



VIDEO PRO X2

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Foreword

Thank you for choosing MAGIX Video Pro X2! Your new software offers you the tools to edit video material at a professional level, including many special functions like DVD authoring, multicam editing, and keyframe animation.

The intuitive functionality featured by MAGIX Video Pro X2 will help you achieve great results even after a relatively short introductory phase. Thanks to the optimal hardware support, you can import your audio and video recordings from any source to your computer. Cut them and optimize them; add effects, titles, and transitions. MAGIX Video Pro X2 provides all of the detailed editing options you need for ambitious video projects. When you're finished, you can export your projects or burn them to disc in any conventional format.

This documentation offers you an overview from the beginning, plus a quick start with the program. The sections at the end provide a detailed and systematic description of the numerous functions.

Have fun using MAGIX Video Pro X2,

The MAGIX team

Table of Contents

Copyright	2
Foreword	2
Support	9
Serial number	10
Unlocking MAGIX Video Pro X2	10
System requirements	11
Introduction	12
What is MAGIX Video Pro X2?	12
What's new in MAGIX Video Pro X2?	12
Features	14
Notes for MAGIX Movie Edit Pro users	18
Quick start	20
Starting the program and orientation	20
DV recording	25
How to capture analog video	27
Video editing	29
Enriching movies	35
Workspaces	37
Activating the main screen	38
Media Pool	38
Toolbars	43
Program and source monitor	50
Arranger	53
Project folder	55
Adjusting the workspace	55
The "Burn" screen	56
Create new video project	57
Movie settings	57
New project settings or new movie	64
Load project	64
Save project	64
Save project as...	64
Video recording	65
Connect camera	65

Select the recording method	67
DV cameras	67
HDV camera	72
Batch recording	73
Logging	73
Analog video recording	74
Single frame	76
Audio	78
Screen	80
Recording AVCHD	81
Edit after recording	82
Creating new movies or attaching them	83
Insert object into the project	84
Select files in the Media Pool	84
Load files	84
Loading parts of longer movie files	84
MPEG-4 import	85
Automatic scene detection	85
Working with objects	87
Select objects	87
Moving objects	87
Splitting objects	87
Edit menu	87
Duplicate objects	88
Object handles	88
Shrink or interlace videos	89
Extract sound from videos	89
Save objects separately	89
Video mix	90
Magnetic objects	90
Transitions (fades)	91
Scene overview	94
Grid and snap	95
Search for and remove ads	95
Trim Objects	96
General advice for operating both trim editors	96
Trimmer for individual objects	97
Cut trimmer	98
Markers	99
Playback marker	99
Set project marker	99
Ranges (in and out points)	100
Chapter markers	101

Scene markers	102
Ad markers	103
Multicam editing	104
Preparation	104
Source and preview images	104
Multicam edit functions	105
Synchronize video objects using the sound track	107
Titles and effects	107
3D text	107
Apply fades	107
Apply effects to objects	107
Comparison image in the source monitor	108
Video effects in the Media Pool	108
Movement effects in the Media Pool	115
Video effect plug-ins	119
Image stabilization	122
Create panorama pictures	123
Borders	124
Title Editor	124
Slideshow Maker	128
Master effects	130
TV picture	132
Audio Effects	133
Animate objects	148
Preparing animations	148
Place keyframe	148
Copy keyframe	149
Display keyframes of individual parameters	149
Retroactively editing an effect's keyframes	149
Soft movement	149
Delete keyframe	150
Editing an effects curve in the object	150
Change curve shape	150
Effects curves - Additional functions	151
Add sound	152
Load and edit audio files	152
Import audio CD	152
MAGIX Soundtrack Maker	154
Tempo and beat recognition	156
Adding a sound track using MIDI songs	160
Synthesizer	162
Mixer	166
Audio effects	169

5.1 Surround	169
Using DVD audio tracks	174
Scrubbing	176
Mix down of audio objects	177
Managing video projects	178
Backup copy	178
Load backup project...	179
Importing & exporting EDL files	180
Clean-up wizard	180
Options for using the final movie	182
Create playable disc	182
Export movie	182
Export audio/video	188
Burn discs	196
Preview and editing	197
Menu	198
Templates	199
Edit disc menu	200
Burn dialog for DVD player	209
Create PC show	211
Create webDVD	211
Batch conversion	212
Open batch conversion	212
Administration	212
Queued entries for batch conversion	212
Format settings for the selected conversion process	213
Shut down PC automatically after successful export	213
Start batch conversion	213
Menus	214
File menu	214
Edit menu	220
Effects (FX)	226
Windows menu	230
Help menu	232
Context menu (right click)	234
Video objects	234
Image objects	238
Transitions	243
Audio objects	243
Text objects	247
MAGIX 3D Maker objects	250

Program settings	254
Playback	254
Path settings	256
Video/Audio	256
System	258
Display templates	259
Display options	260
Problems and solutions	262
File will not load	262
Choppy or uneven playback	262
Problems and Remedies regarding the Auto Remix Assistant	262
Activation problems	263
Online functions	264
Integrated browser	264
MAGIX News Center	266
Embed Flash videos into your own web page	266
Keyboard shortcuts	268
Playback functions	268
Arranger view	268
Move view	269
Transport control in Media pool	269
Mouse modes	269
File menu	269
Edit menu	272
Effects menu	272
Window menu	274
Help	274
Edit keyboard shortcut	274
Activate additional functions	276
Free activation (MPEG-2, MPEG-4, Dolby Digital 2.0 & 5.1)	276
Annex: Digital Video and Data Storage	277
Video Editing on the PC	277
MPEG Compression	277
General notes on AVI videos	278
Overview of the different disc types	278
MPEG-4 encoder settings	285
MPEG-4	285
AVC / H.264	290
AMR	295
AAC	296
Multiplexer	296

Appendix: MPEG Encoder Settings	298
General settings	298
Video settings	299
Advanced video settings	300
Audio settings	300
MPEG glossary	302
Motion estimation	302
Bit rate	302
Block	302
Chroma format	302
Field	303
Frame	303
GOP	303
I frames	304
Interlace	304
P frames and B frames	305
Prediction	305
Quantization scaling	306
If you still have questions...	308
Program help	308
Index	309

Support

If you experience any problems with your software, please contact our support team:

Support website: <http://support.magix.net/contact/us>

This website takes you to the MAGIX user service page; the following free offers are also featured there:

- **FAQs** (frequently asked questions) and general tricks and tips. In most cases, you'll find the solution to your problem here. If not, use the email support form.
- **Email support form:** Use the special form to inform our support staff about your system. This information is used to solve your problems quickly and competently. Simply fill it out and send it with a mouse click!
- **Support forum:** You are not alone. Perhaps other users had a similar problem and can help you solve yours. Our support staff are also regular contributors.
- **Download section:** Updates, improvements, and patches are likewise offered free of charge via download. Many problems you may experience are already familiar to us, and they can often be solved by downloading the latest patch. Besides patches, there are also wizards for checking and optimizing your system.
- **Links:** The links list contains the contact addresses for all of the most important hardware manufacturers.

Please note: To be able to use the support, you have to register your product using the serial number provided. This number can be found on the CD case of your installation CD or on the inside of the DVD box.

You can also reach our support team by telephone:

UK: 2023 3183666 (Mon. - Fri., 09:00-16:00 GMT)

USA/Canada: 1-775-562-0527 (Mon.-Fri. 9 am to 5 pm EST)

Denmark: 699 18763 (Mon.- Fri. 10:00 - 17:00)

Finland (Suomi): 09 42419023 (Mon.- Fri. 11:00 - 18:00)

Norway: 210 35843 (Mon.- Fri. 10:00 - 17:00)

Sweden: 0852500713 (Mon.- Fri. 10:00 - 17:00)

You can request a free access code to the phone support hotline by using this link: <http://support.magix.net/phone>. There you'll also get additional information and explanations about phone support.

Please have the following information at hand:

- Program version
- Configuration details (operating system, processor, memory, hard drive, etc.), sound card configuration (type, driver)
- Information regarding other audio software installed

You can also contact our support team by mail:

UK/Scandinavia: MAGIX Development Support, P.O. Box 20 09 14, 01194 Dresden, Germany

US/Canada: MAGIX Customer Service, 1105 Terminal Way #302, Reno, NV 89502, USA

Customer service & upgrades (US only)

Periodically, MAGIX offers users who purchased their software an upgrade from a previous product to the current version. For details about an upgrade, please call us using the following number:

Sales Department 1-305-722-5810
Monday to Friday 9am – 5pm (EST)

Serial number

A serial number is included in each product. This serial number is required for the installation of the software and enables usage of additional bonus services. Please store this number in a safe place.

What can a serial number do?

With a serial number your MAGIX Video Pro X2 is clearly assigned to you and only you. This way improved and more targeted customer service is made possible. Abuse of the software can be prevented with a serial number, which ensures that optimum the price/performance ratio continues is guaranteed.

Where can the serial number be found?

The serial number can be found on the reverse side of your CD/DVD case. If your product is packed in a DVD box, then you'll find the serial number on the inside.

For the versions that have been especially optimized for the Internet (download versions), you'll get your serial number for activating the software directly after purchasing the product via email.

When will you need the serial number?

The serial number is required when you start or register MAGIX Video Pro X2 for the first time.

Note: We explicitly recommend registering your product (free), since only then are you entitled to download updates and use MAGIX support (view page 8) services.

Unlocking MAGIX Video Pro X2

After MAGIX Video Pro X2 has been installed and the serial number has been entered, the software can be used for 30 days. After these 30 days have expired, MAGIX Video Pro X2 must be activated.

System requirements

For Microsoft® Windows® XP™ / Vista™ / 7™

- Intel® Pentium® IV or AMD® Athlon™, 2 GHz or higher
- 1 GB RAM
- 1 GB free hard disk memory and a DVD drive for program installation
- Graphics card with a screen resolution of at least 1024 x 768
- Sound card (multi-channel sound card recommended for surround sound editing)

Minimum requirements for HD editing

- Intel® Pentium™ IV 3 GHz with hyperthreading, or dual core with at least 1.3 GHz
- 2 GB RAM
- DirectX® 9.0c compatible graphics card, min. 128 MB graphics card memory, and Pixelshader 2.0, ATI X300 or higher, NVIDIA GeForce 6600 or better

Recommended configuration for AVCHD editing

- Intel® Core™ 2 Quad with 2.83 GHz
- 3 GB RAM
- ATI Radeon HD 3000 series or higher with 512 MB VRAM

Introduction

What is MAGIX Video Pro X2?

MAGIX Video Pro X2 is a professional video editing program for Windows PC systems. High-performance, native HD editing, DVD authoring with up to 8 audio tracks, or keyframe animation with Beziér curve control is directed at users with higher standards.

The program is clearly divided into intuitive modules. Videos, photos, and audio from a wide range of sources can be transferred from various devices to PC. Longer movies can be automatically separated into chapters or scenes. You can also do the opposite and combine individual recordings to make a single movie.

Once your video is finished, you can use it in different ways: Transfer it back onto the tape or to your camcorder, export it in any conventional format, or burn it directly to Blu-ray, DVD, or another format of disc.

What's new in MAGIX Video Pro X2?

Improved file import

MAGIX Video Pro X2's support of video formats has been improved, and new formats have been added.

- For DVD videos, multiple audio tracks, or the corresponding audio track (view page 84) may be selected.
- OGG and MP3 are now read directly; conversion to the WAV format is omitted. To import DVDs with multiple audio tracks (e.g. multi-lingual videos), the corresponding audio track can be selected via the context menu for the respective audio object.

Creating backgrounds

The Media Pool (view page 42) features useful templates for various applications. For example, there are professional backgrounds for measurements, but there are also special templates with more creative freedom and adjustable color schemes.

Performance test for your PC during AVCHD import

A performance test has been integrated into MAGIX Video Pro X2 for loading AVCHD videos. This tests whether your computer is powerful enough to edit AVCHD material directly.

Revised MAGIX MovieShow Maker

MAGIX Slideshow Maker (view page 128) has been completely revised. Effects and fades can now be set and adjusted in detail. This program is accessible via "Edit -> Wizards -> Slideshow Maker".

Object zoom

Activate this mode and click on an object to zoom in for detailed editing. This allows individual drum hits in a loop to be edited in a very detailed way or cut. Select the object

and then you will see a button with four arrows pointing outwards on it in the lower right section of the Arranger. Click this button again to reset the view to the original settings.

Scrubbing

Scrubbing (view page 176) originates from the time of tape machines and provides quicker monitoring of passages of a film or piece of music. This was technically implemented in these devices by keeping the tape head on the tape itself, but the motor doesn't drive the tape rolls in this case. Instead the tape is "manually" set to the desired position. Scrubbing in MAGIX Video Pro X2 is available beneath the transport controls via a large wheel, which may be used to move the playback marker.

Audio effects animation in the Media Pool

Audio effects can also be animated in the Media Pool in the same way as video effects. Automation curves that were normally difficult to draw can now be set and changes be made with just few keyframes. Because these curves are object-related, the entire arrangement remains clearly laid-out even with complex automations. The button for animations is located in the Media Pool (like video effects).

Improved video upload

Video uploads to video portals and communities (view page 218) can now even be done in HD quality, and in most cases, without recalculation on the video portal or community website. Upload functions are accessible via "File -> Internet".

Revised DVD menu design

The DVD menu design function has been generally revised. You can access this option directly via the "Burn" button.

New Title Editor

Titles, text, opening and end credits are now written directly in the preview monitor so that you can see exactly where your titles will be positioned right away. Click the "Title" button in the Media Pool, select a template and place it onto the track via drag & drop. You may now edit your titles in the preview window.

Additional new MAGIX Video Pro X2 features

- Secondary color correction for impressive color effects
- Level display for audio file import
- Extended jump markers for improved project navigation
- Creation of colored surfaces/color scroll generator
- Upload videos to Vimeo
- Travel route animation
- MAGIX Music Editor with optimized user guidance
- Advanced support for Blu-ray and AVCHD discs
- Timeline zoom for individual objects
- 3-point cut
- Faster and improved direct support of Video DSLR (Canon 5D, 7D, etc.)
- Time code rendering direct into video

- Direct support of VST audio plug-ins
- Direct entry of a desired target frame rate for easy up/down video clip speed adjustment

Features

Recording

MAGIX Video Pro X2 provides the following recording options:

- **DV cameras:** Mini DV camcorders or DV video recorders
- **HDV cameras:** HDV1 and HDV2 camcorders
- **Video:** Analog TV, video input, VHS recorders, webcams
- **Single frame:** Single and series images from webcams, video recorders, video cameras, or TV cards
- **Audio:** Microphones, cassette recorders, MiniDisc players, turntables
- **Screen:** PC monitor

Analog capture requires capture cards compatible with DirectShow. DV capture can be performed through an OHCI-compatible IEEE 1394 host adapter (FireWire or iLink). A TV card can be used to record programs from TV or from your video recorder.

There is no limit to the length of your recordings. Now you may record video as long as there is available space on your hard drive. Using real-time compression during capture creates smaller file sizes and more available space.

Import/Export file formats

Video files: Video files in the video formats for Windows and DV-AVI type 1/2 (*.avi), MPEG-1 and 2 (*.mpg, *.mp2, *.MPEG), QuickTime (*.mov), MAGIX video (*.mxv), Windows Media, VOB streams from DVD (when unencrypted), AVCHD (only import), MPEG4 (*.mp-4), XDCAM files (Sony PMW-EX4).

Audio files: Wave, MP3 (Windows Media Player 10 or higher required for export), WMA, OGG Vorbis, MIDI files, and audio CD tracks.

Graphic files (for slideshows or as a still behind a scrolling title): Windows bitmaps (BMP), JPEG, GIF, animated GIF, PNG, Adobe Photoshop (PSD), Tagged Image File Format (TIFF).

Text files in RTF format: You may enter texts, such as credits with any formatted text and save them in universal text format (.rtf). Loading such text into MAGIX Video Pro X2 creates a title object.

Notes:

AVI video files in DivX™ format can only be imported with the corresponding codec installed! The DivX codec can be downloaded from www.divx.com.

The QuickTime library has to be installed to import QuickTime files (*.mov).

Additional export formats: In addition to the above-mentioned audio and video formats, the following formats can also be exported: RealMedia™, BMP, Snapshot function (export any film motif as a bitmap or JPEG file). In addition, MAGIX Online Album can be used to create a Flash video. The video to be uploaded to the MAGIX Online Album will be exported in Windows Media format, and from there it can be exported as a Flash video.

Note: To import and export AVC and MPEG-4 files, the MPEG-4 codec must first be activated (view page 275). A dialog will open if the codec is required.

AVCHD standard support

Files from AVCHD cameras can be either read directly or imported. Newer computers are capable of decoding and playing this format in real-time.

MAGIX Video Pro X2 does a performance check in order to make sure that the computer has enough computing capacity. If the check indicates that the computer is insufficient, AVCHD material is transformed into a MPEG-2 file to allow older systems to edit it, too.

Note: To import AVCHD video, the camera drive must be installed even if you are working with portable media (8 cm DVDs, SD memory card, etc.). Reason: AVCHD cameras use an improved UDF file system which Windows can't handle without the driver.

AVCHD Lite

MAGIX Video Pro X2 now also supports the AVCHD Lite standard, which is used by digital cameras for recording video (among other things).

AVCHD activation details

Attention: For AVCHD support, Dolby Digital Stereo and the MPEG-4 codec must be activated. To convert AVCHD videos to MPEG-2, the MPEG-2 codec must be activated.

Burnable disc formats

- 1:1 copies of DVDs & (S)VCDs
- Double-layer DVDs
- VCDs (MPEG-1 on CD-R)
- S-VCDs (MPEG-2 on CD-R)
- DVD (MPEG-2 on DVD)
- miniDVDs (MPEG-2 on CD-R)
- Blu-ray Discs
- AVCHD disc to DVD and Blu-ray
- Project backups and backup copies

Program and source monitor

MAGIX Video Pro X2 offers two video monitors for transport control which can be used independently. The program monitor shows the current project in the Arranger, the source monitor offers a preview for file import from the Media Pool.

Project folder

The project folder is for storing your material. It's useful for preselecting the necessary media for your current project. Use it to store video, audio, titling files, and even edited versions or sections of films for use later in your projects.

Savable window layouts

MAGIX Video Pro X2 offers a flexible user interface which allows windows to be adjusted for any working situation. Both preview monitors can be enlarged to fullscreen and moved around, e.g. to use multiple monitors more effectively. Even the project folder, the Arranger, and the Media Pool can be scaled and moved as a separate window.

Effects

MAGIX Video Pro X2 offers numerous effects and effects settings options as described in detail in the chapter "Effects and titles". A short overview:

- Every object (every video, every single scene, every photo, and every audio recording) can be provided with its own individual effects combination. Every effects combination can be saved separately so that you can use it later on different objects. Right click the object and choose the "Save video effects" option in the context menu.
- Video effects are selected and set up in the "Effects" folder in the Media Pool. Most effects allow "keyframes" to control their behavior. The current settings only become effective beginning with the first selected keyframe. The next keyframe activates the settings present at that keyframe. The area between two keyframes approximates the corresponding effects settings ("tweening").
- Video effects can be controlled using effects curves. A curve is shown in the video's object display which controls the application of the effect; the higher the curve, the more intense the effect. Keyframes are indicated by curve handles, and these can be manipulated as desired. For every curve handle, Bezier handles can be generated to create harmonic curves and effects automations.
- Effects presets are standardized effects configurations for the most important cases. They can be used via drag & drop; just hold down the mouse button and drag the selected effect from the Media Pool to the desired object - finished.
- The effects mixer ("Slide FX") combines or interweaves an assortment of recordings to create a complex visual arrangement. To execute this effect, simply drag the transitions to the space between two videos.

Title effects with MAGIX 3D Maker

The title editor features the MAGIX 3D Maker 3D program for especially high-quality 3D subtitles and texts. The title editor opens when a title template is dragged from the "Title" folder onto the track. The title editor provides access to MAGIX 3D Maker via the "As 3D title..." button.

MultiCam editing

MAGIX Video Pro X2 enables multiCam editing for up to four cameras. The different camera recordings can be played back in sync and edited together for a single version.

Batch conversion

Time-saving conversion of multiple movies and videos in a single target format via batch conversion (view page 212) is available under "File".

Batch capturing

When video material is imported from digital sources (miniDV cameras, DV video recorders, HDV cameras), scenes which you would like to use can be selected first and cut at once. To save space, HD files can be converted directly into MPEG format.

Color correction

MAGIX Video Pro X2 offers 3-way color correction (view page 110) for optimizing poor or incorrectly exposed videos. Color correction can be found in the Media Pool under "Effects".

HD audio support

MAGIX Video Pro X2 supports audio formats that conform to Intel's High Definition audio standard for sound cards. This means that MAGIX Video Pro X2 can be used to produce stereo signals at a sampling rate of 192kHz (32-bit) and 8-channel signals at a sampling rate of 96kHz (32-bit).

DVD authoring with up to 8 audio tracks

You can set your DVDs up with up to eight audio tracks. This is especially useful for creating multilingual DVDs or DVDs with different sound formats (5.1 Surround, stereo). More information about creating different audio tracks can be found in the chapter "Audio tracks (view page 174)".

Synchronization with external devices

MAGIX Video Pro X2 features synchronization with external devices via MIDI or SMPTE (master or slave).

Support of "Shuttle Pro V2" and "Shuttle Express" from Contour

For easy work, an easy preset has been created that enables controlling MAGIX Video Pro X2 with "Contour Shuttle Pro V2" and "Contour Shuttle Express" quickly and efficiently.

MAGIX Soundtrack Maker

If you need a soundtrack, MAGIX Soundtrack Maker offers a massive selection of suitable sounds for background music in different variations, from "funky" to "easy listening" – simply add music to your movie project. The result is real movie background music with changing moods to perfectly match your images.

Multimedia editable DVD menus

The program includes many DVD menu templates (for chapter selection, etc.) for projects intended for TV, and some are also in 16:9 widescreen format. They can be easily inserted during the burning process to give the DVD a professional look.

Every menu template can be customized with your own photos, thematic animations, 3D titles, sound, intro videos, etc. Write with flowers if your video takes place on a meadow, or with clouds if you've flown somewhere. A lovingly created menu always makes a great impression. It's your video's calling card.

Media library

A license-free media library including music, video, and graphics files is included for free use and combination. All files are clearly arranged on your DVD in a well-arranged structure.

Tip: For additional multimedia content, you can also browse the online media catalog Catooh by clicking "File -> Internet".

Additional features

- Automatic scene recognition: Long films are divided into shorter scenes as they are imported or retroactively.
- Metadata logging during recording
- Import of non copy-protected DVDs, including all audio tracks and chapter markers
- Master audio level display on the timeline
- Alpha channel support for AVI videos
- Sample-exact positioning for audio objects on the timeline
- Project-transfer from professional audio programs Samplitude or Sequoia via EDL interface
- 6-channel PCM Surround on Blu-ray Discs

Notes for MAGIX Movie Edit Pro users

For users who are used to working with MAGIX Movie Edit Pro, the user interface can be switched to the "classical" Movie Edit Pro view via "File -> Settings -> Basic settings". Also, when the program is launched for the first time, a selection dialog appears for choosing settings from either "Movie Edit Pro" or "Video Pro X".

Only those program settings will be changed that can be changed via "Menu -> Settings -> Program". In the "Program settings (view page 254)" chapter in this manual, you can learn more in detail about the individual settings.

For everyone who has never used MAGIX Movie Edit Pro, we recommend using the "Video Pro X" mode. This operational mode provides the most options.

The following provides a detailed overview of the differences between the operational modes:

Video monitors

- "Movie Edit Pro" mode only has a preview monitor which is used for both program and source monitor. When the project is stopped, files can be selected in the Media Pool and played back with the transport control. To play back the arrangement again, the Arranger has to be clicked first.
- "Video Pro X" mode provides two preview monitors, one program monitor for previewing the project in the Arranger and a source monitor for previewing files in the Media Pool.

Both preview monitors have different transport controls for separate control of the preview in the Media Pool and playback of the project. More information about the preview monitors can be found in the corresponding section of the chapter "Inserting objects into the project (view page 50)".

Keyboard layout

The preset keyboard shortcuts are different and can be displayed in both modes via "File -> Settings -> Keyboard shortcuts". MAGIX Video Pro X2 also allows familiar shortcuts from Movie Edit Pro to be loaded if they are easier to work with. More information about keyboard shortcuts can be found in the chapter "Keyboard shortcuts (view page 267)".

Loading files

- In "Video Pro X" mode, files are dragged (drag & drop) to the desired position in the Arranger or loaded via the commands from the insert menu. For more about commands in the insert menu, read the section "Insert modes (view page 45)" in the chapter "Workspaces".
- In "Movie Edit Pro" mode, files can also be loaded from the Media Pool by double-clicking them. Videos and image files are placed in the first track at the location of the playback marker, and the associated sound track lands on track 2. If another object is already there, then the new object will be appended behind the last object on the first track. Titles appear on tracks 3 and 4, and additional audio material on track 5.

Space bar behavior

Both modes allow playback to be started by pressing the space bar. Pressing the space bar again has different effects depending on the program version:

- In "Movie Edit Pro" mode, the playback marker is placed at the last stop position.
- In "Video Pro X" mode, the playback marker is kept at the current position. This corresponds with the functionality of a tape recorder when stopped.

Note: Playback behavior can be switched via the dialog under "File -> Settings -> Program" and then the "Playback" tab.

Project folder

- In "Movie Edit Pro" mode, the project folder is not available.
- In "Video Pro X" mode, the project folder is a separate window on the right side of the screen for intermediate storage or combination of any kind of project material. You can drag files from different Media Pool folders or edited objects from the Arranger to the project folder. More information about this can be found in the section "Project folder (view page 54)" in the chapter "Workspaces".

Note: In the following chapters of the documentation, we will suppose that the program is operating in "Video Pro X" mode. If you want to operate the program in "Movie Edit Pro" mode, then deviations may result from the processes described here. You can switch the basic settings at any time via "File -> Settings -> Basic settings".

Quick start

This chapter explains the basic functions of MAGIX Video Pro X2 with a step-by-step introduction. A systematic description of the program functions can be found in the chapters and in the extensive PDF manual.

Tip: Open the tutorial video and the "Quick start" tutorial by clicking the "Help" menu.

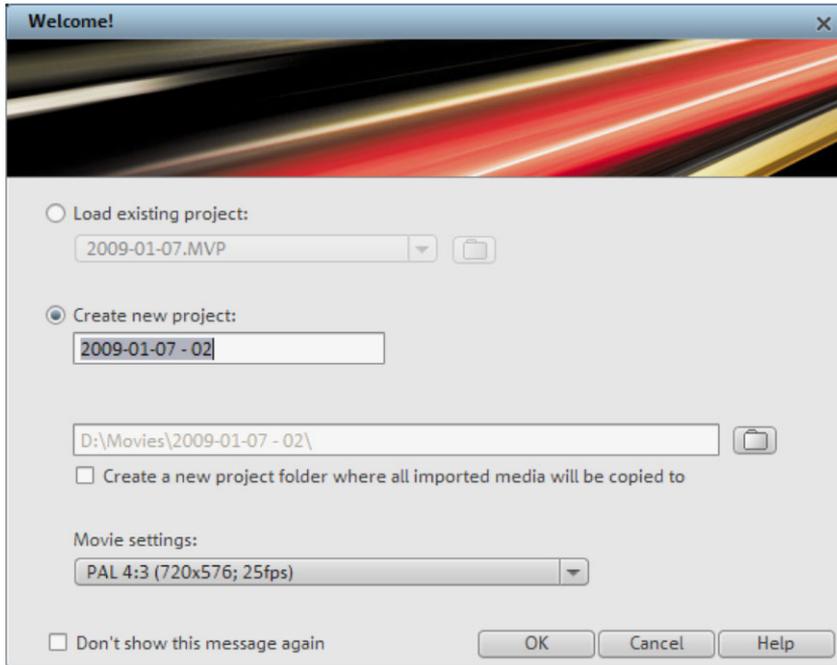
Starting the program and orientation

Once you have installed MAGIX Video Pro X2, start the program from the Windows® Start menu.

Start dialogs

When you start MAGIX Video Pro X2 for the first time, multiple start dialogs will be opened. For MAGIX Movie Edit Pro users, a special dialog option is offered to select either the "Movie Edit Pro" or "Video Pro X" interface. If you have upgraded from MAGIX Movie Edit Pro and are interested in the differences between the different interfaces, then please read the "Notes for MAGIX Movie Edit Pro users (view page 18)". We basically recommend using the program with the Video Pro X interface, since this offers the most options. Over the course of this manual, we will assume that you have selected this interface (you can switch the basic settings at any time via "File -> Settings -> Basic settings").

In the next dialog, you can decide if you would like to "Load an existing project" or "Create a new project". Under "Options", you can "Create a new project folder". All data that belongs to the movie will be saved in this folder.



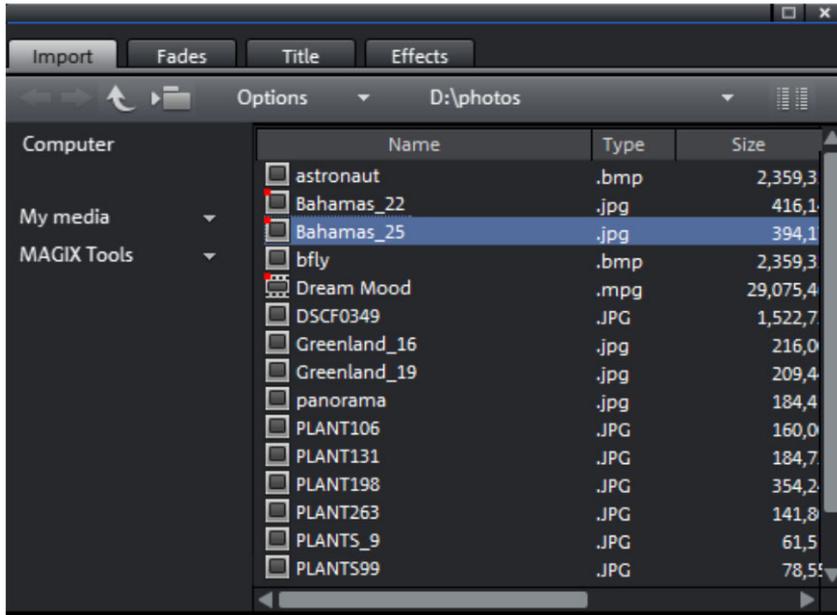
We're still at the very beginning, so let's stick with keeping an overview of everything. Click "OK" to end the dialog and continue.

Selecting, loading, and playing videos

In the beginning, it's probably best to load a video file for test purposes and to get to know the program's functions.

22 Quick start

- The Media Pool appears to the top right; this is a file manager which displays all usable files (besides movies, also photos, images, audio files, and even RTF text files for captions) in the current folder.



- The navigation functions exactly the same way as other file managers: folders can be opened by double-clicking them. The arrow keys jump a step ahead or back in the folder structure. You can also have a folder tree and all of its branches displayed.



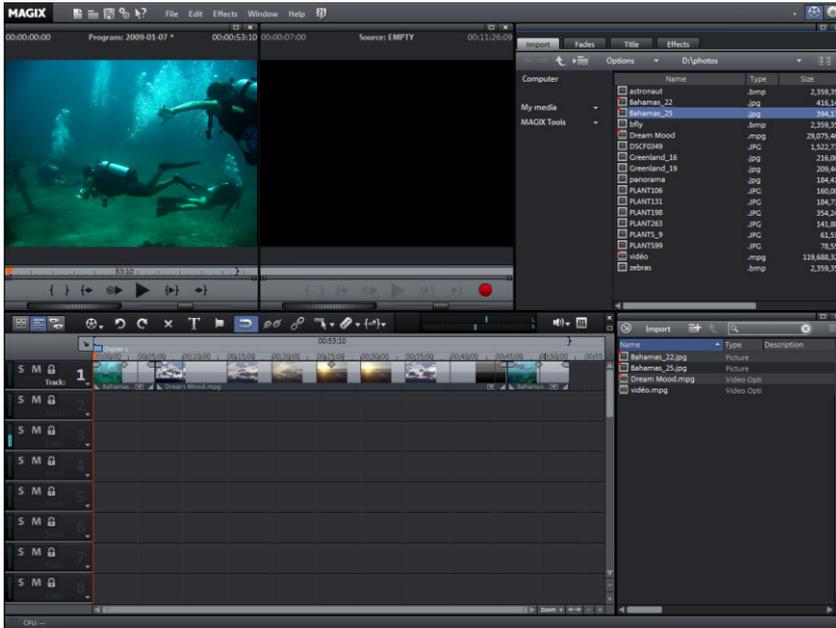
- All of the files in the file list can be loaded and used. Find a video file, e.g. in the format *.mpg, *.mxv, or *.avi.

- In the upper-left area, you will see two preview monitors.



- The left "program" monitor is responsible for playback of objects in the Arranger. The right "source" monitor displays a preview of files in the Media Pool.
- In order to be able to play back movie files from the Media Pool in the right source monitor, double-click the file in the file list first. Double-clicking loads the file in the monitor first.
- To play the video, click the play button on the transport control under the source monitor to the right.. 
- This method lets you select and play back different video files. Drag the selected file (hold down the mouse button) from the Media Pool down into the arranger. An object appears at the location on the track where you release the mouse button to represent this video file.

- Each object can be moved in any way in the Arranger with the mouse, i.e. horizontally on a track as well as vertically between tracks. Drag the video object on the first track all the way to the left to the beginning of the track.



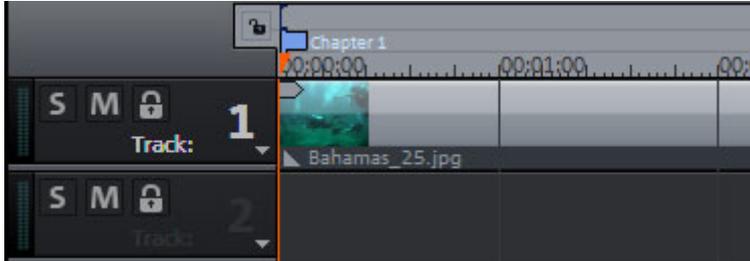
Note: If the video also has a sound track available, then a corresponding audio object will appear underneath it on track 2. Both objects are connected as a group.

- Now that the first file has been loaded into the Arranger, it can be edited, cut, and exported. Other files can also be loaded onto the tracks to combine movies, audio files, and photos.
- To play back the Arranger, click the play button on the transport control under the program monitor to the left.

Tip: An even easier way to do this is by pressing the space bar on your keyboard.

- During playback, a vertical line will move across the Arranger, i.e. the playback marker that displays the current position. You can reposition it by clicking at different locations as desired.

- You can also define playback ranges, e.g. to freeze a certain position independent of the playback marker. Clicking in the timeline above the first track lets you define an end point, i.e. the start point of the playback range. If you right click further on, the end marker will appear to indicate the out point of the playback range. The length of the playback area is shown in the center of the section display.



- The in and out points can be moved with the mouse. Left-clicking positions the "in" point, and the right mouse button sets the "out" point.
- To play back the range, click the "Play back range" button on the transport control under the program monitor.



Now you know how to load and play back media files in different ways. Would you like to try to make your own movie now?

- If you want to continue with your own movie project instead of the demo, select the "New movie" option from the "File" menu and read the next chapters of the tutorial on analog/digital video recording.
- If you wish to continue working with the test file, simply skip the following recording tutorials and begin reading the "Video editing" section.

DV recording

- Connect the DV device (DV camcorders or DV video recorders) to your PC. Switch the device's operating mode to "Video recorder" or "Playback".

- To open MAGIX Video Pro X2's recording dialog, click the red "Record" button on the transport control under the source monitor.



- Select "DV camera" from the recording dialog. Uncompressed DV capture requires approx. 220 MB per minute of video. If you would instead like to record using the more space-saving MPEG format, then you should first activate the "Record DV as MPEG" option.
- This opens the actual recording dialog. Check to see if a DV camera driver has been selected.
- Name your recording. It's worth choosing a logical name which will allow you to find it easily again on the hard drive.
- You can access the appropriate place on the camcorder tape by using the remote control buttons: shuttle forwards, backwards, and start/stop playback. To start recording, click the "Record" button. Keep an eye on the remaining hard-drive space.
- Cease capturing with the "Stop" button and exit the record dialog.

Tip: In the DV recording dialog, you can set clips from the DV video which will then be recorded one after the other (batch capturing).

How to capture analog video

1. Wiring

Connect the video out of your DVD or VHS recorder to the video in (TV, video or video in graphics card) of your computer, and the audio out to the audio in on your sound card.

Due to the variety of device configurations, it is difficult to say which cables function best with your setup. If you're not sure, check the manual of your VCR or your TV, video, or graphics cards.

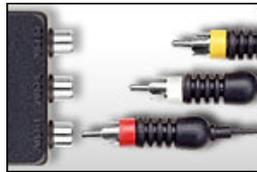
Example:

Europe: Many VCRs and DVD players have a SCART, 3 RCA (2 for stereo sound, 1 for video), or S-Video/optical audio line out. In such case, you will need a SCART to RCA adapter, a cable with 3 RCA jacks, or an S-Video cable.

North America: Many VCRs and DVD players have a 3 RCA (2 for stereo sound, 1 for video), or S-Video/optical audio line out. In such case, you will need a cable with 3 RCA jacks, or an S-Video cable.



SCART/Cinch adapter



SCART/Cinch adapter
with 3 RCA jacks



Stereo RCA/mini
phone jack adapter

Most sound card inputs are mini phone jacks. To connect the VCR audio out to the sound card audio in, you will need a stereo RCA / mini phone plug adapter.

Therefore, you will most likely have to buy a cable with 3 RCA plugs and a stereo cinch/mini jack adapter from your local supplier.

2. Program start and record

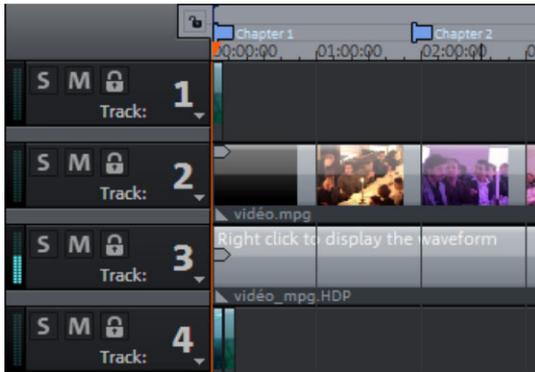
- To open MAGIX Video Pro X2's recording dialog, click the red "Record" button on the transport control under the source monitor.



- Select "Video" from the record dialog. If you would like to burn your video directly to a DVD, then first activate the box "Burn directly to DVD".
- This opens the actual recording dialog. In the record dialog, select the appropriate driver for your video and audio cards (if you have more than one installed). A video preview window is now displayed.
- Name your recording. It's worth choosing a logical name which will allow you to find it easily again on the hard drive.
- Start recording now by pressing the "Record" button in the dialog and end it by pressing the "Stop" button. Pay attention to the number of "dropped frames": If you get a reading of more than 10 dropped frames per minute, then reduce the video quality to prevent your PC from overloading.
- Cease capturing with the "Stop" button and exit the record dialog.

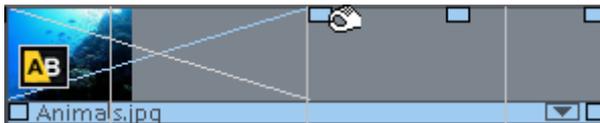
Video editing

Timeline mode



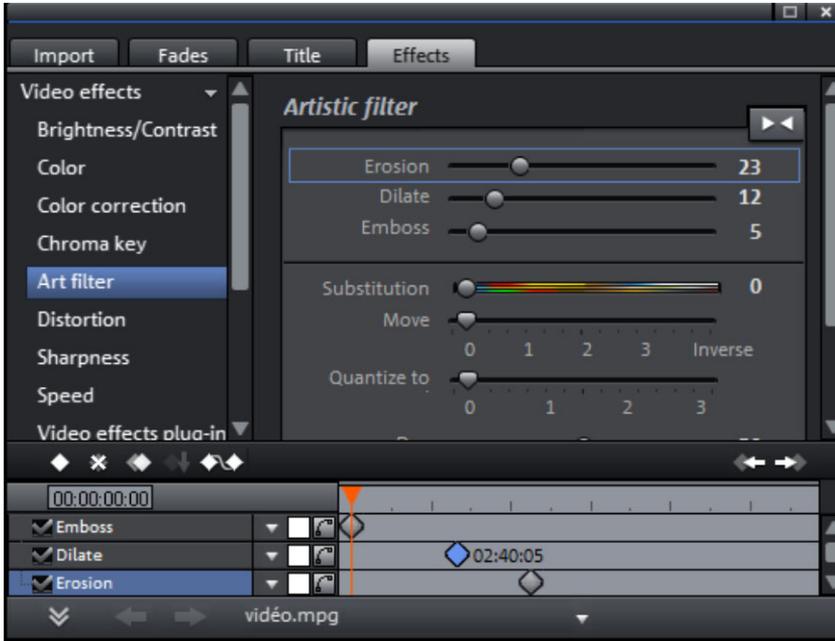
All editing is done in the Arranger. Your movies are displayed according to time in "Timeline" mode, i.e. the longer the representative object in the track, the longer the associated movie.

Handles: All objects can be shortened by moving the mouse to one of the lower corners of the object until it turns into a stretch symbol. You can now stretch the object as much as you like. At the top corners of every object, you'll find two fade handles that can be adjusted to fade an object in or out. The handle at the top center can be used to adjust the volume of audio objects and the brightness of video objects.



Selection: For advanced effects editing, the objects must be selected first. Each object can be selected by clicking it. Objects will change color to show that they have been selected. Multiple objects can be selected by holding down "Shift". You can also click and drag out a rectangle to select multiple objects. All objects included in the rectangle will be selected.

Editing effects: Selected objects can be edited with the effects from the Media Pool.



The settings for each effect can be made directly in the Media Pool. Most effects are controlled with keyframe animations or effects curves. The intensity of the effect is controlled dynamically via individual points (keyframes) or via a drawn curve (effects curve). Every button for the keyframes or effects curve animations can be found after the effect is selected in the lower area of the Media Pool.

Note: To activate an effects curve, an initial keyframe must be set first.

Video mix (chroma key): You can mix two videos as foreground and background images. The video on the lower track makes up the background, a video on the track above it makes up the foreground. Backgrounds are usually landscapes or animations, whereas foregrounds are usually people or objects that are captured in front of single-color surfaces. If you have, for example, a recording of a dancer as the foreground in front of a blue area and a lake as a background, then drag the background lake to a track and the foreground dancer to the track beneath it and arrange it so that one is directly beneath the other. Now select the lower object and open the "Effects" tab in the Media Pool. The item "Chroma key" is available under "Video effects". Select the background color of your foreground video and you will already see the video-mix result in your monitor – the dancer dancing on the lake.

Context menu: The context menu also offers a series of editing options for objects. You can open it by right-clicking on an object. Different trim editors can be opened which enable an exact cut with different transition parameters (for example). For video objects, there is another context menu.

Removing unusable scenes

One of the most important steps during import of your footage is cutting out unusable scenes from the material. There are two options in this case:

- **Option 1:** First, the complete material is loaded into your project and the unusable scenes are cut out.
- **Option 2:** You can cut the material already in the Media Pool, i.e. BEFORE you import it, and then proceed to import only the scenes you need. This process is recommended for long movies with a lot of editing.

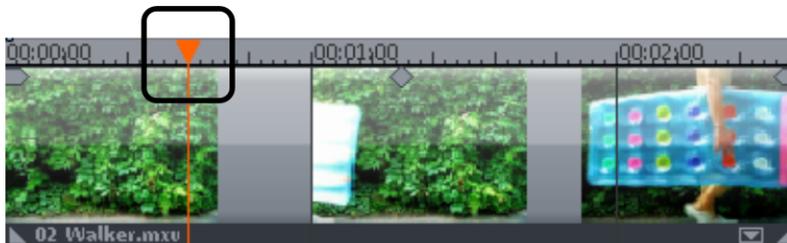
Cutting videos in the project

Let's assume that you have already imported your film material into a project and would like to edit it now.

