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ENGLISH



Marvel G400-TV

• User Guide •

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Using this guide

This guide assumes you're familiar with basic functions like click, right-click and double-click, and that you're familiar with the basics of the operating system you're using. Also, we use the following conventions:

- **Bold** for text that appears on-screen, subheadings and labels.
- *Italics* for file names, paths, publication titles, and new terms.
- ***Bold Italics*** for emphasis.
- Keyboard keys in square brackets, with a plus sign separating keys that you press simultaneously. For example: press [Ctrl]+[Alt]+[Del] to restart your computer.
- Arrows (“→”) to separate ordered directions. For example, “click **OK** → **Close** → **OK**” is the same as “click **OK**, then click **Close**, then click **OK**”.
- When viewing online, **green** for cross-references and **underlined green** for links to Web pages. Click green text to jump to what is being referenced. (To jump to Web pages, your system first needs to have full Internet access.)

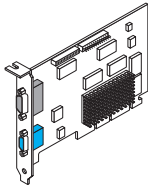
i **Note:** This guide makes references to labels on external video devices. The actual labels on your video devices may not be worded exactly the same. Different manufacturers sometimes use different labels for the same type of controls and connectors. For example, the **VIDEO IN** connector on your TV may be labeled **VIDEO 1** (or **VIDEO 2**). To match labels, see the documentation for your video devices.

i **Note:** If your Matrox product was included with your computer or your copy of this guide wasn't included with your Matrox product, parts of this guide may not apply to you. Specifically, your Matrox product may not include the same software referred to in this guide and you may not be eligible for direct Matrox customer support.

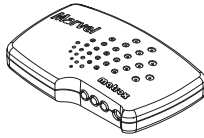
Overview

Thank you for purchasing Matrox Marvel. Discover a whole new universe of digital video with your Matrox card: view, record and edit video on your computer; play the latest 3D games using your TV; record computer video on your video recorder; use your computer as a digital video recorder; and much more. Marvel turns your computer into a home entertainment center and digital video editing studio.

Hardware supplied



Matrox Marvel card



Marvel connector box



Marvel cable



2 composite (RCA)
audio/video cables

Software supplied

- **Matrox PowerDesk** – to use your Matrox graphics hardware
- **Matrox Video Tools** – to use your Matrox video editing hardware
- **Matrox PC-VCR Remote** – to view and record digital video
- **Other software** – see the CD-ROM *Readme* file

Installation overview

To install your Matrox product:

- 1 Install the Matrox card – see [“Hardware installation”](#), page 6.
- 2 Connect your video input and output – see [“Connection setup”](#), page 9.
- 3 Install the software – see [“Software installation”](#), page 19.

Hardware installation

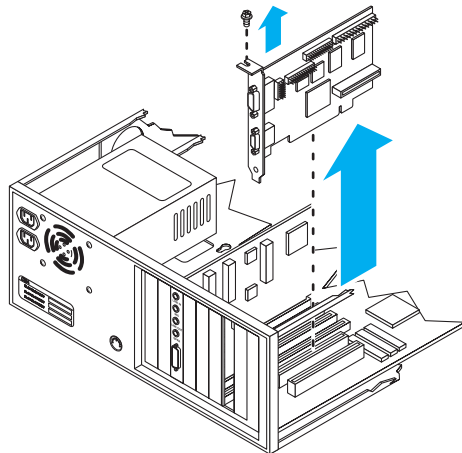
⚠ WARNING: Static electricity can severely damage electronic parts. Before touching any electronic parts, drain the static electricity from your body. You can do this by touching the metal frame of your computer. When handling a card, hold it by its edges and avoid touching its circuitry.

This section describes how to install your Matrox card. To install, you'll need a Phillips screwdriver (star-shaped head). For information specific to your computer, like how to remove its cover, see your system manual.

1 Remove old graphics card *

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

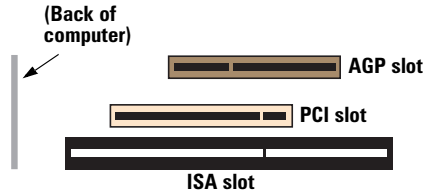
- a** Turn off your computer and unplug your monitor from it.
- b** Remove your computer cover, then carefully remove your old graphics card from your computer. Save the card's fastening screw.



* With multi-display mode, you may be able to use your existing graphics card. For Windows 98, see Windows 98 online help under "Multiple Display Support".

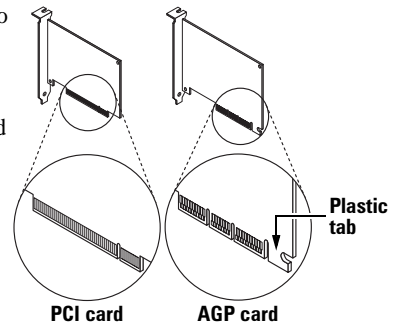
2 Locate the AGP slot in your computer

- a Most computers have different types of expansion slots. Your Matrox graphics card is an AGP card. Locate the AGP slot in your computer. Your system manual should identify the location of each type of expansion slot in your computer.
- b Remove the cover for the slot you intend to use (if it's not already removed). Save the screw for the mounting bracket. (If another slot is uncovered, you can seal it with the cover you just removed.)



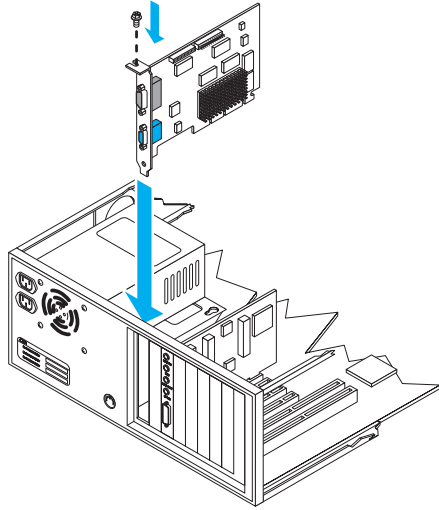
WARNING: Inserting your Matrox card into the wrong type of slot could damage your card, your computer, or both.

Don't insert the plastic tab of your AGP card (see picture) into the slot.



3 Insert Matrox Marvel 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 Replace the screw to secure the bracket of your Matrox card to the computer frame.
- d Put your computer cover back on.



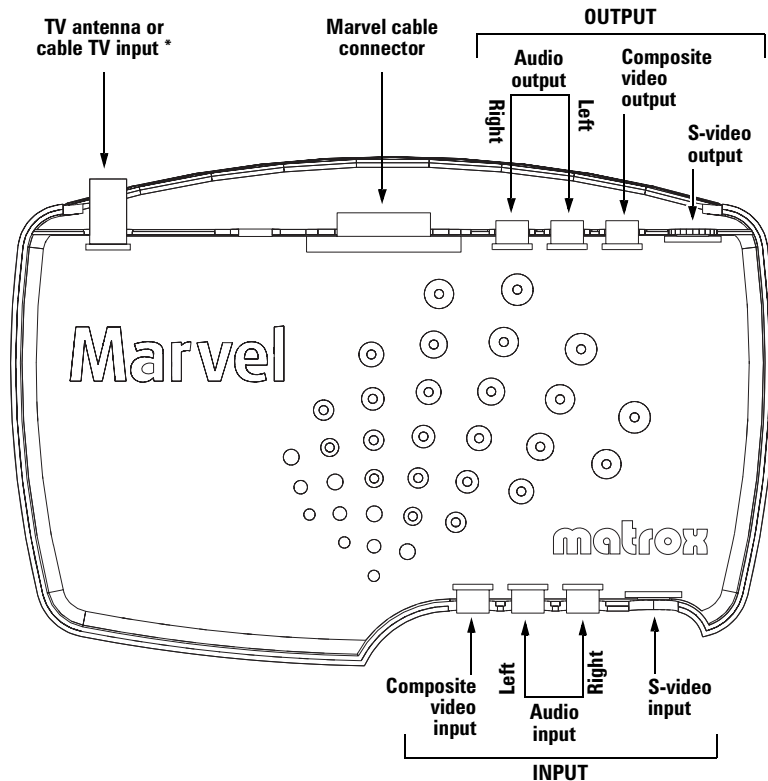
Your Matrox card is now installed. **Before restarting your computer**, connect your external devices (see “[Connection setup](#)”, page 9). **After connecting your external devices**, restart your computer and install your Matrox software (see “[Software installation](#)”, page 19).

Connection setup

After the Matrox Marvel card is installed, you need to connect your external video devices (TV, video recorders, and so on), then install the Matrox video software. This section describes how to connect video devices to your computer.

Marvel connector box overview

Your Marvel product comes with a Marvel connector box. With this box, you can access the connections to your external devices more easily. This is useful anytime you want to change your connection setup – for example, you may want to switch from video conferencing with a video camera to recording video from a video recorder.

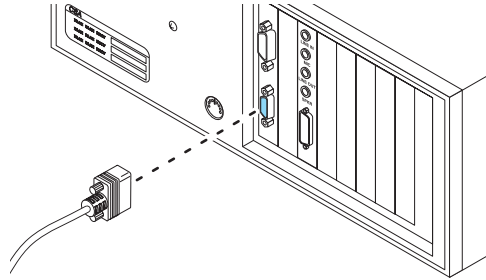


* Certain Matrox Marvel products don't include a TV tuner. If your Marvel product doesn't include a TV tuner, your Marvel box doesn't have a connector for TV antenna or cable TV input.

Quick connection setup

1 Connect computer monitor

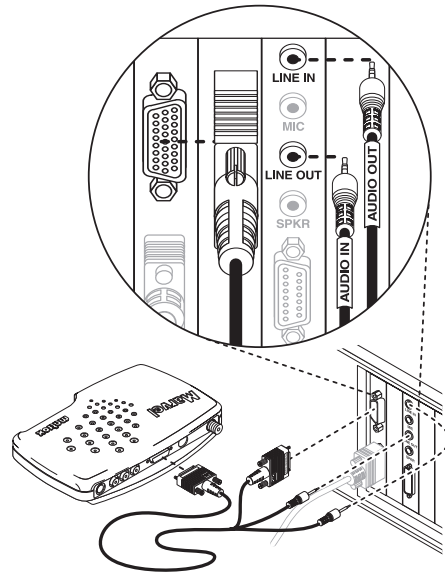
- a Plug the cable for your computer monitor into the blue connector on your Matrox card.
- b Make sure the other end of the monitor cable is properly connected to your monitor.



2 Connect Marvel cable

Use the special cable included with your Marvel card.

- a Plug the end labeled **TO MARVEL board** into your Marvel card.
- b Plug the end labeled **AUDIO OUT** into the **LINE IN** connector on your sound card.
- c Plug the end labeled **AUDIO IN** into the **LINE OUT** connector on your sound card.*
- d Plug the other end into the Marvel connector box.



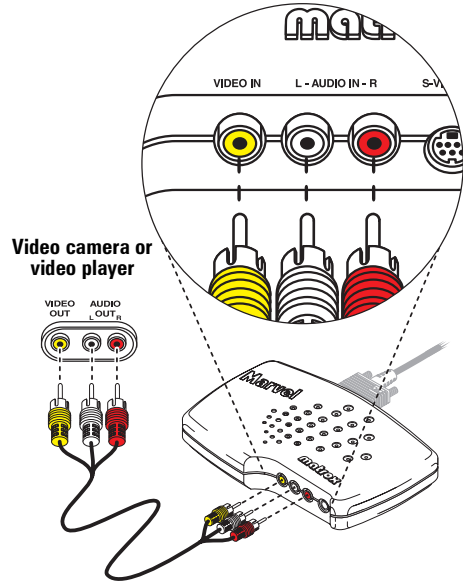
* If your sound card has no **LINE OUT** connector, you can use its **SPKR** connector instead. In this case, all your computer sound output goes to the video device you connected to.

