Matrox **Parhelia**
Matrox **Millennium P750**
Matrox **Millennium P690**
Matrox **Millennium P650**

User Guide

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www.matrox.com/graphics

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Graphics for Professionals

Hardware installation

This section describes how to install your Matrox card. If your Matrox graphics card is already installed in your computer, skip to "Standard (ATX) connection setup", page 6 or "Low-profile connection setup", page 10. For information specific to your computer, like how to remove its cover, see your system manual.

⚠️ **WARNING:** To avoid personal injury and to prevent damage to your computer or Matrox hardware, turn off your computer, unplug it, and then wait for it to cool before you install your Matrox product and touch any of the internal parts of your computer.

While your computer is turned off but still plugged in, some electrical current is supplied to the motherboard. This current may prevent newly installed hardware from working properly.

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.

ℹ️ **Note:** If your Matrox product supports stereo output and you want to use a stereo-output bracket (provided with some Matrox products), you need to connect your stereo-output bracket to your graphics card. For more information, see "Stereo output", page 20.
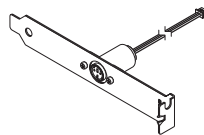
Stereo-output bracket

ℹ️ **Note:** Matrox low-profile graphics cards ship with standard (ATX) brackets compatible with most systems. If you have a low-profile system, you may need to change the standard bracket on your graphics card to a low-profile bracket. For more information, see "Replacing brackets on a low-profile graphics card", page 5.

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 Programs** in 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.)
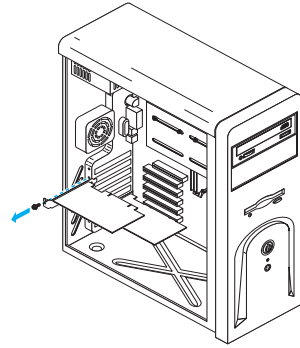
2 Choose an expansion slot

Most computers have different types of expansion slots. Choose an AGP, PCI, or PCI Express (PCIe) ×16 or ×1 slot, depending on the type of Matrox card you have. If you have a PCI card, your card supports both 64-bit and 32-bit PCI slots. Your system manual should identify the location of each type of expansion slot in your computer.

(Back of computer)

AGP slot

PCI Express slots (×16)

(×1)

PCI slots (64-bit)

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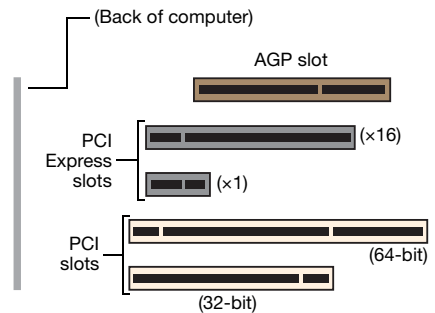
ℹ️ **Note:** If you're using a PCI graphics card in a 64-bit PCI slot, your choice of PCI slot may affect your card or system performance. For more information, see your computer manual.

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* 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".

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

If you have a PCI card and the versions (32- or 64-bit) of your card and PCI expansion slot are different, only part of the card's edge connector (the part closest to the bracket) or expansion slot (the part closest to the back of the computer) should be used.

AGP card

PCI card
32-bit
64-bit

×1
×16
PCI Express card
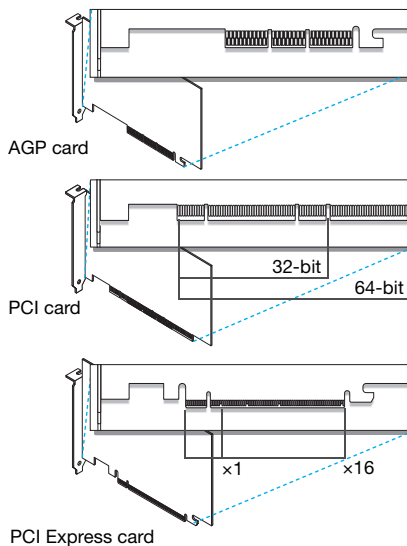
3   Insert your Matrox card

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.
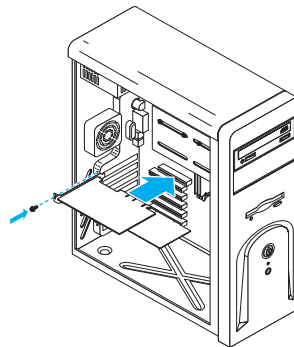
Your Matrox card is now installed. *Before restarting your computer*, connect your monitor or monitors (see "Standard (ATX) connection setup", page 6 or "Low-profile connection setup", page 10). *After connecting*, restart your computer and install your Matrox software (see "Software setup", page 12).

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 24.

Replacing brackets on a low-profile graphics card

Matrox low-profile graphics cards ship with standard (ATX) brackets compatible with most systems. The following explains how to change your standard bracket to a low-profile bracket.

1 Remove the standard bracket from your Matrox graphics card by removing the hexagonal nuts on either side of the monitor connector.

Standard (ATX) bracket

2 Attach and fasten the low-profile bracket with the two hexagonal nuts you just removed.

Low-profile bracket
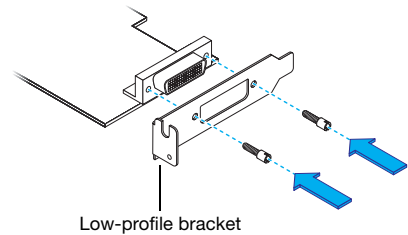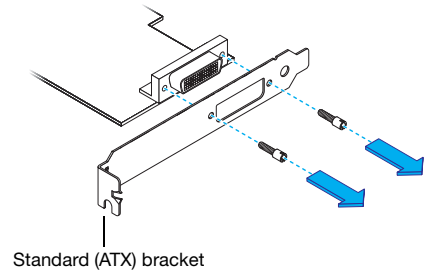
Standard (ATX) connection setup

This section describes how to connect your monitors to a standard (ATX) Matrox graphics card.

Connector overview
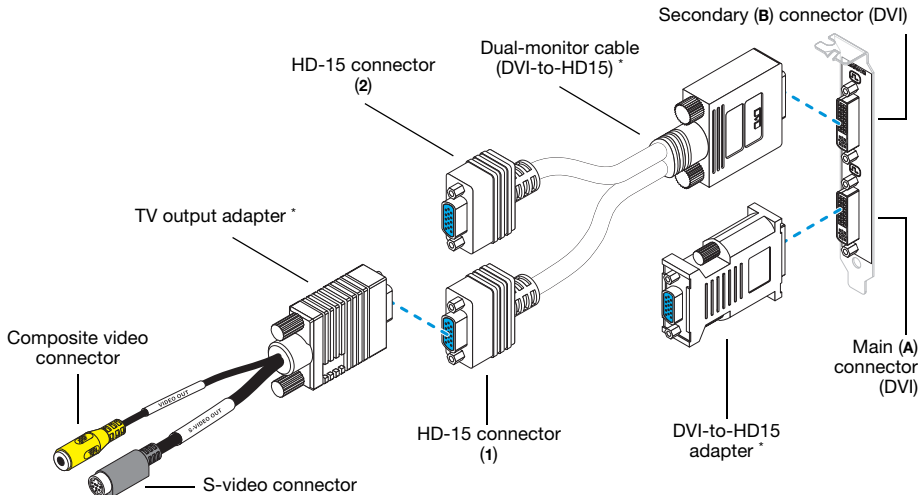
* Matrox Millennium P650 and P690 products include 2 DVI-to-HD15 adapters, but no dual-monitor cable. For Millennium P650, TV output adapters are sold separately (see http://shopmatrox.com).

ℹ️ **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.

If you have an *analog* monitor (a monitor that uses analog input) with a DVI connector and you want to connect it to an HD-15 connector, you'll need a separate adapter. If this adapter isn't included with your monitor, contact your monitor vendor.

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.
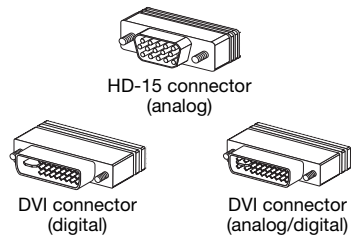
Step-by-step connection setup

⚠️ **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.

ℹ️ **Note:** Whenever you change your connection setup, make sure you're using the correct connectors and that all connectors are properly fastened.

Whenever you restart your computer, make sure your monitors are already turned on. Otherwise, the software may not be able to properly detect your monitors.

1   Connect the first monitor

Connect your preferred monitor to the main connector (**A**) on your Matrox graphics card.

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

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

Monitor connector (DVI)

ℹ️ **Note:** If you want to use 3 monitors at a time and one of these needs to use a DVI connector, that monitor must be connected to the main connector.
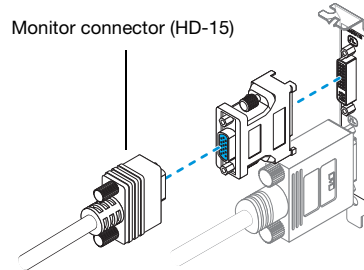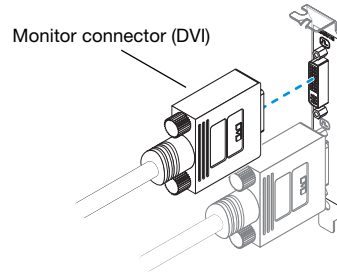
Monitor connector (HD-15)
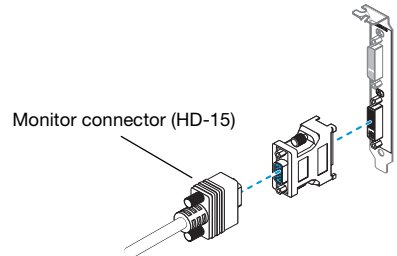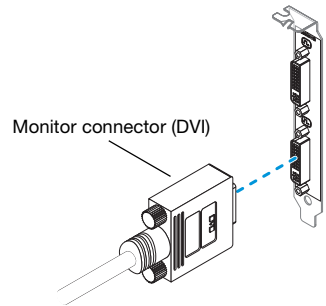
2 Connect the second monitor

If your second monitor uses a DVI connector, connect it directly to the secondary connector (**B**) of your graphics card.

Monitor connector (DVI)

If your second monitor uses an HD-15 connector, you can use a dual-monitor cable (included with certain Matrox products) or a DVI-to-HD15 adapter. To use 3 monitors at a time, a dual-monitor cable is required.

If you use a dual-monitor cable, connect it to the secondary connector on your graphics card, then connect your monitor to connector **1** on the dual-monitor cable. If you're going to connect the TV output adapter, connect your computer monitor to connector **2** instead.