- Play back your video by clicking "Play" on the program monitor's transport control (or simply press the space bar on the keyboard).
- If during playback you have reached a scene that you would like to cut out, click the playback button in the transport control a second time. The playback marker stays near the start of the scene to be removed.

Tip: In case of long films or to speed up the search, you can fast forward the video and follow the action with the preview monitor. To do so, pull the playback marker across the timeline while holding down the mouse button (but not too fast!).

- Set the playback marker exactly at the start of the unusable material. The zoom function is recommended to get a better view of longer videos (the +/- buttons in the bottom right corner).



- Press "T" on the keyboard. This will split the current scene into two sections at the playback marker.

32 Quick start

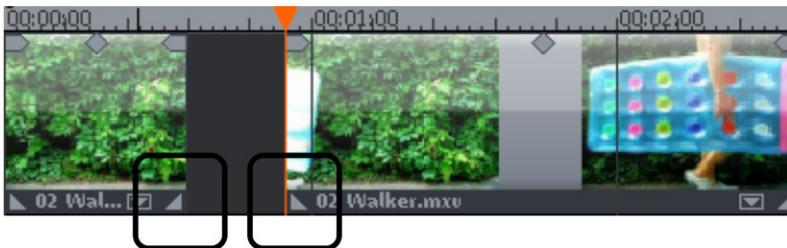
- Repeat these steps for the end of the unusable material. Find the end of the unusable scene, place the playback marker at the end point, and then press the "T" key on the keyboard again.



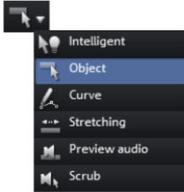
- Now you have "isolated" the unusable scene and may delete it from the video by pressing "Del" on the keyboard. Before this, the scene must be selected by clicking it with the mouse.



- If you weren't very precise during cutting, don't worry; By using the bottom object handles, you can always lengthen or shorten the remaining objects and "pull" parts of the deleted material back in or "push" remaining parts of the deleted scene away.



- After deletion, a gap will appear in the film sequence where the removed material was earlier. How can you remove the gap from the movie? Easy: Pull the later scenes up to the earlier scenes until they "dock" with each other. Please make sure that the later scenes are all taken along during the pull, otherwise the gap will have simply moved to the back of the film sequence. To pull up later objects, use "Intelligent" mouse mode, since this automatically takes all the objects found later on the timeline along with the object being pulled.



Hint: If your project has not only a video track but also a sound track, then it is often necessary to cut both of these tracks simultaneously. After import from the camera, video and sound tracks are automatically grouped, which is why all cutting and moving actions have an effect on video and sound tracks simultaneously. However, if you have added a separate sound track which has not yet been grouped with the video sequence, then you should group them before starting to edit. To do so, select the video object and the audio object via "Ctrl + mouse button", and in the "Edit" menu select the "Group" option (or click the group tool).

Feel free to experiment with the editing functions. Nothing can go wrong, since all editing functions (like all editing processes) are nondestructive. This means that all original material will remain unchanged on your hard disk.

Importing individual scenes from longer movies

If you have saved a longer video as a file on your hard disk and only want to use a section of it for your project, then proceed as follows:

- Double-click the desired file in the Media Pool. Double-click the file to load it in the source monitor and play it back using the transport controls.
- Find the range which you would like to import. Position the playback marker above the transport control at the start position of the range and click the "Set in point" button.



- Next, position the playback marker at the end of the section and click the "Set out point" button.



- The currently selected range appears highlighted in blue in the range display. You can play back this range separately with the "Play back range" button.



- All range limits can be moved by holding down the mouse button and dragging. Once the range matches the section that you want to import, click on the preview monitor and drag the section onto the track. An object will appear there featuring the material you wanted to import. If you're not sure where you would like to use the section in the project, you can drag it into the project folder instead of onto the track.

Regrouping scenes

It will often be the case that you will want to move whole scenes or even groups of scenes to a different place within a film. This happens completely intuitively: Single scenes can be selected in any view by clicking them and moving them to the desired position (drag & drop). You can also create scene groups which can be moved together: "Ctrl" + mouse-click lets you select more than one scene, "Shift" + mouse-click selects all of the scenes that lie in between.

Three final tips for advanced video arranging:

- Using "Intelligent mouse (view page 49)" mode, you can move not only the selected scene, but also all elements directly bordering it (like transitions, fades and scenes following the selected scene, plus those on neighboring tracks).
- The commands "Group (view page 222)" and "Ungroup (view page 222)" let you combine any scenes into groups which can then be moved together as a block.
- If cutting and moving around parts of your project has left it a little unorganized, try using the project folder. The project folder is better suited for intermediate storage of all of the objects you want to use in your movie. You can either move all of the objects directly from the Arranger into the project folder by dragging them there (they will be removed from the corresponding track), or you can copy the objects and paste them into the project folder. Hold down "Shift" while you click to select multiple files. You can also drag sections of files or files from the Media Pool and drag them directly into the project folder.

Note: Please ensure that the project folder is reserved for the respective project at hand. The contents will be saved together with the project and made available the next time the same project is opened, but not when another project is opened.

Enriching movies

Burning DVDs and Blu-ray Discs with interactive menus

You can burn your projects onto DVD or Blu-ray discs with an interactive menu.

Note: Authoring for DVDs and Blu-ray Discs is the same for both formats.

For multiple films that are subdivided into individual scenes (chapters), the DVD selection menu becomes even more important, allowing you to jump to each movie or chapter using your remote control. To make sensible chapter divisions in your movie, it should be split into sensible sections. Place the start marker where you'd like to have it and choose the option "Chapter marker" from the "Edit" menu (keyboard shortcut: Shift + Enter). If you select the option "Automatic chapter markers", a chapter marker is automatically placed at the beginning of every scene.

You can switch to the "Burn" screen by pressing the corresponding button at the top right.



At the center of the monitor, you can see a preview of the current DVD menu. All movies appear in the uppermost entries, and all chapters appear as sub-entries.

Use the "Navigation structure" button to access the selection menu structure. You can delete unnecessary scenes by clicking the corresponding box. The entry will be removed from the menu, but the scene will not be removed from the movie.

If you are satisfied with the subdivision of the movies and chapters, you can devote yourself to the layout of the menu. At the bottom of the screen, you'll see an array of preset menu templates. Use the scroll bar to view each template. There are plenty to choose from:

- If you wish to fully apply a template, then click "Complete" on the template bar above and double-click the template of your choice. The complete template will then be applied.
- You can also combine the various elements of the individual templates. For example, if you want to combine the text format of a template with the background of another one, then select "Font" first and double-click the template with the text of your choice. Then select "Order" and double-click the order you like. The preview in the middle shows you the results immediately.
- Double-click the preview picture or a menu entry to change the film or chapter name and select a different preview picture.
- The button "Design" at the top left enables detailed editing of each element.

When all videos and chapters (scenes) are logically arranged and you are satisfied with the selection menu, you can go ahead and burn. Use the virtual remote control to test the behavior of finished discs to make sure that everything works as planned.

Export video as file

Besides burning your project, you can also export it as a video file. When exporting files your entire movie is put into one file and placed into a folder of your choice on your hard drive. The available export formats can be found in the "File" menu. If you would like to create videos for the Internet or send them per email, you should compress your file using a compression format like Quicktime or RealMedia.

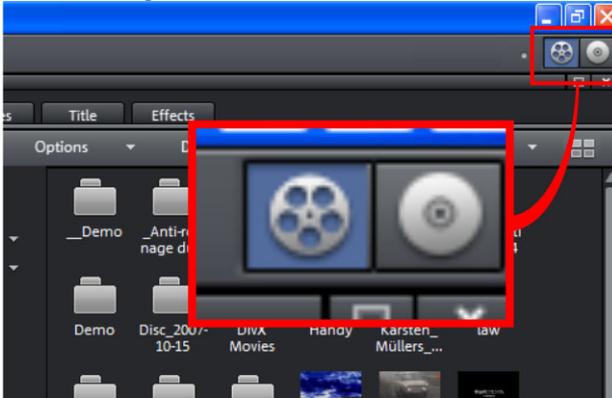
Workspaces



- 1 **Upper toolbar:** These are the buttons for quickly accessing important commands.
- 2 **Menu bar:** Most functions in MAGIX Video Pro X2 can be accessed via the menu bar.
- 3 **Program and source monitor:** Here you can preview video and picture objects.
- 4 **Templates:** Here you can find the folders for transitions, titles, effects and pans. To preview a template, simply click on it.
- 5 **Media Pool:** Load your photos and other media files via the Media Pool. Use the navigation buttons to access any drive or folder on your PC.
- 6 **Buttons for overview and multicam mode:** Switches to "Overview" mode. Overview mode displays all of the objects on the first track and enables quick sorting of scenes. The right button activates "Multicam" mode.
- 7 **Lower toolbar:** Select the "Timeline" or various different mouse modes for diverse editing functions.
- 8 **Timeline:** Defines the playback range. Features a scaled timeline.
- 9 **Peak meter:** The peak meter shows the sum of the current sound track's volume.
- 10 **Project folder:** Provides all of the files needed for the project.
- 11 **Arranger:** Drag & drop files from the Media Pool, then arrange and edit files in detail here.
- 12 **Scroll bars:** The lower scroll bars can be dragged apart and pushed together for zooming with the mouse. The right scroll bar zooms into the tracks vertically. Click on the edge of the scroll bars with the mouse button held down to change the visible window in the Arranger.

Note: Various screen elements are only available via MAGIX Video Pro X2's basic settings ("File -> Settings -> Basic settings").

Activating the main screen



MAGIX Video Pro X2 always starts with this view. If the burn screen is visible, click the left button in the top-right corner of the screen (active in graphic).

Media Pool

The design and operation of the Media Pool is very similar to Windows Explorer. It serves to control and load multimedia files of all kinds: video files, audio files, fades, effects, and even entire projects. At the same time, it is used as a window for editing different tasks.

Importing

Navigation buttons

The navigation buttons let you navigate through your computer's drives and folders.

Forwards/Back



The "Back" button always returns you to the folder you last used.

Up



The "Up" button brings you to the next highest folder level.

Folder tree



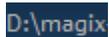
Here you can activate a folder tree to navigate through your computer system.

Search

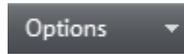


To quickly find specific files, use the search function. You can also specify file type, data and certain folders that should be searched.

Browse history list and path details



The current folder's path is displayed in the top center. Use the arrow button to open the menu to find the folders you previously visited.

Options

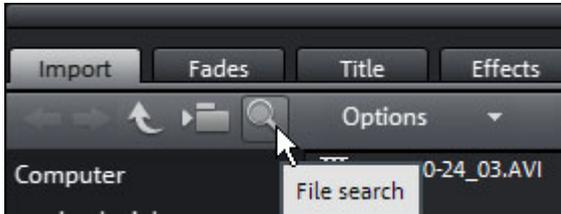
All functions of the context menu (switch views, rename, or delete files, etc.) can also be accessed via the options button.

Display options

Settings for how detailed the entries should be listed can be made here.

Search

The Media Pool has an easy search function for finding files on the computer. It may be activated and turned off again with the shown button.



File name: Enter any part of the name of the file you are looking for in the "File name" field. The X symbol deletes the entry. A "?" may be used as a placeholder for a single character, and "*" for any number of characters.

File type: Here you can enter a file name extension. Multiple entries are separated using a semicolon. Below the entry field, various presets may be selected for often-used file name extensions.

Date: Here, you can set time period limits on your search. Choose an entry from the list.

Folder: If you don't want to search the entire computer, but only look on certain drives or in a single folder, you can define a certain search path.

Search depth: Here you have various options that determine whether additional locations should be searched.

- Search indexed locations and the selected folder
- Search indexed locations, the selected folder and personal files.
- Search indexed locations, the selected folder, personal files and the project file.

"Indexed locations" are folders, which are searched and cataloged in Windows via the index list. If the index list is activated, the files in the indicated folders will be indexed while the computer is idling, so that the user's search query may be completed faster.

Note: In Microsoft Windows XP™, the indexing service is usually deactivated by default. The search functions in Windows Vista™ may be installed with the current version of "Windows Search". They make it possible to easily add to the indexing service. Please refer to the installation instructions from Microsoft.

Computer

The link button "Computer" displays the drives in the Media Pool. All drives will be listed along with their drive letters and can be opened with a double click.

User directory

The second button featuring the user's name opens their personal folder in the Media Pool.

My media

The "My media" button lets you select "Projects", "My videos", "My music", "My images", and "Recordings".

Projects

Switches to the folder where your projects and videos are usually stored.

My videos

Displays all usable files found in "My documents\My videos."

My music

Displays the contents of the "My Documents\My Music" folder. MAGIX Music Manager also suggests this folder for importing your music collection into the database.

My pictures

Switches to the "My documents\My pictures" folder. This folder is often used by digital cameras and scanners to store transferred images by default. The included MAGIX Photo Manager program also uses this folder (e.g. during image import).

Recordings

Recordings: MAGIX Video Pro X2 stores all recordings here to access all recordings as quickly as possible.

MAGIX tools

The "MAGIX tools" link selects links to "Downloads", "Database", "Online Album", and "Internet Media".

Downloads: Use this button to access the media files that you downloaded with Catooh.

Database: Use this button to open the database view. Right-clicking opens the database search. The database first has to be created using the supplied additional program, MAGIX Photo Manager.

Online Album: This buttons opens MAGIX Online Album. This provides a shortcut to uploading and deleting data. To do this, you must first register on MAGIX Online Album.

There are many ways to upload data:

1. While holding "Ctrl" down, select the data to be uploaded in the Media Pool, and select "Copy" in the context menu (opened by right-clicking). Switch to the MAGIX Online Album screen, open the desired folder, and select "Paste" in the context menu.

2. In the Media Pool, click on "Online Album", and go to the desired directory. Open the Windows Explorer, select the desired data with "Ctrl" held down, and drag it into the Media Pool.

Both options will result in your desired data being uploaded to your MAGIX Online Album.

Hint: This function requires an Internet connection. To gain access, make sure you have your login information (email address and password) ready.

Internet media: This opens MAGIX Video Pro X2's integrated browser (view page 264). It offers you the possibility to collect media from the Internet to use in the current project.

Fades

This provides a list of all fades sorted into categories. Clicking on a category shows all of the fades contained therein.

To load a fade, click on it and drag it onto a scene which you would like to blend into. Alternatively, you can select the scene into which you would like to blend into before and double click on the fade in the Media Pool later.

Tip: All fades will appear in the menu between two scenes, and they can also be selected there.

Title

Title presets and the Title Editor (view page 124) are located here. They are sorted into various categories and can be loaded via a double-click or drag & drop. You will also find templates for 3D titles here. The text of title objects can be changed in the program monitor by double-clicking on it.

Effects

Access the effects presets via "Video effects", "Movement effects", "Audio effects", and "Design elements".

Video effects

These are the various effects which can be applied to videos and stills. The effects can be set after an object is selected in the respective effects dialog which appears. For more information, see the "Video effects in the Media Pool (view page 108)" chapter.

Movement effects

These are movement effects you can use to animate the frame by using zoom or camera movements. For more information, go to the "Effects and titles" chapter in "Movement effects in Media Pool (view page 115)".

Audio effects

In addition to many different audio effects presets (echo, reverb, equalizer, compressor, etc.), you can also use the included synthesizer. A synthesizer can be dragged onto the arranger like a multimedia file. It will be displayed as a synth object. Use the corresponding control console to edit the synth sounds and melodies. The control console opens automatically when the synthesizer is dragged onto the arrangement for the first time. A synth object can be opened for further editing later by double clicking.

Design elements

Multi picture-in-picture: These are various effects presets for image stacking.

Collages: These work similarly to normal picture-in-picture effects, but more objects are used. Depending on the collage, arrange the selected objects one after the other and drag the collage onto the first object.

Portrait effects: Select individual effects which are especially suited to vertically formatted photos.

Image objects: These are various image objects like black bars, thought bubbles for cartoons, etc.

Intros/Outros: These are beginning and end scenes for films with various themes.

Visuals: Graphical displays of any played sounds which can be combined with other video material.

Various file list view modes

In the **file list**, all of the supported multimedia files and subfolders of the currently selected folder are displayed. Three different views (list, detail, large symbols) can be set by right clicking on the Media Pool context menu.



List: Only file names are listed. This view mode displays the most files simultaneously.

Name	Type	Size
astronaut	.bmp	2,359,3
Bahamas_22	.jpg	416,1
Bahamas_25	.jpg	394,1

Details: In the details section the type, size, and date of modification are shown for every media file beside its name. The list can be sorted by clicking on any of these details.



Large icons can be quite useful because they show a preview frame for each movie and picture file. This allows you to sort through the material quicker. One disadvantage is that it takes longer for the file list to be displayed.

Preview function

A preview function for all of the files in the Media Pool can be started by double-clicking or by pressing the playback button on the source monitor.

There are also previews for effects that display their effects.

The "Extras" button or the enhanced transport control function allows you to select sections from a longer video file in the Media Pool and load them. Please refer to the chapter "Inserting objects into the project (view page 50)".

Toolbars

Upper button bar



The upper button bar can be found in the monitor to the top left. It has the following functions:

New project



Creates a new MAGIX Video Pro X2 project. A dialog with settings for a new disc project or a new film (view page 63) opens to get started.

Keyboard shortcut:

Shift + N

Load project



Use this option to load a movie into your disc project. Please note that all media files associated with it must be accessible. MAGIX Video Pro X2 will search for all used sounds and video files in the folders in which they were located when the movie was saved.

Keyboard shortcut: Ctrl + O

Save project



The current movie is saved with the name displayed in the project window. If you have not yet specified a name for your project, a dialog will open wherein MAGIX Video Pro X2 asks you to do so.

Please note: In the project file (*.MVP), all information about the used media files, cuts, effects, and titles are saved, but not the picture and sound material itself. This is found in the recorded or imported media files that remain unchanged during the entire MAGIX Video Pro X2 editing process. To save the full movie into a dedicated directory, for instance to continue editing on a different PC, please use the command "Copy movie and media into directory".

Keyboard shortcut: Ctrl + S

Program settings



Opens the program settings (view page 254).

Keyboard shortcut: Y

Context help



By choosing the context help entry from the "Help" menu, or by clicking on the button in the top toolbar, the mouse cursor will turn into an arrow with a question mark.

Then, when you click on any button of the main screen, program help describing the control element in question will open.

Shortcut key: Alt + F1

MAGIX News Center



MAGIX can supply you with all of the latest information about your software. In the MAGIX News Center, you will find all of the links to current online tutorials as well as tips & tricks on individual topics or software application examples.

You will also be informed of the availability of brand new updates and patches for your program as well as special offers, contests, and surveys.

The news is split into three color-coded sections:

- Green for practical tips & tricks for your software
- Yellow reports the availability of new patches and updates for your product
- Red for special offers, contests, and surveys
- And if there are no new messages, then the button will be grey

All available information is shown as soon as you click on MAGIX News Center. If you click on one of the news items you will be forwarded to the corresponding website.

Lower toolbar



The following buttons are available in "Overview" and "Timeline" modes:

Select a movie to edit



Using the dropdown menu, you can control various movies within a project.

Undo

During project editing, you can undo the last changes you made. This way it's no problem if you want to experiment with critical operations. If you don't like the results, then you can always revert to the previous state by using "Undo".

Keyboard shortcut: Ctrl + Z

Restore

The "Redo" function undoes the previous "Undo" function.

Keyboard shortcut: Ctrl + Y

Delete objects



This function deletes the selected scene (or the selected object in "Timeline" mode).

Keyboard shortcut: Del

Title editor



Opens the title editor (More Informationen can be found in the section "Title Editor" on page 124) for the selected photo, video, or title object.

Keyboard shortcut: Ctrl + T

Mute button



This button mutes the sound output. By clicking on the triangle, you can selected which track should be played back by default.

Mixer



This option allows you to display or conceal the real-time mixer. You will find further information, especially with regard to the integration of effects plug-ins, in the chapter "Mixer".

Keyboard shortcut: M

Paste modes

MAGIX Video Pro X2 provides various options for how an object selected in the Media Pool will be pasted into the project.

Apply automatically

Pastes the file selected in the Media Pool into the arranger. Video and image objects will always be placed behind the last object into the first track; audio and text objects are separated into different tracks.

Intelligent ripple

Inserts an object from the Media Pool at the position of the playback marker and simultaneously moves the objects following it.

- In contrast to automatic insertion, all objects will be inserted at the position of the playback marker.
- Videos and images are placed on the first track. If another object is found at the playback marker position, then it will be cut continued at the end of the inserted object (so that the inserted object can start exactly at the point of insertion).
- The objects lying further along on the track will be moved further down.
- Objects on other linked tracks (all objects up to the first completely empty track) will also be moved further down. This includes sound tracks, fades, and titles, all of which will be moved together so that nothing gets mixed up. All objects will be moved which start at the same position as or behind the playback marker.

Note: The prerequisite for a good ripple effect is that the soundtrack, most importantly, is cut at the position of the playback marker. Otherwise, the elements located further down would move down even more, while the soundtrack would stay at its old position, causing picture and sound to separate from each other. If you would like to create an intelligent ripple, make sure that the starting points of all objects that are to be moved are positioned at or behind the playback marker. If this is not the case, click on the screen to cut the corresponding object at the playback marker position.

Single-track ripple

Inserts an object from the Media Pool at the position of the playback marker and simultaneously moves the objects on the track following it.

- The one-track ripple behaves similarly to the intelligent ripple, the difference is that only the objects on the target track are moved. Bordering tracks are unchanged.
- In contrast to automatic insertion, all objects will be inserted at the position of the playback marker.
- Videos and images are placed on the first track. If another object is found at the playback marker position, then it will be cut continued at the end of the inserted object (so that the inserted object can start exactly at the point of insertion).
- The objects lying further along on the track will be moved further down.

Multitrack ripple



The object selected in the Media Pool will be inserted on the target track at the position of the playback marker. All objects found at the playback marker position will be split and moved down the length of the inserted object. All objects on the track located further on will also be moved.

- The multitrack ripple behaves similarly to the intelligent ripple, but the difference is that all objects on all tracks following the playback marker's position will be moved.
- In contrast to automatic insertion, all objects will be inserted at the position of the playback marker.
- Videos and images are placed on the first track. If another object is found at the playback marker position, then it will be cut continued at the end of the inserted object (so that the inserted object can start exactly at the point of insertion).
- If other objects are located at the playback marker position, these will also be separated and moved further along the track.
- Objects lying further along on all tracks will be moved further down.

Replace



Replaces the selected object with an object selected in the Media Pool.

Overwrite



Overwrites the object in the target track at the position of the start marker with the object selected in the Media Pool.

Hint: In contrast to "Replace", no length adjustment takes place. With "Replace", any downstream objects are moved, while "Overwrite" overwrites downstream objects as well (sometimes only partially), depending on the length of the object being inserted in comparison to the object being overwritten.

Cut button

You can access the individual options using the dropdown menu.

Split



This command cuts a scene at the point where the playback marker is positioned. This way, two free-standing objects are created.

Keyboard shortcut: T

Remove start



This command cuts a scene at the point where the playback marker is positioned and removes the material before the playback marker.

Keyboard shortcut: K

Remove end

This command cuts a scene at the point where the playback marker is positioned and removes the material behind the back marker.

Keyboard shortcut: U

Hint: If the commands "Split" and "Remove beginning/end" are applied without a selection, all objects at the position of the playback marker are cut.

Remove scene

This command allows you to completely remove selected scenes. The scenes that follow will be automatically moved to the end of the scene in front of the scene to be removed.

Keyboard shortcut: Ctrl + Del

Split movie

Splits the movie at the playback marker position into two sections within one project. These can be individually controlled using the "Window" menu or the button "Select movie for editing" (see above).

Keyboard shortcut: Alt + W

Additional buttons in Timeline mode

The following buttons are only available in "Timeline" mode:

Set chapter marker

Sets a chapter marker at the position of the playback marker. This creates a chapter entry in the disc menu, in case you are planning to burn the movie to CD/DVD.

You can rename your chapter markers by right clicking and selecting "Rename". The name then appears in the chapter menu.

Shortcut: Shift + Enter

Object grid

Use this button to switch the object grid on and off. When the object grid is switched on, the objects snap into place beside one another so that everything fits in seamlessly.

Form group



Orders all selected objects into groups. As soon as an object from the group is selected, all other objects in the group will be highlighted as well so that you can work on them collectively.

Keyboard shortcut: Ctrl + L

Ungroup objects



This turns all selected objects into free-standing objects again.

Keyboard shortcut: Ctrl + M

Mouse modes



MAGIX Video Pro X2 offers special mouse modes for different kinds of editing. They can be selected using the small arrow next to the button.

Mouse mode for individual objects



This is the preset mouse mode which performs most of the work.

Select objects with a left click. You can move an object by dragging it to the desired position.

Keyboard shortcut: Alt + 1

Intelligent mouse mode



In principle, this mouse mode behaves like the "Single object mouse" mode.

However, all objects that border the object on the same or on adjacent tracks are also moved, starting from the mouse position. This means that all objects overlapping adjacent tracks (fades, fade effects) and those directly connecting to the next one (hard cuts) are pushed together up to the next empty space in the arrangement (the technical term for this action is "Ripple until black").

This is useful for preventing destruction of fades you have already set and want to move an object included therein. To move individual object, switch to "Single object mouse" mode. You can also drag an object vertically onto a free track, thereby breaking the connection with the following objects. You will then be able to move it freely without having to move other objects with it.

Keyboard shortcut: Alt + 2

Curve mouse mode

This mouse mode is used especially for drawing effects curves.

The effects curve controls the intensity of the effect: The higher the curve point, the more intense the respective effects parameter at this location. The curves can be used for video and image objects on the image tracks and also for audio objects on the audio tracks.

More information about this can be found in the chapter "Animate objects", section "Editing object effects curves".

Keyboard shortcut: Alt + 3

Stretch mouse mode

This special mode is for customizing the length of objects.

With timestretching, audio objects can be expanded or compressed using the handles at the bottom. The duration of the audio material is therefore lengthened without changing the pitch. Playback of the video objects is accelerated/decelerated with the help of the handles at the bottom.

Attention! If the object to be stretched or compressed is going to be animated with an effects curve, then the option "Connect curve length with object length (view page 151)" should be set for the effects curve.

Keyboard shortcut: Alt + 4

Preview audio mouse mode

This mode allows you to preview audio objects (as long as the mouse button is held down).

In this mode, objects cannot be moved or changed.

Keyboard shortcut: Alt + 8

Program and source monitor

MAGIX Video Pro X2 features two preview monitors, i.e. a program monitor for object image output in the Arranger and a source monitor for previewing files in the Media Pool.

Setting up the preview monitor

The program and source monitors can be set up variably:

- You can adjust the size of each of the monitors. This can be accomplished by clicking the screen with the right mouse button and selecting the desired size from the context menu - either from the presets submenu or self-defined ("Other resolution").
- You can also freely position both of the monitors. Click on the top bar of the monitor window and drag it down to any position you want.
- By maintaining the original dimensionality, black frames appear if the display format of the monitor does not correspond to that of the video played. You only need to deactivate

this option if you want to display a distorted video intentionally, e.g. if it was incorrectly encoded.

- The option "Display play time" displays a large time countdown in the program monitor. This shows the current position of the playback marker. The foreground and background colors as well as the transparency can be adjusted in the context menu.

Tip: Useful presets for the Arranger and video monitor can be found in the tab "Display presets (view page 259)" in the program settings.

Fullscreen view

The option "Fullscreen" in the context menu maximizes the monitors. Alternatively, double-click on a monitor or select one and press "A + Enter" to maximize the window. The fullscreen view is especially recommended for working with two screens; one screen for the film preview in the preview monitor, and the other for the Arranger.

You can also shift the monitor into full screen mode and access it via the context menu (right mouse button). There, you can also hide and display the basic transport controls.

"Esc" returns you to the normal view (or click on "smaller" button to the right in the fullscreen mode).

Film overview

The option "Film overview" in the "Window" menu enables an overview of the entire Arranger. All objects in the Arranger will be displayed in the program monitor. The overview display is especially recommended for work with long movies because the reduced overview in the program monitor and the zoomed detailed view in the Arranger present a good combination.

The film overview can be used for moving around in the movie and for editing certain parts:

- When you click on a certain object in the program monitor, the Arranger will zoom into that object.
- You can use the mouse to draw a frame in the preview monitor – the corresponding section will be zoomed in the Arranger.
- When you move the playback marker in the program monitor, the Arranger playback marker will also move correspondingly.

Tip: If you use this option very often, then try using the corresponding keyboard shortcut ("Shift + A").

Transport control

Transport controls on the preview monitor enable you to play back video and image material in the Arranger or as a preview in the Media Pool.



Transport control buttons



Range: Above the playback functions, the range between the in and out points can be changed by clicking it.



Playback marker: This marker indicates the location of the image currently displayed on-screen.



Set in/out points: Defines the start and end of the playback range.



To the start: This button sets the playback marker to the start of the current area.



Playback by a frame: This button sets the playback marker just behind the current frame and plays it back.



Play/Stop (pause): The playback button in the middle starts playback. A second click ends playback.

Tip: In the menu "File -> Settings -> Program -> Playback", you can set whether the playback marker will go back to the start position (stop) after the second click or following the appropriate shortcut (space bar), or if it should stay at the current position (pause function).



Area playback: This button plays back the current range.



To the end: This button sets the playback marker to the end of the current range.



Jog wheel: Using this wheel, you can move by single frames within the video and position the playback marker exactly at high magnifications.



Shuttle control: The further the slider control is moved to the side, the quicker the arrangement is played in the corresponding direction. This way a certain position can be reached quickly.

Arranger



MAGIX Video Pro X2 offers an editing interface for advanced editing: audio dubbing, professional editing, plus precise transitions and effects editing.

Tracks

The arranger offers tracks for multimedia material positioning and editing. The number of tracks displayed can be specified in the file menu under "Movie settings".

In principle, any object type may be placed on any of the tracks. You can also combine video and bitmaps objects with MIDI and audio objects on any of these tracks. The maximum length of a movie is restricted to 6 hours.



At the beginning of each track is a track box where you can mute a single audio track with the **M**ute button or play them **S**olo.

Clicking the lock symbol protects all objects in a track against unwanted editing. The track name can be changed by double clicking the text above the buttons.

Zooming

The vertical zoom function sets the number of visible tracks in the window. For a lot of tracks, enlarging the view (zooming) is sensible for editing a single track or object.

Use the horizontal zoom function to increase the visible section of the arrangement on the timeline.



Enlarge objects: Vertical and horizontal zoom stages are enlarged so that all of the selected objects are able to be displayed at maximum size.

If the function is switched off, the zoom stage will be restored.

Multiple sound tracks

MAGIX Video Pro X2 offers up to eight multi sound tracks, e.g. to include different audio streams on a single disc. An example of application might be the creation of multilingual discs.

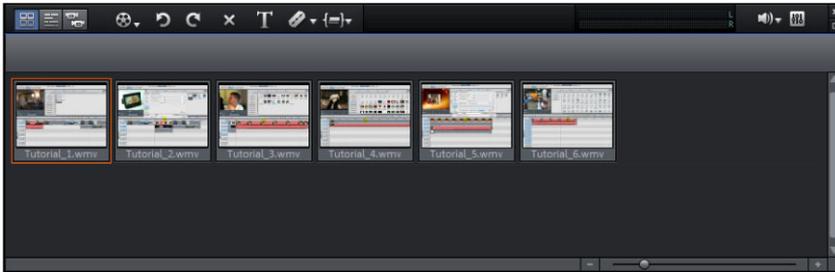
This kind of audio stream is assigned via the track box's context menu; select "DVD audio track 1" - "DVD audio track 8". Every multi sound track can be clearly named via the "Rename DVD audio track" entry in the context menu.

Grid and snap

The time of the arrangement is displayed by the horizontal course of the tracks. To structure this course, a timeline with a grid has been positioned at the top above the first track.

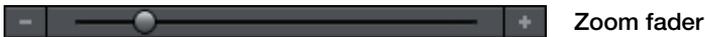
A grid is also displayed in the arranger area. The raster ensures that the objects always "snap" to certain points so that they can be positioned precisely according to the beat. Two consecutive objects will seamlessly snap together even if they are on different tracks. This avoids undesired gaps or overlaps.

Overview mode



The "Scene overview" mode is a special view that improves manageability and categorization of scenes. All scenes are listed one after the other (in multiple lines, like in a text program) and can be copied, cut, moved, deleted and inserted.

In the "Overview" mode, there are no start, play, or end markers. The scene being played back has a frame around it.



This slider specifies how large the photos will appear in the storyboard. The smaller the scenes, the more of them you'll be able to fit on screen.



Maximize: Use this button to maximize the scene overview to fullscreen.

Project folder

This is a kind of catchall for all required files.



A dialog opens for placing files (alternatively to drag & drop via the Media Pool) into the project folder.



Create new folder: Creates a virtual folder. You can create as many folders as you need for sorting your media files. No folders can be created within folders.



The "Up" button brings you to the next highest folder level.



Search box: MAGIX Video Pro X2 searches through all file names for the text entered and then lists the results.



Settings for how detailed the entries should be listed can be made here.

Note: Folders in the project folder are not ordinary folders that are created on the hard drive. They are created directly in the project and are intended to keep complex projects clearly laid-out.

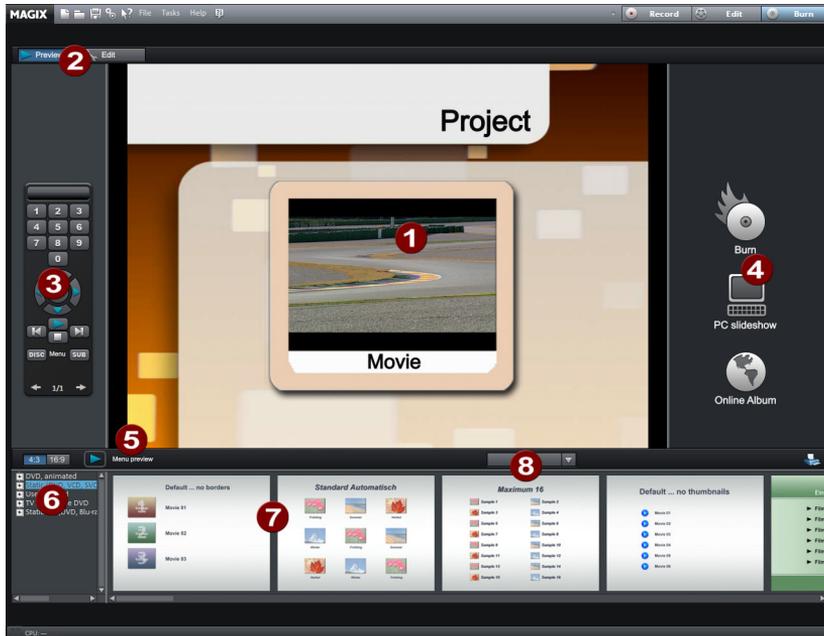
Adjusting the workspace

The source and program monitors, the project folder, the Arranger, and the Media Pool can be shut off completely or freely repositioned. Individual settings can be saved and reloaded. To do this, open the menu "Window -> Workspace -> Save...". The first three workspaces are automatically assigned to F9-F11, but these can be reassigned (view page 274).

Under "**Program settings -> Display templates**" you will find a collection of useful presets for display presets. On systems with a connected monitor, only the first two templates make sense. The presets are explained on the right side of the dialog. All window properties of the Arranger, video monitor, etc. can be changed after the application of a preset.

For larger arrangements, the program monitor can be used to show an overview of the Arranger ("Window -> Movie overview (view page 231)").

The "Burn" screen



- 1 **Preview menu:** This is a preview of the selection menu. Read more in the "Menu (view page 213)" chapter
- 2 **Switch views:** Here you can switch between the Preview and Edit views.
- 3 **Remote control:** Check how your disc reacts when you press a button on your remote control.
- 4 **Output:** Choose between burning a project, a show optimized for PC, or a web show.
- 5 **Play preview:** Here you can playback the menu preview, which you can test with the remote control.
- 6 **Template category:** Switch between different templates for designing your menus.
- 7 **Menu templates:** Switch between different templates for designing your menus.
- 8 **Apply templates:** Here you can select whether a template should be assigned to the page, menu or all disc menus.

Functionality



You can switch to the "Burn" screen by pressing the corresponding button at the top right.

Here you can burn your movies (including a selection menu) onto CD or DVD or upload them to your MAGIX Online Album as a "virtual DVD".

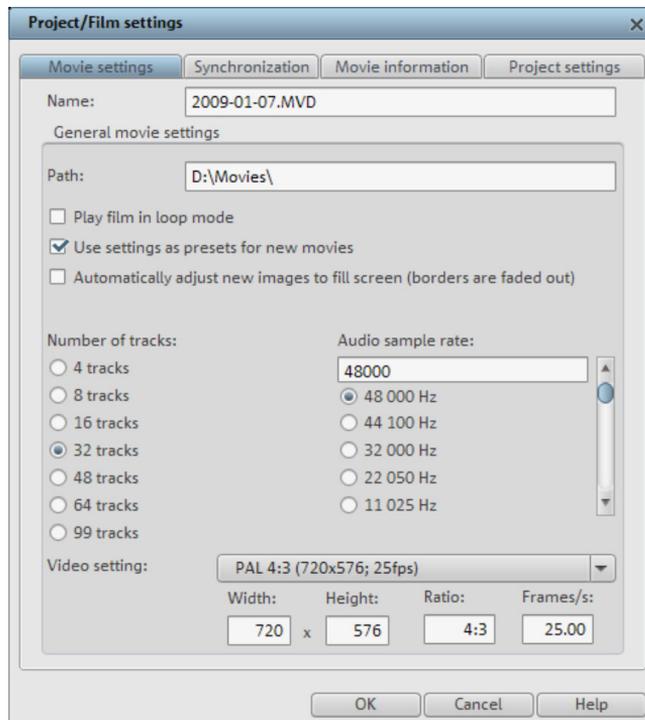
All movies loaded into the project are taken into account during the burning process. If you want to take out some of the movies that are loaded, then you will have to switch back to the "Edit" screen and delete some of them from the project. To do so, switch to the corresponding movie, open the "File" menu and select "Manage movies -> Remove movie (view page 214)".

For more information about the "Burn" screen, please read the chapter "Burning discs (view page 196)".

Create new video project

Movie settings

Open the movie settings via "File -> Settings -> Movie..." or by pressing "E". The following dialog opens:



The buttons at the top are for the four tabs in the dialogs: "Movie settings -> Synchronization ->Movie information" and "Project settings".

Movie settings

Name: You can enter the name of the current movie here.

Path: This is where you determine the path to the folder on your hard drive where your movie is saved.

Play movie back in loop mode: The movie is then played over and over again, i.e. once the movie reaches the end marker, it is started again from the beginning.

Cut new images to fit the screen automatically: Fits all images and videos inserted into the project automatically so that they fit the screen.

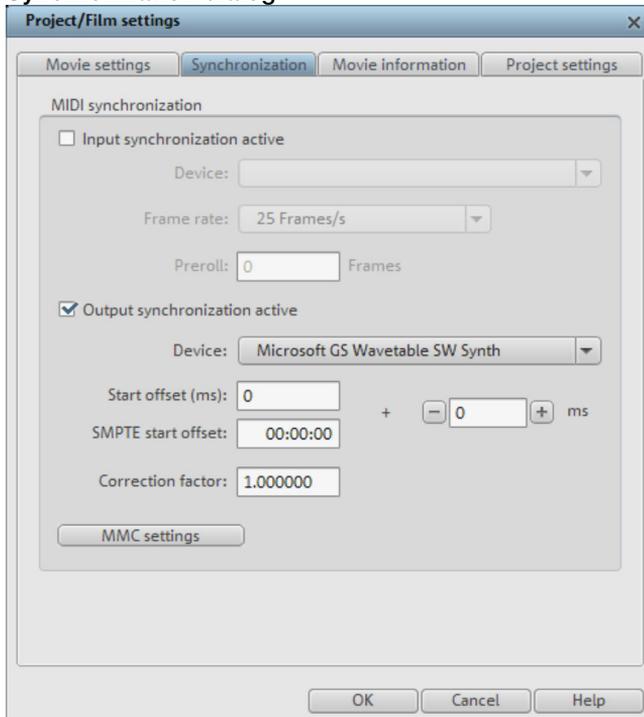
Number of tracks: Changes the track number.

Audio sample rate: The preset sample rate is 48 kHz. This sample rate is applied to all recordings and is also a prerequisite for DVDs. This setting guarantees optimum sound quality. Audio material at different sample rates (e.g. CD audio at 44 kHz) is automatically adapted when loaded (resampling). Only change this value if you are working with sound material at a different sample rate or if your sound card does not support this sample rate.

Video settings: You can select the standard settings for the picture format and frame rate for PAL or NTSC images or for your own format. Please note that MPEG encoding requires a width/height ratio divisible by 8.

Synchronization

Synchronization dialog



Note: A description for each of the synchronization dialog's functions is provided here. A description of how synchronization is set up can be found in the section "Synchronization settings (view page 59)"

Input synchronization: Select the driver via which MAGIX Video Pro X2 should receive the MIDI timecode. This setting is also used SMPTE. Note that for synchronization via SMPTE the device set matches the SMPTE input of your MIDI interface.

Preroll frames: Enter a frame number that MAGIX Video Pro X2 will ignore before synchronization starts. This will ensure that analog devices first require a certain time to reach the correct speed. In order to prevent synchronization of MAGIX Video Pro X2 to an invalid time, this can be skipped by means of preroll frames.

Output synchronization: Select the driver via which MAGIX Video Pro X2 should send the MIDI timecode. Note that for synchronization via SMPTE the device set matches the SMPTE output of your MIDI interface.

SMPTE settings: Specify the correct frame rate with "Type", e.g. 24 for cinematic films, 25 for PAL video and audio synchronization, 29.97 drop/non drop, or 30 for NTSC video.

Start offset: Specify a period in milliseconds and SMPTE frames to be deducted from the incoming SMPTE time before the time is applied for synchronization. With an offset of 60:00:00 (1 hour), you can therefore synchronize a tape with an SMPTE code that starts at 1 hour, MAGIX Video Pro X2, however, still starts at the tape beginning at 0.

Correction factor: Normally, this value should be at "1" (if you haven't changed it). In seldom cases, MIDI synchronization and audio can run apart for longer arrangements. You can accelerate the speed of the MIDI playback by slightly increasing this factor (e.g. to 1.000001).

Note: Set the check box for the corresponding item according to whether you want to apply input or output synchronization.

Specify synchronization

MAGIX Video Pro X2 is capable of being synchronized by external sources or synchronizing external sources.

Synchronizing MAGIX Video Pro X2 with Samplitude or Sequoia is also possible via a virtual MIDI cable (e.g. "MIDI Yoke" or Hubi's MIDI Loopback Device"). The requirement in this case is simply that the virtual MIDI cable has been installed successfully.

MAGIX Video Pro X2 as master

If MAGIX Video Pro X2 should synchronize external programs or sources, then proceed as follows:

- Open the Synchronization dialog (view page 58).
- Under "Output synchronization", set the MIDI device that is connected to the device that MAGIX Video Pro X2 is supposed to sync with.
- In case you want to synchronize another program (e.g. Samplitude/Sequoia) via a virtual MIDI cable with MAGIX Video Pro X2, please make sure that the corresponding MIDI device is set in both programs. The program to be synchronized must support MTC and be configured as the "slave".

- For example, if you use "MIDI Yoke NT1" under "Output synchronization", then the device "MIDI Yoke NT 1" must also be set in the MTC input of the program to be synchronized.

MAGIX Video Pro X2 as slave

MAGIX Video Pro X2 set as the slave causes the program to follow an external source or another program during playback.

