

VideoSystem



Analog Video Converter USB 2.0

English Manual

Version: 26.05.03

CE Declaration

We:

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

hereby declare that the products:

VideoSystem Cameo Grabster 200,

to which this declaration refers are in compliance with the following standards or standardizing documents:

1. EN 55022 Class B

2. EN 55024

The following are the stipulated operating and environmental conditions for said compliance: residential, business and commercial environments and small-company environments.

This declaration is based on:

Test report(s) of the EMC testing laboratory



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1. Preface

Thank you for choosing a TerraTec product. Congratulations on your decision to buy this sophisticated piece of state-of-the-art technology, the Cameo Grabster 200. Cameo Grabster 200 is a professional product that forms a bridge between the worlds of analog and digital video. We are convinced that the Grabster will be both very useful and a lot of fun for you for a long time to come.

The following is a brief overview of the features and capabilities of your new Grabster 200.

2. Scope of delivery

- Cameo Grabster 200
- S-video cable
- Composite cable
- Stereo audio cinch to mini-plug cable
- USB 2.0 cable
- Scart-composite/S-video/audio cinch (RCA) adapter
- Ulead DVD MovieFactory 2 SE Studio Suite
- This manual
- Registration card with the serial number

Please fill out and return the registration card to us at your earliest convenience or register online at <http://www.terratec.net/register.htm>. This will help our Support and Hotline teams more effectively provide you with the answers to any questions you may have.

3. Product description

3.1. Archive, edit and burn videos...

Cameo Grabster 200 is the perfect start into the digital video world. This is because it only takes a few simple steps for this external video converter to connect your camcorder, DVD player, satellite dish, VCR or any other source with an analog video output to your PC. Now, using your computer, you can edit your videos conveniently, safely archive them or quickly and easily burn them to DVD, SVCD or VCD.

3.2. ... in no time via USB 2.0

Cameo Grabster 200 has composite and S-video inputs and a USB 2.0 interface. This makes it possible to copy your videos in very little time! You can copy in MPEG1 or MPEG2 to your local hard drive and even create a DVD RW on the fly, without using space on your drive. Then you can even create individual menus on your DVD and edit out annoying commercial interruptions. The video resolution of 720 x 576 pixels guarantees the highest video quality. This turns your PC into a multifunctional “digital video recorder” for DVD, SVCD and VCD!

3.3. Easily transfer your videos onto DVD or (S)VCD with a simple click of the mouse

Become your own movie producer. With the Ulead DVD MovieFactory 2 SE Studio Suite, included with the Cameo Grabster 200, you have the ideal software for recording and editing videos. It's everything you need to conveniently cut your videos and furnish them with your own clips or individual menus. Afterwards, you can save them on your drive and burn them to (S)VCD or DVD with the click of the mouse.

3.4. Key features:

- External convertor for analog video
- Transfer analog video on the fly onto DVD RW
- Direct creation of (S)VCD
- Ulead DVD MovieFactory 2 SE Studio Suite software
- S-video and composite video inputs
- NTSC and PAL support
- Up to 720 x 576 pixels video resolution
- Recording formats: MPEG1, MPEG2, VCD, SVCD, DVD (on the fly DVD-RW), AVI
- Includes USB2, S-video, composite and audio cables, and Scart adapter

3.5. Technical details:

- USB 2.0 interface
- Video standard: PAL & NTSC
- Composite (RCA) or Y/C (S-video) Mini-DIN inputs
- Video “through” function
- PAL recording: up to 720 x 576 pixels/25fps
- NTSC recording: Up to 720 x 480 pixels/29.9fps
- Video resolution from 160x120 to 720 x 576 pixels
- Windows WDM driver
- Data format: I420, YUY2, RGB24
- Power supply via USB 2.0 (5V)

3.6. System requirements for AVI or MPEG 1 (VCD) recording:

- Pentium III / AMD Athlon 800 MHz
- USB 2.0 port
- Microsoft Win 2000, Win XP
- 128 MB RAM
- Sound card

3.7. System requirements for MPEG 2 (DVD) recording:

- Pentium IV 1400 MHz / AMD Athlon XP 1800+
- USB 2.0 port
- Microsoft Win 2000, Win XP
- 128 MB RAM
- Sound card

4. Installing the Cameo Grabster 200

4.1. Installing the drivers

Inserting the installation CD will automatically launch the installation routine. If this is not the case, please manually execute **AUTORUN.EXE** in the root folder of the CD.