3 Connect Marvel audio/video input

Use one of the two composite audio/video (RCA) cables supplied with Matrox Marvel. (The yellow connectors are for video, white and red are for audio left and right.)

- a Plug the yellow, white and red connectors on one end of the cable to the connectors of the same color on the *front* of the Marvel connector box.
- b Connect the other end of the cable to the **VIDEO OUT** and the left and right **AUDIO OUT** connectors on your video camera or video player*. If your video device has only one audio connector, use the left audio connector on the cable.

For more information on this type of connection, see “[Matrox Marvel input](#)”, page 16.

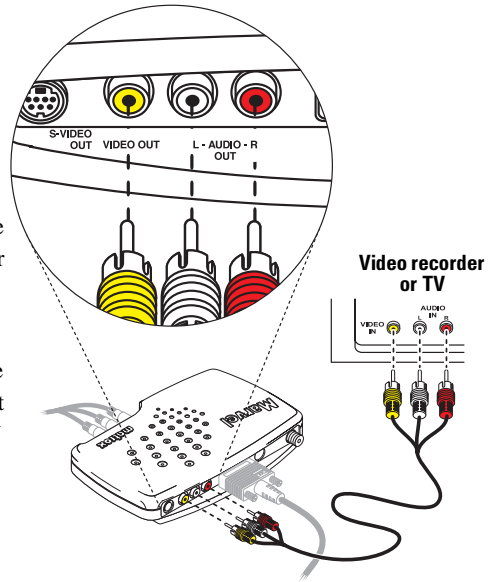


* A *video player* can be any device that generates a video signal. For example, a VCR, videodisc player or DVD player.

4 Connect Marvel audio/video output

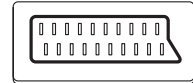
Use one of the two composite (RCA) audio/video cables supplied with Matrox Marvel.

- a Plug the yellow, white and red connectors on one end of the cable to the connectors of the same color on the **back** of the Marvel connector box.
- b Connect the other end of the cable to the **VIDEO IN** and **AUDIO IN** (left and right) connectors on your TV or video recorder. If your video device has only one audio connector, use the left audio connector on the cable.



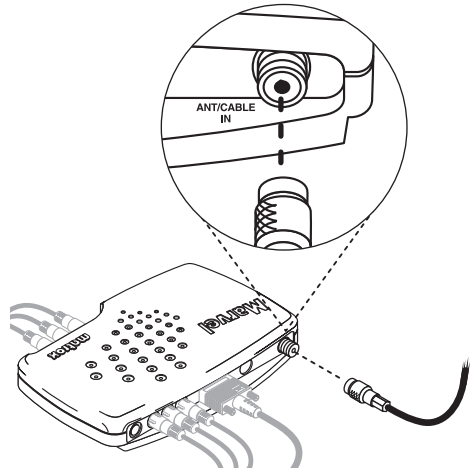
If you connect to a video recorder and you want to see your computer output on a TV, connect your TV to your video recorder. For more information, see “[Matrox Marvel output](#)”, page 17.

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- i** **Note:** If your video recorder or TV **only** uses a SCART audio/video connector (see picture), you may need to purchase a SCART video connector. For more information, see “[SCART information](#)”, page 15.
-

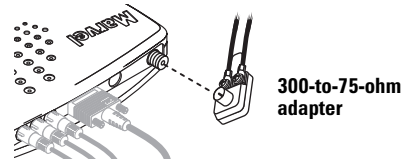


5 Connect TV antenna or cable TV

If your Marvel connector box has an **ANT/CABLE** connector, you can attach a TV antenna or cable TV directly to it. (If your connector box doesn't include TV tuner support, the opening for this connector is sealed.)



i **Note:** If the cable from your antenna is flat and ends with twin leads, you need a 300-to-75-ohm adapter to connect to the **ANT/CABLE** connector (see picture). You can find this type of adapter at most electronics stores.



S-video and composite video

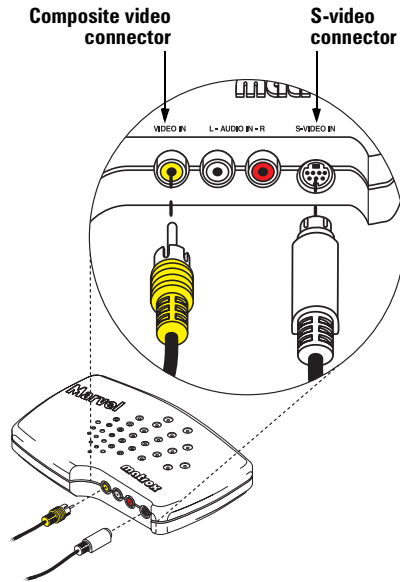
The Marvel connector box has two *composite video* connectors (one input and one output), and two *S-video* connectors (one input and one output). Most video equipment uses composite video, but some devices (for example, S-VHS VCRs) use S-video, which is a higher quality video signal.

If you have a video device with S-video connectors, you should use a Matrox **S-VIDEO IN** or **S-VIDEO OUT** connector. If your S-video device didn't come with S-video cables, this type of cable is available at most electronics stores.

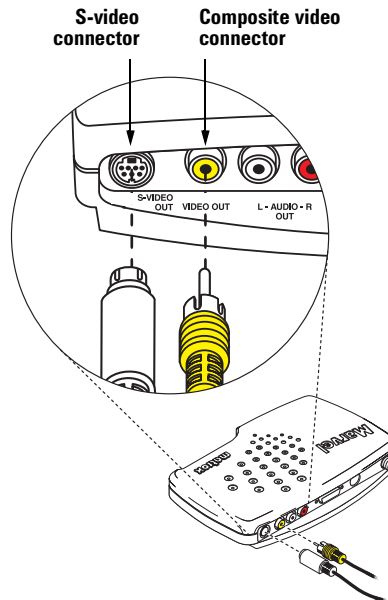
You can use the Matrox S-video connectors instead of – or in addition to – the composite video connectors. If you use composite and S-video connectors, you can connect up to four video devices to Matrox Marvel at the same time (two input and two output).

Matrox Marvel video output is *simultaneous* on its composite (**VIDEO OUT**) and S-video (**S-VIDEO OUT**) lines.

Both video input types may be connected at the same time, but only one video input signal at a time can be used by Matrox Marvel. You need to select either the composite video (**VIDEO IN**) or S-video (**S-VIDEO IN**) signal in the software (see page 34 and page 39).



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

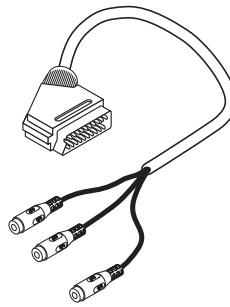


SCART information

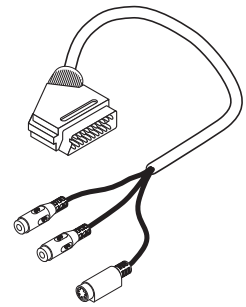
Some video devices in Europe only have SCART connectors. This type of connector includes video *and* audio, whereas composite or S-video connectors include only video.

If your TV or video recorder *only* has a SCART connector, you need a SCART cable adapter to connect to Matrox Marvel. If you don't already have a SCART adapter, you should be able to purchase one from your local electronics store.

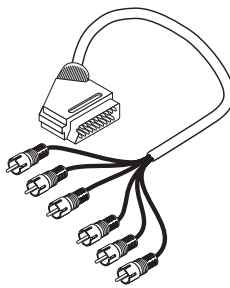
- To connect your TV or video recorder to Matrox *output* or *input*, you need a SCART adapter with **3 connectors** – 2 audio and 1 video.
- To connect your video recorder to both Matrox *input and output*, instead you need a SCART adapter with **6 connectors** – 2 audio inputs, 1 video input, 2 audio outputs, 1 video output.
- There are different SCART adapters for composite and S-video. If you're not sure which your TV or video recorder supports, see its manual. If your TV or video recorder uses S-video, the video connectors on your SCART adapter should be for S-video cables instead of composite (RCA) video cables.



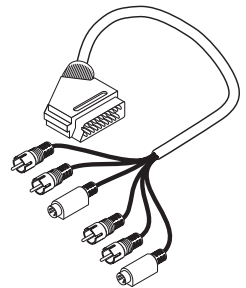
Composite SCART adapter with 3 connectors



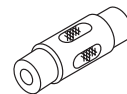
S-video SCART adapter with 3 connectors



Composite SCART adapter with 6 connectors



S-video SCART adapter with 6 connectors



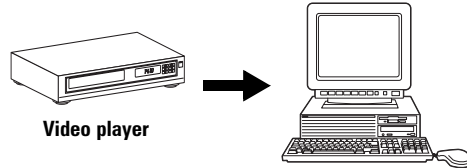
Male-to-male adapter (RCA)

To use a SCART adapter, connect your audio/video cables to the SCART adapter, then connect the adapter to your TV or video recorder. Depending on the type of SCART adapter you're using, you may need *male-to-male* adapters to attach your audio/video cables to it. For more information on connecting to a TV or video recorder, see [“Quick connection setup”](#), steps 2–4.

i **Note:** Unauthorized recording or use of broadcast television programming, video tape or other copyrighted material may violate copyright laws. Matrox assumes no responsibility for the illegal duplication, use or other acts which infringe on the rights of copyright owners. Your Matrox product may not let you record from a copy-protected video source.

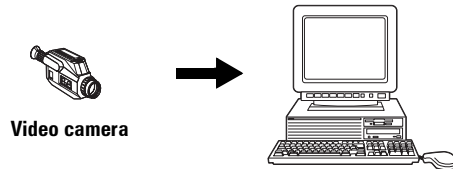
Video player as input

If you connect the output of your video player to your computer, you can view, record and edit the video from your video player on your computer. To connect, see steps 2 and 3 starting on page 10. For more information, see your video player manual.



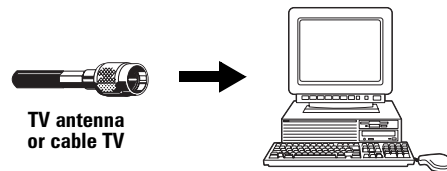
Video camera as input

If you connect a video camera to your computer, you can view, record and edit live video on your computer. You can also video conference. To connect, see steps 2 and 3 starting on page 10. For more information, see your video camera manual.



TV antenna or cable TV as input

If your Marvel connector box has an **ANT/CABLE** connector, you can connect a TV antenna or cable TV directly to Matrox Marvel. With this setup, you can use software to watch TV, change channels and record TV programs like a VCR.* To connect, see steps 2 and 5 starting on page 10.



* You can also use a VCR as a TV tuner for your computer by connecting your TV antenna or cable TV to your VCR (see your VCR manual), and connecting your VCR to your computer.

Matrox Marvel output



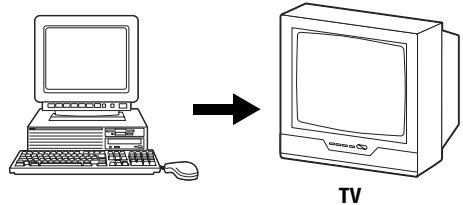
WARNING: Continuous on-screen displays, like your Windows desktop, can cause permanent damage to TV screens. This damage appears as “pattern burns” on your TV screen. This type of damage may not be covered by the warranty for your TV, and Matrox assumes no responsibility for such damage.

To help avoid this problem, you can use the Windows “**Blank Screen**” screen saver, or turn off your TV when you’re not using it.

Output to TV

If your TV has line connectors* (composite, S-video or SCART) and you want to use it to view video directly from your computer:

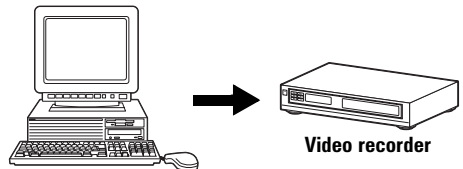
- 1 Connect your computer output to your TV input (see steps 2 and 4 starting on page 10).
- 2 If your TV has a **TV/VIDEO** switch, set it to **VIDEO**. For more information, see your TV manual.