- Open the Synchronization dialog (view page 58).
- Under "Input synchronization", set the MIDI device that is connected to the device that MAGIX Video Pro X2 is supposed to sync with.
- In case you want to synchronize another program (e.g. Samplitude/Sequoia) via a virtual MIDI cable with MAGIX Video Pro X2, please make sure that the corresponding MIDI device is set in both programs. The program that is set to be the synchronization source must support MTC and be configured as the "master".
- For example, if you use "MIDI Yoke NT1" under "Input synchronization", then the device "MIDI Yoke NT 1" must also be set in the MTC output in the master.

Synchronizing Samplitude/Sequoia with MAGIX Video Pro X2

This section should help you synchronize MAGIX Video Pro X2 with Samplitude/Sequoia for Surround productions.

The introduction featured here provides a single example. In this case, MAGIX Video Pro X2 is the master: Samplitude/Sequoia follows the time information from MAGIX Video Pro X2 but sends information from the transport control to MAGIX Video Pro X2. This method allows playback from both programs to be started while they run synchronously.

The chapter "Transferring a Surround project to MAGIX Video Pro X2 (view page 173)" explains how completed Surround projects are transferred from Samplitude/Sequoia to MAGIX Video Pro X2 and how they are processed.

Requirements

Since synchronization occurs via MTC (MIDI time code), a virtual MIDI driver must be installed. Examples are "MIDI Yoke" or "Hubi's MIDI Loopback Device". Configure the driver as required so that at least two virtual MIDI devices are available.

If a Surround project is to be created, then you require a Surround-capable sound card with at least 6 channels.

Setting up MAGIX Video Pro X2

- Open the synchronization dialog
- Activate the box "Input synchronization active".
- Under "Device", set the first free virtual MIDI device (e.g. "MIDI Yoke NT 1").

Now set the transport controls via MMC (MIDI machine control):

- Click the "MMC button" to open the "MIDI machine control".
- Activate the box "Receive MMC commands (slave)".
- Under "Device", set the second free virtual MIDI device (e.g. "MIDI Yoke NT 2").
- Close both dialogs by pressing the "OK" button.

Setting up Samplitude/Sequoia

- Start Samplitude/Sequoia; MAGIX Video Pro X2 can remain open.
- Open the Samplitude/Sequoia synchronization dialog. Right-click the "Sync" button on the transport console, or select the entry "Synchronization settings" in the "Options" menu.
- Activate the box "Output synchronization active".
- Under "Device", set the first free virtual MIDI device (e.g. "MIDI Yoke NT 1").

Now set the transport controls via MMC (MIDI machine control):

- Click "MMC settings" to open the "MIDI machine control" dialog.
- Activate the box "Send MMC commands (master)", "Transport window as remote control for external device", and "Space bar for remote control".
- Under "Device", set the second free virtual MIDI device (e.g. "MIDI Yoke NT 2").
- Close both dialogs by pressing the "OK" button.

Now you can conveniently dub your movie in Samplitude/Sequoia while you edit and cut your work in MAGIX Video Pro X2. Playback can be started from both programs and always runs synchronously.

MIDI Machine Control (MMC)

MMC modes

The synchronization window provides settings for remote control via MIDI Machine Control. MAGIX Video Pro X2 supports synchronization of external devices via MMC. Three working modes are provided:

Receive MMC commands (slave): If you have set up MAGIX Video Pro X2 to work as a slave, activate this option. MAGIX Video Pro X2 keeps track of the JOG shuttle operations and fast forward and rewind commands of external devices. MAGIX Video Pro X2 also receives the current playback position of the device and displays it as an additional blue cursor on the timeline.

Send MMC commands (master): MAGIX Video Pro X2 operates as master. The external device follows the time position every time the playback cursor moves to a certain position within the arrangement.

While playing a range in MAGIX Video Pro X2, the MMC device stops once the end of the range is reached. If this option is activated, the start and stop commands sent by the space bar only control the MMC device.

Use transport console as remote control for external device

If you activate this option, the transport control no longer controls playback and recording directly within the program but instead controls the external MMC device. Play, stop, fast forward, rewind, and fast rewind no longer have any direct effect on playback. The record button starts recording in synchronization with the playback of the MMC device.

Use the space bar to start playback remotely: If this option is activated, the start and stop commands are controlled via the space bar on the MMC device.

Advanced options

Input MIDI device: Here you can set the MIDI device via which MAGIX Video Pro X2 should be controlled.

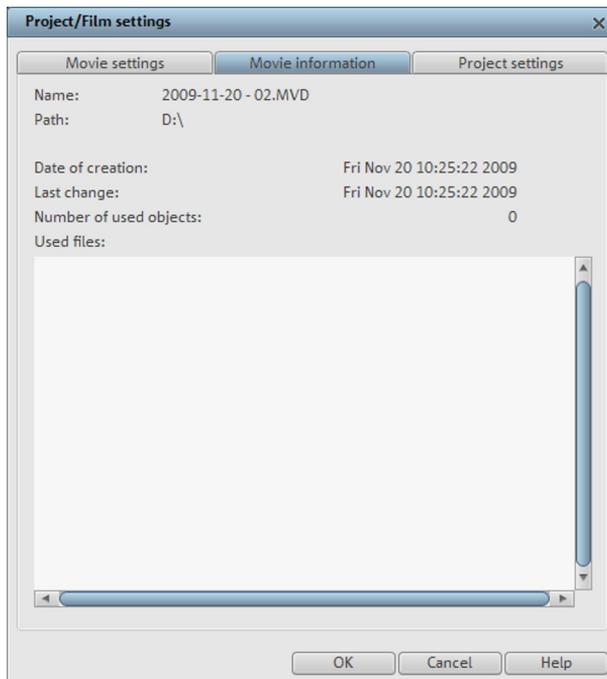
Output MIDI device: Select the MIDI device which is connected to the device you want to control remotely.

MMC input ID: Enter the MAGIX Video Pro X2 input ID here. Normally this is "All".

MMC output ID: Set the input ID of the MMC device you wish to control remotely. Normally this is "All".

Movie information

This option opens an information window:



Name: Enter the name of the current movie.

Path: The path for the folder on your hard drive where your movie is saved.

Created on: Displays the time the movie was created.

Last changed: Displays the time of the last save.

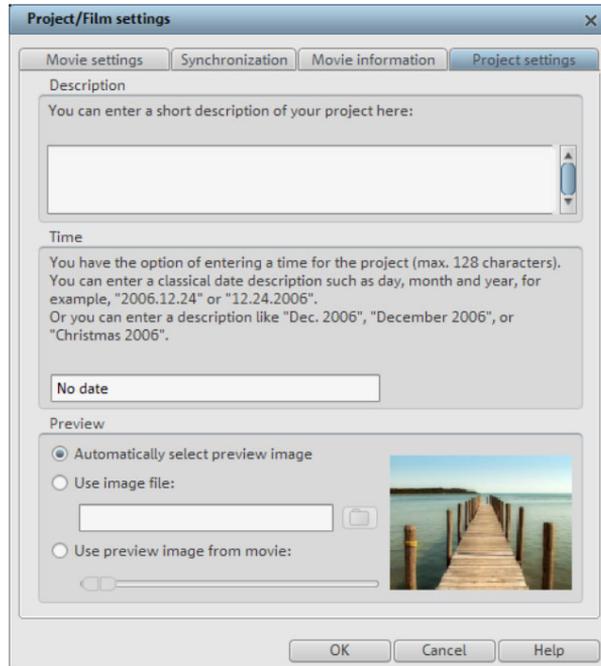
Number of objects used: Displays the number of all objects in the movie.

Number of objects used: All files used in the movie are listed here.

Keyboard shortcut: E

Project settings

In this dialog, you can view and change the settings for the current film.



Automatically select preview image

MAGIX Video Pro X2 uses an automatically selected preview image.

Use image file

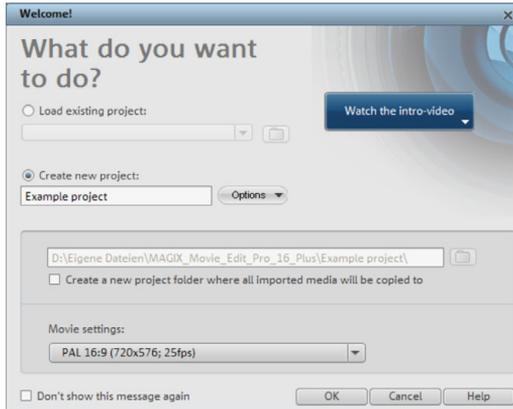
Clicking the folder button opens a dialog to load image files. In this dialog, you can navigate to the directory where the image file is found and select it by double clicking.

Use preview image from movie

Use the controller to select a frame from the corresponding directory.

New project settings or new movie

When you start MAGIX Video Pro X2 the following dialog will open:



Decide in this dialog if you want to "Load an existing movie" for further editing and burning to disc, or if you want to "Create a new movie". Under "Options" you can "Create a new movies folder". All data that belongs to the movie will be saved in this folder.

We're still at the very beginning, so let's stick with keeping an overview of everything. Click "OK" to end the dialog and continue.

Load project



Use this option to load a movie into your disc project. Please note that all media files associated with it must be accessible. MAGIX Video Pro X2 will search for all used sounds and video files in the folders in which they were located when the movie was saved.

Keyboard shortcut: Ctrl + O

Save project



The current disc project is saved with the name displayed in the project window. If you have not yet specified a name for your project, a dialog will open asking you to do so.

Keyboard shortcut: Shift + S

Save project as...

A dialog opens where you can specify the path and name of the video for saving.

Keyboard shortcut: Shift + O

Video recording

Connect camera

Connect AVCHD camera

AVCHD cameras are available in basically three types:

- **Cameras with removable storage:** The camera includes a slot for a memory card. Your computer should feature a card reader for the associated medium so that you can simply insert the card from the camera and import the desired material. Different camera models can be connected via USB.
- **Cameras which burn DVDs directly (usually 80 mm diameter instead of the regular 120 mm):** The DVD can simply be taken out of the camera and inserted into the computer. For so-called "Slot in DVD" drives, look beforehand in the operational manual whether or not 80 mm DVDs (also called 3" DVDs or MiniDVDs) are acceptable.

Note: These variants require a special UDF driver (normally included with the camera) to be installed before the DVDs or removable storage can be imported into Windows.

- **Cameras with built-in hard drives:** The camera is present as a drive as soon as the USB cable is connected to the PC. This additional drive is then visible in the Media Pool. A separate UDF driver doesn't usually need to be installed.

Note: The variants listed here and their procedures are explained according to our experience. We also recommend reading the camera's manual for more detailed instructions and contacting the manufacturer in case of problems.

Connect a DV or HDV camera

MAGIX Video Pro X2 supports continuous editing of DV (digital video) files. You will require a DV recorder or DV camera with an IEEE-1394 interface (also known as FireWire or iLink) as well as an OHCI-standard IEEE-1394 host adapter for your PC. You must also have Microsoft's DirectX8.a (or higher) installed.

- Connect the digital output of the switched-off camera with the computer's DV interface (also called FireWire or iLink).
- Insert a DV cassette or the storage device into the camera.
- Switch your camera's operating mode to "Video recorder" or "Playback".

The camera is now ready to transfer the video to the computer.

Note: You may also use a HDV camera in DV mode to, for example, transfer recordings in the old DV format. We have noted problems with this mode in many cameras, and therefore recommend that the **Record mode** of the camera is also switched to DV, switching the camera off and then on again.

Connect analogue video source

Connect the video out of your camcorder, or DVD/VHS recorder to the video in (TV, video, or video graphics card) of your computer, and the audio out to the line in of your sound card.

Due to the variety of device configurations, it is difficult to say which cable will function best with your setup. If you're not sure, check the manual of your VCR or your TV, video, or graphics cards.

Example:

Europe: Many VCRs and DVD players have a SCART, 3 RCA (2 for stereo sound, 1 for video), or S-Video/optical audio line out. In such case, you will need a SCART to RCA adapter, a cable with 3 RCA jacks, or an S-Video cable.

North America: Many VCRs and DVD players have a 3 RCA (2 for stereo sound, 1 for video), or S-Video/optical audio line out. In such case, you will need a cable with 3 RCA jacks, or an S-Video cable.

**SCART/Cinch adapter****SCART/Cinch adapter
with 3 RCA jacks****Stereo RCA/mini
phone jack adapter**

Most sound card inputs are 3.5 mini stereo jacks. To connect the VCR audio out to the sound card audio in you will need a stereo RCA/ mini phono plug adapter.

You will most likely have to buy a cable with 3 RCA plugs and a stereo cinch/mini jack adapter from your local supplier.

Select the recording method

First, you should find out the correct recording method for your camera. The following options are basically available:

- Analog transfer: Transformation of the analog signal into a digital data current, whereby the actual video file is then created using the settings (Super 8, Hi8, (S)VHS, video recorder, and other analog sources).
- Digital transfer (DV camera, HDV camera)
- Copy the finished video files from a storage medium or directly from the connected camera to the local hard drive for AVCHD cameras, DVDs (without copy protection), DVD cameras with built-in hard drive or removable storage. Next, import the copied file into the project.



To start recording, click on the "Record" button under the source monitor.

The following selections are possible:



- **DV cameras:** For mini DV cameras and DV video recorders
- **HDV camera:** For HDV1 and HDV2 cameras
- **Video:** For analog video cameras TV, analog TV, VHS recorders (video input), webcams

- **Single frame:** For single and series images from analog cameras, analog TV, or VHS recorders, webcams, etc.
- **Audio:** For microphones, cassette recorders, MiniDisc players, turntables, etc.
- **Screenshots:** Records directly from the computer monitor.

DV cameras

DV devices

MAGIX Video Pro X2 supports continuous editing of DV (digital video) files. You will require a DV camcorder or DV recorder with an IEEE 1394 interface (also known as FireWire or iLink) as well as an OHCI conforming IEEE 1394 host adapter for your PC.

To record digitally, the digital output of the Mini DV camcorder or DV video recorder must be connected to the DV interface of the PC, but remain switched off. You must also have Microsoft's "DirectX8.a" (or higher) installed. Now switch your camcorder to "video recorder" or "playback" (according to your particular device) and open the DV capturing dialog.

Capturing DV recorders or cameras

 To start recording, click the "Record" button under the source monitor.

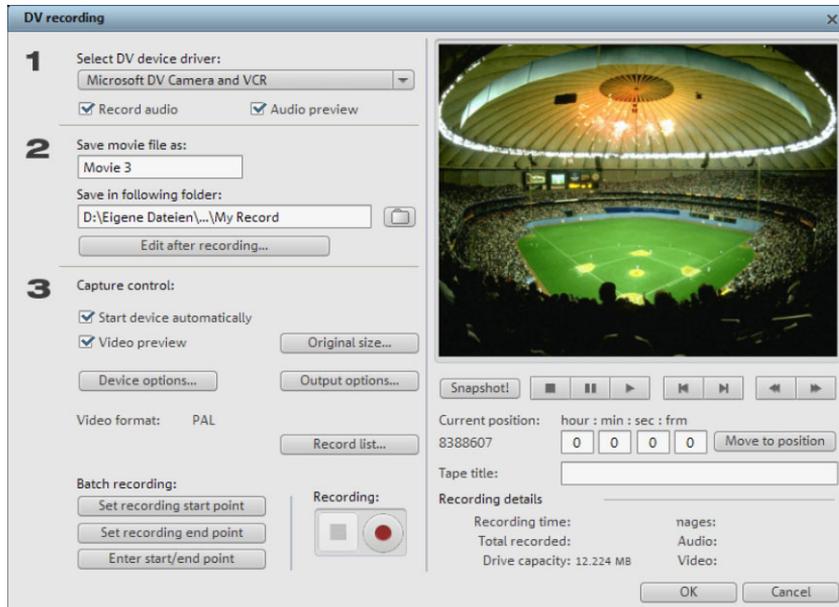
- Select "DV camera" from the recording dialog. Uncompressed DV capture requires approx. 220 MB per minute of video. If you would instead like to record using the more space-saving MPEG format, then you should first activate the "Record DV as MPEG" option.



- This opens the actual recording dialog. Check to see if a DV camera driver has been selected.
- Name your recording. It's worth choosing a logical name which will allow you to find it easily again on the hard drive.
- You can access the appropriate place on the camcorder tape by using the remote control buttons: shuttle forwards, backwards, and start/stop playback. To start recording, click on the "Record" button. Keep an eye on the remaining hard-drive space.
- Cease capturing with the "Stop" button and exit the record dialog. You can see the recording in the film-strip in the lower third of the screen.

Tip: In the DV recording dialog, you can set clips from the DV video which will then be recorded one after the other (batch capturing). Read more on this in the chapter "Batch processing" (view page 73)

"DV capturing" dialog



Note: Keep an eye on the available hard drive space before each recording. DV capture requires approx. 220 MB per minute of video!

Select DV device driver: The device driver for your DV device should be listed here. If "Audio recording" is deactivated, then only video without sound is recorded. "Audio preview" activates the audio output of the recording.

Note: The audio preview is deactivated at first, since DV cameras usually include built-in speakers.

Save video file as/save in following folder: Enter the name of the movie to be recorded. You can also select the folder where you wish to store your video file. The default recording directory is set by default, but you can change the Path settings settings under menu item "File -> Program settings -> Path settings".

Edit after recording: This provides access to the automatic editing options.

Start device automatically: Starts the DV recorder or DV camera automatically when the "Record" button is pressed. This does not function with all digital cards/video devices.

Movie preview: On the preview monitor you can see a preview of your movie.

Original size: This option allows you to preview the video in the original size. To return to the dialog use the "Esc" key.

Automatic capturing: Here the start and end points can be set for the capturing. This allows you to search the entire video for all captures to be used and list them for planned batch capture. This is then processed in sequence when the recording starts (via the red button). That way you don't need to record each scene individually. You simply determine recording time points, and the computer takes care of the rest. To set the start and end points precisely, click "Enter start/end point (view page 71)"

Recording list: Use this button to view the available list of already recorded videos and scheduled recordings. All entries from the list can be selected and deleted.

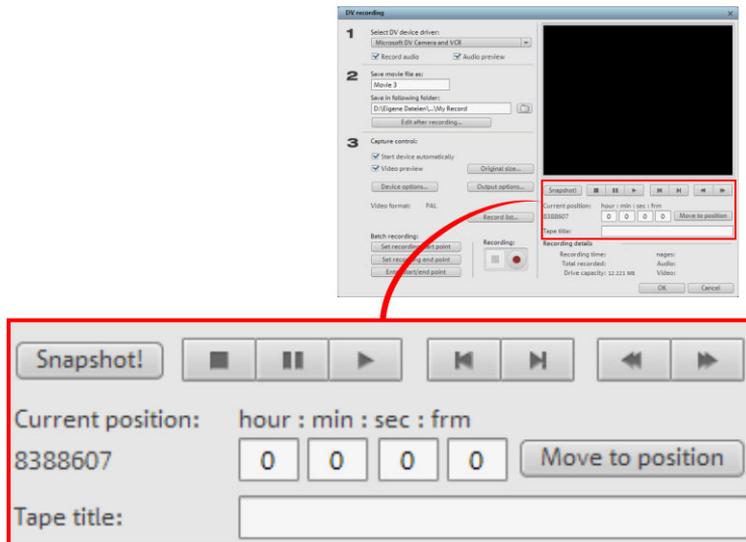
Record: Starts the recording process. Also contains the list of scheduled recordings. These are processed step-by-step (batch capturing).

Stop: Stops the recording process.

Snapshot! With the Snapshot! button, you can create a frozen image directly from the preview monitor. Start the camcorder and watch the preview window. When the image you want appears, click "Snapshot". Or you can navigate using the remote control to the position you want, and stop there in **Pause mode**. Stopped playback on the DV camera will not deliver an image! The images are saved in the record directory as graphics files in the set resolution.

Remote control: Digital camcorders can be controlled remotely. This does not function with all digital cards/video devices. If your hardware does not support the remote control function the buttons will not be usable.

The transport buttons required for this are in the DV or HDV recording dialog.



Tape name: Enter a name for your tape here. MAGIX Video Pro X2 requires this name for the DV logging feature.

Recording information: Displays various information about your recordings.

Enter start/end point:

Enter the exact start and end point or the recording length for a scene.

Both values can be entered as ATN (absolute track number) or as a timecode in hours:minutes:seconds:frames.

DV as MPEG

The "Recording selection" dialog option allows you to transfer DV recordings directly into the space-saving MPEG format on the hard disk.

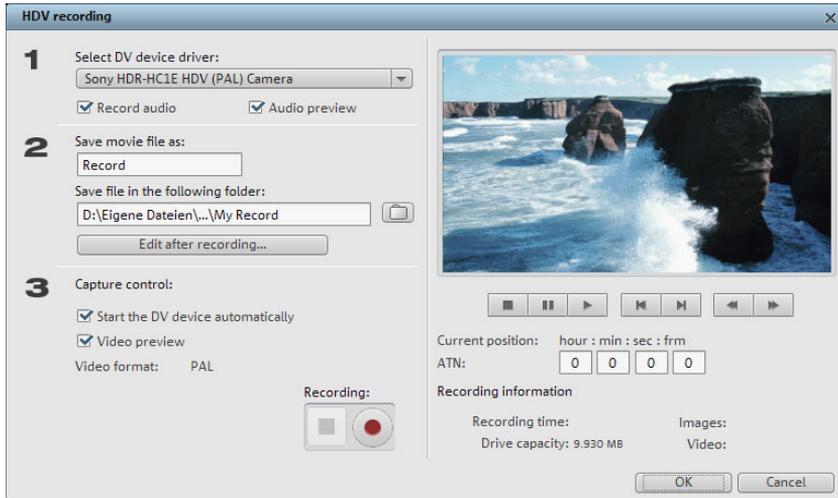


The "Enhance" button presents the MPEG encoder settings options.

You can also burn your DV material directly to disc without taking any intermediate steps.

HDV camera

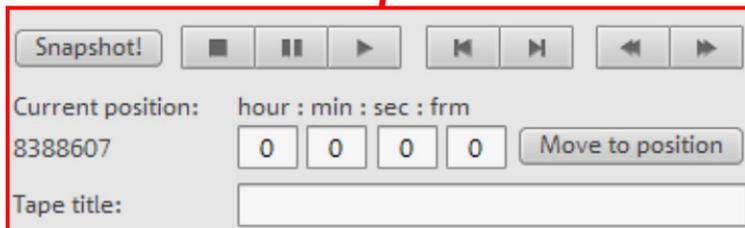
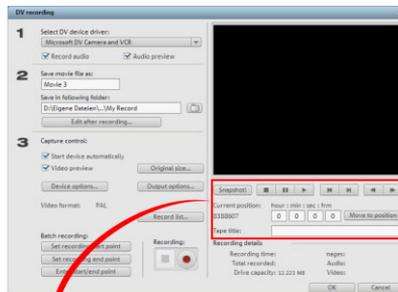
Use this option to open the "HDV camcorder recording" dialog. To do this, you have to connect an HDV 1 or HDV 2 camcorder.



The options in this dialog can also be found above in DV recording.

Remote control: Digital camcorders can be controlled remotely. This does not function with all digital cards/video devices. If your hardware does not support the remote control function the buttons will not be usable.

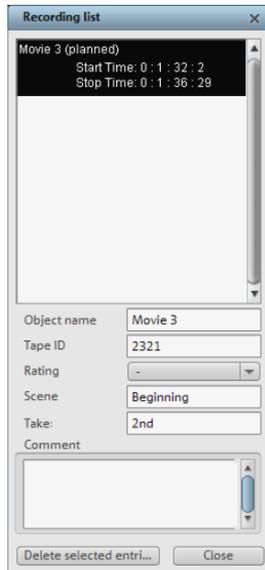
The transport buttons required for this are in the DV or HDV recording dialog.



Batch recording

Set the start and end points for the capture here. This allows you to search the entire video for all captures to be used and then list them for planned batch capture. This is then processed in sequence when the recording starts (via the red button). That way, you don't need to record each scene individually. You simply determine recording time points, and the computer takes care of the rest. To set the start and end points precisely, click "Enter start/end point (view page 71)".

Recording list: Use this button to view the available list of already recorded videos and scheduled recordings. All entries from the list can be selected and deleted.



The basis for batch recording is the recording list in the DV recording, DV to MPEG recording, or HDV recording's recording dialog. All recordings listed there are "logged". Recordings for which the corresponding video material is no longer on the hard disk will appear as "planned recordings". Click the red record button to move all video files back to the hard disk.

Logging

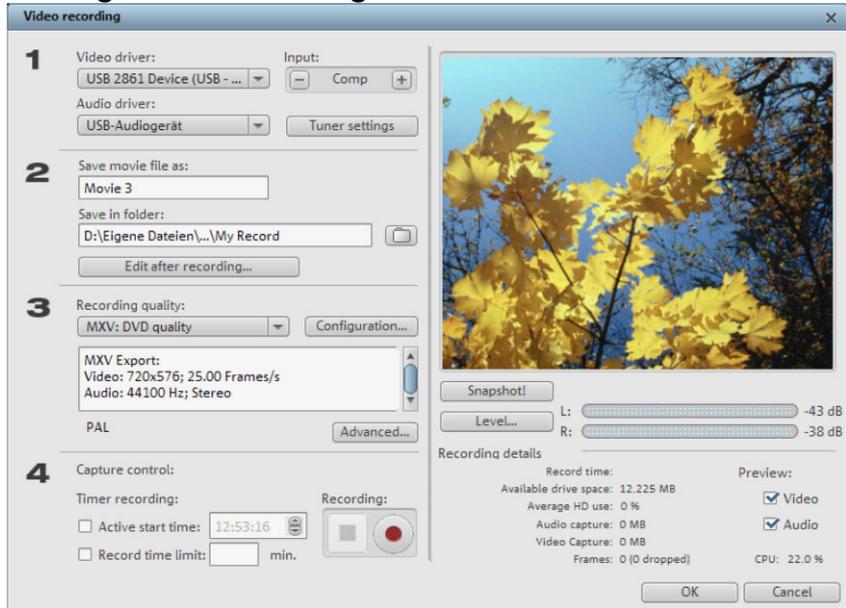
Logging means that MAGIX Video Pro X2 also saves the original position and additional information (metadata, e.g. scene, take, rating, comments, etc.) about DV video and audio files.

If does not find the corresponding DV and WAV files during the loading of a video, it will ask that the corresponding DV tape is inserted into the connected camcorder again for automatic scene import.

You no longer have to save DV AVI and audio files (which can be very large). If at a later time you would like to work on a film again, but do not have the space to keep the material for it on your hard disk, then you can simply delete the bulky DV AVI and audio files.

The basis for the log is the recording list in the DV recording, DV to MPEG recording, or HDV recording's recording dialog. All recordings listed there are "logged". Recordings for which the corresponding video material is no longer on the hard disk will appear as "planned recordings". Click the record button to move all video files back to the hard disk.

Analog video recording



Video/Audio driver: Here you can set up the video card or sound card for recording. In practically every case, the driver software supplied with the hardware must be installed.

Hint: Under "video driver" you will find a "screen capture" entry. You can read about how it functions in the chapter "Screen (view page 80)".

Input/Tuner settings: If your video capture card supports multiple sources, i.e. your card also has a TV tuner or multiple inputs (SVHS, composite, etc.), then you can select the proper recording source and the TV channel to be recorded here.

Save video file as/save in following folder: Enter the name of the movie to be recorded. You can also select the folder where you wish to store your video file. The standard recording folder is set as default. The location of this folder can be changed in "Path settings" under "File -> Program settings -> Folders".

Edit after recording: Use this to access the automatic editing options.

Recording quality: You can select from a variety of preset quality levels from the list. They are sorted according to picture quality. Use **Configuration** to fine-tune the quality for the preset.

Presets displayed with MPEG record directly in MPEG format.

Tip: Use the presets marked MPEG if you want to burn your recordings straight away, since smart encoding can omit laborious encoding after recording.

Advanced...: Opens the video driver settings dialog (view page 75).

Capture control: Here you'll find the "Red" record and "Stop" buttons; these start and stop recording.

Timer recordings active/time limit: Here you can specify a recording start time and length, and thus turn your PC into a fully functioning VCR.

Snapshot!: With the "Snapshot" button, you can create a still image directly from the preview monitor. The images are saved in the recordings folder as graphics files in the resolution you have set.

Recording information: This shows statistical information such as the recording time, available space on the hard drive, the recorded frames, and the "dropped" frames. Dropped frames are frames that have been left out because the computer processor is too slow for the selected image format and cannot accept all incoming frames.

Preview: Some graphics adapters allow you to reduce the system lead by deactivating the video preview. If you hear an "echo", deactivate the audio preview.

Advanced configurations in the video capturing dialog

Here you can adjust certain settings for the video recording driver.

These dialog boxes, so-called "property sheets," come with the video card drivers. These driver-specific performance properties may deviate depending on the cards. We also have a very limited influence on the behavior of these drivers. If you encounter any difficulties, please contact the video card manufacturer for the latest driver updates.

Input: Sets the crossbar of the video card.

The crossbar determines which video and audio input signal will be recorded. The crossbars are connected in series to the video recording chip itself. In the output field, the video output (for the crossbars) is the input for the recording chip (video or audio decoder-in) of the video card. In the "Input" field, select the signal source that will be used by the video card to capture for this input. Many video cards have separate crossbars for audio and video. If you have a problem, try out the different configurations until the right sound matches the right image.

Composite-in = the normal video input (typically a cinch jack)

S-video = S-video input (mini-din jack)

SVHS-in = SVHS input (special cable)

Tuner-in = TV signal of the integrated tuner

Imagesetting

Video decoder: If the picture only appears in black & white or it flickers, the video standard may be set incorrectly. In mainland Europe, **PAL_B** is used.

VideoProcAmp: Fine-adjustment of colors, brightness, contrast etc. We recommend against changing any of the manufacturer's settings.

Format: Please do not change anything here. The capturing format is set in the "Recording quality" option in the video recording dialog.

Station selection

This option is only available if a TV tuner is integrated into your video card.

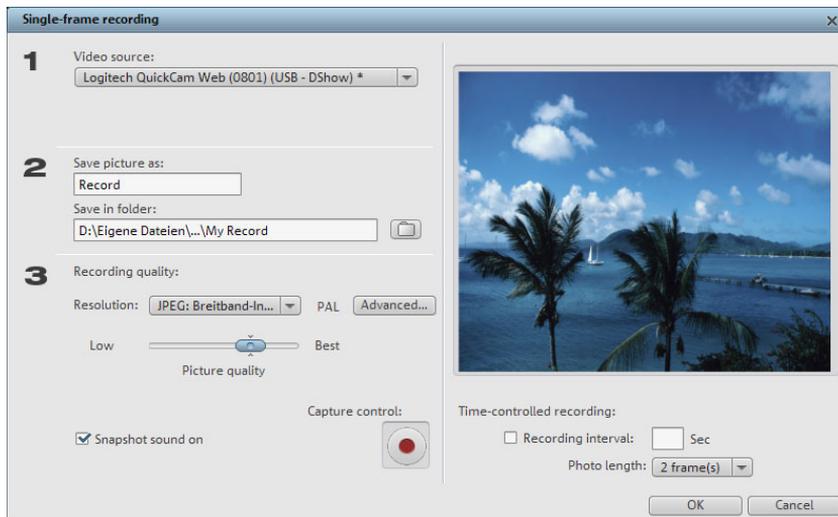
Single frame

The single-frame recording function lets you record snapshots directly from the connected video source. This requires either a video clip compatible with DirectShow, a TV card, or a USB device such as a webcam.

The time control function allows you to automatically take snapshots. Here are just a few examples of where it might be used:

- for creating photo stories from videos
- for animated films (stop-motion animation)
- for video surveillance
- or for time-lapse photography

The recorded images are added to the current arrangement.



Video source: Sets the video card to be used to take pictures.

How would you like to name the recorded JPEG file?: Enter the title of snapshots you are about to record. They are saved under this name and numbered consecutively. You can also select the file path for storage.

Resolution: The resolution of the recording is defined here. It corresponds to the resolution options offered on the camera. The slider lets you set the image quality. Using higher resolutions results in larger file sizes for each recording; moving the slider in the opposite direction sets the image quality back to the preset value.

Advanced...: Opens the video driver settings dialog.

Camera noise during recording: You can make the program play a clicking sound each time a snapshot is taken.

Recording: The red "Record" button triggers a snapshot or alternatively a series of recordings when using the time control function.

Time control

Photo length in frames: Specifies how long the photos appear in the slideshow.

Interval: When this function is activated, a series of images is made once the recording has started. Snapshots are automatically saved and numbered consecutively at a preset time interval.

For example, if you specify a two-second interval between shots and that each shot be added at a length of 5 frames to the slideshow, then the end result is a time-lapse recording at 10x normal speed.

Enhanced single-frame recording dialog settings

You can adjust certain settings for the video recording driver.

These dialog boxes, so-called "property sheets", come with the video card drivers. The driver-specific features may slightly vary from driver to driver. The MAGIX team has little direct influence on the performance of the various drivers. If you encounter any difficulties, then please contact the video card manufacturer for the latest driver updates.

Input: Sets the crossbar switch of the video card. This lets you define what video and audio signal is used in the recording. The crossbars are connected in series to the video recording chip itself.

Output: In the "Output" field, the video output (for the crossbars) is the input for the recording chip (video or audio decoder in) of the video card. In the "Input" field, you select the signal source to be used for this input by the video card during recording.

Composite in = the normal video input (typically a cinch jack)

S-VHS in = S-VHS input (special cable)

Tuner in = the TV signal of the built-in tuner

Video decoder: If the picture only appears in black & white or it flickers, then the video standard may be set incorrectly. PAL_B is used in Germany and most European countries (France: SECAM; US/CAN: NTSC).

VideoProcAmp: For fine tuning of colors, brightness, contrast, etc. We recommend against changing any of the manufacturer's settings.

Format: Do not change anything here! The capture format settings can be changed under "Resolution" in the "Recording" dialog box.

Audio

Songs, noises, or instruments can be easily recorded in MAGIX Video Pro X2 using the audio recording function. A hooked-up microphone or various audio devices (especially a stereo system) can be used as recording sources.

Connecting the source for recording

First of all, the source of the audio material must be connected to the sound card input. Again, there are several possibilities which primarily depend on the type of equipment you have.

If you want to record material from a stereo system, then you can use the line-out or AUX out jacks on the back of your amplifier or tape deck. This involves connecting them to the sound card input (usually red).

If your amplifier has no separate output (other than for the speakers), then you can use the connection intended for headphones for your recordings. In most cases, you will need a cable with two mini-stereo jacks. This type of connection has the advantage of being able to set the headphone input signal level with a separate volume. As headphone connections generally are not the best, it is advised that you use the line outputs if possible.

When recording cassettes from a tape deck, you can connect the tape deck's line out directly to the sound card input.

When recording from vinyl records, you should not connect the record player's output directly with the sound card because the phono signal needs to be pre-amplified. A more suitable method would be to use the headphone connection or an external pre-amp.

If you are recording from a microphone, then please connect the microphone to the microphone jack on your sound card (usually red).

Adjusting the signal level

Adjusting the signal level to the sound card is also recommend to get the best sound quality during digital recording.

Once a recording source is connected to the sound card, the "Record" button opens the recording dialog and starts the recording source.

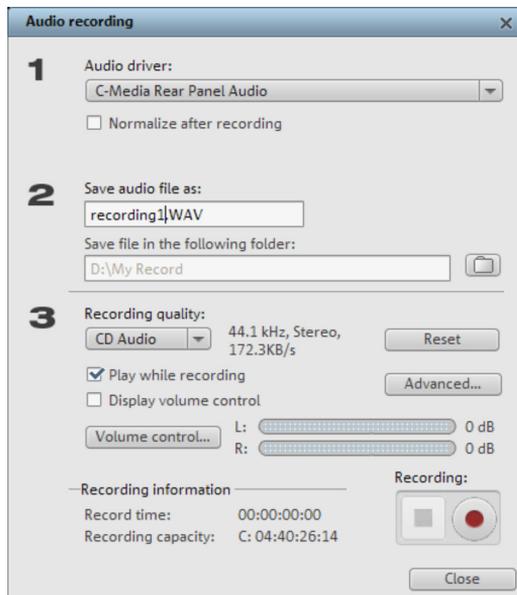
You can now adjust the recording level with the help of the LED display in the recording dialog. For this, you must first check off "Show levels".

If the adjustment is set too high, distortion occurs and the incoming signal must be reduced. If you have connected the source through either an amplifier or tape deck output to the sound card, you can only reduce the signal level in your sound card's software mixer interface. You can access the mixer directly from within the recording dialog via the "Recording level" button.

If you reduce input sensitivity by using the input fader, the resolution at which the analog signal is digitized is also reduced. Try to set these automatic controllers to the loudest sound level possible!

The maximum setting for an optimal level is the loudest part of the material. The loudest part should be adjusted to be the maximum. The actual recording begins when you press the "Record" button. At the end of the the recording you will be asked if you want to use the recording. Upon confirmation, the newly-recorded material will be placed in the next free track at the position of the start maker in the arrangement.

"Audio record" dialog



Audio driver: Selects the sound card for the recording.

Save audio file as/ save in the following folder: Here you can select the title of the audio file you wish to record. You can also select the folder where you wish to store the file.

Recording quality: Sets the sound quality of the recording. In the preset menu you can choose between medium wave radio ("AM tuner"), UKW ("FM Radio"), DAT (Digital Audio Tape) and CD quality.

Peakmeter (Monitor): Using the peakmeter, you can monitor the level of the incoming signal. Please read more on this in the chapter "Adjusting levels" (view page 78)

Recording: This button starts the actual recording.

Stop: Click this button to stop recording

Normalize after recording: With this option activated, your material's volume is raised to a proper level after recording is completed. In order to achieve good results, you should try to record the source as loud as possible without overmodulating it. To do so, refer to the peak meter reader in the recording dialog.

Playback while recording: This option is particularly important for spoken commentary, etc. If activated, the selected movie (or selected scene if recorded in the "Edit" screen) is played while recording. This acts as orientation for the movie.

Advanced: Use this button to open a window where you can select from special features:

Advanced options

- "Mono" creates a mono recording and requires half of the hard drive space required for stereo.
- "Real-time sample rate adjustment" automatically matches the sample rate of a new file to be recorded with the sample rate of the selected movie sound track.
- "Ducking" (reducing the sound volume): To add narration or other sound material to a video that already has sound volume levels set, activate the option "Automatic reduction of sound volume of remaining audio tracks". This automatically reduces the volume of audio objects in the arranger during the recording session ("ducking"). A volume curve controls the whole process, produces the fading in and out of effects automatically and guarantees consistent overall volume.

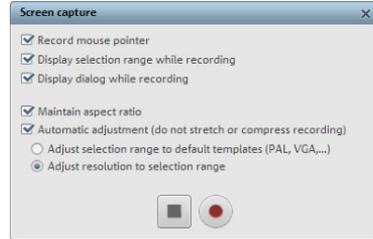
Screen

Use this feature to record everything that moves on your monitor. This process is called "screen capturing".

- Under "Recording quality", you will find various presets for different applications. You can either record the entire monitor ("fullscreen"), a frame of variable size (e.g. to film the Windows Media Player display), or a different video player. Click "Configuration" to make custom size adjustments.

Hint: Because many video players work with overlay, it is recommended to open each player **before** starting the capture! This way switching into "Overlay" mode can be prevented.

- Click the "Record" button in the recording dialog. A small dialog with a red record button, a black stop button as well as a frame with dashed bordering appears. Activate the option "Record mouse pointer" to record the movements of the mouse pointer.



- Now select the screen area you wish to record, i.e. the screen of the video player in which the video is playing. Drag the frame over the area you wish to record and adjust its size as required by dragging the edges and corners.



- The actual recording process can be started by pressing the red "Record" button. The recording starts; the record symbol appears in the task bar (tray).
- Once the video you wanted to record has come to an end, click on the "Record/Stop" button to stop the recording. Recording ends and the recording dialog is visible once again.

Recording AVCHD

This recording is actually not really a recording as such, but rather "only" the transfer of the already created video file and its import into the existing project.

AVCHD requires a special UDF driver (normally included with the camera) to be installed before the DVDs or removable storage can be imported into Windows. This isn't necessary for AVCHD cameras with built-in hard drives. The camera is preset as a drive as soon as the USB cable is connected to the PC. This additional drive is then visible in the Media Pool, and the corresponding M2TS files can be simply dragged from the list.

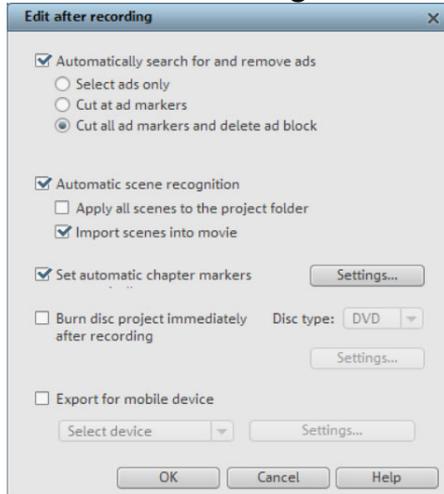
Files with the M2TS extension can easily be dragged down from the Media Pool (above right). You will be asked during the first import if you want to convert the movie into the MPEG-2 format. You should definitely answer this question with "Yes", since only then will you be able to edit your movies in real time. We also recommend you activate the check box "Don't ask me again". The advantage is that you won't have to answer this query every single time you import individual files.

Switch on hardware acceleration, too (press "P -> Display options -> Playback in Arranger -> Video mode -> Direct3D hardware acceleration"). This lets you playback multiple tracks simultaneously with a modern graphics card (better than ATI Radeon 1300). Another advantage of converting to MPEG-2 is the option of using "smart encoding". The sound will be re-encoded to guarantee synchronicity of image and audio. It is currently not possible to maintain 5.1 sound; this is automatically converted to MPEG stereo.

AVCHD activation details

Attention: For AVCHD support, Dolby Digital Stereo and the MPEG-4 codec must be activated. To convert AVCHD videos to MPEG-2, the MPEG-2 codec must be activated.

Edit after recording



The "Edit after recording" dialog can be opened from all recording dialogs.

All editing steps from recording to automatic burning can be carried out without further user involvement.

In the "Edit after recording" dialog you can:

- Automatically search for and remove ads. For more on this please read the "Automatically search for and remove ads" section in the PDF manual.
- Split up the material into scenes. Please read the "Automatic scene recognition (view page 85)" section for more on this in the PDF manual.
- Set automatic chapter markers. Please read the "Set chapter markers automatically (view page 101)" section in the "Edit menu" chapter in the PDF manual.

Burn disc immediately: You can use this option to record and burn in a single step. Simply select the format you would like to burn, insert a suitable blank disc into the drive, and then press record.

Note: Make sure that the selected recording quality corresponds with the disc type (e.g. the preset "MPEG DVD" for DVDs)!

If you use your own settings for MPEG encoding (e.g. half image resolution for long-play DVDs), then make sure that the settings for recording and later for burning are the same so that no new recording is necessary (Smart encoding).

After recording, the program automatically switches to the "Burn" screen, the burn window opens, and the disc is burned. The last set layout is used for the menu layout for the DVD.

Tip: This function is particularly suitable for burning lengthy disc projects directly to disc, since you can start recording in the evening and have the finished DVD by morning.

Export for mobile device: The recorded movie is immediately converted into the format of the selected mobile device and transferred onto the device. The list field contains the device which has been selected in the "Export video/audio (view page 188)" dialog.

Settings: Opens the export settings (view page 182) for the selected target device.

Hint: If you enter a file name and memory path in the export dialog, then the path is used but the file name is ignored. For EPG-controlled TV recordings the name of the program is used instead.

Creating new movies or attaching them

If you record or load multiple movies one after the other, then you will need to decide for every new film if it should be appended to the previous film or created as a new one.

The choice you make here is important for the later design of the DVD burning selection menu; movies will be entered into the first level of the menu hierarchy and scenes are entered into the second level. Every movie can also be edited in detail and enriched with effects, titles, and transitions via the "Edit" screen.