While the installation program will take care of most of the work, we were not able to automate everything for you. A number of points must be observed to that the installation is set up correctly the first time around.

4.1.1. Installing DirectX 9.0

We realize that things don't always go as planned. With the introduction of DirectX 9.0, Microsoft offers many improvements and bug fixes that are essential for digital video editing.

Please install these updates first!

4.1.2. Driver Installation

Please do not connect your Cameo Grabster 200 to the PC just yet!

1. Please close all active applications.
2. Insert the driver CD-ROM into your CD-ROM drive.
3. Choose your language.
4. Click the driver installation option.
5. Follow the instructions as they appear on your screen.

4.2. Installing the hardware

4.2.1. Connections



Description

- ❶ **Video Thru (cinch/composite)**—Connect your TV/VCR, etc. here. The video signal that is fed to ❷ is sent on in analog form, for example to a television, through ❶.
- ❷ **Composite input (cinch)**—connect your analog video source here. The video signal is sent on in analog form from ❶ to a television for example, and is output digitally from ❹ to the PC.
- ❸ **S-video input (Y/C)**—If your analog video source has an S-video output signal, we recommend that you use this input. The video signal is output digitally to the PC via ❹.
- ❹ **USB 2.0 output**—for connecting a PC.

4.2.2. Bridge between analog video device and PC

It is particularly interesting to create a bridge between an analog video device and the PC. This lets you digitalize video material, edit it and then burn it to (S)VCD or DVD, or burn it to DVD “on the fly”.

To do this, you need only connect the video output (S-video or composite) of your analog video device (camcorder, VCR etc.) with the video input ❷ or ❸ of the Cameo Grabster 200, and then connect the audio outputs to the line-in jack on your sound card. In this case, make sure that your sound card is set to record through the “Line-In” input. Please use the appropriate cables (included). If your analog video device has a Scart output, you can use the Scart composite/S-video/Stereo audio adapter provided. Now connect the USB2.0 output ❹ to the USB2.0 interface of your PC. Use the USB2.0 cable provided. Follow the instructions as

they appear on your screen. Now launch your software. See “The applications at a glance” section for more information on the ULEAD DVD MovieFactory 2 Studio Suite software. Do you want to monitor the digital recording on your TV? No problem! As long as you use the composite input ②, you can pass the video signal via the video thru jack ① to your television or VCR.

4.3. Driver settings

The “Amcap” utility is all you need for complete control. In almost all situations, you do not need to change any settings! Of course, you can also access the driver from the DVD MovieFactory and VideoStudio software provided. This may be necessary if you use the S-video input, or if your analog source is NTSC. After you have installed and connected your Cameo Grabster 200 as described above, select the desired language on the installation CD and then launch Amcap.



Under “Options/Video Capture Filter/Image”, you can determine whether the video signal is to be fed into the composite input or S-video input, and whether the TV standard is PAL or NTSC. Set the resolution under “Options/Video Capture Pin”.

5. The applications at a glance

DVD MovieFactory 2 SE Studio Suite consists of two high-quality applications: VideoStudio and DVD MovieFactory 2 SE. MovieFactory is an easy-to-use tool for transferring analog videos to DVD-RW “on the fly” or saving them to hard disc. Of course, you can also use it to edit videos—even those which have already been saved to DVD-RW “on the fly”. VideoStudio is geared towards professional video editing and offers just about every possible function you can think of. We have provided extensive documentation for both programs on the installation CD.

