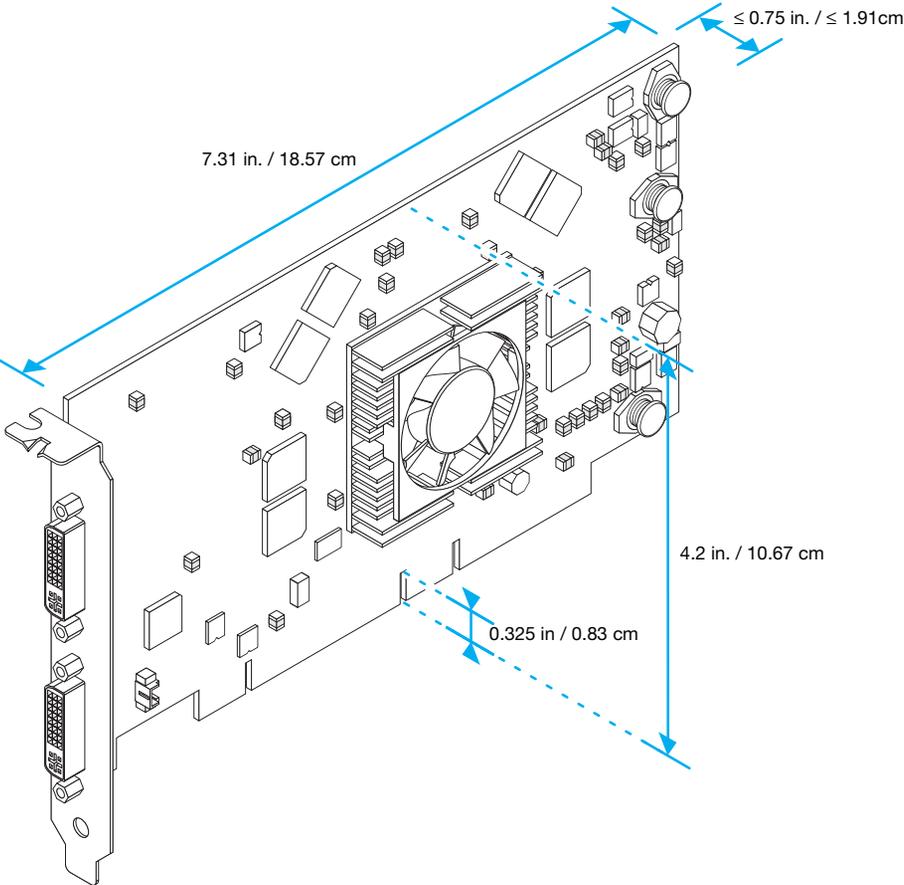
Environmental specifications

- Minimum/maximum ambient operating temperatures: 0 to 55 °C
- Minimum/maximum storage temperature: -40 to 75 °C
- Maximum altitude for operation: 3,000 meters
- Maximum altitude for transport: 12,000 meters
- Operating humidity: 20 to 80% relative humidity (non-condensing)
- Storage humidity: 5 to 95% relative humidity (non-condensing)