Insert object into the project

Select files in the Media Pool

All selection processes take place in the source monitor. View and edit material before importing it. There's also a preview function for all of the files in the Media Pool.

- Double-click the desired file in the Media Pool which you would like to preview. Image objects will be displayed immediately, video objects need to be loaded first. A preview is also provided for special objects like titles or fades.
- Use the playback button in the source monitor to start a preview for a video object.
- Audio files and synthesizer objects from the Media Pool can also be previewed via the playback button.

Load files

Media files can be loaded into the Arranger from the Media Pool in several different ways:

- **The fastest way:** Drag the desired file from the Media Pool into the desired track. If an object is already present at this position, the file is inserted at the desired time position on the next empty track below.
- **Load several files:** If you would like to load several files, hold down the "Ctrl" key while clicking on the entries you would like to use. If you would like to load a sequence of files, hold the "Shift" key and click the first entry, then on the last. All entries present in between will be selected. Every file can be moved from the Media Pool to the Arranger via drag & drop.
- **Insert via menu command:** You can also use the menu commands of the "Insert modes" button. For more about this, read the section "Insert modes (view page 45)" in the chapter "Workspaces".
- **Project folder:** If you would like to combine your material separately, then using the project folder is recommended. It can be used as a sort of clipboard where files that may be used in the project are sorted ahead of time. This creates a better overview and saves repetitive, annoying navigation through folders in the Media Pool.

DVD files (VOB) with multiple audio tracks

MAGIX Video Pro X2 also loads VOB files that contain multiple audio tracks. After the VOB file loads, simply click the audio object created and select the desired audio track.

Note: To view and select audio objects in the arrangement, Timeline mode must be active.

Loading parts of longer movie files

For longer videos, it is recommended to define the areas which should be loaded into the project before importing. An in and an out point is set to define the area for this purpose. Proceed as follows:

- Select a file from the Media Pool by double-clicking it. Play it back using the play button in the source monitor to indicate the section which you want to use in the project.

- Either move the range markers directly by dragging them with the mouse or set them using the buttons or the shortcuts **I** and **O**. The shortcuts are especially useful for exact positioning using the shuttle and the jog wheel.
- Left-click on the monitor and drag it to the Arranger. An object will appear on the track and in the project folder simultaneously which corresponds with the selected area. You can also drag your selection into the project folder and use it in your project later by dragging it from the project folder onto the Arranger. The file in the project folder has the same name in this case as the original file but includes the selected range only.
- You can also drag a file from the Media Pool into the project folder first and then cut it from there with the help of the source monitor. The in and out points that result are saved directly when the range is stretched.
- Alternatively, objects can be moved the opposite direction from the Arranger into the project folder. In case the object should appear in the project folder and in the Arranger, hold down "Ctrl". This adds all object-associated settings (fades, effects, animations). This enables different editing work to be done on an object and then saved in the project folder for use later.

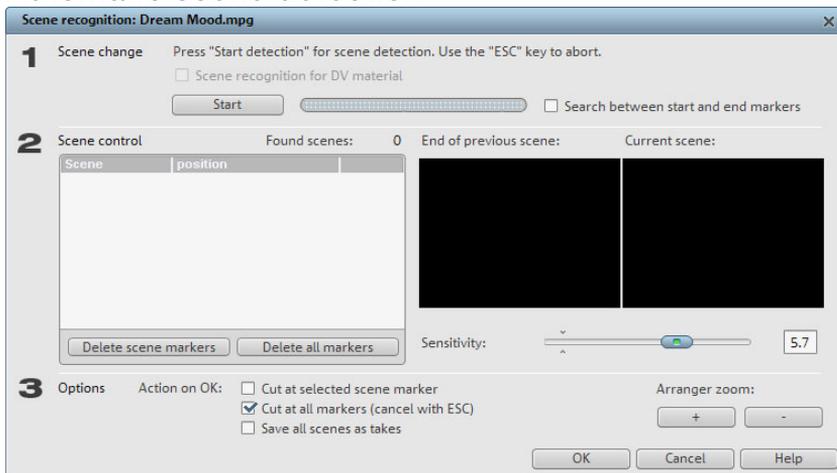


MPEG-4 import

MPEG -4 files can be loaded from the Media Pool just like other files using drag & drop.

Note: To import and export AVC and MPEG-4 files, the MPEG-4 codec must first be activated (view page 275). A dialog will open if the codec is required.

Automatic scene detection



Automatic scene recognition can be opened via the "Effects" menu. The scene recognition function analyzes the film for scene transitions and scans for drastic changes in the brightness and color distribution within the picture.

Automatically created timestamps from digital video devices (the points in time at which the device was turned on and off) are also marked as scenes.

1. First, select "Start" from the "Search scene change" box. The search for possible scene transitions will begin. If you have a large amount of material, then this may take a while, but the image analysis has to be done just once for each recording. The results are saved together with the video file.
If the scene recognition is performed again with the same source material, then the scene transitions found are immediately displayed. If you are still not happy with the resulting scene partitioning simply repeat and correct where necessary.
2. All found scene transitions in the list can be checked in the dialog. Every scene marker can be selected or deleted. Select a scene transition from the list of found scene transitions and use the preview images to check whether the found transition is really a scene change or not.

Tip: This option is helpful, for example, if a camera flash was captured in the source footage. The flash from the camera would cause a sudden brightness modification even though there was no actual scene change.

The preview always displays the end of the previous scene and the beginning of the new scene. If the images do not differ except for the brightness, then the scene may have been falsely recognized. In this case select **"Delete scene marker"**.

Via the zoom +/- buttons you can enlarge the part of the arranger where the selected scene begins or previous scene ended.

You can use the **"Sensitivity"** controller to change the sensitivity of the scene recognition to detect different scene changes, depending on the settings.

"Action on OK" lets you specify whether the movie should be cut at the selected scene transition or at all scene transitions and whether the found scenes should be saved as takes.

Working with objects

Select objects

To edit or delete objects using the menus, you must first select them. To do so, simply click on the object you wish to select. Objects will change color to show that they have been selected.

When the "Shift" key is pressed, multiple objects are selected. You can open up a rectangle positioning the mouse over the object, then holding down the mouse button and marking all objects within the rectangle ("elastic band selection") by left clicking and dragging.

Any object can be combined with others to make up a group to avoid objects being unintentionally moved out of relation to each other. Once they are combined, clicking on one object of a group will select the entire group. To group or ungroup objects, use the buttons in the tool bar or the corresponding commands in the "Edit" menu.

Moving objects

Any object selection can be moved (dragged) along the horizontal timeline or vertically into different tracks by clicking and holding the left mouse button on the selected objects. After releasing the mouse button the objects appear at the new location.

If the "Shift" key is pressed while moving the object selection, then the object's horizontal time position will be maintained. The object selection can only be moved vertically (up and down to different tracks).

Splitting objects

All objects can be split. Each object section then becomes is then split into individual objects.



- First of all, select the object to be split.
- Position the playback marker at the position where the movie is to be cut.
- Click on the "Cut" button or select the "Cut" option in the "Edit" menu.

In order to rejoin these split objects at a later stage, simply highlight the individual parts and select the command "Create group" to group the selected objects together.

Edit menu



With a click on the small arrow beside the cut button, you can access the cut menu. There you will find further relevant commands.

Split

This command cuts a scene at the point where the playback marker is positioned. This way, two free-standing objects are created.

Keyboard shortcut: T

Remove start

This command cuts a scene at the point where the playback marker is positioned and removes the material before the playback marker.

Keyboard shortcut: K

Remove object end

This command cuts a scene at the point where the playback marker is positioned and removes the material behind the back marker.

Keyboard shortcut: U

Remove scene

If you want to cut a scene out of a movie retroactively, this option automatically moves all objects, titles, and transitions on all tracks forwards so that no gaps result.

Objects on other tracks which project into the area of the selected scene will not be moved automatically; they will remain at the current position.

Keyboard shortcut: Ctrl + Del

Split movie

This command splits a movie at the point where the playback marker is positioned, making two separate movies. The part before the playback marker will remain in the arranger. The remaining part will be erased from the current arranger and turned into a new movie, which can be found in the "Window" menu.

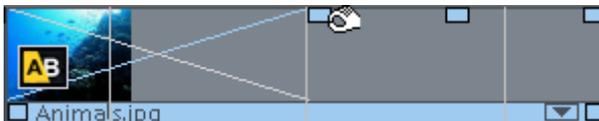
Keyboard shortcut: Alt + T

Duplicate objects

It is easy to copy objects to create larger arrangements from small audio or video loops quickly. Speed up this process by clicking on the object to be copied with the mouse while holding down the "Ctrl" key. This generates a copy which you can immediately drag to the desired position.

Object handles

All objects can be re-sized with the "object handles" on the lower edge. Move the mouse over one of the lower corners of the object until the mouse pointer becomes a double arrow. You can now stretch the object as much as you like.



5 "handles": Length, fade, brightness (volume)

An object can be faded in or out using the handles to the left and right upper corners of the object. Crossfades between different objects can be created by overlapped positioning of objects that are fading in and out. The length of the crossfade can be adjusted with the handles.

Using the brightness/volume handle located centrally at the top of the object, adjusts the volume of audio or MIDI objects, or the brightness of video and image objects. Even if several objects are playing simultaneously, the volume or brightness of individual objects can still be altered.

Shrink or interlace videos

Videos can be made smaller, e.g. to show a foreground video in a cut-out of a background video. To do this, both videos have to be placed above each other in the arranger.

- Place one video above the other in the tracks.
- Position the foreground video on the track beneath the background video.

Note: Make sure that the mixing effect "Stamp" is active under "Video effects -> Chroma key".

- Select the foreground video, and in the Media pool under "Effects -> Movement effects", select the entry "Position/Size" or "Crop/Zoom".
- You can change the image area/size by holding down the mouse button and dragging the edges of the video in the program monitor. This is also useful for placing the selected video at the desired position in the program monitor.

For more detailed information, see the section entitled "Movement effects in Media Pool" in the chapter "Effects and titles (view page 107)". Nearly all preset effects may be automated or animated. To animate effects or produce movements, please read the "Animating objects (view page 147)" chapter.

Extract sound from videos

Video with sound material appears in the arranger on two tracks as two objects (an audio object and a video object). The two objects automatically form a group.

To edit the video and audio material separately from one another, the objects can be separated with the Ungroup (view page 222) function in the "Edit" menu or button in the arranger. Now you can replace the audio or the video track, or process each file separately. Rejoin/regroup the tracks with the "Export arrangement" function.

Save objects separately

You can easily save the object from the Arranger as separate files. Objects contain a reference to any multimedia file or a special objects (video, sound, visual, etc.) with all additional properties that an object can have like in and out point, fade and effects including effect curves that can be used in MAGIX Video Pro X2.

In MAGIX Video Pro X2 you can use Takes for various applications.

- You can divide your videos into takes while loading into the Arranger. To do this, first press the "Media/Film" button. The transport functions of the transport control no longer apply to the objects in the Arranger but rather to the video file selected in the Media Pool.
- The Extras button lets you set in and out points for scenes. The selected scene can subsequently be saved to the Takes directory.
- All scenes found by the automatic scene recognition function can be stored in the Takes directory. This creates the basis for a quick assembly of found scenes.
- This takes directory may be used in both direction: either as a source of takes to be dragged into the Arranger or a destination directory for new scenes. Use the Takes directory to build complex storyboards: The individual scenes that make up the video are cut first, before being arranged on the tracks.
- Since Takes also contain corresponding effects, one can store different variations of the same movie with different effects (for example, video cleaning) in the Takes directory. The Takes directory uses very little memory in contrast to rendering out the actual video files!

Video mix

This term refers to mixing various videos while simultaneously playing them. The video objects to be mixed must be placed one below the other in the arranger so they overlap in time. Add a special video mix effect to the lower video, which determines the parts that will be transparent for the upper video. This way, you look from the bottom to the top through the arranger.

To make a dancer dance in front of a landscape using the "blue box" effect, the landscape must be placed on, for example, track 1 and the dancer on track 2 and the "blue box" effect be activated for the dancer.

Tip: For further details on video effects and adjustments, see the chapter "Video effects (view page 108)".

Magnetic objects

You can attach a video, picture, or text object to moving picture content of another video. The "Image object" automatically completes the movement of a picture element from the film. For example, you could use this method to insert a hat that stays on someone's head throughout, even if the person hops through the picture. Let's roll:

- Place an image object (e.g. a photo of a hat) on a track below a video with a corresponding image element (e.g. a walking person). The picture element should have enough contrast in it (bright-dark difference) and should have a consistent size.
- In the Media Pool under "Effects -> Movement effects -> Position/Position", you can match the zoom of the image object to the video and then position it precisely (i.e. add the hat to the person).
- Right click on the image object and select the "Attach to image position in the video".
- In the "Attach to image position in the video" dialog, click on "Change size and position".

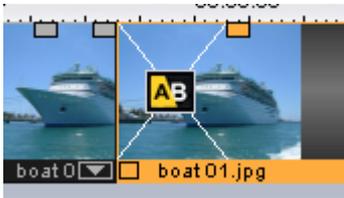
- Select an image section in the preview monitor using the mouse which you would like the image object to follow. This section should have as high a level of contrast as possible.
- Calculation of the object movement starts automatically.

Transitions (fades)

When importing video files into the arranger, individual objects usually follow directly after one another. This is called a "hard cut". However, you can make scenes blend or "transition" into each other.

This means that for the duration of a transition, two objects are shown at once and can be mixed "faded" together in different ways. You will find numerous blends in the Media Pool's transition directory.

Simple crossfade



A simple transition can be created in the arranger by dragging one object over another. A **crossfade** will be automatically created. During this standard transition, the brightness of both objects is increased, i.e. the first clip fades out while the second clip fades in. The duration of the crossfade is displayed in the arranger by white crossing lines. You can adjust the length of the crossfade by dragging the upper handle (See "Object handles") of the second object to the left or to the right.



To select a different fade click on the transition symbol displayed when an object is selected.

The fade menu opens. The transition icon will change, depending on your selection.

Fades from the Media Pool

To open the fade directory, click the "Fade" button; double clicking enables a preview of the fade in the preview monitor.

Simply drag the desired fade preset onto the border between the two objects. Only when the mouse pointer with the transition preset is placed over a scene change will it turn into an object symbol. The object at the back will be shifted to the front to accommodate the transition.

The length of a transition is decided by you, so if a transition is shortened, it means that the resulting effect is speeded up.

Some transitions can be adjusted even more exactly. To do so, click the corresponding fade symbol in the timeline or in the storyboard and select "Settings". An object's fade symbol in the Media Pool can represent an entire group of different effects.

The alpha fades (in the directory: iris, objects, random, etc.) are actually pre-produced black and white videos combined with the alpha keying effect.

Note: Use transitions economically! Most professional movies or TV shows use hard cuts as the rule and transitions less frequently. Videos appear unprofessional and too ornate if fade effects are added to every change of scene.

Custom fades with Alpha-keying

Alpha keying extends the range of transition effects used in MAGIX Video Pro X2 to produce black & white movie transitions or selected color fade-ins and fade-outs. You can create such a video from any video material (also color) by exporting it as a transition (File -> Export movie -> Export as transition).

The loaded movie is then exported as a black and white video in mxv format and stored in the fade directory. Afterwards, it will be available in the Media Pool and the fade menu.

3D transitions

General options

3D power effects offer exciting and varied opportunities for creating transitions between two videos. You will find the 3D effects in the Media Pool's transitions directory.

To display the 3D fades as smoothly as possible, the program uses the accelerator features of your graphics adaptor. 3D functions can be used with both software standards: Direct3D and OpenGL. These standards are variably supported by the respective graphics card drivers. For this reason, you can switch between different fade settings for each standard.

Settings

In the transition settings you can adjust the look and reaction of the 3D transitions. To do so, click the corresponding fade symbol in the timeline or in the storyboard and select "Settings".

The following options are then available to you:

Anti-aliasing: An undesirable step effect is usually created at the borders of 3D objects. Anti-aliasing reduces this effect, but also requires more computer power. This setting applies globally for all 3D fades. Switching anti-aliasing for a 3D transitions therefore ensures that this setting is applied to all other 3D transitions

Mirror X/Y: This option lets you influence the movement curve of the 3D objects within the transitions. The "X axis mirror" option mirrors the movement of the object horizontally. The option "Y axis mirror" mirrors the movement of the object vertically (along the Y axis).

Rendering: Determine which software standard (see above) you would like to use to render the 3D objects, i.e. OpenGL or Direct3D. Both modes use the hardware functions of the

graphics card to render the 3D transition. Nevertheless, they can produce different results, both in performance as well as in the final look of the transitions.

To use Direct3D, you have to have DirectX9.0a installed. OpenGL requires an OpenGL 1.1 driver.

This setting applies globally to all 3D transitions. Switching between the render modes of a 3D transition therefore ensures that all other 3D transitions also use this setting.

Hardware acceleration deactivation: Hardware-accelerated rendering on the graphics card increases the performance multiple times over; however, it may lead to problems on some systems. If errors should occur in connection with the 3D transitions, you can deactivate hardware acceleration for calculating 3D transitions.

To do this, select the “Program settings” item from the file menu and deactivate the options “Hardware acceleration for 3D effects”. To apply these changes, you will need to restart the program.

Troubleshooting

Problem: The 3D transition display in the video monitor is sluggish and jittery.

Solution: The performance of the 3D power effects is dependent on your graphics adapter's CPU power. To achieve a smoother display you can deactivate anti-aliasing in the 3D transitions settings dialog, or you can choose a lower resolution for your screen. Furthermore, you should ensure that you have the latest driver for your graphics card installed. During export or burning to disc, transitions will be displayed fluidly in any case.

Problem: The screen remains black or displays errors during 3D transitions.

Solution: The 3D transitions use hardware-accelerated rendering on your graphics card to calculate the image. This can lead to compatibility problems on certain systems. Please ensure that you have the latest driver for your graphics card installed. In certain circumstances, this may also fix the switchover between the render modes (in the settings dialog of the transitions) or solve the problem by deactivating anti-aliasing.

If there are still problems, however, you can deactivate hardware acceleration completely. Refer to “Deactivating hardware acceleration” for more info.

Problem: A warning that there is insufficient graphics card memory for rendering the transition is displayed when exporting or burning a slideshow containing 3D transitions.

Solution: The video memory on your graphics card is insufficient to render the 3D effect at the desired resolution. Select a lower resolution (e.g. 720 x 576) in the export dialog. If the problem persists, deactivate the hardware acceleration as described in the section “Deactivating hardware acceleration”.

Problem: Only a crossfade is displayed when previewing a 3D transition. A warning is displayed that insufficient graphics card memory is available

Solution: The video memory of your graphics card is insufficient to render the 3D effect at the desired resolution. Right click the video monitor and then select a lower resolution in "Resolution presets". If the problem persists, try deactivating hardware acceleration as described above.

Problem: Only a crossfade is displayed when previewing a 3D transition. A warning is displayed that the 3D transition may not be displayed correctly.

Solution: Deactivate hardware acceleration; see "Deactivating hardware acceleration".

3D series

The 3D series are a further development of 3D transitions (view page 92), whereby the transitions are thematically sorted. For instance, you can make photos pop up and disappear on a notice board or make it look as if the photos were hanging on the walls of a gallery.

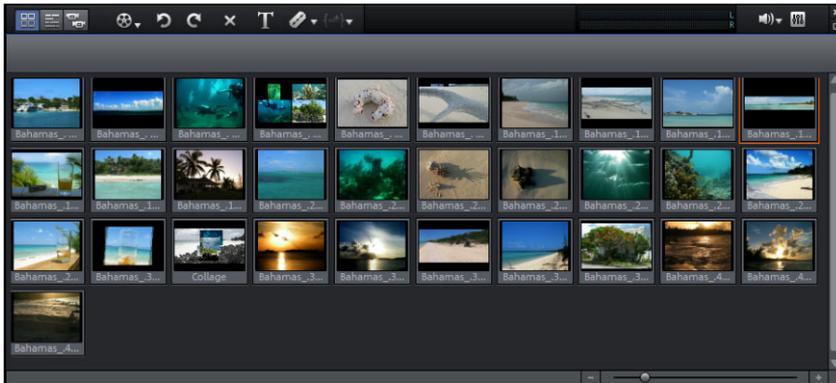
There are several options to load 3D series for photos or scene transitions:

- Click the "Fades -> 3D -> 3D series" button in the Media Pool. Select the desired 3D series and drag it onto the first scene or image transition where the 3D transition should start.
- In the transitions menu between two scenes choose the option "3D series". Click on the desired 3D series to select it.



You can select how many of the subsequent fades should be replaced by the 3D series in the dialog.

Scene overview



The "Scene overview" mode is a special view that improves manageability and categorization of scenes. All scenes are listed one after the other (in multiple lines, like in a text program) and can be copied, cut, moved, deleted and inserted.

In the "Scene overview" mode, there are no start, play or end markers. The scene being played back has a frame around it.

**Zoom fader**

This slider specifies how large the photos will appear in the storyboard. The smaller the scenes, the more of them you'll be able to fit on screen.



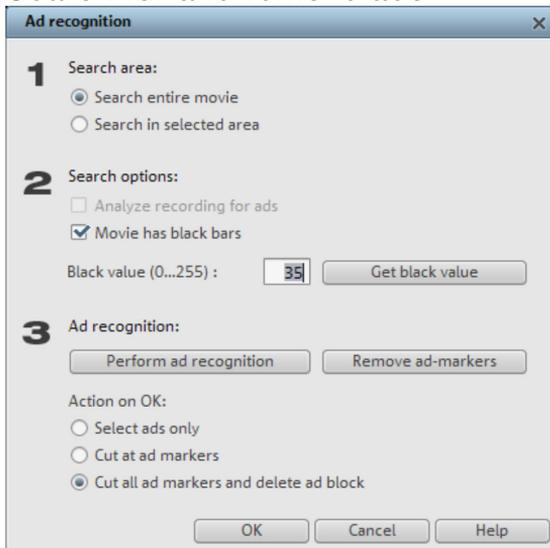
Maximize: Use this button to maximize the scene overview to fullscreen.

Grid and snap

The time of the arrangement is displayed by the horizontal course of the tracks. To structure this course, a timeline with a grid has been positioned at the top above the first track.

A grid is also displayed in the arranger area. The raster ensures that the objects always "snap" to certain points so that they can be positioned precisely according to the beat. Two consecutive objects will seamlessly snap together even if they are on different tracks. This avoids undesired gaps or overlaps.

Search for and remove ads



The "Ad killer" feature can be used to automatically locate and remove commercials in recorded TV programs.

How it works: First, characteristics typical of commercials are located, and then the entire section including the ads is edited and removed. This is particularly effective in movies broadcast in 16:9 widescreen format since there are two visible black borders at the top and bottom. The borders disappear when ads are shown, so the ad killer detects this when they disappear and edits the movie at these positions. Using the button "Get black value" you can click on the black bars in the monitor and thus set the color shade in order to

improve detection. A further characteristic typical for commercials is raising (maximizing) the volume.

Specify in this dialog whether you want to cut the ad block immediately or highlight it first. You also have various search and display options.

Keyboard shortcut: Shift + C

Trim Objects

Trimming provides exact placement of object borders or transitions. MAGIX Video Pro X2 has two different trimmers, and these can be opened using the context menu for a video or image object.

General advice for operating both trim editors

Play functions: The trim window contains its own play functions that allow the object to be played individually or in relation to the arrangement.

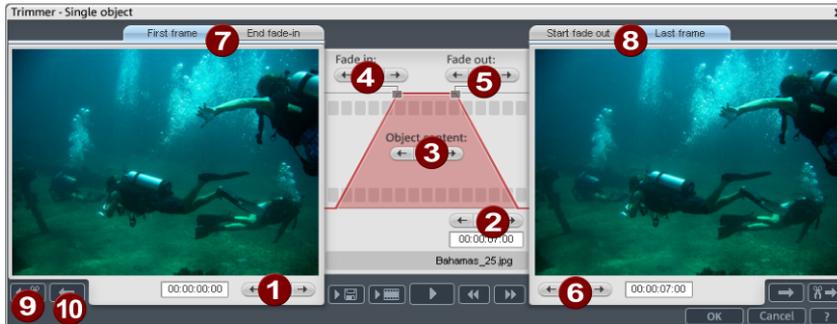
- The right play button plays the arrangement normally. Note: Replays can sometimes appear shaky because the processor may be overworked, and some frames may be left out.
- The middle play button plays the arrangement "frame-by-frame", which means no frames are left out, but that the replay may be slower.
- The left play button renders material before playing. This method ensures a smoother playback.

The start marker in the timeline is reset when the rewind and fast-forward functions are activated, allowing for complete control of transitions between two videos.

Increments: A click on the +/- buttons in both trim editors places the handle or the material within an object exactly into a frame. With the "Ctrl" key you can increase the frame rate (5 frames/sec per mouse click).

Trimmer for individual objects

A schematic display of the selected object and its handles can be found in the center of the trimming window.



Fade in/out (4, 5): These buttons adjust the upper fade handles of an object.

Object content (3): Here you can move the video material to be played without changing the object length.

Position (2): Moves the object on the track.

First frame/End fade-in (7): Toggles the left monitor between the first frame of the object and the end of the transition.

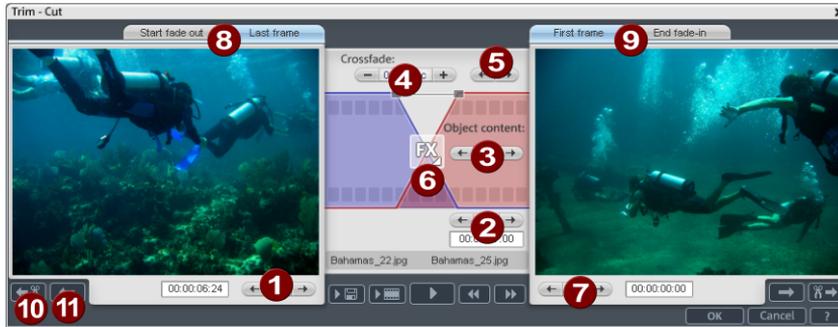
Start fade-out/Last Frame (8): Toggles the right monitor between the start of the transition and the last frame of the object.

Left/right arrow buttons (1, 6): Here you can adjust the lower object handles.

Next object/cut (9, 10): The buttons below and to the right skip to the next/previous object and/or cut in the arranger. These buttons make it easy to move and trim objects in the arrangement without having to leave the trimmer.

Keyboard shortcut: Q

Cut trimmer



A schematic display of the selected transition and its handles can be found at the center of the trimming window.

Left arrow buttons (1): These buttons move the last frame of the first object while adjusting the second. The length of the transition remains. The display indicates the relative change in comparison with the starting situation when the trimmer was opened.

Position (2): Moves the second object. The length of the transition is changed. This corresponds with shifting an object in the arranger.

Object content (3): Moves the movie under the second object. The length of the object and the object itself are not changed.

Crossfade (4): Changes the transition's length between both objects. The objects remain of equal length. The length can be numerically entered.

Middle arrow buttons (5): Shifts the existing transition. Both objects remain in their positions, but the transition's center point moves.

Transition (6): Displays the type of transition. A mouse click opens a popup window from which you can select a transition.

Right arrow buttons (7): Move the first frame of the second object. The first object and the transition remains. Only the length of the second object changes.

Start fade-out/Last frame (8): Switches the left monitor between the start of the transition and the last frame of the object.

First frame/End fade-in (9): Switches the right monitor between the first frame of the following object and the end of the transition.

Next cut (10)/Next object (11): The buttons below and to the right skip to the next/previous object and/or cut in the arranger. These buttons make it easy to move and trim cuts in the arrangement without having to leave the trimmer.

Keyboard shortcut: N

Markers

MAGIX Video Pro X2 also allows you to set various types of markers within your project.



The **Lock button** lets you lock all markers (jump markers, chapter markers) against accidental moving or deleting.

Playback marker



The playback marker indicates the point from which the material – either the arrangement or a selected file from the Media Pool – will be played back. There is a playback marker below each preview monitor and an additional one above the timeline in the arranger.

The playback marker is displayed as a red triangle below the monitors. In the arranger it is displayed as a red triangle.

In order to move the playback marker, simply double click on the desired area below the monitor. Alternatively, you can click on the playback marker and move it by dragging it with the mouse. While being moved, the current image will appear on the monitor, letting you see exactly where in the material you are located.

The playback marker in the video monitor can also be moved by clicking on the lower section of the time scale in the arranger. The playback marker will also be moved on the program monitor, as both markers are coupled to each other.

The exact position of the playback marker can be seen in the time display at the top left, below the corresponding monitor. There, you can change the displayed values (Hour:Minute:Second:Frame) per mouse click to reach a certain point in time. Simply enter the desired value and the playback marker will jump to the corresponding position.

Tip: In the "Playback" tab under "File -> Settings -> Program", you can set whether repeatedly pressing the space bar resets the playback marker to the current position or moves it to the original position.

Set project marker

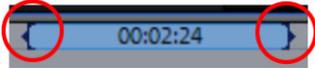
The menu provides the option of placing a project marker (view page 224) at the current playback location. These provide a way to mark certain segments or events of interest in the project, etc.

After selecting the menu, a dialog for entering the name of the marker to be created will open. The first 10 project markers may be selected using the number keys 1-0 (0 accesses the 10th marker). This allows you to jump to a particular position of a longer video immediately, without scrolling and searching.

Project markers can be deleted or renamed at any time via the context menu. They do not have any direct effect on the results of your work, but they can be very helpful.

Ranges (in and out points)

Range markers are the "in points" (range start) and "out points" (range end). They mark a certain range for playback that can be viewed by pressing the "Playback range" button at the bottom of the corresponding monitor.



To the left, you can see an in point (range start), and an out point is visible (range end) to the right

Hint: The value between both markers shows the length of the selected area according to the pattern Hours:Minutes:Seconds:Frames.

Ranges in the video monitor

There are various options for changing the playback area and the in/out points.

- Set the playback marker at the desired position and press "Set range start" or "Set range end" underneath the monitor to set the in and out points.
- Click on one of the markers below the monitor and move it to the desired position by dragging it.
- Click one of the markers in the upper-most bar in the arranger and drag it.
- Right clicking on the bar moves the out point to the position of the mouse cursor. The area grows or shrinks in size correspondingly. Left clicking moves the in point, whereby the area size stays constant (out point is moved as well).
- You can adjust the position of the entire range by clicking the blue bar between the markers and moving it by dragging while holding down "Ctrl".

Keyboard shortcut:

Set the start of the range (in point) at the position of the playback marker: "I"

Set the end of the range (out point) at the position of the playback marker: "O"

Range markers in the source monitor

In/Out points are set in the source monitor in the following way:

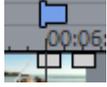
- Set the playback marker at the desired position and press "Set range start" or "Set range end" underneath the monitor to set the in and out points.
- Click on one of the markers below the monitor and move it to the desired position by dragging it.
- You can adjust the position of the entire range by clicking the blue bar between the markers and moving it by dragging.

For the exact functions of the range markers in the source monitor, please read the section "Logging (view page 84)".

Keyboard shortcut:

Set in point (range start) at the position of the playback marker: "I"

Set out point (range end) at the position of the playback marker: "O"

Chapter markers

The chapter marker defines the start of the new chapter. Chapters improve navigation when burning your project to CD or DVD (view page 196).

The following options can be accessed via the "Edit" menu or by right clicking on a playback marker.

Set chapter marker

Sets a chapter marker at the position of the playback marker. This creates a chapter entry in the disc menu, in case you are planning to burn the movie to CD/DVD.

You can rename your chapter markers by right clicking and selecting "Rename". The name then appears in the chapter menu.

Shortcut: Shift + Enter

Automatic chapter markers

Automatically sets chapter markers in the arrangement based on certain rules. These chapter markers determine the chapters in your DVD menu. This function is useful if you want to burn your recording onto disc right away.

There are a few options for automatic chapter generation:

At the beginning of the movie: The movie contains only one chapter

At the object starts in a track...: Every object in a track creates a chapter. Track 1 is preset.

At the position of existing title objects: Subtitles, for instance as faded-in subheadings, give the position of the chapter markers.

Provide interval (in minutes)/provide quantity: If the chapters are separated without any particular method and are just needed for quicker navigation, you can also insert chapter markers in pre-defined intervals or as a pre-defined number of chapter markers.

Titling the chapter markers: To title the chapter markers, you can use a user-defined name with consecutive numbers or the object name or text from the text objects.

Optionally, you can delete existing chapter markers and confine the automatic chapter marker function to the area between the start and end markers.

Keyboard shortcut: Alt + Shift + Enter

Delete (all) chapter markers

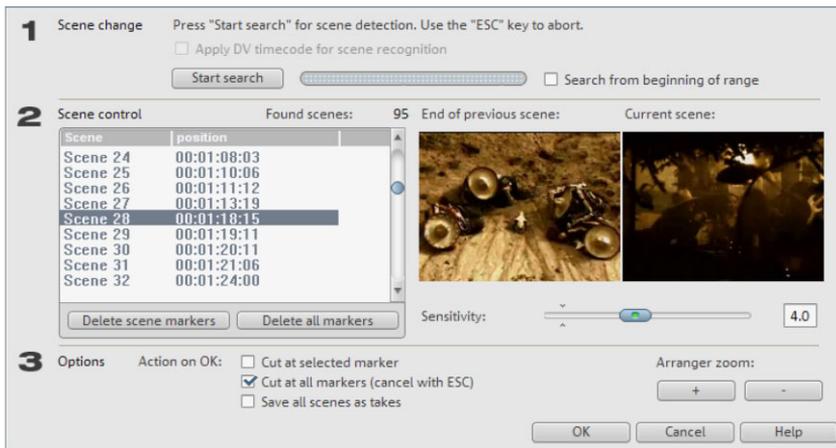
Deletes one or all chapter markers. This removes chapter entries from the disc menu. Read more in "Burn screen".

Keyboard shortcut: Ctrl + Enter / Alt + Ctrl + Enter

Scene markers

Scene markers separate a complete video into scenes. You can load any video into MAGIX Video Pro X2 and have it divided into scenes.

Simply drag the desired video into the arranger. Then, right click on the video and select "Scene recognition". The following dialog appears:



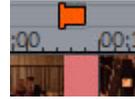
After clicking "Start search", an overview of the detected scenes will be displayed underneath the scene control.

Delete scene markers: Here you can delete individual markers by selecting them from a list.

Delete all markers: Deletes all project markers.

Action on OK: You have three possibilities: Either MAGIX Video Pro X2 splits your video into individual scenes ("Cut at all markers"), you select a scene and cut only at this position ("Cut at selected marker") or you can save the scenes as "Takes (view page 89)".

After deciding in favor of one of these options, red scene markers will appear on the timeline in the arranger. The scenes can then be split according to the selected option and edited.



Note: An important difference between a scene and a chapter marker is that a scene marker can be set only within a continuous video, while a chapter marker can include several videos consecutive videos.

Additional information about scene recognition is provided in chapter "Insert objects into the project (view page 85)".

Shortcut for scene recognition: Shift + Z

Ad markers

Ad markers indicate detected ad pauses. For more on this, please read the "Search for and remove ads" chapter.



Multicam editing

Multicam editing enables easy cutting of various recordings of the same scene from different camera perspectives. The preview monitor shows the image material from up to four sources next to each other, and the material can be cut in real time with the mouse.

Preparation

Multicam editing is a special mode of the arranger. The top two tracks serve as target tracks where sound and video are copied from up to four different source tracks. The two top tracks must be empty when multicam mode is switched on, or the existing object will be moved to a different track.

Next, load various video recordings of the same scene one below the other, starting on track 3 in the arranger.

It is important that the individual sources are synchronized to each other exactly. It is best to find a noticeable movement, or an "o" sound, if audio was recorded.

To localize the sound in the audio track exactly, you may have to create a wave display of the track. Right click on the sound track and choose "Create wave form display".

You can use a clapperboard during filming, since this offers both sound and motion; an actor's clapping in front of running camera before the start of the scene is also helpful. Set a grid point at this position in the object (shortcut "Alt + Shift + P"). You can now move the source objects over each other so that the grid points are aligned.

Two video sources with sound tracks can be automatically synchronized using their audio material. To do this, use the "Align with other audio objects" (view page 107) function from the context menu of audio objects.



Activate "Multicam" mode with this button or with the "Multicam" command in the "Edit" menu.

Source and preview images

The assignment of tracks as source tracks for the multicam cut takes place automatically. When "Multicam" mode is activated, the source tracks will be assigned to all tracks containing video objects starting from track 3.

You can also conduct or change the assignment manually. To do so, tight-click on the trackbox of the corresponding track to active or deactivate a track as a source track. In this way, you can use more than four tracks for multicam editing, but no more than four at one time. The source tracks are marked using color.



For every assigned track, a preview appears in the source monitor, and the frame's color corresponds to the color of the track, letting you assign each preview image to the corresponding track.

If the objects created using multicam cut on the target track, a preview image of the corresponding source track highlighted with a yellow frame will be shown for length of playback.

Multicam edit functions

You can edit various sources in the the target track during playback in real time or during stopped playback.

Real-time multicam editing

You can edit various sources together during playback in real time.

1. Start playback.
2. Click on the desired source in the preview monitor.
3. The corresponding video added into the target track starting from this time point.
4. To switch the source, click on another source, and a new object from another source will be created from this point. You can repeat this process as often as you like.

For precise editing in the target track, use the usual edit functions or the Trimmer. Keep in mind that as long as you are in multicam mode, only the object borders are moved, and not the objects themselves. Otherwise, gaps or image jumps could result while you use the multicam edit function again later.

Replacing an object's source

Replacing an object's video material in the target track with another source:

1. Select the object for which the source is to be replaced in the target track.
2. Click the source you want to replace the video material in the source monitor object.
3. The video material will be replaced by the material selected in the new source. The project length is not changed.

Insert cut

Insert material from one of the sources between any position on the target track and the next object.

1. Place the playback marker on the desired position.
2. Click on the desired source in the preview monitor.
3. The material from this source will be added to the target track, the new object will end at the next object, and the section lying below an existing object will be overwritten.

Overwrite range

You can overwrite a selected area of the target track with one of the source videos.

1. At the end of the arranger, select an area for a cut by determining the in point with a left mouse click, and the out point with a right mouse click. Or use the corresponding buttons in the transport control.
2. Click on the desired source in the source monitor.
3. In the selected area, the target track will be overwritten with the video material from the selected source.

Master audio track

Normally, videos in the source track are edited together with their audio tracks. Since the original sound can differentiate from camera to camera due to different camera positions, you will probably prefer using either the soundtrack from only one camera for all settings, or to replace the soundtrack completely (for music videos, for example, you will use the studio version of the original track).

Right click on the track box of one of the source audio tracks or a different audio track and select "Multicam: Master audio track" from the context menu to assign a master audio track for multicam editing. The master audio track will be appear in a dark color.

Now, during every multicam cut, material from the master audio track will be inserted on track 2, independent of the source track used.

Synchronize video objects using the sound track

Video objects can be synchronized using their sound tracks. During the process, their soundtracks are compared for similarities. If videos come from the same recording environment, the same acoustic events will be found on their soundtracks (e.g. clapping the clapper board).

Synchronization of multiple objects on one track is possible. First, on the reference track, select all audio objects that are to act as reference positions. Then, on another track, select all audio objects that should be moved.

Choose the "Align with other audio objects" function from the audio objects context menu.

MAGIX Video Pro X2 attempts to locate the acoustic events in the reference objects of the second track and to move these to the corresponding position. Because the audio objects are grouped with their corresponding video objects, video is also synchronized.

Titles and effects

MAGIX Video Pro X2 offers a large palette of video effects. The video effects that are used the most can be found directly in the Media Pool, while others can be found in the object context menu or in the "Effects" menu.

3D text

3D text can be created directly from the title editor. Click the title editor and then press the "As a 3D title" button. The title object will now be turned into a MAGIX 3D Maker object, and a limited MAGIX 3D Maker program version is opened.

For more information about MAGIX 3D Maker, try the help file. You can open it by pressing "F1" from within the program.

Apply fades

Fades can be selected in the Media Pool under "fades" and moved into the space between two objects using drag & drop. In addition, they are available directly in the fades menu between two objects (see figure).



Find out more on this topic under "Transitions" (view page 91).

Apply effects to objects

All title and effects for objects are accessible via the Media Pool. There are various methods for applying effects:

- Titles, static effects and audio effect presets are loaded into the corresponding object using drag & drop.

- Effects that can be animated (in Media Pool under "Effects -> Video effects/movement effects") will be applied directly to the objects selected earlier as soon as changes are made in the Media Pool.

Comparison image in the source monitor

When editing effects in video and image objects, MAGIX Video Pro X2 offers a comparison mode which lets you compare the before and after state directly.

Selected object without effects: Outside effects pages completely without effects, inside effects page without effects from the current effects page. Playback marker synchronized in the program and source monitors.

Selected object with effects: As the name suggests; in contrast to "no effect", there is no synchronization, allowing two different parts of an object to be compared to one another.

Precursor to the selected object: The object that is located before the selected object (on the same track!) is displayed as comparison image in the source monitor.

Successor to the selected object: The object that is located after the selected object (on the same track!) is displayed as comparison image in the source monitor.

Select object...: The desired object may be selected with a click

Remove comparison image: The comparison image is removed from the source monitor.

Note: In program settings (view page 254) you can activate the "Comparison image in source monitor for editing effects in the Media Pool" option. If this option is activated, the "Selected objects without effects" comparison mode will be automatically activated when switching into the Media Pool effects, and will be automatically deactivated when the mode is exited. This serves to compare the original and edited image. This automation will be suppressed if the option is deactivated.

Video effects in the Media Pool

Video effects in the Media Pool can always be opened independently from the selection of an object.

The program monitor displays the starting image of the video. The playback marker enables you to jump to a specific position in the video in order to check the results of the effects by starting and stopping playback.

Brightness & Contrast

Brightness/Contrast: Use the sliders to increase or reduce the brightness and the contrast of the picture.

Selective brightness (gamma): "Gamma" determines the mean grayscale that can be calculated from the various color ranges. "Selective brightness" is the most important

function for enhancing images. In the preset list select various adjustment curves and edit the dark, middle, or brightest points in the picture.

Using the fader you can also set the power of the brightness/darkness adjustments.

Auto exposure: With this button you can automatically optimize the exposure and contrast with a click.

Color

White balance

All light is not the same. Depending on whether it is sunlight or artificial light, this will have an effect on color variation. The human brain is able to compensate for this variation: A white sheet of paper will still look white under candlelight, although it is in fact much more yellow than by daylight.

In order to imitate this filtering done by the brain, a camera must also analyze and correct the light. White balance does the same thing to a picture that the brain does by setting the camera to the so-called "color temperature" of the surroundings.

If you do not possess a camera which performs this function automatically, you can apply the white balance function in MAGIX Video Pro X2.

An incorrect white balance can lead to an unnatural blue or red hue.

Directions: To use the white balance, click on the button to the right of the label "White balance" and then select a point which represents white or a neutral gray to the "outside world". The color temperature is then corrected automatically.

Tip: Cool color effects can be achieved by setting a different color as the white benchmark. There is definitely room for experimentation!

Red-eye-removal

This photo function removes unnatural redeye that the results from using a flash. Click on the eye symbol and then select the red pupils in the preview monitor using the mouse.

Hint: For photo optimization, we recommend you use MAGIX Photo Manager. The program is installed automatically and can be used for quick previewing and easy management of pictures from your database. It has a tool for correcting redeye and setting auto color and white balance to control discoloration in pictures.

Saturation

You can increase or reduce the color portions of images with the "saturation" fader. A newly developed algorithm is applied which makes color changes related to other parameters (for example contrast settings) in order to achieve the most natural coloration possible. With just a little bit of experimentation, you can achieve astounding results – anything from turning summer snapshots into autumnal scenes to funky pop art!

Hue

Select a color for coloring the image from the color chart.

Red/Green/Blue

Using the "Red/Green/Blue" slider, you can change the color portion mix for each color.

Color correction

The "Highs", "Mids" and "Shadows" ranges can be adjusted individually.

