Hardware installation

This section describes how to install your Matrox card. If your Matrox graphics card is already installed in your computer, skip to "Connection setup", page 6. 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.

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 the Add/Remove Program 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.)

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

2 Matrox Graphics Card – User Guide
2 Choose an expansion slot

Most computers have different types of expansion slots. Choose an AGP, PCI, or PCI Express (PCIe) 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.

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

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

If you 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.
3 Insert your Matrox card

a Position your Matrox card over the expansion slot you’ve chosen.

b Push the card in firmly and evenly until it’s fully seated in the slot.

c Secure the bracket of your Matrox card to the computer frame.

Your Matrox card is now installed. Before restarting your computer, connect your monitor or monitors (see “Connection setup”, page 6). After connecting, restart your computer and install your Matrox software (see “Software installation”, page 11).

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 18.
Replacing brackets on a low-profile graphics card

Most Matrox low-profile graphics cards ship with ATX brackets compatible with most systems. The following explains how to change brackets on your Matrox product.

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

2. Attach and fasten the new bracket with the two hexagonal nuts you just removed.
Connection setup

For the purpose of determining your connection setup, there are 4 types of graphics cards:

- **DVI/HD-15** – a DVI (white) and an HD-15 (blue) connector

- **Dual-DVI** – two DVI (white) connectors

- **Single-DVI** – only a DVI (white) connector

- **LFH-60** – only an LFH-60 (black) connector

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

**Note:** To connect a digital monitor (a monitor that uses digital input, usually a flat panel monitor) to your Matrox product, your monitor must have a DVI connector. P&D and MDR-20 connectors aren't supported.

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.
### If you have a DVI/HDMI-15 graphics card

If your Matrox card has a DVI and an HDMI-15 connector, you can connect up to two monitors directly to your card.

You can use the HDMI-15 connector on your card to connect an analog monitor.

You can use the DVI connector on your card to connect a digital monitor.

You can also use the DVI connector to connect an analog monitor. You should do this only when there’s already a device connected to the HDMI-15 connector. You can connect an analog monitor with a DVI connector directly. You can also connect an analog monitor with an HDMI-15 connector using a DVI-to-HDMI15 adapter. If you need this adapter and it’s not included with your Matrox product, contact your computer vendor.

### If you have a dual-DVI graphics card

If your Matrox card has 2 DVI connectors, you can connect up to two monitors directly to your card.

You can connect monitors with DVI connectors directly to your card.

You can also connect an analog monitor with an HDMI-15 connector using a DVI-to-HDMI15 adapter. If you need this adapter and it’s not included with your Matrox product, contact your computer vendor.
If you have a single-DVI graphics card

If your Matrox card only has a DVI connector, you can connect one monitor directly to your card or up to two monitors using a dual-monitor cable.

You can connect a monitor with a DVI connector directly to your card.

You can also connect an analog monitor with an HD-15 connector using an analog dual-monitor cable (included with certain Matrox products) or using a DVI-to-HD15 adapter. If you need this adapter and it’s not included with your Matrox product, contact your computer vendor.

To use a dual-monitor cable to connect one or two analog monitors, connect it to your card and to your analog monitor cables. If you’re connecting only one monitor, use the main connector (labeled 1 or 1/3) of your dual-monitor cable.

If you have an LFH-60 graphics card

If your Matrox card only has an LFH-60 connector, you can connect up to two monitors to your card using a dual-monitor cable. The type of monitor you can connect to your card depends on the type of dual-monitor cable you have.
Analog dual-monitor cable – If you’re using an analog dual-monitor cable (a cable with HD-15 connectors), you can only connect analog monitors. Connect your cable to your card and to your analog monitor cables. If you’re connecting only one monitor, use the main connector (labeled 1 or 1/3) of your dual-monitor cable.

Digital dual-monitor cable – If you’re using a digital dual-monitor cable* (a cable with DVI connectors), you can connect analog and digital monitors. Attach your Matrox dual-monitor cable to the connector on the bracket of your Matrox card.

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

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.

If you’re connecting only one monitor, use the main connector (labeled 1 or 1/3) of your dual-monitor cable.