5.1. Installing the software

Install VideoStudio and DVD MovieFactory 2 SE from the installation CD. Simply follow the instructions provided.

5.1.1. Brief introduction to DVD MovieFactory 2 SE

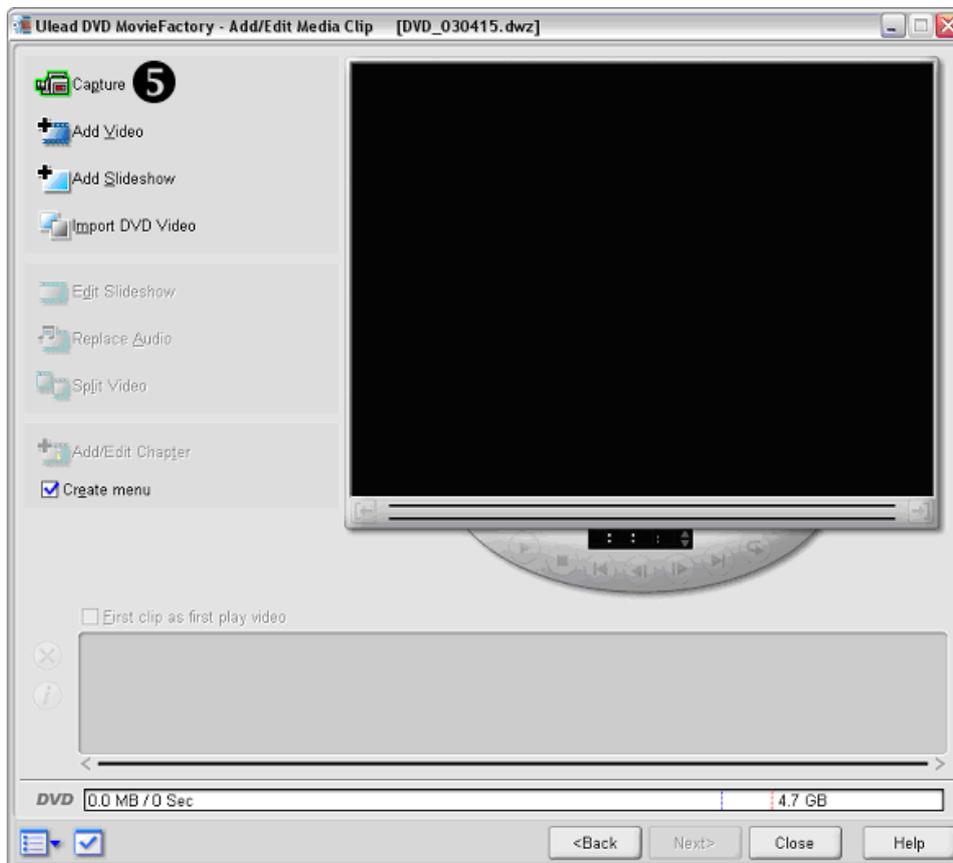
After you have installed and connected your Cameo Grabster 200 as described above, start up DVD MovieFactory 2 SE. Be sure to select your sound card's line-in for recording.



If you want to copy your analog video directly to CD as an (S)VCD or onto DVD, just select “Direct to Disc” ② and follow the simple instructions on the screen.