Monitor connector (HD-15)

3 Connect the third monitor

If you want to use 3 computer monitors at a time and your Matrox product supports it, your second and third monitors must use HD-15 connectors. Connect your third monitor to connector **2** on the dual-monitor cable.

Monitor connector (HD-15)
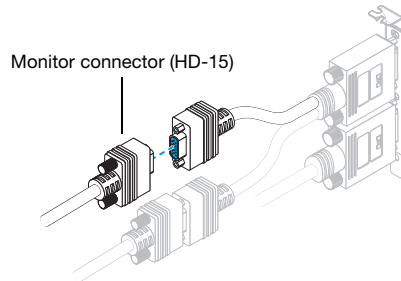
ⓘ **Note:** The left-to-right order of your displays isn't dependent on your connection setup and, through Matrox PowerDesk software, you can re-order your displays to match your Windows desktop. For more information, see Matrox PowerDesk help.

ⓘ **Note:** To connect a TV or video recorder to your graphics card, you need a TV output adapter (included with certain Matrox products). The TV output adapter connects to connector **1** on your dual-monitor cable or to a DVI-to-HD15 adapter. For more information, see "TV output", page 13.
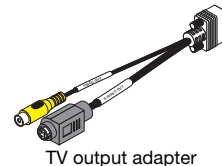
TV output adapter

Note: If your Matrox product supports stereo output and you want to use a stereo-output adapter (provided with some Matrox products), you can connect the adapter to the main connector (**A**) of your graphics card. For more information, see "Stereo output", page 20.
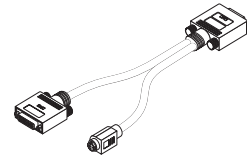
Stereo-output adapter

Your Matrox card is now installed. Restart your computer and install your Matrox software (see "Software setup", page 12).
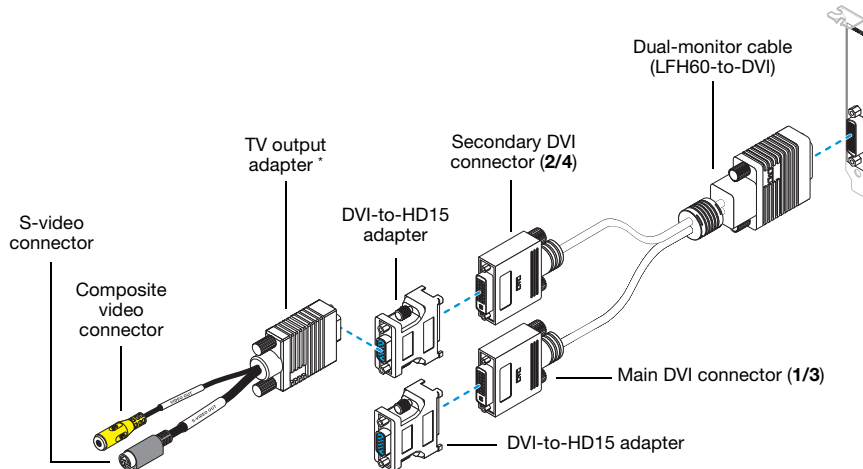
Low-profile connection setup

This section describes how to connect your monitors to a low-profile Matrox graphics card.

Connector overview

*   TV output adapters are sold separately (see http://shopmatrox.com).

Step-by-step connection setup

⚠ **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:** Whenever you change your connection setup, make sure you're using the correct connectors and that all connectors are properly fastened.

Whenever you restart your computer, make sure your monitors are already turned on. Otherwise, the software may not be able to properly detect your monitors.

Connecting a low-profile card

1   Attach the dual-monitor cable

Attach your Matrox dual-monitor cable to the connector on the bracket of your Matrox card. Make sure the connectors are properly fastened.

⚠️ **WARNING:** To avoid damaging the LFH-60 connector on your dual-monitor cable or on your graphics card, carefully insert the connector on your dual-monitor cable as straight as possible into the connector on your graphics card. Specifically, inserting the connectors into each other at an angle is likely to bend and damage the pins on the connector of the dual-monitor cable.
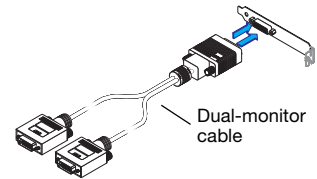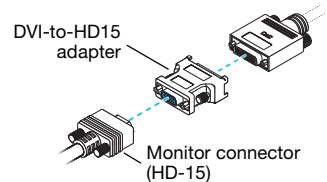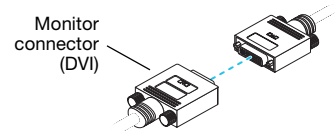
Dual-monitor cable

2   Connect the first monitor

Monitor connector (DVI)

Connect your preferred monitor to the main DVI connector (**1/3**) of your dual-monitor cable.

If your monitor has a DVI connector, connect it directly to the main DVI connector (**1/3**) of your dual-monitor cable.

DVI-to-HD15 adapter

If your monitor has an HD-15 connector, use the DVI-to-HD15 adapter included with your product to connect your monitor to the main connector. Make sure the connectors are properly fastened.

Monitor connector (HD-15)

3   Connect the second monitor

Connect your second monitor to the secondary DVI connector (**2/4**) of your dual-monitor cable. Depending on the connector type of your monitor, connect the same way as in step 2.

Your Matrox card is now installed. Restart your computer and install your Matrox software (see "Software setup", page 12).

Software setup

ℹ️ **Note:** This guide has references that are specific to the Matrox installation CD-ROM. If your Matrox product wasn't packaged by Matrox (for example, if it was included with your computer), your product may not include this CD-ROM.

If you don't have this CD-ROM, certain references in this guide may not reflect the software you have. For more information, see other software documentation provided by your system vendor.

This section describes how to install Matrox software for *Windows 2000*, *Windows Server 2003*, *Windows XP* , *Windows XP Professional x64*, and *Windows Vista*.

You may need administrator rights to install certain software. For more information, see Windows documentation or contact your system administrator.
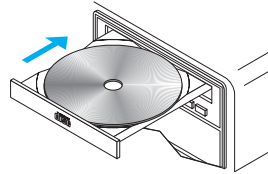
1   Install display driver

Windows detects new hardware when you restart. If Matrox display drivers haven't been previously installed, Windows prompts you to install a display driver. Follow the on-screen instructions. (The Matrox 32-bit and 64-bit display drivers are in the *Win2kXP* and *WinXP64* folders of your Matrox installation CD-ROM.)

2   Install optional software

After your computer restarts, the setup program shows you a list of additional items you can install. Follow the on-screen instructions.

3   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/Vista, 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.

TV output

If your Matrox product supports TV output, you can use the TV output adapter to connect a video recorder or a TV to your Matrox graphics card. This adapter is only included with certain Matrox products. To purchase a Matrox TV output adapter for your product, see the Matrox online store (http://shopmatrox.com).

TV output adapter
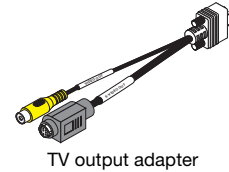
This section describes how to use the *TV output* feature.

> ℹ️ **Note:** TV output isn't supported with full-screen DOS display modes (for example, the information you see before Windows starts) or with standard VGA mode (for example, when you restart Windows in "safe mode"). Older programs may use these display modes. While one of these display modes is in use, your TV displays nothing (black).
>
> This feature is supported only while using PowerDesk-HF.

Connection setup

1 Turn off computer

Before you connect your Matrox product, make sure you shut down your system and turn off your computer.

> ⚠️ **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.
>
> If a display device (monitor, TV, or video recorder) is connected while your computer is using settings intended for another display device, the display of the new device may be garbled or unusable. *Some* devices may be permanently damaged if incorrect settings are used.

2 Attach TV adapter

Standard (**ATX**) **card** – Connect the TV output adapter to connector **1** on your dual-monitor cable.

If you're only using one computer monitor and a TV, you can use a DVI-to-HD15 adapter to connect the TV output adapter to the secondary (**B**) connector on your Matrox card.

Low-profile card – Use a DVI-to-HD15 adapter to connect the TV output adapter to the secondary DVI connector on your dual-monitor cable.

TV output adapter

Secondary DVI connector

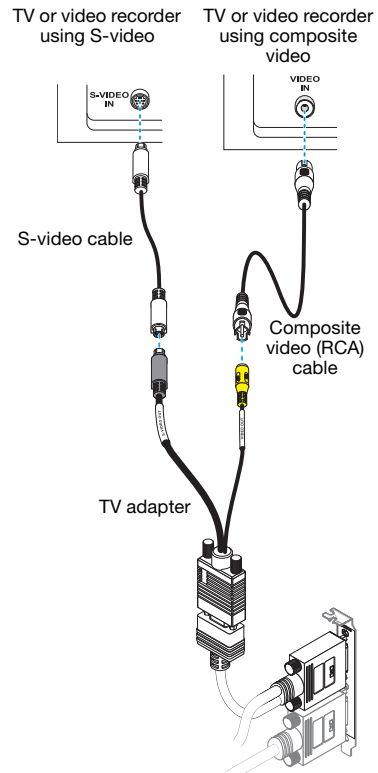TV output adapter

DVI-to-HD15 adapter
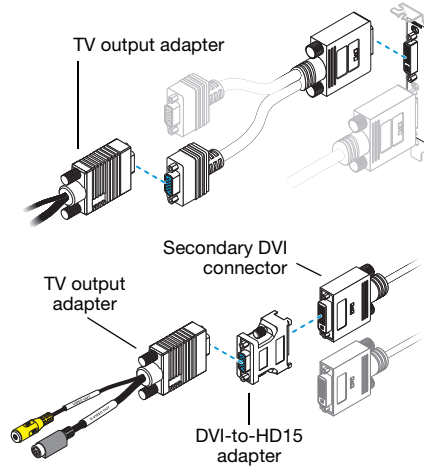
3 Connect video output

To connect to a TV or a video recorder, you'll need a composite video (RCA) or S-video cable.

If your video device (a TV or a video recorder) didn't come with one of these cables, these types of cable are available at most electronics stores. The type of cable you use depends on what your video device supports. Many video devices support composite video connections, and some higher-quality video devices support S-video connections.

a Attach one end of your composite video or S-video cable to the appropriate connector on your TV adapter.

b Attach the other end to the **VIDEO IN**[*] connector on your TV[†] or video recorder.

c Before viewing or recording video output directly from your computer, make sure your TV or video recorder is set up to use *line* input. For example, if your TV has a **TV/VIDEO** switch, set it to **VIDEO**; or if your video recorder has a **TUNER/LINE** switch, set it to **LINE**.

TV or video recorder using S-video

TV or video recorder using composite video

S-VIDEO IN

VIDEO IN

S-video cable

Composite video (RCA) cable

TV adapter

(Note: Using the Matrox composite video *and* S-video connectors at the same time is optional.)