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.
Determining your main and secondary display

Your Matrox hardware has a main display and a secondary display – the main display is more capable than the secondary display. Which connector the software uses for your main display depends on your connection setup.

- If your Matrox card has a DVI and an HD-15 connector, there are 3 conditions that determine which connector is used for your main display:
  - If a digital monitor is connected, the DVI connector is used for your main display.
  - If the TV output adapter is connected, the DVI connector is used for your main display.
  - If no digital monitor or no TV output adapter is connected, the HD-15 connector is used for your main display.

- If your Matrox card has 2 DVI connectors, the main display uses the connector labeled A and the secondary display uses the connector labeled B.

- If your Matrox card only has a DVI connector and you're not using a dual-monitor cable, this connector is used for your main display.

- If you're connecting your monitors using a dual-monitor cable, the connectors are numbered. The main display uses the connector labeled 1 (or 1/3) and the secondary display uses the connector labeled 2 (or 2/4).

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.

Other Notes:

- If a TV output adapter is included with your Matrox product, you can use this adapter to connect a TV or video recorder to your Matrox product. The adapter connects to the HD-15 connector on your card or to the connector labeled 2 (or 2/4) on an analog dual-monitor cable. For more information, see "TV output", page 14.

- The digital dual-monitor cable is only available for cards with an LFH-60 connector.
Software installation

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/XP.

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 Windows 2000/XP display driver is in the Win2kXP folder.)

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

See “Display setup”, page 12.
Display setup

Windows 2000/XP – Your Matrox display driver includes Matrox PowerDesk software. This software helps you get the most out of your Matrox graphics card. This section has important information on how to configure your display settings using Matrox PowerDesk software.

Accessing PowerDesk property sheets

Many display controls are on Matrox PowerDesk property sheets. You can identify Matrox PowerDesk property sheets by the icon appearing on the tab.

To access these property sheets, right-click your Windows desktop background, then click Properties ➔ Settings ➔ Advanced. If you’re using a multi-display desktop, select a display before clicking Advanced.

Also, to quickly access PowerDesk features, click the Matrox QuickDesk icon ( ) on your Windows taskbar. To see the QuickDesk icon in Windows XP, you may need to click the Show hidden icons button ( ) on your Windows taskbar.

Note: Multi-display mode is supported under Windows 2000/XP. For more information on multi-display mode, see Windows 2000/XP online help under “Multiple Display support”.

Monitor setup

Before changing your display resolution, color palette, or other Matrox PowerDesk settings, make sure correct software monitor settings are selected. If you have a Plug-and-Play (DDC) monitor, the correct settings are usually automatically selected. The following explains how to make sure your monitor settings are okay.

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

If you have a Plug-and-Play (DDC) monitor, Windows should automatically use the correct settings for your monitor. To make sure the correct monitor is selected in Windows:

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

2 Depending on what version of Windows you have, click Change Display Type, or Advanced Properties ➔ Monitor, or Advanced ➔ Monitor. If you’re using a multi-display desktop, select a display before clicking Advanced.
3 If the monitor name listed doesn’t match your monitor, click the Change button to select a new monitor name. Follow the on-screen instructions.

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

If you want to customize your Windows monitor settings (analog monitors only):

1 Access the PowerDesk Monitor Settings property sheet (see “Accessing PowerDesk property sheets”, page 12).

2 Depending on what you want to do, click one of the buttons in the Monitor settings selection method box, then follow the on-screen instructions.

**DualHead Multi-Display setup**

With your Matrox graphics card, you can enable a second display (for example, a computer monitor or a TV) as part of your Windows desktop. This is the Matrox DualHead Multi-Display feature. To use this feature:

When you first restart your computer, you’ll be prompted to enable the DualHead Multi-Display feature. Follow the on-screen instructions. For more information, see the online help.

**Other DualHead features**

If your Matrox graphics card has a second monitor connector you can also use these features:

- **DualHead Clone** – View a copy of your main display on your secondary display. Each display can use different monitor settings (refresh rates).

- **DualHead Zoom** – Use your secondary display to view a zoomed-in portion of your main display.