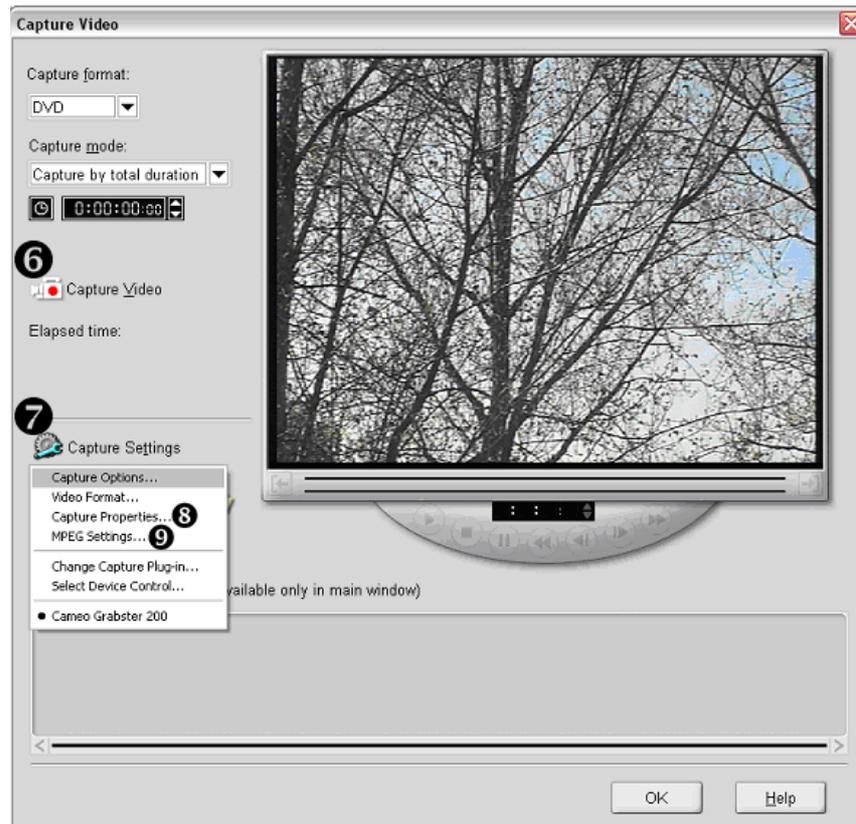
Do you want to first transfer your treasured analog videos to hard disc, edit them and later create an (S)VCD or DVD with an impressive menu? Not a problem: Select “Start Project” ① on

the left, and in the center choose the corresponding format ③. Now click “Next >” ④. This will open a new window:

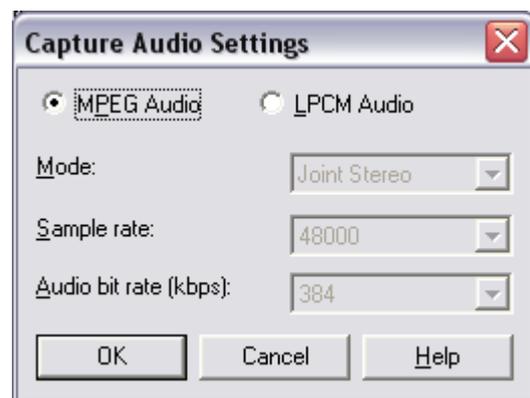
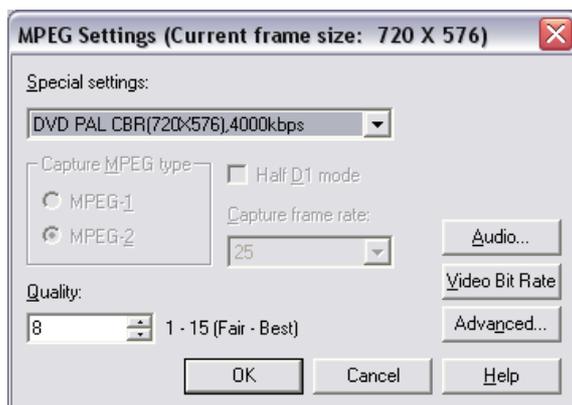


This window lets you insert videos or pictures from the hard disc into your project. Here, we want to briefly explain how you can digitalize your analog videos.

Click on “Capture” ⑤ in the upper left of the window. This will open a new window. You have now started recording mode.



