Video System

CAMEO 400 DV

Digital Video Editing System

English Manual

Status 19.12.00

CE declaration

We:

TerraTec Electronic GmbH, Herrenpfad 38, D-41334 Nettetal, Germany

hereby declare that the product:

SoundSystem DMX XFire 1024

to which this declaration refers complies with the following standards or standardizing documents:
1. 50081-1

2. EN 50082-1

The following are the stipulated operating and environmental conditions for the said compliance:

Residential, business and commercial environments and small-company environments.

This declaration is based on:

test report (s) of the EMC testing laboratory

Contents

Preface **4**

Installation **5**

Card Diagram 5

The external IEEE 1394 ports 5

The internal IEEE 1394 ports 5

The internal power supply voltage 6

Connecting a DV camcorder 7

Connecting other FireWire™ devices 7

Installing the card 7

Installing the driver **8**

Installation under Windows 98 SE 9

Driver installed – this is what it looks like. 12

Installation under Windows 2000 13

The software installation **14**

Installing MediaStudio Pro 6.0 VE 14

Installing the DV updates for Windows 98 SE 14

Installing the Texas Instruments driver, no guessing matter! 14

The Software in Overview **16**

MediaStudio Pro 6.0 VE – MSP 16

Adorage Magic – Cameo Edition 16

Cool 3D 1.0 16

First Cut **17**

DV Recording with Video Capture 6.0. 17

DV Editing with the Video Editor. 19

Effective Transitions 21

Transfering DV to your Camcorder. 23

Attachment **24**

FAQ – Frequently asked questions and their answers 24

The perfect PC 27

The Processor 27

The RAM 27

The Hard Drive 27

You aren't alone... 28

Links to camcorder manufacturers: 28

The following companies offer Enablers for various DV camcorders: 29

Further links to digital video editing 29

The Service from TerraTec. 30

Hotline, Mailbox, Internet. 30

Broken?! 31

General Service Agreement 32

Terminology 33

Preface

We are pleased that you have chosen a product from TerraTec. We also congratulate you on your decision because the Cameo 400 is a piece of high-quality, state-of-the-art technology. With this product you have obtained one of the most powerful PC video processing solutions. We are sure that your Cameo 400 DV will serve you well in the future and raise the fun factor ;-) on your PC.

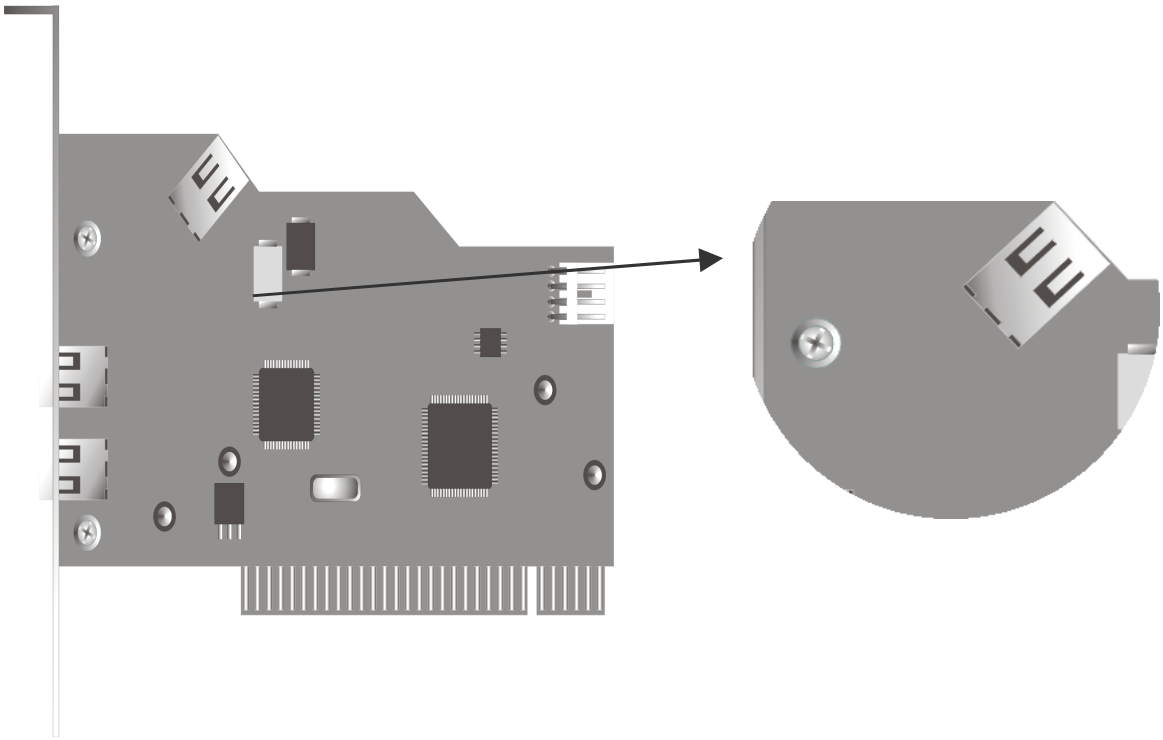
The following is a short overview of all that awaits you.

Installation

Card Diagram

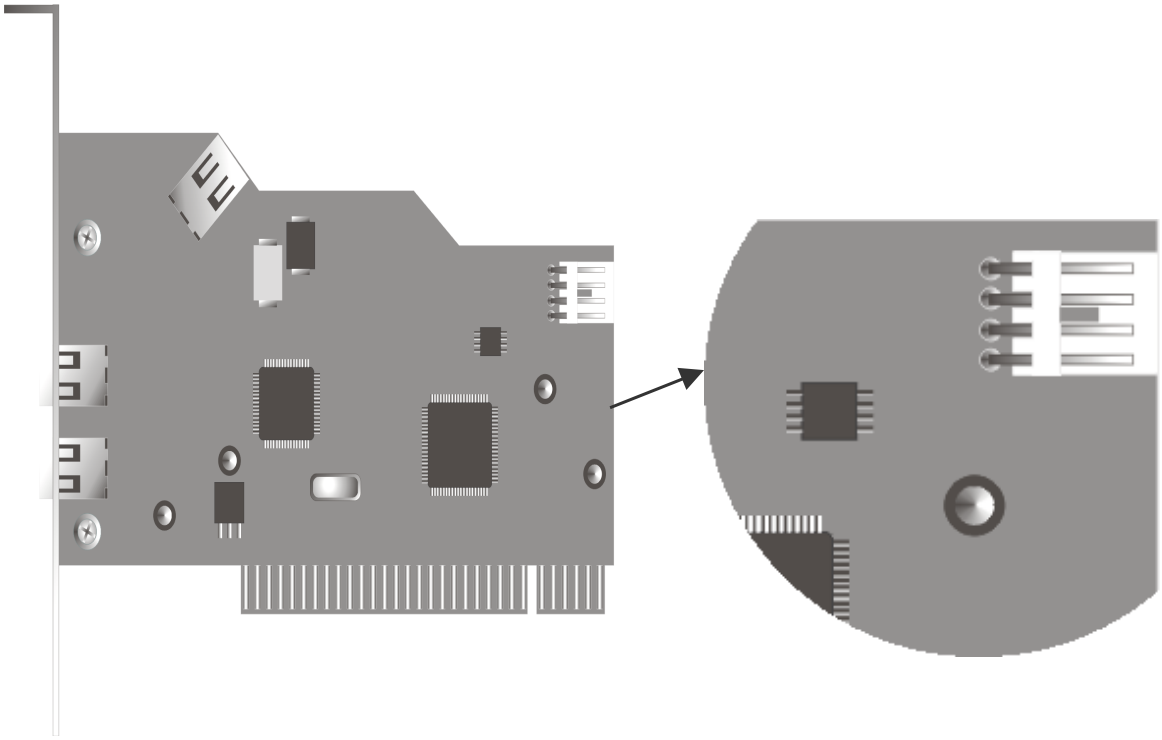
The external IEEE 1394 ports

These connecters provide the link between the Cameo 400 DV and the outside world, like your camcorder for example.