Optionally, if you use the composite video *and* S-video connectors on your Matrox TV adapter, you can directly connect two different video devices at the same time.

To view *and* record output from the same Matrox video connector, you can connect it to a video recorder and connect the video recorder to a TV. For more information, see your video recorder and TV manuals.

4 Connect audio output

Typically, the sound output from a computer comes from speakers connected to your sound card. If you prefer, you can hear or record the sound output from your computer using the same TV or video recorder you connect to your graphics card. To do this, you need an audio cable with a stereo jack on one end and two RCA connectors on the other end. If you don't have this type of cable, you can buy one at most consumer electronics stores.

a Plug the stereo-jack end of the audio cable into the **LINE OUT**[*] ((⊱)) connector on your sound card.

b Plug the other end of the cable into the left (**L**) and right (**R**) **AUDIO IN** connectors of your video device. For more information, see your sound card manual.
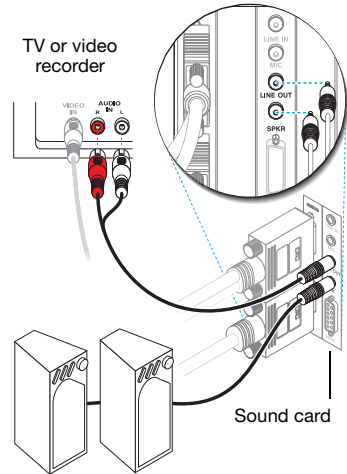
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[*] The labels on your devices may not be consistent with what's in this guide. Different manufacturers sometimes use different labels for the same type of controls and connectors. For example, the **VIDEO IN** connector on your TV may be labeled **VIDEO 1** (or **VIDEO 2**). To match labels, see the documentation for your video devices.

[†] If your TV only has an antenna or cable TV connector, you can use an *RF modulator* to connect it to your Matrox card. RF modulators are available at most electronics stores.

[*] If your computer has no audio **LINE OUT** connector, you can use its **SPKR** (speaker) connector instead. In this case, all your computer sound output goes to the video device you connected to.

Software setup

If a TV or video recorder is connected to your Matrox product, you can use TV output mode to view or record your display on your TV or video recorder. (To connect video devices to your computer, see page 13.)

TV settings have lower resolutions and refresh rates than typical computer monitor settings. Lower refresh rates may result in more noticeable flicker.

ⓘ **Note:** Two TV standards are supported for TV output. The NTSC standard is used in North America and Japan, among other places. The PAL standard is used in most of Western Europe and in China, among other places.

If an incorrect TV standard is selected in Matrox software, the output from your computer may not appear or record properly on your TV or your video recorder. To find out what standard your TV or video recorder supports, see its documentation.

Windows 2000/XP/Vista –

- To add a TV to your Windows desktop or as a feature display, access **Multi-Display Setup** in your Matrox PowerDesk software.

- You can also use a TV (or video recorder) as your secondary display:

  - With *Matrox Clone* – Access **Multi-Display Setup** in your Matrox PowerDesk software and select **2 displays, Clone mode**.

  - With *Multi-Display Zoom* – Access **Matrox Zoom** in your Matrox PowerDesk software and select **Multi-Display Zoom**.

  - With *PureVideo/DVDMax* – Access **Video Playback Settings** in your Matrox PowerDesk software and enable **Use PureVideo/DVDMax**.

- To select the TV standard (NTSC or PAL) used for TV output:

  1 Access **Monitor Adjustments** in your Matrox PowerDesk software.

  2 Click the TV in the left part of the page, then click **Select a TV output standard**.

  3 Select **NTSC** or **PAL** according to the standard used by your TV or video recorder.

  4 Click **OK**.

- To adjust TV settings, access **Monitor Adjustments** and **Video Playback Settings** in your Matrox PowerDesk software.

To access PowerDesk, double-click its icon (🖿) on your Windows taskbar. To see the PowerDesk icon in Windows XP/Vista, 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.

Video input

If your Matrox product supports video-input, you can use the
video input adapter to capture video with your graphics card.
This section describes how to use the video-input feature.
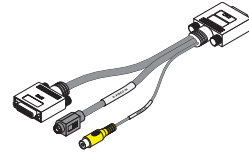
Video-input adapter

ℹ️ **Note:** Because the video-input and stereo-output adapters use the same connector, you can
only use one of these adapters at a time. For more information on stereo output, see
"Stereo output", page 20.

This feature is supported only while using PowerDesk-HF.

Connection setup

1   Turn off your computer

Before you connect your Matrox product, make sure you shut down your system and turn off
your computer.

⚠️ **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.

If a display device (monitor, TV, or video recorder) is connected while your computer is
using settings intended for another display device, the display of the new device may be
garbled or unusable. *Some* devices may be permanently damaged if incorrect settings are
used.

2   Connect your video-input adapter

Connect the video-input adapter to the main
connector (**A**) on your graphics card. If a
monitor is already connected to the main
connector, disconnect that monitor and, if
present, the DVI-to-HD15 adapter.

Video-input
adapter
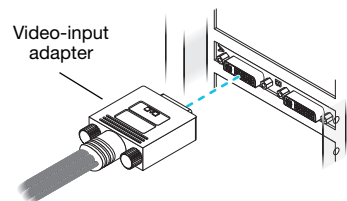
3 Connect your monitor

Connect your preferred monitor to the main connector (DVI) on your video-input adapter.

If your monitor has a DVI connector, connect it directly to the main connector (DVI) on your adapter.

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

Make sure the connectors are firmly in place.

Monitor connector (DVI)

DVI-to-HD15 adapter

Monitor connector (HD-15)
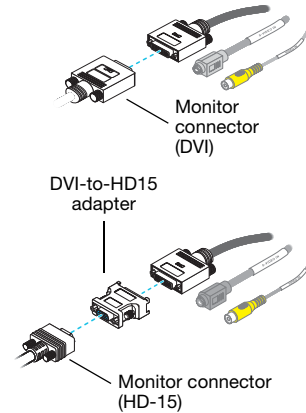
4 Connect video input

Connect the video output of your video device (for example, your video camera) to the composite video (**VIDEO IN**) or S-video (**S-VIDEO IN**) connector on your video-input adapter.

Video device (S-video)

Video device (Composite video)
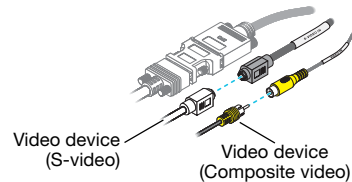
5 Connect audio input

To connect the audio output of your video device to your computer, make sure you have a cable that corresponds to the connectors on your audio hardware. Typically, video devices use two RCA connectors and audio hardware uses stereo jacks. These cables and adapters are available at most electronics stores.

Connect the audio output of your video device to the **LINE IN** (《♪) or **MICROPHONE** (◝◞) connector on your computer audio hardware. If your video device has only one audio connector, use the left audio connector on the cable.
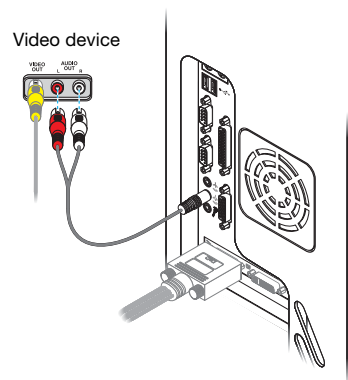
Video device

ⓘ Note: The labels on your devices may not be consistent with what's in this guide. Different manufacturers sometimes use different labels for the same type of controls and connectors. For example, the **VIDEO IN** connector on your TV may be labeled **VIDEO 1** (or **VIDEO 2**). To match labels, see the documentation for your video devices.

Software setup

To capture video with your Matrox Parhelia product, your video-capture software must support WDM (Windows Driver Module) drivers and you must have the Matrox WDM display driver package installed on your system. For the latest Matrox WDM display driver package, see the Matrox Web site (www.matrox.com/graphics/support/drivers).

To capture video with your Matrox product, select **Matrox Video Capture** as your video source in your video editing software.

Stereo output

You can use stereo output with OpenGL software that takes advantage of this feature. Matrox products that support stereo output ship with a stereo-output bracket, a stereo-output adapter, or both. To use stereo output, you need to install the stereo-output bracket and connect your stereo-output device to that bracket, or you can connect your stereo-output device to the stereo-output adapter.
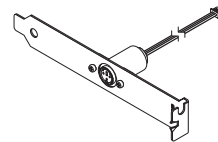
ⓘ **Note:** This feature is supported only while using PowerDesk-HF.

Connecting your stereo-output bracket

This section describes how to install and use the stereo-output bracket included with your Matrox product.
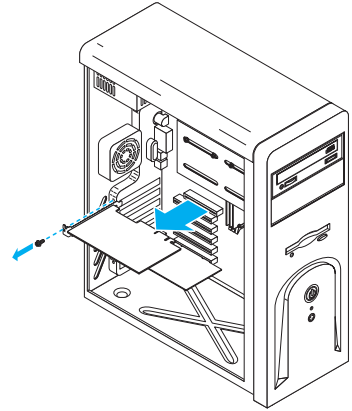

Stereo-output bracket

⚠ **WARNING:** To avoid personal injury and to prevent damage to your computer or Matrox hardware, turn off your computer, unplug it, and then wait for it to cool before you install your Matrox product and touch any of the internal parts of your computer.

While your computer is turned off but still plugged in, some electrical current is supplied to the motherboard. This current may prevent newly installed hardware from working properly.

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 Remove your graphics card

Turn off your computer and all peripherals such as your monitor or printer. Open your computer and remove your existing graphics card.


2 Connect the bracket to your graphics card

Connect your stereo-output bracket to the stereo-output connector on your graphics card. The stereo-output connector is a small white connector near the main connector (**A**) of your graphics card.
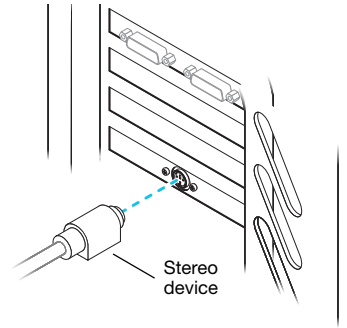

Stereo connector
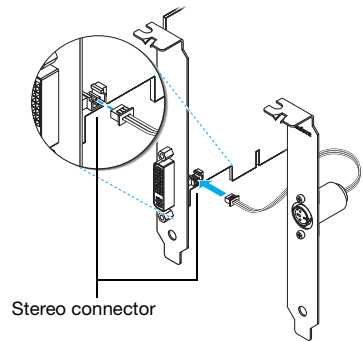
3 Insert your Matrox card and stereo-output bracket

a Position your Matrox card over its expansion slot.

