

**ENGLISH**

**Marvel G200 • Marvel G200-TV  
• User Guide •**

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# Contents

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<b>Using this guide</b>	<b>5</b>
More information .....	5
<b>Overview</b>	<b>6</b>
Hardware supplied .....	6
Software supplied .....	6
System requirements .....	7
Installation overview .....	7
<b>Hardware installation</b>	<b>8</b>
<b>Connection setup</b>	<b>11</b>
Marvel connector box overview .....	11
Quick connection setup .....	12
S-video and composite video .....	15
SCART connector information .....	16
Matrox Marvel input .....	17
Matrox Marvel output .....	18
<b>Software installation</b>	<b>20</b>
Matrox Marvel Installation CD-ROM .....	20
Avid Cinema CD-ROM .....	21
Photo Express CD-ROM .....	21
<b>Matrox PowerDesk software</b>	<b>22</b>
Monitor setup .....	22
Display setup .....	23
TV output setup .....	23
Software overview .....	24

<b>Matrox PC-VCR Remote program</b>	<b>25</b>
Input setting .....	26
Video file input .....	26
TV tuner input (Matrox TV tuner required) .....	27
Video line input .....	27
Mini remote .....	29
More features .....	30
<b>Matrox VidCap driver</b>	<b>32</b>
Video source settings .....	32
Video format settings .....	33
<b>Avid Cinema program</b>	<b>34</b>
Step 1 – Planning and shooting your movie .....	36
Step 2 – Bringing video into your movie .....	37
Step 3 – Editing your movie .....	38
Step 4 – Finishing your movie .....	40
More information .....	41
<b>Ulead Photo Express program</b>	<b>42</b>
<b>VDOnet Internet VDOPhone program</b>	<b>43</b>
Requirements .....	43
Network setup .....	43
VDOPhone setup .....	43
Connecting with other VDOPhone users .....	44
More information .....	45
<b>Troubleshooting</b>	<b>46</b>
Graphics .....	46
Video editing .....	54
TV output .....	59
Sound .....	62

<b>Display information</b>	<b>64</b>
Graphics .....	64
Video editing .....	65
<b>Hardware information</b>	<b>67</b>
<b>Customer support</b>	<b>69</b>
<b>Warranty</b>	<b>72</b>
<b>Index</b>	<b>74</b>

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## Using this guide

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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.)

**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.

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## More information

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We provide important additional information in online documentation, including Help files, *readme* files, and Adobe Acrobat PDF (Portable Document Format) files. Use the **Acrobat Reader** program, which you can install from your Matrox installation CD-ROM (*Guides\English\ar32e301*), to view or print PDF files.

This guide is available on the CD-ROM as a PDF file (*Guides\English\marv\_eng.pdf*). The online version of this guide includes [“Hardware information”](#), [“Customer support”](#), [“Warranty”](#) and [“Software license agreement”](#). For more information on the types of documentation provided, see each software section in this guide.

Also, be sure to check for any last-minute release notes at the end of this manual and in the Matrox CD-ROM *readme* file.

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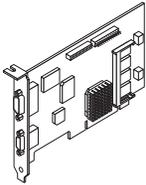
## Overview

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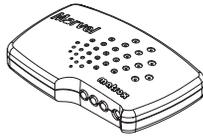
Thank you for purchasing Matrox Marvel. Discover a whole new universe of digital video with your Matrox card: view, record and edit video on your computer; play the latest 3D games using your TV; record computer video on your VCR; use your computer as a digital VCR; and much more. Marvel turns your computer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

## Hardware supplied

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**Matrox Marvel card**



**Marvel connector box**



**Marvel cable**



**2 composite (RCA)  
audio/video cables**

## Software supplied

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- **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
- **Avid Cinema** – to edit digital video
- **Ulead Photo Express** – to edit digital images
- **VDOnet Internet VDOPhone** (trial version) – to use your Internet-connected computer as a video phone
- **Other software** – see the CD-ROM *readme* file

## System requirements

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Requirement	Minimum	Recommended
Pentium processor or compatible	166 MHz	P2, 233 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
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)
Matrox Marvel must be used with Windows 95/98.		

\* 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.)

## Installation overview

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To install your Matrox product:

- 1 Install the Matrox card – see “[Hardware installation](#)”, page 8.
- 2 Connect your video input and output – see “[Connection setup](#)”, page 11.
- 3 Install the software – see “[Software installation](#)”, page 20.

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# Hardware installation

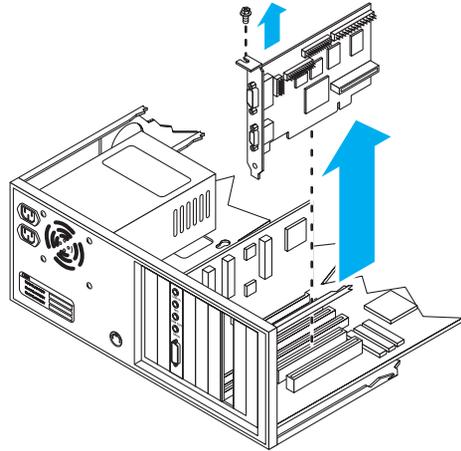
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**WARNING:** Static electricity can severely damage electronic parts. Before touching any electronic parts, drain the static electricity from your body. You can do this by touching the metal frame of your computer. When handling a card, hold it by 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. If a graphics card *isn't* already installed in your computer, skip to [step 2](#).

## 1 Remove old graphics card

- 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.

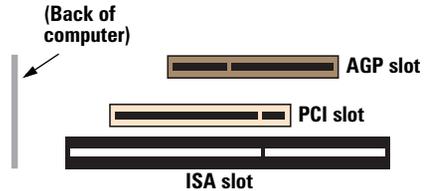


## 2 Choose an expansion slot

- a** Most computers have different types of expansion slots. Choose an AGP or PCI slot, depending on the type of Matrox card you have.

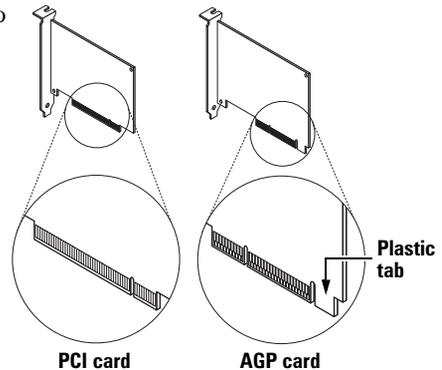
Your system manual should identify the location of each type of expansion slot in your computer. If your old graphics card and your new Matrox graphics card are designed for the same type of slot (AGP or PCI), you can use the slot your old graphics card was in.

- 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.)



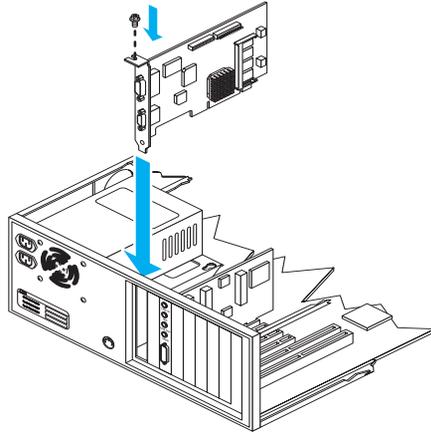
**WARNING:** Inserting your Matrox card into the wrong type of slot could damage your card, your computer, or both.

If you have an AGP card, *don't* insert the plastic tab (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 11). *After connecting your external devices*, restart your computer and install your Matrox software (see [“Software installation”](#), page 20).