Note: Before using complex color correction, you should first check if "Brightness/Contrast" and "Color" functions can help you.



By turning the mouse wheel, the work area of each color wheel can be increased or decreased.

Color angle: Determines the color on the color wheel, which the image should be colored with in each brightness area.

Shortcuts: Shift + mouse wheel above each color wheel

Correction intensity: Sets the intensity of the coloration of each brightness range.

Shortcuts: Ctrl + mouse wheel above each color wheel

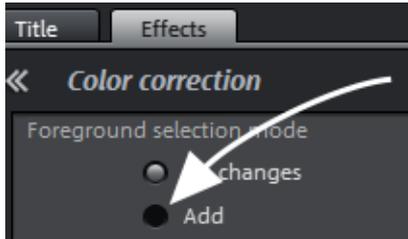
Saturation: This lets you set the color saturation for the corresponding brightness range.

Edit color ranges individually

Secondary color correction allows individual colors in video and image objects to be adjusted. This includes essentially two layers, the fore and background. The master layer may also be used to influence the overall image.

The foreground layer corresponds with the mask created, and editing in the background changes all of the areas outside of this mask. The mask may be assigned to a certain color or to multiple colors simultaneously.

To open color correction, click the video or image object and open the entry "Color correction" via "Video effects" in the Media Pool.

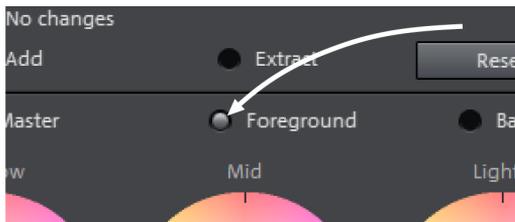


"Add" allows a color to be selected with the pipette tool to create a mask. MAGIX Video Pro X2 displays the mask in black and white stripes to highlight the current selection.



Click with the pipette tool on the color in the program monitor that you would like to add to the current layer until your selection is complete.

Unwanted colors can be removed from the selection again by selecting "Remove" and clicking the corresponding color.



Select the layers (fore and background) to edit.



Now, shadows, midtones and highlights of the selected color and level will be able to be edited separately (view page 110) in a regular fashion.



A classic example: Saturation of all brightness areas on the background layer is reduced, and colors in the foreground are adjusted as desired.

Chroma key

This section contains the mixing effects for chroma keying used to mix together a foreground and background video to create an overlay effect.

Note: The background video must be present in the track above the object for the foreground!

For example, track 1: background, track 2: foreground

Stamp: The currently selected object is "stamped" onto the video on the track above the object. This is only possible if the bottom video takes up only a part of the image, as otherwise only the bottom (currently selected) video would be visible. The object should be reduced or moved first. This can be achieved using the edit functions (see above) or the "Selection" sub-menu in the "Effect" menu. To find out more, read "Shrink or interlace videos (view page 89)".

Color: Select the range with the color that should be transparent in the video monitor. The video is made transparent in the areas featuring this color, and the video on the top track can be seen "through" these areas.

Mix: This button mixes the two videos together. With the aid of the fade handles, very soft cross-fades can be achieved between the partially overlapping videos.

Black/blue/white/green screen: The selected video covers up the video on the top track and all black/blue/white/green areas appear transparent. This makes it possible to "place" a person who has been recorded in front of a blue (or green, white or black) background into any type of landscape or background.

Alpha: This video effect uses the brightness of a video to control a cross-fading effect between two other videos on neighboring tracks. The additional videos should be situated directly above and below the alpha-keying object.

In all black parts of the alpha-keying object, the top video is faded in, while in all white passages the bottom video is shown. Grey passages are permeable for both videos and create a mixture of the two. In the case of colored passages, the brightness of the color is used for control purposes.

Video level: The video level essentially changes the brightness of the video before other video effects are applied. This can have significant influence on the effects, especially in case of chroma keying. The effect can be automated; read about this in the chapter "Animating objects (view page 147)".

Artistic filter

Erosion: The image is broken up by means of small rectangles and resembles a "patchwork".

Dilate: The image is broken down into cell-like elements.

Emboss: The edges are strongly highlighted.

Substitution: Using the rainbow scale red, green, and blue parts are exchanged. Quickly create surreal landscapes and green faces.

Shift: The color values are increasingly inverted. Blue colors turn red; green ones appear purple.

Quantize: Depending on the setting, colors are either rounded up or down so that the overall number of colors is reduced. This creates impressive grids and patterns.

Color fill: Using this slider, you can color in your video using red, green and blue colors (the basic TV colors).

Contour: The image is reduced to its contours in two sizes (3 x 3 or 5 x 5); vertical or horizontal contours may be selected.

Distortion

Motion: Moving parts of the image are enhanced and warped.

Echo: The moving images create an optical "echo"; previous images stand still and gradually turn paler until they completely disappear.

Whirlpool: The image is twisted into an "S" shape.

Fisheye: The perspective is distorted as if the image were viewed through a fisheye lens.

Mosaic: The video is depicted as a mosaic.

Lens: The image is dynamically distorted at the edges.

Sand: The image is depicted in a granulated manner.

Kaleidoscope: The left upper corner is mirrored horizontally and vertically.

Horizontal/Vertical mirror: The object is reflected vertically or horizontally – it appears on its side or upside down.

Sharpness

The fader allows you to regulate the level of image sharpness or apply a soft filter.

"Fine adjustment" allows you to set how sharp surfaces or edges should appear. This enables you to effectively reduce image distortions (noise).

Speed

The playing speed can be adjusted with the slider control. The range between 0 and 1 plays the video slowly; values above 1 accelerate playback. If the playing speed is increased, the object length in the arranger is automatically shortened.

Reverse: This button reverses the playback direction (with the same tempo).

Note: Since the soundtrack of a movie cannot be played backwards, you have to first separate the movie object from its soundtrack (view page 89). The speed effects cannot be animated!

Animation

Nearly all preset effects may be automated or animated. To animate effects or produce movements, please read the "Animating objects (view page 147)" chapter.

Movement effects in the Media Pool

Size & Position



Values in: Set whether the values are applied in percent or pixels.

Position

Left: Enter the start position from the left image border.

Top: Enter the start position from the top image border.

Center: Based on the current image size, the image starting points (left and top) will be positioned so that they are centered.

Note: Negative values can, of course, also be entered. The image borders will then be outside of the visible area.

Size

Width: Enter the width of the image.

Height: Enter the height of the image.

Note: The size and the position of the image can be roughly entered in the program monitor by simply moving the image into it and dragging on the handles.

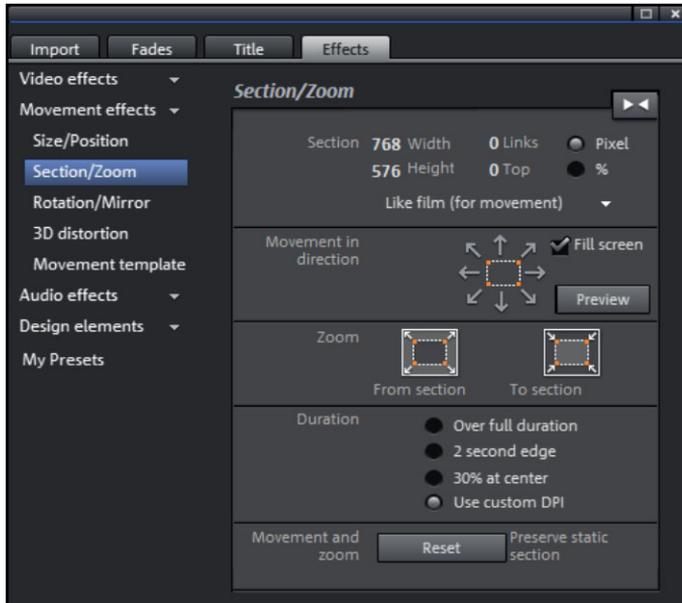
Maximize: The image will be maximized according to the movie's resolution.

Set original size: The image will be scaled to its original size.

Retain proportions: This option makes sure that the image will not be stretched or distorted. The proportions of width to height will remain the same.

Edit: In the "Edit" mode you can change the position and size of the image using handles that can be displayed or hidden.

Camera movement



Cutaway

Cropped cutaways can be used to:

- display just one section of the photo.
- to move the clip through the picture with the help of a movement effect – the result is a type of camera movement. Please read more on this in the next chapter, "Movement".

In the program monitor, you can set a picture section to serve as the basis for the movement effect. Press the left mouse button and drag out the section you want to use.



Alternatively, both buttons can be used to specify the section.

Keep proportions: In this menu, you can select the format for the section. The format of the original picture is used as the default.

Movement in direction



Determine the direction in which the selected section or image will move during the time indicated under "duration". In addition to horizontal and vertical movements, diagonal movements are also possible.

Fullscreen: If this check box is active, the opened section will zoom to fullscreen. If this option is switched off, it won't be possible to add movement to the section.

Preview: Displays a preview of the section at the playback marker location.

Direction and time



Zoom in: The entire picture is displayed and then zoomed to show only a smaller picture section according to the time set in "Length of movement". If no portion is previously set, a central portion of 50% of the picture is set.



Zoom out: The selected picture section is displayed and is then zoomed out to display the entire picture according to the time set in "Time period". If no portion is previously set, a central portion of 50% of the picture is set.

Direction and time

The value specified here determines the position at which the keyframes for the corresponding movement effect are set as standard. They determine the positions at which the pan start and stops.

Note: Automatically placed keyframes can be edited retroactively, and the option will then be set to "User defined". Read the section "Changing an effect's keyframes (view page 149)" in the chapter "Animating objects (view page 147)".

Movement & zoom



Reset: This option applies a static zoom to show the selected section of the picture only.

Rotation & Mirror



This button resets all settings.

Note: If you animate the object using keyframes, then only the current keyframe is affected by pressing reset.

Rotate



Rotates the image on the horizontal axis.



Rotates the image on the vertical axis.



Rotates the image around its center point.

Straighten horizon

The image can be rotated around the axis via the slider. The image is automatically zoomed to avoid black edges.

Show guidelines: Activating this check box displays a grid in the program monitor for orientation during horizontal straightening.

Mirror



Mirrors the image on the vertical axis.



Mirrors the image on the horizontal axis.



Rotates the image 90° clockwise.



Rotates the image 90° counterclockwise.

Presets

Various useful presets are located here.



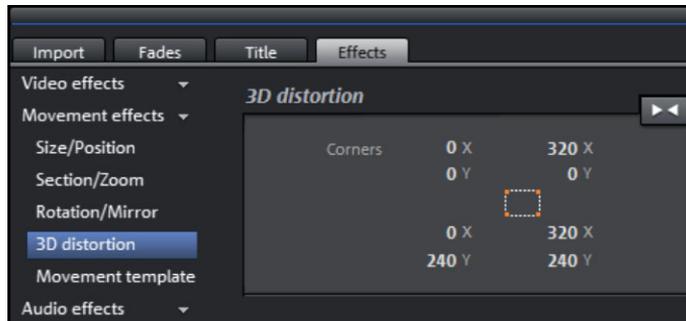
A dialog opens for opening presets from other folders.



Save your own settings as a preset.

3D distortion

This makes real 3D positioning of images possible, letting you distort the image in space and move it. Enter the individual corner points numerically or move them in the program monitor using the mouse.



This button resets all settings.

Animation

Nearly all preset effects may be automated or animated. To animate effects or produce movements, please read the "Animating objects (view page 147)" chapter.

Video effect plug-ins

Additional effects may be loaded into MAGIX Video Pro X2 in the form of video effect plug-ins. Video effects plug-ins are additional programs of third-party manufacturers that can be used to add additional video effects to video objects. You can use them to extend the comprehensive effects selection of MAGIX Video Pro X2 even further.

MAGIX Video Pro X2 supports the plug-in format of the freeware video editing software "VirtualDub", as well as the "VitaScene" and "Adorage" program by "proDAD". A selection of tested VirtualDub plug-ins (.vdf files, also called VirtualDub filters) and Adorage plug-ins can be downloaded as an installer package directly from within MAGIX Video Pro X2.

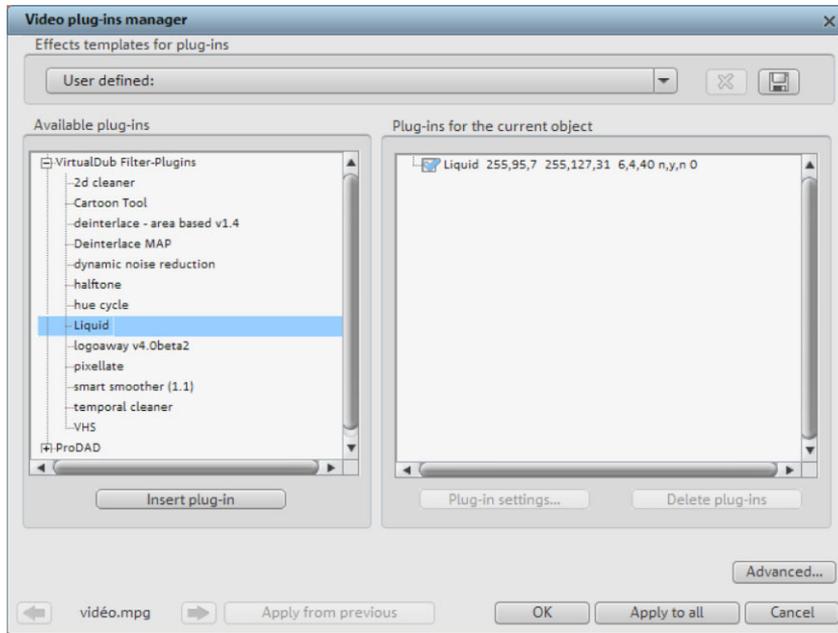
Important examples of using plug-ins are, for instance, removing channel logos, disturbances or adding special effects.

Using video effect plug-ins

In order to be able to use plug-ins, you have to install them first. MAGIX Video Pro X2 checks whether plug-ins are already available. If not, it will offer to download them from the Internet or to manually set the plug-in path.

In order to use a video effects plug-in, please use the "**Video effects plug-in**" command from the "Effects -> Video effects" menu or from the "Video and image object effects" menu. A manager dialog for video effects plug-ins will open which lists all available plug-ins on the right side.

Manager for video plug-ins



Effects templates for plug-ins: MAGIX Video Pro X2 does not include plug-ins due to licensing conflicts, but there are plug-ins presets for some channels for logo removal (view page 121), such as the "logoaway".



You can save your personal settings by pressing the **"Save"** button or remove them from the list by pressing the **"Delete"** button.

Available plug-ins: All available plug-ins are listed here.

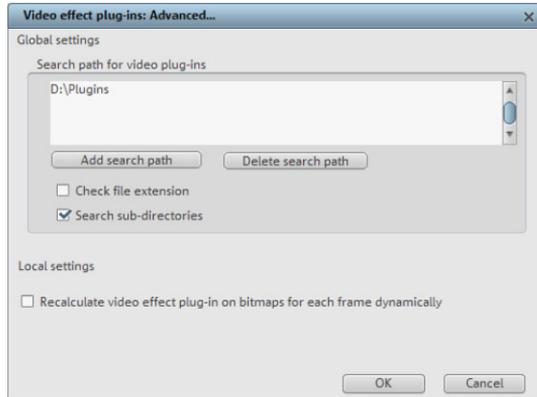
Add plug-in: The selected plug-in is added to the editing chain (**plug-ins on the current object** list is on the right). You can load as many plug-ins as you like simultaneously. They are then edited subsequently according to the list sequence. The plug-in order can be changed using drag & drop in the list.

Plug-in settings: Here you can open the settings dialog for the selected plug-in. All plug-in settings in the entire list can be saved as a preset (effects templates for plug-ins).

Advanced: Opens the Advanced settings dialog (see "Advanced...").

The control elements at the lower border of the dialog (navigation buttons, apply from last, apply to all, OK, cancel) correspond with the optimize video dialog.

Advanced...



In the "Advanced" dialog, you can specify the search path for plug-ins. MAGIX Video Pro X2 checks these for available plug-in files at program start and adds these to the list of available plug-ins. **"Add path"** adds new search paths, and **"Delete path"** removes them from the list again.

Check for file extension only: Accelerates the search for new plug-ins if a larger number of plug-ins are available by not checking if they are valid.

Scan subfolders: Extends the search to subfolders below the selected paths.

Local settings

Recalculate video effects plug-in on bitmaps for each frame dynamically: If you apply a plug-in to a bitmap (image), then this option must be activated in case the plug-in creates moving effects.

Remove a channel logo with the "Logoaway" plug-in

The "Logoaway" freeware plug-in by Krzysztof Wojdan is a high-quality option for removing the channel logo from your video material. The plug-in attempts to remove the channel logo by reconstructing image elements using from the surrounding area.

Since each station positions its logo at a different location and in different sizes, you can select the presets for different channels from the effects templates.

Hint: The broadcasting rights of each channel must be observed. Commercial use of the edited material clearly constitutes a breach of copyright.

Image stabilization

The motion stabilizer reduces unsteady camera motion and helps to smooth pans. This option can be accessed from the context menu of a video object or via "Effects -> Open video objects".

Functionality

Image stabilization balances undesired picture movements. The motion stabilizer equalizes inadvertent movements in the image by moving the image in the opposite direction in accordance with the wrong movements. This produces unusable edges in the footage that are cut off automatically, and black strips replace the edge of the shifted picture, which are then removed using a zoom shot. The result is a clearly more stable, almost imperceptibly larger picture.

Application

Activate the motion stabilizer in the video object FX or context menus. You will see the current video object in the preview monitor.

First, check the movie material for shaky scenes by clicking on the "Stabilize" button. Based on the preset parameters, a relative shift between the pictures is calculated. After concluding the analysis, take a look at the suggested correction, then use the slider for further adjustments. Once you are happy with the final correction, click "OK". If the first scan did not provide a satisfactory result, try changing the parameters below and repeat the process.

Image stabilization dialog



Stabilizing radius: To prevent the motion stabilizer from recognizing every camera movement as unwanted shakiness, you can determine the radius within which movement is acceptable. The larger the stabilization radius, the more shakiness is corrected.

Note: Changing this parameter will require reanalysis of the source footage.

Analysis area: This area determines the area of the footage that should be analyzed. The center of the image is preset. If shakiness occurs in another part of the picture, relocate the analysis area. To do this, use the lasso to "capture" the shaky area.

Temporal smoothing: This value determines the speed of the movements considered blurry. This allows you to differentiate between a panning shot and a nervous hand-held shot. Changes to this value are immediately applied.

Cancel: Exits the dialog without making changes to the settings.

Delete corrections: Resets the current settings.

New value: The altered value for the temporal correction is accepted and the new correction curve is set.

Create panorama pictures

This function will turn your photos into a sensation. Add new life to your holiday memories and create great panoramas with only a few clicks. You don't need to create only "proper" panoramas; let your imagination run wild and put together anything you want to! You'll see your photos in a new light and create stunning montages.

Select pictures for panorama

Load all necessary images into the film project as usual. The images that should make up the panorama should be selected one after the other while holding down the "Shift" key. Select the entry "Panorama photo" from the context menu "Effects (view page 226) -> Video object effects".

Invert image sequence for panorama image

Sometimes photos are accidentally loaded in the wrong sequence or were created from left to right. If you forgot to sort your photos correctly beforehand, then simply click "Invert sequence".

Calculating the panorama image

If you click "Create", the panorama image will be processed. Depending on the resolution and number of original images included, this may take some time. The original photos are replaced in your slideshow with the panorama image you've created, but the original files on the hard drive will remain intact.

Hint: You can create a panorama image from a maximum of six images. Click on "More options" for more information on the upgrade.

Finished panorama (2 images)



Finished panorama from 2 images

Borders

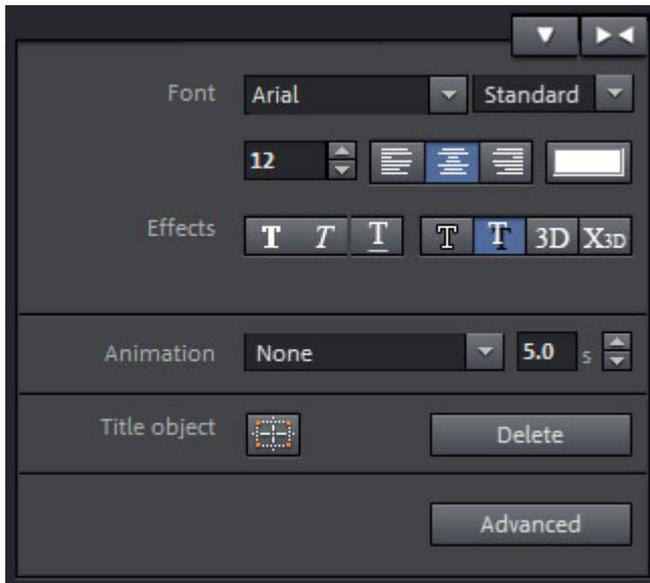
The "Frame" directory can be accessed via the button in Media Pool. There, you will find bitmap patterns for the borders of videos. These are much like picture-frames that can be modified by video mix effects. Drag them to the lowest track of the arranger and select the Bluescreen or Greenscreen effect to make the blue or green space in the middle transparent for the upper videos. This way you can see the objects of the upper tracks of the arranger in the field.

You can use the lower handles to adjust the size of the borders to fit any length of the video. This allows you to add a frame to a video from start to end. You can also achieve interesting effects by inserting and discarding borders within a video.

Title Editor

Titles can be used for many applications: as a running text (ticker), subtitles, speech and thought bubbles, to display date and time, and much more.

 The button in the toolbar opens the Title Editor.



Enter text, e.g. for subtitles, lead or end credits in the video monitor. Texts can be displayed in all kinds of fonts and colors.

If you want to format individual words or letters, select them with the mouse and choose a different format or color. If no selection is made, the entire text will be formatted.

Creating titles from a template

The Media Pool includes the tab "Title" beside the entry "General", and this features additional, thematically named title templates.

- Open one of these entries and select any title template. A simple mouse-click provides a preview, and double-clicking creates a title object using the template.

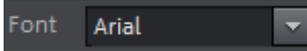
Note: Templates may be applied to an existing title object. Settings outside of the text will be lost!

Creating titles without a template

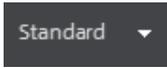
- Try clicking on the entry "General" under "Title" in the Media Pool.
- Next, click in the video monitor on the location where the title should be positioned.
- Next, simply enter the text via your keyboard.
- After the text has been entered, click the check mark to confirm your entry.

Edit title

- Click again on the title in the video monitor window or the title object in "Timeline" mode.
- Now change the text however you like.
- Confirm your entry by clicking the check mark next to the positioning frame.

Font

Font: Select the font here that should be displayed for the text.



Font style: Choose here whether all of the text or parts of it should be shown bold, in italics, or underlined.



Font size: Set the size of the text here.



Direction: Choose here whether the text should be justified to the left, centered, or to the right within the positioning frame.



Color: Press this button to choose the font color.

Effects

Font style: Choose here whether all of the text or parts of it should be shown bold, in italics, or underlined.



Outline/shadow/3D: This function allows you to add shadows, 3D effects, and an outline to the text. These settings can be adjusted in detail via "Advanced".



The X3D button converts the title object into a Xara 3D text object. More about Xara 3D text objects is described in the section "3D text (view page 127)".

Animation

You can make your credits scroll down the screen, and many other text movements and effects and designs are also available.

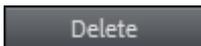


The display duration for the subject can be set here.

Templates for animated text are arranged in the other Media Pool categories; the icon and the description are there to help you find the correct settings.

Title object

Center position: Clicking "Center position" puts the title back in the middle.



Delete: The whole title object, i.e. text and settings, will be deleted.

Advanced Title Editor settings

Options

Only use visible TV area: The text will be zoomed so that it will always be within the TV's limits, which is specified in the Movie effect settings (view page 131).

Background

Specify here whether the text's background should appear black or white. This is only meaningful if no other video or image object is in the background.

Text effects

Edit different text effects in detail. One color may be set for each effect.

Shadow: The position of the shadow may be set on the horizontal and vertical axes.

Transparency makes the background "shine through" more or less.

Soften makes the edge of the shadow harder or softer.

Outline: A border appears around the letters in the text.

A filled outline appears in the color selected, i.e. as a line in the set width.

If the option is deactivated, then the color of the outline will match the text color; the color of the outline is selected here.

3D: The text appears with a 3D-style outline. The width and thickness of the 3D contour (H) can be set in points.

3D text

3D text can be created directly from the Title Editor. Click the Title Editor and then press the "X3D title" button. The title object will now be turned into a MAGIX 3D object. If you have also installed MAGIX 3D Maker, the program will open for you to work on the text.

Presets are also located in the Media Pool under "Titles -> 3D". You can enter or process text here.

For more information about MAGIX 3D Maker, try the help file. You can open it by pressing "F1" from within the program.

Add time code

MAGIX Video Pro X2 can add a time or date ("timecode") to the picture material. To add a timecode, right click on the video object and choose the "Fade in date as title" option from the context menu.

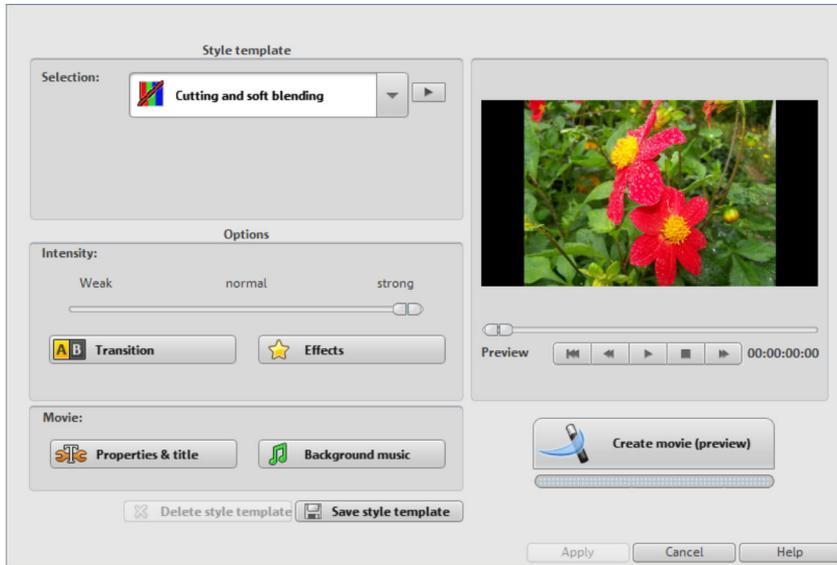
- If you're using a DV-AVI file (a digital recording from a camcorder, for instance), then the recording date will be used from the selected section.
- If you're using a different file, the creation date will be used as the timecode.

The title editor is then opened in order to customize the entry.

Slideshow Maker

Slideshow Maker is ideal for converting still images into moving pictures, adding background music, and effects.

Open Slideshow Maker via "File -> Edit -> Wizards".



Style template

Select a template that best matches your needs.

Save/delete style template



Style templates you have created yourself appear in the list of included style templates when you use the default folder provided as a save location.



If you like, these can be deleted again.

Intensity

Controls the portion of video and image objects that feature effects.

Transitions

The different sliders are used to set the portion of individual fade types.

3D / Other:

Fade duration: Set the length of the fades in seconds.

Random fades: The fades are set to random values.

Effects

The faders enable the respective effects types to be specified.

Random effects: The faders that control the amount of effects are set randomly.

Properties & title

Film length

Resulting film length: This is an estimation of how long the film will be after applying Slideshow Maker.

Available music: This is the complete length of the music that is currently selected. Background music (view page 130) enables detailed settings for the pieces of music to be used.

Adjust film length to the music: An attempt is made to adjust the length of photo objects to the background music. If the film is too short the music will be cut off. If the film is too long, the music will repeat.

Adjust music length to the film: Photo objects have a set length, and the resulting film is filled with music. The music at the end of the movie is simply faded out.

Including video objects

Process videos: If this option is set, then videos will be automatically processed with effects and transitions.

Length: Settings may be made here about whether the original length of the video should be maintained or if it should be shortened.

Opening and closing credits

Set the text for opening and closing credits here.

Text: Enter the corresponding text for opening and closing credits that should be added by Slideshow Maker.

File: A title template, a video, or an image file may also be used.

Note: Titles created using Slideshow Maker may also be edited (view page 124) at any time.

Group associated recordings together

If this option is active, an attempt is made to detect associated events via their date information and to separate them from each other optically. Detection of individual events is based on the time span of these events to achieve a sensible separation.

Begin group with black fade: A black fade is added between the different events.

Begin group with title and black fade: A black fade is added between the different events. A title is also faded in with a suitable duration, e.g. 1st/2nd/3rd day, provided the events take place over multiple days.

Begin group with title and picture: A black fade is added between the different events. A title is also faded in with a suitable duration after the black fade, e.g. 1st/2nd/3rd day, provided the events take place over multiple days.

Background music

Specify here whether and which music should be used for the background.

Use background music: Adds background music.

Load file(s): A file selection dialog will open to choose a folder with pieces of music where you can select one or multiple files.

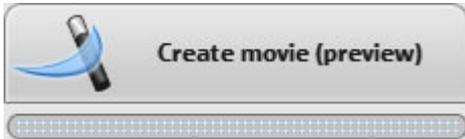
Remove: The selected pieces are removed from the list and will not be used.

Preview: Previews the selected piece of music.

Volume: This slider controls the volume ratio between the original sound and the background music.

Tip: Pieces of music in the first track are listed and used for the background music, provided they are not removed.

Create movie



After all of the important settings have been made, click this button to produce the film.

If the results do not match what you imagined, then click "**Cancel**" to discard the changes. Otherwise, you can change the settings again or select another style template and click "**Create film**".

Master effects

All of the settings made here influence the entire movie. Settings are made separately for each individual movie in the project. You can open the effects from the the settings via the "Effects" menu.

On the right, you'll see a preview of the current settings. Use the position slider to jump to different positions in the movie or to various scenes in order to see how the selected setting affects the image material.

Brightness/Contrast

Brightness/Contrast: Use the faders to increase or reduce the brightness and contrast of the image.

Selective brightness (gamma): "Gamma" sets the middle gray value transmitted from various color areas. In the presets menu you can determine which color areas should be used. Using the fader you can also set the intensity of the brightness or darkness.

Color space correction (master effect): This option combats colors that are too strong and cannot be properly displayed on your TV. The color saturation of the photos in question are "turned down" to the maximum level at which they can be properly displayed.

Color

Saturation: Use the saturation slider to increase or reduce the hue proportions in the image. A newly developed algorithm is now applied that carries out color changes in relation to other parameters (e.g. contrast settings) to achieve the most natural coloring possible. With just a little bit of experimentation, you can achieve the most astounding results – anything from turning summer snapshots into autumnal scenes to funky pop art...

Hue: Use the palette to select a hue for coloring the picture.

Red/Green/Blue: The "Red/Green/Blue" slider corrects the color proportion mix.

Sharpness

This fader allows you to regulate the level of image sharpness.

The "fine tuning" option allows you to determine the level of focus for particular surfaces or borders.

Anti-flickering filter intensity: The anti-flickering filter affects only still images. It is especially intended for zooms in images with many edges and transitions with high contrast (e.g. fences, bars, brick walls). High-frequency images such as these begin to flicker when they are reduced in size. This filter smoothes these edges somewhat. You should set the intensity of the anti-flickering filter according to your preferences, because smoothing is always a compromise between good contrast and fluid image sequence during playback.

TV picture

This option ensures that the image size is adapted to fit the real television picture (anti-cropping). Without adjustment, the television might otherwise crop the image borders.

Fade in TV display area in the preview monitor: This option displays the image borders of the television as lines in the preview monitor. The four image borders of the TV display area can be set by means of the 4 input fields. In this case, it is necessary to know the actual size of the TV picture. To determine it, proceed as follows:

The four image margins can be proportionally adjusted by means of the four input fields. Here it is important to find the optimal balance between distortion, reduction, bar formation and image cropping:

- If the same value is entered for every margin, the image size is reduced proportionally. In this case no distortions will occur, but there will be bars along the edges.
- If different values are entered for the 4 fields, the image size is reduced disproportionately. This causes image distortion.

Apply margin to: With this option the entered values for the four margins are applied as an image reduction. The result can immediately be viewed on the preview monitor.

Determining the visible TV frame size

To determine the picture properties of your television as well as optimal image size editor settings, you should perform a test run.

1. Load the **Visible TV** picture.mvm film from the "My projects > visible TV picture" folder in Media Pool.
2. Play back the film and read the instructions on the video screen.
3. Copy the slideshow to CD or DVD.
4. Place the disc into your player and play back the film. Compare the TV picture to the picture displayed on your video screen by MAGIX Video Pro X2.
5. Determine the proportional value of the borders cropped by the television with the 4 measurement scales along the edges of the test picture.
6. Enter the values in the "Full TV size" editor.

The image size is now optimized to your TV picture. Please note: Depending on device settings and disc carrier type, the cropping values may vary slightly.

TV picture

In the context menu or in the Effects > Video object effects you will find various adjustments for various specifics of the TV picture.

Next to the interlace and anti-flickering filter in the object properties, you will find the option to adjust the image to the real proportions of the TV picture. A special algorithm ensures an optimal ratio between image size and image borders (anti cropping).

Interpolation for interlace source material: Select this option to remove ridge structures from the (video) image. If, for instance, you extract freeze frames from a video, these ridge structures appear in image sections showing movement.

Anti-flicker filter: Select this option for freeze frames with very fine structures and high contrast. This filter reduces line flickering during TV playback.

Border cropping - offset: Select this option if the edges are cropped during playback on your television. Values stored in "Film effect settings" (view page 131) will be applied.

Audio Effects

Load audio effects from the Media Pool

In „Effects“ > „Audio effects“ you find several audio effects you can drag & drop onto the audio object. A preview is played by double clicking the effect.

Another advantage of this so-called "object-oriented" working method is that automations are moved automatically with objects when they are moved, since they are attached to the object and not to the track itself.

General

Under "Effects -> Audio effects -> General", you will find audio effects that can be animated using effects curves (view page 147). This means that certain effect settings can be changed during playback.



Effect curves are always object related, i.e. they only apply to one object and are moved or copied together with the object.

Note: The faders AUX 1 and AUX 2 control the volume at which the object's signal is sent to the corresponding FX tracks in the mixer.

Audio Cleaning (view page 135), Echo/Reverb (view page 138), and Timestrech/Resample can also be accessed here.

Note: Volume and balance curves are also present in the track. The set values in the curve are also active, respectively.

Audio effects presets

Under "Effects -> Audio effects -> Audio effects presets", you'll find a broad palette of effects settings which you can add to audio objects via drag & drop. A preview can be played back by double-clicking the object corresponding preset.

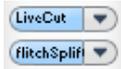
Synthesizer

Synthesizers in MAGIX Video Pro X2 can be loaded as individual objects. This is less of an effect than a technical means of producing your own sound effects. More information is available in "Synthesizers".

Using audio effects

Track effects

Besides audio effects in the object (audio cleaning, reverb/echo, timestretch/resample, Surround, etc.), a separate track effects rack with equalizer, reverb/echo, compressor as well as plug-ins can be used in each mixer track.



The plug-ins are loaded via the plug-ins slot.



You can open the track audio effects rack with the FX button.

A light blue track FX button indicates that effects are active in the track.

Track effects always affect all audio objects of a track, for instance, they also affect individual record takes of an audio recording.

Master effects

Master effects influence the mixed sum of all audio tracks. For this purpose a Master Audio Effects Rack and further plug-ins are provided. The MAGIX Mastering Suite (view page 143) is also available to help produce perfect sound.

Note: This saves storage space as opposed to applying an effect to each object individually. Object effects, on the other hand, that are only calculated for the affected object are played back to save computing power.

Control Effect devices

The effects are controlled in the conventional way by the use of slider controls, turning knobs, buttons or using graphic sensor fields.

Sensor fields: Sensor fields can be intuitively used with mouse movement to change the sound of the audio and the respective effect settings change according to the mouse movement. For every effect, two settings are simultaneously affected within the sensor fields (such as echo delay and feedback).

Power: Every effects device in the rack can be separately switched on or off.

Reset: Every effect has a reset button that restores the effect device's initial default (off). The effect is not calculated into the sound, and the effect is not rendered.

Preset: Each effects device is equipped with a selection of presets are selected through the dropdown menu.

Bypass: Some effects are equipped with a bypass button which bypasses the effects device. The bypass button allows you to directly compare the neutral, unedited sound of the audio object with the effects setting you have chosen.

A/B: Similar to the bypass button, the A/B button also compares two settings with each other. If you have selected a preset for the effect and make manual changes to it later, you can compare the original preset sound with the new settings by using the A/B button.

Sound optimization

This option opens an editor for correcting audio material discrepancies.

Select the cleaning function you desire from the upper part of the dialog:

- The equalizer (on page 137) allows you to manipulate the frequency spectrum – perfect for cleaning up muffled dialog.
- The compressor is a dynamic volume control that lends the overall sound a deeper, richer quality.
- The stereo FX processor ("Stereo FX") justifies the position of the sound in the stereo panorama.
- DeNoiser, DeClipper, and DeHisser are professional noise reduction tools that do exactly what their titles say they do.

Presets: You can try out the suitability of a number of presets in the preset menu.

Temporarily deactivate all effects: Switches all the effects off.

Apply to all scenes: Applies the selected cleaning settings of all effects to every scene of the movie.

DeClipper

Should the input level of an audio recording be too high, then overmodulation (digital distortion) may result at the loudest parts (the signal peaks). This digital distortion can also be called "clipping". At the overmodulated area, the values that are too high are simply cut off, and the typical, quite unpleasant sounding crackling distortions are heard.

MAGIX Video Pro X2 contains a special function for dealing with digital clipping and analog distortions.

Using the fader, you can set at what level the DeClipper should register a signal as being overmodulated and, if required, correct it (clip level). This is important, since different sound cards show different clipping methods. The more the fader is turned up, the lower the level recognized by the program as overmodulated. If the clip level is set too high, unwanted sound modification may occur.

Get clip level: The clip level is gauged automatically.

DeNoiser

The DeNoiser removes persistent background noise like computer hum, hissing, noises from sound charts, disturbance from ground circuits, interference from audio equipment

with high-impedance outputs (such as record players), impact noise, or the turntable rumble.

The DeNoiser requires a noise sample. Some typical noise sounds are included in the "Preset" selection menu.

Set the degree to which the noise should be reduced with the **fader**. It is often better to reduce interference signals by 3-6 dB rather than as much as is possible in order to keep the sound "natural".

A different option consists of creating a noise sample yourself. All that's needed is a short section from the audio track in which the distortion can be found. To get it, switch to the DeNoiser dialog by pressing "**Advanced**".

DeNoiser – Advanced settings

Step 1: Choose a noise sample

First of all, a sample of the distortion you wish to remove must be selected, i.e. a so-called "noise sample".

You have two options to choose from:

Pick out typical background noise: You can select and use a number of typical background noises from the flip menu. Select one and listen to it by pressing the "Play" button. If it is similar to the background noise in your sound track, go ahead and use it (see "Step 2: Removing background noise").

Extract a new noise sample from an audio track: You can also pick out a short passage (from the existing sound track) in which you can hear the background noise.

Automatic search: Searches especially quiet passages in which background noise is most noticeable.

Previous / Play / Next: These buttons allow you to play all of the passages found for easy comparison.

Save as: Once found, you can save noise samples to the hard drive. They then appear as entries in the "Typical background noises" flip menu to be used in other projects.

If you only wish to use the noise sample in the current project, you don't have to save. Instead just go to the "Remove noise" category.

Step 2: Removing background noise

Noise level: The level of the noise reduction function should be set as precisely as possible. Values that are too low are expressed at a low distortion dampening level and in artifacts, like noises or "twittering" (see below). High settings produce dull results – useful signals that sound similar to hissing noises are also filtered away. Try to find the best setting for the project at hand.

Reducer: This sets the balance between the original signal and the signal with the applied noise reduction. It's often better to reduce interference signals by 3-6 dB rather than as much as is possible, so as to keep the sound "natural". In case of buzzing, it's best to apply complete removal.

Dehisser

The DeHisser eliminates regular "white" noise typically produced by analog tape recordings, microphone pre-amplifiers, A/D converters, or transformers.

Noise reduction can be regulated in decibels with the fader. It is often better to reduce interference signals by 3-6 dB rather than as much as possible in order to keep the sound "natural".

Noise level: You can choose between different noise levels. The level of the noise reduction function should be set as precisely as possible. Low settings result in incomplete deletion of the hissing. Incomplete deleting of hissing produces artifacts and should be avoided, since high settings will produce dull results and some useful signals (i.e. woodwinds) which are similar to hissing are also filtered away.

Equalizer

The 10-track equalizer divides the frequency spectrum into 10 areas (tracks) and supplies them with separate volume controls to allow you to achieve many impressive effects, from the simple rising of the bass to total sound transformation. If you raise the low frequencies too much throughout the whole level, it might cause distortions.

Fader: The volume of each of the 10 frequency bands can be set separately with the 10 volume controls.

Link frequency bands: The frequency fields can be bundled together flexibly in order to avoid artificial-sounding exaggeration in individual frequency fields.

Compressor

The compressor is essentially an automated dynamic volume control tool. Pitch dynamics are limited, loud passages stay loud, and low passages become louder. Compression is often used to make the material more powerful, particularly for bass recordings and vocals, but also as master effects in the mixer for adding to the overall sound.

Ratio: Regulates the compression ratio.

Function: Defines the compressor's mode of operation depending upon the sound material.

Stereo FX

The stereo FX processor provides adjustment of the alignment of the audio material in the stereo balance. If the stereo recordings sound weak and undifferentiated, an extension of the stereo base width can often provide better transparency.

Bandwidth control: Adjust the bandwidth between mono (on the extreme left), unchanged base width (center) and maximum bandwidth ("wide" on the extreme right).

Reducing the bandwidth can raise the overall level. In extreme cases, when the left and the right channels include identical material and the bandwidth control is pushed to the extreme left on "mono", the result can be a level increase of 3 decibels.

Raising the bandwidth (values of 100) diminishes the mono compatibility.

Audio effect dialogs

Some of the following effects can be opened individually (via the context menu), or as part of the track or master effects rack. However, the functionality remains the same.

Reverb/Delay



The reverb effect device offers newly developed and very realistic reverb algorithms to add more room depth to your recording.

Reverb

Reverb is probably the most important, but also the most difficult effect to generate.

Fundamentals

Our everyday experience shows that not every room matches every instrument. Thus we have designed "virtual" rooms. However, it still remains important to find the correct parameters. Here are some examples of parameters that are decisive for the sound impression in real and virtual rooms:

- Size of room: The larger the room, the longer the sound travels between walls or objects. Our brain "calculates" the size from the time difference. The size impression is mainly determined from so-called first reflections and the discreet echo. We don't notice a (diffused) reverb.
- The reverberation time is mainly influenced by the composition of the walls, ceilings, and floors. This reverb time is highly frequency-dependent. For instance, the highs and mids are dampened more in rooms with curtains, carpets, furniture, and some corners than in an empty, tiled room.
- The density of the reflection. The sequence of the first reflection is particularly important. A room with many individually recognizable echoes feels alive, especially if they are quite far apart.
- The diffusion. Simple reverb machines do not take into account that reflections become more and more complex as they develop. They blur the first echoes at the beginning, which sounds artificial and "two-dimensional" for many signals. Our reverb effect works like a real room instead where individual echoes can still be heard at the beginning of the reverb but then reflect amongst each other more and more until they disappear in the signal sustain as a so-called "diffused hiss".

The presets include many rooms that were designed for certain instruments and applications and whose internal parameters have been optimized for these applications. However, you can influence most of the characteristics of the room using the provided sliders.

In addition to the rooms we have modeled two device types in the reverb effect that allow you to create an artificial reverb for a longer time: Plate Reverb and Spring Reverb.