In the future IEEE 1394 devices will appear for internal PC use. This connection standard allows you to use such devices with the Cameo 400 DV.

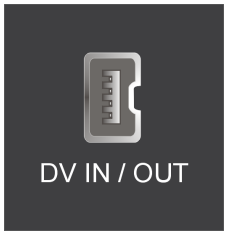
The internal power supply voltage



If you want to connect other IEEE 1394 devices that draw their power from the Cameo 400 DV at some time in the future, then you should connect the Cameo 400 DV directly to your PC power supply. This way the supply is not all drawn from the mainboard, eliminating overload on the PC electrical net.

Be careful when connecting the Cameo 400 DV to the power supply, as an incorrect connection can cause damage to the Cameo 400 DV and other system components.

Connecting a DV camcorder



On your camcorder there is a port that is marked “DV IN”, “DV IN / OUT” or “iLink™”. Connect the small jack of the FireWire cable to the port on your camcorder and the larger jack to the Cameo 400 DV.

Connecting other FireWire™ devices

Besides DV camcorders there are other FireWire™ devices which can be driven with the Cameo 400 DV. Among these are FireWire™ hard drives, CD ROM or DVD drives, and printers. Up to 63 of these device can be connected and used simultaniously.

Connecting other FireWire™ devices should be done according to the device's documentation.

Installing the card

Before you insert the Cameo 400 DV in your PC, pay attention to the specifics of your configuration. Also refer to the manual for your computer and other expansion cards for their settings.

Please observe the following instructions to ensure trouble-free installation.

If difficulties still arise, carefully reread the relevant chapter in this manual.

First check to ensure that the package is complete.

The delivery includes at least:

1 PCI-IEEE1394 controller Cameo 400 DV

1 installation & driver CD-ROM

1 IEEE1394 connector cable

1 registration card with serial number

1 manual

Send your registration card as soon as possible or register online at **`http://www.terratec.net/register.htm`**. This is important for support and the hotline.

Safety Instruction

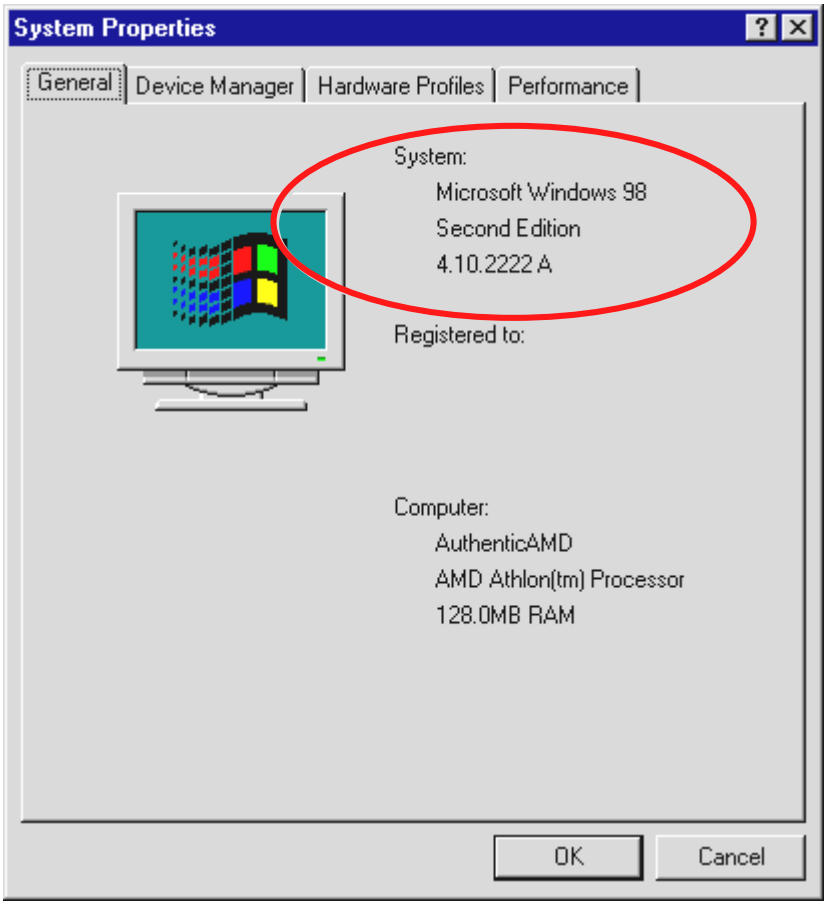
Before opening the case, unplug the power plug from the wall socket as well as from the PC.

Installing the driver

If you are working with Windows 2000, you can skip this section and go directly to the section Installation under Windows 2000on page 13.

Before installation under Windows 98 SE you should check that you really have the second edition of Windows 98 installed on your PC. Open the “Device Manager” by following these steps:

Click on “Start” -› “Settings” -› “Control Panel” -› “System”.



Please take note that Windows 98 SE is much further developed than Windows 98 in the first version and is so to speak crucial for DV video processing.

If you have the first version of Windows 98 on your PC, we would recommend that you update your system. Updates from Windows 98 to Windows 98 SE can be found in professional shops and are a wise investment for your system as well as the digital video; definitely saving you lots of time and trouble.

Installation under Windows 98 SE

During the driver installation your camcorder should not be connected to the Cameo 400 DV.

Once you have inserted the Cameo 400 DV in your PC and booted, Windows 98 SE recognizes the card as a new hardware device and the following screen appears.

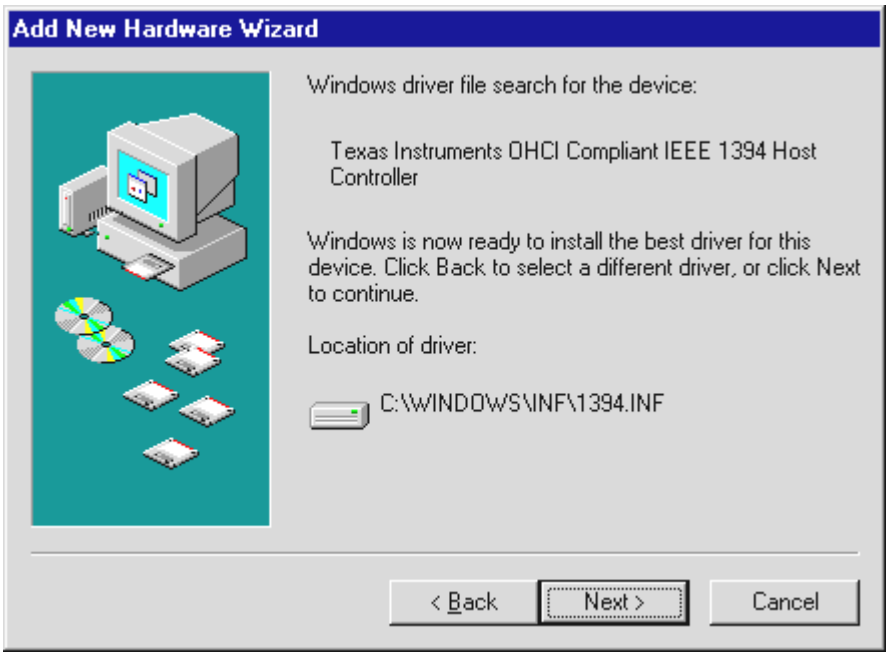
Click on “Next”, then the following message appears:

Do not choose any of these options and remove the checks next to any marked fields. Insert your Windows 98 SE installation CD and click on “Next”.