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## Connection setup

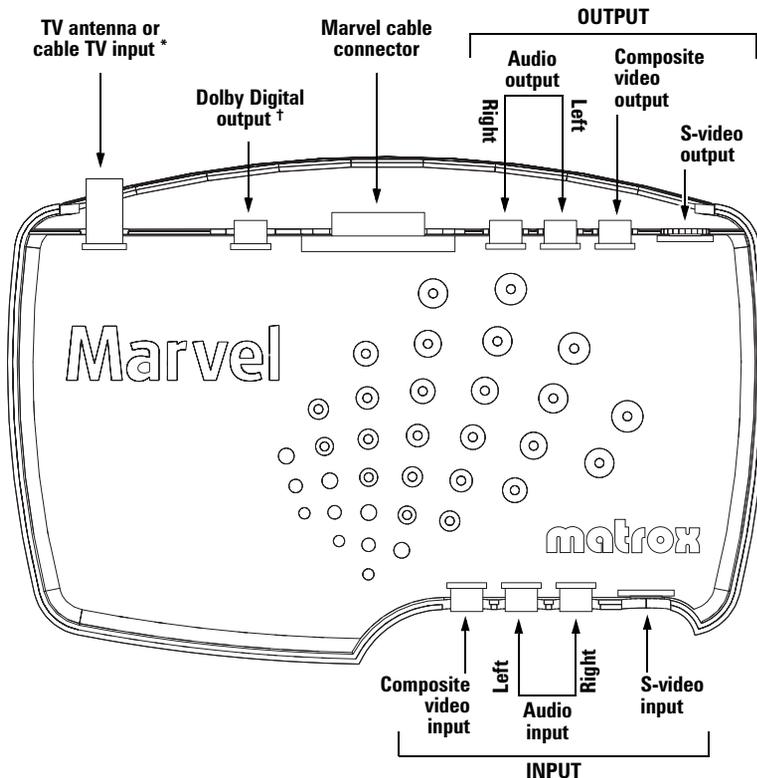
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After the Matrox Marvel card is installed, you need to connect your external video devices (TVs, VCRs, and so on), then install the Matrox video software. This section describes how to connect video devices to your computer.

### Marvel connector box overview

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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 VCR.



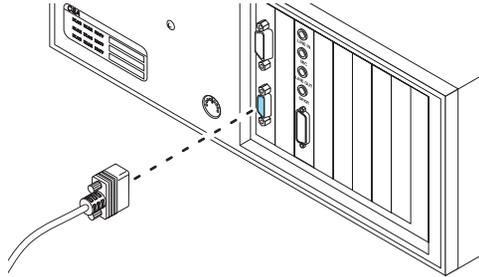
\* Certain Matrox Marvel products don't include a TV tuner. If your Marvel product doesn't include a TV tuner, your Marvel box doesn't have a connector for TV antenna or cable TV input.

† To use Dolby Digital output, you need a Matrox DVD add-on (sold separately) and an external Dolby Digital decoder (sold separately).

## Quick connection setup

### 1 Connect computer monitor

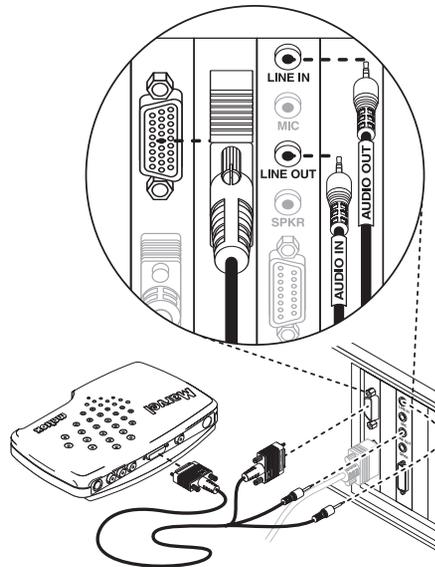
- a Plug the cable for your computer monitor into the blue connector on your Matrox card.
- b Make sure the other end of the monitor cable is properly connected to your monitor.



### 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.



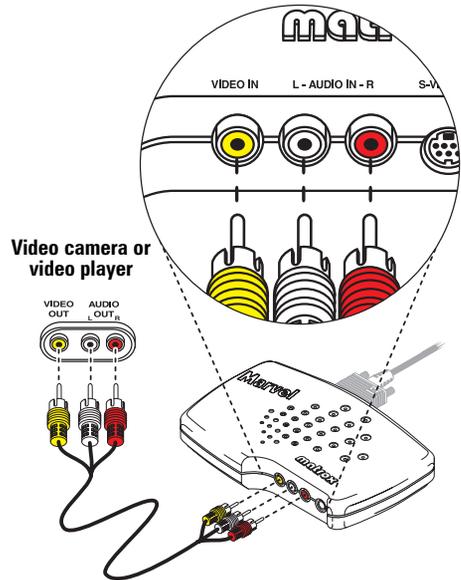
\* If your sound card has no **LINE OUT** connector, you can use its **SPKR** connector instead. In this case, all your computer sound output goes to the video device you connected to.

### 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 17.

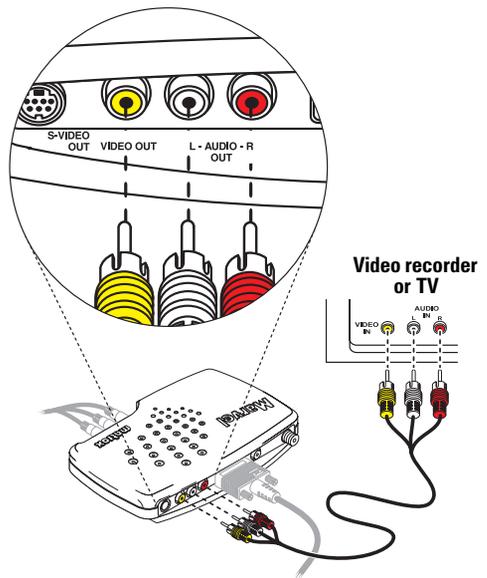


### 4 Connect Marvel audio/video output

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

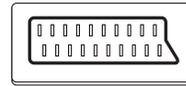
- a Plug the yellow, white and red connectors on one end of the cable to the connectors of the same color on the **back** of the Marvel connector box.
- b Connect the other end of the cable to the **VIDEO IN** and **AUDIO IN** (left and right) connectors on your TV or video recorder. If your video device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

If you connect to a VCR and you want to see your computer output on a TV, connect your TV to your VCR. For more information, see “Matrox Marvel output”, page 18.



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

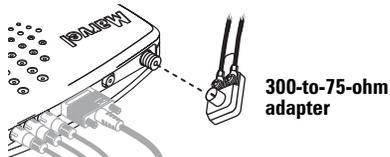
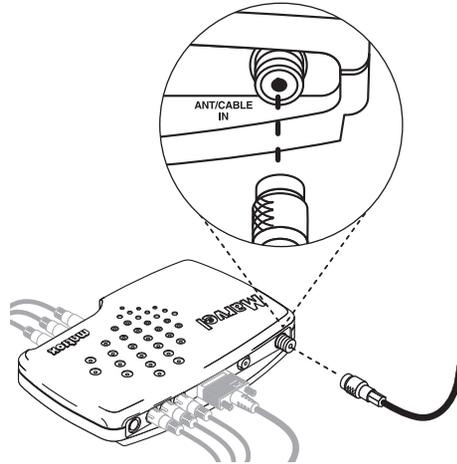
**SCART connectors:** If your VCR or TV *only* uses a SCART audio/video connector (see picture), you may need to purchase a SCART video connector. For more information, see “SCART connector information”, page 16.



## 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.)

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 below). You can find this type of adapter at most electronics stores.



## S-video and composite video

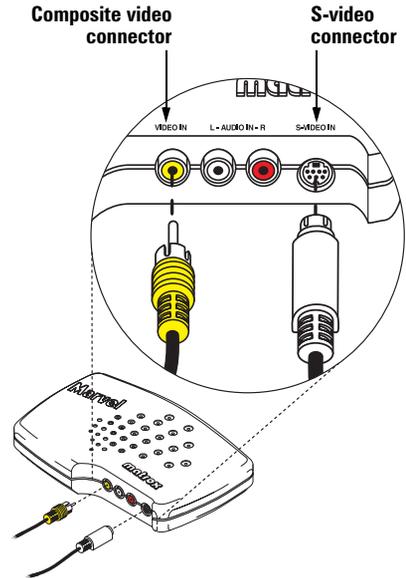
The Marvel connector box has two *composite video* connectors (one input and one output), and two *S-video* connectors (one input and one output). Most video equipment uses composite video, but some devices (for example, S-VHS VCRs) use S-video, which is a higher quality video signal.