In the preview window, you can already see the video signal of your analog source. Under “Capture Settings” 7, you can adjust the settings. Under “MPEG Settings” 9, you can specify the desired bit rate (video quality) and audio format. Here is an example for the DVD recording format:

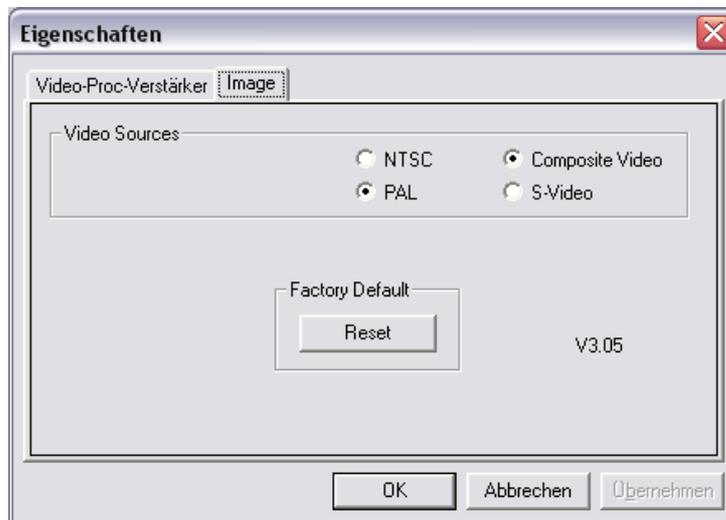


If you select 4000 kbps CBR (constant bit rate), your blank DVD can easily hold over two hours of DVD video. Of course, don't forget that the higher the bit rate, the better the quality, and the larger the file size. Start recording (6).

5.1.2. Driver settings in DVD MovieFactory

The only thing the PC needs to know is whether the video signal is being fed into the composite input or the S-video input, and whether the TV standard is PAL or NTSC. To make these settings, just switch to the recording mode in DVD MovieFactory. There you will find the

PAL/NTSC and Composite/S-Video In settings under ⑧ “Capture Settings/Capture Properties/Video Capture Filter/ 2nd Register Card 'Image'”.



After you have stopped recording (“ESC”), click on “OK”. This returns you to the main window. You will see the recorded video sequence both in the storyboard and the preview window. Now you can edit your video clip and organize it into chapters. Click “Next” to complete your project.



You can now create your own menu. The next step lets you check the menu. In the final step, you can decide whether to output your project to CD/DVD or hard disk.

Help is always at hand (in the lower right of the active window).

6. Appendix

6.1. Troubleshooting

There is no sound in the video recording.

Check all connections to your sound card. If everything is connected correctly, make sure Line-In is enabled for you sound card (under Start / Settings / Control Panel / Sounds and Multimedia). Read the operating manual provided with your sound card.

The PC crashes when I begin recording video.

Open the Device Manager. To open the Device Manager, press and hold the Windows key (with the Windows logo) and press the Pause key. This opens the System Properties window. Click the “Hardware” tab and then the “Device Manager” button. Under “Sound, video, and game controllers”, disable the “USB Audio Device”. This has no other effect on your system.

I only see a very small picture with poor quality.

Make sure that you have activated the USB 2.0 input of your PC, and that you are currently using it. Your computer probably has USB 2.0 and USB 1.1 inputs, or your USB 2.0 interface is disabled in your BIOS settings. Read the manual provided with your motherboard.

6.2. Service at TerraTec.

Nothing seems to work!—This can happen even on the best systems. If this happens to you, the TerraTec team is happy to offer its service and support.

6.2.1. Hotline, Mailbox, Internet.

If you have a tough problem—where you cannot solve the problem yourself, the support in this manual doesn't resolve the problem, and your dealer can't fix it either—please contact us directly.

If possible, try our Internet support system first: at <http://www.terratec.net/>, you will always find current answers to Frequently Asked Questions (FAQ) and the latest drivers. All of this is also accessible via our mailbox system. To call us: +49- (0) 2157-8179-24 (analog) and +49- (0) 2157-8179-42 (ISDN).