Output to video recorder†

If you want to record video from your computer onto video cassette:

- 1 Connect your computer output to your video recorder input (see steps 2 and 4 starting on page 10).
- 2 Make sure your video recorder **TUNER/LINE** input switch is set to **LINE**. For more information, see your video recorder manual.

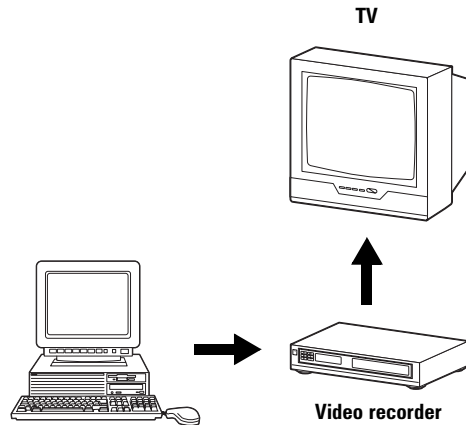


* If your TV only has an antenna or cable TV connector, you can use an *RF modulator* (available in most electronics stores) to connect directly.

† Your Matrox product may not let you record from a copy-protected video source.

Output to TV through your video recorder

If you want to view computer video on your TV *and* record it on your video recorder, you can connect through your video recorder. There are two ways to do this: you can use line connectors (composite, S-video or SCART) or antenna/cable TV connectors. A line connection is higher quality, but some TVs only have an antenna or cable TV input connector.



To use line connectors:

- 1 Connect your computer output to your video recorder input (see steps 2 and 4 starting on page 10).
- 2 Make sure your video recorder **TUNER/LINE** input switch is set to **LINE**.
- 3 Connect your video recorder's **VIDEO OUT** and **AUDIO OUT** to your TV's **VIDEO IN** and **AUDIO IN**.
- 4 If your TV has a **TV/VIDEO** input switch, set it to **VIDEO**.

To use antenna or cable TV connectors:

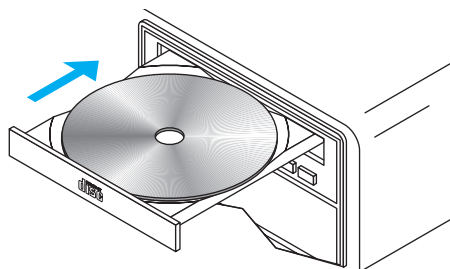
- 1 Connect your computer output to your video recorder input (see steps 2 and 4 starting on page 10).
- 2 Make sure your video recorder **TUNER/LINE** input switch is set to **LINE**.
- 3 Connect your video recorder's antenna or cable output to your TV antenna/cable input.
- 4 If your TV has a **TV/VIDEO** input switch, set it to **TV**.
- 5 **North America only:** Change the channel on your TV to 3 or 4, depending on how the **CHANNEL** switch on your video recorder is set.

For more information, see your video recorder and TV manuals.

Software installation

W9x After installing the Matrox Marvel hardware and connecting it to your external video devices (TV, VCR, and so on), you need to install software. This section describes how to install Matrox software for *Windows 95/98*.

(For other software, see the *Readme* file in the root folder of the Matrox installation CD-ROM.)



Matrox Marvel Installation CD-ROM

1 Restart your computer

W9x Turn on your computer and all devices connected to it. Windows 95/98 detects new hardware when you restart. If Matrox display drivers haven't been previously installed, Windows reports finding a PCI adapter (even if you have an AGP card). Windows prompts you to install a display driver. Follow the on-screen instructions. (The Matrox Windows 95/98 display driver is in the *Win9x* folder of your Matrox installation CD-ROM.)

2 Install required software

After your computer has restarted, insert (or reinsert) the Matrox installation CD-ROM in your CD-ROM drive – the setup program automatically starts.* This setup program works with Windows 95/98, and detects which operating system you're using. If the required display software isn't already installed, the setup program automatically prompts you to install this software. Follow the on-screen instructions.

After the required display software is installed, you're prompted to restart your computer for changes to take effect. Leave your Matrox CD-ROM in your CD-ROM drive.

3 Test your system performance

If a hard disk in your computer hasn't been tested before by Matrox software, the **Matrox HD Benchmark** program starts. This program tests the speed of hard disks and reports the results. The results are saved and affect the maximum settings you can select with the **Matrox PC-VCR Remote** program (see page 35). Disk speed affects the quality of video file recording and playback. After the test is finished, click **OK** to continue.

* If Windows doesn't automatically start the setup program, you can start it manually from the root folder of the CD-ROM.

4 Test your connection setup

If this is a first-time installation, the **Matrox Quick Connect** program automatically starts. This program lets you interactively test your computer's connections to external video devices. Follow the on-screen instructions and when you're done, exit this program to continue.


5 Install optional software

After your computer restarts, the setup program shows you a list of additional items you can install. Select each item you want to install, then follow the on-screen instructions.

More software information

We provide important additional information in online documentation, including help files, *Readme* files, and Adobe Acrobat PDF (Portable Document Format) files. To view or print PDF files, use the **Acrobat Reader** program, which you can install from the Matrox installation CD-ROM (*Guides\English\ar40eng*).

This guide is available on the CD-ROM as a PDF file (*Guides\English\marv_eng.pdf*). The online version of this guide has additional information, including the following sections: “**Matrox PC-VCR Remote program**”, “**Matrox VidCap driver**”, “**Extra troubleshooting**”, “**Display information**”, “**Hardware information**”, “**Customer support**”, “**Warranty**” and “**Software license agreement**”.

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.

Be sure to check for any last-minute release notes at the end of this manual and in the Matrox CD-ROM *Readme* file. The CD-ROM *Readme* file also contains information on other software included on the CD-ROM. For more information on other software, see the documentation included with the software (on the CD-ROM or installed with the software).

Matrox PowerDesk software


Matrox PowerDesk display drivers and utilities help 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:



- W9x** ■ **Windows 95** – Right-click your Windows desktop background, then click **Properties**.
- W98** ■ **Windows 98** – 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 access Matrox PowerDesk property sheets more quickly, you can double-click the QuickDesk icon () on your Windows taskbar.

i **Note:** The Matrox display driver for Windows 95/98 supports multiple displays with Windows 98. For more information on multi-display mode, see Windows 98 online help under “Multiple Display support” and see “DualHead Multi-Display setup”, page 22. (Windows 95 doesn't support multiple displays.)

Monitor setup

Before changing your display resolution, color palette, or other Matrox PowerDesk settings, make sure correct software monitor settings are selected. The following explains how to do this.



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



Windows 95/98 – 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**.

- 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:

- 1 Access the PowerDesk **Monitor Settings** property sheet (see “[Accessing PowerDesk property sheets](#)”, page 21).
- 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.



Notes:

- 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 Windows 95/98, Matrox monitor settings are based on Windows monitor settings. If you change your Windows monitor settings, you may have to reselect or readjust your Matrox monitor settings.



- In multi-display mode (Windows 98 only), each display has its own monitor settings (refresh rates).
-

DualHead Multi-Display setup

Your Matrox graphics card allows you to enable a second display (a TV) as part of your Windows desktop. This is the Matrox *DualHead Multi-Display* feature. To use this feature:



Windows 98 –

- 1 Access the PowerDesk **DualHead** property sheet (see “[Accessing PowerDesk property sheets](#)”, page 21).
- 2 Select the **DualHead Multi-Display** option button.
- 3 Click **OK** → **Yes** to restart your computer and for changes to take effect.
- 4 If multi-display mode isn't automatically enabled when you restart Windows:
 - a Right-click your Windows desktop background, then click **Properties** → **Settings**.
 - b Select the disabled display, enable the **Extend my Windows desktop onto this monitor** check box, then click **OK**.

W_{9x} Other DualHead features

If you're using Windows 95/98, 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 DVDMax** – Play digital video in a window on your main display and, at the same time, view that video full-screen on a TV.
- **DualHead Zoom** – Use your secondary display to view a zoomed-in portion of your main display.

TV output setup

Use TV output mode to view or record your computer display with a video device (TV or video recorder). This video device is connected to the Matrox **VIDEO OUT** or **S-VIDEO OUT** connector (see “Connect Marvel audio/video output”, page 12). To use TV output mode:



WARNING: Because *some* computer monitors don't support TV settings, a computer monitor may become garbled or unusable if it uses TV settings. If this happens, you can simply turn off your computer monitor and use your TV to view your computer display.

Also, *some* computer monitors may be damaged if they use the 50 Hz vertical refresh rate used with European TV settings. For more information, see your monitor manual.



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.

To use TV output*

W₉₈ **Windows 98** – To add a TV to your Windows desktop, see “DualHead Multi-Display setup”, page 22.

W_{9x} **Windows 95/98** – You can use the **DualHead Clone**, **DualHead Zoom**, or **DualHead DVDMax** features (see “Other DualHead features”).

To adjust TV settings, access the Matrox PowerDesk **DualHead** property sheet (see “Accessing PowerDesk property sheets”, page 21). To adjust advanced desktop TV settings, click **Desktop TV Settings**. To adjust advanced DVDMax TV settings, click **DVDMax TV Settings**.

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

i **Note:** With the **DualHead Clone** feature (Windows 95/98), you can avoid using TV settings with your computer monitor. You can do this by enabling the **Keep optimal refresh when possible** check box on the **DualHead Clone Options** dialog box.

More PowerDesk information

For more information on Matrox PowerDesk:

W_{9x} **Windows 95/98** –

- Access the PowerDesk **Information** property sheet (see “Accessing PowerDesk property sheets”, page 21), then click **Help** or **View Readme File**.
- Where available, see the PowerDesk context-sensitive help. (Some help topics are only available through context-sensitive help.)

* To enable TV output support for DOS display modes, use **Matrox System Utilities**. You can install this software from your Matrox installation CD-ROM. For more information, see the *Readme* file included with this software.

Troubleshooting

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

i **Note:** More troubleshooting items are in the online version of this guide (see page 30). See also “[More software information](#)”, page 20, and “[More PowerDesk information](#)”, page 24.

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 6.

Cause There may be an unsupported graphics adapter in your computer.

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

Solution If a graphics adapter is built-in to 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 (ISA or 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 “[Locate the AGP slot in your computer](#)”, page 7.
- 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. Your *primary display* is the one that first displays information when your computer restarts. For more information, see “Using multiple displays...”, page 29, solutions 2 and 3.

- 3 Make sure **Matrox System Utilities** are installed on your computer. (These can be installed from your Matrox CD-ROM.)
- 4 Restart your computer in DOS mode, then type:


```
cd c:\matrox\util [Enter]
upbiosdos [Enter]
```
- 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**

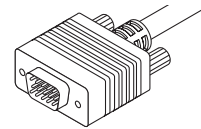
Cause Your monitor’s video controls may be improperly set.

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

Cause Your monitor may not be properly connected.

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

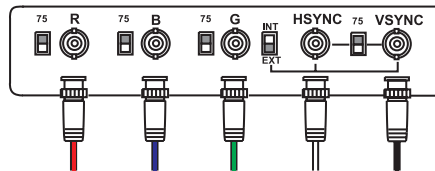
Solution Make sure the 15-pin connector to your Matrox graphics card is firmly in place.



15-pin connector

Solution Make sure the connection to the back of the monitor is firmly in place. This could be a 15-pin or BNC connection.

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.



Bayonet Nut Connect (BNC)

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

Solution Set each of your monitor's 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.

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

Solution Make sure correct software monitor settings are selected.

W9x If your display is still usable, see "Monitor setup", page 21. Otherwise, see the next troubleshooting item.