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.

d Select a slot for your stereo-output bracket. Replace the cover of that slot with the stereo-output bracket.
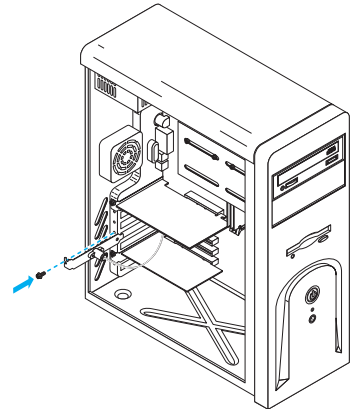
4 Connect your stereo device

Connect your stereo device (for example, your 3D glasses) to the stereo connector (mini DIN, 3 pins) on your stereo-output bracket.
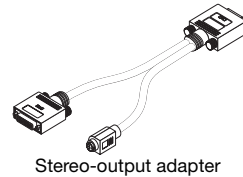
Stereo device

To connect your monitors, see "Standard (ATX) connection setup", page 6. After connecting your devices, restart your computer.

Connecting your stereo-output adapter

This section describes how to use the stereo-output adapter with your Matrox product. To use the stereo-output bracket, see "Connecting your stereo-output bracket", page 20.
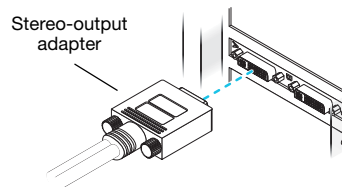
Stereo-output adapter

⚠ **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:** Because the video-input and stereo-output adapters use the same connector, you can only use one of these adapters at a time. For more information on video input, see "Video input", page 17.

1 Connect your stereo-output adapter

Connect the stereo-output adapter to the main connector (**A**) on your graphics card. If a monitor is already connected to the main connector, disconnect that monitor and, if present, the DVI-to-HD15 adapter.
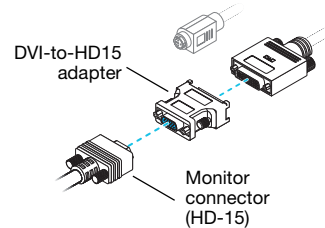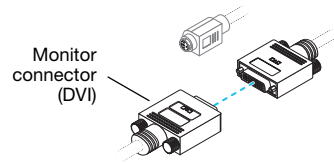
Stereo-output adapter

2 Connect your monitor

Connect your preferred monitor to the main connector (DVI) on your stereo-output adapter.

Monitor connector (DVI)

If your monitor has a DVI connector, connect it directly to the main connector (DVI) on your adapter.

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

DVI-to-HD15 adapter

Monitor connector (HD-15)

Make sure the connectors are firmly in place.

3 Connect your stereo device

Connect your stereo device (for example, your 3D glasses) to the stereo connector (mini DIN, 3 pins) on your stereo-output adapter.
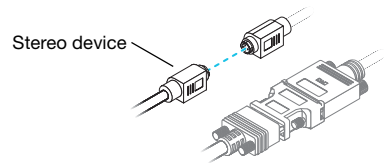
Stereo device

After connecting your devices, restart your computer.

Software setup

Windows 2000/XP/Vista – To enable stereo-output support for OpenGL software, access the Matrox PowerDesk-HF main interface. Click **Quality and Performance Settings**, then make sure **Allow stereo-output** is enabled.

To access PowerDesk, double-click its icon ( ) on your Windows taskbar. To see the PowerDesk icon in Windows XP/Vista, 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.

Restarting in VGA mode

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

1 Click **Start → Shut Down → Restart → OK*** to restart your computer. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

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" (or "Low resolution mode"), then press [Enter].

ⓘ **Note:** If your system stops responding while it's in VGA mode, select "Safe mode" instead.

Graphics – 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 2.

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, specifically the *AGP aperture size*. 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.)
Cause	The BIOS of your Matrox graphics card may need to be updated or restored.
Solution	**For advanced users** – If you have another VGA-compatible graphics card (PCI), you can try resetting the BIOS of your Matrox graphics card.

1   Turn off your computer and insert the other graphics card into an expansion slot. For more information on expansion slots, see "Choose an expansion slot", page 3.

2   Plug your monitor into the other graphics card and restart your computer.

> **Note:** Make sure your computer uses the other graphics card to control your primary display. The graphics card that controls your primary display is the one that first displays information when you restart your computer.
>
> Your computer BIOS (Basic Input/Output System) and the slot type (AGP, PCI, or PCIe – see "Choose an expansion slot", page 3) of each graphics card help determine which graphics card controls your primary display.
>
> To control which graphics card is used for your primary display, you may be able to change the configuration of your computer BIOS. For information on how to change your computer BIOS settings, see your system manual.

3   Insert your Matrox installation CD-ROM.

4   Click **Start → Run**, type *D:\Sysutils*. You will need to use the **PBIOSWin** program to update the BIOS of your Matrox graphics card. For more information on how to use this program, see the *Readme* file in the *Sysutils* folder.

5 Turn off your computer, remove the other graphics card, then plug your monitor into your Matrox graphics card.

6 Restart your computer.

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 "Standard (ATX) connection setup", page 6 or "Low-profile connection setup", page 10) 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.

Cause If your monitor supports multiple input sources (analog/digital), it may be configured to use the wrong source.

Solution Make sure your monitor is using the correct input source. For more information on selecting the input source for your monitor, see your monitor documentation.

Solution Change your connection setup to use a different input source. For more information, see "Standard (ATX) connection setup", page 6 or see "Low-profile connection setup", page 10.

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 **Analog monitors only** – The Matrox display driver may be trying to use settings your monitor doesn't support. This can happen if the display resolution was changed to one your monitor doesn't support or if the monitor connected to your computer was changed without changing the display or monitor settings 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   Make sure your monitor supports the display mode currently in use. After installing your Matrox product, your system uses either the preferred display mode for your monitor or a display mode of 800 × 600 at 60 Hz.

Solution   If none of your displays are available, reinstall your Matrox display drivers. For more information on reinstalling your display driver, see the following solution.

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

Solution   Remove, then restore Matrox software:

> ℹ️ **Note:** Before removing software, make sure you have all the necessary files to reinstall software that may still be needed. Also, make sure the display driver you reinstall supports *all* Matrox products in your computer.

Windows 2000/XP/Vista –

1 If your primary display is unusable, restart your computer in VGA mode .

2 To remove Matrox software:

Windows 2000/XP –

    a Click **Start → Settings* → Control Panel → Add/Remove Programs** (double-click*) **→ Matrox PowerDesk-HF** (or **Matrox PowerDesk-SE**) **→ Change/Remove → Yes**. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

    b Click **Matrox Driver → Change/Remove → Yes**.

Windows Vista –

    a Click **Start → Settings* → Control Panel → Programs* → Program and Features → Matrox PowerDesk-HF** (or **Matrox PowerDesk-SE**) **→ Uninstall → Yes**. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

    b Click **Matrox Driver → Uninstall/Change → 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 card. You may also need to reinstall other Matrox software.

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

Graphics – Extra troubleshooting

The following are extra troubleshooting items 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/Vista** – 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 27.

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.

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 (DDC) monitor, it should be automatically detected by the software.

Problem **Built-in network hardware doesn't work after graphics card is installed**

Cause The installation of a graphics card may have caused your computer to reallocate system resources.

Solution Try reinstalling your network drivers.

Solution Try moving your Matrox graphics card to another PCI (or PCIe depending on your product) slot in your computer. For instructions on how to safely install your Matrox card, see "Hardware installation", page 2.

Problem **After game for Windows 2000/XP/Vista starts, monitor doesn't display properly**
(blank screen, rolling or overlapping screen images)

Cause If your game uses a low-resolution (640 × 480 and below), full-screen display mode, your monitor may not support the refresh rate the Matrox driver is using.

Solution **1** If the game is still running in full-screen mode and your monitor is unusable, exit the game. To do this, press [Alt]+[Tab] *once*, right-click the name of the game on the Windows taskbar, then click **Close**.

2 Make sure the correct monitor is selected in Windows.

Problem **3D and video programs don't work**

Cause Your computer or program may not work well with bus mastering.

Solution Disable bus mastering:
(If you want to continue using bus mastering, see the other solutions.)

Windows 2000/XP/Vista – PowerDesk-HF only –

1 Double-click the PowerDesk icon (🅜) on your Windows taskbar to access the PowerDesk main interface. To see the PowerDesk icon in Windows XP/Vista, you may need to click the **Show hidden icons** button (◀) on your Windows taskbar.

2 Click **Help → Troubleshooting settings**.

3 Make sure **Use bus mastering** is disabled.

4 Click **OK** or **Apply**. You can now close the PowerDesk main interface.

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 **Using multiple displays under Windows 2000/XP/Vista, program doesn't work with your Matrox product**

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 (AGP, PCI, or PCIe – see "Choose an expansion slot", page 3) 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 If you're using multiple displays in *independent* mode, try using *stretched* mode instead. Programs that don't work in independent mode may work in stretched mode. For more information, see Matrox PowerDesk help.

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   Under Windows 2000/XP/Vista, you can use different display drivers for different products.
Software that depends on a specific display driver feature may not work if your graphics
hardware is using different display drivers.

> **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   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/Vista** – 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**

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, PCI, and PCIe) and the BIOS settings of your computer.

Solution   **Windows 2000/XP/Vista** – Move the displays in Windows.

1   **Windows 2000/XP** – Right-click your Windows desktop background, then click
Properties → Settings.

   Windows Vista – Right-click your Windows desktop background, then click **Personalize
→ Display Settings**.

2   Select a display and move it according to the physical position of the monitor it's
associated with.

3   Click **OK**.

ⓘ   **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**
(example: mouse pointer not drawn properly)

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

Solution   **Windows 2000/XP/Vista – PowerDesk-HF only** – Disable specific types of software acceleration:

1   Double-click the PowerDesk icon (🔲) on your Windows taskbar to access the PowerDesk main interface. To see the PowerDesk icon in Windows XP/Vista, you may need to click the **Show hidden icons** button (ⓒ) on your Windows taskbar.

2   Click **Help → Troubleshooting settings**.

3   Disable one or more features. For more information, see Matrox PowerDesk help.

4   Click **OK** or **Apply** for your changes to take effect. (Depending on the feature you disabled, you may have to restart your computer for the changes to take effect.)

Solution   **Windows 2000/XP/Vista** – 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**.

3   Click **OK → OK**.

Windows XP –

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

2   Disable one or more features.

3   Click **OK → OK**.

Windows Vista –

1   Right-click your Windows desktop background, then click **Personalize → Window Color and Appearance**.

2   If you're using Windows Aero, click **Open classic appearance properties for more color options**. Under **Color scheme**, select **Windows Vista Basic**.