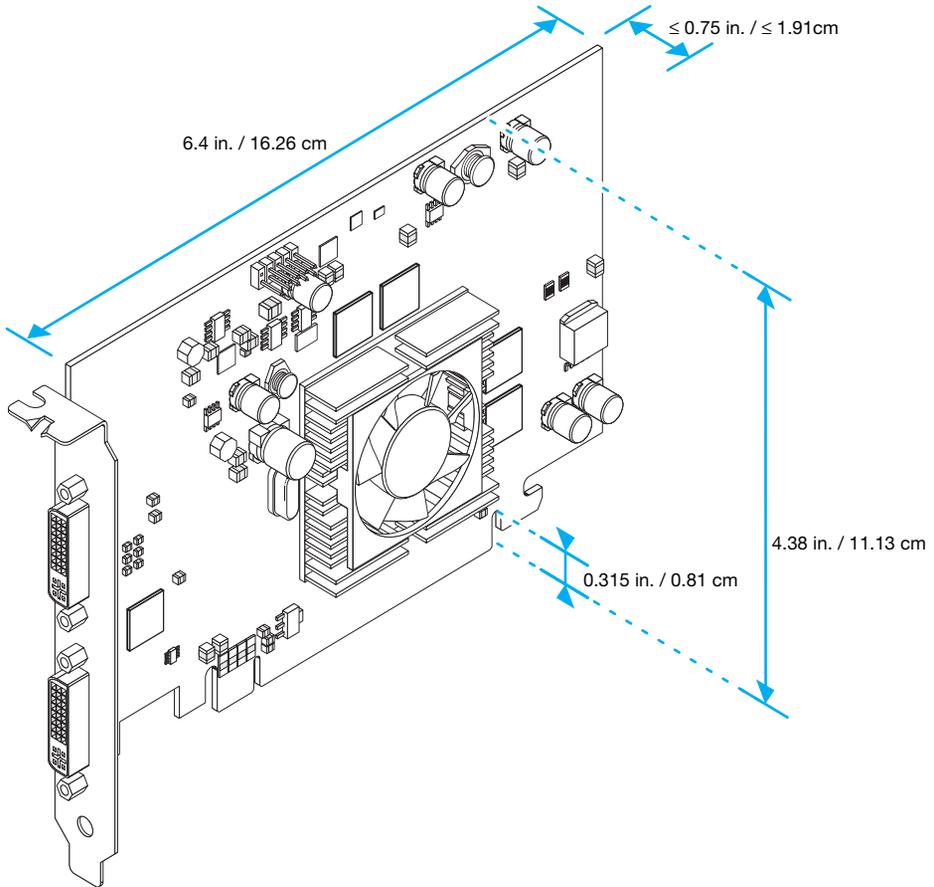
Digital monitor information

- TMDS (Transition Minimized Differential Signaling) encoding based on the Silicon Image PanelLink standard
- DDWG (Digital Display Working Group) compliant DVI connector
- EDID (Extended Display Identification Data) 1.2, 1.3 (without the extended data block), and 2.0 support

Maximum card dimensions (PCI)



Maximum card dimensions (PCIe)



Customer support

Matrox Web

Matrox is on the Internet with a World Wide Web (WWW) site. Our Web site has product literature, press releases, technical material, a sales office list, trade show information, and other relevant material.

- Visit the Matrox Graphics Web site at www.matrox.com/graphics.
- E-mail questions or comments regarding the site to webmaster@matrox.com.

If you have a problem

Matrox values your business and offers professional support for your Matrox product. For product support, contact your Matrox representative or do one of the following:

- Visit our technical support Web site at www.matrox.com/graphics/support.
- Visit our technical support forum at www.matrox.com/graphics/support/forum.
- See our FAQs (Frequently Asked Questions) at <http://forum.matrox.com/mga/>.

Information we need

Please give a complete description of the problem, and include:

- Matrox card serial number, model number, revision number, BIOS number, driver type and version, and memory address at which the Matrox card is installed.
- Computer brand and model name.
- Monitor brand and model name.
- Operating system, version, and service pack.
- Brand and model of any other cards and devices installed on your system.

Program-specific problems

If a problem appears with a specific program, please give us the following information:

- Display settings (color palette, display resolution, and so on) applied when the problem occurs.
- Program name and version. Name any add-on packages you're using.

- Detailed steps known to cause the bug, so we can reproduce it.

Where to get information

For system information:

- **Windows 2000** – Right-click the **My Computer** icon on your Windows desktop background, then click **Properties**.
- **Windows 2000/XP** – Click **Start** → **Programs** → **Accessories** → **System Tools** → **System Information**.
- **Windows XP** – Click **Start** → **Settings*** → **Control Panel** → **Performance and Maintenance*** → **System** (double-click*). (* Depending on your configuration of Windows, this part of the step may not be necessary.)