If this window appears, you need to tell Windows where to find the CD. Click on “OK”, and the next window appears:

Enter the path to the Win98se folder on the installations CD. Optionally, you can click on “Browse” and search for the file manually.

When Windows has found the necessary files choose “Search for the best driver for your device (Recommended)” and click on “Next”.

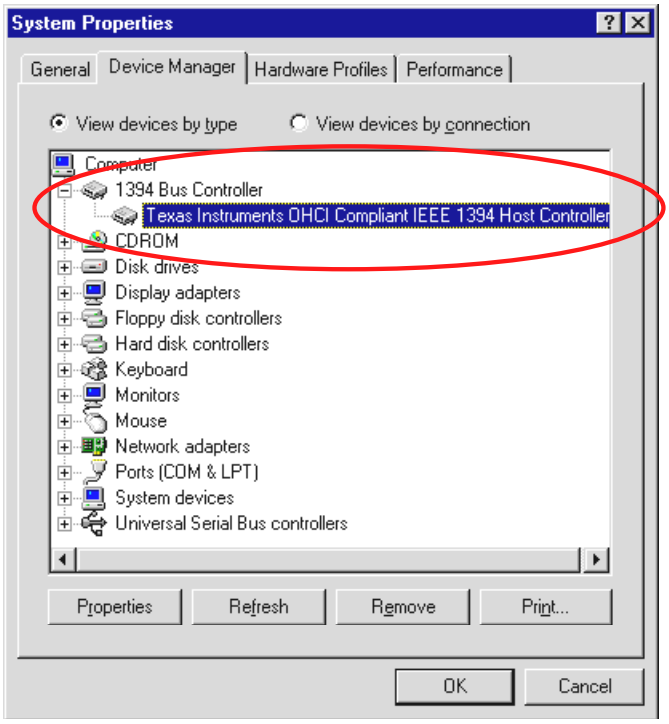


You should also click “Next” when this screen is reached. To wrap up the installation click on “Finish” in the final window.

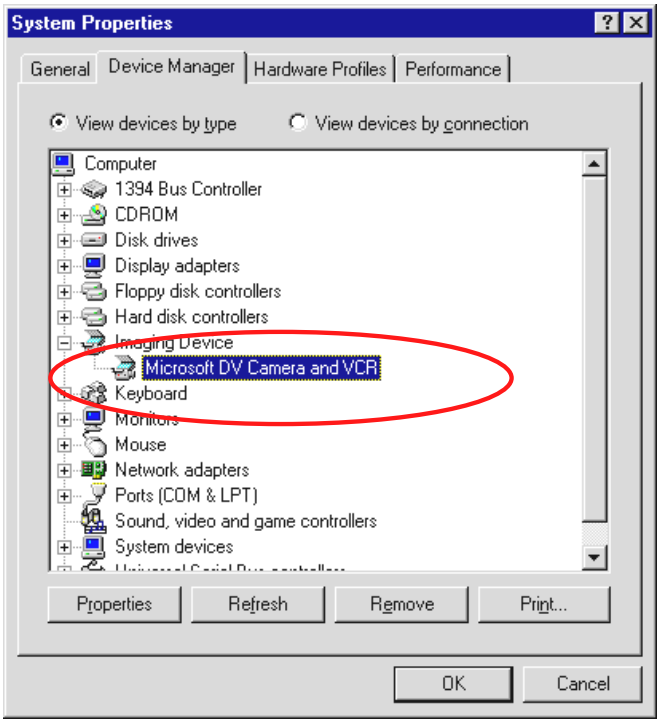
Windows then carries out the driver installation for you. Nothing else should happen at this point. Should you recieve further commands or requests to do something, and are not sure what to do, you can typically just hit enter succesfully.

Driver installed – this is what it looks like.

After the driver has been successfully installed, you should verify that everything is functioning properly with your Windows 98 SE system. In the Device manager you can get an overview of installed and recognized hardware devices in your PC. The Device Manager is found in the Control Panel under “System”.



After you have connected your camera and turned it on, the Plug and Play function adds it to the Device Manager.



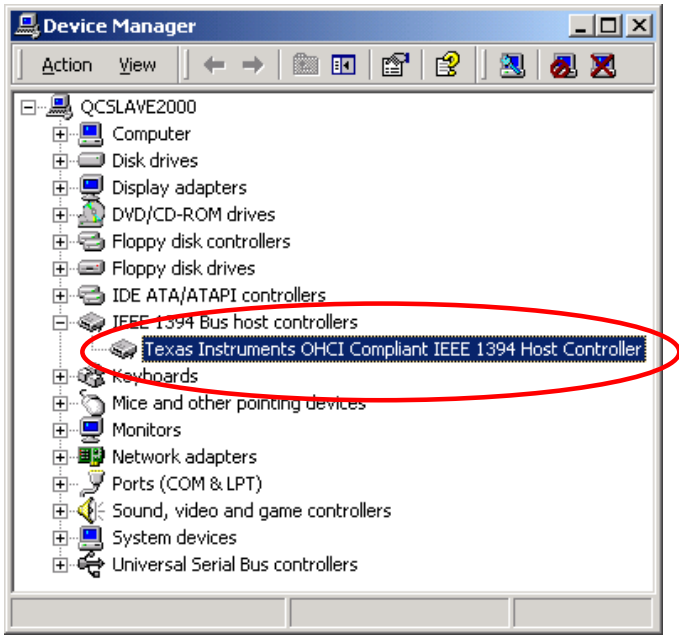
Installation under Windows 2000

During the driver installation your camcorder should not be connected to the Cameo 400 DV.

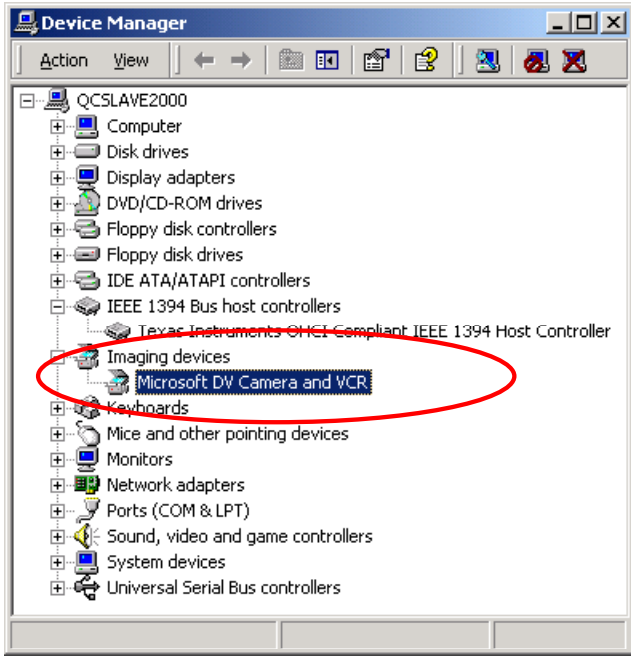
Under Windows 2000 the installation is the easiest, because everything that is needed for DV processing is already there. The driver installation is automatic, without asking for anything.

You should still check the Windows 2000 Device Manager after the installation.

Click on “Start” -› “Settings” -› “Control Panel” -› “System” and choose the “Hardware” tab.



After connecting the camcorder it appears in the above list under “Imaging devices”.



The software installation

Apon inserting the CD “Drivers, Applications and more” the installation routine starts automatically. Should this not occur, start the programm **AUTORUN.EXE** from the root directory of the CD manually.

The installation program does quite alot of the task alone, but not everything can be automated. To ensure a smooth installation please consider the following points.

Installing MediaStudio Pro 6.0 VE

MediaStudio Pro 6.0 VE should be installed first. Further installations from this CD require that MediaStudio Pro 6.0 VE be installed already.