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.

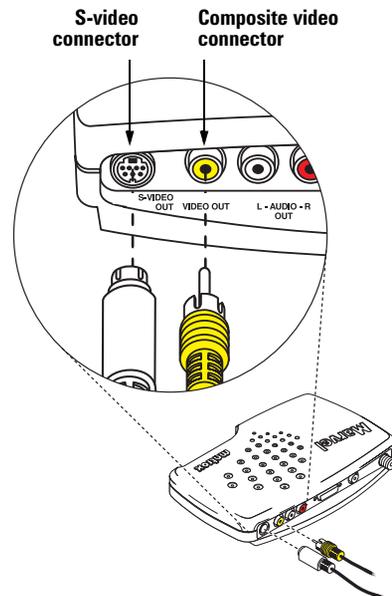
You can use the Matrox S-video connectors instead of – or in addition to – the composite video connectors. If you use composite and S-video connectors, you can connect up to four video devices to Matrox Marvel at the same time (two input and two output).

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 28](#) and [page 32](#)).



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



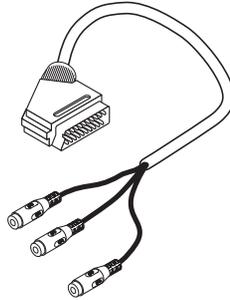
## SCART connector information

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.

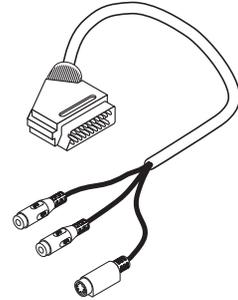
If your TV or VCR *only* has a SCART connector, you need a SCART cable adapter to connect to Matrox Marvel. If you don't already have a SCART adapter, you should be able to purchase one from your local electronics store.

- To connect your TV or VCR to Matrox *output* or *input*, you need a SCART adapter with **3 connectors** – 2 audio and 1 video.
- To connect your VCR 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 VCR supports, see its manual. If your TV or VCR uses S-video, the video connectors on your SCART adapter should be for S-video cables instead of composite (RCA) video cables.

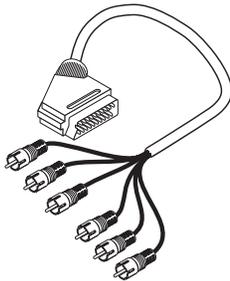
To use a SCART adapter, connect your audio/video cables to the SCART adapter, then connect the adapter to your TV or VCR. Depending on the type of SCART adapter you're using, you may need *male-to-male* adapters to attach your audio/video cables to it. For more information on connecting to a TV or VCR,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



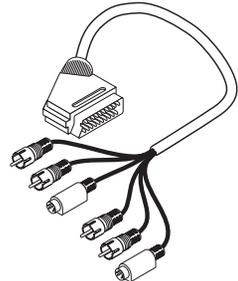
Composite SCART adapter with 3 connectors



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)

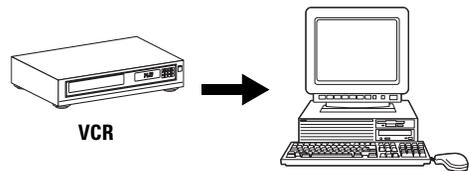
## Matrox Marvel input

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**Copyright information:** 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.

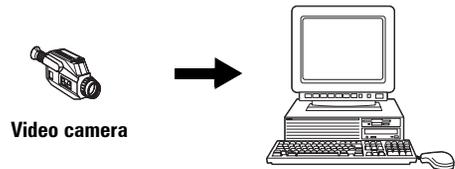
### VCR as input

If you connect the output of your VCR to your computer, you can view, record and edit the video from your VCR on your computer. To connect, see steps 2 and 3 starting on page 12. For more information, see your VCR manual.



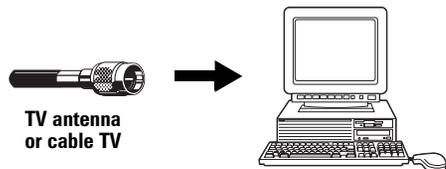
### Video camera as input

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 12. 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 12.



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\* 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\*

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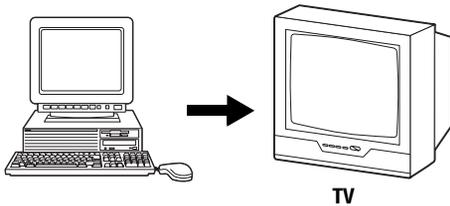
**WARNING:** Continuous on-screen displays, like your Windows desktop, can cause permanent damage to TV screens. This damage appears as “pattern burns” on your TV screen. This type of damage may not be covered by the warranty for your TV, and Matrox assumes no responsibility for such damage.

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<sup>†</sup> (composite, S-video or SCART) and you want to use it to view video directly from your computer:

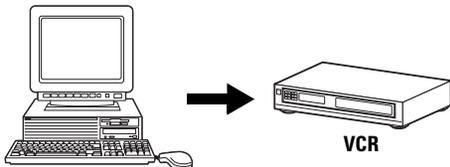
- 1 Connect your computer output to your TV input (see steps 2 and 4 starting on page 12).
- 2 If your TV has a **TV/VIDEO** switch, set it to **VIDEO**. For more information, see your TV manual.



### Output to VCR

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

- 1 Connect your computer output to your VCR input (see steps 2 and 4 starting on page 12).
- 2 Make sure your VCR **TUNER/LINE** input switch is set to **LINE**. For more information, see your VCR manual.



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

† 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.

## Output to TV through your VCR

If you want to view computer video on your TV *and* record it on your VCR, you can connect through your VCR. 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.

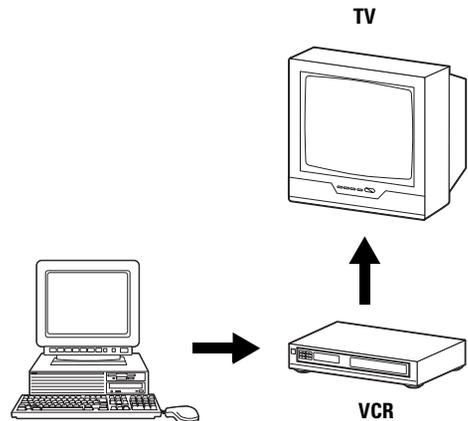
### To use line connectors:

- 1 Connect your computer output to your VCR input (see steps 2 and 4 starting on page 12).
- 2 Make sure your VCR **TUNER/LINE** input switch is set to **LINE**.
- 3 Connect your VCR'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 VCR input (see steps 2 and 4 starting on page 12).
- 2 Make sure your VCR **TUNER/LINE** input switch is set to **LINE**.
- 3 Connect your VCR'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 VCR is set.

For more information, see your VCR and TV manuals.

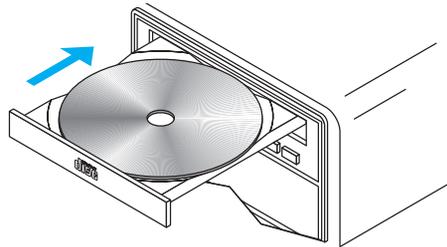


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## Software installation

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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 the software that comes with your Matrox Marvel card.



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### Matrox Marvel Installation CD-ROM

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- 1 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).
  - If you see the **New Hardware Found** dialog box, click “**Do not install a driver**”, then **OK**.
  - If you see the **Update Device Driver Wizard** dialog box, click **Next**, then **Finish**.
  - If you see the **Add New Hardware Wizard** dialog box, click **Next** → **Next** → **Next** → **Next** → **Finish**, then **Yes** to restart your computer.

(At this point, Windows is using a display driver that doesn't fully support your Matrox graphics card.)