Warranty

A. Limited Warranty Statement

1. Matrox Graphics Inc. ("Matrox") warrants to the end-user customer, who provides adequate proof of purchase that Matrox hardware products purchased from Matrox authorized dealers will be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. This warranty applies only to the original end-user purchaser and is non-transferable. Conditions and limitations of Matrox's warranty are stated below.
2. Matrox's limited warranty covers only those defects which arise as a result of normal use of the hardware and does not apply to any:
 - a. improper or inadequate maintenance;
 - b. incompatibilities due to the user's hardware or software applications with or in which the Matrox product interfaces;
 - c. product of a special or custom-made nature;
 - d. unauthorized modification or misuse;
 - e. improper installation, misapplication or negligence;
 - f. operation outside the product's environmental specifications;
 - g. improper site preparation or maintenance;
 - h. software;
 - i. other causes that do not relate to a product defect;
 - j. defects or damage suffered as a result of force majeure (including theft);
 - k. defects or damage suffered as a result of normal wear and tear; and/or
 - l. stolen goods.
3. If Matrox receives, during the applicable warranty period, notice of a defect in a warranted hardware product and the defective Matrox product in question, Matrox shall at its sole option, either repair or replace the product, and shall return the repaired product or a replacement product within a reasonable delay. The replacement product may not be new, provided that it has functionality at least equal to that of the product being replaced.
4. This warranty is valid in any country where Matrox hardware products are distributed by Matrox or its authorized dealers.
5. This Limited Warranty Statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world.

B. Limitations of Warranty

1. NEITHER MATROX NOR ANY OF ITS THIRD PARTY SUPPLIERS MAKES ANY OTHER WARRANTY OF ANY KIND, WHETHER EXPRESSED OR IMPLIED, WITH RESPECT TO MATROX PRODUCTS. MATROX SPECIFICALLY DISCLAIMS (and the customer, by accepting the Matrox product, specifically accepts such disclaimer and waives) ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR OR INTENDED PURPOSE OR USE AND THE WARRANTY AGAINST LATENT DEFECTS, WITH RESPECT TO THE HARDWARE AND/OR SOFTWARE. MATROX FURTHER DISCLAIMS ANY WARRANTY THAT MATROX PRODUCTS, IN WHOLE OR IN PART, WILL BE FREE FROM INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY OR PROPRIETARY RIGHTS.
2. To the extent that this Limited Warranty Statement is inconsistent with the law of the locality where the customer purchases the Matrox product, this Limited Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain limitations of this Limited Warranty Statement may not apply to the consumer.
3. To the extent allowed by local law, the remedies provided in this Limited Warranty Statement are the customer's sole and exclusive remedies.

C. Limitations of Liability

1. EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THE LIMITED WARRANTY STATEMENT, IN NO EVENT SHALL MATROX BE LIABLE FOR:
 - a. any direct, indirect, special, incidental, consequential, foreseeable or unforeseeable, or punitive damages, whether based on contract, tort, delict or any other legal theory and whether advised of the possibility of such damages; and/or
 - b. damages arising from the loss of use, data, production revenue and/or profit of in connection with the Matrox product or any business interruption.
2. Without prejudice to the foregoing, any liability of Matrox for any breach of warranty shall be limited to the amount paid by the customer for the defective hardware in question.
3. To the extent allowed by local law, Matrox's entire liability and the customer's exclusive remedy shall be the repair or replacement of any defective product during the warranty period. Matrox does not offer any other warranty with respect to Matrox hardware or software or any other hardware or software.
4. Customer shall be responsible for all applicable taxes, duties and customs fees on any replacement unit, as well as all transport, insurance, storage and other charges incurred on all returned products.

D. Obtaining Service

1. Verify that your Matrox product was installed and configured according to the information in its accompanying documentation.
2. Read the "Troubleshooting" information included with your Matrox product and the documentation provided by your dealer to see if you can solve the problem yourself.
3. If you are still experiencing difficulties, please contact your dealer where you purchased your Matrox product.

E. General

This limited warranty shall be governed by the laws of the Province of Quebec, Canada and the federal laws of Canada applicable therein and the courts of the Province of Quebec shall have exclusive jurisdiction to hear and decide any dispute instituted by the customer in connection with this limited warranty; the customer waives, by accepting the product, its rights to institute proceedings in connection with this warranty against Matrox in any jurisdiction other than Quebec.

Software license agreement

Single User Products This Matrox software (the “Software”) is copyrighted by Matrox Graphics Inc. All rights are reserved. The purchaser is granted a license to use the software only, subject to the following restrictions and limitations:

1. The license is for the original purchaser only, and is not transferable without written permission of Matrox.
2. The original purchaser may use the Software on a single computer owned or leased by the original purchaser. You may not use the Software on more than a single computer, even if you own or lease more than one computer, without written consent of Matrox.
3. The original purchaser may make back-up copies of the Software for his or her own use only, subject to the use limitations of this license.
4. The original purchaser may not engage in, nor permit third parties to engage in, any of the following:
 - Providing or disclosing the Software to third parties.
 - Providing use of the Software in a computer service business, network, time-sharing, multiple CPU or multi-user arrangement to users who are not individually licensed by Matrox.
 - Making alterations or copies of any kind in the Software (except as specifically permitted above).
 - Attempting to unassemble, de-compile or reverse engineer the Software in any way.
 - Granting sublicenses, leases, or other rights in the Software to others.
 - Making copies, or verbal or media translations, of the user’s guide.
 - Making telecommunication data transmissions of the Software.