3 Click **Effects** and then disable one or more features.

4 Click **OK → OK**.

Solution **Windows Vista** – Disable Windows Aero. Right-click your Windows desktop background, then click **Personalize → Window Color and Appearance → Open classic appearance properties for more color options**. Under **Color** , select **Windows Vista** or **Windows Classic**.

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

ⓘ **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.

ⓘ **Note:** If you identify a program that doesn't work well with Matrox acceleration, please contact Matrox technical support () 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 –

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.

3 Click **OK** or **Apply** for your changes to take effect.

Windows Vista –

1 Right-click your Windows desktop background, then click **Personalize → Display settings**.

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

3 Click **OK** or **Apply** for your changes to take effect.

Cause   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/Vista –**

1 Double-click the PowerDesk icon ( ) on your Windows taskbar to access the PowerDesk main interface. To see the PowerDesk icon in Windows XP/Vista, 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:

- **Open program windows**

- **Center dialog boxes and message boxes**

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 2 digital monitors at the same time, certain limitations may apply. For more information, .)

Video

The following troubleshooting items address problems related to video files.

Problem **Video file playback is jerky (skipping frames)**

> ℹ️ **Note:** Jerky video file playback may be the result of slow playback or recording. Slow recording causes frames to be dropped (frames aren't recorded). If jerky video is caused by frames that were dropped during recording or by the video settings such as the encoding method, the problem can only be fixed by recapturing the video under better conditions or with different video settings.

Cause Your hard disk may be too slow.

Solution Try *defragmenting* your hard disk. To defragment a hard disk:

Windows 2000/XP – Click **Start → Programs → Accessories → System Tools → Disk Defragmenter**.

Windows Vista – Click **Start → Settings → Control Panel → Performance Information and Tools → Advanced Tools → Open Disk Defragmenter**.

Solution If possible, try using a faster disk.

> ℹ️ **Tip:** If your computer has more than one hard disk, you may get better results if you play back video files from a disk *other than* the one where the Windows swap file is stored. The Windows swap file is usually stored on drive "*C:*".

Solution Make sure the drive you're using (a hard disk or DVD drive) is using DMA (if your drive supports DMA transfers). To use DMA:

⚠️ | **WARNING:** Not all drives support DMA well. For more information, see the documentation that came with your hard disk.

Windows 2000/XP –

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 Double-click the **IDE ATA/ATAPI controllers** list item to expand it, then double-click the name of the appropriate controller.

3 Change each **Transfer Mode** setting to "**DMA if available**".

4 Click **OK** to accept the changes.

Cause Too many programs may be running (using up computer resources).

Solution Close other programs, including memory-resident programs like **System Agent.**

Cause Your Matrox graphics card may be sharing an IRQ (interrupt request) with another PCI card in your computer (for example, a network card).

Solution Try moving the PCI card to another PCI slot in your computer. For more information, see the documentation for this card or see your system manual.

Problem **Mouse pointer flickers or disappears when it's over a video window**

Cause You may be using a customized mouse pointer. Windows draws customized mouse pointers in a way that may cause them to flicker or disappear while they're over a video window.

Solution **Windows 2000/XP/Vista** – Use default Windows mouse pointers:

1 **Windows 2000/XP** – Click **Start → Settings* → Control Panel → Printers and Other Hardware* → Mouse** (double-click*). (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

Windows Vista – Click **Start → Settings* → Control Panel → Hardware and Sound* → Mouse** (double-click*). (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

2 Click the **Pointers** tab.

3 In the **Scheme** box, select (or reselect) "**(None)**", then click **OK.**

DVD

The following troubleshooting items address problems related to DVD. (For general video-related troubleshooting items, see "Video", page 35.)

Problem **DVD video playback is jerky (skipping frames)**

Cause Your DVD drive may be too slow.

Solution If your DVD drive supports DMA transfers, enable this feature (see page 36).

Problem **Can't play certain DVD videos**

Cause A DVD video may not play back because the region setting on your DVD player doesn't match the region code on the DVD-ROM disc. DVD players and videos use region codes to prevent the playback of video that was intended only for a certain region or market.

Solution To get a copy of a DVD video that's compatible with the region code of your DVD player, contact the vendor of that video.

Problem **Can't record DVD video**

See "Can't record video with a video recorder", page 40.

TV output

The following troubleshooting items are related to TV output support (see "TV output", page 13).

Problem **TV image is garbled or unusable**.
(blank screen, rolling or overlapping screen images)

Cause Your TV or video recorder may not be properly connected.

Solution Make sure your TV or video recorder is properly connected. For more information, see "Connection setup", page 13.

Cause Your TV or video recorder may not be properly set up.

Solution If a TV is connected to your Matrox graphics card and the TV has a **TV/VIDEO** switch, set it to **VIDEO**. For more information, see your TV manual.

Solution	If a video recorder is connected to your Matrox graphics card and the video recorder has a **TUNER/LINE** switch, set it to **LINE**. For more information, see your video recorder manual.
Cause	Matrox software may not be set up for TV output. Particularly, the TV standard selected may not be correct.
Solution	**Windows 2000/XP/Vista –** See "Software setup", page 16.
Cause	TV output isn't supported with full-screen DOS display modes (for example, the information you see before Windows starts) or with standard VGA mode (for example, when you restart Windows in "safe mode"). Older programs may use these display modes. While one of these display modes is in use, your TV displays nothing (black).
Solution	View the program you're using with your computer monitor instead of your TV.

Problem   Computer text is hard to read with a TV

Cause	The resolution of a TV is lower than a typical computer display. As a result, some text may be harder to read with a TV than with a computer monitor.
Solution	Lower your computer display resolution:

Windows 2000 –

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

2   Move the **Screen area** slider to a lower setting.

3   Click **OK** to close the dialog box and apply changes.

Windows XP –

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

2   Move the **Screen resolution** slider to a lower setting.

3   Click **OK** to close the dialog box and apply changes.

Windows Vista –

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

2   Move the **Resolution** slider to a lower setting.

3   Click **OK** to close the dialog box and apply changes.

Solution   If you're using a display area larger than 640 × 480, you can use larger system fonts to make some text more readable:

Windows 2000/XP –

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

2 Under **Font size**, select **Large Fonts**.

3 Click **OK** to close the dialog box and apply changes.

Windows Vista –

1 Right-click your Windows desktop background, then click **Personalize → Adjust font size (DPI)**.

2 At the User Account Control prompt, click **Continue**.

3 Select **Larger Scale (120 dpi)**, then click **OK**.

4 Restart your computer for the changes to take effect.

Problem   Poor TV or video recorder image quality

Cause   Your software TV settings may need adjusting.

Solution   See "Software setup", page 16.

Cause   There may be too many video devices between your video source and destination, or one or more of the video devices may be degrading the quality of the video signal. Demodulators, long cables, cable extensions and improper connections can all affect video signal quality.

Solution   If your video equipment supports it, use S-video connections. For more information, see "Connection setup", page 13.

Solution   Try changing one or more video devices.

Solution   If possible, use fewer connections. For example, don't use cable extensions.

Cause   The image settings on your TV may need adjusting.

Solution   Some TVs have an aperture control sometimes called **PICTURE**. Lowering this setting may reduce this problem. Reducing your TV's brightness setting may also improve image quality. For more information, see your TV manual.

Problem **Can't record video with a video recorder**

Cause The video source may be copy protected. Your Matrox product may not let you make copies of copy-protected video. (Some video sources let you make a copy of a video, but you may not be able to make a copy of that copy.)

Solution To get copies of a copy-protected video, contact the vendor of the video.

Problem **Video appears stretched or squished on a TV**

Cause **Windows 2000/XP/Vista** – If you're using the *PureVideo/DVDMax* feature to view video full-screen on your TV, the aspect ratio of a video may not match the aspect ratio of your TV.

Solution Adjust software settings:

1 Double-click the PowerDesk icon (🔲) on your Windows taskbar to access the PowerDesk main interface. To see the PowerDesk icon in Windows XP/Vista, you may need to click the **Show hidden icons** button (⦿) on your Windows taskbar.

2 Click **Video Playback Settings → PureVideo/DVDMax settings**.

3 Select **Preserve aspect ratio**.

4 Select **Detect video aspect ratio based on → Video window**.

5 Select the aspect ratio of your TV (4:3 or 16:9 – most TVs are 4:3).

6 Click **OK** or **Apply** for your changes to take effect.

For more information, see context-sensitive help.

Stereo output

The following troubleshooting items address problems related to stereo output support.

Problem **Stereo image is choppy**

Cause Your refresh rate may be too low.

Solution Make sure the vertical refresh rate of your monitor is set to at least 85 Hz. Stereo image quality is usually better at higher refresh rates.

Sound

The following troubleshooting items address problems related to sound cards.

Problem   **Sound doesn't record, video files play back with no sound, or sound output is distorted or too loud**

Cause   If the sound problem is with a particular device (for example, TV or speaker), the volume control on the device itself may need adjusting.

Solution   Adjust the volume control on the device itself.

Cause   Audio cables may be loose or incorrectly wired.

Solution   Make sure your sound card cables are properly connected (see "Connect audio output", page 15).

Cause   Your sound card's Windows software settings may be incorrect. Specifically, input or output may be disabled, or volume levels may be too low or too high.

Solution   Make sure your sound card's Windows software settings are correct.

Windows 2000/XP –

1   Double-click the speaker icon (or) on the Windows taskbar.

If you **don't** see the speaker icon:

Windows 2000 –

a   Click **Start → Settings → Control Panel**.

b   Double-click the **Multimedia** or **Sounds and Multimedia** icon.

c   Enable "**Show volume control on the taskbar**".

d   Click **OK**.

e   Double-click the speaker icon on the taskbar.

Windows XP –

a   Click **Start → Settings* → Control Panel → Sound, Speech, and Audio Devices* → Sounds and Audio Devices** (double-click*). (* Depending on your configuration of Windows, this part of the step may not be necessary.)

b   Enable "**Place volume icon in the taskbar**".

c   Click **OK**.

d   Double-click the speaker icon on the taskbar.

2   Click **Options → Properties**.

3   Click the **Recording** button, enable all check boxes in the list box, then click **OK**.

4   For the **Line In** and/or **Microphone** controls, make sure the **Volume** slider levels are okay (if you're not sure, try half level), and the appropriate **Select** check box is enabled.

5   Click **Options → Properties**.

6   Click the **Playback** button, enable all check boxes in the list box, then click **OK**.

7   For the **Master**, **Line**, **Aux**, and/or **Wave** controls, make sure the **Volume** sliders are at one-quarter to one-half levels (if you're not sure, try half level), and the **Mute** check boxes are cleared.