- 2 *After* your computer has restarted, insert the Matrox installation CD-ROM in your CD-ROM drive – the setup program automatically starts.\* Select the language you want to use, click **Next** to continue, then follow the on-screen instructions.
- 3 If the following software is not already installed on your computer, the setup program prompts you to install it:
  - Matrox PowerDesk utilities and display drivers
  - Microsoft DirectX and DirectX Media software
  - Matrox video software (PC-VCR Remote, VidCap, Quick Connect, HD Benchmark)

Follow the on-screen instructions.

- 4 The setup program prompts you to restart your computer. Leave the CD-ROM in your CD-ROM drive and click **Restart Computer** to continue. You *must* restart your computer for changes to take effect.

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

- 5 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 28). Disk speed affects the quality of video file recording and playback. After the test is finished, click **OK** to continue.
- 6 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.
- 7 Click buttons in the main menu, depending on what you want to do. After clicking a setup button, simply follow the on-screen instructions. Click **Exit** when you're done.

For more information on software installed from the Matrox installation CD-ROM, see the following sections:

- “[Matrox PowerDesk software](#)”, page 22
- “[Matrox PC-VCR Remote program](#)”, page 25
- “[Matrox VidCap driver](#)”, page 32
- “[VDOnet Internet VDOPhone program](#)”, page 43

## **Avid Cinema CD-ROM**

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To install Avid Cinema, insert the Avid Cinema CD-ROM in your CD-ROM drive – its main setup program automatically starts. To install the software, follow the on-screen instructions. For more information on **Avid Cinema**, see “[Avid Cinema program](#)”, page 34.

## **Photo Express CD-ROM**

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To install Ulead Photo Express, insert the Photo Express CD-ROM in your CD-ROM drive – its main setup program automatically starts. To install the software, follow the on-screen instructions. For more information on **Photo Express**, see “[Ulead Photo Express program](#)”, page 42.

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# Matrox PowerDesk software

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To access Matrox PowerDesk programs and online documentation, click  → **Programs** → **Matrox PowerDesk**. You can also access PowerDesk features by clicking the Matrox QuickDesk icon () on the Windows taskbar.

**Note:** The Matrox display driver for Windows 95/98 supports multiple displays with Windows 98. However, Matrox PowerDesk features are disabled in multi-display mode. To change your display settings while in multi-display mode, use Windows controls. For more information on multi-display mode, see Windows 98 online Help under “Multiple Display support”. (Windows 95 doesn’t support multiple displays.)

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## Monitor setup

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### To check your monitor settings

**1** Click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Monitor**.

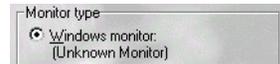
**2 If you have a Plug-and-Play monitor:**

Make sure the **Windows monitor** button is selected and **Plug and Play Monitor**, *or* the model name of your monitor, appears immediately under it. If so, the Matrox display driver *automatically* uses the correct settings for your monitor.



**If you don’t have a Plug-and-Play monitor:**

If the monitor type listed under the **Windows monitor** button is incorrect or shows **Unknown Monitor**, you should select a monitor.



To select a monitor, click the **Matrox monitor** button, select your monitor by name in the list below this button, then click **OK**. If your monitor doesn’t appear in the list, you can try the Windows method of monitor selection. For more information on monitor selection, see the online Matrox PowerDesk guide.

**Note:** 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.

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

## Display setup

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

## TV output setup

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You can view or record your computer display on a TV or VCR connected to your computer. (To connect video devices to your computer, see steps 2 and 4 starting on 12.) To use TV output mode\*:

- 1 Click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Settings**.
- 2 Enable the **Output to TV** check box.
- 3 Click **Advanced** → **TV Out** to adjust advanced TV output settings. Specifically, make sure the correct TV standard (NTSC or PAL) is selected. For more information on settings, see context-sensitive Help.
- 4 Click **OK** to close the dialog box and apply changes.

While in TV output mode, your computer display uses TV settings. TV settings have lower resolutions and refresh rates than typical computer monitor settings. Lower refresh rates may result in more noticeable flicker. To turn off TV output mode, clear the **Output to TV** check box.

**WARNING:** Because *some* computer monitors don't support TV settings, a computer monitor may become garbled or unusable while TV output mode is used. If this happens, simply turn off your computer monitor and use your TV to view your computer display. Your computer monitor will work normally when you disable TV output mode.

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.

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\* To enable TV output support for DOS display modes, use the Matrox CD-ROM setup program. For more information, see the CD-ROM *readme* file.

## Software overview

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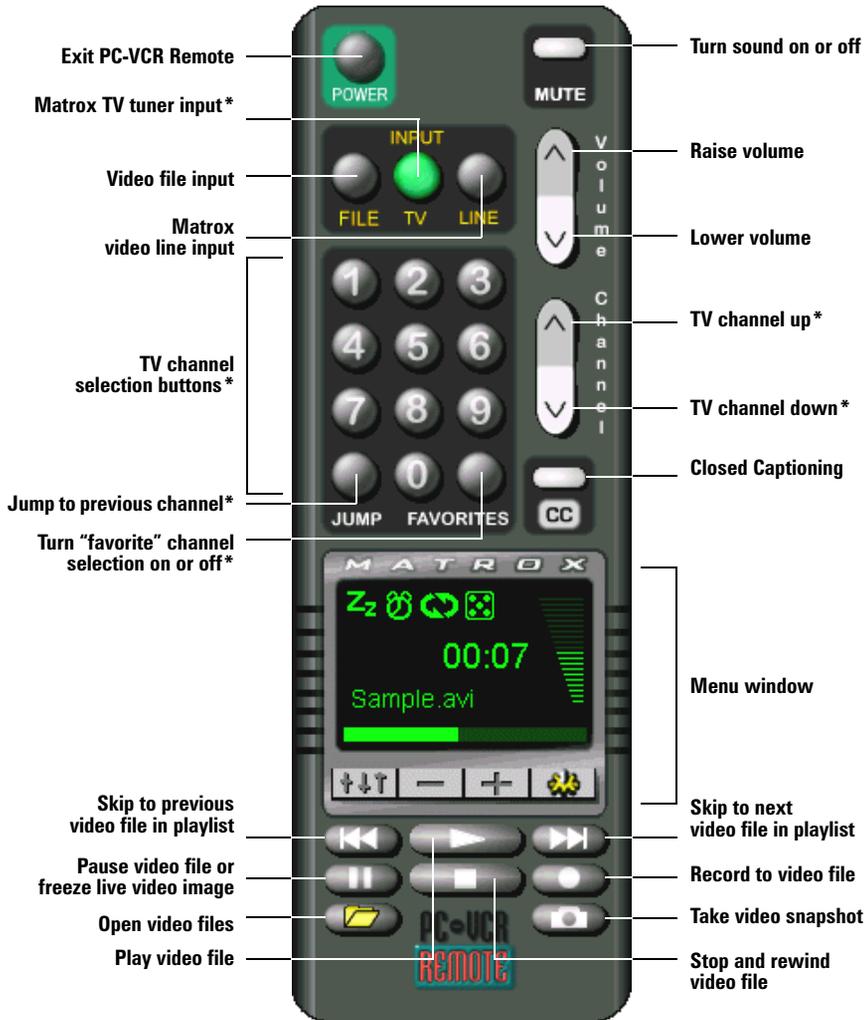
### Matrox PowerDesk for Windows 95/98 includes

- Matrox display driver with:
  - DirectDraw and Direct3D support for direct access to Matrox hardware.
  - Plug-and-Play (DDC-2B) and Energy Star (DPMS) support.
- **Settings** property sheet to change your display settings. Use this sheet to access Matrox PowerDesk features such as:
  - Desktop mode buttons to set up a proportional, horizontal or vertical *virtual desktop*.
  - Display schemes to easily switch to a pre-defined display setting.
  - **Performance** property sheet to change Matrox display driver performance settings.
  - **Utilities** property sheet to configure Matrox PowerDesk options.
  - **TV Out** property sheet to control advanced TV output settings.
- **Monitor** property sheet to inform the Matrox display driver of your monitor's capabilities. You can use this sheet instead of the Windows method of monitor selection.
- **Color** property sheet to change your display's color balance.
- **Hot Key** property sheet to define keyboard shortcuts for:
  - CenterWINDOW to center your view area on the active window.
  - MaxVIEW to resize the active program window to the size of your current display area.
  - PanEND to move your display area to the right or bottom of your virtual desktop.
  - PanHOME to move your display area to the left or top of your virtual desktop.
  - PanLOCK to enable or disable panning.
  - PixelTOUCH to magnify part of your desktop area.
  - Your favorite display schemes.
- **Information** property sheet for information on your display hardware and software.
- **Matrox Desktop Navigator** (DeskNav) program to quickly change the view area of your desktop and give you quick access to the PixelTOUCH zoom and CenterWINDOW features.
- **Matrox QuickDesk** menu to quickly switch to a saved display scheme, and to access other Matrox PowerDesk features.
- **Matrox Diagnostic** program to identify some possible display-related problems.