Matrox reserves the right to terminate this license if there is a violation of its term or default by the Original Purchaser. Upon termination, for any reason, all copies of the Software must be immediately returned to Matrox, and the Original Purchaser shall be liable to Matrox for any and all damages suffered as a result of the violation or default.

Limited warranty Matrox warrants to you, for a period of 90 days normal use from your date of purchase, that:

1. The CD/disks on which the software is furnished and the documentation are not defective.
2. The Software is properly recorded upon the CD/disks included.
3. The documentation is substantially complete and contains all the information Matrox deems necessary to use the software.
4. The Software functions substantially as described in the documentation.

Matrox’s entire liability and your exclusive remedy shall be the replacement of any CD/Disks or documentation not meeting these warranties, which is returned to Matrox or an authorized dealer, together with a copy of your paid receipt. The above is the only warranty of any kind, either express or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular use that is made by Matrox on this Licensed Software. In no event shall Matrox be liable to you or to any third party for consequential, special, indirect or incidental damages which you may incur as a result of using the licensed software, including, but not limited to, loss of data, or information of any kind which you may experience.

Index

B

- BIOS 16, 17
- BNC monitor connection 11, 15

C

- Connection setup 6–8
- Connectors 6, 14
- Customer support 27–28
 - Warranty 29–30

D

- Display
 - Information 23
 - Primary 17

E

- Expansion slots 4, 10

H

- Hardware
 - Acceleration 19
 - Information 2, 24
 - Installation 3–5

I

- Installation
 - Hardware 3–5
 - Overview 2

- IRQ 16

M

- Monitor
 - Settings 11–13
- Multi-display mode 19

P

- PCI 4
- PCI Express 4

- PowerDesk 9

S

- Software setup 9

T

- Technical assistance 27
- Troubleshooting 10–22
 - Extra 14–22
 - Graphics 14–20

V

- VESA 23
- VGA 23

W

- Warning 3, 4, 5, 6, 9, 12, 14
- Warranty 29–30
- Web, Matrox 27

Thank you for choosing Matrox

Please register online (<http://www.matrox.com/graphics/registration>) to be eligible for customer support, new product announcements, and information on special offers and upcoming events.

USA

FCC Compliance Statement



Remark for the Matrox hardware products supported by this guide 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 causes 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 the dealer or an experienced radio/TV technician for help.

WARNING Changes or modifications to this unit not expressly approved by the party responsible for the compliance could void the user's authority to operate this equipment. The use of shielded cables for connection of the monitor to the card is required to meet FCC requirements.

Declaration of conformity of a Class B digital device according to the FCC rules

We, the Responsible Party Matrox, 625 State Route 3, Unit B, Plattsburg, NY 12901 • Telephone: (514) 822-6000 (extension 2026) • Attention: Conformity Group Matrox

Declaration The Matrox hardware products supported by this guide comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation. Any question regarding this declaration should be forwarded to the above coordinates.

CANADA

(English) Industry Canada Compliance Statement

Remark for the Matrox hardware products supported by this guide These digital devices do not exceed the Class B limits for radio noise emission from digital devices set out in the Radio Interference Regulation of Industry Canada.

(Français) Conformité avec les exigences du ministère de l'Industrie Canada

Remarque sur les produits matériels Matrox couverts par ce guide Ces appareils numériques n'émettent aucun bruit radioélectrique dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par Industrie Canada.

JAPAN

VCCI Compliance Statement



Remark for the Matrox hardware products supported by this guide 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.

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。

(English) European user's information – Declaration of Conformity

Remark for the Matrox hardware products supported by this guide These devices comply with EC Directive 89/336/EEC for a Class B digital device. They have been tested and found to comply with EN55022/CISPR22 and EN55024/CISPR24. In a domestic environment these products may cause radio interference in which case the user may be required to take adequate measures. To meet EC requirements, shielded cables must be used to connect the monitor and other peripherals to the card. These products have been tested in a typical class B compliant host system. It is assumed that these products will also achieve compliance in any class B compliant system.