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

Cause The Matrox display driver may be trying to use settings your monitor doesn't support. This can happen if a monitor was never selected in the software and the display resolution was changed to one your monitor doesn't support, or if the monitor connected to your computer was changed without it being changed 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 95/98 –**



- 1 Press [Ctrl]+[Alt]+[Del] twice to restart your computer.
- 2 **Before** Windows starts, press [F8] for the Windows startup menu to appear. (With Windows 98, if [F8] doesn't work, instead try pressing and holding [Ctrl] before Windows starts.)
- 3 Select the number for "safe mode", then press [Enter].
- 4 Right-click the Windows desktop background, then click **Properties** → **Settings**.
- 5 Move the **Desktop area** (Windows 95) or **Screen area** (Windows 98) slider down to its lowest setting, then click **OK**.
- 6 Restart your computer normally.
- 7 Make sure the correct monitor is selected in Windows (see "Monitor setup", page 21).
- 8 Make sure you're not using inappropriate monitor setting customizations: Access the PowerDesk **Monitor Settings** property sheet (see "Accessing PowerDesk property sheets", page 21), then click **Delete all customizations**.

- 9 Restore your original display settings (see steps 4 and 5).





Note: In multi-display mode (Windows 98 only), each display has its own monitor settings (refresh rates).

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

Solution After you've made sure that your Matrox hardware is properly installed, try removing the current display drivers, then install Matrox display drivers:



Windows 95/98 –

- 1 If your display is currently unusable, press [Ctrl]+[Alt]+[Del] twice to restart your computer. Otherwise, click  → **Shut Down** → **Restart the computer**.
- 2 *Before* Windows starts, press [F8] to see a startup menu. (With Windows 98, if [F8] doesn't work, instead try pressing and holding [Ctrl].)
- 3 Select the number for “safe mode”, then press [Enter].
- 4 If an old version (before version 5.x) of Matrox PowerDesk software is installed, remove it: click  → **Settings** → **Control Panel** → **Add/Remove Programs** (double-click) → **Matrox PowerDesk** → **Add/Remove** → **Complete Uninstallation** → **OK**.
- 5 To switch to a standard (VGA) display driver, right-click your Windows desktop background, then click **Properties** → **Settings**, then:
 - If you see the **Advanced Properties** button, click **Advanced Properties** → **Change** → **Show all devices** → **Standard display types** → **Standard Display Adapter (VGA)** → **OK** → **Close** → **Close** → **Yes**.
 - If you see the **Change Display Types** button, click **Change Display Types** → **Change (Adapter)** → **Show all devices** → **Standard display types** → **Standard Display Adapter (VGA)** → **OK** → **Close** → **Close** → **Yes**.
 - If you see the **Advanced** button, click **Advanced** → **Adapter** → **Change** → **Next** → **Display a list of all the drivers...** → **Next** → **Show all hardware** → **Standard display types** → **Standard Display Adapter (VGA)** → **Next** → **Yes** → **Next** → **Finish**.
- 6 Install the latest Matrox display drivers for your graphics card – run the setup program, then follow the on-screen instructions.

Problem **Using multiple displays under Windows 98,**
W₉₈ **program (for example, a game) doesn't work with main graphics card**

Cause Your main graphics card may not be controlling your primary display. Your *primary display* is the one that first displays information when your computer restarts. Programs that don'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 (ISA, PCI or AGP – see “Locate the AGP slot in your computer”, page 7) 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.

More troubleshooting

The online version of this guide (see page 20) has extra troubleshooting items dealing with problems such as:

- Can't use Windows 95/98, Windows reports a configuration error, and/or can't install or uninstall display driver
- After game for Windows 95/98 starts, monitor doesn't display properly
- Matrox Diagnostic or setup program reports an IRQ problem
- Game for Windows 95/98 doesn't start or runs slower than normal
- After restarting computer, Windows 95/98 warns that the graphics card isn't configured correctly
- Screen image defects appear or program doesn't run properly
- Can't use a video program
- Can't record video from a video player
- No picture in PC-VCR Remote video window
- Can't create Matrox MJPEG video files
- Video file playback is jerky (skipping frames)
- Poor video capture quality
- Mouse pointer flickers or disappears when it's over a video window
- PC-VCR Remote reports that it doesn't detect the TV tuner or there's no TV in the video window when 'TV' input is selected
- DVD video playback is jerky (skipping frames)
- Can't play certain DVD videos
- TV image is garbled or unusable
- Computer monitor becomes garbled or unusable while in TV output mode
- Computer text is hard to read with a TV
- Poor TV image quality
- Video appears stretched or squished on a TV
- Sound doesn't record, video files play back with no sound, or sound output is distorted or too loud

Matrox PC-VCR Remote program

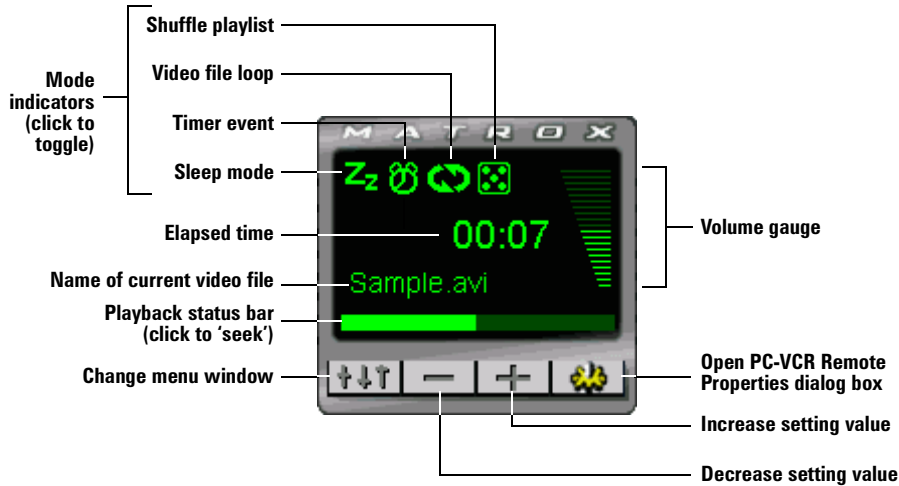
With the Matrox PC-VCR Remote program, you can use your computer like you would a TV or VCR. To start, double-click the **PC-VCR Remote** icon (⊗) on the Windows desktop background. The first time you start PC-VCR Remote, you see the PC-VCR Remote and its video window. Use the PC-VCR Remote to control what you see in the video window and what you record to file.

PC-VCR Remote interface



* Matrox TV tuner required. Only certain Matrox Marvel products include a TV tuner.

PC-VCR Remote menu window (with video file playback)



Input setting

After you've made sure your external video devices are properly connected, click an **INPUT** button on the PC-VCR Remote to select a video source for the video window.* This input setting affects many PC-VCR Remote controls. Select a button based on what kind of input you want to use:





- **FILE** – for video file playback.
- **TV** – to use a Matrox TV tuner (if available).
- **LINE** – to use a device connected to your Matrox **VIDEO IN** or **S-VIDEO IN** connector. This can be a video camera or video player.

Video file input

With PC-VCR Remote, you can play AVI, MOV, MPG, MPS and DAT video files, including the video files you record with PC-VCR Remote (AVI files).

To view a video file

- 1 On the PC-VCR Remote, click the **FILE** button.
- 2 Click **Open Video Files** (), then select a video file in the resulting dialog box.
- 3 Click **Play** ().


* There are maximum video window resolutions (sizes). We recommend you use a 16-bit color palette setting for your display. For more information, see page 69.

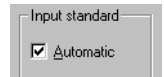
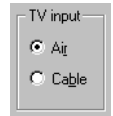
TV tuner input (Matrox TV tuner required)

If your Matrox product includes a TV tuner, you can view, record and edit TV programs on your computer, like you would with a VCR. However, instead of using the controls on your VCR, you can use the PC-VCR Remote software controls.

TV tuner software setup

To make sure PC-VCR Remote is set up to use your Matrox TV tuner:

- 1 Click the **TV** input button on the PC-VCR Remote.
- 2 Click **Properties** () → **TV Setup**.
- 3 Click a **TV input** button to indicate what your Matrox TV tuner is connected to:
 - **Air** – for an antenna.
 - **Cable** – for cable TV.
- 4 Click **Advanced**, select the country you're in, then click **OK**.
- 5 Click the **Video** tab, then make sure the **Automatic** check box (in the **Input standard** group box) is enabled.
- 6 Click the **TV Setup** tab → **Auto Scan** button for PC-VCR Remote to automatically search all channels and keep in memory only the ones that can be tuned.
- 7 Adjust any other settings you want, then click **OK** to save settings and close the dialog box.



TV channel preview

To see the TV channel preview window, right-click the PC-VCR Remote, then click the **TV Preview** menu item. By resizing this window, you can preview up to 30 channels at a time. Use the scroll bar to preview different channels. If PC-VCR Remote **FAVORITES** feature is enabled, only the channels defined as your “favorites” are visible in the preview window.


The video window and the TV channel preview window can't be viewed at the same time. To view a particular channel in the video window and close the preview window, double-click a channel in the preview window.

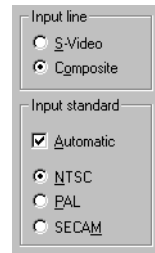
Video line input

When the PC-VCR Remote **LINE** button is selected, the video window displays the signals coming from a device connected to your Matrox **VIDEO IN** or **S-VIDEO IN** connector. This can be a video camera or video player (see “[Matrox Marvel input](#)”, page 16).

You can record from your video camera or video player to a digital video file. You can then play back this video file with PC-VCR Remote, or edit it with another program (see “[Avid Cinema program](#)”, page 42).

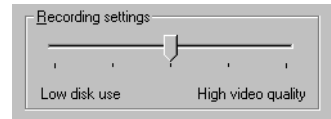
Before you record to a video file

- Make sure the video camera or video player is properly connected to your Matrox **VIDEO IN** or **S-VIDEO IN** connector. For more information on how to connect video devices, see “[Connection setup](#)”, page 9.
- Make sure your Windows sound card settings are correct. For more information, see “[Sound](#)”, page 64.
- Make sure your PC-VCR Remote property settings are correct. Click the **Properties** button () on the PC-VCR Remote to access its setting controls:
 - On the **Video** property sheet, select the Matrox input line you want to use (composite or S-video) and the TV standard your video camera or video player uses (NTSC in North America; PAL in most of Europe; or SECAM in France). For PC-VCR Remote to automatically detect the TV standard, enable the **Automatic** check box. If this check box is enabled, there may be a delay of a few seconds when you change the **INPUT** setting.
 - On the **Recording** property sheet, select the path where you want to save your video file and select your video capture options for PC-VCR Remote. Move the **Recording settings** slider to increase or decrease the frame size and rate of recordings. The higher the frame size, the higher the video quality, but also the more disk space you'll need.Look at the **Max recording time** box to see the maximum amount of time you can record to a video file. This time is based on the currently selected capture settings and the amount of free space on the disk where your video file will be recorded.



Recording settings

The maximum frame size and rates you can select with the **Recording settings** slider are based on the currently selected capture settings (see “[Capture options](#)”) and the disk where the video file will be created. Higher-quality capture settings generally require a disk that can store information faster. PC-VCR Remote determines how fast your disk can store information by checking the results saved by the **Matrox HD Benchmark** program.



Capture options


On the **Recording** property sheet, click the **Capture Options** button to select your video capture type:

MJPEG – Click this button to use hardware-based Matrox MJPEG (Motion-JPEG) video compression. Video files you create with this button selected are smaller, and as a result, your disk can store longer videos and handle more video at a time. When your disk can handle more video at a time, you get *higher-quality* video file recording and playback.


Video files you create with this button selected are still Audio Video Interleaved files (*.avi), but only someone with a Matrox video editing card and its software drivers can use them. This is because Matrox video editing cards have special hardware to decompress MJPEG-encoded video files. You can adjust the image quality of Matrox MJPEG digital video by moving the **MJPEG quality** slider in the same dialog box.


RGB* – Click one of these buttons to record uncompressed video files.

* With PC-VCR Remote, **RGB** digital video is always in *overlay* mode. For more information on overlay mode, see “[Overlay and preview modes](#)”, page 41.