Installing the DV updates for Windows 98 SE

Microsoft has improved the DV support under Windows 98 SE. By installing the DV updates your Windows system will be updated. After installing the first DV update Windows requests that the PC be restarted. Click on NO in the dialog box and carry out the second DV update. You can restart afterwards. These updates aren't necessary under Windows 2000 and are not offered during the installation process.

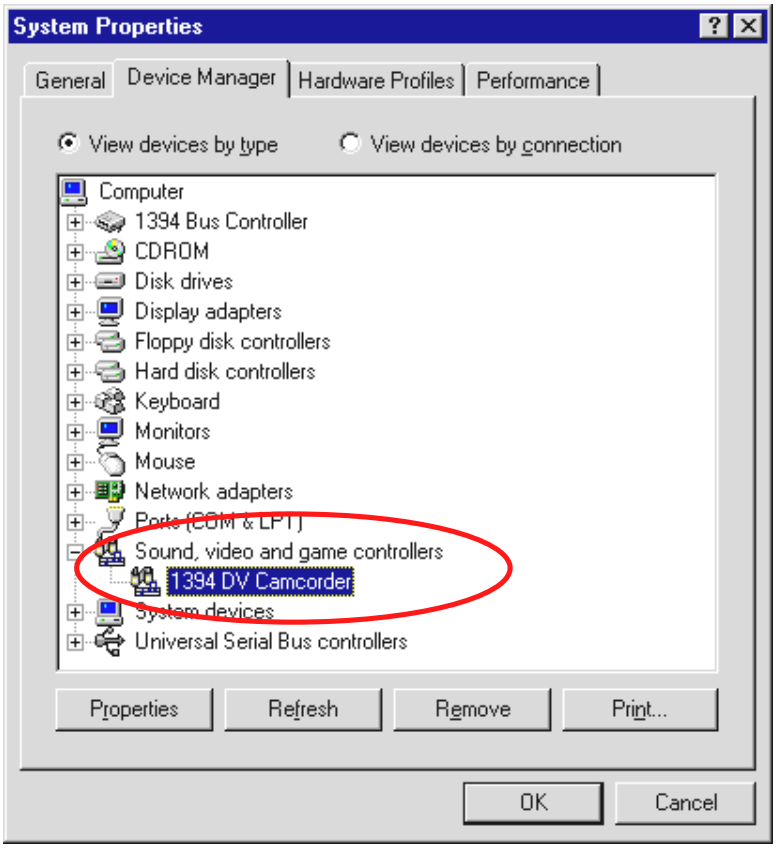
Installing the Texas Instruments driver, no guessing matter!

If you are working with Windows 2000 or using a Sony or Panasonic camcorder, then this section is not relevant and you can skip it. If, on the other hand, you are using a Canon or JVC camcorder and working with Windows 98 SE, then installing this driver could be important for you, as the necessary standards are otherwise missing.

Before installing the Texas Instruments driver you should certify that your camcorder really doesn't work with the installed Microsoft drivers. Follow the instructional steps in the section "First cut" and check out the FAQ at the end of this documentation.

Remember: after installing the Texas-Instruments driver all the references in this document regarding device control are different. Instead of choosing **MS 1394** always choose **TI 1394.**

After installing the Texas Instruments IEEE1394 driver you have to restart your computer. Afterwards your camcorder should be listed in the Device Manger like in the example:



The Software in Overview

This document concentrates itself primarily on the hardware installation. The following software description can't and shouldn't be taken to replace the software manual. Detailed documentation for the software titles can be found on the installation CD.

MediaStudio Pro 6.0 VE – MSP

MediaStudio Pro 6.0 VE is a program packet that consists of the following modules, which are all installed on the hard drive:

- Audio Editor 6.0
  (For manipulating sounds, fade in/fade out/louder/lower etc...)
- Video Capture 6.0 (For recording video sequences)
- Video Editor 6.0 (For cutting, editing and presenting your video sequences)

Adorage Magic – Cameo Edition

The Adorage Magic effects packet works as a Plug-In for MSP. You will find the extra effects in the MSP production archive under the transition effects.

Cool 3D 1.0

Cool 3D offers lots of 3D title tools. Self created titles can be integrated and utilized in your video project.

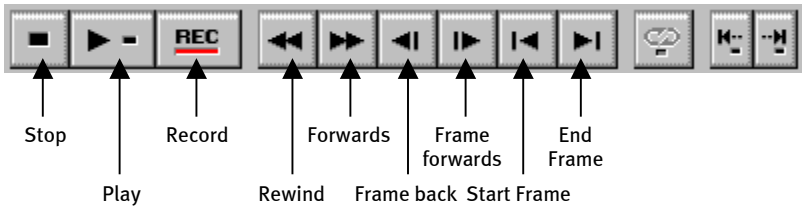
First Cut

Really important!!! – Because PC systems rarely run 100% stable and the fun and hard work is robbed by a system crash, we recommend that you regularly save your project, especially after making serious changes. In this manner you will become accustomed to insuring that no data loss occurs due to a system crash.

DV Recording with Video Capture 6.0.

In this section we would like to take a quick run through working with Video Capture.

1. Connect the DV cable to the Cameo DV400.
2. Switch the camcorder on and set it to the Player or VTR mode. Now connect the other end of the DV cable to the camcorder. Your system automatically recognizes that the camcorder is now connected to the PC.
3. Start “Video Capture 6.0” from the program group “Ulead MediaStudio Pro 6.0 VE”.
4. First a few options in the menu “Setup” need to set:
   - Choose the “Ulead DirectShow Recording Plug-in” under “Switch Capture Plug-in...”.
   - In the current menu “Ulead DirectShow Recording Plug-in” choose “Microsoft DV Camera and Video Recorder”.
   - And now in the menu “Device Control” choose “MS 1394 Device Control”.
5. Activate the “Preview” in the “View” menu. You should now be able to control your camcorder with the function buttons from “Video Capture” remotely and the camcorder image should be shown in “Video Capture”. If your camcorder doesn't support the remote control feature, then you need to take all the necessary steps manually on your camcorder.



The Video Capture – user interface.

6. Cue your video tape to the position where you would like to begin recording and click on the recording button “REC” in the Video Capture-user infterface.
7. Now the window “Capture Video” appears. At the position “File name” enter the name you wish to have your video saved under. Using the button “Browse” you can set the path where the file is to be saved. Pay attention that you have enough free memory, as each second of DV video requires approximately 3.5 MB. To begin the recording phase click on “OK”.

8. The video data is then sent from the camcorder to the hard drive. Don't be disturbed by the picture should it appear to jump or skip; this is just the preview and has no relevance on the final results.
9. End the recording after a few seconds using the “ESC” key. Your first video clip has now been transferred to your PC, ready to be edited.