(Français) Informations aux utilisateurs Européens – Déclaration de conformité

Remarque sur les produits matériels Matrox couverts par ce guide Ces unités sont conformes à la directive communautaire 89/336/EEC pour les unités numériques de classe B. Les tests effectués ont prouvé qu'elles sont conformes aux normes EN55022/CISPR22 et EN55024/CISPR24. Le fonctionnement de ces produits dans un environnement résidentiel peut causer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre les mesures appropriées. Pour respecter les impératifs communautaires, les câbles de connexion entre le moniteur ou autres périphériques et la carte doivent être blindés. Ces produits ont été testés dans un système hôte typique compatible classe B. On suppose qu'ils présenteront la même compatibilité dans tout système compatible classe B.

(Deutsch) Information für europäische Anwender – Konformitätserklärung

Anmerkung für die Matrox Hardware-Produktunterstützung durch dieses Handbuch Diese Geräte entsprechen EC Direktive 89/336/EEC für ein digitales Gerät Klasse B. Sie wurden getestet und entsprechen demnach EN55022/CISPR22 und EN55024/CISPR24. In einer Wohnumgebung können diese Produkte Funkinterferenzen erzeugen, und der Benutzer kann genötigt sein, entsprechende Maßnahmen zu ergreifen. Um EG-Anforderungen zu entsprechen, müssen zum Anschließen des Monitors und anderer Peripheriegeräte an die Karte abgeschirmte Kabel verwendet werden. Diese Produkt wurden in einem typischen, der Klasse B entsprechenden, Host-System getestet. Es wird davon ausgegangen, daß diese Produkte auch in jedem Klasse B entsprechenden System entsprechend funktionieren.

(Italiano) Informazioni per gli utenti europei – Dichiarazione di conformità

Nota per i prodotti hardware Matrox supportati da questa guida Questi dispositivi sono conformi alla direttiva CEE 89/336/EEC relativamente ai dispositivi digitali di Classe B. Sono stati provati e sono risultati conformi alle norme EN55022/CISPR22 e EN55024/CISPR24. In un ambiente domestico, questi prodotti possono causare radiointerferenze, nel qual caso all'utente potrebbe venire richiesto di prendere le misure adeguate. Per soddisfare i requisiti CEE, il monitor e le altre periferiche vanno collegati alla scheda grafica con cavi schermati. Questi prodotti sono stati provati in un tipico sistema host conforme alla classe B. Inoltre, si dà per scontato che questi prodotti acquisiranno la conformità in qualsiasi sistema conforme alla classe B.

(Español) Información para usuarios europeos – Declaración de conformidad

Observación referente a los productos de hardware de Matrox apoyados por este manual Estos dispositivos cumplen con la directiva de la CE 89/336/EEC para dispositivos digitales de Clase B. Dichos dispositivos han sido sometidos a prueba y se ha comprobado que cumplen con las normas EN55022/CISPR22 y EN55024/CISPR24. En entornos residenciales, estos productos pueden causar interferencias en las comunicaciones por radio; en tal caso el usuario deberá adoptar las medidas adecuadas. Para satisfacer las disposiciones de la CE, deberán utilizarse cables apantallados para conectar el monitor y demás periféricos a la tarjeta. Estos productos han sido sometidos a prueba en un típico sistema anfitrión que responde a los requisitos de la clase B. Se supone que estos productos cumplirán también con las normas en cualquier sistema que responda a los requisitos de la clase B.