8   Close the dialog box.
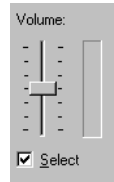
> ℹ️ **Note:** Depending on your sound driver, certain labels may be different. For example, **Line In** may be labeled **Line**.

Windows Vista –

1   Right-click the speaker icon (🔊) on the Windows taskbar.

If you *don't* see the speaker icon:

a   Right-click the taskbar and select **Properties → Notification area**.

b   Under **System icons**, enable the **Volume** check box.

c   Click **OK**.

d   Right-click the speaker icon on the Windows taskbar.

2   Select **Playback** and make sure all the devices you want to use are listed as working. If a device is listed as not working, right-click the device icon and select **Enable**.

> ℹ️ **Note:** To see all your devices, right-click anywhere on the property sheet and make sure **Show disabled devices** and **Show Disconnected Devices** are enabled.

3   For each device you want to use, double-click the device icon and select **Levels**. Make sure the volume slider value is okay and the volume button is enabled (🔊). Click **OK**. (To test the volume of a playback device, right-click the device icon in the **Playback** property sheet and select **Test**.)

4 Select **Recording** and make sure all the devices you want to use are listed as working. If a device is listed as not working, right-click the device icon and select **Enable**.

ⓘ **Note:** To see all your devices, right-click anywhere on the property sheet and make sure **Show disabled devices** and **Show Disconnected Devices** are enabled.

5 For each device you want to use, double-click the device icon and select **Levels**. Make sure the volume slider value is okay (if you're not sure, try a value of 50) and the volume button is enabled (🔊). Click **OK**. (To test the volume of a recording device, make sure an audio source plugged into it and playing, then watch the volume meter next to the audio device icon. The volume meter should be between 60 and 100%.)

Cause   The problem may be specific to the audio hardware of your computer.

Solution   For more information, see the documentation for the audio hardware of your computer.

More Information

We provide additional information in help and *Readme* files. Be sure to check for any last-minute release notes included with your product and in the Matrox CD-ROM *Readme* file. Also, check the Matrox Web site (www.matrox.com/graphics) for the latest Matrox software, technical support, and product information. This guide is available on the CD-ROM as an Adobe Reader file (*Guide\Guide.pdf*).

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.

- Matrox Parhelia and Matrox Millennium P750 products support TripleHead features. *TripleHead* features control 3 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. It's available only for products with 128 MB of memory or more.

- 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.

- While using 1 or 2 displays at a time, your Matrox graphics card supports display resolutions up to 2048×1536.

- Your Matrox graphics card supports the highest refresh rates supported by most monitors. At the highest display resolution (2048×1536), your Matrox graphics card supports a vertical refresh rate of up to 85 Hz.

- 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 (2048×1536), certain display limitations may apply. (For example, video playback may be limited.)

- While using 3 displays at a time (TripleHead), all 3 displays use the same display resolution, color palette, and refresh rates, and the highest display resolution available is 1280×1024 (that is, 3840×1024 for all 3 displays).

- The highest display resolution supported for digital monitors is 1920×1200.

- **Matrox Parhelia** – If you're using two digital monitors at the same time, your Matrox hardware uses the same display resolution for both your monitors. If you select different resolutions for your displays, one of your displays may use only a portion of the screen (the rest of the screen will be black). To avoid having only a portion of the screen used, we recommend you select the highest display resolution available. The highest display

resolution available is the highest resolution supported by both monitors. If one of your monitors supports a higher resolution, it may use display scaling to fill the entire screen. For more information on what your monitors support, see their documentation.

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	102	103	113	114	115
1024 × 768	—	105	116	117	118
1280 × 1024	—	107	119	11A	11B
1600 × 1200	—	11C	11D	11E	11F

	Rows			
Columns	25	43	50	60
80	—	—	—	108
132	109	10A	10B	10C

Hardware information

Features – Matrox Parhelia, Millennium P750, Millennium P650

	Matrox Parhelia	Matrox Millennium P750	Matrox Millennium P650	Matrox Millennium P650 Low-profile PCI	Matrox Millennium P650 PCIe
DualHead	✓	✓	✓	✓	✓
TripleHead	✓	✓	✓ *	—	—
TV output†	✓	✓	✓ ‡	✓ ‡	—
Stereo output	✓	—	—	—	—
Video input	✓ §	—	—	—	—
Display rotation	✓	✓	✓	✓	✓
Memory	128 MB or 256 MB	64 MB	64 MB	64 MB	128 MB
Card type	AGP 4x, 8× compatible PCI	AGP 2×, 4×, 8× compatible	AGP 2×, 4×, 8× compatible	PCI	PCIe ×16
Form factor	ATX	ATX	ATX	Low-profile	ATX

* TripleHead upgrade kit available (see http://shopmatrox.com).
† Matrox PowerDesk-HF required.
‡ TV output adapter sold separately (see http://shopmatrox.com).
§ Supported only with Matrox Parhelia 256 MB PCI. Video input adapter sold separately (see http://shopmatrox.com).

Features - Matrox Millennium P690

	Matrox Millennium P690 PCI	Matrox Millennium P690 PCIe	Matrox Millennium P690 LP PCIe	Matrox Millennium P690 Plus LP PCI	Matrox Millennium P690 Plus LP PCIe
DualHead	✓	✓	✓	✓	✓
TripleHead	—	—	—	—	—
Quad Display	—	—	—	✓ *	✓ *
Stereo output	—	—	—	—	—
Video input	—	—	—	—	—
Display rotation	✓	✓	✓	✓	✓
Memory	128 MB	128 MB	128 MB	256 MB	256 MB
Card type	PCI	PCIe ×16	PCIe ×1 or ×16	PCI	PCIe ×16
Form factor	ATX	ATX	Low-profile	Low-profile	Low-profile

* Quad Display upgrade kit available (see http://shopmatrox.com).

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

* While using 2 digital monitors at the same time, certain limitations may apply. For more information, see page 44.

Maximum card dimensions – Matrox Parhelia (AGP)
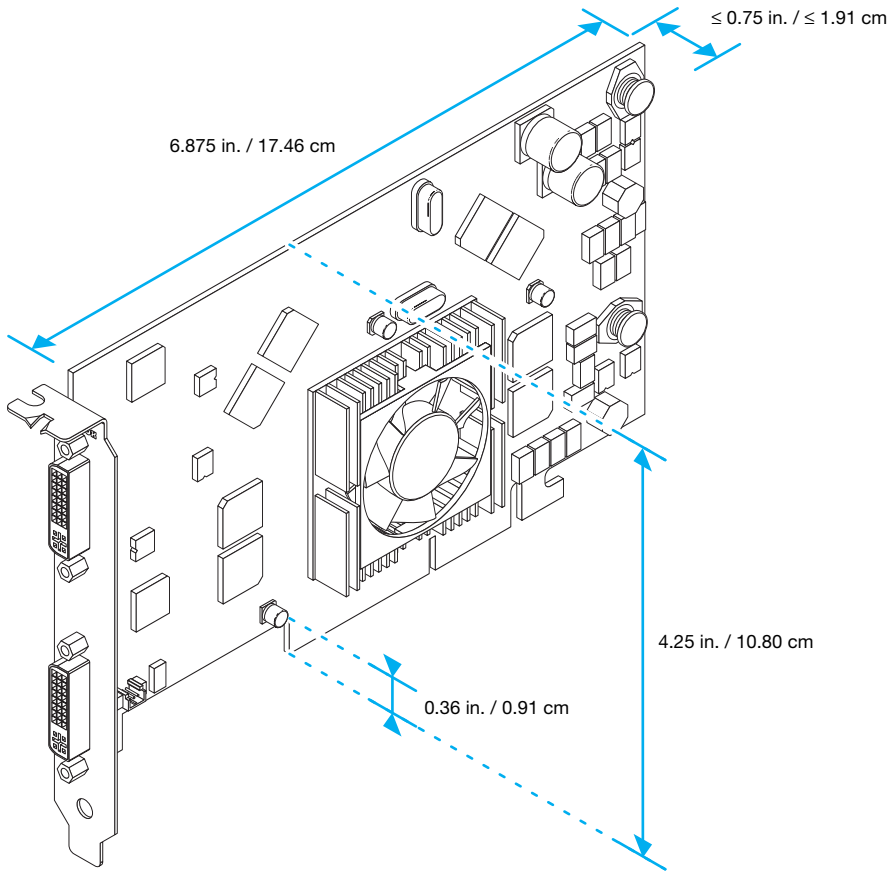
≤ 0.75 in. / ≤ 1.91 cm

6.875 in. / 17.46 cm

4.25 in. / 10.80 cm

0.36 in. / 0.91 cm

Maximum card dimensions – Matrox Parhelia (PCI)

≤ 0.75 in. / ≤ 1.91 cm

7.50 in. / 19.05 cm

4.20 in. / 10.67 cm

0.325 in. / 0.83 cm
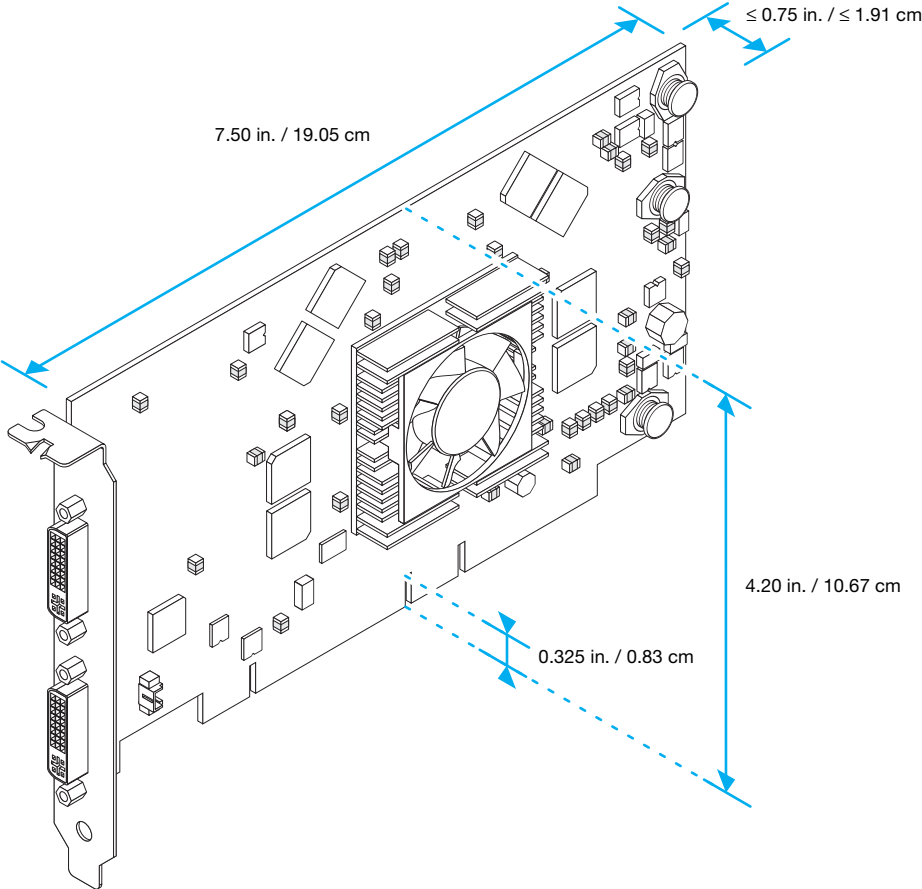
Maximum card dimensions – Matrox Millennium P750 or P650 (AGP)