If these options do not provide the necessary help, please contact our phone hotline. You can also reach us online. To do so, visit us at <http://www.terratec.net/support.htm>. In either case, please have the following information handy:

- your registration number,
- this documentation,
- a printout of your configuration files,
- the manual of your motherboard, and
- a screen shot of your BIOS configuration.

In addition, it would be helpful to our technicians if you are at your computer during the phone call so that you can carry out our tips and tricks directly. Please do not forget to write down the name of the respective support technician if you contact our Support Team. You will need this name if a defect is present and your card needs to be mailed to us.

6.2.2. Broken?!

Before you return the Cameo Grabster 200, be sure to contact us! Make a note of the name of your support contact and follow these simple instructions:

- Please fill out the service request form provided with your Cameo Grabster clearly and completely. The more clearly and detailed you describe the problem, the faster we will be able to help. Cards sent in without a description of the problem cannot be processed and will be returned to you at your expense.
 - Be sure to include a copy of your purchase receipt (not the original) with the package. If we do not receive a copy of a receipt, we will assume that the warranty for the product has expired and will bill you for the repair.
 - Please use a sufficiently strong and padded mailing package. We recommend using the original package. Remember that the card is a sensitive electronic component.
 - Be sure to include enough postage—we will cover for the postage for the return to you.
- ;-)

6.3. General terms and conditions of service

1. General

By purchasing and receiving the goods, you accept our general terms and conditions of service.

2. Proof of guarantee

You will require a copy of the purchase receipt or delivery slip as proof of warranty. If you do not supply proof of warranty, we will charge for repairing the goods.

3. Description of problem

Shipments that do not include a description of the fault or an insufficient description ('defective' or 'for repair' is insufficient) will be returned for a processing fee, because this makes repair more difficult and could have been avoided.

4. Invalid returns

In the event of an unfounded complaint (no fault could be detected, probable operating error), we will return the goods and a processing fee will be charged.

5. Package

If possible, please use the original packaging for return shipment. Any warranty claim will be jeopardized by improper packaging. The warranty will not apply to damage caused by improper packaging.

6. Foreign manufactured products

Devices that are not manufactured or distributed by TerraTec Electronic GmbH will be returned and a processing fee will be charged.

7. Repairs liable to your expense

Repairs out of the warranty period are liable to your expense.

8. Transportation costs

The dispatcher pays all costs associated with shipping and insurance for the goods for repair to TerraTec Electronic GmbH. If the goods are covered by warranty, TerraTec Electronic GmbH will pay the shipping costs for returning repaired goods. COD shipments will not be accepted for organizational reasons.

9. Final regulation

TerraTec Electronic GmbH reserves the right to change or supplement the general terms and conditions of service at any time.

Otherwise the General Terms and Conditions of Business of TerraTec Electronic GmbH are considered to be accepted.

6.4. Glossary

AVI – A Windows video format.

Bit rate – The bit rate indicates the volume of the data stream per second. A higher bit rate results in higher quality. A distinction is made between constant bit rates (for -> VCD, for example) and variable bit rates, e.g. for -> SVCD and -> DVD. Unlike constant bit rates, variable bit rates adjust the size of the data stream according to the video material.

Blue screen – A variation of -> Chroma keying

Chroma keying – Chroma keying uses a surface with a single color in front of which an actor, for example, is filmed. This color area is then made transparent during subsequent editing and can be replaced by a different background.

Chrominance – Chrominance refers to the color signal in -> YUV, which is comprised of two color components: U, the balance between red and cyan, and V, the balance between yellow and blue.

Clip – A short piece of video material.

Composite video – Composite video is a transmission method common in the consumer sector that is generally realized using cinch connectors and which is frequently used, for example, on TVs. In this process, all signals (chrominance and luminance) share a single cable. The quality of composition video is lower than that of -> S-video, for example, in which chrominance and luminance are transmitted separately.

CPU – Central Processing Unit. The part of your computer (the processor, i.e. Pentium or Athlon) that does the actual computing.