# Matrox PC-VCR Remote program

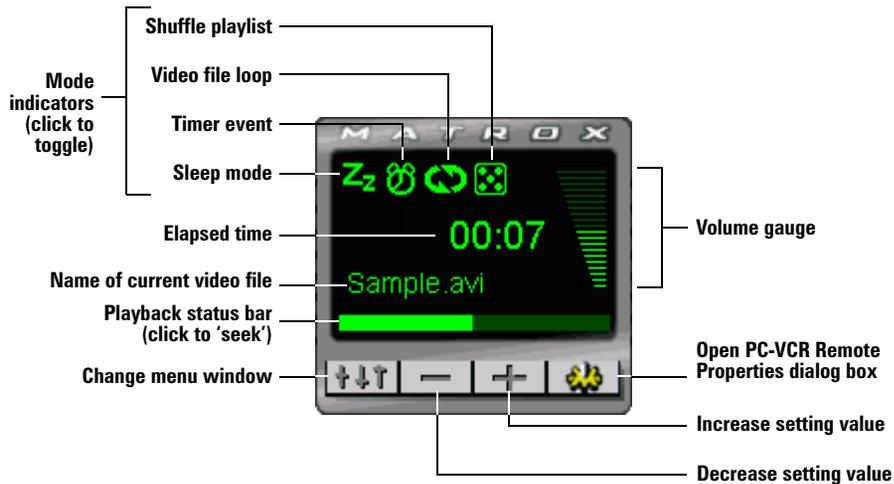
With the Matrox PC-VCR Remote program, you can use your computer like you would a TV or VCR. To start, double-click the **PC-VCR Remote** icon (🖱️) on the Windows desktop background. The first time you start PC-VCR Remote, you see the PC-VCR Remote and its video window. Use the PC-VCR Remote to control 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 65](#).

## TV tuner input (Matrox TV tuner required)

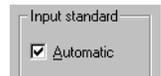
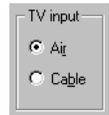
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If your Matrox product includes a TV tuner, you can view, record and edit TV programs on your computer, like you would with a VCR. However, instead of using the controls on your VCR, you can use the PC-VCR Remote software controls.

### 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

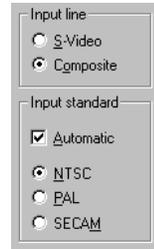
---

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 17).

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 34).

## 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 11.
- Make sure your Windows sound card settings are correct. For more information, see “Sound”, page 62.
- Make sure your PC-VCR Remote property settings are correct. Click the **Properties** button (  ) on the PC-VCR Remote to access its setting controls:

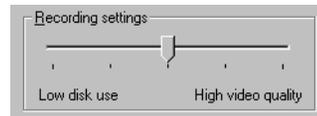


- On the **Video** property sheet, select the Matrox input line you want to use (composite or S-video) and the TV standard your video camera or video player uses (NTSC in North America; PAL in most of Europe; or SECAM in France). For PC-VCR Remote to automatically detect the TV standard, enable the **Automatic** 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 33.

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 28.
- 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.



Mini remote toolbar (FILE input)

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.

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

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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.)



**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.

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\* 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.

**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.

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# Matrox VidCap driver

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

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## Video source settings

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**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 11.

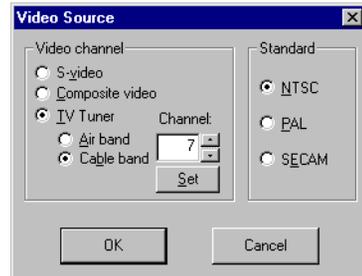
**Standard** – Click a button in this group box to identify the TV standard used by your video source:

**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.



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

## Video format settings

**RGB** – Click an RGB button to select an uncompressed video file format. Use an RGB format to video conference with VDOPhone and to capture still images with Photo Express. 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

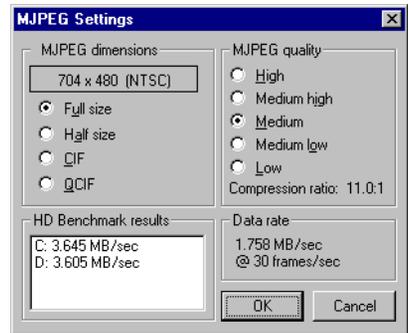
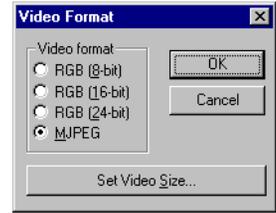
**16-bit** – 65,536 colors

**24-bit** – 16,777,216 colors

**MJPEG** – For more information, see “Capture options”, page 29.

**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.

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# Avid Cinema program

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## 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 movie making, 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	<b>Invitation</b> 20 to 25sec.
2	<b>Balloons at the Door</b> 3 to 5sec. Zoom out from close-up of colorful bunch of balloons to a wide shot of balloons on streamers tied to front door.
3	<b>Party Room</b> 12 to 15sec. Pan wide shot of birthday child in party room. Doorbell rings. Follow child running to open front door.
4	<b>Opening Cake Box</b> 4 to 6sec. Close-up of cake box being opened to reveal beautifully decorated cake.

## 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 11), 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.



**Video from your video camera plays here**

**List of shots to bring in**

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

Record   Stop    Mute

New Shot    **Birthday Party**

- Invitation
- Balloons at Door
- Party Room
- Open Cake Box
- Put Candles on Cake
- Guests Arrive
- The Party
- Sing Happy Birthday

Guests Arrive    The Party    Sing Happy Birthd    BlowOut Candles    Special Gift

**Timeline**



## 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

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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](http://www.avidcinema.com)).

### If you have a problem

- 1 See the Avid Cinema online Help for troubleshooting information.
- 2 See page 46 in this manual for more troubleshooting information.
- 3 If you still have a problem, see the “Customer support” section in the online version of this manual. For information on the online version of this manual, see page 5.



# Ulead Photo Express program

With Photo Express, you can easily turn your digital photos into cards, calendars, posters, screen savers, slide shows and more. You can use photos from any source, including scanner, digital or video camera, VCR, file copy, or another program. With a sound card, you can even add audio to your photo projects.

When you start Photo Express, the first thing you see is its distinctive, easy-to-use interface. Pause your mouse pointer over an item to see a pop-up tooltip identifying it.



To see how easy it is to create projects using predefined templates, try clicking **Project**. Then when you're ready to create a project from scratch, click **Photo**.

Each command panel item has an associated toolbar. When you click a new item on the command panel, the toolbar changes.

For more information on how to use Photo Express, see the online Help. There are interactive tutorials and a Screenbook which you can access through the Photo Express CD-ROM (the path to the Screenbook is *Manual\English\pe2.pdf*).

---

# VDOnet Internet VDOPhone program

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With VDOPhone and your Matrox video editing card, you can use your computer as a video phone. You can send and receive live video, high-quality sound, and text over the Internet.