Plate reverb

A plate reverb consists of a large metal plate (often 0.5 to 1 m² thick, or more) that is put into motion by a magnet and coil system (similar to a loudspeaker). On the reverb plate, so-called "taps" are positioned at different locations. These are pick-ups comparable to those on a guitar. Reverb plates have a very dense sound (high diffusion); no direct echo can be heard. They are therefore ideal for percussive metal. A plate reverb generates a smooth "pleasant effect" with vocals.

Spring reverb

You probably remember spring reverb from guitar and keyboard amps, particularly the older ones. At the bottom of these amps, a unit consisting of two to four spirals is mounted on a vibration-free carriage. As with the reverb plate, it uses systems for transforming the electric signal into a mechanical one. There are different designs and sizes of spring reverb; however, they all have the same quite peculiar sound: the typical "bloing" sound when the springs are moved, similar to splashing. When the reverb dies away the basic pitch of the spring(s) can usually be heard quite clearly. Furthermore, the frequency range is considerably limited due to the losses in the spirals and in the used pick-up/transmitter. Despite this, the sound is special and some of the latest music styles (e.g. dub & reggae) would hardly be possible without spring reverb.

Parameters

The reverb effect has the following parameters:

Size: Defines the size of the room (or the system for the plate and spring). With some low "size" settings, you can also reduce the distance between the individual reflections. This allows resonance to develop (accentuated frequency ranges), which can sound oppressive if the reverb sustain is too long. The proper size for each instrument can be gauged by taking into account the interplay between the room and the resonance.

Time: Reverberation time. This controller lets you define how far the echo will be absorbed, i.e. the time for the reverb to die away. Turning this knob to the left minimizes the time. You will then only hear the first reflection. Turning the knob to the right minimizes the absorption, and therefore results in a long sustained reverberation.

Color: Within certain limits, you can influence the sound characteristic of the effect. The effect of this controller depends on the used preset. In rooms, "color" controls the dampening of the highs in the reverb (from dark to bright) as well as pre-filtering of the signal. The controllers for plate and spring presets also determine the dampening of the basses.

Mix: This controller sets the mix ratio between the original and the edited signal. For rooms, you can quite easily move a signal further into the room by increasing the amount of effect. The last four presets are intended for use in an AUX channel of the mixer and are set to 100%.

Presets

The presets are primarily sorted by instruments, but you can (and should) choose which preset you want to use for which instrument.

Delay

This effect is like an echo which delays the signal and repeats it.

Delay: This sets the period of time between the individual echoes. The more the control is turned to the left, the faster the echoes will follow each other.

Feedback: This adjusts the number of echoes. Turn the dial completely to the left, there is no echo at all; turn it completely to the right and there are seemingly endless repetitions.

Mix: This fader determines how much of the unprocessed original sound (dry signal) is subjected to the echo (wet signal). Application of this effect in an AUX bus requires the controller to be set to 100% (all the way to the right).

Timestretch and pitchshift



This effect device changes the object's speed and/or pitch.

Pitch: This control changes the pitch independent of the object's speed ("pitchshifting").

Tempo: This control changes the tempo independent of the pitch ("timestretching"). The object acts as if it were compressed or stretched on the track.

Tones/BPM: These fields are used to numerically enter the pitch or speed change. Only MAGIX Soundpool files are suitable for numerical entries, since these contain information about the pitch and speed.

Setup: This button opens a setup dialog where you can select various pitchshifting and timestretching procedures.

- **Standard:** Timestretching and pitchshifting in standard quality. This method is suitable for audio material without a pronounced beat. Beat markers are evaluated to improve audio quality.
- **Smoothed:** Timestretching and pitchshifting for audio material without pulsing elements. The method is suitable for polyphonic orchestral instruments, pauses, speech, and singing. Beat markers are not evaluated. In this case, a considerably more complex algorithm is used which requires more

processing time. The material can now also be used on very large factors (0.2...50) without causing strong artifacts. The material is "smoothed", which makes the sound softer and emits it at an adjusted phase level. This smoothing is hardly audible, for example, with speech, singing or solo instrumentation. Problems in the shape of distortions may arise with more complex spectra (sound mixes from various instruments or finished mixes).

- **Beat marker slicing:** Beat-synchronous timestretching and pitchshifting via splitting and temporal repositioning. Exactly set beat markers are required at the beats or transients. The markers can be generated in real time (automatically) or read from the WAV file if available (patched). In MAGIX Music Editor, a patching tool is provided for users to set the markers themselves. The algorithm is suitable for rhythmic material that can be divided into individual beats or notes. This requires a low audio level before each beat or note.
- **Beat marker stretching:** Beat-synchronous timestretching and pitchshifting in standard quality. The material is stretched between beat markers positions so that the beats or attacks at the beat marker positions are not impaired by stretching. The markers can be generated in real time (automatically) or read from the source file if available (patched). This method is suitable for rhythmic material that can not be divided into individual beats or notes because the beats or notes overlap each other.
- **Beat marker stretching (smoothed):** Beat-synchronized timestretching and pitchshifting in high audio quality even with extreme time extension. Beat markers are used at the beats or transients. The markers can be generated in real time (automatically) or read from the WAV file if available (patched). This method is suitable for rhythmic material that can not be divided into individual beats or notes because the beats or notes overlap each other. This method requires a lot of processing time which is why it should be used sparingly on less powerful systems.
- **Universal HQ:** Universal methods for timestretching and pitchshifting in very high audio quality. Suitable for all types of audio material. Beat markers are evaluated to improve audio quality. This method requires so much processing time, that a real-time application is recommended only in exceptional situations. Using the apply function is recommended instead.
- **Monophonic voice:** Timestretching and pitchshifting for vocal solos, speech, or solo instruments. The material must not contain background noise, and excessive reverb may also be detrimental to the use of this method. With suitable material the audio quality is very high. In addition, the formats remain when pitchshifting. Beat markers will not be evaluated.
- **Resampling:** Pitch shift and tempo cannot be changed individually. This method requires considerably less CPU time.

Audio effects in the mixer

Equalizer



The 10-band equalizer subdivides the frequency spectrum into ten areas ('bands') and equips them with separate volume controls. This way it is possible to create many impressive effects, from a simple boosting of the bass to complete elimination of a certain range of frequencies. Note: If low frequencies are boosted too much, the overall sound level is heavily increased which may lead to distortion. In this event, adjust the overall volume downward by using the 'master volume' control situated at the bottom center of the effect rack.

Slider control: Each of the ten frequency ranges can be separately boosted or turned down with the ten volume controls.

Link bands: Using this button randomly combines the frequency ranges with each other in to avoid artificial-sounding overemphasis of an individual frequency range.

Touch screen (right EQ section): This is the 'sensor field' of the EQ. Here you can draw any type of curve with the mouse. This will be immediately translated into a corresponding control setting on the left side of the EQ.

Compressor



The compressor is an automated dynamic volume control. It limits overall dynamics, maintains the volume of loud passages so they stay loud, and increases the volume of low passages. A compressor can be put to good use for bass recordings and vocals, but also as a master effect in the mixer for subsequent editing of the overall sound.

Processing is carried out using a "look-ahead" method, similar to high-quality studio appliances. There are no peak overmodulations or other artifacts, as the algorithm can never be 'surprised' by sudden level peaks.

Ratio: This parameter controls the amount of compression.

Threshold: Set the volume threshold, below and above which compression is applied.

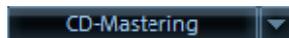
Attack: Sets the algorithm's reaction speed to increasing sound levels. Short attack times can create an undesirable "pumping" sound, as the volume is quickly reduced or increased correspondingly.

Release: Sets the algorithm's reaction speed to falling sound levels.

MAGIX Mastering Suite

The MAGIX Mastering Suite is a special effects rack for use with the mixer master channel. Its effects provide audio mastering functions to give the finished mixed music file a final polish.

The **On/Off switches** switch the effects on and off individually. Each effect has a range of presets that can all be picked from a list along the lower border of the effect.



The settings of all effects can also be saved together as one **preset** so that you can use your ideal mastering setting again for other arrangements.



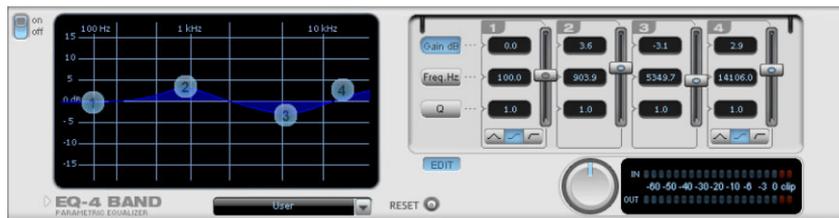
Each effect can be reset by pressing the **"Reset"** button. You can press the **"Bypass"** button to temporarily deactivate the effects.

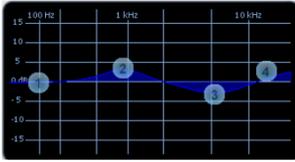
Note: 5.1 Surround mode only provides the compressor and parametric equalizer devices in this case.

Parametric Equalizer

The parametric equalizer consists of four filter bands for adjusting the overall sound of the music track. Each band is a filter with a typical "bell shape". Within a certain frequency range and around an adjustable middle frequency, you can increase or reduce the signal level gain. The width of this frequency range is called bandwidth. The bandwidth is defined by the Q value. The higher the Q value, the narrower and steeper the filter curve.

You can influence the basic sound of the mix by increasing and decreasing the broadband to give it more "depth" (lower center = 200-600 Hz) or more "air" (highs = 10Khz). You can also decrease the narrow bandwidth (high Q value) in the frequency response, e.g. to remove disruptive frequencies.





Graphic: The resulting frequency path of the equalizer is displayed in the graphic. The frequency is spread out horizontally, the increase or decrease of the respective frequency, vertically.

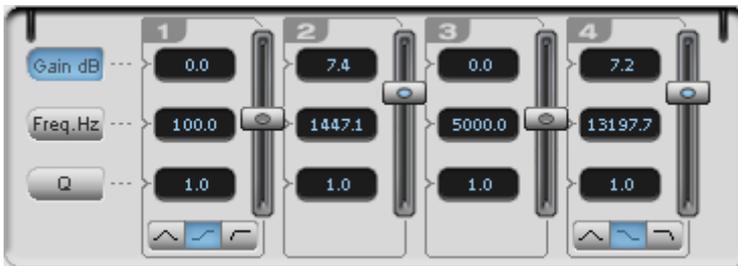
The blue bullets 1-4 symbolize the four wave bands. You can move them around with the mouse until you find your desired frequency response.



Peak meter: The peak meter gives you control over the output level of the equalizer. The adjacent master gain controller can be used to balance the level with the EQ.



Edit: The "Edit" button opens the fine tuning for the four bands:



Parameter selection: With the buttons on the right you can select the parameter that can be adjusted with four faders of each band. Furthermore, there are number keys to enter every parameter of the bands.

Gain dB: These controllers allow you to raise or lower the filter. Setting the controller to 0 deactivates the filter and doesn't use CPU power.

Freq. Hz: The center frequency of the individual filters can be set between 10 Hz and 24 kHz with the frequency controllers. Freely choosing the frequency enables multiple filters to be set to the same frequency in order to have a greater effect.

Q (bandwidth): Set the bandwidth of the individual filters between 10 Hz and 10 kHz.

There is still a peculiarity among bands 1 and 4: The filter curve for these bands can be changed from a normal "peaking" EQ filter (📈) to "shelving" (📉) (this is the basic setting) and high (band 1) or high-cut (band 4) (📉). When using the "shelving" filter, a soft increase or decrease in all frequencies happens above or below the filter frequency, and the Q parameter does not have a function here. With a low-cut or high-cut filter, all frequencies below (low-cut) or above (high-cut) the set frequency are filtered out.

MultiMax



MultiMax is a compressor with three independent frequency bands. The dynamics are edited separately for each band.

The benefit of a multi-band compressor in comparison to a "normal" compressor is that the "pumping" tendency and other disturbing side effects are dramatically reduced when editing the dynamics. For instance, it can prevent a bass top peak from "reducing" the entire signal.

Multi-band technology also lets you specifically edit individual frequency ranges.

Link bands: When this function is activated and one fader is adjusted, all faders are changed in the same ratio. The type of dynamic editing is not influenced.

High quality: When the "high quality" setting is activated, an even more precise algorithm is used, but this requires more processing power. We recommend that you switch on this setting before you export the project.

Setting the frequency band: The settings of the frequency bands are changed directly in the graphic. Simply click on the separator lines and move them.

Bass/Mid/High: These knobs control the level of compression for each frequency band.

Presets

In MultiMax you can use the presets to open further special functions.

Dynamic expander: Compression that is too high will result in audible noise (usually defined as a pumping sound). Particularly radio recordings are recorded with very high compression rates to increase the perceived volume. Unfortunately compression reduces the dynamics (interval between the quietest and loudest part). The expander enhances the dynamics of the recording.

Cassette NR-B decoder: MAGIX Video Pro X2 simulates decoding of Dolby B + C noise suppression if no Dolby player is available. Cassettes recorded with Dolby B or C sound more muffled and slurry if played back without corresponding Dolby.

Noise gate: This cleaning function suppresses noise entirely below a certain noise level. This lets you create, for example, song transitions that are entirely noise-free.

Leveler: This setting automatically sets the entire material to an identical volume level. The volume control knob is no longer required. You can use this function to equalize greater volume differences within a song. To equalize volume variations between different songs you can also use the function "Normalize loudness" from the "Effects" menu.

DeEsser: These special presets are for removing overstressed hiss sounds from speech recordings.

Stereo FX



The Stereo FX enhancer allows you to determine the positioning of the audio material in the stereo picture. If the stereo recordings sound out of focus and undifferentiated, an extension of the stereo base width can often provide better transparency.

Bandwidth control: Adjusts the bandwidth between mono (on the extreme left), unchanged bandwidth (center), and maximum bandwidth ("wide", on the extreme right). Reducing the bandwidth can produce a rise in the level. In extreme cases, e.g. when the left and the right channels include identical material and the bandwidth control is pushed to the extreme left on "mono", the result can increase the level by 3 dB.

Raising the bandwidth (values of 100) diminishes the mono compatibility. This means that recordings edited this way sound hollow when listened to in mono.

Volume control: Adjusts the volume of every single channel, thereby adjusting the entire balance. The reduction of left and right levels is displayed under the control buttons. A centered recording can later be moved to the left or right of the stereo balance.

Stereo meter: This provides a graphic display of the phase relation of the audio signal. You can use it to review the orientation of the signal in the stereo balance and the effect of the stereo enhancer.

In order to achieve greatest compatibility with mono, the display should come closest to a diagonal line. Otherwise some frequency ranges may erase themselves if the stereo signal is played on a mono device.

Karaoke presets: These presets open a special karaoke effect that more or less eliminates vocals. It deletes middle frequencies typical for human vocals during playback so that someone else can do the singing.

In typical karaoke songs, the lyrics are usually displayed as subtitles in the video clip so that the singer can follow along. MAGIX Video Pro X2 also comes with a suitable feature: the title editor, which can be used to create karaoke subtitles. Please read the "Title editor" section in the chapter "Images and video objects".

Digital Audio Meter



On the lower border of the MAGIX Mastering Suite there is a digital audio meter which provides separate control method displays for 10 wave bands on each channel. This device is used for orientation purposes, e.g. selective equalizer editing.

Limiter



Limiter: MultiMax includes a limiter that prevents clipping by automatically lowering the level. Quiet parts remain untouched. Unlike the Compressor, it does not try to change the basic sound.

Automatic track damping

This command automatically dampens the volume of other audio objects to add movie comments. You can also specify whether you want to dampen the original sound of the video, or all sound tracks.

In the dialog, you can activate and deactivate the dampening value.

You can use this command while recording audio (view page 79) (audio recording, advanced options).

Animate objects

Different kinds of animations are provided in the Media Pool. The "Effects" tab under "Video effects" and "Movement effects" provides you with the effects which can be animated using keyframes.

The following objects can be animated:

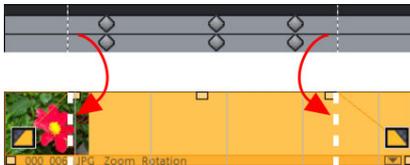
- Video objects
- Image objects (still images)
- Title objects
- MAGIX 3D Maker objects (3D texts)
- Visual objects

Preparing animations

- First, select the object in the Arranger to animate.
- For complex animations, we recommend placing a marker beforehand for orientation.
- In the Media Pool, open the "Effects" tab and click on the effect you would like to animate under "Video effects" or "Movement effects".

Note: For audio effects, activate the effect to be animated in the audio object's context menu.

- If necessary, set up the effect however you would like it for the start of the animation.
- There is a timeline in the lower section of the Media Pool. You can see here which animated effects are applied to the selected object. Keyframes may be placed, selected, moved, and deleted.



There are two stippled lines in the timeline to help you orientate yourself while you edit movement. These lines will help you recognize the start or end of the transition.

Place keyframe

Click the timeline to set the playback marker at the locations where a keyframe should be added.

Note: You can also use the timeline in the arranger for exact positioning. If you are using markers for orientation, then this is the easier choice.

- ◆ The button places keyframes for all parameters required in the animation.

Additional keyframes can be added simply by placing the playback marker at the next keyframe location and changing the parameters

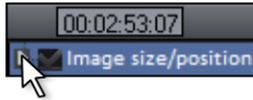
The positioned keyframes can also be retroactively moved via drag & drop.

Copy keyframe

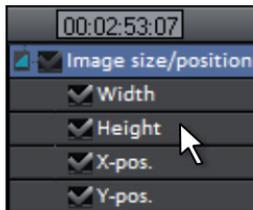
-  Select the keyframes to be copied by clicking them and then press the "Copy" button.
-  Next, set the playback marker at the location for insertion and then press the "Insert" button.

Display keyframes of individual parameters

Multiple keyframes are added simultaneously to effects if they include multiple parameters.



Click the small arrow beside the name of the animated effect to display all of its parameters.



Now all keyframes of the effects parameter can be individually moved, deleted, activated, and deactivated.

Note: Only those parameters are listed which are used for the animation. As soon as another parameter is required for editing the effect, it becomes visible to you here.

Retroactively editing an effect's keyframes

Previously set keyframes can be retroactively and temporally moved and their values edited.

Keyframes can be moved via drag & drop. Simply click on the keyframe and drag it to the desired position.

To change an effect's setting for an already positioned keyframe, click the keyframe and adjust the effect in the Media Pool.

Soft movement

-  Normally, a hard, unnatural pan results after points are set.

This option makes sure that the progression of these movements is executed softer and more naturally. However, you should note that it can happen that a pan slightly exceeds the frame border.

Delete keyframe



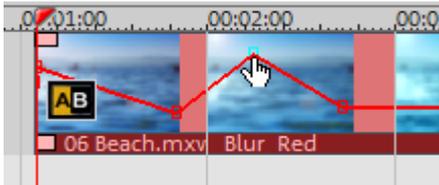
Select the keyframe to be deleted by clicking it.



This button removes the selected keyframe.

Editing an effects curve in the object

 **Activate effects curve:** For each animated effects parameter, a curve is created and placed over the object. Click this button to display the effects curve on the object.



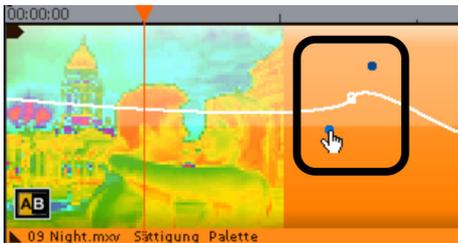
The curve can either be edited with the individual curve points (in "Standard" mouse mode) or by freely drawing the effect curve (in "Curve" mouse mode).

New curve points can be added to the curve in "Standard" mode via "Ctrl + Shift" and clicking; existing ones can be deleted in the same way. Every curve point can be moved with the mouse horizontally and vertically.

Note: The buttons for activating effects curves are first displayed once the first keyframe has been placed.

Change curve shape

Every curve point can be equipped with two Bezier curve handles for softening curves shortly before and after the handles. To create two Bezier curves for a curve point, click the curve point with "Ctrl + Shift" held down and drag the point a little.



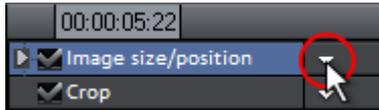
Both Bezier handles are connected to each other and create a soft Bezier curve which is harmonized with the effects curve. They can however be disconnected and adjusted independently ("Ctrl + Shift" + click on the Bezier handles).

Tip: When working with individual curves or Bezier handles, using a higher vertical zoom level is recommended to see and move curves and curve points as precisely as possible.

The following functional shortcuts can be used to quickly and effectively work with with curve points:

- Double-click on a curve point to set the effect value to the default value.
- "Shift" + drag to move a curve point vertically only.
- "Ctrl" + drag to move a curve point horizontally only.
- "Ctrl + Shift" + click on a curve point creates a Bezier handle from the curve point.
- "Ctrl + Shift + click on Bezier handles disconnects the Bezier handles.
- "Ctrl + Shift" + click on a curve creates and deletes curve points.
- "Del" deletes the selected curve point(s).

Effects curves - Additional functions



The context menu can also be opened via the small arrow beside the effects indicator.

Delete effects: Removes the selected effect completely.

Delete effects curve: Removes the effects curve to be created again.

Copy effects curve: The effects curve is copied to the clipboard to be used at other positions.

Insert effects curve: A previously copied effects curve can be inserted elsewhere with this function at any time. This may be in the same object or in another object.

Note: If you would like to insert the curve into a longer or shorter object, then think about setting the option "Connect curve length with object length" correctly **before copying**.

Connect curve length with object length: If this option is set, then changes to object length will affect the effects curve accordingly.

In practice, this behavior is needed rarely, for example if objects are stretched or compressed. The option is deactivated by default for this reason.

Load effects curve: A previously saved effects curve may be loaded via this menu item. This is useful, for example, if you have added your own default animations.

Caution! The current effects curve will be overwritten as another one is loaded.

Save effects curves: Effects curves can be saved as a separate file. This is useful, for example, if you want to add your own default animations and simply load them again at other positions again.

Tip: Be aware that during saving the setting "Connect curve length with object length" is saved as well and applied during loading.

Add sound

In principle, any track in MAGIX Video Pro X2 can be used as a sound track. There are no specific track types. But it is easier not to mix object types within one track.

Load and edit audio files

All importable audio files can be accessed from the Media Pool and previewed (as sound) by a click on the file name. All files can be dragged into the arranger window.

Tracks from audio CDs can be also placed into the arrangement via drag & drop.

Edits, fine positioning, volume adjustment, fading in and out, are all processed using the object tab directly in the arranger.

Various effect curves may be selected for audio tracks, dynamically controlling selectable effects, volume or stereo panorama. More information about this can be found in the chapter "Animate objects", section "Effect curves for the audio track".

Import audio CD

The steps are similar to transferring wave files into an arrangement:

- Insert an audio CD into the CD/DVD drive of the PC.
- Go to your CD/DVD drive in the Media Pool. The individual CD titles appear in the file list.
- A single mouse click starts the playback of the CD title for prelistening.
- Drag & drop the CD title into a track in the current arrangement and the song will be grabbed and copied to the hard drive. The files will be saved in the "Import" directory ("Program settings -> Folders")
- The audio object appears in the track and can be played back or edited immediately.

A special program is used for digitally importing the audio data from the CD/DVD drive. Some drives do not support this mode (an error message will be displayed) or support will only be of low quality (the audio objects will contain crackling).

If this method does not yield a satisfactory result, you can open the CD manager via the menu command "File -> Read tracks from audio CD". This option opens the CD manager where you can select tracks from audio CDs and import them into the arrangement. You can also select the drive if you have more than one and adjust the import settings.

If this is also unsuccessful, you can also play the CDs using the drive and record them with the sound card. More can be found in the "Recording audio CDs" (view page 154) section.

CD Manager

This option opens the CD Manager where you can select tracks from audio CDs and import them into the arrangement. You can also select and configure the CD-R if you have more than one drive.

The CD Manager lets you import audio data using most CD and DVD drives. You may have to contact your technical support to find out which drive is suitable. Data is imported

digitally. Audio tracks are imported into the arrangement as WAV files and saved in the Import directory. (Program settings -> Folders).

To import audio tracks you should proceed as follows:

- Select the desired CD-R drive if you have installed more than one drive.
- Click on the "Track list" button.
- Select the desired title from the track list (using the key combination Shift or Alt and the cursor keys).
- Click on "Copy selected track(s)."
- The audio material is now copied from the CD drive onto hard disk. The progress is displayed.
- Close the track and drive lists. In your arrangement there are now one or several new objects that contain audio material of the disc.

Drive list dialog

Tracklist: This button opens the track list dialog for copying one or multiple tracks.

Configuration: This button opens the configuration dialog where you can make various special settings, SCSI IDs, etc.

Reset: Restores the default settings of the drive.

Add drive: Creates a new drive entry in the list, which you may wish to adjust.

Delete drive: Deletes a selected drive from the list.

Save setup: Saves the current drive list and all configuration data in a *.cfg file.

Load setup: Loads the current drive list and all configuration data from a *.cfg file.

The tracklist dialog

Copy selected track(s): This button starts audio copy. A new object is created for every track in the arrangement and the corresponding track marker is created.

Play: Starts the audio playback of the first selected track on the list (for testing).

Stop: Stops playback.

Pause: Stops playback so as to start it later from the same position using the "Resume" button.

Resume: Resumes playback if it had been paused before.

Select all tracks: All audio tracks are selected, for instance, to copy the entire CD. Track markers can also be made using Shift or Alt pressed together with the arrow keys. Multiple tracks can be selected by pressing "Ctrl + mouse click".

Deselect all tracks: All markers are reset.

The CD-ROM configuration dialog

Drive name: Lets you edit the name of the drive in the list. This is useful if you create more than one entry accessing the same physical drive.

Host adapter number: Lets you specify the number of your SCSI adapter - normally "0".

SCSI-ID: Lets you set the ID of your CD-ROM drive. Be sure to set the correct ID; there is no error checking!

SCSI-LUN: Select the SCSI-LUN parameter, normally "0".

Alias: Lets you select the manufacturer type of your CD-ROM drive.

Normal copy mode: Copies the audio data without any software correction.

Sector synchronization copy mode: Copies the audio data using a correction algorithm. This is especially useful, since many CD drives have problems finding an exact position again and gaps can occur.

Burst copy mode: Optimizes the speed of the copy process; no software corrections made.

Sectors per cycle: Defines the number of audio sectors that should be read from the audio CD in a read cycle. The higher the number of sectors, the faster the copying process. Many SCSI systems have problems with more than 27 sectors.

Sync sectors: Sets the number of audio sectors that will be used for software correction. A higher number results in a better synchronization but also in a slower copying process.

Scanning CD tracks with the recording dialog

Some CD-ROM drives do not support this mode (trying digital extraction results in an error message), or they only support it with difficulty (results in audio objects with crackling noise, skips, etc.). In this case, the CD may be "scanned" by recording it into the computer. When recording the CD to the computer, the CD titles are simply played back from the CD-ROM drive and are re-recorded as .WAV by the sound card. Before recording a CD to your computer, change the program settings in the "File -> Audio/Video options" menu. To ensure easy recording of the CD titles via the "Recording" dialog, the audio output on the CD-ROM drive must also be connected with the sound card input. This connection is usually already set up on modern multimedia PCs. If not, this is easily done by installing a cable inside the computer case.

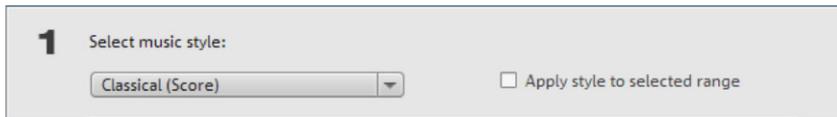
MAGIX Soundtrack Maker

The MAGIX Soundtrack Maker adds atmosphere. Music tracks corresponding to the specified mood are generated automatically. Even mood changes are possible.

Open the MAGIX Soundtrack Maker using the Edit > Assistants (view page 223) menu. The work is split into 3 steps.

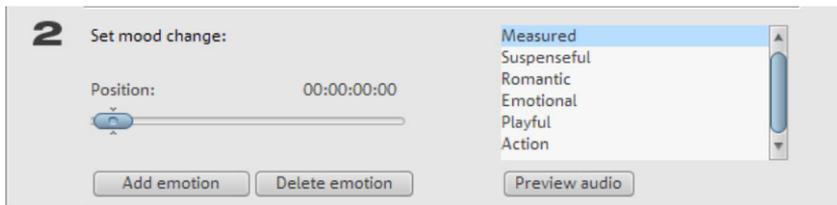
Then close the dialog by clicking on "Apply". If you click on "Cancel", the dialog will be closed and all changes will be discarded.

Select music style



First, choose the musical style you want. The option "Apply only between start and end marker" lets you limit the length of the background music you want to create. You can also set the start and end markers (view page 100) with the left and right mouse button while MAGIX Soundtrack Maker is open.

Set mood change



You can also select a mood from the list.

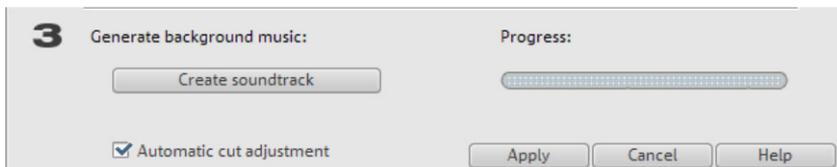
Preview: Here you can preview your selected emotion.

Position: With the position slider you can go to a certain position to set the emotions at a certain position. Instead, you can also move the start marker with the left mouse button. The preview will be displayed in the video monitor.

Insert emotion: This button inserts the emotion at the current position. MAGIX Soundtrack Maker will then suggest a new position for the next emotion by adjusting the position slider. Of course, you can also position it elsewhere and insert additional moods.

Delete emotion: Deletes the current emotion.

Generate background music



One click on "Create soundtrack" creates a new soundtrack.

"Progress" shows the current status.

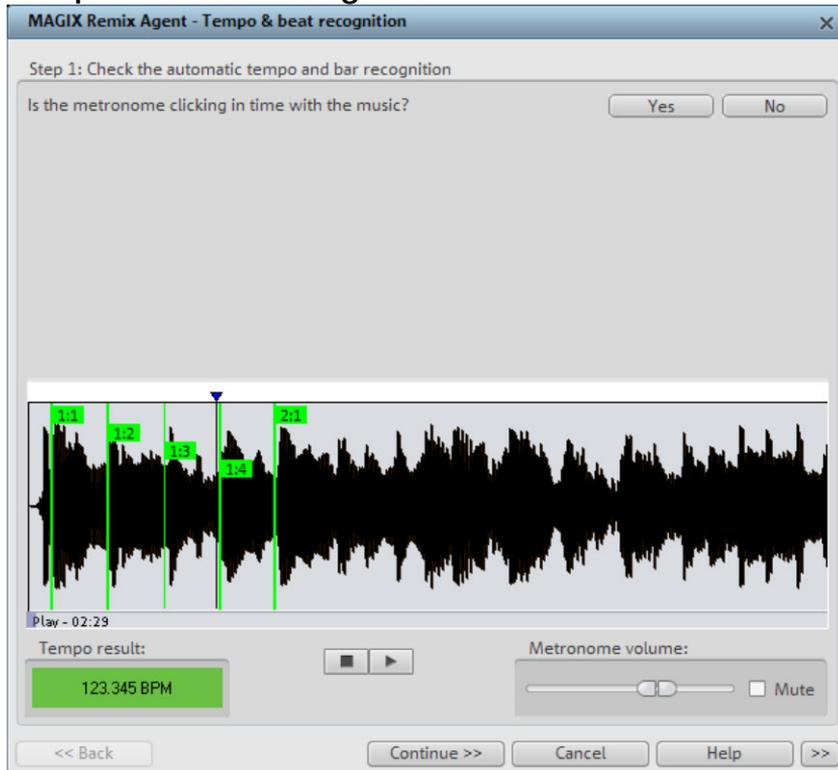
Variations

If you don't like the background music created, you can create variations.

You can do this for the entire background music as well as for individual emotions:

- If you want to vary the entire background music, simply click on "Create variations".
- If you only want this to apply to a certain emotion, you should first go to it with the position slider in the dialog (or the start marker on the main screen). Then activate the option "Vary only selected emotions". Now click "Create variations".

Tempo and beat recognition



The Tempo and beat recognition in MAGIX Video Pro X2 is a special tool for video clips. It analyzes the rhythm of a musical piece. The basis for this analysis is the rhythm speed, measured in BPM (Beats per Minute).

After determining the BPM value of the song, the song will be subdivided into short passages of equal length. The individual objects having the duration of exactly one bar at first stay grouped, so as not to accidentally "rearrange" the song. (Of course, if you like you can do just that! To do so click on "ungroup".)

When editing only the resulting object edges are important. Because all objects can always latch to each other on their edges, videos can be arranged to transition exactly to the beat of the music: The points along the track where videos lock together lie exactly on the bars of the music.

Prerequisites for using the beat recognition assistant

- Songs must be longer than 15 seconds
- Songs must be "rhythmic" (i.e. they can be danced to)
- Songs must be in stereo format

Preparation - Setting the start marker and object end

Before opening the Auto Remix Assistant, you should set the start marker at the position in the song object in the arranger where you want detection to start. If the song contains a long intro without beats, set the start marker after the intro. As a rule of thumb, the Auto Remix Assistant should always be "fed" dance music.

- The start marker should be set before a quarter note beat or, better still, briefly before a beat at the start of a bar.
- If the start marker lies before the song object, the object is examined from the beginning.
- If detection is not performed by the end of the song, the object can be shortened accordingly with the object handle at the end of the object.

Automatic Tempo Recognition

When the Auto Remix Assistant is launched, the selected song object is analyzed and played back. A metronome begins to click according to the result and lines visualize the positions of the quarter notes found in the wave-shaped display.

The following cases are differentiated:

- Position of the start of a measure (the one): red line.
- Position of the other quarter notes (the two, three, and four): green lines.
- Reliably recognized positions: thick lines.
- Unreliably recognized positions: thin lines.
- When tapped, blue lines appear.

If the tact and tempo information is already present, points are indicated above the display at the appropriate positions. The metronome volume can be regulated below and to the left of the wave-shaped display. To the right, the BPM value is indicated. If a valid BPM value was found, it is displayed in green.

If the metronome clicks in time with the music, the measure start is correct. If not, you can correct the tempo manually.

Setting the manual and and Onbeat/Offbeat

If the result is incorrect, you can help the Auto Remix Assistant with a few mouse clicks on the correction buttons.

There are two possibilities:

On the one hand, the "Tempo correction" list offers alternative BPM numbers which could also fit with the music. The adjustable BPM values are detected automatically – the total BPM can therefore deviate from song to song.

For more difficult audio material, we recommend using the "Tapping input" mode. Either the "T" key must be pressed or the "Tap tempo" button must be clicked with the mouse in time with the music. With repeated tapping of the tempo correction button, one should keep an eye on the color in the BPM display. In the "unlocked" condition (red), the tapping is not in time with the music. One should tap until the "locked" condition is displayed. After a short time, you will hear if the result is correct via the metronome.

Subsequently, offbeat correction takes place as required. If the detected quarter note beats lie around the length of an eighth note (transferred behind the real positions of the quarter note beats), one or more alternatives can be selected from the onbeat/offbeat correction list.

Determining the start of a measure

Next, the starting point of the measure is corrected. The beat at the start of the measure must always agree with the high tone of the metronome and/or the red line in the wave-shaped display.

Corrections can be made by tapping; If the start of the measure can be heard, tap with the mouse or press the "T" key. Alternatively, you can also select how many quarter notes the "one" is to be pushed to back.

If the starting marker was set briefly before the first beat of a measure, this correction is not necessary.

Note: With all corrections, the metronome and visualization react to the lines in the wave-shaped display only after a short delay.

Using BPM and beat detection

Now you may select one of the actions to be adapted to the arrangement song (or vice versa) or cut up the songs at the ends of a measure.

Save only Tempo & Beat information

Only wave file data is stored. This makes sense if some manual post-correction is required for determining beat/tempo.

When the data is stored, tempo & beat regulation can be released for future tempo adjustments or to create object remixes.

Tempo adjustment

Setting the object tempo to the arrangement tempo

This fits the object length to the existing arrangement. Three different procedures are possible: timestretching, resampling, or audio quantization.

- Timestretching keeps the pitch of the song constant, but sometimes the sound quality can suffer.
- Resampling changes the pitch (similar to changing the speed of a record player), and retains the sound quality of the song as much as is possible.
- During audio quantization, the audio file takes the tempo adjustments into consideration as if the first remix object (see below) were created and combined immediately into a new audio file. If the recognition is uncertain, extreme tempo fluctuation may result. It is particularly important to set the starting marker so that the tempo is recognized definitely. The advantage of audio quantization is that small tempo fluctuations in the music balance out. The start of the measure always agrees with the start of the arrangement measure and never plays out of time.

Setting the arrangement tempo to the object tempo

The arrangement adopts the detected BPM value. If you would like to use the cut-up song as the basis for a new composition (e.g. for remixes), then this option should be active.

Creating remix objects

The song is cut by beat into individual objects. Some applications may include:

- To produce loops from complete songs which can then be used with other material. Most importantly, not all remix objects are suitable as loops. Ideally, less complex material should be used, e.g. drums from an intro.
- To remix songs, thus changing the sequence of the objects, cutting or doubling beats or to enrich the song with other loops or synth objects.
- To mix two songs: If percussion and tempo fit perfectly, can you blend the songs without "side effects"?

This option can be activated later from the "Object" menu, provided that the tempo data is stored.

The "Audio quantization" option: Audio quantization fits new objects exactly in time with the arrangement.

With homemade music, tempo fluctuations are common, and therefore different measure lengths may result. Nevertheless, so that the objects fit into the rigid timing pattern of the VIPs, the time processor is activated automatically and object timestretching is used to correct the different lengths.

Setting resampling for small corrections: If the necessary corrections are very small, better quality resampling can be used instead of timestretching. Afterwards, you should not change the master tempo any longer, since definite pitch changes may arise.

Remix objects in "Loop" mode: New objects are set in "Loop" mode. When extending the object with the right object mouse handle, the original length of the object is played again and again.

Setting the arrangement tempo to the object tempo: (see above)

Note: Time correction assigned to objects can be subsequently cancelled if the time processor is called up and edited ("Timestretch/Resample object", or double click on the object to open the FX racks associated with the time processor).

Cancel: The dialog is closed.

Problems and Remedies regarding the Auto Remix Assistant

Problem: The playback stutters, the metronome is suspended, the computer is overloaded... (on older computers.)

Remedy: We recommend changing to wave drivers ("P" key, "Playback parameter" dialog) instead of DirectSound.

Problem: The metronome does not work and there are no lines on the the wave-shaped display.

Probable cause: The material does not contain beats or the song contains a passage without beats.

Remedy: The song should be limited in such a way that only rhythmic passages are contained.

Possible 2nd reason: Inaccurate tapping or a false BPM value has been entered.

Remedy: Try the tempo correction buttons or tap until the "locked" condition is attained.

Problem: The metronome sounds inaccurately or is jerky, the lines in the wave-shaped display are irregular and thinly drawn.

Adding a sound track using MIDI songs

A few words about MIDI: MIDI files do not contain the actual sounds like wave files, only the note control information. This data is interpreted to effect playback by the synthesizer chip on the sound card. This has several advantages:

- MIDI files need a lot less memory than wave files, so more MIDI files will fit on a CD-ROM.
- MIDI files can be adapted to any beat (BPM) without affecting the sound; only the playback tempo needs to be changed.
- MIDI files are very easy to transpose to another pitch; a section in a song does not have to be saved in several different keys. The version in C major is sufficient, and it can then be transposed to any key by simply clicking with the right mouse button.

The disadvantage of MIDI files: The sound is not true audio. The audio is only produced when the synthesizer chip on the sound card plays it back. As a result, high-quality sound cards or external synthesizers will sound completely different and better than standard sound cards, depending upon the settings for playback "voices". Therefore, it is definitely worth using a good sound card or external MIDI synthesizer with MAGIX Video Pro X2!

Arranging MIDI files

Integrating MIDI files in an arrangement:

Search for a directory containing MIDI files using the Media Pool located at the left edge of the screen. Click on a file, and it will be played back immediately. Now drag the desired file into the arrangement to finish the process.

An object will appear which displays the MIDI notes as dots. The high notes are dots in the upper section, and the lower notes are the dots further down in the lower section. You can even see the velocity of the notes. The louder the note is played, the brighter it appears on the screen.

MIDI objects may be arranged, the volume may be modified (middle handle) or fades (in or out) may be added (top right and left handles) in the same way as audio, video, or synthesizer objects. The "element bar" lets you "open" an entire track instantly from a MIDI loop. If a MIDI file seems to be empty, check the MIDI replay device in the "Playback parameters" window ("P" key or menu "File -> Settings -> Playback parameters"). Your sound card driver or your MIDI interface must be set correctly to hear MIDI!

MIDI interface and external sound generator

Of course, MIDI objects can also be played back over a MIDI interface into external synthesizers, sound modules, etc. Start by setting FX to 1.0. The timing between MIDI and audio can be balanced later if you notice a delay between the two. This is important for very slow arrangements, since the sample rate on the sound card is not entirely. The MIDI drivers can be set in the "Playback parameters" window ("P" key or menu "File -> Settings -> Playback parameters").

Convert MIDI files to audio files

Before exporting (as a video, for example) an arrangement, all MIDI objects must be converted into audio objects first, since these contain only pure control information for the sound reproduction before they are exported.

First, connect the MIDI synthesizer (usually the sound card) output to the sound card input. Now the MIDI file can be played back and simultaneously recorded as an audio file using the record function. The result is an audio file that can be processed and exported together with other multimedia files.

Synthesizer

Creating synth objects

The software synthesizers are located in the "Audio effects presets" folder in the Media Pool's "Effects" tab.

Icons appear there for all available synthesizer plug-ins. Use drag & drop to add them to the arrangement. A synth object appears in the appropriate track and the plug-in's interface opens. Synth objects can be programmed via this interface.

Programming the synth object

Depending on the plug-in, various functions to create and control sound can be applied via the operating console.

To monitor programming, playback can be started and stopped at any time with the space bar while the operating console is open.

Arranging the synth object

Once you have finished programming the melodies or rhythms of the synth object, you can close the operating console and arrange the synth objects on the tracks. They can be stretched or compressed, faded in and out, turned down or up, etc. with the help of handles: These steps are the same for all objects.

The operating console of every synth object can be reopened at a later stage by double clicking or via the synth button if you would like to reprogram the object. In addition, you can drag as many other synth objects of the same software synthesizer as you like onto the tracks and program them separately.

Effects and mix down of synth objects

Just like audio objects, synth objects can be edited with any available master effect. Please read the chapter on "Audio effects" for more information.

In the real-time mixer, it is possible to exactly adjust the level of every synth track.

The mix down function mixes all tracks, including the synth objects, into one file so that tracks and computing power for new objects are released.

Atmos

Atmos is a synthesizer which can be used to easily create realistic nature sounds in no time. From thunder and lightning to animal sounds and traffic noise, Atmos helps you design natural-sounding atmospheric noises for your projects.