≤ 0.75 in. / ≤ 1.91 cm

5.90 in. / 14.99 cm

4.05 in. / 10.29 cm

0.36 in. / 0.91 cm
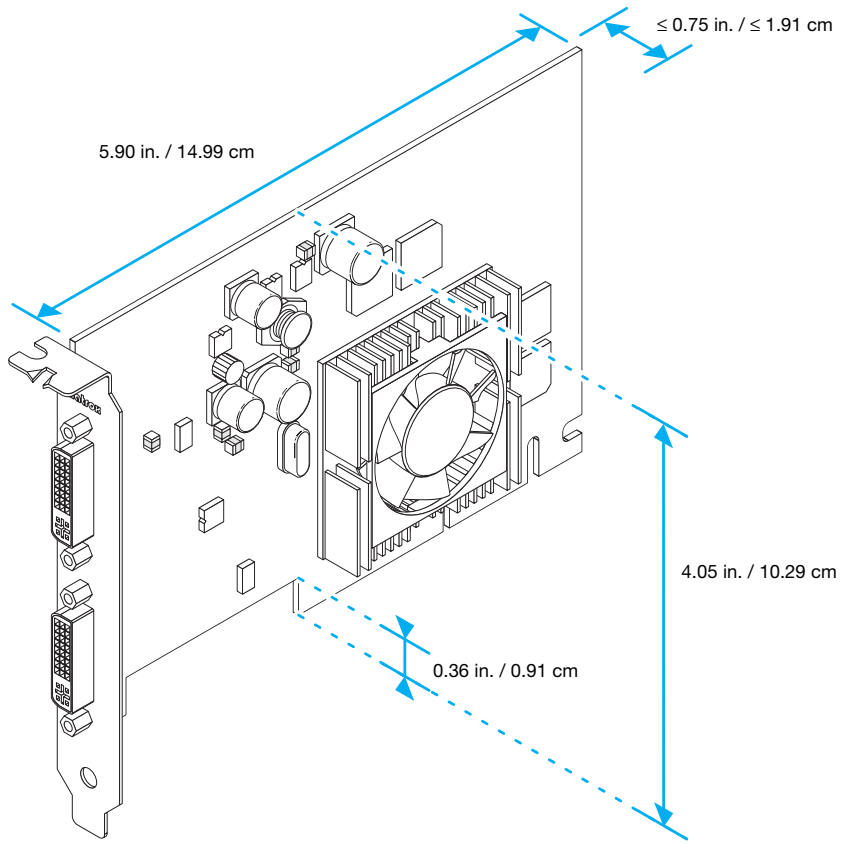
(Millennium P750 shown)

Maximum card dimensions – Matrox Millennium P650 Low-profile PCI
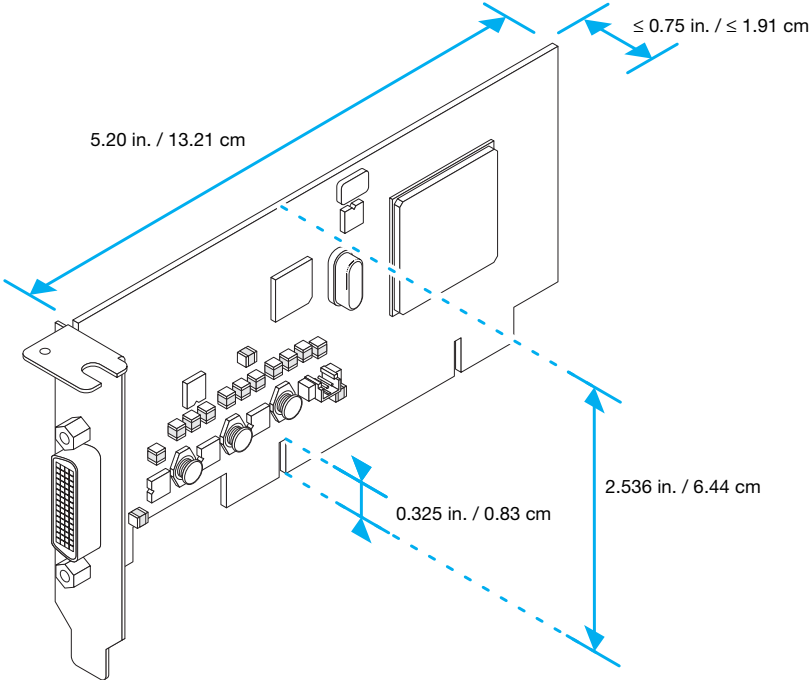
≤ 0.75 in. / ≤ 1.91 cm

5.20 in. / 13.21 cm

2.536 in. / 6.44 cm

0.325 in. / 0.83 cm

Maximum card dimensions – Matrox Millennium P650 PCIe

≤ 0.75 in. / ≤ 1.91 cm

6.425 in. / 16.32 cm

4.376 in. / 11.12 cm

0.331 in. / 0.84 cm

Maximum card dimensions – Matrox Millennium P690 PCI

≤ 0.75 in. / ≤ 1.91 cm

6.60 in. / 16.76 cm

4.20 in. / 10.67 cm

0.325 in. / 0.83 cm

Maximum card dimensions – Matrox Millennium P690 PCIe

≤ 0.75 in. / ≤ 1.91 cm

6.60 in. / 16.76 cm

4.376 in. / 11.12 cm

0.331 in. / 0.84 cm
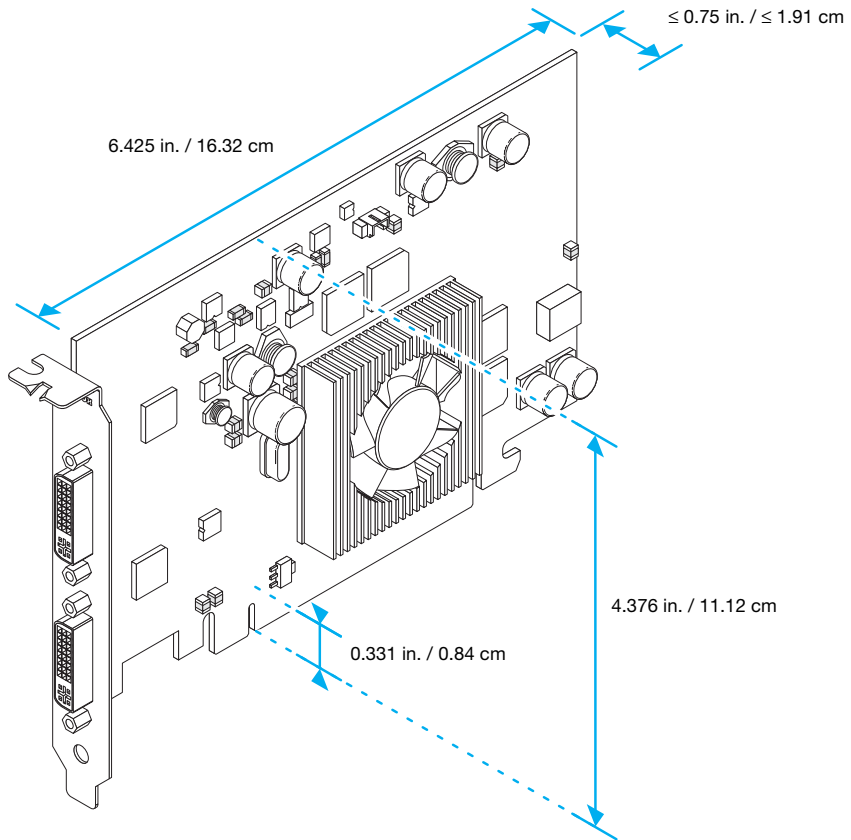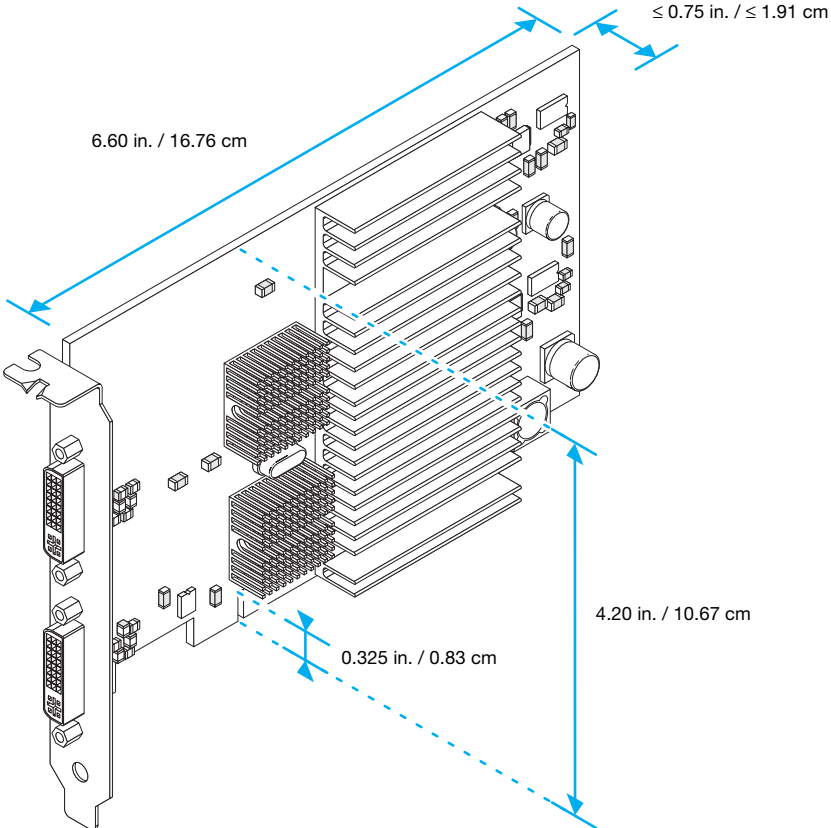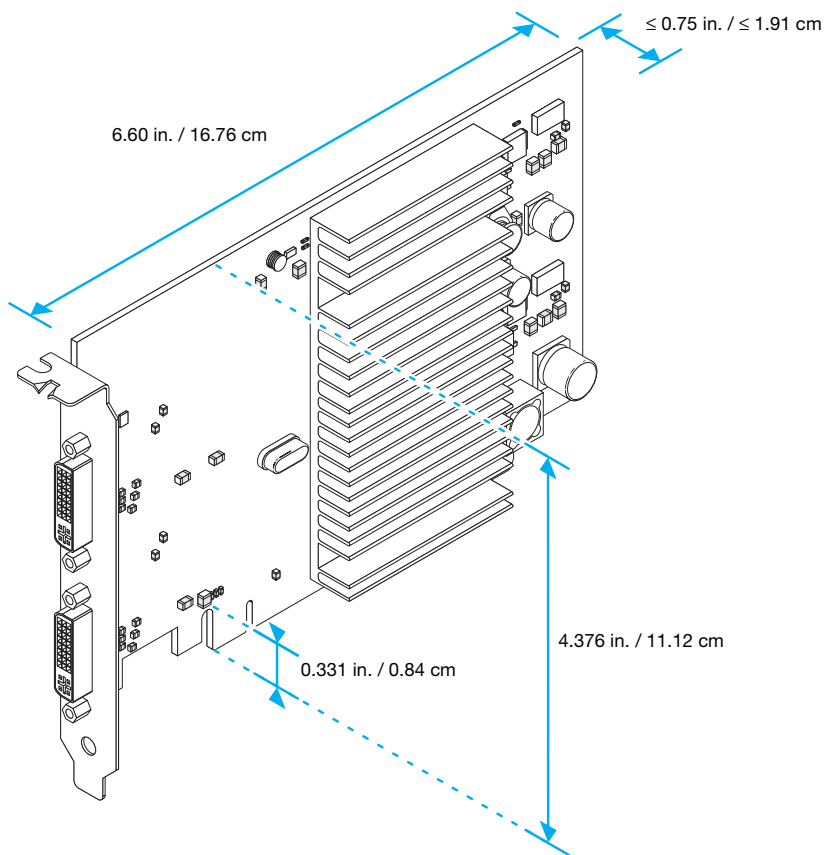
Maximum card dimensions – Matrox Millennium P690 LP PCIe (x1 and x16) and P690 Plus LP PCIe