- **DualHead DVDMax** – Play digital video in a window on your main display and, at the same time, view that video full-screen on your secondary display.

**More PowerDesk information**

For more information on Matrox PowerDesk:

- For context-sensitive help where available, click the “?” icon in the title bar, then click the item you want help on. Right-click a help topic for a pop-up menu that lets you print or copy it. (Some help topics are only available through context-sensitive help.)

- Access the Matrox PowerDesk Information property sheet (see “Accessing PowerDesk property sheets”, page 12), then click **Help** or View Readme File.
TV output

You can use the TV output adapter to connect a TV or video recorder to view or record the secondary display of your Matrox graphics card. If a TV output adapter wasn’t included with your Matrox product, you can purchase it separately (see http://shopmatrox.com). This section describes how to use the TV output feature.

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).

Connection setup

1 Turn off computer

Windows 2000/XP – To shut down your computer, click Start → Shut Down → Shut down → OK, then 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

If your Matrox card has an HD-15 connector, attach your Matrox TV output adapter to this connector. If you’re using an analog dual-monitor cable, attach your TV output adapter to the connector labeled 2 (or 2/4).
If your Matrox card has 2 DVI connectors, use a DVI-to-HD15 adapter to connect the TV output adapter to the secondary DVI connector (B) of your graphics card.

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.

* 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.
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.

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 14.)

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

Windows 2000/XP –

- To add a TV to your Windows desktop, see Matrox PowerDesk help.

* 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.
To use TV output, you can use the *DualHead Clone*, *DualHead Zoom*, or *DualHead DVDMax* features (see “Other DualHead features”, page 13).

To adjust TV settings, access the Matrox PowerDesk *DualHead* property sheet (see “Accessing PowerDesk property sheets”, page 12).

For more information on how you can use your secondary display, see Matrox PowerDesk help.

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**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.
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 – 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.


3 Select "VGA mode", then press [Enter].

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 an unsupported graphics adapter in your computer.

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

**Solution**
If a graphics adapter 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 adapter.
**Cause**  
Your computer BIOS (Basic Input/Output System) 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.

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.

**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. (A DualHead-supporting graphics card may display this startup information on both of its displays at the same time.)

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.
<table>
<thead>
<tr>
<th>Problem</th>
<th>Wrong color balance, screen image off-center, or no picture at all</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cause</strong></td>
<td>Your monitor video controls may be improperly set.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Adjust your monitor controls (brightness, contrast, and so on). For more information, see your monitor manual.</td>
</tr>
<tr>
<td><strong>Cause</strong></td>
<td>Your monitor may not be properly connected.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Make sure you’re using the correct connectors and that all connectors are properly fastened.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Make sure the monitor power cable is firmly in place.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Make sure the connection to the back of the monitor is firmly in place.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>If your monitor uses BNC input, make sure the Red (R), Green (G), Blue (B), Horizontal Sync (HSYNC – white or gray wire), and Vertical Sync (VSYNC – black wire) connections are firmly in place and plugged into the correct input.</td>
</tr>
<tr>
<td><strong>Cause</strong></td>
<td>If your monitor uses BNC input, one or more connection settings may be incorrect.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Set each of your monitor RGB input and sync switches (if available) to 75 ohms, with the sync set to “external”. These controls are usually switches on the back of your monitor.</td>
</tr>
<tr>
<td><strong>Cause</strong></td>
<td>If display problems occur after the startup screen of your operating system, your software monitor settings may be incorrect.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Make sure correct software monitor settings are selected.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>If your primary display is still usable, see “Monitor setup”, page 12. Otherwise, see the next troubleshooting item.</td>
</tr>
</tbody>
</table>
Problem  After the startup screen, or after display settings are changed, the screen image is garbled or unusable
(blank screen, rolling or overlapping screen images)

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

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

Solution  Windows 2000/XP –

1  If your primary display is unusable, restart your computer in VGA mode (see “Restarting in VGA mode”, page 18).

2  Right-click the Windows desktop background, then click Properties → Settings.

3  Move the Screen area (Windows 2000) or Screen resolution (Windows XP) slider down to its lowest setting, then click OK.