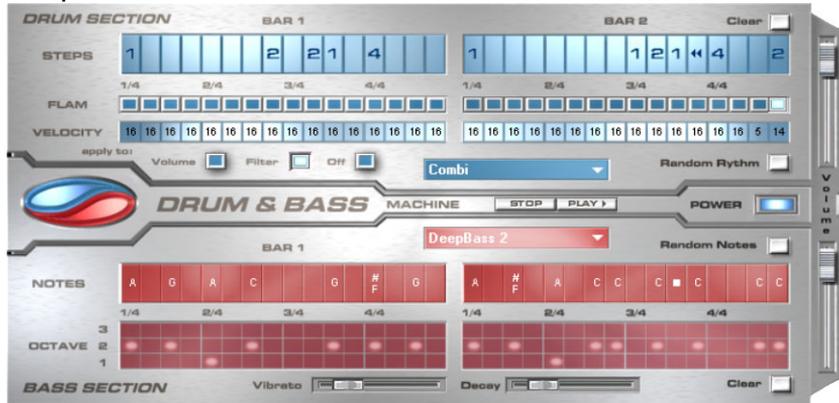
- In the upper border window, select the top category "Scenario". You can select a desired nature sounds category (for example, "Thunder and Lightning").
- In the middle of the window, a collection of control elements appears for designing the desired "Ambience". Each element has its own description (e.g. "Thunder") and two faders, i.e. "Volume" and "Intensity". The "volume" control adjusts the loudness portion of the element. The "Intensity" fader controls the behavior of the sound, depending on controller element. For example, with "Thunder", you can set how often thunder and lightning should sound; with "Rain", the strength of the rain can be regulated (if moved to the far left, light rain can be heard, while if moved to the far right, a downpour with loud splashing noises is audible).
- At the bottom right border you will find a master volume fader with which the master volume of the synthesizer can be set. Furthermore, the "Randomize" setting is also located here. This way you can change the settings of the control elements by yourself.

Drum & Bass machine 2.0

The Drum & Bass machine is a dual synthesizer, uniting both distinct styles of drum'n'bass in one piece of equipment to produce fast beat crashes and rumbling bass lines. With the Drum & Bass machine you need no special skills to create authentic sounds for your drum'n'bass songs.

A tip: The typical speed for Drum'n'Bass is usually around 160-180 BPM. The Drum & Bass machine also fits in perfectly with other music styles, e.g. bigbeat (120 BPM) or trip hop (80-90 BPM).

Setup



The top half of the synthesizer controls the rhythm section, the bottom half controls the bass section. Between the two, on the left side you will see a symbol where both sections can be turned on and off individually. You can turn off the bass section, for example, so that you take only the drum section break beat into the arrangement. The MAGIX Video Pro X2 arrangement mix will then only include the drum section in the mix file.

The volume control is on the right border, controlling the volume for both sections. The play and stop buttons allow you to listen to your drum'n'bass creations up front in MAGIX Video Pro X2.

The "Drum'n'Bass" label covers a menu containing functions to load and save drum'n'bass patterns (Load machine state/Save machine state), and functions to delete or generate patterns (Clear all/Random all). The submenu "Velocity presets" contains some help functions for programming of the velocity row.

The rhythm section (top half)

You can easily create complex and authentic jungle break beat sounds. In a professional recording studio, jungle break beats are created by dividing any given drum loop into several small "bits" and putting them back together in a different order. This lengthy process is significantly simplified by the Drum & Bass machine. You just have to design your own new play sequence.

You set up the new sequence in the top ("steps") row. The blue cells indicate the individual sections ("notes") for the subdivision of the loop.

A left mouse click on one of the blue cells allows you to select one of six possible symbols. Each symbol represents a different note or other way of playing the note. Every time you click on one of the blue cells, the next symbol is chosen.

Rely on your own intuition and creativity when programming your beats. It is not absolutely necessary to know the exact meaning of each individual symbol in order to create cool and authentic beats.

Summary symbol description:

- 1:** Play drum loop from beginning
- 2:** Play drum loop from the second note
- 3:** Play drum loop from the third note
- 4:** Play drum loop from the fourth note
- Backward symbol:** Play backwards from this point
- Stop symbol:** Stops play

The right mouse button allows you to delete the step cells individually. The "Clear" button on the right deletes all step cells; the drum loop is played in its original sequence. The "Random rhythm" button generates a random sequence. You can then alter the rhythm as you wish.

By clicking on the blue field in the bottom part of the rhythm section you open a pop-up menu where you can select the drum loop sound. If you select a different drum loop, it will be loaded and played as programmed by you.

In the "Flame" row you can set the note to be played twice quickly in succession instead of only once, allowing you to program rolls and fill-ins.

The "Velocity" row allows you to set intensity values between 0 and 16 with the mouse (left mouse click increases value, right mouse click decreases value). Use the three buttons under the "Velocity" row to determine how these values will affect the sound of your loop. If you select "Volume", the velocity value alters the volume for this cell (16 = loud, 0 = quiet). If you select "Filter", the velocity value alters the filter strength for this cell (16 = sharp, 0 = muffled). The "None" button blocks use of the velocity values.

The bass section (bottom half)

The bass section allows you to create the right bass lines for your rhythm quickly. As in the rhythm row, there are two-step rows.

- With the first "Notes" row, you determine the sequence of the notes, i.e. the sound sequence.
- By clicking on a cell with the left mouse button, you open a pop-up window, where you can select the notes.
- By clicking with the right mouse button, you delete a cell.
- If you click on an empty cell with the right mouse button, you will see a "Stop" symbol. This function is similar to that in the rhythm section, i.e. it stops the bass sound at this point.
- In the "Octave" row you can determine the bass octave sound. Octave 1 creates a deep tone, Octave 3 a high tone. You can only set the octave values if there is a note in the row above.
- As in the rhythm section, there are also buttons for "Clear", "Random notes", and a red selection field at the top border of the bass section. The red selection field allows you to set the bass sound.
- Underneath the step rows, you will also find two sliding controls for sound adjustment. You can use the "Vibrato" control to make the bass tone "swing" at its pitch. If the control is pushed all the way to the right, the swing will be stronger; all the way to the left will have no effect on the pitch.

- With the "Delay" controller you can set a time for the sound to completely fade out. All the way to the right makes the sound fade out quickly (after approx. 1/4 second); all the way to the left means ongoing sound.

Mixer



MAGIX Video Pro X2 includes a real-time mixer with a master effects section that professionally mixes all the tracks within an arrangement. The mixer can be opened by pressing the "M" key or accessed via the toolbar in the main window ("View -> Mixer").

Mixer tracks

Each track has its own volume or brightness fader. This fader also affects added MIDI objects.



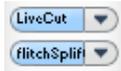
The stereo position for each audio track is defined with the Pan controls.

The "Solo" button switches a track to solo mode, i.e. all other tracks are muted. The "Mute" button mutes a track.

Double clicking any of the controls resets them to their default passive setting (no boost or cut in level), and no processor output will be required.

Track effects

Besides audio effects in the object (audio cleaning, reverb/echo, timestretch/resample, Surround, etc.), a separate track effects rack with equalizer, reverb/echo, compressor as well as plug-ins can be used in each mixer track.



The plug-ins are loaded via the plug-ins slot.



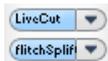
You can open the track audio effects rack with the FX button.

A light blue track FX button indicates that effects are active in the track. Please read the chapter "Audio Effects (view page 133)" for functionality and handling of the individual audio effects.

DirectX audio plug-ins

The MAGIX Video Pro X2 supports DirectX audio plug-ins. These are usually effects modules such as reverb, equalizer, etc.

The DirectX system must be installed on your PC prior to using the DirectX plug-ins – a manual installation is only required on rare occasions. Generally, DirectX is already available through the Windows installation. If your PC does not have the DirectX System installed or if it is out of date, you can find a DirectX installer on the MAGIX Video Pro X2 disc. Of course, DirectX plug-ins have to be installed first, depending on the plug-in used.



Two so-called "slots" for track effects are located in the channel strip of the mixer for the corresponding track, plus in the FX tracks.

Clicking on the small triangle will let you select an effect from the list. Select "No effect" to remove a plug-in from the slot. A left click temporarily disables the plug-in. Active plug-ins are displayed in light blue. Right clicking on the slot opens the settings dialog of the plug-in.

FX tracks (effect tracks)



Two FX send controllers (FX1 and FX2) are located below the plug-in slots.

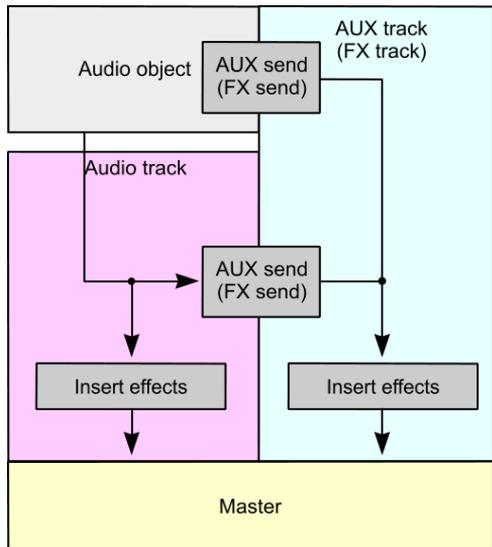
You can determine the volume at which you want the signal to be routed to the two available FX tracks.

An FX track is a complete, additional mixer track which provides a complete track FX rack and two plug-in slots for use as a send effect.

A send effect differs from a normal effect found in the track (insert) insofar as it can edit the signals from multiple tracks or objects simultaneously.

A send effect roughly corresponds to the scheme of a parallel switch, while an insert on a track is like a series switch.

A special feature offered by MAGIX Video Pro X2 is that audio objects can also send directly to the FX track.



The FX are usually hidden in the mixer. They will be displayed as soon as one of the FX send controllers is used.

In the first FX track, the reverb function is activated as standard, since it is the most important application of the send effects.

The volume controllers regulate the volume of the FX track and correspond with the old AUX return controller. "Mute" is used to switch the FX portion on and off. "Solo" enables you to single out FX individual tracks. The track's peak meters which send to the FX track are displayed in grey.

Master track

The FX button and the plug-in slots function exactly like in the tracks. The FX button will open the **master audio effects rack**. The complete mixer settings including the FX tracks can be reset with the "**Reset**" button.

MAGIX Mastering Suite: Opens the MAGIX Mastering Suite (view page 143).

5.1 Surround: This button switches the mixer to "Surround (view page 172)" mode.

Both faders control the total volume.



Link button: If you deactivate the link button, you can control the volume of the right and left channels individually.

Volume and panorama automation

You can automate the volume and panorama curves on a mixer track. This means you can record this movement of the track volume faders and panorama controls while playing the movie. This way, for instance, you can simulate the movement of a sound source and volume adjustment from left to right instantly during playback.



As long as the **"Auto"** button in a track is active, all movements of the volume and panorama controller are recorded.

The automation is displayed as a curve in the arranger and can be edited later with the mouse.

Unlike the automation curve of the mixer, the dynamic effects are track-dependent, i.e. regardless of the objects contained in the track.

Audio effects

For more information about this, see the section entitled "Audio effects" in the chapter "Effects and titles (view page 133)"

5.1 Surround

MAGIX Video Pro X2 supports playback and export in real 5.1 Surround.

Requirements

You will require a sound card or a sound chip which is integrated into the computer's motherboard with six individual outputs to playback the individual channels:

- front left (**L**) / right (**R**)
- centre (**C**) / subwoofer (**LFE**)
- back left (**Ls**) / right (**Rs**)

Surround playback is possible with all audio driver models (see Playback settings), (Wave, DirectSound, ASIO).

DirectSound is supported by most of the standard sound cards.

Wave drivers are similarly supported by many standard sound cards; however, individual sound cards (for example, Soundblaster) require access to DirectSound.

Note: 24-bit Surround playback is often not possible, therefore please select 16-bit output.

For Surround output with **ASIO** drivers, you will require a 6-channel-capable ASIO driver (e.g. MAGIX Low Latency). Older multi-channel audio cards that activate their stereo output couples via multiple separate drivers are not suitable.

Output of the six output signals is achieved in all driver models in the output channels in the same (standardized) order:

Channels 1/2: L-R

Channels 3/4: C-LFE

Channels 5/6: Ls-Rs

When using WAV or ASIO drivers, the loudspeaker settings normally have to be changed to 5.1 playback in the control panel.

In order to do this you have to start the Control Panel for "Sounds and audio devices" and select "Loudspeaker settings", "Advanced", "5.1 Surround loudspeakers".

On most systems the program does this automatically while using DirectSound.

Importing and exporting surround audio files

Import

When importing MPEG-2 files with Dolby Digital sound (e.g. VOB files from DVDs or DVB-TV recordings), you can choose from two different applications:

- **Mixdown:** Surround sound is displayed as an audio object under the video object, playback of the Surround track is reduced and recalculated to stereo playback. Use this option if you don't wish to edit the Surround sound, but rather wish to export it. You can also use it if you think that a stereo export is enough to meet your requirements
- **Surround mix:** The individual Surround channel pairs (L-R, C LFE, Ls-Rs) are split into three audio tracks as separate objects and the mixer is then set to Surround mode (view page 171). This mode allows you to change the Surround mix.

In MAGIX Video Pro X2 the import of Dolby Digital Surround is always executed as a mixdown. MAGIX Video Pro X2 can also import interleaved wave files (multi-channel wave files), multi-channel Windows Media Audio and MP3Surround files; a Surround mix is always created.

Export

Surround mix exports can occur in any one of the following formats:

- 6-channel PCM files (interleaved wave)
- Windows Media files (as a Surround soundtrack of a Windows Media Video or WMV-HD disc)
- MPEG-2 files with a Dolby Digital audio track

The files created are fully compatible with the normal file formats, this means that they can also be played on computers incapable of playing Surround (in normal stereo).

The export is performed via the same menu commands (e.g. "File -> Export movie -> Audio as wave") like the normal stereo export. You will then be asked if the export should be in stereo or Surround format.

Export Dolby Digital Surround via Smart Encoding

You can also burn material to be exported with Surround sound again without the need for the Dolby Digital codec (in MAGIX Video Pro X2 or without Dolby Digital encoder activation) to DVD or export the corresponding MPEG files while keeping 5.1 Surround Sound. To do so, use the "Smart Rendering" option which transfers the unprocessed parts of the output material without renewed encoding. Read more on this in the MPEG encoder settings section "General settings (view page 298)".

The import has to be executed as a mixdown, the audio material cannot be changed (no fades, no audio cleaning, no volume adjustment). Harder cuts, e.g. removal of commercials are allowed, but they may not happen precisely according to the frame, but at the GOP (group of pictures) borders.

The Mixer in surround mode



To activate Surround playback, open the mixer ("M" key) and click on the "5.1 Surround" button in the master.

In the master, 6 peak meters for the individual channels are shown. The normal panorama button turns into a representative display of the Surround editor (see below (view page 172)) which can be opened by clicking on the display.

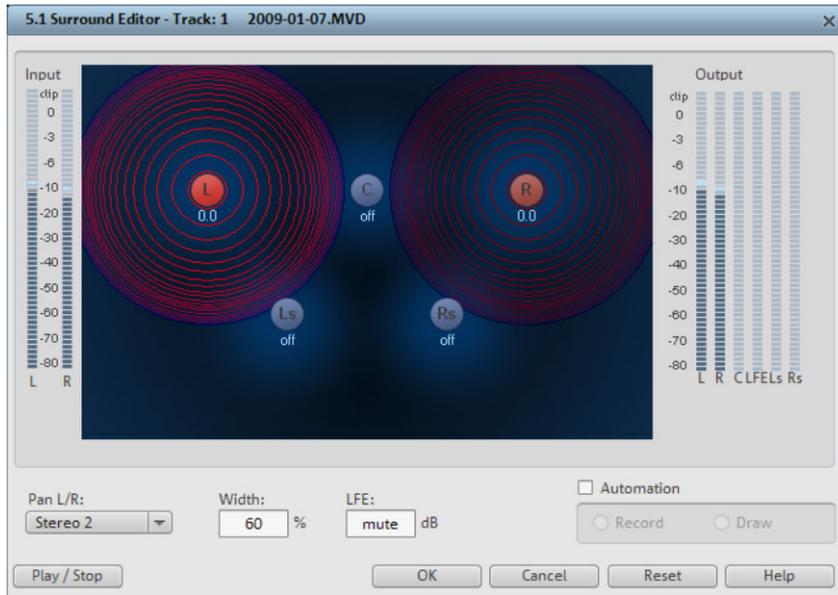
The Surround editor is also available to the FX tracks (see "Mixer"). For example, you can send the original track to the front loudspeaker **L/R**, the FX track however will remain at the rear loudspeakers **Ls/Rs**.

The master volume is applied to all channels, here the left controller influences channels L and Ls, the right controller; channels R and Rs and the middle value of both controller; the channels C and LFE.

The master plug-ins are only applied to the front channels!

In the master FX rack of the MAGIX Mastering Suite, the full effect palette is not available in 5.1 Surround mode, but rather only the compressor and the parametric equalizer (view page 143) (from the Mastering Suite). The settings of these effects have the same effect on all six channels.

5.1 Surround Editor



The selected mixer track's 5.1 Surround editor allows you to arrange the audio signal of a track (displayed as two red sound sources) in stereo space. The signal is dispersed to the 5 (blue) loudspeakers which represent the individual Surround channels.

There are 6 channels:

- L:** front left
- R:** front right
- C:** center
- Ls:** back left/left Surround
- Rs:** back right / right Surround
- LFE:** subbass (**L**ow **F**requency **E**ffect) channel

Dispersing the signal to the 5 loudspeakers occurs after the sound source emits a sound field of a certain level (displayed as red circles). The further away a loudspeaker's source is, the lesser its share of the corresponding loudspeaker channel. The position of the loudspeaker can be moved with the mouse.

The subbass share (**LFE**) is set directly from the corresponding value table. It can also be changed by dragging the mouse.

There are various modes in which you can use the source signal:

- **Mono:** The (stereo) source signal is seen as mono material, the left and right channels are mixed together and arranged together. The original stereo information is lost here.
- **Stereo 1:** Similar to mono mode insofar as the left and right channels are moved together, but only a portion of the left source is audible in the loudspeakers **L** and **Ls** and only a portion of the right source in the right channels **R** and **Rs**. The stereo information remains as intact as possible.
- **Stereo 2:** The left and right channels can be moved individually. The distance between the left and right source is retained when you move the left source. You can move an individual source by holding down the "Alt" key.
- **Center/LFE:** Only the left channel is arranged. In return, the LFE share is drawn solely from the right channel. This mode is only important for importing Surround material.

"Width" determines the level of the sound field of an individual source.

Automation:

Panning of the sound source on the loudspeaker can be automated to simulate movements in the room.

For this to happen "**Automation**" must be activated. There are two methods to create automations: record and draw.

To **record** (when automation is on), the sound source is moved between the loudspeakers during playback. When recording the automation, the "Record" check box lights up red.

The draw function is an alternative to drawing out complex movements. When drawing in active mode, all panning movements are transmitted to the time interval between the start and end marker (when the mouse button is held). You can thus draw the entire movement curve for the selected time range.

"**Reset**" deletes surround automation from the track.

There is no automation of the parameters for width and LFE, of the distance between the left and right source in "Stereo 2" mode, or of the loudspeaker positions.

Transfer Surround tracks from Samplitude/Sequoia to MAGIX Video Pro X2

Note: In order to be able to use Samplitude/Sequoia parallel to MAGIX Video Pro X2, the programs will have to be synchronized with each other. Read more about the topic "Synchronizing Samplitude/Sequoia with MAGIX Video Pro X2".

Existing Surround tracks are transferred directly to MAGIX Video Pro X2 from Samplitude/Sequoia. Set a playback marker first in MAGIX Video Pro X2 at the starting position of the movie – the wave file will be added at the position of this marker.

Note! In MAGIX Video Pro X2, the last six tracks must be free to ensure that correct transfer can take place. Set the number of tracks to a higher number in the Movie settings as required.

- Switch to Samplitude/Sequoia
- To transfer, open the menu item "Export to MAGIX Video Pro X2" in the "File" menu under "Export".
- Please note that when exporting, a sampling rate of 48 kHz should be set, since this is the sampling rate used in DVD audio streams.
- Click "OK" and enter the save location and a logical name for the Surround sound in the dialog that opens.
- After export, the six Surround channels will be loaded directly into MAGIX Video Pro X2. 5.1 Surround mode will be activated and the channels will feature the corresponding track settings.

Using DVD audio tracks

DVD audio tracks are provided for adding multiple audio tracks to the video that can be selected via the disc's menu. There are primarily two areas of application for this:

- Creating audio tracks for different languages
- Mixing stereo and Surround audio separately

These two applications can be combined, since MAGIX Video Pro X2 features up to 8 separate DVD sound tracks.

Define DVD audio tracks

A context menu can be opened in the track boxes which enables every track to be made into a DVD audio track. Name the tracks logically, because they will appear in the menu of the burned disc later.

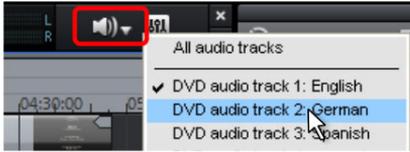


For example, 2 different DVD audio tracks ("stereo" and "Surround") have been created. Assign the tracks for the stereo sound to "Stereo" via the context menu and the Surround sound tracks to the DVD audio track labeled "Surround".

Note: This approach can also be applied in the same way to creation of a multi-lingual disc.

Dub individual languages

If all DVD sound tracks have been defined, then MAGIX Video Pro X2 sets the first one by default for you to mix.



Once this is finished, you can continue with the other DVD audio tracks simply by switching the active DVD audio track.

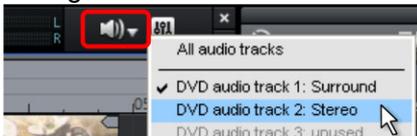
You can mute a recording by clicking the small arrow next to the button.

Combine Surround and stereo tracks

Note: The method described here is only recommended if the stereo track requires a separate mix, since it normally isn't necessary to add an extra stereo track. Playback devices automatically apply a mix to stereo sound in place of 5.1 Surround when it is required.

In case you want to create a disc which features 5.1 Surround as well as normal stereo tracks, MAGIX Video Pro X2 offers a solution for this, too.

Mixing stereo

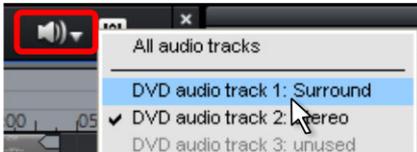


Now set MAGIX Video Pro X2 so that only the stereo track can be heard. You can mute the recording by clicking the small arrow next to the button, and then select "Stereo" in the DVD sound track.



Now open the mixer (view page 166), and if "5.1 Surround" mode is still active, then shut it off. Mix the stereo as you normally would, and then close the mixer.

5.1 Surround mix



Now set MAGIX Video Pro X2 so that only the Surround track can be heard. Mute the recording by clicking the small arrow next to the button, and then select "Surround" in the DVD sound track.

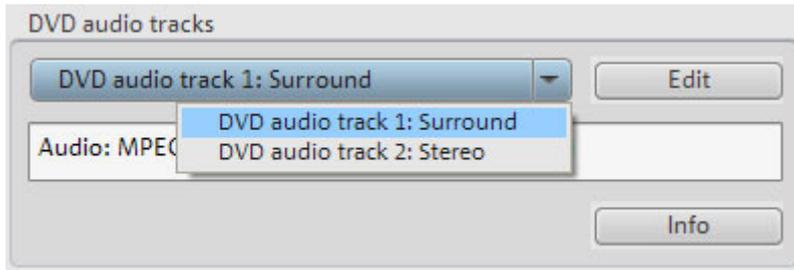


Now open the mixer (view page 166) and activate 5.1 Surround mode. Mix the Surround (view page 169) like usual.

Set the format for individual DVD audio tracks

Next, make the necessary changes to the formats of the DVD audio tracks. These settings are located in the MPEG encoder settings panel that can be opened in the burn dialog.

The simplified settings dialog displays an additional section for the DVD sound tracks. Select the DVD sound track you want to adjust from the dropdown menu. You can now assign whatever format you want to any track, i.e. 5.1 Surround to some tracks, stereo to others – just like in the figure.



Click "Edit" to open the advanced MPEG encoder audio settings dialog. Specify which format the selected DVD sound track should have. For more detailed information, read the section "Audio settings (view page 300)" in the chapter "MPEG encoder settings (view page 298)".

Note: Even if you create all of your DVD's audio tracks as 5.1 Surround tracks, this setting must be made for each of the tracks.

Sound tracks which feature the setting "Apply to all DVD sound tracks" will always be mixed with the other DVD audio tracks, though these will be created in whatever format is set for them.

Scrubbing

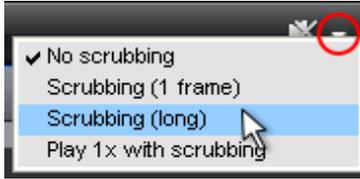
Scrubbing originates from a time when tape machines still dominated. The function is suitable for quickly previewing individual passages of a film or piece of music.

This was technically implemented in these devices by keeping the tape head on the tape itself, but the motor doesn't drive the tape rolls in this case. Instead the tape is "manually" set to the desired position. In this way, positions where a cut should be made, for example, can be set fairly precisely. The disadvantage of this method is that the pitch changes proportionate to the playback speed - like when a record is played too quickly or too slowly.

Scrubbing in MAGIX Video Pro X2 certainly behaves a little differently than its analog predecessor; instead, it plays short samples of the material at the original speed.

Note: In order to preview individual audio objects, use the "Preview (view page 50)" mouse mode.

Scrubbing: Activate



Scrubbing can be activated via the menu beside the speaker button on the upper edge of the arrangement window.

Scrubbing: Modes

No scrubbing: Scrubbing is inactive. If the playback marker is set or moved, then sound will not be played.

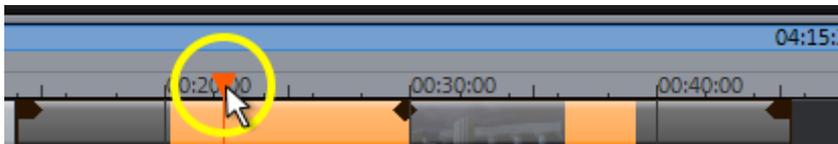
Scrubbing (1 frame): Scrubbing is active and samples are only 1 (video) frame in length. The speed is 25 fps, i.e. 1/25 second. This mode is suitable for positioning the playback marker exactly.

Scrubbing (long): Scrubbing is active, the sample length amounts to approx. 0.5 seconds. In this mode, locating specific events is particularly easy.

Play 1x during scrubbing: If this option is active, the current position will be played one time. If it is inactive, then it will be repeated.

Scrubbing: Apply

If a scrub mode is selected, then you can simply set the playback marker with the mouse at a location on the timeline. Hold down the mouse button and move the playback marker to different locations in the arrangement.



Scrubbing also functions via the keyboard. Using the jog and shuttle wheels in the video monitor also enables scrubbing, even for different hardware controllers, which makes the program feel just like an analog video editing system!

Mix down of audio objects

If the arranger becomes too full to manage, the system is out of RAM, or you just want to "summarize" your production, use the mix down function to convert the entire audio arrangement into a single audio file. Just click on the mix down button in the button bar or select the function from the "Processing" menu.

You can choose a name and a destination for storing the mix down object. The default directory is "My audio/video".

Storage of the audio arrangement will take up a little more space on your hard-drive, but it requires less RAM for playback than an unmixed entire arrangement.

Note: The mix down effect optimizes the volume automatically. Even if the mix down function is used various times, you will not lose audio quality.

Managing video projects

Backup copy

Files must be saved to be able to be easily retrieved in case of a hard drive crash or some other error.

Copy movie/project and media to folder

This menu option allows you to put a complete MAGIX Video Pro X2 arrangement, including all applied multimedia files, into one folder. This is especially useful if you want to reuse or archive such an arrangement later on, or if the files are located on multiple storage devices (CDs, DVDs, etc) so that you continually have to change them during loading. Effects files used are also saved in a folder together with the other files.

If you select the option, "**Copy disc project, movies, and media into folder**", all movies in the current disc project, including all of the related media, are put together and copied into the chosen folder.

Hint: MAGIX Video Pro X2 also features DV logging. You no longer need to save large DV-AVI and audio files, since MAGIX Video Pro X2 saves the position of this material on the DV tape and imports missing files automatically when reloading the DV tape.

A dialog opens where you can specify the path and name of the video.

Shortcuts:

Copy movie and media into folder	Shift + R
Copy project and media into folder...	Ctrl + Q

Burn movie and media onto CD/DVD / Burn project and media

Use this option to burn the film as well as all associated files to disc. To do so, you must have a burner installed on your computer and a blank CD must be inserted.

If you choose the option "Burn project and media", the current project and all of the associated media files are grouped together and burned onto disc.

Even larger projects can be burned straight to disc. The project, if necessary, will be split up and burned automatically to multiple discs. A restore program which is burned to the first disc of this type of backup guarantees that the backup can be restored without any problems.

Keyboard shortcut: Ctrl + Shift + R

Tip: Under "File -> Settings -> Program...", you can determine how often an automatic backup will be created in the "System" tab under "Automatic backup".

Importing & exporting EDL files

Import EDL (edit list)

The menu "File -> Import edit list (EDL)..." allows you to import edit lists in the Samplitude EDL format into MAGIX Video Pro X2.

- If an empty project is opened, then the complete EDL file will be imported, and another selection box appears with the following options:
 - Remove original video tracks before importing
 - Remove original audio tracks before importing
 - Keep original tracks
- If the tracks are muted before importing the EDL file, then they will not be removed.
- If there are already objects in the project, then you will be asked if the files should be imported into the project or if a new project should be created for them.

Export EDL

In the menu "File -> Export movie", EDL files can be created using "Export movie information as EDL..." to continue editing them in other programs, e.g. Samplitude or Sequoia.

There is a completely new input mask here. Checkboxes can be used to select if the video and/or audio should be exported. Radio buttons can be used as required to choose whether individual tracks should be rendered or referenced as original files in the EDL. Video rendering occurs in the DV-AVI format; audio rendering as a stereo wave (for Surround projects, 6 mono files will be rendered).

An export folder can be specified via the selection dialog. The EDL file and the rendered files will be stored there as required.

Checkboxes can be used to select whether the EDL file should be loaded directly into Sequoia. The program will either be launched automatically, or the files will be added into a running instance of the program. The user can enter the path to Sequoia in the input mask.

Clean-up wizard

The clean-up wizard helps you delete projects from your hard drive, including all media files. Use this function to free up disk space for future projects.

Caution: If the files you used in the slideshow have also been used in other slideshows (like trailers, opening music, etc.), then you should make backup copies of these files beforehand.

Shortcut: Ctrl + Alt + G

Delete specific files

Choose this option if you would like to select certain files for deletion. In the file selection dialog, you can select the desired files. In the next step, the clean-up wizard searches for other files which belong to your selection. Using this method, you can delete an entire movie with all of its accompanying media, help, project, and backup files. Before they are deleted, you will receive relevant information in a dialog and a confirmation request.

Search and delete superfluous files

Choose this option if you would like to find unnecessary files or free up some space on your hard drive. The clean-up wizard automatically looks for extraneous files created during use of MAGIX Video Pro X2. Before they are deleted, you receive relevant information in a dialog and a confirmation request.

Advanced

"Advanced" lets you set which files and folders should be included in the cleaning process.

Options for using the final movie

Create playable disc

MAGIX Video Pro X2 allows discs to be burned for playback on conventional playback devices (e.g. DVD players, Blu-ray players). For more information, please see "Burning discs (view page 196)".

Export movie

You can export your movie in various video formats. The options available vary according to the selected format.

Presets: These are the typical settings for the selected format and the most important applications.



You can save your personal settings by pressing the "**Save**" button, or remove them from the list by pressing the "**Delete**" button.

Export settings: You can set up the general export parameters like resolution, page proportions and frame rate in the dialogs. Select the most frequently used values from the list fields; to set your own values click on the "...". The "**Advanced**" button opens the specific settings for the selected video format. "**File**" allows you to export your file to a different folder than the one specified as the preset. With "**Overwrite file automatically**", you can perform multiple exports from the same file.

Other: Under "Other" you also have the option of switching off your computer automatically after long encoding processes and limiting the export to the selected area (start to end marker).

Output after export: Some formats allow special playback options (e.g. DV-AVI on the camera or WMV export with output via Bluetooth to your mobile phone).

Video as AVI

When exporting to AVI video you can set and configure the size and frame rate of the AVI video and the compression codec for audio (audio compression) and video. Please also observe the general information on AVI video formats (view page 277).

Keyboard shortcut: Alt + A

Video as DV-AVI

This option exports the video as a DV encoded AVI. You will be asked for which video standard you want to export DV data. PAL (Europe) or NTSC (USA)? The arrangement can be easily transferred to the Digicam via the FireWire interface.

The window will provide further information on all available options. You can access it via the button "**Advanced...**" in the "Export" dialog.

Keyboard shortcut: Alt + B

Video as MPEG video

MPEG stands for "Motion Picture Experts Group" and is a high-performance compression format for audio and video files.

Details on the settings of the MPEG encoder can be found in the "MPEG encoder settings" appendix.

Keyboard shortcut: Alt + C

MAGIX video export

Exports the movie in MAGIX video format. This format is used for video recording by MAGIX video software and is optimized for digitally edited high-quality video material.

Keyboard shortcut: Alt + D

Video as Quicktime Movie

Exports the movie in QuickTime movie format. This enables streaming playback of audio and video files over the Internet.

As with RealMedia export, appropriate adjustments can also be made for video size, frame rate, and codec settings. However, the export dialog does not permit you to add commentary to the video.

For QuickTime files (*.mov) you have to install the QuickTime library.

Keyboard shortcut: Ctrl + E

Uncompressed movie

When exporting an uncompressed AVI video file, you can adjust the size and frame rate of the AVI video you wish to create.

Warning: This will create very large files!

Keyboard shortcut: Alt + U

Video as MotionJPEG AVI

Opens the export dialog for AVI video in Motion JPEG format. This format is supported by digital picture frames, for example.

Movie as sequence of individual pictures

This option exports the video as a sequence of single frames in bitmap format. This means that for every video frame, a graphic file will be created. The image count can be determined in the export dialog under "Frame rate".

Keyboard shortcut: Alt + V

Windows Media Export

Exports the arrangement in Windows Media format. This is a universal audio/video format from Microsoft. The setting options in the **Advanced** dialog are correspondingly complex.

Manual configuration

Audio/Video codec: Various codecs corresponding to the many versions of Windows Media (7, 8, 9) are possible. If playback compatibility problems arise, try an older codec with a lower version number.

Bit rate mode: Constant and variable bit rate modes are possible; however, most devices and streaming applications require a constant bit rate. For VBR two-pass modes, the movie is compressed in two passes for optimal use of the bandwidth required for highly-compressed movies on the Internet.

Bit rate/quality/audio format: The bit rate substantially determines the display and audio quality. The higher this is, the better your videos will look and the larger the files and the required encoding time will be. For variable bit rates, the bit rate is adapted dynamically to the requirements of the corresponding picture or sound material. Here, either the quality value of between 1-100 can be set or, for two-pass encoding, an average or maximum bit rate. For audio, the bit rate is set additionally by the audio format.

Import from system profile (export type): For the most used methods (other than for playback on mobile devices; for this you should use the supplied presets), e.g. Internet streaming, Microsoft provides a diverse selection of system profiles. If you have the Windows Media Encoder 9 installed (available from Microsoft as a free download), then you can edit the profiles or create your own. These can be loaded by pressing the "**Import from profile file**" button.

Go to **Clip info** to insert title, author name, copyright details, and a description.

Keyboard shortcut: Alt + F

Video as RealMedia video

Exports the movie in RealMedia movie format.

RealMedia enables streaming playback of video files via the Internet. This has a very high compression rate, but the quality is noticeably reduced. After choosing a name for your file, you can specify the bit rate of the transmission speed (modem, ISDN, etc.) at which the audio file should still be playable without any errors.

There are many options for embedding meta information for this format.

The advanced video options allow you to select the number of frames per second ("fps"), the lower the value, the less data is transferred and the lower the picture quality.

The following settings can be accessed via the "Advanced..." button.

Audio/Video settings: Here you can select presets for the quality of audio or video material.

Clip information: You can enter the author, video's name, and so on, which appear in the Real player during playback.

Clip meta information: You can enter keywords for search engines here. When the RealVideo clip is uploaded to a homepage, search engines will find it using these keywords. This search engine indexing can also be switched off.

Preprocessing: Of special interest here is the "Two-pass encoding" field, since this can be used to enhance the quality of the video. The video is compressed into two runs in order to optimize the bandwidth. You can also select various filters.

Video size: Select between video sizes of 160 x 120 and 720 x 576 pixels.

Profile: You can select at which bandwidth the video should be created, i.e. over which data connection it will be played in real time ("streamed"). The settings selected here may limit other selection options, since files for 28k modems cannot be created to be played at high quality.

Keyboard shortcut: Alt + G

Exporting as Flash

Export of FLV files has been replaced by the more powerful H 264 export. Flash plug-ins of the new generations to playback MP4 files with H.264 material instead of FLV files. You can select a preset labeled as "Flash Player" or click on "Advanced" and activate the "Export as website" entry for MPEG 4 export. This will automatically create an HTML page and a SWF file with Flash Player in addition to the exported file.

When applying manual settings, AVC H.264 format with AAC sound is recommended. In order to be able to play back the file in a browser, the exported MP4 file, the SWF file and the HTML file must be in the same folder. The browser needs an installed Flash plug-in (version 9.0.115.0 or higher is recommended).

Video as MPEG-4 video

MPEG-4 is the most advanced video format available at the moment. Unlike others, it can provide high-quality pictures at the same file size.

Behind MPEG-4, you'll find a highly complex "academic" standard that operates and is supported variably according to make. To go into detail on these differences and parameters would be beyond the scope of this documentation. For this reason, indications, along with the operational manual of your device, are given that should help create executable MPEG-4 files. For more experimental users, the complete setup options of the MPEG-4 codec can be found behind the "Advanced settings..." buttons.

Video/Audio: The MPEG-4 format and the advanced AVC format are also available, but have so far only been used on a few devices. MPEG-4 video can be combined with AAC or AMR sound, the latter mostly in conjunction with mobile phones. The combination ACC/AAC doesn't appear very often (Apple iPod video), ACC with AMR in contrast, not at all.

Multiplexer: Here you can find the so-called "container" formats and special options for Apple's iPod and Sony's PSP. MPEG-4 is usually used as an **output format**, while mobile phones mostly use 3GPP.

Keyboard shortcut: Alt + K

Audio as MP3

MAGIX Video Pro X2 supplies an optional MP3 encoder for especially fast and good-quality conversions into the popular MP3 audio format.

Hint: The MP3 encoder cannot be used as a codec for the audio track of AVI audio files.

Transmission format

Specify how you wish to send the audio file to the mobile device here.

Options

In the "Options" section you can set the format and the compression of the audio file.

Bit rate: The bit rate selection specifies the level of compression, and the higher the bit rate, the higher the quality of the exported audio file. On the other hand, the bit rate determines the final file size; the smaller the bit rate, the smaller the file.

Mono/Stereo/5.1 Surround: Most mobile devices have only one loudspeaker. To save on memory, you can export in mono for these devices. In 5.1 Surround mode, you can also export in MP3 Surround (see "The Mixer in Surround mode" (view page 171)).

Normalize: This feature should always be activated. It guarantees music volume isn't too high or low.

Keyboard shortcut: Alt + M

Audio as WAV

The soundtrack of the movie is exported as a WAV audio file.

Keyboard shortcut: Alt + H

Export as transition...

Please see "Creating custom alpha transitions"

Single frame as BMP

Exports the image at the position of the start marker and displayed on the video screen as a BMP file.

Keyboard shortcut: Alt + M

Single frame as JPG

Exports the picture located at the current start marker and displayed in the video monitor as a JPG file.

Keyboard shortcut: Alt + N

Animated GIF

The video will be exported as an animated GIF file (also called "AniGIF"). This file format is supported by many mobile phones.

Export movie information as EDL

Exports the current movie in a Samplitude-compatible EDL format. This export is mainly intended for transferring audio files to Samplitude/Sequoia, since the program cannot process all of the video formats MAGIX Video Pro X2 can manage. Only object cuts, tracks, pans, and volume (with curves) are transferred, since the EDL format only saves this information in a limited manner.

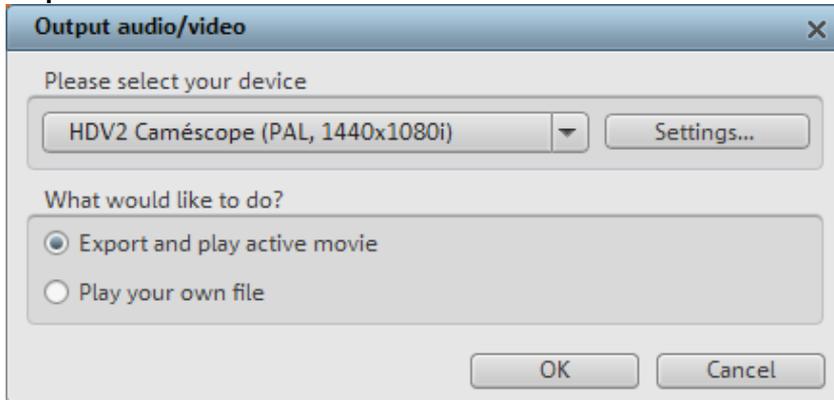
Items that are not transferred: All effects, Surround positions, video transitions, markers (chapter markers, scene markers).

The basic audio and video files will not be exported. They will be loaded by either the EDL-importing program automatically (if they are available in the same folder of the EDL file), or requested during importing.

The following is a recommended approach to application of an editing list in EDL format:

- Save the media you used beforehand in a folder (e.g. via "File -> Backup copy -> Copy film and media to folder").
- Export your film as an EDL editing list and add the EDL file in the same folder as the media.
- Load the EDL file in the importing program (e.g. Sequoia). The EDL file provides the correct positioning of the individual media. After editing, you can export the audio track as a WAV file, for example, and import it again into MAGIX Video Pro X2 to replace the existing audio objects.

Export audio/video



This window lets you transfer your finished video to external devices. Besides the camcorder options for digital camcorders (DV/HDV) and VHS recorders for playing analog video, many options for further players such as mobile video players, SmartPhones, PDAs or games consoles are also included. These are explained in the section "Exporting to mobile devices (view page 191)".

Video playback via TV output

Video or graphics cards with TV outputs allow you to transfer videos directly to external analog video recorders. The arrangement must be displayed in fullscreen mode and recorded by the external device. Make sure that the TV output in the Windows Control Panel (in "Display") is active.

Warning: For many graphic cards, the TV output can only be activated when a television or video recorder is connected **before** turning on the computer!

For the best video monitor quality via TV output, select "Overlay" mode. When in doubt, make sure that "Overlay" mode is selected as the video mode in the program settings ("File -> Program settings -> Display options").

You can play the video directly from the arrangement. Errors may result if the processor is overloaded by real-time calculations of video effects and transitions.

If direct playback doesn't work without errors, open the menu item "Output video" and select "VCR -> Render and output in fullscreen". All tracks and effects are then combined as a single file. The file will be played back after this analysis.

If you would like to play a finished movie several times, export it as an AVI file and reload it into a new movie! It should then be possible to play the file directly without constant rendering.

Playing videos on digital devices

The digital output always consists of two processes:

1. Exporting, i.e. compiling all tracks, video, music, effects, transitions, and titles into one single video file. This video file is created in the format required by the target device and then temporarily saved to your computer's hard disk.
2. Output: In this case the created video file is transferred to the mobile device or to the camera. The data is either written to the device via FireWire as a removable device if connected to the USB port or transferred by Bluetooth or infrared.

Both processes are normally performed together. However, you can only export via "File -> Export movie" or export via the option "**Output file**" in the dialog "**Output audio/video**".

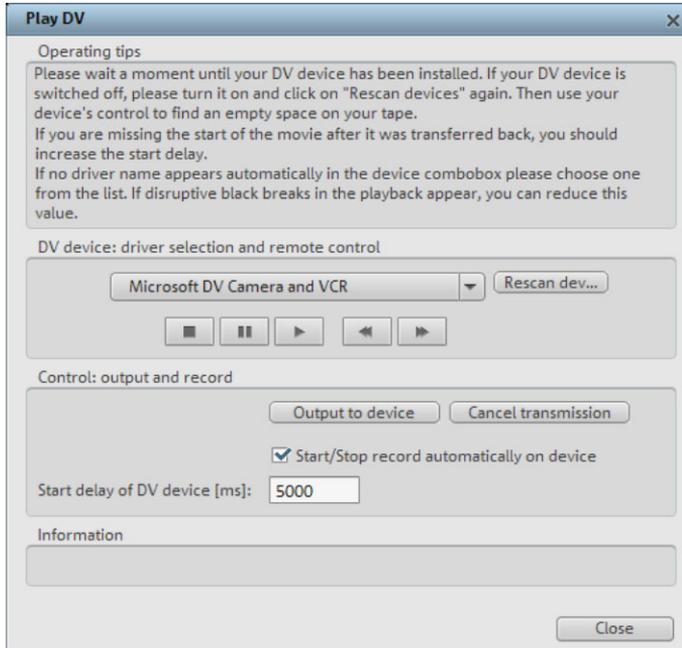
The **Settings button** opens the "Export" dialog (view page 182) of the file format for your selected device.