D8 – Digital 8 is the successor to the Hi8 and VHS-C camcorder formats. Hi8 or D8 cassettes are still used, but the video data is recorded digitally in DV format.

Data throughput – see Data transfer rate

Data transfer rate – The data transfer rate describes the speed at which a hard drive can read or write data over a sustained period. The data transfer rate is usually measured in seconds, e.g. 7 Mbps.

Device control – In DV terms, this refers to the ability to control your camcorder from your PC.

DirectDraw – This is a graphics standard that was initially developed by Microsoft. Its features include the capability to write graphics data directly to the memory of the graphics board for the fluid display of video material.

Dropped frames – These are individual images missing from the video data stream, usually due to a slow hard drive.

DV – DV stands for Digital Video. The DV standard uses a compression rate of 5:1. This corresponds to a data rate of 3.125 Mbps, which can be handled by virtually all newer hard drives. The quality of the DV standard is very high; it is therefore frequently used in professional productions. A number of different cassette types exist in the DV sector, which vary in size and maximum playing time, but which are compatible with one another in terms of video data. MiniDV is designed for the consumer sector and supports playing times of up to one hour. The DV format used in the professional sector supports playing times of up to three hours.

DV-In – Usually, the DV jack of a camcorder can transport video data in both directions—to and from the camcorder. Many camcorders in Europe do not feature DV-In, however. Also see -> Enabling.

Enabling – Due to European import duties, imported digital video recorders are more expensive than imported digital video playback devices. For this reason, manufacturers of camcorders have begun to modify their products for the European market and to disable the digital input -> DV-In. Needless to say, clever developers found a way around this restriction very quickly. This is known as “enabling”. Enabling the DV camcorder is a precondition for sending video material back to the camcorder. Enablers are available for almost all camcorders and can be purchased freely.

Fading – Fades are soft transitions, often involving special effects, from one clip to the next.

Fields – Rather than displaying 25 frames per second (as per the PAL standard), 50 fields are displayed per second to reduce TV display flicker. These fields consist of either the odd-numbered rows (these are sent first) or the even rows of the image being displayed.

FireWire™ – Apple's name for -> IEEE 1394

Frame rate – The number of frames within a given period of time. The frame rate is frequently stated in frames per second (FPS).

Hi8 – Analog video recording system that separates color and brightness information, thus offering quality better than that of VHS-C, for example.

“Hosiden” mini-DIN connector – A small connector with four conductors used for -> S video signals.

IEEE 1394 – This is a universal bus system originally developed by Apple for digital data communications. The devices are connected by cables with a maximum length of 4.5 m. The system supports transfer rates of up to 400 Mbps. However, a standard has not been

established for video data due to the lack of specifications for the format of video data using this bus. Sony got down to brass tacks and closed this gap by installing FireWire™ sockets in its digital camcorders and developing its own protocol. Thanks to FireWire™ and the Sony protocol, the dream of loss-free video editing has finally come true.

iLink – Sony's name for → IEEE 1394

Interlacing – see Fields

Linear editing – The origins of linear video editing date back to analog video. The original video data is generally present in the same sequence as the edited video clips. A simple type of linear editing would be, for example, transferring video material from an analog video camera to a video recorder while discarding a number of clips. If you then insert a new clip in the middle, however, all of the following clips will also require editing.

Luma keying – Unlike chroma keying, the transparency of the video is determined on the basis of brightness in luma keying.

Luminance – Luminance refers to brightness in → YUV. (Y)

Main memory – see RAM

MiniDV – The consumer version of the DV format. Also see → DV.

MiniDVD – This is a process in which → DVD data, including the DVD directory structure and navigation menu, is burned onto a blank conventional CD. Many of the currently-available DVD players can play MiniDVDs. Due to their lower capacity, MiniDVDs can only store around 18 minutes of video data. If you do not own a DVD burner, we recommend recording video material on → SVCD.

MJPEG – Motion JPEG is a compression process in which every single frame in the video data stream is compressed individually.