4  Restart your computer normally.

5  Make sure the correct monitor is selected in Windows (see “Monitor setup”, page 12).

6  Make sure you’re not using inappropriate monitor setting customizations. Access the PowerDesk Monitor Settings property sheet (see “Accessing PowerDesk property sheets”, page 12), then click Delete all customizations.

7  Restore your original display settings (see steps 2 and 3).

Note: In multi-display mode, each monitor has its own monitor settings (refresh rates).

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

Solution  Remove, then restore Matrox software:

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 –

1  If your primary display is unusable, restart your computer in VGA mode (see “Restarting in VGA mode”, page 18).
2 To remove Matrox software, click Start → Settings* → Control Panel → Add or Remove Programs (double-click*) → Matrox Graphics Software (remove only) → Change/Remove → Yes. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)

3 After removing Matrox software, install the latest display driver for your Matrox graphics card. You may also need to reinstall other Matrox software.

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

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**Graphics – Extra troubleshooting**

The following troubleshooting items address problems related to graphics cards.

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

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

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

| Cause | Files on your system may have been deleted or corrupted. |
| Solution | Remove, then restore Matrox software. For more information, see page 21. |

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

| WARNING: If incorrect software monitor settings are used, your display may become unusable and some monitors can be permanently damaged. For more information, see your monitor manual. |
Note: Windows 2000/XP – To check if your monitor settings are properly selected:

1. Right-click your Windows desktop background, then click **Properties → Settings → Advanced → Monitor**. If you’re using multi-display mode, select a display before clicking Advanced.

2. If you see the name of your monitor or “Plug-and-Play”, your monitor settings are properly selected.
   
   If you see the wrong monitor name or Default monitor, your monitor settings aren’t properly selected.

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

**Solution**
Manually select your monitor settings in the software. For more information, see “Monitor setup”, page 12.

**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.

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

**Solution**
If there’s an HD-15 connector at the back of your monitor, use this connector instead of the BNC connectors.

Note:
HD-15 connector
BNC connectors
Problem: After game for Windows 2000/XP 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.

3. Access the Matrox PowerDesk Monitor Settings property sheet (see "Accessing
PowerDesk property sheets", page 11).

4. Click Select customizations from the Matrox list.

5. From the Matrox monitor list, select the monitor model you’re using. If your monitor
model doesn’t appear in the list, select a monitor that runs at 60 Hz at 640 × 480 (for
example, Standard monitor types → Vesa 1024X768 @60Hz → Next). Follow the on-
screen instructions to complete the selection.

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 –
1. Access the Matrox PowerDesk Options property sheet (see "Accessing PowerDesk
property sheets", page 12).

2. Clear the Use bus mastering check box.

3. Click OK → OK → Yes to accept the changes and restart your computer.

Cause: Your computer may not have given an interrupt request (IRQ) to your Matrox graphics card
or may have given one used by another device in your computer. This may be because your
computer’s “Plug-and-Play” feature is turned off.
Windows 2000/XP – To check the display adapter’s IRQ:

1. Click Start ➔ Settings* ➔ Control Panel ➔ Performance and Maintenance* ➔ System (double-click*) ➔ Hardware ➔ Device Manager. (Depending on your version and configuration of Windows, this part of the step may not be necessary.)

2. Click the plus sign to the left of the Display adapters. An “X” through an icon means the hardware has been disabled. A circled exclamation point through the icon means the hardware has a problem.

3. Double-click the name of your Matrox display adapter to open a properties dialog box. The type of problem is displayed in the General tab ➔ Device status area. Check also the Resources tab ➔ Resource type list for an Interrupt Request.