For more information on PC-VCR Remote property settings, click “” on the title bar of the dialog box, then click a dialog box item.

Recording to a video file

- 1 Click the **LINE** button on the PC-VCR Remote. You should see video in the PC-VCR Remote video window; if not, see “[Before you record to a video file](#)”, page 34.
- 2 Click **Record** (.

If you click **Record** once, PC-VCR Remote will record to video file until you click **Stop** () or run out of disk space. If you click **Record** again, PC-VCR Remote will record for 2 minutes; click again and PC-VCR Remote will record for 4 minutes; and so on.

Mini remote

If you don't want to use the full-sized PC-VCR Remote, you can use the "mini remote". The mini remote is a toolbar added to the PC-VCR Remote video window. The mini remote replaces the "full remote". To use the mini remote, right-click the PC-VCR Remote, then click **Use Mini Remote** on the resulting pop-up menu.





Mini remote toolbar (FILE input)


Pause your mouse pointer over each mini remote button to see a pop-up tooltip identifying it. There are different buttons on the mini remote depending on the type of input selected.

To return to using the full remote again, right-click the PC-VCR Remote video window, then click **Use Full Remote** on the resulting pop-up menu.


More features

To access more features, click the **Properties** button () on the PC-VCR Remote. You can also right-click PC-VCR Remote or its video window to quickly access some features. Here's a partial list of what else you can do with PC-VCR Remote:

Full-screen video window  Double-click the PC-VCR Remote video window to make its video image fill your entire computer display.* Double-click again to restore the video window to its original size.



TV program timer () You can program the PC-VCR Remote like you would a VCR. You can schedule weekly, daily or one-time-only TV program events which do one of three things:

- Make the PC-VCR Remote video window appear.
- Save Closed Captioning text to a file (North America only).
- Record video and audio input to a file.

Closed Captioning () Save Closed Captioning text to a file. If the current PC-VCR Remote video input signal supports the Closed Captioning service used in North America, click the **Closed Captioning** button to show or hide text information encoded in the video signal. (This feature doesn't work with the Teletext service used in Europe.)




* If your display area setting is too large, **TV** and **LINE** input and playback from Matrox MJPEG-encoded AVI video files may appear centered on a black screen when viewed "full-screen". Playback from other types of AVI files may appear blocky when viewed full-screen because of the way the video is encoded.


Teletext  Browse Teletext information. If the current video input signal (TV input only) supports the Teletext service used in Europe, click the **Teletext** button  to start a separate Teletext program. This Teletext program lets you browse information encoded in the video signal. Use the Teletext browser to change Teletext pages, and use PC-VCR Remote to change channels. For more information on how to use the Teletext program, see its online Help. For more information on the Teletext service, contact your TV provider.

Keyword detection Create lists of words that PC-VCR Remote automatically searches for in the Closed Captioning information of a video signal. Depending on how you set it up, PC-VCR Remote will make the video window appear, save Closed Captioning text to a file, or record the video and audio input to a file when it finds a keyword. (This feature does not work with the Teletext service used in Europe.)


Sleep mode  Have PC-VCR Remote close automatically after a certain amount of time.

Shuffle playlist  Shuffle the video files in the current playlist into random order. (To use this feature, enable **Use Playlist** first.)

Loop video files  Play video files continuously.

Video snapshots Click the **Video Snapshot** button () on the PC-VCR Remote to save a digital still image (“frame capture”) of the current PC-VCR Remote video window. Video snapshots can be saved as bitmap (*.bmp) or JPEG (*.jpg) files. You can adjust the quality, and as a result the file size of JPEG video snapshots.

Video window cropping If the PC-VCR Remote **LINE** or **TV** button is selected, hold down the [Shift] key, then click the video window display area. This opens a dialog box that lets you trim the edges of the video window display. This is useful for hiding information along the edges of a video image or if you just want to see part of your video window display. You can also hold down the [Ctrl] key, then drag in the video window to crop. To restore cropping settings, right-click the video window, then click the **Reset Cropping** menu item.







 **Note:** In a video window with no cropping, the edges of video images may appear distorted. You normally don’t see this distortion on a TV because most TVs crop the edges of video images. Professional video equipment doesn’t produce this distortion but consumer-quality video equipment may. You can use the cropping feature of PC-VCR Remote to hide this distortion.

Hot keys Assign keyboard shortcuts to many PC-VCR Remote controls.

Audio With a sound card installed in your computer, you can adjust your computer’s sound output with the PC-VCR Remote.

TV tuner If your Matrox product includes a TV tuner, you can:

- Simultaneously preview up to 30 channels in a single window.
- Change channels with PC-VCR Remote controls.
- Schedule TV program timer events for different channels.
- Password-protect certain TV channels (“parental lock”).
- Auto Scan for tunable TV channels.
- Define certain channels as your favorites and quickly skip to those channels with the PC-VCR Remote channel up and down buttons.

To turn some features on or off, click the PC-VCR Remote mode indicators (, , , , ). For more information on PC-VCR Remote features and controls, see its context-sensitive help. Click “” on the title bar of a dialog box, then click a dialog box item.

Matrox VidCap driver

Video capture programs (*other than* Matrox PC-VCR Remote and Avid Cinema) use the Matrox **VidCap** driver interface. For example, when you use Ulead **Photo Express**, you see the Matrox VidCap driver interface when you adjust video settings. This section describes VidCap source and format setting controls.

Video source settings

Video channel – Click a button in this group box to select a source:

S-video – to capture video from a video camera or video player connected to your Matrox **S-VIDEO IN** connector.

Composite video – to capture video from a video camera or video player connected to your Matrox **VIDEO IN** connector.

TV tuner* – to capture video from your Matrox TV tuner.

Depending on what's connected to your Matrox **ANT/CABLE** connector, click one of these buttons:

- **Air band** – for a TV antenna.
- **Cable band** – for cable TV.

With the **Channel** box, select the channel you want to use. Click **Set** to apply your selection.

For more information, see [“Connection setup”](#), page 9.

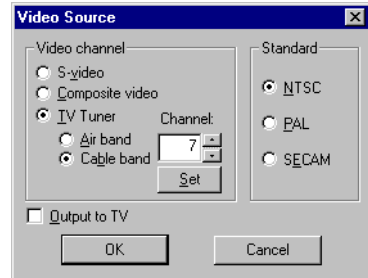
Standard – Click a button in this group box to identify the TV standard used by your video source:

NTSC – for most North American video devices.

PAL – for most European video devices.

SECAM – for video devices using the TV video standard from France.

The VidCap driver automatically assigns the correct standard used by your current video source. VidCap won't let you select a TV standard it doesn't detect.



* Matrox TV tuner required. Only certain Matrox Marvel products include a TV tuner.

Output to TV – Enable this check box if you want your video source to appear full-screen on a TV connected to your Matrox graphics card. This feature can only take effect if no other DualHead feature (see page 22) is being used.

Video format settings

RGB – Click an RGB button to select an uncompressed video file format. Use an RGB format to video conference and to capture still images. The bit values represent how many bits of information are used for color palette information; the larger the bit value, the more colors can be used, but the larger the file size.

8-bit – 256 shades of gray

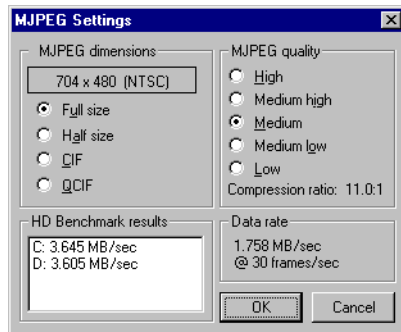
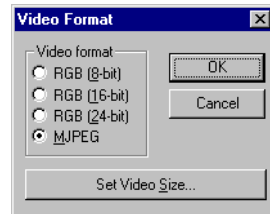
16-bit – 65,536 colors

24-bit – 16,777,216 colors

MJPEG – For more information, see “Capture options”, page 35.

Set Video Size – Click this button to adjust the video image size (resolution) settings for the currently selected format (RGB or MJPEG). For MJPEG, you can also select its quality setting.

Also, with MJPEG you can compare the speed of your hard disks (**HD Benchmark results** box) with the speed required by the selected settings (**Data rate** box). (The data rate estimate *doesn't* take audio into account.) If the hard disk you're using is too slow, video files you capture may appear jerky.



Overlay and preview modes

The video capture program you're using may give you a choice of *overlay* or *preview* modes. If the **MJPEG** video format is selected, overlay and preview settings have no effect. If an **RGB** video format is selected, overlay and preview settings affect how video is viewed or captured:

- With overlay mode, everything *on* the video window is captured. For example, any part of a dialog box overlapping the video window appears in the captured video.
 - With preview mode, you will get a lower frame rate (resulting in jerky video) and you may not be able to view or capture video if there isn't enough graphics memory available. The amount of graphics memory available depends on how much memory is on your graphics card, the size of the video window, and the resolution and color palette settings of your display.
-

Avid Cinema program



Discover the fun of making movies

With Avid Cinema and your Matrox Marvel card, you're in the director's chair. With them, you can create movies right on your computer.

Avid Cinema leads you through the movie-making process. You can write a storyboard for your movie, bring your footage into your computer, add photos, art, music and sound, edit into a finished product, and then share your movie through a variety of formats: videotape, Internet, e-mail, CD-ROM or Microsoft PowerPoint.

This section gives you an idea of what you can do with Avid Cinema. As you use Avid Cinema to plan and edit movies, you'll discover other powerful features to make your movies more interesting.

As you learn more about making movies, you'll discover new ways to use Avid Cinema. To get started, try the Avid Cinema online tour with Cecil B. DeMovie. If you prefer, you can jump right into editing your own movies. For more information on movie-making with Avid Cinema, see the product's online help.



Cecil B. DeMovie



File formats supported for import

In addition to capturing video from your video camera or video player, you can put graphics, photographs, sounds, music and other videos into your movie. The file formats supported by Avid Cinema include:

- Graphics – PhotoCD, GIF, JPEG, BMP
- Sound – AIFF, WAV, CDA
- Video – AVI, CMA, MOV, VFW, FLI, FLC

File formats supported for output

Avid Cinema lets you record your movie to videotape or save it in any of these formats:

- **Avid Cinema** – MJPEG AVI or QuickTime format
- **Presentation** – AVI format
- **Internet** – AVI or QuickTime format
- **4x CD-ROM** and **2x CD-ROM**

Overview of making movies with Avid Cinema

Avid Cinema's on-screen tabs are designed to lead you through the steps in the movie-making process:

- **Step 1 – Planning and shooting your movie**
- **Step 2 – Bringing video into your movie**
- **Step 3 – Editing your movie**
- **Step 4 – Finishing your movie**



Step 1 – Planning and shooting your movie

You can start bringing video in without a plan for your movie, but for better results, you should start with a plan. Organize your thoughts with an Avid Cinema storyboard.

A storyboard is a shot-by-shot plan for a movie. Each idea you visualize translates into a shot you'll film or import. You can write a storyboard for yourself or to give to others who will help you bring your ideas to life. With the storyboard, you can capture your ideas about what you will do in the editing phase of movie making.

You can plan your movie around a generic story, like “Birthday Party”, then personalize it. Generic stories are called storyboard templates and Avid Cinema provides them for shooting and editing family occasions, school events and business presentations. (You can select templates by clicking the **Plan** button in the **Welcome** dialog box.) You can also start with a blank storyboard and write the story of your movie from scratch.