MPEG – The Motion Picture Experts Group is a consortium of leading manufacturers and developers of video technology that determines new standards such as MPEG-1 or MPEG-2.

Nonlinear editing – Unlike → linear editing, individual clips can be edited without affecting subsequent clips. For example, with nonlinear editing, you can shorten or remove a clip at the beginning of a video project without having to edit the following clips as a result.

NTSC – NTSC is the video standard used, for example, in the USA and Japan. NTSC has a higher frame rate than PAL (30 frames or 60 → fields per second), but a lower resolution (525 rows, with 480 visible). Color depiction in NTSC is realized in → YIQ.

PAL – This is the most common video standard in Europe. PAL displays 25 frames (or 50 → fields) per second and has a resolution of 625 rows, of which 576 are visible. Color depiction in PAL is realized in → YUV.

Preview – The preview offers you a quick overview of your work. The final quality is normally considerably higher than that of the preview.

RAM – Random Access Memory is the main memory of your PC. Since video editing with effects is very memory-intensive, the old rule applies: you can never have enough RAM!

Rendering – this refers to the processing of video or audio clips after an editing operation has been completed, for example after the application of an effect or filter.

RGB color space – In the RGB color space, each visible pixel is made up of the three components R(ed), G(reen) and B(lue). To achieve the natural display of colors on a computer, each of these components must have at least 256 values. This corresponds to exactly one byte for each color component. A single complete video image would thus require 768 pixels x 576 pixels x 3 bytes = 1,327,104 bytes. This corresponds to around 1.2 MB per frame! One second of video in the RGB color space would therefore require around 31.6 MB of storage space. Using this process, a 2 GB hard drive would have a video capacity of around one minute. No current hard drive can deliver this volume of data in real time, but a number of options are available to reduce the data volume of the video signal substantially through transformation to a different color space (usually YUV) and compression (usually MJPEG).

Saturation – Describes the ratio of color in the picture.

SECAM – The English drive on the left side of the street; the French use SECAM. SECAM is the third video standard like PAL and NTSC. Today it is used only in France and a number of Eastern countries. East Germany, for example, also once used the SECAM standard.

Storyboard – Unlike the → timeline, the storyboard offers a thematic overview of your video project. Individual scenes can be identified easily, but it does not deliver a sense of the actual length of the project.

SVCD – Abbreviation for Super Video CD. SVCDs are similar to → VCDs, but they have a great advantage in that their data is in MPEG-2 format with a → variable bit rate. In addition, the resolution of 480 x 576 pixels is higher than that of the VCD. An SVCD generally can contain 45-50 minutes of video material. The bit rate (audio and video) of an SVCD may not exceed 2.6 Mbps. SVCDs can be viewed using many standalone DVD players.

S-video – Unlike → composite video, chrominance and luminance are transmitted separately in S-video, resulting in higher quality.

Timeline – The timeline is the time axis upon which you position and edit your video clips.

Transition – see Fading

Trimming – This refers to adjusting the length of a video clip at the beginning and/or end.

VCD – Abbreviation for Video CD. The Video CD has a PAL resolution of 352 X 288 pixels and stores audio and video data in MPEG-1 format. VCDs use a constant -> bit rate of 1.15 Mbps for video and 224 kbps for audio data. VCDs can be viewed in virtually any DVD player.

Video filter – Video filters let you influence your video material in a wide range of ways. For example, you can manipulate the colors of your video film or use complex filters to degrade your new, top-quality film to look like an old, silent movie.

Video for Windows – This is an old, but still commonly used, video concept for Windows.

YIQ – YIQ is a color space related to -> YUV. It is also characterized by a brightness component -> luminance (Y), but also by different color components, I (cyan-orange balance) and Q (magenta-green balance). YIQ is used for -> NTSC, for example.

YUV – YUV is the designation for a color space characterized by a brightness component -> luminance (Y) and two color components -> chrominance (U, V).