**Solution** Change settings in your computer BIOS setup utility.

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

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

**Cause** Your computer’s other BIOS settings may be incorrect.

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

**Problem** Game for Windows 2000/XP doesn’t start or runs slower than normal (program uses Microsoft DirectX interface)

**Cause** An older version of DirectX may be installed. The Matrox CD-ROM setup program installs DirectX, but some programs install an older version of DirectX (overwriting your version). To see what version of DirectX is installed:


2. Look at the Microsoft DirectX label.

**Solution** If DirectX 8.0 or later isn’t installed, install it. Run the setup program from the DirectX folder of the Matrox installation CD-ROM.
Problem  Using multiple displays under Windows 2000/XP, program doesn’t work with main graphics card

Cause  Your main graphics card may not be controlling your primary display. The graphics card that controls your primary display is the one that first displays information when you restart your computer. (A DualHead-supporting graphics card may display this startup information on both of its displays at the same time.)

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

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

1. Through the DualHead property sheet, make sure the DualHead Multi-Display feature is disabled. To access this property sheet, see “Accessing PowerDesk property sheets”, page 12.

2. 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.)

3. Click the plus sign to the left of the Display adapters.

4. For each display adapter, except for the one controlling your primary display, right-click the name of a display adapter, then click Disable → Yes.

5. Restart your computer for changes to take effect.

Note: Your primary display can’t be disabled.

Note: To restore display adapters, repeat steps 2–5, but click Enable in step 4.

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.

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

Solution

Install the latest unified display driver for your Matrox graphics cards. (A unified display driver supports more than one model of graphics card.) This driver is available on the Matrox Web site (www.matrox.com/graphics). Make sure that the display driver supports all Matrox products in your computer. Install the display driver by running the setup program included with it.

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

**Cause**

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

**Solution**

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

**Problem**

In multi-display mode, displays aren’t numbered consecutively

**Cause**

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

**Solution**


* Windows 2000/XP – In “Separate resolutions...” mode only.)

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

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

**Note:** A unified Matrox display driver may not be available for all the models of Matrox graphics cards installed in your computer (especially for older models). Under Windows 2000/XP, you can use more than one display driver in this case.

**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** Disable specific types of software acceleration:

Windows 2000/XP –

2. Clear one or more check boxes, starting with Use device bitmaps caching. For more information, see context-sensitive help.
3. Click OK → Close to accept the changes. (Depending on the feature you disabled, you may have to restart your computer for the changes to take effect.)

**Solution** Disable Windows effects:

Windows 2000 –

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

Windows XP –

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

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

**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** Disable Matrox hardware acceleration:

Windows 2000/XP –

1. Right-click your Windows desktop background, then click Properties → Settings → Advanced → Troubleshooting (or Troubleshoot).
2. Move the Hardware acceleration slider to None.
3. Click OK → OK to accept the changes.
<table>
<thead>
<tr>
<th>Problem</th>
<th>Program window or dialog box doesn't appear on screen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cause</strong></td>
<td>Another window or dialog box may be covering the window or dialog box you want to see.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Move, close, or minimize any window or dialog box that may be covering the window or dialog box you want to see.</td>
</tr>
<tr>
<td><strong>Cause</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Make sure all the displays and monitors you want to use are usable. For more information, see other troubleshooting items in this guide.</td>
</tr>
<tr>
<td><strong>Cause</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Disable the display:</td>
</tr>
<tr>
<td>Windows* 2000/XP – (* In “Separate resolutions…” mode only.)</td>
<td>1 Right-click your Windows desktop background, then click Properties → Settings.</td>
</tr>
<tr>
<td></td>
<td>2 Select the display you want to disable, then clear the Extend my Windows desktop onto this monitor check box.</td>
</tr>
<tr>
<td></td>
<td>3 Click OK or Apply for your changes to take effect.</td>
</tr>
<tr>
<td></td>
<td>2 Move the Desktop area slider until the number of displays used matches the number of monitors connected, then click OK to accept your changes. (The display you disable must be the last one, if it’s not, to change your display configuration, see page 28.)</td>
</tr>
<tr>
<td><strong>Cause</strong></td>
<td>The program window or dialog box may be somewhere off-screen.</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>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.)</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Manually move the program window or dialog box:</td>
</tr>
<tr>
<td></td>
<td>1 Press [Alt]+[Space].</td>
</tr>
</tbody>
</table>
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 – Use the Move All Windows to Primary Display feature to move the program window or dialog box. Simply press the keyboard shortcut assigned to this feature.