Trademarks • Marques déposées • Warenzeichen • Marchi registrati • Marcas registradas

Matrox Electronic Systems Ltd. /

Matrox Graphics Inc.....	Matrox [®] , DualHead [®] , CenterWINDOW [™] , DVDMax [™] , GigaColor [™] , ASM [™] , ATC [™] , AuroraVX3mp [™] , AuroraVX [™] , DualHead2Go [™] , Epica [™] , Extio [™] , G400 [™] , G450 [™] , G550 [™] , Marvel [™] , MED2mp [™] , MED2mp-DVI [™] , MED3mp-DVI [™] , MED4mp [™] , MED5mp-DVI [™] , MED5mp [™] , Millennium [™] , MMS [™] , Multi-Monitor Series [™] , MultiDesk [™] , P650 [™] , P650 [™] Low-profile, P750 [™] , Parhelia [™] , Parhelia [™] APVe, Parhelia-512 [™] , Parhelia-LX [™] , Parhelia HR256 [™] , PJ4OLP [™] , PowerDesk [™] , PowerSpace [™] , QID [™] , Quad Information Display [™] , RAD [™] , Quick Connect [™] , MaxVIEW [™] , MGA [™] , MGA-G100 [™] , MGA-G200 [™] , PixelTOUCH [™] , PrecisionCAD [™] , Precision SGT [™] , QuickDesk [™] , RAD2mp [™] , RAD3mp [™] , RAD9mp [™] , RAD PCI [™] , RAD PCIe [™] , RADQ2mp [™] , Rainbow Runner [®] , SonoVUE [™] , SPECTRUM [™] , TheatreVUE [™] , TripleHead [™] , TripleHead2Go [™]
Adobe Systems Inc.	Acrobat [®] , Reader [®]
Apple Computer, Inc.	Apple [®] , Mac [®] , Mac OS [®]
Dolby Laboratories, Inc.	Dolby [®] , Dolby Digital [®]
Intel Corporation	Intel [®] , Pentium [®]
International Business Machines Corporation	IBM [®] , VGA [®]
Macrovision Corporation.....	Macrovision [™]
Microsoft Corporation	Aero [™] , Direct3D [®] , DirectDraw [®] , DirectShow [™] , DirectX [™] , Microsoft [®] , MS-DOS [®] , PowerPoint [®] , Windows [®] , Windows NT [®] , Windows Server [®] , Windows Vista [™]
Silicon Graphics, Inc.	OpenGL [®]
Silicon Image, Inc.....	PanelLink [™]
U.S. Environmental Protection Agency.....	Energy Star [™]

• (English) Registered trademarks are registered in the United States, Canada, and/or other countries. All other nationally and internationally recognized trademarks and tradenames are hereby acknowledged. • (Français) Les marques déposées sont déposées aux États-Unis, au Canada et/ou dans d'autres pays. Toutes les autres marques et tous les autres noms déposés reconnus nationalement ou internationalement sont également reconnus par les présentes. • (Deutsch) Die eingetragenen Warenzeichen sind in den USA, Kanada und/oder anderen Ländern registriert. Alle sonstigen national und international bekannten Warenzeichen und Produktnamen werden hiermit anerkannt. • (Italiano) I marchi registrati sono registrati negli Stati Uniti, in Canada e/o in altri paesi. Tutti gli altri marchi registrati e nomi commerciali riconosciuti a livello nazionale e internazionale sono ugualmente riconosciuti qui. • (Español) Las marcas registradas están registradas en los EE.UU., Canadá u otros países. Por medio del presente se reconocen todas las demás marcas y nombres comerciales reconocidos a nivel nacional e internacional.

(English) Disclaimer

THE INFORMATION IN THIS GUIDE IS SUBJECT TO CHANGE AT ANY TIME AND WITHOUT NOTICE.

Matrox Graphics Inc. reserves the right to make changes in specifications at any time and without notice. The information provided by this document is believed to be accurate and reliable. However, no responsibility is assumed by Matrox Graphics Inc. for its use; nor for any infringements of patents or other rights of third parties resulting from its use. No license is granted under any patents or patent rights of Matrox Graphics Inc.

(Français) Responsabilité

LES INFORMATIONS CONTENUES DANS CE MANUEL PEUVENT ÊTRE MODIFIÉES À TOUT MOMENT SANS PRÉAVIS.

Matrox Graphics Inc. se réserve le droit de modifier les spécifications à tout moment sans préavis. Les informations contenues dans ce manuel sont reconnues comme étant précises et fiables. Cependant, Matrox Graphics Inc. n'assume aucune responsabilité concernant leur utilisation, ni leur contrefaçon ou les autres droits des tiers résultant de leur utilisation. Aucune licence n'est accordée sur aucun brevet ou droit d'exploiter un brevet de Matrox Graphics Inc.