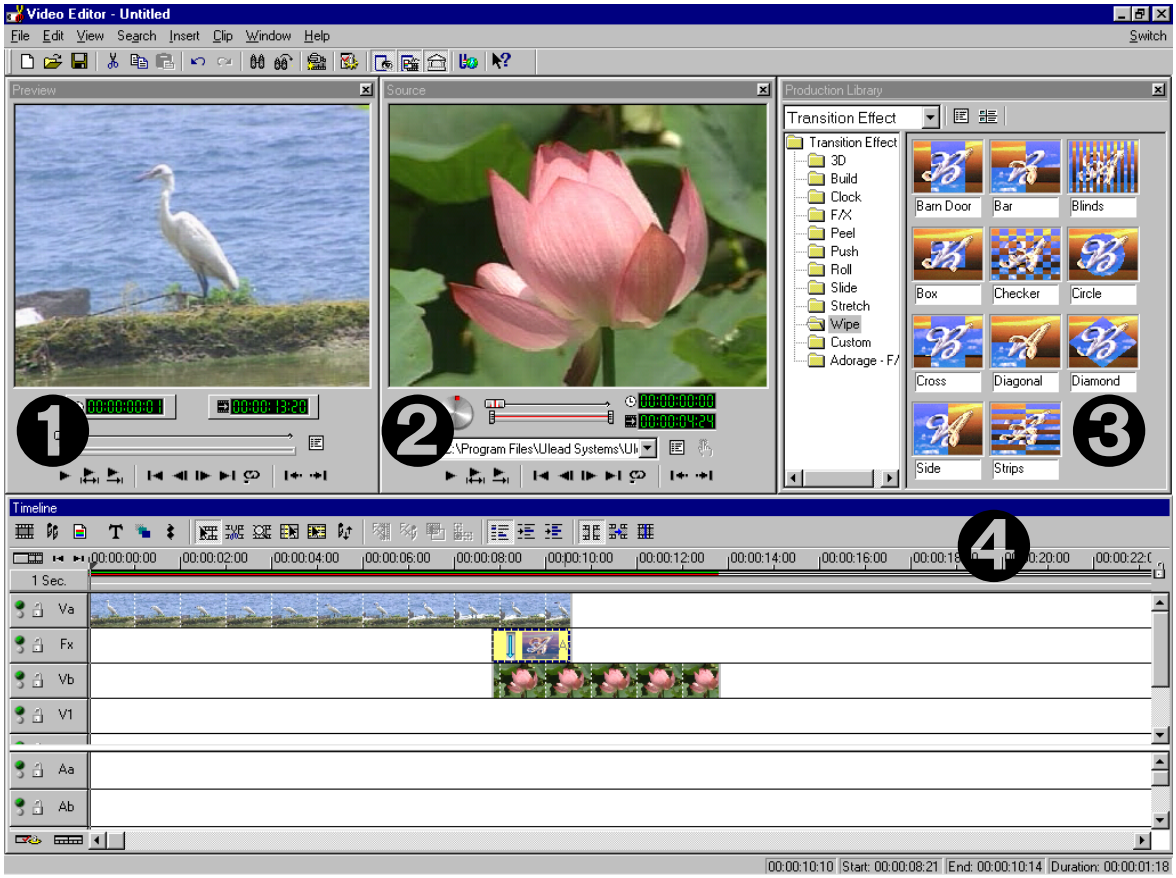
Follow the above steps a second time to create another video clip so that you already have adequate material for the next section “DV Editing with the Video Editor.”. Be sure to give your second video clip another name, otherwise the first clip will be overwritten.

It is generally recommended to give your video clip a name that clearly identifies it so that finding and recognizing it later is simplified.

DV Editing with the Video Editor.

Close Video Capture and start the Video Editor. Here you can cut your video clips and add titles and effects.

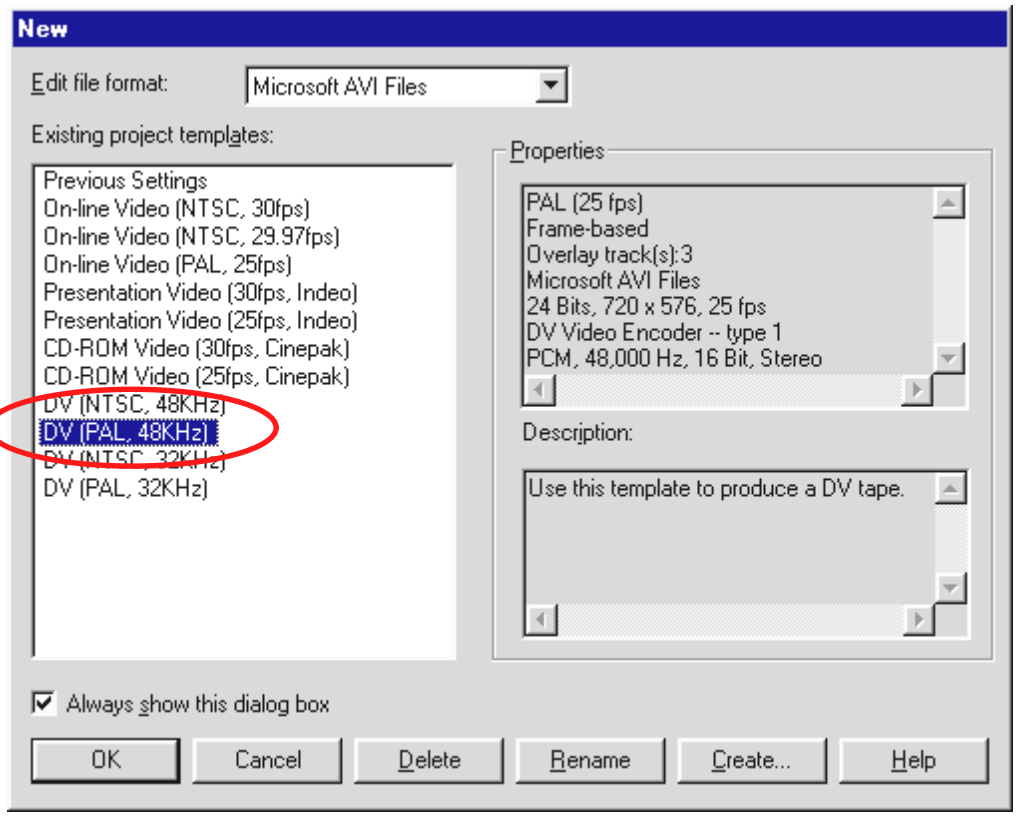
The interface is divided into the following areas:



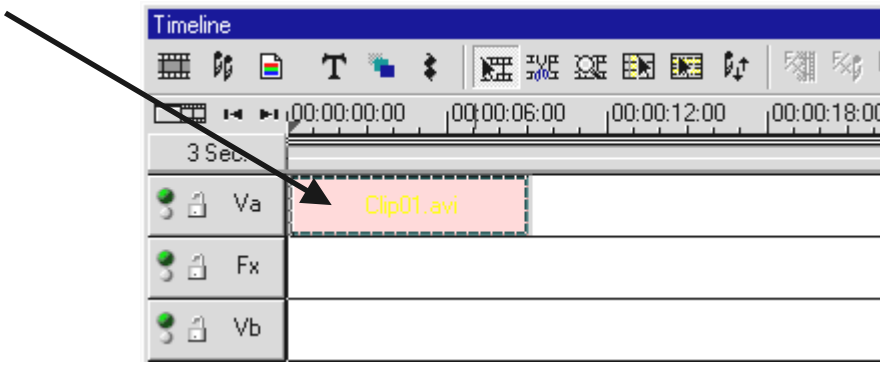
1. Preview window (to preview your project in lower quality)
2. Source window (Here you can cut your video or audio clips before incorporating them)
3. Production Library (The various tools to help you process your material are to be found here: video effects, filters, audio effects and also an archive for your video and audio material.)
4. Timeline (The Timeline offers a complete overview of all aspects of your project. All video clips, effects, audio tracks, etc... are clearly layed out in an easy to follow placement graph.)

So lets get started:

- After you have opened Video Editor 6.0, you will be requested to set certain project parameters. Here you need to choose DV (PAL, 48 kHz) and then "OK".