≤ 0.75 in. / ≤ 1.91 cm

6.60 in. / 16.76 cm

0.331 in. / 0.84 cm

2.712 in. / 6.89 cm
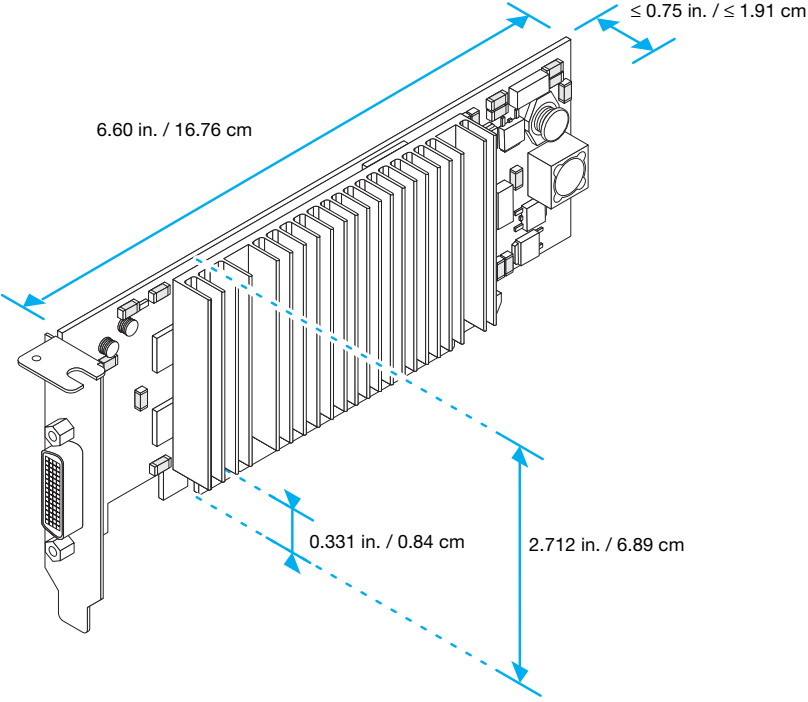
(Millennium P690 LP PCIe (x16) shown)

Maximum card dimensions - Matrox Millennium P690 Plus LP PCI

≤ 0.75 in. / ≤ 1.91 cm

6.60 in. / 16.76 cm

0.325 in. / 0.83 cm

2.536 in. / 6.44 cm
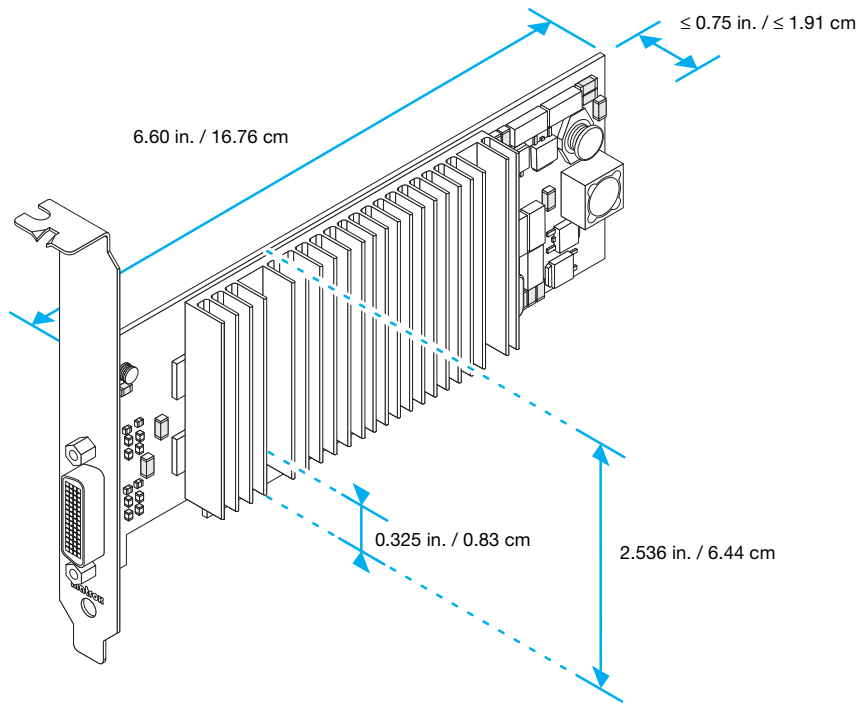
Customer support

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 visit our technical support Web site at www.matrox.com/graphics/support/.

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.

- If possible, take note of the file and segment address that caused the problem.

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

Where to get information

For display information:

Windows 2000/XP/Vista –

1 Double-click the PowerDesk icon ( ) on your Windows taskbar to access the PowerDesk main interface. To see the PowerDesk icon in Windows XP/Vista, you may need to click the **Show hidden icons** button ( ) on your Windows taskbar.

2 Click **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.)

- **Windows Vista** – Click **Start → Settings*** **→ Control Panel → System and Maintenance → System**. (* 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 3 years 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 the Matrox product 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.

4. If you must return a Matrox product, leave the configuration as it was when you were using it, and leave all identification stickers on the product. Pack the product in its original box and return to your Matrox dealer where the product was purchased, together with your proof of purchase. Your Matrox dealer will return the product for you. Alternatively, if this first option is unavailable to you, you may contact the Matrox Technical Support group who will issue an Return Merchandise Authorization (RMA) number, upon receipt of adequate proof of purchase, and inform you of shipping instructions. DO NOT RETURN THE PRODUCT TO MATROX WITHOUT MATROX'S RMA NUMBER AND EXPRESS AUTHORIZATION.

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.

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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.

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4. The original purchaser may not engage in, nor permit third parties to engage in, any of the following:
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   • 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.
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EUROPE (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.

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FRANCE

Avertissement sur l'épilepsie

À lire avant toute utilisation d'un jeu vidéo par vous-même ou votre enfant   Certaines personnes sont susceptibles de faire des crises d'épilepsie ou d'avoir des pertes de conscience à la vue de certains types de lumières clignotantes ou d'éléments fréquents dans notre environnement quotidien. Ces personnes s'exposent à des crises lorsqu'elles regardent certaines images télévisées ou qu'elles jouent à certains jeux vidéo. Ces phénomènes peuvent apparaître alors même que le sujet n'a pas d'antécédent médical ou n'a jamais été confronté à une crise d'épilepsie.

Si vous-même ou un membre de votre famille avez déjà présenté des symptômes liés à l'épilepsie (crise ou perte de conscience) en présence de stimulations lumineuses, veuillez consulter votre médecin avant toute utilisation.

Nous conseillons aux parents d'être attentifs à leurs enfants lorsqu'ils jouent avec des jeux vidéo. Si vous-même ou votre enfant présentez un des symptômes suivants: vertige, trouble de la vision, contraction des yeux ou des muscles, perte de conscience, trouble de l'orientation, mouvement involontaire ou convulsion, veuillez immédiatement cesser de jouer et consultez un médecin.

Précautions à prendre dans tous les cas pour l'utilisation d'un jeu vidéo   Ne vous tenez pas trop près de l'écran. • Jouez à bonne distance de l'écran de TV et aussi loin que le permet le cordon de raccordement. • Utilisez de préférence les jeux de vidéo sur un écran de petite taille. • Évitez de jouer si vous êtes fatigué ou si vous manquez de sommeil. • Assurez-vous que vous jouez dans une pièce bien éclairée. • En cours d'utilisation, faites des pauses de dix à quinze minutes toutes les heures.

EUROPE

(English) European user's information – Directive on Waste Electrical and Electronic Equipment (WEEE)

Please refer to the Matrox Web site (www.matrox.com/environment/en/weee) for recycling information.

(Français) Informations aux utilisateurs Européens – Règlementation des déchets d'équipements électriques et électroniques (DEEE)

Se référer au site Web de Matrox (www.matrox.com/environment/en/weee) pour l'information concernant le recyclage.

(Deutsch) Information für europäische Anwender – Europäische Regelungen zu Elektro- und Elektronikaltgeräten (WEEE)

Bitte wenden Sie sich an der Matrox-Website (www.matrox.com/environment/en/weee) für Recycling-Informationen.

(Italiano) Informazioni per gli utenti europei – Direttiva sui rifiuti di apparecchiature elettriche ed elettroniche (RAEE)

Si prega di riferirsi al sito Web Matrox (www.matrox.com/environment/en/weee) per le informazioni di riciclaggio.

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