(Deutsch) Haftungsablehnungserklärung

DIE IN DIESEM HANDBUCH ENTHALTENEN ANGABEN UND DATEN KÖNNEN OHNE VORHERIGE ANKÜNDIGUNG GEÄNDERT WERDEN.

Die Matrox Graphics Inc. behält sich das Recht vor, jederzeit und ohne Ankündigung technische Daten zu ändern. Es wird keine Garantie für die Richtigkeit des Inhalts dieses Handbuchs übernommen. Weiterhin übernimmt die Matrox Graphics Inc. keinerlei Verantwortung für die Benutzung dieses Handbuchs, weder für Verstöße gegen Patentrechte noch für andere Rechte Dritter, die aus seinem Gebrauch resultieren mögen. Es werden keinerlei Lizenzrechte gewährt für sämtliche Patente oder Patentrechte der Matrox Graphics Inc.

(Italiano) Discrezionalità

LE INFORMAZIONI CONTENUTE NEL PRESENTE DOCUMENTO SONO SOGGETTE A MODIFICHE SENZA PREAVVISO.

Matrox Graphics Inc. si riserva il diritto di apportare variazioni di qualunque tipo alle specifiche tecniche in qualunque momento e senza alcun preavviso. Le informazioni contenute in questa documentazione sono ritenute corrette e attendibili. In ogni caso, non è imputabile a Matrox Graphics Inc. nessuna responsabilità per il loro utilizzo, come nessuna violazione a brevetti o diritti di altri produttori derivante dal loro utilizzo.

(Español) Renuncia

LA INFORMACION QUE CONTIENE EL PRESENTE MANUAL ESTA SUJETA A CAMBIOS SIN PREVIO AVISO EN CUALQUIER MOMENTO.

Matrox Graphics Inc. se reserva el derecho de realizar modificaciones en cualquier momento y sin previo aviso. La información facilitada en este documento se considera que es exacta y fiable. Sin embargo, Matrox Graphics Inc. no asume ninguna responsabilidad por su uso; ni por cualquier infracción de patentes u otros derechos de terceras partes derivados de su uso. No se concede ninguna licencia bajo cualesquiera patentes o derechos de patentes de Matrox Graphics Inc.

Matrox Graphics Inc.

1055 Saint Regis Boulevard
Dorval, Quebec, Canada H9P 2T4

Tel: (514) 822-6320

Sales: 1-800-361-1408

E-mail: graphics.sales@matrox.com

Technical support:

www.matrox.com/graphics/support

Web site: www.matrox.com/graphics

Asia Pacific

Matrox Asia Ltd.

2006, West Tower, Shun Tak Centre
168-200 Connaught Road C.
Sheung Wan, Hong Kong

Sales: 852-2281-5700

Fax: 852-2537-9530

E-mail – China, Hong Kong, and Taiwan:

Info-GC@matrox.com

E-mail - Japan:

Info-Japan@matrox.com

E-mail – All other Asia Pacific countries:

Info-AsiaPacific@matrox.com

Technical support: 852-2281-5757

E-mail: tech.asiapac@matrox.com

United Kingdom

Matrox UK

Chaplin House, Widewater Place
Moorhall Road, Harefield
Middlesex, UB9 6NS, UK

Sales: +44 (0) 1895 827300

Fax: +44 (0) 1895 827301

E-mail – UK, ROI, Benelux, France, Spain, Portugal,

and MEA: insales@matrox.com

Technical support:

www.matrox.com/graphics/support

Deutschland

Matrox Electronic Systems GmbH

Inselkammerstraße 8
D-82008 Unterhaching bei München, Deutschland

Tel: +49 89 62170-0

Sales: +49 89 62170-444

Fax: +49 89 6149743

E-mail – Germany, Austria, Switzerland:

Info-CentralEurope@matrox.com

E-mail – Denmark, Finland, Norway, Sweden:

Info-NorthernEurope@matrox.com

E-mail – Eastern Europe:

Info-EasternEurope@matrox.com

Technischer Support: www.matrox.com/graphics/support

Tel: +49 89 62170-333

Italia

Ufficio italiano di Matrox Graphics Inc.

3G electronics

Via Boncompagni, 3B

20139 Milano, Italia

Ufficio vendite: 02-5253095

Fax: 02-5253045

E-mail: vendite@treg.it

Supporto tecnico: www.matrox.com/graphics/it/support

Sito Web: www.matroxitalia.it