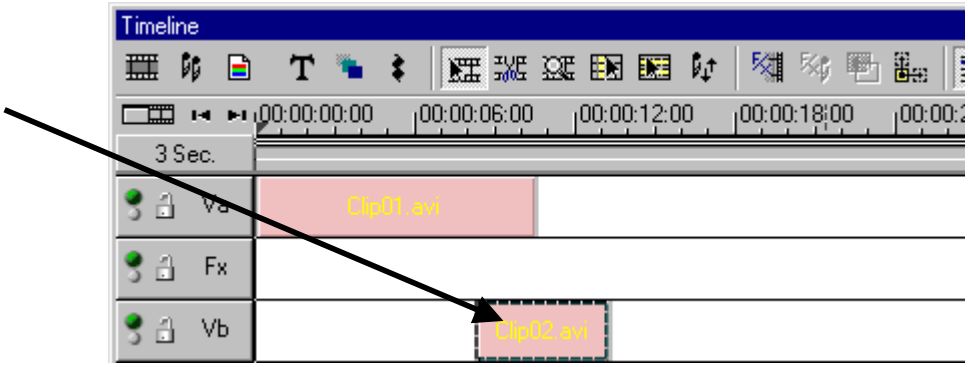


- Then double click on the video track Va from the Timeline.
- In the dialog menu that appears choose your video clip.
- You can then see that your video clip has been added to the Timeline.



Watch your video clip, by clicking the play button in the Preview window.

- Double click on the Vb video track and insert your second video clip.
- Use the mouse to place the second video clip far enough to the right that it overlaps the end of the first clip a little.

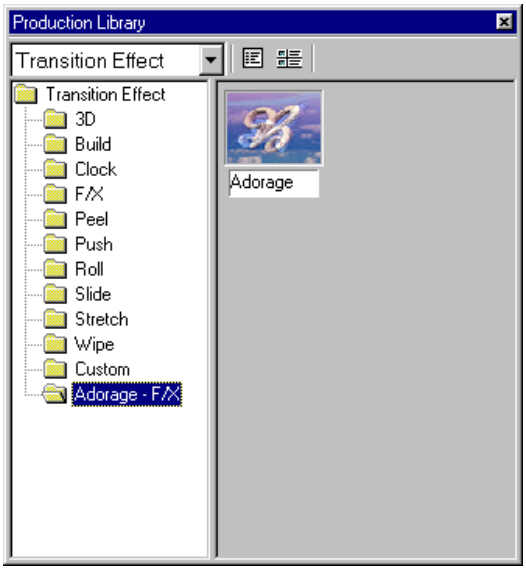


Play the preview again. You will see that from the position where the **Vb** clip starts to overlap clip **Va**, only **Vb** appears and **Va** is so to say cut out. This is your first straight cut.

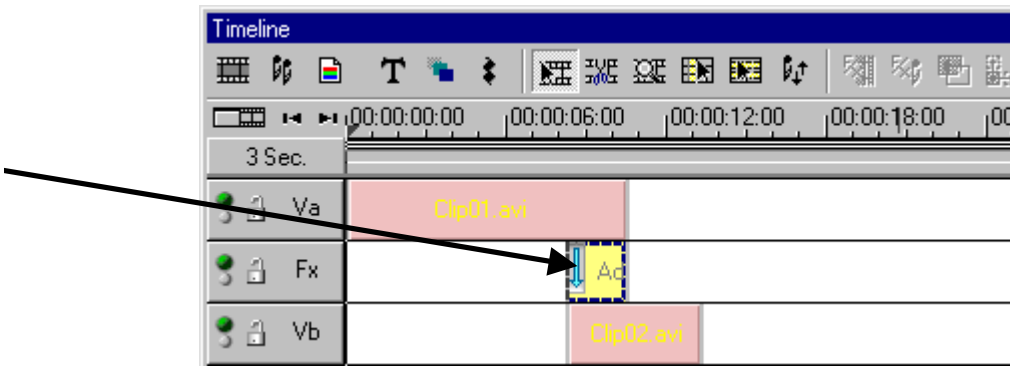
Effective Transitions

Straight cuts are the typical choice, but you also have the option of adding artistic transitional effects to blend one clip to another.

- Search the **Production Library** for a transitional effect.
- Choose the group **Adorage -FX**.



- Use the mouse to pull the Adorage symbol from the right side of the Production Archive menu onto the **FX track** in the **Timeline** and position it exactly where your video clips overlap.
- The overlapping area is then the length of the transitional effect.



- By double clicking on the effect in the Timeline you activate it's settings menu. (Detailed information about the effects settings can be found in the Adorage Magic documentation.)

You won't see anything in the Preview window of the Video Editor if your camcorder is connected to the Cameo400 DV. The preview is then given directly on the cammcorder.

Disconnect your camcorder from the Cameo or switch your camcorder off in order to see your video in the Preview window.

Transfering DV to your Camcorder.

When you have your first project finished you can send it back to your camcorder. (The DV Input (DV In) on your camcorder must be enabled.)

1. Connect the DV cable to the Cameo DV400.
2. Switch the camcorder on and set it to the Player or VTR mode. Now connect the other end of the DV cable to the camcorder. Your system automatically recognizes that the camcorder is now connected to the PC.
3. Start “Video Editer 6.0” from the program group “Ulead MediaStudio Pro 6.0 VE”.
4. Load the video project you would like to send to the camcorder.
5. Click on “File” in the Video Editor menu, and then choose “Select Device Control”.
6. Pay attention that “MS 1394 Device Control” is selected.
7. Select “File” again, followed by “Print to Tape” and there choose “Timeline”.
8. Now you should choose “Entire Project”, then click on “Options”, choose “Device Control” and confirm your selections with “OK”. The transfer to your camcorder should start automatically.

If your PC doesn't have an Intel® Pentium® III 500 processor or higher, then transfering the data to the camcorder might produce problems with the audio track. We recommend that you convert your entire project into one DV video clip in order to transfer it to your camcorder. After having edited a video clip from the DV camcorder, the audio track will probably have to be re-processed.

Attachment

FAQ – Frequently asked questions and their answers

Rewinding the video from MediaStudio Pro 6.0 VE doesn't work under* Windows 98 SE *like it says in the section "Transfering DV to your Camcorder".

Most likely the camcorder isn't correctly enabled or possibly not 100% compatible to the Microsoft DV drivers. If the camcorder is enabled, then you should consider installing the Texas Instruments driver from the driver CD after removing the old device from the Device Manager. Afterwards the rewind function for the camcorder varies in many ways from the MS driver. Please follow these steps:

1. Connect your camcorder with the Cameo 400 DV.
2. Start "Video Editer 6.0" from the program group "Ulead MediaStudio Pro 6.0 VE".
3. Click on "File" in the Video Editor menu, and then choose "Select Device Control".
4. Choose the Texas Instruments (TI) driver for your DV camcorder.
5. Click on "File" again and then on "Export" and choose "TI DV Record".
6. Now load the video project that you would like to send to your camcorder.
7. In the "DV Recording - Preview Window" you can view your DV file, then click on "Next".
8. In the "DV Record - Recording Window" click on "DV record" to begin the transfer to your camcorder.

Recorded video sequences wiggle or jump.

The most common cause is a hard drive that can't write the video stream quickly enough. You should defragment your hard drive regularly. If you are using an Ultra DMA hard drive, check that the DMA mode is activated in the Device Manager. Also check that the Cameo 400 DV does not share its IRQ with any other device.

We recommend using a seperate drive exclusively for your video material. You should also configure the temporary folder for MediaStudio Pro 6.0 VE to use this hard drive.

Please also read the next point.

Video files aren't recorded or the PC crashes during the recording.

Check to be certain that the Cameo 400 DV has an IRQ (Interrupt) alone. Open the Device Manager (Click on "Start" -› "Settings" -› "Control Panel" -› "System". In the Device Manager double click on "Computer" to open the IRQ list for your computer.) If the Cameo 400 DV shares the IRQ with another device, you should first try installing the card in another PCI slot. Often this solves the problem. Do not, however, put the Cameo 400 DV in the first PCI slot (directly next to the AGP slot for your grafic card), because this PCI slot usually shares its IRQ with the AGP slot.

How fast should my hard drive be to avoid drop-outs in the recording and playback?