1 Storyboard 2 Bring Video In 3 Edit Movie 4 Finish Movie

New Shot

Filming Tips
 Editing Tips

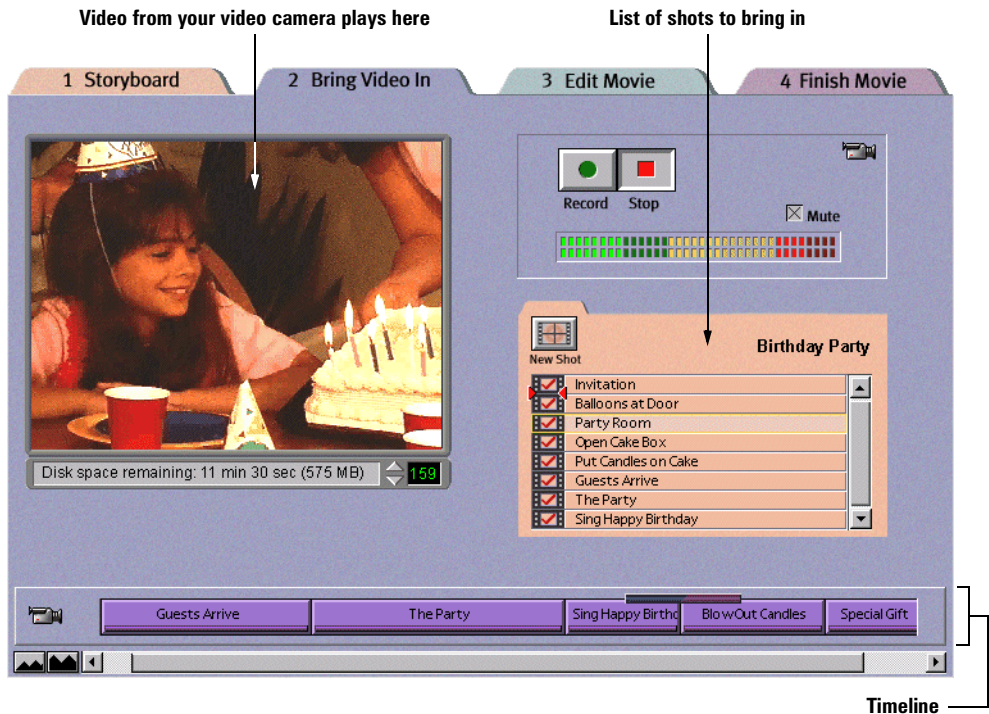
Birthday Party

1	Invitation 20 to 25sec.
2	Balloons at the Door 3 to 5sec.
3	Party Room 12 to 15sec.
4	Opening Cake Box 4 to 6sec.

Step 2 – Bringing video into your movie

Before you edit your movie, you need to transfer your footage to your computer. Make sure your video camera or video player is properly connected to your computer (see “[Connection setup](#)”, page 9), then use the **Bring Video In** tab to transfer your video shot by shot.

Each shot you bring in becomes a video clip in the *Timeline*. The Timeline is where you assemble and edit your movie – it shows all clips in the movie in storyboard order. Since your storyboard appears as a shotlist on this tab, you can rearrange it here and organize your timeline for the next step, editing your movie.



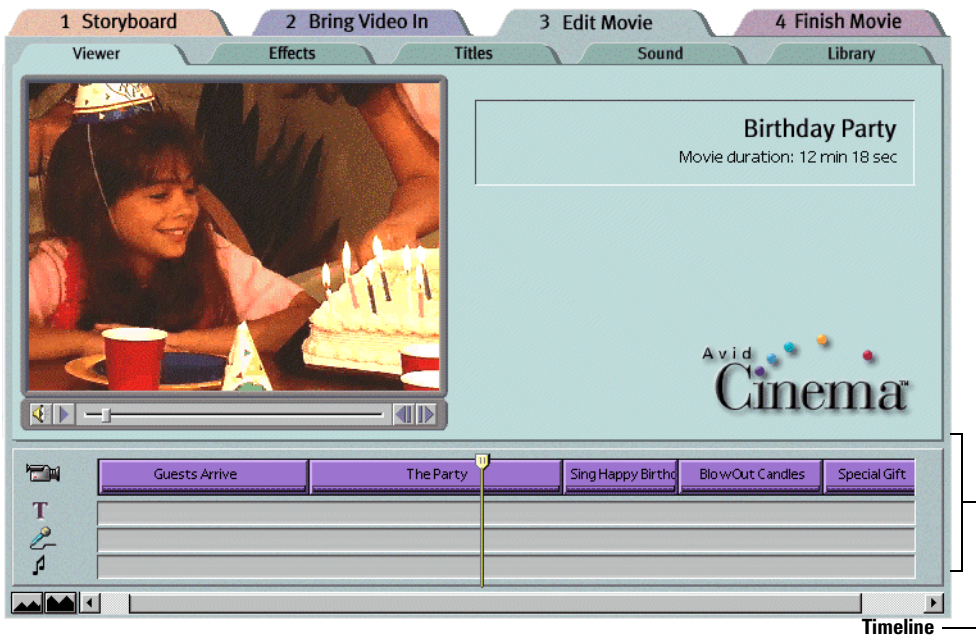


Step 3 – Editing your movie

Now the real fun begins – you're ready to edit your movie. The **Edit Movie** tab contains a series of smaller tabs for viewing and rearranging sections of your movie, and for adding effects, titles, sound and graphics files.

With the **Viewer** tab, you make your movie better by rearranging and trimming clips. For example, you can split clips into two, then insert other material in the split, or work with your two new pieces

The Timeline is expanded on the **Edit Movie** tab. This is so you can create effects between clips, and add titles, narration and music.





Creating effects

With the **Effects** tab, you can create interesting transitions between clips. For example, you can use a *clockwipe* effect as a transition to the next clip in your movie. With Avid Cinema, you can choose from dozens of different effects.



Adding titles

With the **Titles** tab, you can superimpose text over video. You can add stationary text, such as titles and captions, or scrolling text, such as closing credits. You can select the font, size and color you want to set the tone of your movie: use a stately font and somber color for a serious title, or a cool font and bright color for a fun title.

Adding music and narration

With the **Sound** tab and your computer microphone, you can record narration over your movie as it plays. Or place a music or sound effects CD in your computer's CD-ROM drive and import audio tracks.

Using the Library

With the **Library** tab, you can add a variety of media files to your movie, including:

- Scanned-in photographs
- Graphics
- Music from a music CD
- Sound effects
- QuickTime movies


Step 4 – Finishing your movie

With the **Finish Movie** tab, you can view your finished movie full-screen, record it onto videotape or save a version for Internet or e-mail distribution. You can also include your movie in an on-screen PowerPoint presentation.



1 Storyboard 2 Bring Video In 3 Edit Movie 4 Finish Movie

Birthday Party




Start Stop

- Preview movie
- Play movie full screen
- Save movie to videotape
- Save movie for...

Internet ▼

Save your movie in this format if you want to publish it on a Web site or send it out on the Internet.

 More about Avid Cinema...

More information

For complete information on Avid Cinema, see the product tour and online help included with the software.

Copies of the Avid Cinema *Making Movies* guide

In addition to using the Avid Cinema Tour and online help, you can learn to use the product with the well-illustrated book, *Making Movies*. You can order copies of the book from the Avid Cinema Web site (www.avidcinema.com).

If you have a problem

- 1 See the Avid Cinema online help for troubleshooting information.
- 2 See [page 25](#) and [page 50](#) in this manual for more troubleshooting information.
- 3 If you still have a problem, see [page 73](#).



Extra troubleshooting

Graphics

The following troubleshooting items address problems related to graphics cards.

Problem **Can't use Windows 95/98, Windows reports a configuration error, and/or can't install or uninstall display driver**

W
9x


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

Solution **For advanced users** – Manually remove any old or new display drivers, then reinstall the latest display driver for your Matrox graphics card:

- 1 Restart your computer, then *before* Windows starts, press [F8] to see a startup menu. (If [F8] doesn't work in Windows 98, instead try pressing and holding [Ctrl].)
- 2 Select the number for "safe mode", then press [Enter].
- 3 Right-click the **My Computer** icon on the Windows desktop background, then click **Properties** → **Device Manager**.
- 4 Click the plus sign next to **Other devices** (if it appears) and **Display adapters**. Delete all listed display adapters (click each, then click **Remove**), then click **OK**.
- 5 In the following folders, remove all files or folders related to "PowerDesk" (*pd*.**), "Matrox" or "MGA". (For more information on some files, right-click on them in Windows Explorer, then click **Properties** → **Version**. The following paths assume default installations and may be different on your computer.)
 - *C:\Windows\Start Menu\Programs\StartUp*
 - *C:\Windows\Startmenu\Programs*
 - *C:\Windows\System*
 - *C:\Program Files*



Note: Recent versions of Matrox PowerDesk for Windows 95/98 (5.x and later) install files only to your Windows *System* folder.

- 6 Click  → **Run**, type *regedit*, then click **OK**.
- 7 Under **HKEY_LOCAL_MACHINE** → **SOFTWARE**, remove all items starting with “Matrox” or “MGA”.



Note: Recent versions of Matrox PowerDesk for Windows 95/98 (5.x and later) store registry settings under **HKEY_CURRENT_USER** → **SOFTWARE**. *Your* settings under **HKEY_CURRENT_USER** are only accessible if you’re logged into Windows with your user name.

- 8 Restart your computer, then install the latest display drivers for your Matrox graphics card. You may also need to reinstall other Matrox software.

Problem After game for Windows 95/98 starts, monitor doesn’t display properly **W**_{9x} **(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, press [Ctrl]+[Alt]+[Del] *once* for the **Close Program** dialog box, and then click the **End Task** button.
 - 2 Access the Matrox PowerDesk **Monitor Settings** property sheet (see “[Accessing PowerDesk property sheets](#)”, page 21).
 - 3 Click **Select customizations from the Matrox list**.
 - 4 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 Matrox Diagnostic or setup program reports an IRQ 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 95/98 –

- 1 Access the Matrox PowerDesk **Options** property sheet (see “[Accessing PowerDesk property sheets](#)”, page 21).

- 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 95/98 – To check the display adapter's IRQ:

- 1 Right-click the **My Computer** icon on the Windows desktop background, then click **Properties** → **Device Manager**.
- 2 Click the plus sign to the left of the **Display adapters**. An "X" through an icon means the hardware has been disabled. A circled exclamation point through the icon means the hardware has a problem.
- 3 Double-click the name of your Matrox display adapter to open a properties dialog box. The type of problem is displayed in the **General** tab → **Device status** area. Check also the **Resources** tab → **Resource type** list for an **Interrupt Request**.

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

Solution Change settings in your computer's CMOS 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 CMOS setup utility.

For more information on your computer's CMOS setup utility, see your system manual or contact your system manufacturer.

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

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

Problem **Game for Windows 95/98 doesn't start or runs slower than normal**

W_{9x}

(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:

- 1 Access the Matrox PowerDesk **Information** property sheet (see “[Accessing PowerDesk property sheets](#)”, page 21).
- 2 Look at the **Microsoft DirectX** label.

Solution If DirectX 6.1 or later isn't installed, install it. Run the setup program from the *DirectX* folder of the Matrox installation CD-ROM.

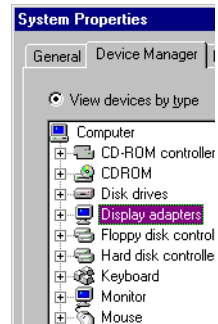
Problem **After restarting computer, Windows 95/98 warns that the graphics card isn't configured correctly**

W_{9x}

Cause You may have a conflict because of previously installed display drivers.

Solution Delete all existing display drivers and reinstall Matrox display drivers:

- 1 If Windows 95/98 prompts you to start the **Add New Hardware Wizard**, click **Cancel**. (If you start the Wizard, it will *not* detect your graphics card.)
- 2 Right-click the **My Computer** icon on the Windows 95/98 desktop.
- 3 Click **Properties** → **Device Manager**.
- 4 Click the plus sign next to **Other devices** (if it appears) and **Display adapters**.
- 5 Delete *all* listed display adapters (click each, then click **Remove**), then click **OK**.
- 6 Restart your computer and reinstall the Matrox display drivers (see page 19).