## Requirements

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### To send and receive any information:

- Internet connection – through a network, or a 14.4 Kbps (or faster) modem

### To send sound:

- Microphone or video camera
- Sound card and supporting drivers

### To receive sound:

- Earphones or speakers
- Sound card and supporting drivers

### To send and receive sound at the same time:

- Sound card and drivers that support full-duplex (two-way) information transfer

### To send video:

- Video camera to send live video
- VCR to send taped video or TV signals

## Network setup

---

Before starting VDOPhone, you need an Internet connection. If you have full Internet access (you can send and receive e-mail and browse the World Wide Web), you can begin the VDOPhone setup. If you don't have full Internet access, contact your local Internet service provider or network administrator. See also [“More information”](#), page 45.

## VDOPhone setup

---

To start the VDOPhone program, double-click the **VDOPhone** icon () on the Windows desktop background. The first time you start VDOPhone, it asks if you want to start the setup wizard. If you click **Yes**, this program guides you through some of the setup options for VDOPhone. For more information, see the online Help.



## VDOPhone setup

1 Click **Tools** → **Options** → **Video**.

2 Click the **Source** button to select the video source you want to send out.

Typically, you would select **Composite video** or **S-video**, and connect a video camera to the appropriate Matrox input line. This setup lets you send out live video of yourself. However, your video source could also be a video player or your Matrox TV tuner.\* For more information, see “[Matrox Marvel input](#)”, page 17.

For more information on the **Video Source** dialog box, see “[Video source settings](#)”, page 32.

3 Click the **Format** button to select the type of video you send out.

a Click **RGB (8-bit)** for black and white output, or **RGB (16-bit)** or **RGB (24-bit)** for color output. Do *not* use Matrox MJPEG compression with VDOPhone.

b Click the **Set Video Size** button to select the size of the video image you send out.

**QCIF** is recommended for most Internet connections. In general, the larger the image size, the slower the frame rate.

c Click **OK** → **OK** to confirm your selections.

For more information, see “[Video format settings](#)”, page 33.

4 Select **Self View** through the drop-down menu to open a window where you can see yourself as the person you’re connecting with will see you. Now you’re ready to connect with another VDOPhone user.

## Connecting with other VDOPhone users

Before you begin, the person you’re calling needs to be ready to receive your call with their copy of the VDOPhone program.

1 Click the **Call** button in the main window of VDOPhone.

2 In the resulting dialog box, type the e-mail, IP, or host address of the person you want to call.

3 Click the **Dial** button.

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

For two-way video communication, both parties must have properly installed video capture cards **and** must be sending video. If you don't get two-way sound with your connection, see “Sound”, page 62.

If you have full Internet access, click **Go** → “**Who's online?**” to see a list of VDOPhone users currently on the Internet.

If other users can't connect to you using your e-mail address, they should try using your IP address. To see your own IP address (and later communicate it to other users), run the *winipcfg* program:

- 1 Click  **Start** → **Run**.
- 2 Type *winipcfg* in the **Run** text box, then click **OK**.
- 3 In the resulting dialog box, take note of your **IP Address**, then click **OK** to close the dialog box.

## More information

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For online Help for VDOPhone, click  **Start** → **Programs** → **VDOPhone** → **VDOPhone Help**. See also **ReadMe** and **VDOPhone Manual** in the **VDOPhone** folder. For frequently asked questions and troubleshooting information, see VDOPhone's Web site at [www.clubvdo.net](http://www.clubvdo.net).

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# Troubleshooting

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## Graphics

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The following troubleshooting items address problems related to graphics cards.

For a list of notes, problems and limitations, click  **Start** → **Programs** → **Matrox PowerDesk** → **Readme**. Also, be sure to check for any last-minute release notes at the end of this manual and in the Matrox CD-ROM *readme* file.

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<b>Problem</b>	<b>Computer doesn't display information or boot after Matrox card is installed</b>
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**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 8.

**Cause** There may be another 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's 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 “Choose an expansion slot”, page 9.
- 2 Plug your monitor into the other graphics card and restart your computer.

**Note:** If you’re using more than one PCI graphics card, make sure your computer uses the other graphics card for your *primary display* – the one that first displays information when you restart your computer. If not, turn off your computer, move the other card to another PCI slot, then try restarting your computer again.