In order to transfer DV video data without error you need hard drive with a minimal transfer rate of around 3.5 MB/sec. We recommend using a SCSI drive or IDE drive that supports Ultra DMA mode. Pay attention when using an Ultra DMA drive that it is activated in the Device Manager and that the newest Ultra DMA driver is installed on your system.

Can the video material be damaged by repeated transfer between my camcorder and PC?

No, the video material is already in digital format and isn't converted further. The transfer process from the camera to the PC or vice versa can be somewhat compared to a copying process.

I have previously worked with the Texas Instruments driver on my PC. My new camcorder uses the Microsoft driver. How can I change back to the Microsoft driver?

Follow these steps:

- Connect your camcorder to the Cameo400 DV.
- Open the Device Manager
- Open the group "Audio, Video and Gamecontroller".
- Double click on "1394 DV Camcorder".
- Then click on "Update Driver" and then "Next".
- Choose the option "Display a list of all the drivers...".
- In the next window click on "Have disk".
- The path to be given is "C:\WINDOWS\INF". (If you installed Windows in another path you will need to give the corresponding path.)

- Choose “Microsoft DV Camera and VCR”. Simply ignore the message that the current driver appears better than the chosen one. Afterwards the camera should appear in the Device Manger as MS Device.

In “VideoCapture” a message appears that the device can’t be found, recording is not possible.

Check that the camera is listed in the Device Manager in Win98 SE/2000. This normally happens automatically, and the camera should appear in the group “Imaging devices” as “Microsoft DV Camera and VCR” or under “Sound, video and game controller” as “1394 DV Camcorder”. Should this not be the case then click on “Refresh”.

The camera can be steered, but there is nothing to see on the monitor.

Check in the configuration from “VideoCapture” that the “Ulead DirectShow-Capture-Plugin” is chosen. If your PC has another VfW based card for video recording like a graphic card, TV card, etc... then the video capture could be set to one of these devices.

Direct by the video capture preview on the monitor the image is distorted, also in the recording the distortion is there when played back, in the Media player for example.

Some cameras (JVC, Canon) don´t work correctly with the MS steering. To use the TI steering you need to be sure it is listed in the Device Manager.

After exporting a finished clip all the processed scenes are mosaically distorted or the camcorder signals “Incorrect Format”.

Under Win 98 SE there are two necessary DV updates, (2427up.exe, 243174up.exe). These updates can be installed directly from the installation CD.

When trying to export a finished clip a message appears saying the cassette is copy protected or the camcorder isn't able to record.

Install the DV updates from the installation CD.

Some cameras have problems identifying the status over the FireWire port. Remove the cassette from the camera and tape the holes on the back side with two small tape strips.

The perfect PC

Sorry, the perfect PC still remains to be seen. Every PC has ist pro's and con's and should be chosen for its qualities in the primary usage field. In the following list we have included recommendations to help simplify the search for the right components:

The Processor

The processor speed is not the most crucial issue when working with DV video data, but does become relevant when you want to utilize the video effects and complex blending transformations. With a fast processor the wait time for effects processing can be significantly reduced. We recommend an Intel Pentium III or AMD Athlon processor.

The RAM

To process video material the data must be manipulated. Being able to hold large amounts of data in RAM and not have to constantly read and write to the drive delivers noticeable results. Even though 64 MB RAM is enough, we recommend using 128 MB. If you are working under Windows 98 SE, then using more RAM has little effect.

The Hard Drive

No other component plays a larger role in digital video processing as the hard drive. Most modern drives should be capable of reading and writing the necessary amount of data quickly enough. When using IDE drives, be certain that the drive's DMA mode is activated in the Device Manager. It is furthermore recommended to utilize a second drive exclusively for video data.

You aren't alone...

Below we have put together a list of (hopefully) interesting and usefull internet links.

Links to camcorder manufacturers:

Canon

Germany - **http://www.canon.de**

England - **http://www.canon.co.uk**

France - **http://www.canon.fr**

Italy - **http://www.canon.it**

Spain - **http://www.canon.es**

Netherland - **http://www.canon.nl**

JVC

http://www.jvc-europe.com/JvcCons/

Panasonic

Germany - **http://www.panasonic.de**

England - **http://www.panasonic.co.uk**

France - **http://www.panasonic.fr**

Italy - **http://www.panasonic.it**

Spain - **http://www.panasonic.es**

Netherland - **http://www.panasonic.nl**

SONY

Germany - **http://www.sony.de**

England - **http://www.sony.co.uk**

France - **http://www.sony.fr**

Italy - **http://www.sony.it**

Spain - **http://www.sony.es**

Netherlands - **http://www.sony.nl**

The following companies offer Enablers for various DV camcorders:

http://www.como.com

Germany

http://www.dv-in.de

http://www.dvcut.de

http://www.hifivideofachversand.de

http://www.stonehead.de

Netherlands

http://www.twintek.nl/dvwidget.html

http://enable.dvin.org/

UK

http://enable.dvin.org

Further links to digital video editing

http://www.dvfilmmaker.com	(English site that concerns itself with DV film related themes).
http://www.mainconcept.com	(manufacturer of composition and editing programs and other helpful software)
http://www.videox.net	(German site)

The Service from TerraTec.

"I Followed the instructions 'to the letter' but ..." is not pleasant, but can occur even in the best system. In such cases the TerraTec team is available for info and help.

Hotline, Mailbox, Internet.

If you have a difficult problem that the handbook, you, or your neighbor or salesman can't solve - then please contact us directly.

The first method - if an option - is the internet: at **http://www.terratec.net/** you will find the answers to frequently asked questions (FAQ) as well as the newest drivers. All this is also reachable over our mailbox system.

The mailbox numbers are: **+49-(0)2157-8179-24** (analog) and
+49-(0)2157-8179-42 (ISDN).

If the above mentioned options don't help you then contact our telephone support hotline. We can also be contacted online per email.

Call up **http://www.terratec.net/support.htm**. In both cases you will need to have the following information at hand:

- Your registration number,
- This documentation,
- A print-out of your configuration info,
- Your mainboard manual,
- A screenshot of your BIOS configuration.

Furthermore necessary for a proper and timely solution is to place your call while sitting in front of your PC in order to try various configurations directly or obtain further info. Please take note of the support team co-workers name.

You will need this if you need to send the card to us for testing or repair.

Broken?!

Before you send your card to us you must contact one of our co-workers. Note the name of the support technician and pay attention to the following points:

- Complete the Service card included with your Cameo 400 DV fully and clearly. Concisely detailed error descriptions can be used to speed up the process. Shipments without error descriptions cannot be processed and will be returned at the senders expense.
- Include a copy of the purchase reciept (not the original). If none is included we must conclude that the product is no longer in the warranty period and the repair will have to be billed to you.
- Please use adequately padded and safe packaging materials. Our experience is that the original packaging is the best. Remember, we are dealing with a sensitive electronic component.
- Be sure to adequately stamp the package - we'll do the same for the way back.

Everything will be OK. ;-)

General Service Agreement

1. General
   By buying and retaining the goods, you acknowledge our General Service Conditions.
2. Proof of Warranty
   You copy of the sales receipt or delivery notices is necessary for proof of warranty. If you do not have this proof of warranty, you will be charged for any repairs.
3. Problem Description
   Returns received with no or insufficient descriptions of the problem ("defect" or "to be repaired" is not sufficient), will be returned charging a processing fee since this makes the repair effort more difficult and is avoidable.
4. Wrongful Complaints
   In case of wrongful complaints (no error can be determined, probably user error), we will send the goods back charging a processing fee.
5. Packaging
   If possible please return the goods in the original packaging. Inappropriate packaging could endanger the warranty. Any transport damage cause because of this voids the warranty.
6. Other Products
   Devices not manufactured or marketed by TerraTec Electronic GmbH will be returned with a processing fee.
7. Repairs Liable to Charge
   Repairs that do not fall under the warranty will be charged.
8. Transport Costs
   The sender is liable for transport and insurance costs when sending goods to TerraTec Electronic GmbH to be repaired. TerraTec Electronic GmbH will cover the transport costs for returning the goods if the repair falls under warranty. Packages with postage due will be declined for organizational reasons.
9. Final Provision
   TerraTec Electronic GmbH reserves the right at any time to change or expand these General Service Conditions.