Problem Screen image defects appear or program doesn't run 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:

W_{9x} Windows 95/98 –

- 1 Access the Matrox PowerDesk **Options** property sheet (see “[Accessing PowerDesk property sheets](#)”, page 21).
- 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 If possible, update your Matrox display driver. Matrox makes new display drivers available on the Matrox Web site (www.matrox.com/mga) and BBS (see page 73).

Solution Disable Matrox hardware acceleration:

W_{9x} Windows 95/98 –

- 1 Right-click the **My Computer** icon on the Windows desktop background.
- 2 Click **Properties** → **Performance** → **Graphics**.
- 3 Move the **Hardware acceleration** slider to **None**.
- 4 Click **OK** → **Close** → **Yes** to accept the changes and restart your computer.

Cause Windows 95/98 – There may be a conflict between resources in your system.

Solution **W_{9x}** 1 Right-click the **My Computer** icon on the Windows desktop background, then click **Properties** → **Device Manager**.


- 2 Click the plus sign next to **Other devices** (if it appears) and **Display adapters**.
- 3 Delete any display adapter *other than* the one for your Matrox graphics card.
- 4 Restart your computer.

i **Note:** If you identify a program that doesn't work well with Matrox acceleration, please contact Matrox technical support (see page 74) and describe the problem. This information may help us come up with a fix or work-around in a future driver release.

Video

The following troubleshooting items address problems related to digital video.



For a list of notes, problems and limitations, click  **Start** → **Programs** → **Matrox Video Tools** → **Read Me**.


Problem Can't use a video program

(video capture, playback, editing or conferencing programs)

Cause Another program may be using your Matrox video input hardware. Only one program at a time can use Matrox video input hardware.

Solution Close any other program that may use video editing hardware, then restart the program you're using.

Cause Files may be missing or corrupted.

Solution Uninstall then reinstall Matrox video software. To uninstall, click  **Start** → **Settings** → **Control Panel** → **Add/Remove Programs** (double-click) → **Matrox Video Tools** → **Add/Remove** → **Yes**. Insert the Matrox installation CD-ROM in your CD-ROM drive – the setup program automatically starts. (If Windows doesn't automatically start the setup program, you can start it manually from the root folder of the CD-ROM.)

Solution Uninstall then reinstall the program you're having problems with. For more information, see its documentation.

Problem Can't record video from a video player

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 No picture in PC-VCR Remote video window


Cause One or more of your cable connections may be loose or incorrect.

Solution Make sure all your computer connections are firmly plugged in.

Solution Make sure connections are correct (see “[Connection setup](#)”, page 9). To test your connection setup, click  **Start** → **Programs** → **Matrox Video Tools** → **Matrox Quick Connect**.

Solution Make sure the PC-VCR Remote input settings are correct (see “[Matrox PC-VCR Remote program](#)”, page 31).

Cause PC-VCR Remote video tuning settings may be set too low.

Solution Reset the video tuning settings to default values: On the PC-VCR Remote, click **Properties** () → **Video** → **Default Tuning** → **OK**.


Problem Can't create Matrox MJPEG video files (with video editing, video capture or 2D/3D animation programs)

Cause An unsupported video file resolution (size) may be selected.

Solution In the video file creation settings of the program you're using, make sure an MJPEG resolution supported by your Matrox product is selected (see “[Matrox MJPEG resolutions](#)”, page 70).



For information on how to select the video file creation resolution, see the documentation of the program you're using.

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.

 **Windows 95/98** – To defragment a hard disk, click  → **Programs** → **Accessories** → **System Tools** → **Disk Defragmenter**.

If this program isn't installed:

- 1 Click  → **Settings** → **Control Panel**.
- 2 Double-click **Add/Remove Programs**.
- 3 Click **Windows Setup**.
- 4 Double-click **Disk Tools**.
- 5 Enable the **Disk Defragmenter** check box.

- 6 Click **OK** → **OK**. (You may be prompted to insert the Windows 95/98 CD-ROM in your CD-ROM drive.)

Solution Make sure your hard disk is using DMA (if your hard disk supports DMA transfers). To use DMA:

i **Note:** Not all hard disks support DMA well. For more information, see the documentation that came with your hard disk.

W_{9x} **Windows 95/98 –**

- 1 Right-click the **My Computer** icon on your Windows desktop background, then click **Properties** → **Device Manager**.
- 2 Double-click the **Disk drives** list item to expand it, then double-click the name of the hard disk you're using.
- 3 Click **Settings**, then enable the **DMA** check box.
- 4 Click **OK** → **OK** → **Yes** to restart your computer and for changes to take effect.


Solution If possible, try using a faster disk.

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

Solution If possible, recapture the video file using settings that require less disk use. For more information, see "[Capture options](#)", page 35.

Cause If you're using the PC-VCR program for video file playback, tooltips may be interfering with its video window display.

Solution For PC-VCR Remote, disable tooltips:

- 1 On the PC-VCR Remote, click **Properties** () → **General**.
- 2 Clear the **Use tooltips** check box.
- 3 Click **OK** to apply changes and close the dialog box.

Solution For other programs, avoid pausing your mouse pointer over controls.

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

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

Cause Your display settings may be too high. As a result, video file playback may not be fully supported by Matrox hardware.

Solution Try lowering your display settings. We recommend a 1024 × 768 or lower display resolution with a 16-bit color palette.

W_{9x} **Windows 95/98** – To access display settings, see “Accessing PowerDesk property sheets”, page 21.

Cause The video file you’re playing may not be encoded with Matrox MJPEG. Playback of video files *not* encoded with Matrox MJPEG *isn’t* accelerated by Matrox video editing hardware.

Solution Capture your video files with Matrox MJPEG. For more information, see “Capture options”, page 35.

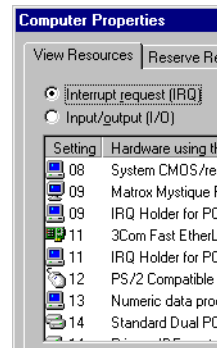
Cause If the problem is specific to Matrox MJPEG video files, Microsoft DirectVideo may be enabled. Matrox MJPEG uses DirectShow, *not* DirectVideo.

Solution Disable DirectVideo. With the **Notepad** program, open the *system.ini* file in your Windows folder and disable the “**VIDS.DRAW=dvideo.dll**” line in the “[drivers32]” section. Disable it by placing a semicolon at the beginning of the line. Save your changes, close the file, then restart your computer.

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

W_{9x} **Windows 95/98** – To see if your graphics card is sharing an IRQ:

- 1 Right-click the **My Computer** icon on your Windows desktop background, then click **Properties** → **Device Manager** → **Properties**.
- 2 Look in the list box to see if your Matrox graphics card is assigned the same IRQ number as another PCI card in your computer.



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 Poor video capture quality

Cause The settings a video file was created with may not be optimal.

Solution If possible, recreate the video file with more optimal settings. If you’re using PC-VCR Remote, see “Before you record to a video file”, page 34.

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 “S-video and composite video”, page 14.


Solution Try changing one or more video devices.

Solution If possible, try using fewer connections. For example, don’t use cable extensions.

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 Use default Windows mouse pointers:

- 1 Click  **Start** → **Settings** → **Control Panel**.
- 2 Double-click the **Mouse** icon, then click the **Pointers** tab.
- 3 In the **Scheme** box, select (or reselect) “(None)”, then click **OK**.

Problem PC-VCR Remote reports that it doesn’t detect the TV tuner or there’s no TV in the video window when ‘TV’ input is selected

Cause Your Matrox product may not include a TV tuner. To confirm this, see the packaging your Matrox product shipped with.

Solution A separate Matrox TV tuner may be available for your Matrox product. For more information, see the Matrox Web site (www.matrox.com/mga).

Cause The video signal coming from your antenna or cable TV may have problems. To test it, temporarily connect it directly to a TV. (If it works okay with your TV, it should work for your Matrox TV tuner.)

Solution Make sure your antenna or cable TV connection to your TV tuner is okay. See “Connect TV antenna or cable TV”, page 13.

Solution If you’re using an antenna, try adjusting it, checking all the connections to it, or using a different antenna.

Solution If you’re using cable TV, contact your cable company.

Cause Software settings may be incorrect.

Solution See “Matrox PC-VCR Remote program”, page 31.

DVD

The following troubleshooting items are specific to DVD. (For general video-related troubleshooting items, see “Video”, page 55.)

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:



Note: Not all DVD drives support DMA well. For more information, see the documentation that came with your DVD drive.



Windows 95/98 – To enable DMA for a DVD drive:

- 1 Right-click the **My Computer** icon on your Windows desktop background, then click **Properties** → **Device Manager**.
- 2 Double-click the **Disk drives** list item to expand it, then double-click the name of the DVD drive you’re using.
- 3 Click **Settings**, then enable the **DMA** check box.
- 4 Click **OK** → **OK** → **Yes** to restart your computer and for changes to take effect.

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.

TV output

The following troubleshooting items address problems related to connecting graphics card output to a TV or video recorder.

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 [page 17](#).

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 properly set up for TV output. Particularly, the TV standard selected may not be correct.

Solution **Windows 95/98** – See “TV output setup”, [page 23](#).

Cause You may be using a DOS display mode *without* your Matrox graphics card being properly configured for DOS TV output. DOS display modes are used for:

- DOS programs that run full-screen
- a full-screen DOS prompt under Windows
- text displayed before Windows starts

Solution Make sure your Matrox graphics card is properly configured to support TV output for DOS display modes. To enable TV output support for DOS display modes, use **Matrox System Utilities**. You can install this software from your Matrox installation CD-ROM. For more information, see the *Readme* file included with this software.

Cause If you're using a program that runs full-screen, this program may be using a display mode that's not supported for TV output.

Solution If the program offers a choice of display modes, select a display mode supported for TV output. For a list of display modes supported for TV output, see [“Supported TV output modes”](#), page 70. For information on how to change display modes with the program you're using, see its documentation.

Solution View the program you're using with your computer monitor instead of your TV.

Problem Computer monitor becomes garbled or unusable while in TV output mode

Cause While in TV output mode, your computer monitor may also use TV settings. Some computer monitors may not support certain TV settings. The 50 Hz vertical refresh rate used with European TV settings is particularly a problem with some computer monitors. See [“TV output setup”](#), page 23.

i **Note:** Your Matrox graphics card may be configured to automatically use TV settings while certain DOS display modes are used. For more information, see the *Readme* file included with your **Matrox System Utilities** software.

Solution **Windows 95/98** – To avoid using TV settings with your computer monitor, enable the **Keep optimal refresh when possible** check box on the **DualHead Clone Options** dialog box. To do this:

- 1 Access the Matrox PowerDesk **DualHead** property sheet (see [“Accessing PowerDesk property sheets”](#), page 21).
- 2 Click **Clone Options**.
- 3 Enable the **Keep optimal refresh when possible** check box.

For more information, see context-sensitive help.

Solution Turn off your computer monitor and use your TV to view your computer display. Your computer monitor will work normally when TV output mode is disabled.

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:

W9x Windows 95/98 –

- 1 Right-click your Windows desktop background, then click **Properties** → **Settings**.
- 2 Move the **Desktop area** (Windows 95) or **Screen area** (Windows 98) 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:

W95 1 **Windows 95** – Right-click your Windows desktop background, then click **Properties** → **Settings**.

W98 **Windows 98** – 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 image quality

Cause Your software TV settings may need adjusting.

Solution See “TV output setup”, page 23.

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 “S-video and composite video”, page 14.

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 Video appears stretched or squished on a TV

Cause **Windows 95/98** – 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:

- 1 Access the Matrox PowerDesk **DualHead** property sheet (see "Accessing PowerDesk property sheets", page 21).
- 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.

For more information, see context-sensitive help.

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 steps 2, 3 and 4, starting on page 10).


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 95/98** – Make sure your sound card's Windows software settings are correct:

W9x

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

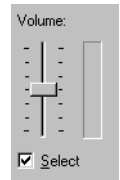
If you *don't* see the speaker icon:

- a** Click  → **Settings** → **Control Panel**.
- b** Double-click the **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.