To assign a keyboard shortcut to this feature:

1 Right-click the Matrox QuickDesk icon ( ) on your Windows taskbar, then click Hot Keys.

2 Create a keyboard shortcut for the Move All Windows to Primary Display feature.

Solution Windows 2000/XP –

1 Click the Matrox QuickDesk icon ( ) on your Windows taskbar, then click Multi-Display Controls.

2 Enable one or more of the following features:
   • Open program windows in display
   • Use CenterPOPUP
   • Center dialog boxes

3 Choose where you want the program window or dialog box to appear.

For more information, see Matrox PowerDesk help.

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

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

Solution Select the highest display resolution available. This generally results in better image quality. (While using two digital monitors at the same time, certain limitations may apply. For more information, see page 39.)
## Video

The following troubleshooting items address problems related to video files.

### Problem: Video file playback is jerky (skipping frames)

| 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, the problem can only be fixed by recapturing the video under better conditions. |
|-------|

#### 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** *(or All Programs)* → **Accessories** → **System Tools** → **Disk Defragmenter**.

#### Solution
If possible, try using a faster disk.

| 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 drive 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** *(double-click)* → **Control Panel** → **Performance and Maintenance** *(depending on your version and configuration of Windows, this part of the step may not be necessary.)* → **System** → **Hardware** → **Device Manager**.

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).
**Problem** Can’t view video

**Cause** Your display settings may be too high.

**Solution** Try lowering your display settings (resolution, color palette, and/or refresh rate). For information on changing display settings, see “Display setup”, page 12.

**Cause** Under certain conditions, certain video may not be viewable with your secondary display.

**Solution** Try using your main display instead.

**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 – Use default Windows mouse pointers:

1. Click **Start → Settings** → **Control Panel → Printers and Other Hardware → Mouse**.
   (* 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**.

**Cause** You may be viewing digital video with the secondary display of your DualHead-supporting graphics card. On a secondary display, mouse pointers are drawn in a way that may cause them to flicker or disappear while they’re over a video window.

**Solution** View digital video with the main display of your DualHead-supporting graphics card.
DVD

The following troubleshooting items address problems related to DVD. (For general video-related troubleshooting items, see “Video”, page 32.)

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 32).

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 36

TV output

The following troubleshooting items are related to TV output support (see “TV output”, page 34).

Problem TV image is garbled or unusable
(a blank screen, or 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 6.
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.


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/XP –
1 Right-click your Windows desktop background, then click Properties → Settings.
2 Move the Screen area (Windows 2000) or Screen resolution (Windows XP) 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.

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 6.

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 – If you’re using the DualHead 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:

2. Click DVDMax Options.
3. Select Preserve aspect ratio.
4. Select the aspect ratio of your TV (4:3 or 16:9 – most TVs are 4:3).
5. Select Detect based on video window size.
6. Click OK or Apply for your changes to take effect.
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 16).

**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**  
Windows 2000/XP – Make sure your sound card’s Windows software settings are correct.

1. Double-click the speaker icon (speaker) 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 the “Show volume control on the taskbar” check box.
   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 the “Place volume icon in the taskbar” check box.
   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.

**Note:** Depending on your sound driver, certain labels may be different. For example, **Line In** may be labeled **Line**.

**Cause** The problem may be specific to the sound card you have.

**Solution** For more information, see your sound card manual.

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**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 Acrobat file (Doc\English\Guide\Guide_en.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).

- Matrox graphics cards that can support a secondary display have the Matrox DualHead feature.

- The secondary display of your graphics card only supports a 16- or 32-bit color palette.

- 3D acceleration is only available with a 16- or 32-bit color palette.

- The display resolutions available depend on your Matrox graphics card, display driver and software monitor settings. Different software monitor settings have different resolutions available to them. With your software monitor settings, some of the resolutions listed in this section may not be available, or resolutions not listed in this section may be available. For more information on software monitor settings with Windows 2000/XP, see “Monitor setup”, page 12.

- Many Plug-and-Play monitors don't automatically report if they’re capable of 1152×864, or 1600×1200 and higher display resolutions. To use these resolutions, or higher refresh rates than those reported by the monitor, you can use the Matrox monitor selection method. To use Matrox monitor settings with Windows 2000/XP, see “Monitor setup”, page 12.