In any case, these General Terms and Conditions from TerraTec Electronic GmbH are valid as accepted.

Terminology

AVI – a Windows video format.

Blending – see Overlay

Blue Screen – A variation of the Chroma Keying

Capture – as in record.

Chroma Keying – Chroma Keying uses a single colored background where, for example, an actor or actress is overlaid. The background can then be made transparent, allowing another background to be blended in.

Chrominance – Chrominance describes the color signal in YUV, which is a combination of two color combinations. U, the balance between Red and Cyan and V, the balance between Yellow and Blue.

Clip – A short piece of recorded video material.

Composite Video – Composite Video is a standard consumer transfer method, normally an RCA jack (Cinch) and often used on televisions and VCRs. Using this method all signals (Chrominance and Luminance) are sent through one cable. The quality of Composite Video is not as good as S Video, where Chrominance and Luminance are sent separately.

CPU – Central Processing Unit. The part that really works, the processor, e.g. Pentium or Athlon.

Data Transfer Rate – This is the amount of data your drive continually reads or writes. This value is typically measured in seconds, e.g. 7 MB/sec..

Device Control – this represents the ability to steer your DV camcorder from the PC.

DirectDraw – DirectDraw is a graphic standard started by Microsoft. One advantage of this standard is that data can be written directly in the graphic card memory, e.g. for smooth video playback.

Dropped Frames – These are the single frames that are lost from the data stream during recording, usually due to a slow hard drive.

D8 – Digital 8 is the logical conclusion to the Hi8 and VHS camcorder formats. It continues to use Hi8 or D8 cassettes but records in DV format.

DV – DV stands for Digital Video. The DV standard utilizes a compression rate of 5:1, which represents a data rate of 3,125 MB/sec. and can be processed by all the newer hard drives. The DV quality standard is really high and is increasingly used in professional productions. There are two different types of DV video cassette formats that differ in the maximum video time length and cassette size but both formats are compatible. Mini DV is for the Consumer field and offers tape lengths of up to 1 hour. The DV format for the professional field has a maximum playtime of 3 hours.

DV-In – The DV port on a camcorder can normally transport video data in both directions, from the camcorder or to the camcorder. Many European camcorders are incompatible with the DV In standard. See Enabler.

Enabler – Due to European customs laws importing digital video recorders is more expensive than importing digital video playback devices. The camcorder developers have for this reason modified their devices for the European market by deactivating the digital Input-› DV In. Ever clever developers of course quickly found a way to reactivate the DV In. This procedure is called Enabling. Enabling is the prerequisite to be able to send video material back to the DV camcorder. Enablers are available for all camcorders and can be found in stores or ordered on the internet.

FireWire – Apple's name for IEEE 1394

Frame Rate – this identifies how many single images (frames) are included in a given time period. Typically the frame rate is represented in frames per second (FPS).

Half Frames – in order to avoid flicker in the video signal during playback on a TV 50 half frames instead of the usual 25 frames per second (in PAL standard) are sent. The half frames are either the odd lines (these are sent first) or the even ones that are displayed interlaced on the screen.

Hi8 – Analog video recording system, that separates color and brightness from each other and thereby achieves a better quality than e.g. VHS C.

IEEE 1394 – a universal bus system for transferring digital data originally developed by Apple. The attached devices are allowed to be separated by up to 4,5 m over cable. Data transfer rates of up to 400 Mbit/sec are possible. Because there is no standard for how data is sent over this bus there was until recently no common standard for video data. Sony filled this hole by adding the FireWire port to the digital recorder and creating their own protocol. Through FireWire and the Sony protocol the dream of loss free video processing was finally realized.

Ilink – Sony's name for IEEE 1394

Linear Editing – The linear video cut finds its roots in analog video. The finished video clip is usually in the same order as the original video material. A simple example of linear editing is transferring data from an analog video camera and leaving certain scenes or sections out. But should you want to insert a new clip e. g. in the middle then all the following clips have to be re-recorded.

Luma Keying – In contrast to Chroma Keying the transparency of the video based on the brightness is determined by Luma Keying.

Luminance – Luminance represents brightness in YUV. (Y)

MiniDV – The consumer version of DV formats. See also DV.

MJPEG – Motion JPEG is a compressions technique where every frame in the video data flow is individually compressed.

MPEG – The Motion Picture Experts Group is a combination of leading manufacturers and developers of video technology that have led the way to new video standards such as MPEG 1 or MPEG 2.

Non-linear Video Editing – different from the linear video cut the process of adding clips has no effect on the following clips. The non-linear video cut allows, for example, a clip at the beginning of a video project to be shortened or removed without having to re-process the following clips.

NTSC – NTSC is the video standard used in the USA or Japan. NTSC offers a higher frame rate as PAL (30 frames, i.e. 60 -› half frames per second), but in a lower resolution (525 lines, 480 visible). The color in NTSC standard is represented in YIQ.

Overlay – refers to the transitional effects between two video clips.

PAL – Is the common video standard in Europe. The PAL frame rate is 25 frames (i.e. 50 -› Half frames) per second and the resolution is 625 lines(576 visible). The PAL color standard is YUV.

Preview – allows a simple overview to help manage your project. The final quality is normally much better than the preview.

RAM – Random Access Memory is quick working memory of the PC. It is crucial when editing video with effects and so the general rule: You can't have too much RAM!

Rendering – describes the processing of video or audio clips that have been changed e. g. by applying filters or effects.

RGB Color Spectrum – In the RGB spectrum every visible pixel is comprised of three components: R(ed), G(reen) and B(lue). In order to achieve a natural color spectrum on the PC

each one must have at least 256 components. This is exactly one Byte of memory. One single video frame requires 768 Pixels x 576 Pixels x 3 Bytes = 1327104 Bytes. That's about 1,2 MB per frame!! So if you want to record one second of RGB video you need about 31,6 MB of drive space. A 2 gigabyte hard drive has a video capacity of approximately one minute using this standard. Given the fact that there are not (yet) any drives that can handle such huge amounts of data, there is the possibility to transform the video signal by using another color spectrum (usually YUV) and through compression (usually MJPEG) so that the size is greatly reduced.

SECAM – The British drive on the left, the French use SECAM. Next to PAL and NTSC, SECAM is the third video standard in the group, but which is only used in France and a few other eastern countries. Secam was also used in the former DDR in Germany.

Storyboard – In contrast to the Timeline the Storyboard gives you a thematic overview of the project components. Individual scenes are easily identified, but there is no real relation to the length of the project.

S-Video – Unlike by Composite Video Chrominance and Luminance in the video signal are separated from each other achieving a higher quality.

Timeline – The Timeline displays the positioning of your video and audio clips as well as transitions.

Transition – See Overlay

Trimming – This describes cutting a video clip at the beginning and/or end.

Video for Windows – This is the relatively old, but still commonly used video concept under Windows.

Video filter – Using the Video filters you can manipulate your video material in various ways. For example you can change the colors or activate complex filters to make your film look like an old silent reel.

YIQ – YIQ is a color spectrum related to YUV. It is also determined by brightness -› Luminance (Y), and also by the color components I (cyan orange balance) and Q (magenta green balance). YIQ e. g. is primarily used by NTSC.

YUV – This color spectrum is composed of the brightness component -› Luminance (Y) and the two color components -› Chrominance (U,V).