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 **Select** check boxes are enabled.



i

Note: To access the recording settings of your sound card with Matrox PC-VCR Remote, click **Properties** () → **Recording** → **Audio Levels**.

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** 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.

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

Solution For more information, see your sound card manual.

Display information

Graphics

Notes

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

W₉₈

- **Windows 98** – In *DualHead Multi-Display* mode (see page 22), the graphics memory is divided equally between the main and secondary display. For example, if you have a 16 MB graphics card, the main and secondary displays each have 8 MB available to them. As a result, maximum display capabilities may be affected.
 - In *DualHead Multi-Display* mode (see page 22), the secondary display 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 95/98, see “[Monitor setup](#)”, page 21.
 - 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 95/98, see “[Monitor setup](#)”, page 21.
 - 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.
-

Maximum display resolution

Aspect ratio	Main display*
4:3/5:4 (standard)	2048 × 1536
16:9/16:10 (wide screen)	1920 × 1200

* For your secondary display, see “Supported TV output modes”, page 70.

Maximum vertical refresh rate (Hz)*

Aspect ratio	Display resolution	300 MHz RAMDAC (Main display†)
4:3/5:4 (standard)	640 × 480	200
	800 × 600	200
	1024 × 768	160
	1152 × 864	140
	1280 × 1024	120
	1600 × 1200	100
	1800 × 1440	80
	1920 × 1440	75
	2048 × 1536	70
16:9/16:10 (wide screen)	856 × 480	200
	1280 × 720	160
	1600 × 1024	120
	1920 × 1080	100
	1920 × 1200	90

* Based on a monitor with a maximum horizontal refresh rate of 130 kHz

† The refresh rate for your secondary display depends on TV settings (60 Hz for NTSC or 50 Hz for PAL).

Maximum horizontal refresh rate (kHz) *

Aspect Ratio	Display resolution	300 MHz RAMDAC (Main display†)
4:3/5:4 (standard)	640 × 480	130
	800 × 600	130
	1024 × 768	130
	1152 × 864	130
	1280 × 1024	130
	1600 × 1200	130
	1800 × 1440	120
	1920 × 1440	115
	2048 × 1536	110
16:9/16:10 (wide screen)	856 × 480	130
	1280 × 720	130
	1600 × 1024	130
	1920 × 1080	115
	1920 × 1200	115

* Based on a monitor with a maximum horizontal refresh rate of 130 kHz

† The refresh rate for your secondary display depends on TV settings (60 Hz for NTSC or 50 Hz for PAL).

Maximum 3D display resolutions (main display)

Graphics memory	Color palette*	Maximum display resolution		
		Double-buffering without Z-buffering	Double buffering with 16-bit Z-buffering	Double buffering with 32-bit Z-buffering
16 MB	64 K colors (16-bit)	2048 × 1536	1800 × 1440	1600 × 1200
	16 M colors (32-bit)	1600 × 1200	1280 × 1024	1280 × 1024
32 MB	64 K colors (16-bit)	2048 × 1536	2048 × 1536	2048 × 1536
	16 M colors (32-bit)	2048 × 1536	2048 × 1536	1800 × 1440

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

Supported VESA modes

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	—

* To use this resolution, install **Matrox System Utilities** from your Matrox installation CD-ROM. For more information, see the *Readme* file included with this software.

Video editing

General display information

- For information on Matrox MJPEG, see “Capture options”, page 35.
- “PAL” is the TV standard for the UK and other parts of Europe. PAL resolutions are the same as SECAM (standard for France).
- “NTSC” is the TV standard for North America.

Maximum video window resolutions for Matrox MJPEG and live video

There are maximum video resolutions (sizes) for viewing full-screen video with hardware-accelerated Matrox MJPEG video files and for viewing live video (**TV** or **LINE** input). With this type of video, your graphics card supports:

- 16- or 32-bit color palette
- 1600 × 1200 maximum display resolution (for full-screen video)

These resolutions are supported using a vertical refresh rate of 85 Hz or lower. Some programs may allow for full-screen video at higher display resolutions, but you may experience problems with video image quality at these higher display resolutions.

Matrox MJPEG resolutions

Your Matrox card can capture Matrox MJPEG video at the following resolutions:

Resolution	NTSC	PAL/SECAM
Full	704 × 480	704 × 576
1/2	352 × 480	352 × 576
1/4	352 × 240	352 × 288
1/16	176 × 120	176 × 144

Disk space for captured video

The disk space required to store digital video files depends on the frame size (resolution), frame rate, and compression ratio they're captured with. The following table shows the estimated disk space (MB / min) required with different capture settings (with no audio):

Resolution	Frame rate	Compression ratio	MB / min
1/16	1/2	3.4:1	11
1/16	Full	3.4:1	21
1/4	Full	6.9:1	42
1/2	Full	6.9:1	84
Full	Full	11.0:1	105
Full	Full	6.6:1	176

Supported sound quality settings (video file recording)

Setting	Bits per sample	Stereo or Mono	Sample rate	MB / min
CD-quality	16	Stereo	44.100 kHz	10.3
TV-quality	16	Stereo	22.050 kHz	5.2
Low-quality	8	Mono	11.025 kHz	0.6

Supported TV output modes*

- **Windows 95/98** (all color modes) – 640 × 400 (DirectX only), 640 × 480, 800 × 600, 1024 × 768
- **DOS[†]** – 720 × 400, text (02h, 03h); 320 × 200, 256 colors (13h); 640 × 480, 16 colors (12h); 640 × 400, 256 colors (100h); 640 × 480, 256 colors (101h); 640 × 480, 32 K colors (110h); 640 × 480, 64 K colors (111h); 640 × 480, 16 M colors (112h)

* Only for Matrox graphics cards with TV output support. For more information, see [“Hardware information”](#), page 71.

[†] To enable TV output support for DOS display modes, use **Matrox System Utilities**. You can install this software from your Matrox installation CD-ROM. For more information, see the *Readme* file included with this software.

Hardware information

Features

	Marvel G400-TV
Graphics chip	Matrox G400 (256-bit DualBus)
3D features	VCO ² (Vibrant Color Quality ²), environment-mapped bump mapping, stencil buffering, anisotropic filtering, bilinear filtering, trilinear filtering, alpha blending, anti-aliased vectors, vertex fogging, table fogging, specular highlighting, 16-bit Z-buffering, 32-bit Z-buffering, single buffering, double buffering, triple buffering, texture mapping, MIP mapping, Gouraud shading
Main RAMDAC	300 MHz
Secondary RAMDAC	135 MHz
Memory	16 MB
Memory type	SGRAM
DualHead (with a TV)	✓
Video input: Composite and S-video connectors (NTSC, PAL or SECAM)	✓
TV output: Composite and S-video connectors (NTSC or PAL)	✓
TV tuner: TV antenna or cable TV input	✓
MJPEG: Full-resolution, hardware MJPEG (Motion-JPEG) video compression/decompression (codec)	✓
Card type	AGP 4 × *
Model #	G4+ /MVTA16G
Matrox add-ons (sold seperately)	Digital flat panel (for G400 cards)

* AGP 4×: These cards support AGP 4× mode with AGP 4× computers, and 2× mode with 2× computers.

System requirements

Requirement	Minimum	Recommended
Pentium processor or compatible	P11, 233 MHz	P11, 350 MHz or faster
System memory (RAM)	32 MB	32 MB or more
CD-ROM for video file playback*	✓	4× with 256 KB cache, or better
Sound card for audio capture and playback (with a Windows-compatible WAV driver)	✓	✓
Modem for video conferencing (with Internet connection)	14.4 Kbps	28.8 Kbps or faster
Free hard disk space for video capturing	300 MB	2 GB with IDE mode4 or SCSI drive
Video equipment	Video camera (for video conferencing)	TV and video recorder (for video viewing and recording)
Slot type	AGP	AGP

* For MPEG1-encoded video files (*.mpg).
(The data transfer rate needed for the playback of most MJPEG-encoded AVI video files is too high for most CD-ROMs.)

Video specifications –

- Separate sync monitors only
- The video follows the PS/2 standard, with no sync on RGB, and no blanking pedestal. Black or blank – 0.0 V; White – 0.700 V.
- There are five connections to a monitor that uses BNC (Bayonet Nut Connect) connectors – R, G, B, HSYNC (white or gray wire), and VSYNC (black wire).

Environmental specifications –

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

Customer support

Matrox Web and FTP sites

Matrox is on the Internet with a World Wide Web (WWW) and File Transfer Protocol (FTP) site. Our Web site has product literature, press releases, technical material, a sales office list, trade show information, and other relevant material. Our FTP site contains current drivers for Matrox products. You can download drivers using the Internet FTP site, in addition to our BBS. You can access our FTP server independently, or from the Matrox Web site.

Our address for Matrox Graphics Inc. is:

WWW; www.matrox.com/mga

FTP; [ftp.matrox.com/pub/mga/](ftp://ftp.matrox.com/pub/mga/)

Send questions or comments regarding the site to:

e-mail; webmaster@matrox.com

If you have a problem

If you have a problem, we recommend that you follow the procedure below for the quickest results.

- 1 Contact your dealer** – This is usually the quickest and most effective method of technical assistance. Your dealer is local and may be familiar with your complete system. In the case of hardware warranty assistance, the product must be returned to the dealer, who will return it to Matrox.
- 2** If your Matrox product was provided by your computer manufacturer, contact this manufacturer. For contact information, see your computer documentation or contact the vendor.
- 3 CompuServe** – If you have a modem and an account on CompuServe, you can get technical assistance and driver updates directly from Matrox by typing *GO MATROX* at the “!” prompt.
- 4 Matrox BBS** – You can download driver updates (which may eliminate a particular bug), utilities, and other information from our 24-hour Bulletin Board Service (BBS). The phone number is **514-685-6008**. The communication parameters are 8 data bits, 1 stop bit, and no parity. You’ll be prompted to enter your first and last name and a password. If you don’t have an account, it’s created when you enter your name for the first time. See also “Matrox Web and FTP sites”.

- 5 MATFAX instant fax** – Call our dial-up Matrox fax service at **514-685-0174**. Using a touch-tone phone, you can have faxes sent to you automatically 24 hours a day. Available documents include common installation problems, available drivers and updates, and product data sheets.
- 6 Direct Matrox Technical Assistance** – If you still can't resolve a problem (and your Matrox product wasn't provided by your computer manufacturer), you can get direct technical assistance four ways:
- Call Technical Support (Canada) at **514-685-0270**. For residents of Quebec only, call **514-822-6330**.
 - Send a FAX to **514-822-6363**, Attention: Graphics Technical Assistance.
 - Send e-mail to graphics.techsupport@matrox.com.
 - Write a letter to Graphics Customer Support at our Corporate Headquarters. The address is: **Matrox Graphics Inc., 1055 St. Regis Blvd., Dorval, QC, Canada, H9P 2T4**.

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 name, system BIOS manufacturer and version number or date, bus type, model, processor speed, and amount of memory.
- Monitor brand and model name.
- Operating system and version – if you're using a memory manager, its brand and version. Also, list any memory-resident programs in use.
- If you're using a network card, its brand and version.
- Brand and model of any other cards and devices installed on your system.


Program specific problems

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




- Display settings (color palette, display resolution, and so on) applied when the problem occurs.
- Program name and version. Name any add-on packages you're using.
- 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 95/98** – access the **Information** property sheet (see “[Accessing PowerDesk property sheets](#)”, page 21).

For system information:

-  ■ **Windows 95/98** – right-click the **My Computer** icon on your Windows desktop background, then click **Properties**.
 -  ■ **Windows 98** – click  **Start** → **Programs** → **Accessories** → **System Tools** → **System Information**.
-

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 three (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.
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 - 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.

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3. To the extent allowed by local law, the remedies provided in this Limited Warranty Statement are the customer's sole and exclusive remedies.

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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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