- The maximum refresh rates listed in this section have been rounded and are based on a monitor with a maximum horizontal refresh rate of 130 kHz. Depending on your monitor, refresh rate capabilities may vary. For information on the capabilities of your monitor, see your monitor documentation.

- If you’re using BNC connectors with a Plug-and-Play monitor, the Plug-and-Play feature of your monitor can’t be used. To use the Plug-and-Play feature of your monitor, instead of the BNC connectors, use the 15-pin connector at the back of your monitor.

- In multi-display mode, each monitor has its own monitor settings (refresh rates).

- LFH-60 and Dual-DVI – 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.
You may experience problems viewing certain types of video (for example, DVD video). If you experience this problem, try lowering your display settings (resolution, color palette, and/or refresh rate). If you're having problems viewing video with your secondary display, try using your main display instead. For information on changing display settings, see "Display setup", page 12.

**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.

<table>
<thead>
<tr>
<th>Display resolution</th>
<th>16 colors</th>
<th>256 colors</th>
<th>32 K colors</th>
<th>64 K colors</th>
<th>16 M colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 × 400</td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>640 × 480 (VGA)</td>
<td></td>
<td>101</td>
<td>110</td>
<td>111</td>
<td>112</td>
</tr>
<tr>
<td>800 × 600</td>
<td>102</td>
<td>103</td>
<td>113</td>
<td>114</td>
<td>115</td>
</tr>
<tr>
<td>1024 × 768</td>
<td></td>
<td>105</td>
<td>116</td>
<td>117</td>
<td>118</td>
</tr>
<tr>
<td>1280 × 1024</td>
<td></td>
<td>107</td>
<td>119</td>
<td>11A</td>
<td>11B</td>
</tr>
</tbody>
</table>
# Hardware information

## Features

<table>
<thead>
<tr>
<th></th>
<th>Millennium G550</th>
<th>Millennium G550 Low-profile PCI</th>
<th>Millennium G550 PCIe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graphics chip</strong></td>
<td>Matrox G550 (256-bit DualBus)</td>
<td>Matrox G550 (256-bit DualBus)</td>
<td>Matrox G550 (256-bit DualBus)</td>
</tr>
<tr>
<td><strong>Main RAMDAC</strong></td>
<td>360 MHz</td>
<td>360 MHz</td>
<td>360 MHz</td>
</tr>
<tr>
<td><strong>Secondary RAMDAC</strong></td>
<td>230 MHz</td>
<td>230 MHz</td>
<td>230 MHz</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>32 MB</td>
<td>32 MB</td>
<td>32 MB</td>
</tr>
<tr>
<td><strong>Memory type</strong></td>
<td>DDR (Double Data Rate) SDRAM</td>
<td>DDR (Double Data Rate) SDRAM</td>
<td>DDR (Double Data Rate) SDRAM</td>
</tr>
<tr>
<td><strong>DualHead</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>TV output†</strong></td>
<td>(Composite video and S-video, NTSC and PAL)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Card type</strong></td>
<td>AGP 2x and 4x compatible</td>
<td>PCI</td>
<td>PCIe x1</td>
</tr>
<tr>
<td><strong>Form factor</strong></td>
<td>ATX or low-profile</td>
<td>Low-profile</td>
<td>ATX or low-profile</td>
</tr>
</tbody>
</table>

* For Matrox products with a single connector, DualHead is supported with a dual-monitor cable (see "Connection setup", page 6).
† See "TV output", page 14.

## Environmental specifications

- Minimum/maximum ambient operating temperatures: 0 to 55º C
- Minimum/maximum storage temperature: -40 to 75º C
- Maximum altitude for operation: 3,000 meters
- Maximum altitude for transport: 12,000 meters
- Operating humidity: 20 to 80% relative humidity (non-condensing)
- Storage humidity: 5 to 95% relative humidity (non-condensing)
- Estimated MTBF (Mean Time Before Failure): 19 years – for the model with the lowest estimated MTBF under normal working conditions
- Power consumption: ~11.4 W (PCB: 7012-02; Main display: 1600 × 1200, 16 bits, 92 Hz; Secondary display: 1600 × 1200, 16 bits, 85 Hz)
Digital monitor information (certain models only)

- 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 39.