- 3 Make sure Matrox DOS 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:\mga\setup [Enter]
updbios [Enter]
```
- 5 Turn off your computer, remove the other graphics card, then plug your monitor into your Matrox graphics card.
- 6 Restart your computer.

**Note:** If your Matrox graphics card has TV output support for DOS display modes, or has flat panel support, you may have to restore this support after you use *updbios*. For more information, see the *readme* file in the root folder of your Matrox installation CD-ROM.

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

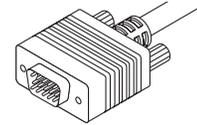
**Cause** Your monitor’s video controls may be improperly set.

**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.

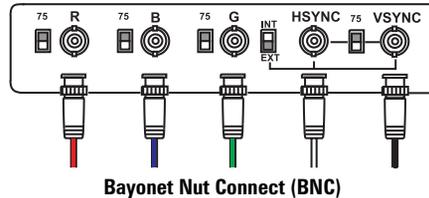
**Solution** Make sure the 15-pin connector to your Matrox graphics card is firmly in place.



**15-pin connector**

**Solution** If your monitor uses a 15-pin connector, make sure the connection to the monitor is firmly in place.

**Solution** If your monitor uses BNC input, make sure the Red, Green, Blue, 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.

---

**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**
- 1 Press [Ctrl]+[Alt]+[Del] twice to restart your computer.
  - 2 **Before Windows starts**, press [F5] to enter "safe mode".
  - 3 Right-click the Windows desktop background, then click **Properties** → **Settings**.
  - 4 Move the **Desktop area** slider down to its lowest settings, then click **OK**.
  - 5 Restart your computer normally.
  - 6 Select a monitor with the Matrox **Monitor** property sheet, then you can adjust your display settings. For more information, see the online Matrox PowerDesk guide.

**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.

- 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 [F5] to enter “safe mode”.
- 3 If Matrox PowerDesk utilities are installed, remove them: click  → **Settings** → **Control Panel** → **Add/Remove Programs** (double-click) → **Matrox PowerDesk** → **Add/Remove**.
- 4 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**.
- 5 Install the latest Matrox display drivers for your graphics card – run the setup program, then follow the on-screen instructions.

---

**Problem:** **Can't install or uninstall Matrox software for Windows 95/98**

---

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

**Solution** **For advanced users:** Try manually removing Matrox display drivers, then reinstall them:

- 1 Switch to a VGA display driver.
- 2 In the following folders, remove all files or folders related to “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*
- 3 Click  → **Run**, type *regedit*, then click **OK**.
- 4 Under **HKEY\_LOCAL\_MACHINE** → **SOFTWARE**, remove all items starting with “Matrox” or “MGA”.

- 5 Restart your computer, then *before* Windows starts, press [F5] to enter “safe mode”.
- 6 Right-click the **My Computer** icon on the Windows desktop background, then click **Properties** → **Device Manager**.
- 7 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**.
- 8 Restart your computer, then install the latest display drivers for your Matrox graphics card.

**Problem**    **After game for Windows 95/98 starts, monitor doesn't display properly**

---

**(blank screen, rolling or overlapping screen images)**

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

- Solution**
- 1 If the game is still running in full-screen mode, press [Ctrl]+[Alt]+[Del] *once* for the **Close Program** dialog box, and then click the **End Task** button.
  - 2 Click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Monitor** (tab) → **Matrox monitor** (button).
  - 3 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**). For more information on Matrox monitor selection, see the online Matrox PowerDesk guide.
  - 4 Click **OK** to apply your selection and close the dialog box.

**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.)

- 1 Click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Settings** → **Advanced** → **Performance**.
- 2 Clear the **Use Bus Mastering** check box.
- 3 Click **OK** → **OK** → **Yes** to accept the changes and restart your computer.

**Cause** **PCI graphics cards only:** Your Matrox card may be in a “slave” expansion slot on a computer that makes a distinction between bus mastering and slave slots.

**Solution** Change slots. Shut down your computer, disconnect it from the power supply, remove your Matrox card and then insert it into a different PCI expansion slot. For instructions on how to safely install your Matrox card, see “[Hardware installation](#)”, page 8.

**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.

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.



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

Check also the **Resources** tab → **Resource settings** list for an **Interrupt Request**.

**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.

**Solution** **PCI graphics cards only:** You may have to manually assign an IRQ to your Matrox card with the *irqset* program in the *C:\Program Files\Matrox MGA PowerDesk* folder. For instructions on how to use *irqset*, click  → **Programs** → **Matrox PowerDesk** → **Readme**.

**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 (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 Click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Information**.
- 2 Look at the **Microsoft DirectX Version** label.

**Solution** If DirectX 6.0 or later isn't installed, install it:

- 1 Insert the Matrox installation CD-ROM in your CD-ROM drive. Windows automatically starts the CD-ROM setup program; click **Cancel** to continue.
- 2 Click  → **Run**.
- 3 Type "`d:\redist\dx6eng`", where "`d:\`" is the drive letter of your CD-ROM drive; then click **OK** to start the DirectX setup program.

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

**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 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 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 20).



**Problem**    **Screen image defects appear in Windows 95/98, 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.

- 1 Click  **Start** → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Settings** → **Advanced** → **Performance**.
- 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](http://www.matrox.com/mga)) and BBS (see page 69).

**Solution**    Disable Matrox hardware acceleration.

- 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**    There may be a conflict between resources in your system.

- Solution**
- 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.

**Note:** If you identify a program that doesn't work well with Matrox acceleration, please contact Matrox technical support (see page 70) and describe the problem. This information may help us come up with a fix or work-around in a future driver release.

## Video editing

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The following troubleshooting items address problems related to video editing.

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 editing hardware. Only one program at a time can use Matrox video editing 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 doesn't 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 11). To test your connection setup, click  → **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 25).

**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 66).

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)**

---

**Cause** Your hard disk may be too slow.

**Solution** Try recapturing and playing back video files after defragmenting your 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** If your hard disk supports DMA transfers, enable this feature, then try recapturing and playing back video files. To enable DMA for a hard disk:

- 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.

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

**Solution** If possible, try recapturing and playing back video files with a faster disk. To test and compare disk speeds, click  → **Programs** → **Matrox Video Tools** → **Matrox HD Benchmark**.

**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 29.

**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** 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.

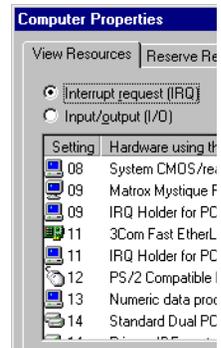
**Solution** Capture your video files with Matrox MJPEG. For more information, see “[Capture options](#)”, page 29.

**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). 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.

**Solution** **PCI graphics cards only:** Try moving your Matrox graphics card to another PCI slot in your computer.

**Solution** **PCI graphics cards only:** Use the *irqset* program to manually assign a different IRQ number to your Matrox graphics card. For instructions on how to use *irqset*, click  **Start** → **Programs** → **Matrox PowerDesk** → **Readme**.

## **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 28.

**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 15.

**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](http://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 14.

**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 25.

## 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 VCR may not be properly connected.

**Solution** Make sure your TV or VCR is properly connected. For more information, see page 18.

**Cause** Your TV or VCR 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 VCR is connected to your Matrox graphics card and the VCR has a **TUNER/LINE** switch, set it to **LINE**. For more information, see your VCR manual.

**Cause** Matrox software may not be properly set up for TV output.

**Solution** See “TV output setup”, page 23. Particularly, the TV standard selected may not be correct.

**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. You can do this with the Matrox CD-ROM setup program. For more information, see the CD-ROM *readme* file.

**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 66. 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 also uses 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.

**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 CD-ROM *readme* file.

**Solution** Try using a different display mode. For a list of display modes supported for TV output, see "Supported TV output modes", page 66.

- To change your Windows display mode, click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Settings**.
- For information on how to change display modes with a program that doesn't use Windows display modes, see the documentation for that program.

**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**    **Can't record video from a video player**

---

**Cause** The video source may be copy protected. Your Matrox product doesn't 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 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:

- 1 Click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Settings**.
- 2 Move the **Display area** 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:

- 1 Click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Settings**.
- 2 Under **Font size**, select **Large Fonts**.
- 3 Click **OK** to close the dialog box and apply changes.

## Problem Poor TV or VCR video image quality

---

**Cause** Your software TV settings may need adjusting.

**Solution** To access TV settings, click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Settings** → **Advanced** → **TV Out**. For more information, see context-sensitive Help.

**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 15.

**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.

## 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 12).

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