Maximum card dimensions for ATX cards (AGP version)
Maximum card dimensions for low-profile cards (AGP version)

- Maximum length: 6.6 in. / 16.77 cm
- Maximum width: 2.54 in. / 6.45 cm
- Maximum depth: ≤ 0.75 in. / ≤ 1.91 cm
- Height: 0.36 in / 0.91 cm
Maximum card dimensions for ATX cards (PCIe version)

4.35 in. / 11.05 cm

≤ 0.75 in. / ≤ 1.91 cm

3.577 in. / 9.09 cm

0.331 in / 0.84 cm
Maximum card dimensions for low-profile cards (PCIe version)

- Width: 6.35 in. / 16.13 cm
- Height: 2.712 in. / 6.89 cm
- Depth: ≤ 0.75 in. / ≤ 1.91 cm

- Width: 6.35 in. / 16.13 cm
- Height: 2.712 in. / 6.89 cm
- Depth: ≤ 0.75 in. / ≤ 1.91 cm
Customer support

Matrox Web

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.

Technical support

Matrox values your business and offers professional support for your Matrox product.

If your product was purchased through a Matrox dealer, contact your dealer for product support. This is the quickest and most effective method of technical assistance. Your dealer is familiar with your complete system.

If your product was purchased through Matrox, 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.
**Driver and software download**

A more recent display driver may support more features and may offer increased capabilities (such as higher display resolutions). Matrox makes the latest display drivers, software, and system utilities available on the Matrox Technical Support Web site (www.matrox.com/graphics/en/support/drivers).

**View your warranty information**


**Register your Matrox product**

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

**Where to get information**

For display 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 (or All 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.)
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Matrox warrants to you, for a period of 90 days normal use from your date of purchase, that:

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6. The Software is properly recorded upon the CD/disks included.

7. The documentation is substantially complete and contains all the information Matrox deems necessary to use the software.

8. The Software functions substantially as described in the documentation.

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

Remark for the Matrox hardware products supported by this guide   This equipment has been tested
and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These
limits are designed to provide reasonable protection against harmful interference in a residential installation. This
equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the
instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference
will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception,
which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference
by one or more of the following measures: • Reorient or relocate the receiving antenna • Increase the separation between
the equipment and receiver • Connect the equipment into an outlet on a circuit different from that to which the receiver
is connected • Consult the dealer or an experienced radio/TV technician for help.

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

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

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

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

CANADA

(English) Industry Canada Compliance Statement

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

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

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

JAPAN

VCCI Compliance Statement

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

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

Remark for the Matrox hardware products supported by this guide

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

(Résumé) 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


(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 ed è risultato conforme 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.
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.

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


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


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


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.
Matrox TV-output Release Note

/10945-401-0100 2008.01.28

These notes contain important information about your Matrox graphics card. Due to the last-minute nature of these notes, they're in English only. We apologize for the inconvenience.

Remark for the Matrox TV-output adapter

WARNING: Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

While using the TV-output adapter with a Matrox Millennium G550 low-profile product, your Matrox product complies to the following regulatory compliance statements.

USA

FCC Compliance Statement

Remark for the Matrox hardware products supported by this guide
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

CANADA (English) Industry Canada Compliance Statement

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

(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 A digital device. They have been tested

Matrox TV-output Release Note 1/2
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 A compliant host system. It is assumed that these products will also achieve compliance in any class A 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 A. 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 A. On suppose qu’ils présenteront la même compatibilité dans tout système compatible classe A.

(Deutsch) Information für europäische Anwender – Konformitätserklärung

(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 A. 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 A. Inoltre, si dà per scontato che questi prodotti acquisiranno la conformità in qualsiasi sistema conforme alla classe A.

(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 A. 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 A. Se supone que estos productos cumplirán también con las normas en cualquier sistema que responda a los requisitos de la clase A.
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