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

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

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

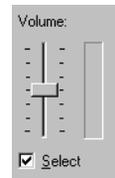
- a** Click  → **Settings** → **Control Panel**.
- b** Double-click the **Multimedia** icon.
- c** Enable the “**Show volume control on the taskbar**” check box.
- d** Click **OK**.
- e** Double-click the speaker icon on the taskbar.

**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.

**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

### Maximum display resolutions

Graphics memory	Color palette	Maximum display area	Maximum 3D display area*
8 MB	256 colors (8-bit)	1800 × 1440 / 1920 × 1200	—
	32/64 K colors (15/16-bit)	1800 × 1440 / 1920 × 1200	1600 × 1200 / 1920 × 1080
	16 M colors (24-bit)	1600 × 1200 / 1920 × 1080	—
	16 M colors (32-bit)	1280 × 1024	1152 × 864
† 16 MB	256 colors (8-bit)	1800 × 1440 / 1920 × 1200	—
	32/64 K colors (15/16-bit)	1800 × 1440 / 1920 × 1200	1800 × 1440 / 1920 × 1200
	16 M colors (24-bit)	1600 × 1200 / 1920 × 1080	—
	16 M colors (32-bit)	1280 × 1024	1280 × 1024

\* Double-buffering, without Z-buffering.

† With memory upgrade.

### Refresh rates

Display resolution*	Horizontal refresh rate (kHz)		Vertical refresh rate (Hz)	
	230 MHz RAMDAC†	250 MHz RAMDAC†	230 MHz RAMDAC†	250 MHz RAMDAC†
640 × 480	31–102	31–102	60–200	60–200
800 × 600	38–114	38–114	60–200	60–200
1024 × 768	48–113	48–113	60–140	60–140
1152 × 864	54–110	54–110	60–120	60–120
1280 × 1024	64–107	64–107	60–100	60–100
1600 × 1200	75–106	75–113	60–85	60–90
1920 × 1080	68–88	70–94	60–75	60–80
1920 × 1200	75–91	75–95	60–70	60–76
1800 × 1440	89–97	89–104	60–65	60–70

\* Maximum refresh rates are attainable when using 8- or 16-bit color palettes.

Maximums may not be attainable at the highest display resolutions **with** a 24- or 32-bit color palette.

† For RAMDAC information, click  Start → Programs → Matrox PowerDesk → Matrox Display Properties → Information.

## 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	—	101	110	111	112
800 × 600	102	103	113	114	115
1024 × 768	—	105	116	117	118
1280 × 1024	—	107	119	11A	—
1600 × 1200	—	11C	11D	11E	—

To use higher refresh rates while in VESA display modes, see “DOS utilities” in the *readme* file in the root folder of the Matrox installation CD-ROM.

## Video editing

---

### General display information

- For information on Matrox MJPEG, see “Capture options”, page 29.
- “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

There are maximum video window sizes (resolutions) for viewing Matrox MJPEG video files *and* live video (**TV** or **LINE** input). The following tables list the maximum sizes (measured in pixels) based on your graphics card, and the color palette and resolution settings of your display. (These resolutions are supported using a vertical refresh rate of 85 Hz or lower.)

b/p*	640 × 480	800 × 600	1024 × 768	1152 × 864	1280 × 1024	1600 × 1200
16	640 × 480	800 × 600	1024 × 768	1152 × 864	1280 × 1024	1600 × 1200
32	640 × 480	800 × 600	1024 × 768	—	—	—

\* With G200 graphics cards, the viewing of MJPEG video files or live video is supported only with a 16- or 32-bit color palette.

## 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)

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\* To enable TV output support for DOS display modes, use the Matrox CD-ROM setup program. For more information, see the CD-ROM *readme* file.

# Hardware information

## Features

	Marvel G200	Marvel G200-TV
<b>Graphics chip</b>	MGA-G200 (128-bit DualBus)	MGA-G200 (128-bit DualBus)
<b>RAMDAC</b>	230/250 MHz (internal)	230/250 MHz (internal)
<b>Memory</b>	8 MB	8 MB
<b>Memory type</b>	SDRAM	SDRAM
<b>Video input:</b> Composite and S-video connectors (NTSC, PAL or SECAM)	✓	✓
<b>TV output:</b> Composite and S-video connectors (NTSC or PAL)	✓	✓
<b>TV tuner:</b> TV antenna or cable TV input	—	✓
<b>MJPEG:</b> Full-resolution, hardware MJPEG (Motion- JPEG) video compression/decompression	✓	✓
<b>Card type</b>	AGP 2×* or PCI †	AGP 2×* or PCI †
<b>Model #</b>	G2+/MVA (AGP) G2+/MVP (PCI)	G2+/MVTA (AGP) G2+/MVTP (PCI)

\* AGP: Supports AGP bus version 1.0 at clock speeds up to 66 MHz in 2× mode

† PCI: Supports PCI bus version 2.1 at clock speeds up to 33 MHz

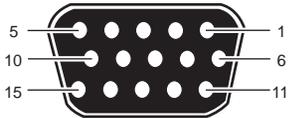
## Matrox add-ons (sold separately)

	Marvel G200	Marvel G200-TV
<b>Memory</b>	8 MB SDRAM	8 MB SDRAM
<b>TV tuner</b>	✓	—
<b>DVD decoder</b>	✓	✓

## Matrox Marvel G200 & Marvel G200-TV

- 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)

### Monitor connector pinouts

	<ul style="list-style-type: none"><li>1 Analog red output</li><li>2 Analog green output</li><li>3 Analog blue output</li><li>4 Not connected</li><li>5-8 Ground</li><li>9 +5 V (DDC)</li></ul>	<ul style="list-style-type: none"><li>10 Ground</li><li>11 Not connected</li><li>12 SDA (DDC)</li><li>13 TTL horizontal sync</li><li>14 TTL vertical sync</li><li>15 SCL (DDC)</li></ul>
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# Customer support

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## Matrox Web and FTP sites

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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](http://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](mailto:webmaster@matrox.com)

## If you have a problem

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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 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.
- 3 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”.
- 4 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.

**5 Direct Matrox Technical Assistance** – If you still can't resolve a problem, 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](mailto: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, 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** – click  → **Programs** → **Matrox PowerDesk** → **Matrox Display Properties** → **Information**.
- For system information:
  - **Windows 95/98** – right-click the **My Computer** icon on your Windows desktop background, then click **Properties**.
  - **Windows 98** – click  → **Programs** → **Accessories** → **System Tools** → **System Information**.

## Free CompuServe introductory membership offer

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As a Matrox customer, you are entitled to a free Introductory Membership to CompuServe including:

- free access to CompuServe's Basic Services for one month
- \$15 introductory usage credit to explore the Matrox section on the Graphics B Vendor Forum and CompuServe's other Extended and Premium service offerings
- a personal User ID Number and Password
- a complimentary subscription to the monthly CompuServe magazine

### To receive your free CompuServe introductory membership

- Call toll-free **1-800-524-3388** and ask for **Representative 229**.
  - In the United Kingdom, call **0800 289 378**.
  - In Germany, call **0130 37 32**.
  - In the rest of Europe, call **44 117 976 0681**.
  - Outside of the U.S., Canada, and Europe, call **614-529-1349**.

Contact Matrox on CompuServe to receive answers to questions you may have about our graphics accelerators and video products. You can receive:

- assistance on technical questions
- information on the latest products and upgrades
- tips on using Matrox products

Through CompuServe, you can directly contact Matrox technical representatives or other Matrox users. You can also take advantage of the many services CompuServe offers.

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# Warranty

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## A. Limited Warranty Statement

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

## B. Limitations of Warranty

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

## **C. Limitations of Liability**

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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**

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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**

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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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# Index

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## **A**

address, Matrox 70  
Adobe Acrobat 5, 42  
AGP 9, 67  
audio  
    adjusting 31  
    connection setup 13  
    quality 66  
AVI  
    MJPEG compression 29  
Avid Cinema 34–41

## **B**

BBS, Matrox 69  
BIOS settings 51  
BNC monitor connection 48

## **C**

capture settings 28, 29  
CD-ROM  
    Avid Cinema 21  
    Marvel 5, 20, 21, 54  
    Photo Express 21, 42  
    requirements 7  
Closed Captioning 30  
color palette 33  
composite video  
    connection setup 13, 15  
    connector 6  
    SCART 16  
    software setup 28, 32  
CompuServe 69, 71  
connection setup 11–19  
copyright information 17  
customer support 69–71, 72

## **D**

DDC 22  
DirectX 52

disk  
    space 7, 28, 29, 66  
    speed 21, 29, 55  
display  
    drivers 24  
    information 64–66  
    setup 23  
document conventions 5  
driver conflict 52

## **E**

e-mail, Matrox 70  
expansion slots 9, 46, 51

## **F**

FAX, Matrox 69  
frame capture 25, 30  
FTP, Matrox 69

## **G**

graphics  
    troubleshooting 46–53

## **H**

hardware  
    acceleration 29, 53, 57  
    information 24, 67–68  
    installation 8–10  
    requirements 7  
HD Benchmark 21, 28, 33, 56

## **I**

input  
    connection setup 13  
    TV tuner 17  
    video camera 17

installation  
    hardware 8–10  
    overview 7  
    software 20–21  
IRQ settings 50, 51

## **L**

labels (on video devices) 5

## **M**

Marvel cable 6  
Marvel connector box 6, 11  
memory requirements 7  
MJPEG  
    capture options 29  
    resolutions 65, 66  
    video format setting 33  
    video quality 29  
monitor connector 48, 68  
monitor settings 22, 47, 48, 50

## **N**

NTSC 28, 32, 65, 67

## **O**

online documentation  
    Avid Cinema 34, 41  
    Marvel 5  
    Matrox Video Tools 54  
    PC-VCR Remote 31  
    Photo Express 42  
    PowerDesk 22, 46  
    VDOPhone 45  
output  
    connection setup 13  
    TV 18, 19  
    VCR 18, 19  
overlay mode 33

## **P**

PAL 28, 32, 65, 67  
PCI 9, 51, 67  
PC-VCR Remote 25–31  
PDF 5, 42  
Photo Express 42  
Plug-and-Play 22  
preview mode 33

## **Q**

quality  
    audio 66  
    MJPEG 29  
    video 57  
    video files 28  
Quick Connect 21, 55

## **R**

RCA connectors 6, 13, 16  
requirements, system 7  
resolution  
    display 65  
    MJPEG 66  
    video window 65  
RF modulator 18  
RGB 29, 33, 44

## **S**

SCART 14, 16  
SECAM 28, 32, 65  
software  
    installation 20–21  
    setup 50  
sound  
    troubleshooting 62–63  
Super VGA 65  
S-video  
    SCART 16  
    software setup 28, 32

## **T**

technical assistance 70

troubleshooting 46–63  
TV output  
    connection setup 18  
    software setup 23  
    troubleshooting 59–61  
TV tuner  
    input 17  
    software setup 27, 31, 32

## **V**

VCR  
    connection setup 17  
    input 17, 27  
    output 18, 19  
VDOPhone 43–45  
VESA  
    DDC monitor 22  
    modes (table) 65  
VidCap driver 32–33  
video  
    input 17, 27, 29, 37  
    output 18, 19  
video camera 17, 27  
video editing  
    troubleshooting 54–59  
video files  
    capturing 29  
    creating 28  
    file types 26, 35  
    input 35  
    MJPEG 29  
    output 35  
    playback 26  
    quality 28  
    settings 28–29  
video snapshot 25, 30

## **W**

warning 8, 9, 18, 22, 23, 48  
warranty 72  
Web, Matrox 69

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