Export DV/HDV

For digital output, please select "File -> Export audio/video", and then select **Camcorder** in the device menu. For DV cameras, you can select the device **DV camera** for HDV camcorders **HDV1** or **HDV2**.

"Settings" opens the respective export settings dialog (DV-AVI export for DV camcorders; MPEG export for HDV camcorders). For most applications, you should use the settings defined here. **Advanced** takes you to the DV export settings (More Informationen can be found in the section "DV export settings" on page 191).

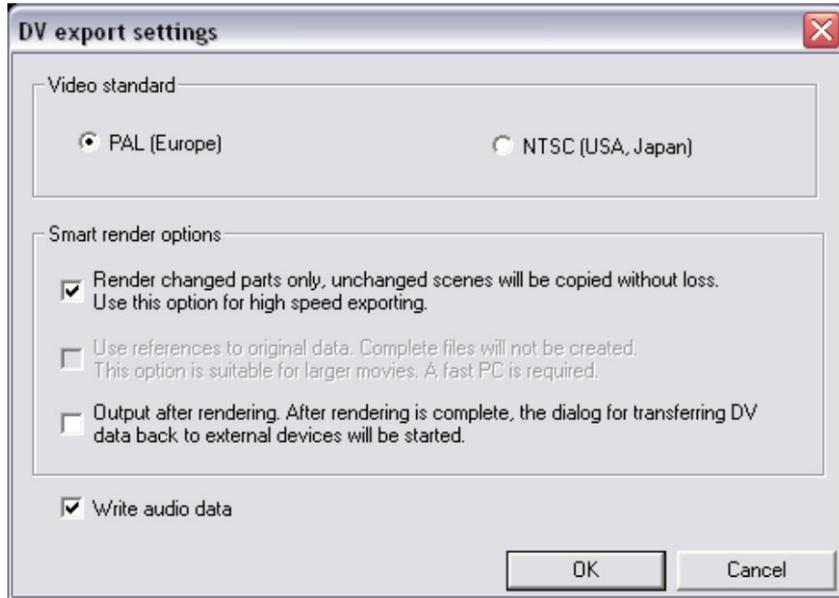
Now connect your camera and follow the displayed instructions.



If you want to play a rendered movie on DV, then there's no need to render it again. Simply activate the "Play own DV file" option and select your DV video from the "My Audio/Video" directory.

Tip: Digital cameras that can record in digital via a PC connection are usually more expensive. You may be able to reduce your purchase costs considerably by buying a digital camera that cannot transfer digitally and then have it activated by a camera specialist. You should inquire about this option before buying one.

DV export settings



PAL/NTSC: The PAL format is used in Europe, and the US and Japan use NTSC. This option usually does not require changing.

Render changed parts...: Non-edited original files are simply copied into a completed DV AVI. Normally, you have to decompress the DV data, add the set effects calculations, and recompress it. If no effects processing is pending, then these steps may not be necessary. This option can be permanently activated.

Use references to original material...: Unedited original files are exported directly to the device. Effects are rendered in real time. Use this option for finished movies without edits and effects, since real-time effects processing of DV data causes high processor loads that often result in output errors.

Transfer DV back to device after export...: Deactivate this option if you are only rendering your movie but do not want to export it. You can export your movie later by clicking "Export own DV file" from the "Export" dialog.

Export to mobile devices

Most devices require certain format settings (file format, resolution, bit rate, picture repeat rate, etc.) to be able to play a video.

The menu is divided into various device classes (mobile phones, organizers and PDAs, games consoles, and video players) to make it easier to select your device. The last three selections are saved as favorites in the top part of the device list if you have more than one device or want to present your movies to your friends.

If your device is listed here, you won't have to worry about the format settings, because the necessary settings of the export dialog (view page 182) are automatically customized to the target device. Simply select your device, and then click the "OK" button - that's all.

Transfer with Bluetooth

Warning! The procedure described here refers to Windows XP with Service Pack 2! Dialogs may be different depending on the Bluetooth driver and operating system version, or their order may vary (e.g. for password allocation) when transferring to your mobile phone. However, the process is usually similar if other drivers are used. Read more on this in the help file or the corresponding chapters of your operating system's manual and Bluetooth adapter.

- If you own a Bluetooth device, you can export the movie straight to your device. To do so, your device and your PC must both have Bluetooth interfaces. If your system has a Bluetooth device, you can activate the "**Transfer via Bluetooth**" option.
- After converting the movie into the desired format, the **Bluetooth file transfer assistant** opens.
- The first time you try to transfer files to your device via Bluetooth, you have to specify your device as the receiver in the dialog by clicking on "**Search...**", selecting your device and then pressing "OK". The name of your device in the Bluetooth network is specified in the Bluetooth settings of the device. Check your device manual for this. Select your device and confirm your choice by pressing "OK".
- Now enter a password of your choice, which you will later have to confirm on your device and click on the "Continue" button in the assistant. Since connections between multiple Bluetooth devices can be set up simultaneously in a room, the password serves to identify certain connections as well as to safeguard your data.

The order may be the other way around, depending on the Bluetooth device driver, i.e. the mobile phone will request a password which must be confirmed on your PC. It's important that you use the same password in each case.

- You may be asked once again to enter the file name and path of the movie. In this case, we recommend using a folder that you will be able to find again quickly to export the file (e.g. "...My Files/My Videos").
- Click the "Scan..." button, open the set up folder, and select your video file by double clicking it. Now, in the wizard, click the "Continue" button.
- Next, you may have to activate the reception of files on the device and re-enter the password. Afterwards, the transfer of the videos will begin automatically.
- Once the transfer has been completed successfully, "1 new message" will display on your device. Read more on how to save and play videos in the corresponding device manual.

Warning! We only recommend activating data reception via Bluetooth on your device once this function is actually required, e.g. for transferring files. Once you have completed the uploading process, you should deactivate Bluetooth again, since permanently activated Bluetooth reception constitutes a security risk!

Transfer via infrared

For devices with infrared interfaces, the transmission of movies works similarly to using the Bluetooth transfer method. To do this, your PC and your device have to have infrared interfaces. Many notebooks are already fitted with such IrDA interfaces.

- Before starting the export, an infrared connection must already be established between the computer and the device. Activate the infrared interface on your device and establish the connection to your computer. You can check if a connection has been established via a corresponding symbol in the task bar. More information on this can be found in the Windows help under the keyword "Wireless connection".

Note: Some devices deactivate the infrared interface when no data is exchanged after a certain amount of time. In this case, you can search for the exported movie in the Media Pool again, reactivate the infrared interface of your device, open the context menu of the file, and then send the video to your device again by clicking "Transfer".

- Open the "Export" dialog via the export button, and under "Play after export", select the option "Export with infrared". Confirm with "OK". A window will now be displayed which informs you of the current status of the transmission.
- Once the transfer has been completed successfully, "1 new message" will display on your device. Read more on how to save and play videos in the corresponding device manual.

My device is not in the list, what should I do?

Update devices online

The assortment of playback devices is constantly changing. Every day, new devices or versions are coming onto the market. The list of supported devices may therefore not be up-to-date and may not (yet) contain your specific device. MAGIX continuously maintains updated preset lists for the available devices, and these can be downloaded by pressing the update button. Internet access is necessary.

The command "Download presets for new device" in the "Help" menu opens a website containing an up-to-date list of all supported devices and device versions. Just search for the desired device and click the corresponding link. The settings for the device will be downloaded and made available to you in MAGIX Video Pro X2.

Warning: Some browsers display a warning if you try to download an executable file (.exe). You can ignore this warning.

If your device is not listed on the website, you can report your unsupported device so that it will be included in later updates.

User-defined:

If your device does not appear in the list after the online update, you can set up the export settings manually. No need to worry though; you only have to do it once, since these settings can be saved as a preset.

Read the **instruction manual of your mobile device** to find out which file format is required for this. If your device supports multiple formats, then you can experiment with the formats to get the best results.

Specify the file format by opening the target device's menu and selecting "**User-defined -> Video -> ...Format**". If you then click on "Export", you arrive at the Export dialog (view page 182) of the selected file format where you can set all the advanced settings.

For details on these settings, please consult your device manual. Explanations for the file format's settings can be found in the **Overview of the device classes** chapter, for the special settings of the export dialogs see "Export movie (view page 194)" in the "File menu" chapter.

Tip: If the format settings for your device are not accessible, then you can try out a different device from the same manufacturer and, using it as a template, make adjustments accordingly.



If you find settings you like, we recommend saving these as a preset for further use.

Overview of the device classes

This chapter explains the various supported device classes and which peculiarities should be noted when manually setting the export format.

Quick overview of the device types*

Example devices MPEG-4 profiles (audio + video formats within MPEG-4 container format)

iPod & PSP	AVC (video) + AAC (audio)
Mobile phones	3GP (video) + AMR or AAC (audio)

Additional video formats

Symbian mobile phones	MPEG-4
Video players	DivX / XviD
PDA's, PocketPC's	WMV9

*No guarantee taken for correctness of information

Mobile phones

This refers to multimedia mobile phones and SmartPhones.

File format: For SmartPhones running the Symbian operating system, you should ideally use the Real format for maximum compatibility, since RealPlayer is integrated into the system. Many mobile phones also play MPEG-4. It's important in this case that the correct container format (for mobile phones, usually 3GPP) is set up ("Video as MPEG-4 video export")

Resolution: The resolution corresponds to the display size of your mobile phone in pixels. Standard resolutions are 128 x 96 pixels (sub QCIF), 176 x 144 pixels (QCIF), 300 x 180 pixels, and 320 x 240 pixels (SmartPhones). You can find out the resolution of your mobile phone from its documentation. Many mobile phones require the precise setting in order to play back videos. If the aspect ratio does not correspond to the display resolution (300 x 180 corresponds to 5:3 instead of 4:3), then black bars are added. For broad displays (optimized for 16:9) we recommend the video effects Aspect ratio 16:9 (anamorph/letterbox).

Frame rate: Picture repeat rate, i. e. the number of frames per second (fps). For mobile phones this is usually reduced from 25fps to around 10 or 15fps in order to save memory space and because mobile phone processors are not powerful enough. If you don't have to save on memory, select the largest frame rate possible (see device manual) because at low frame rates the video can be very jerky.

Organizers and PDAs

Under "Organizers and PDAs", Pocket PCs and similar devices are listed.

File format: For Pocket PCs, you should ideally use Windows Media Video format for maximum compatibility, since it usually only runs on modified Windows Operating Systems (Windows Mobile), and the Windows Media Player is integrated in the operating system.

Resolution: The resolution corresponds to the display size of the PDA, mostly 320 x 240 pixels. You can find out the resolution of your PDA from its documentation. A PDA can also play back at higher resolutions than those set; mostly, however, the CPU is usually not able to handle this as it must scale the picture before output, which can cause errors.

Frame rate: Picture repeat rate, i. e. the number of frames per second (fps). If you don't have to save on memory, use the largest frame rate possible (see device manual) because at low frame rates the video can be very jerky.

Games consoles

Some portable games consoles (Sony PSP, Nintendo Wii) can also play videos. The consoles are extremely particular with regard to file format settings, and they sometimes use their own file format variations.

Warning: Do not change the presets!

MAGIX tries to supply presets for all games consoles with video functions on the market, but you may have to update your device list.

Warning: Sony PSP and Apple iPod video only play movies when they are copied with a specific name into a pre-defined target folder. Always copy movies for these devices from the export dialog along with the corresponding presets (at the top of the "Preset" list and at the bottom beside "Play after export").

Video players

Video players are considered to be video devices if they have been developed especially for mobile video playback. They usually have relatively large displays and their own hard disk or a very large flash card memory (in GB).

File format: Mostly DivX AVI or WMV (Windows Media Video) are used. While WMV is its own format, AVI is a so-called container format. This means that the actual file format is set via the medium's codec (view page 277).

In addition to the AVI format, you will also have to set up a codec that your mobile device supports when exporting AVI files.

A much-used codec for AVI is the DivX codec. This is supported by a large number of portable video players. Specific standards have been set up between the codec manufacturer DivX and the device manufacturers (profiles) that a certified DivX device has to fulfill.

Unlike Windows Media or MPEG4, a separate audio codec (ACM codec) is required for the sound in order to encode the sound track in the same high compression at acceptable quality. Select the codec you wish to use for the sound under **Audio compression**. MP3 56kBps is used as a preset. For improved sound quality, you should read your device manual to find out which sound formats AVI audio still supports and, if required, install further ACM codecs from the Internet.

The DivX codec can be downloaded from www.divx.com <http://www.divx.com>.

Resolution: Video players can handle almost every resolution up to TV resolution (720x576), as most models can display your video picture in TV resolution via an analog TV output. For the optimum picture quality on the device display (if you do not wish to use the TV output) use the resolution that the device can display.

Frame rate: Picture repeat rate, i. e. the number of frames per second (fps). This isn't problematic, since the frame rate of the output material is used.

Warning: Sony PSP and Apple iPod video only play movies when they are copied with a specific name into a pre-defined target folder. Always copy movies for these devices from the export dialog along with the corresponding presets (at the top of the "Preset" list and at the bottom beside "Play after export").

Burn discs



Switch to the "Burn" screen first by pressing the button indicated.

You can burn your movies (including a selection menu) onto CD, DVD, Blu-ray Disc, or upload them to MAGIX Online Album.

All movies loaded into the project are taken into account. If you want to take out some of the movies that are loaded, then you will have to switch back to the "Edit" screen and delete some of them from the project. To do so, switch to the corresponding movie, open the "File" menu and select "Manage movies -> Remove movie (view page 214)"

Note: At a screen resolution of 1280 x 1024, the program display changes. This makes the program more manageable and easier to use. The work steps remain the same despite the different display.

Preview and editing

MAGIX Video Pro X2 provides two different modes for designing and previewing the disc menu.



The preview mode is mainly intended to behave like a DVD player or Blu-ray player for checking the disc menu under realistic conditions. Only templates may be used; more detailed editing of the disc menu is not possible at this time.



During editing, you may adjust many features of the disc menu. There are many templates available for this that may be changed flexibly once loaded.

Remote control

The virtual remote control is an important helper when it comes to checking how the disc will perform later.

When you later insert the CD or DVD with your disc project into your player, this remote control will control the preview picture just like a "real" remote control controls the picture on a monitor or TV. The DVD menu navigation can now be initiated with the arrow keys or the "OK" button. Activated buttons are highlighted.



The **number keys** select the corresponding entry on the menu page. All menu entries are marked with a corresponding number. Within a chapter menu, playback is started from the particular scene. In the movie menu, the corresponding chapter menu (if available) is changed or movie playback is started.

Navigation keys: These help you move from one section to the next in the menu of the CD/DVD being burned. You can switch between individual entries and confirm the switch by pressing "OK". The remote control works just like the remote control for your home DVD player.

Skip/Move forward/back: This allows you to skip to the next or previous scene while playing back your movie. In the menu, you can skip forward or back from one menu page to another.

Play: Starts the first entry in the menu. In case both the scene menus and chapter menus are available (see menu mode), the scene menu will be displayed first. Press the play button again to start playback at the beginning of the first scene of the first chapter. Pressing **stop** halts playback.

Disc switches to the first page of the film menu.

Sub switches into the chapter menu (if available) of the currently selected film.

Menu

MAGIX Video Pro X2 can add graphical selection menus to your movies. The menu is also burned to CD/DVD and appears when inserted into your player. Just like with a purchased DVD, you can easily select your movies with the help of preview pictures, or access particular chapters within a movie.

This sort of menu is available for the following disc types:

- Blu-ray Disc
- DVD
- Mini DVD
- Super Video CD (SVCD)
- Video CD (VCD)
- WMV HD disc
- AVCHD disc
- MultiDisc

VCD, SVCD, and AVCHD disc are only possible as static menus.

Templates

Below the preview monitor and the editing elements you will find templates for DVD menus and layouts.



To the left you will find a tree structure that makes it easier to select the template type. Now you can select using two buttons in the tree structure, whether you want to select templates in the "16:9" or the "4:3" (default) format. Every menu template is high resolution. Under "4:3" the following are available:

- **Animated DVD:** These templates contain background and introductory videos as well as music. The control elements are displayed in various states. The templates can only be used for mini DVDs and DVDs. If you burn a VCD or SVCD, still pictures and control elements will be shown, but music will not be audible.
- **Static (DVD, VCD, SVCD):** Here you will find templates equally suitable for use with DVDs and SVCDs. They consist of normal background pictures and tools
- **Unique:** These templates adjust to your disc project, i.e. the videos and scenes you use are integrated directly into the menu.
- **TV showtime DVD:** With these templates your pictures will not be displayed in the movie menu as small preview pictures, but rather as fullscreen preview pictures for every menu page. With the "Skip" button on your remote control you can present the chapters with the help of the preview pictures, like in a slideshow – with the option of being able to start the movie at any time from the current preview picture. These templates are intended for DVDs.

Note: For these menus the "Movie and chapter menu" mode in the menu design must remain active.

- **HD (DVD, WMV HD):** These templates contain super-sharp, high-res background images that are particularly noticeable on HD TV devices.

Under 16:9 additionally:

- **HD animated (DVD, WMV, HD, mini HD DVD):** These templates contain super-sharp, high-res background images that are particularly noticeable on HD TV devices and are additionally animated.

If you selected a specific type of menu template, you can use the horizontal scroll bar to view all the templates. There are lots of options when using the templates:

- If you wish to apply a template to all menu pages, click on "**Complete**" in the template bar and double-click on the template of your choice. The complete template will then be applied.

- You can also combine the various elements of the individual templates. If, for example, you wish to combine the text format of a template with the background of another one, first double-click on the template with the text of your choice. Then click on the tab "Text". There you can select the desired template for the text.



You can load the template (or individual template elements) for the current menu (movie or chapter) as well as for all menus.

Note: Some menu templates include intro videos with a smooth transition to the menu page!

Edit disc menu

The preview pictures and the menu title can be moved freely in the preview monitor. The menu may be edited very flexibly.



Activate the "Edit" button to do this.

Load on-disc editing project from disc



Use this button to load the DVD-/RW in your drive for on-disc editing. For more information on this, consult the On-disc editing section.

Edit menu elements

Hold down the left mouse key and drag text boxes or graphical elements to the desired position. You can adjust the size by dragging out the corners and edges of the frame.

During project editing, you can undo the last changes you made. This way it's no problem if you want to experiment with critical operations. If you don't like the results, then you can always revert to the previous state by using "Undo".

Keyboard shortcut: Ctrl + Z

The "Redo" function undoes the previous "Undo" function.

Keyboard shortcut: Ctrl + Y



Set ratio: Avoid distortions by using this button to set the page proportions of the menu elements.



Group: Menu elements, including the description text and number, can be moved or scaled in size.

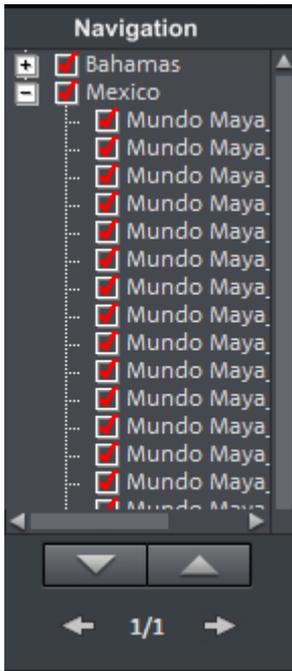


Fade in TV display area in the preview monitor: This option displays the image borders of the television (view page 131) as lines in the preview monitor.



Grid: You can precisely align the frame positions with one another using the grid button. A dialog can be opened to set the grid more exactly using the small arrow next to the button.

Navigation



- All movies are listed as first entries. The corresponding menu level is the **film menu**.
- All scenes are listed as second entries to the right. The corresponding menu level is the **chapter menu**.

Removing the red check deactivates the corresponding entry in the photo menu. The scenes are shown of course, but they are not selectable directly in the menu.

- If you click a film entry, then the film menu will open in the preview.
- If you click one of the chapters listed, then the chapter menu will open in the preview.

Disc options

You may deactivate the menus entirely or customize them here.

Intro video: You can use this button to load videos to be used as introductions to your DVD or mini DVD. The *.avi, *.mpg, *.mxv, *.vob formats are supported. The intro is played immediately after the DVD has been inserted into the player. The DVD menu will then appear.

Film menu & chapter menu

The disc menu essentially consists of two layers:

Film menu: The upper layer includes the film menu, which is only used if a project contains multiple movies.

Chapter menu: This is the lowest layer of the disc menu, which assumes the chapter markers in a movie as menu entries. More information about this is available in "Chapter markers (view page 101)".

Note: A chapter menu cannot contain more than 99 entries. If your movie has more chapters, then you can either burn it without a chapter menu or split it into multiple parts.

Note on SVCD compatibility

Some DVD players may have difficulty playing created SVCDs (despite fault-free burning) if the disc contains a project burned in "Chapter and photo menus" mode and contains several slideshows and/or a large number of photos. These compatibility problems can be avoided by:

- Using menu mode 1 or 2 for SVCD,
- Only adding a single movie to the disc, or
- Turning off the PBC (playback control) function, i. e. the menu navigation of the DVD player.

Preview pictures: Shows/hides the preview pictures in the disc menu.

Numbering: The numbers beside the menu entries can be selected directly using the remote control, but they might be disturbing sometimes. Use this option to show/hide them.

Frame: A frame borders the preview pictures. If you think it gets in the way, then you can easily remove it using this option.

In the Arranger: Clicking this button opens the Arranger to edit animated menus.

Create your own menu background

Every menu background can be created new from scratch or edited.

A click on this button switches to the "Edit" interface and loads the selected menu background as video. Here you can change and design the background as you please. The created film must be saved and then applied as a menu background.

Tip: If you would like to design a menu background yourself from scratch, first press Ctrl + A to select all objects, and then Del, to delete them.

Design page

Background graphic: You have three options in this case. You can either set a certain "color value" for the background. Or, you can select an image file from your hard drive. You can also select a certain frame from a video in your project.

New menu pages may also be added or irrelevant pages may be removed.



Adds a new menu page.



Removes the selected menu page.

**Animated selection menus
(not for (S)VCDs)**

You can also add audiovisual animations to the DVD menus. The background videos are played as endless loops while the menu is shown on the screen. You can also set up background music in various formats or use the background picture for each menu. Please note that the animations can only be used with DVDs and mini-DVDs, but not with CD formats.

Sound / Music: Press this button to load an audio file into the preview monitor and use it as an animation in the menu background.

Video: Press this button to load a video or graphics file into the preview monitor and use it as an animation in the menu background. In addition to the options for the background graphic (see above), you can also use a sequence from a loaded slideshow or from a different video file.

Options for background videos:

- **Create animated menu buttons:** The preview pictures for individual movies from the film menu are shown as small movie samples. You can set the start point and length of the animation using the sequence options faders.
- **Use the audio track of the video:** The audio track of the background video is used with the menu.
- **Play menu animation as a loop:** The background video (audio and/or video) will be played back as a loop.
- **Length of the menu view is set by the audio/video** or whichever medium is longer. You can specify how long the background video should be here. The other medium will be played as a loop.

Design button

MAGIX Video Pro X2 enables simple editing of any menu entry. They will appear in the disc menu as buttons with preview images.

New menu entries may also be added or irrelevant pages may be removed.



Adds a new menu entry.



Removes the selected menu entry.

Tip: If you would simply like to deactivate unused menu entries, this may be done via the navigation.

Note: The chapter menu is formed via chapter markers (view page 101) and can be influenced in detail with these.



Pressing this button or double-clicking the menu entries allows menu entries you have created to be edited. The

dialog with the properties of the menu entries (view page 204) will open.



Edit in MAGIX Video Pro X2: These buttons open MAGIX Video Pro X2 for further editing of your background pictures or the selected menu elements.

Jump to linked page



To test the targets of menu entries, select the desired menu entry and click the button.

Menu entry properties

Double-clicking the preview picture or a menu entry opens an editor for you to adjust the preview picture or menu entry.

Menu entry: Specify the menu page that should be opened when this menu entry is selected.

Preview image: Select a suitable preview picture here.

Menu text

In the text input field, you can enter any text to match the chosen menu entry.



Set the vertical direction of the text (upwards, centered or downward).



Set the horizontal direction of the text (left, centered or right).

Font size: Set the height of the text in pixels.

Font color: Define the foreground color of the text.

Font: Set which font and which style (bold, italic, etc.) should be used.

Shadow: Set the color and size of the shadow that will appear underneath the text.

3D effect: If you would like to make your text appear three-dimensional, you can set the width, height, and color of the 3D effect.

Apply to all: Except for the text, all settings are applied to all entries in the current menu.

Menu image

Use frame from movie: Use the fader to set which frame should be used in the video as a preview picture. The numerical input fields are sorted as follows:
Hours:Minutes:Seconds:Frames.

Use different graphic: You can also load your own bitmap images to be used as menu pictures.

Hint: It may be the case that there are no menu pictures in some menu templates, so changing the menu picture won't have any noticeable effect.

Actions at the end of the movie (only in the film menu)

You can enter which action should be carried out once the film has finished playing. You have the choice of:

- Stop playback
- Jumping to the video menu or photo menu
- Jump to chapter menu
- Jump to next movie
- Play film as an endless loop

Edit your own menu entries

There is another view in this dialog to edit menu entries you have created. Menu links can be edited here. This makes it possible to link a menu entry with a certain action, menu page, or a certain position in the movie.

No link: The menu element cannot be selected and has no function other than to display menu text.

Link to page in current menu: Jumps to a menu page in the current movie or chapter menu in the current film.

Link to another menu: Opens another movie or chapter menu.

Link to chapter in a movie: If this option is selected, enter a film and chapter marker where playback should start.

Note: For DVDs, only chapters within the current movie may be jumped to.

Link to film start: The movie will play back from the start.

OnDisc Editing

With OnDisc Editing you can burn more movies onto disc at a later stage and customize the menu accordingly. It's also possible to just rework the menu.

In order to use OnDisc Editing, the "Prepare disc for OnDisc Editing" option has to be activated. You can find this option in the Burn (view page 210) options of the Burn dialog.



To put a film onto DVD, first load the film and then switch to the "Burn" interface. Insert your DVD+/-RW and press **"Load project"**.

MAGIX Video Pro X2 will ask you if you wish to add the loaded movies to the disc. If you answer "Yes", the entries will be added to the existing menu.

It is **not** possible to edit movies you have already burned onto disc later in the Burn window (To do this, please use the "Restore backup" function). You may only make changes to the menu.

In addition to normal menu design possibilities you can hide entire movies in OnDisc Editing mode, for example, to replace them with an entirely reworked version.

Select a movie in the navigation structure and press the **Del** key. To display the movie again, press **Shift+Del**.

Warning: Deleting certain parts of your DVD-/RW is not possible. Every new version of the menu will be burned additionally to the disc. Accordingly, the remaining disc space becomes less and less the more changes you make. If you remove a movie from the menu, it will still be played, providing "Actions at the end of the movie" is set up accordingly. Also, examine "Menu entry properties" (See "Actions at the end of the movie (only in the film menu)") in the Burn window.

With "Burn disc" you can create your "new" disc. Here, only the new movies and the adjusted menu will be encoded and burned to disc.

Burning assistant

Click "Burn" to open the screen where you create DVDs, Blu-ray Discs, or another video medium, including a menu.



Here you can select the type of disc you would like to create. Under "More options" additional disc options are available to you which aren't used as frequently.

Burning assistant: Disc limitations

Note: For each disc format there are different limitations. For example, with many formats animated menus are not possible or no menus and transitions at all are possible. You can find an overview of these limitations in the PDF manual or in "Help" under "Appendix: Digital videos and storage media ("Overview of the different disc types)".

Memory

VCD (approx. 700 MB)	approx. 70 minutes
SVCD (approx. 700 MB)	approx. 30 - 40 minutes
DVD (approx. 4.7 GB)	approx. 2 hours
Mini-DVD (approx. 700 MB)	approx. 20 minutes
Blu-ray Disc (approx. 25 GB/single-layer or 50 GB/dual-layer)	approx. 4.5 hours

Especially with the MPEG-2 encoder which is used for SVCDs, DVDs, and mini-DVDs (i.e. on CD-ROMs written in DVD file format), it can be difficult to supply reliable information relating to the required memory. If the "Variable bit rate" of the MPEG-2 encoder is activated, encoding will occur according to the movements in the picture. The required memory depends on the film material; an action film would need more memory than a drama, for instance.

If you cannot save your disc project on a blank CD, you will have to divide it up into different sections.

A movie, for example, can be burned onto 3 SVCDs by creating three different projects: Start, middle, and end are added and burned sequentially.

Further information on MPEG compression and formats can be found in the chapter "Video and data formats (view page 277)" of the PDF manual.

Test series with variable encoder settings

If you would like to know how much memory you will require for various encoder settings, then you should run some simulations before burning.

To avoid wasting blank CDs while testing, you should activate the "Simulate first" option.

Then create, for example, a short (ca. 5 min.) disc project and simulate burning in multiple cycles with various settings.

After every simulation you can access the MPEG-1 or MPEG-2 file on the hard disk to check how large the file has become.

You will discover how much disc space your disc project will require from the simulation results. The memory requirements of a 5-minute disc project would have to be multiplied by 20 in order to estimate the space required for a 100-minute movie. You should also add buffer for the selection menu.

Separate project onto multiple discs

Automatically: If the disc project requires more memory than is available on the CD or DVD, a dialog will appear before burning asking whether the disc project should be automatically segmented for multiple discs. Confirm this by clicking "Yes". The disc project will then be automatically divided into individual disc projects and burned sequentially onto multiple discs. This is the easiest method since everything is automatic, and all you have to do is insert a new blank CD when required.

Manual

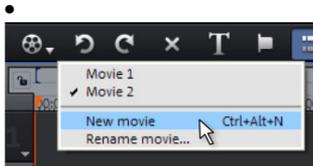
Case 1: If several movies do not fit onto a single disc...

In this case, switch back to the "Record" screen and delete as many movies as is needed until the remaining movies fit onto the disc. You can create a new disc project and load and burn the other movies afterwards.

Case 2: When a long film doesn't fit onto a disc...

In this case, the movie has to be split into two or more parts that will be burned separately onto disc.

- Switch back to the "Edit" view and place the start marker to the position at which you wish to divide the movie. In the "Edit" menu, select "Cut -> Separate movie".



- All passages behind the start marker will be removed from the movie and made into a smaller movie. Both movies can be moved using the "Select to edit" menu in the arranger. Save both of them separately to your hard disk ("Save movie" menu option, for example, as "Part 1" and "Part 2").
- Remove one of the two movies (for example, "Part 2") from the disc project ("Manage movies -> Remove movie (view page 214)" menu option).
- Switch to the "Burn" interface and burn the first film ("Part 1") to CD or DVD.
- Create a new disc project ("New" button), switch to the "Record" view and load it into the second film ("Part 2").
- Switch to the "Burn" interface and burn the second movie to CD or DVD.

Burn dialog for DVD player

Select your burner, the type of disc, the encoder settings, etc. For video CDs this is MPEG-1; for Mini DVDs, Super Video CDs and DVD, use MPEG-2. Blu-ray Disc uses MPEG-2, and higher bit rates are applied in order to reach the higher HD resolutions.



Steps for burning DVDs, etc.

1. **Set up burner and burn speed:** If you have multiple burners installed, you can select which device you wish to use in this menu.
2. **Encoder settings:** Use the "Encoder" button to access the selection dialog where you can specify the properties of the MPEG encoder (memory requirements, quality and duration of the MPEG conversion). The "Advanced" button opens the "Advanced settings" dialog. Here you can adjust all the fine settings of the MPEG encoder.

Burning disc/starting video encoding: "Burn disc": This starts the disc burning process. Every time you burn and every time a simulation is carried out, the disc project is encoded (for VCDs with MPEG-1, with SVCD, DVD and mini-DVD with MPEG-2 (See "MPEG Compression")). You have the option of choosing a storage location for the MPEG file on the hard disk. Please note that the MPEG file is not deleted from the hard disk after the burn process has finished. Depending on the length of the project, encoding and burning may take some time. The time required can be seen in the dialog.

Creating an ISO image

The simplest way to create an ISO image is to select "Image recorder" under "Burner". When starting the "Burning process", you have to specify a name for the image file you wish to create.

Options

Simulate first: If you are not sure about the write speed or memory requirements of the selected disc, you can simulate the write process before burning.

Add project backup: Use this option to add additional project data to the CD/DVD together with the selected video format. You can then load the disc project from the finished disc (See "Restore disc project from (S)VCD/video DVD") to re-edit it and create a changed version.

Activate buffer underrun protection: Many burners support techniques that prevent "buffer underrun". Use this option to activate this protective feature and burn your files at higher speeds (without risking making a coaster out of your blank disc).

Completely format DVD/CD-RW media: This option reformats the RW media and deletes all existing file material.

Prepare disc for OnDisc editing: With a DVD±RW, it is possible to add more slideshows to the disc, or to edit the menu at a later date. The disc has to be burned with the option "Prepare disc for OnDisc editing" activated.

Shutdown computer after burning: Activate this option to automatically turn off the computer after encoding and burning has been completed. You could, for instance, start the encoding and burning process in the evening, and then you don't have to wait for the process to finish to switch off your computer.

Activate the burner's defect management option: If a certain section of the disc is defective, then this will be recognized by the burner and labeled as such. No content will be saved there as a result.

Burn standard video DVD onto same disc: On a WMV HD disc you can use this option burn an additional normal DVD video onto disc. This ensures that your discs can also be played back on standalone DVD players. See Multi disc.

CD/DVD title: This is the title of the DVD as displayed as disc name on the PC. The disc project name is displayed here by default.

Encoder settings



Use the "Encoder" button to access the selection dialog where you can specify the properties of the MPEG encoder (memory requirements, quality, and duration of the MPEG conversion).

Preset: Additional settings for the selected disc type.

Longplay video DVD	DVD with extra-long play time. The bit rate is reduced, causing a compromise in quality.
Longplay music DVD	DVD with extra-long play time for music. The bit rate for the soundtrack remains at the highest quality level.
Standard DVD	Normal DVD
Widescreen DVD	Normal DVD in 16:9 widescreen format

Bit rate: The bit rate determines the memory requirement of the completed video. The higher the bit rate, the larger the file, and the shorter the maximum play time of the movie that fits on a disc.

Adjust bit rate: The expected file size of the finished video is estimated, depending on the set bit rate. If the movie does not fit onto the disc, then the bit rate is corrected accordingly.

Quality: Determines the quality of the encoding process. The higher the quality, the better the finished video will look, but encoding will take considerably longer.

Smart rendering: Smart Rendering considerably reduces the encoding effort for MPEG files. During production of MPEG files, only those parts of the movie that were changed in the program (e.g. by video cleaning or effects) are re-encoded. Please note: The MPEG files contained in the movie **must have the same format**, i.e. the bit rates (variable or constant), audio formats, image resolutions, and video formats must match.

Anti-flicker filter: This option should only be activated for playback on a TV screen to reduce line flickering.

To return to the standard settings please use the "**Reset**" button.

The "Advanced" button opens the "Enhanced parameters" dialog. Here you can adjust all the fine settings of the MPEG encoder. Please also read the addendum MPEG Encoder Settings (view page 298).

Create PC show



Click this button and a presentation optimized for your PC will be created.

First, enter a path where the PC show will be found again later, and click "OK".

Create webDVD



You can create an online presentation which can be uploaded to MAGIX Online Album and opened there. To do this, you must first register on MAGIX Online Album.

First, create and save the online presentation on your computer, and then it can be uploaded. Indicate a location to save the file. Usually the suggested folder does not need to be changed.

Batch conversion

Batch conversion makes it possible to convert multiple video files, movies, objects, or whole projects into another format in just one step.

Open batch conversion

Batch conversion can be opened using different presets. A pre-selection appears only if you have loaded a film or a project.

The following scenarios exist:

- Batch conversion has been opened from the context menu in the Media Pool: The file selected in the Media Pool beforehand will be transferred to the task list and can be converted to the available formats. In case of projects which contain multiple movies, all movies will appear as individual tasks.
- Only one empty movie is open: A dialog opens additionally for batch conversion, in which video files that have to be converted to other formats can be selected and loaded.
- A movie with video material and more than one object in the first track is opened. A dialog opens, in which you can select which tasks should be created for batch conversion.
 - **All scenes in the movie:** All objects present in the 1st track will be used as starting points for the video files to be exported. An application for this could be that all scene beginnings of a movie should be exported as bitmap files or a backup for a movie is to be created as individual scenes.
 - **Multiple movies:** The opened movie will be exported as a whole video. Additional movies can be added to the list in the dialog.
- Multiple movies with video material are open: The opened movie will be exported as a complete video. This is especially useful for large projects with a lot of individual movies, eliminating the need to export each one individually.

Administration

Save and load your settings here. These include the list of files to be exported and the export settings and names of all entries.

Caution! Batch conversion references the projects, movies, and the objects contained therein directly. Keep in mind that when converting entire movies, the source material must also be available. During conversion of individual objects from movies, you have to make sure that the movie file has not been changed between loading and saving.

Queued entries for batch conversion

This is the list of all objects that have to be converted into the indicated format. Each task can have its own export settings.

Add files (not during conversion of individual objects from movies): Manually add files, including video files and projects.

Remove selected: The marked tasks will be removed from the list.

Duplicate selected: If you would like to export tasks in multiple formats, you can simply mark and duplicate them and assign individual export settings to them.

Format settings for the selected conversion process

These are settings for the currently selected tasks, and multiple tasks can be given a setting simultaneously. Select one or more tasks from the task list.

Note on format setting for multiple tasks: If one of the marked tasks already has an individual setting, its will be lost after another format is selected. To prevent this, remove the selection for each task using Ctrl + mouse-click.

Set the target format in the flip menu. Windows Media Video format (*.wmv) is the default.

Advanced settings: This opens the dialog for the advanced format settings. This corresponds to the dialog for normal video export of a movie.

Tip: If you give several tasks the same file name, the files created will be documented intelligently. For example, you can easily convert and simultaneously line up multiple movies that belong together thematically.

Shut down PC automatically after successful export

This option is especially useful when you export long movies and are using an especially high-quality and resource-demanding export format. You can leave the computer to work on the individual tasks and after finishing them it will turn itself off.

Start batch conversion

Click on "Start conversion" to start the process. After ending conversion processes, a list of all export processes with a message informing of its success will appear.

Hint: During batch conversion, messages that appear during normal file import will be for the most part suppressed. This is to enable the smoothest conversion of all tasks. Therefore, please make sure that all files to be converted or the project can be easily loaded before starting a batch conversion.

Menus

Certain menu items are not available on the "Record" and "Burn" screens. The menu reference describes the full menu as found on the "Edit" screen.

File menu

New project



Creates a new MAGIX Video Pro X2 project. A dialog with settings for a new disc project or a new film (view page 63) opens to get started.

Keyboard shortcut: Shift + N

Load project



Use this option to load a movie into your disc project. Please note that all media files associated with it must be accessible. MAGIX Video Pro X2 will search for all used sounds and video files in the folders in which they were located when the movie was saved.

Keyboard shortcut: Ctrl + O

Save project



The current disc project is saved with the name displayed in the project window. If you have not yet specified a name for your project, a dialog will open asking you to do so.

Keyboard shortcut: Shift + S

Save project as...

A dialog opens where you can specify the path and name of the video for saving.

Keyboard shortcut: Shift + O

Manage movies

New movie

Use this option to create a new movie for your recordings and imported files. Since a film is normally already opened, you will have to decide whether the movie should be inserted into the existing project or if a new project should be created.

Keyboard shortcut: Ctrl + Alt + N

Delete movie

This option lets you remove the current movie from the project. However, it is still available on the hard drive and can be loaded again at any time.

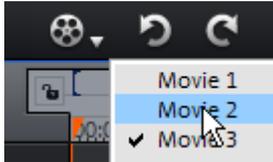
Shortcut: Shift + F4

Attach movie

Using this function you can attach a movie to an opened one. This is then attached to the end of the movie and automatically takes on the original movie's settings.

Import movie file

Use this option to load a movie into your disc project. Please note that all media files associated with it must be accessible. MAGIX Video Pro X2 will search for all used sounds and video files in the folders in which they were located when the movie was saved.



The "Select movie for editing" button lets you switch between movies.

Export movie file

A dialog will open in which a file name for the film to be exported has to be entered. The movie can then be imported again into other projects.

Note: The movie file (*.mvd) contains all information about the used media files, cuts, effects, and titles, but not the picture and sound material itself. This is found in the recorded or imported media files that remain unchanged during the entire MAGIX Video Pro X2 editing process. To save the full movie into a dedicated directory, e.g. to continue editing on a different PC, please use the function "Copy movie and media into directory". (view page 178)

Export movie

This provides all export formats supported by MAGIX Video Pro X2 that aren't covered by burning. Refer to "Exporting (view page 182)" for more information.

Import media files into project folder

The files selected in the Media Pool will be imported into the project folder (view page 54).

Clean up project folder

Unused media files will be removed from the project file.

Note: This function applies to the entire project.

Record audio / images / video

A selection window will open for you to select the desired recording type. You can also access it via the "Record" button in the transport control.

Keyboard shortcut: G

Import Audio CD track(s)

You can simply import a CD track as a regular file from the Media Pool via drag & drop. If this simple method doesn't work for some reason, then you can use the menu command to open the CD manager to select tracks from an audio CD and load them into the arrangement. More about this can be found in the section "Importing Audio CDs" in the Audio chapter (view page 152).

Keyboard shortcut: C

Scan image**Select scanner**

The twain interface connects MAGIX Video Pro X2 with almost all current scanners or digital cameras. Proceed as follows if working with the twain interface for the first time:

1. Install the twain software for the device.
2. Restart your computer.
3. Start MAGIX Video Pro X2.
4. Click on "File > Twain scanner > Select source", if the scanner works with 32-bit software.
5. In the dialog field click on the device you want to work with. This step will no longer be necessary if you continue using the same device.

Keyboard shortcut: Alt + Q

Start the scanning process

The scan window of your scan software will appear. Specify the resolution and color depth in this window. Once the scan process is finished, the twain software will normally switch off by itself – the scanned image file will be added to MAGIX Video Pro X2 automatically. If the twain dialog remains open, you will be able to scan multiple images in succession.

Import EDL (edit list)

Import cut lists in EDL format (view page 180) may be opened via this menu.

Output audio/video

This command opens the dialog for exporting the completed video or its audio track to analog or digital video recorders/camcorders or various mobile devices such as smartphones, PDAs, video players, or games consoles.

Please read the chapter "Output audio/video (view page 188)".

Keyboard shortcut: H

Batch convert

This menu entry calls up the batch convert dialog (view page 212). In order that allows you to convert files, movies or projects quickly and efficiently in several video formats.

Shortcut: Alt + S

Burn CD/DVD

Manually compile files

Opens the MAGIX Speed burnR burning application for burning movies or other files onto CD/DVD. The files are selected by simply dragging & dropping them into the MAGIX Speed burnR explorer. Further information can be found in the MAGIX Speed burnR help file.

Keyboard shortcut: Alt + Shift + R

Copy CD/DVD direct

The dialog provides several options for creating a copy:

- **Copy:** Here you can directly copy a non copy-protected CD or DVD.
- **Shrink:** Compresses a DVD to the size of a regular single layer DVD+/-R/RW. All files of the original DVD have to be on the hard drive.
- **Analog copy:** Copies your video onto a disc via analog recording.

More on this in the chapter about the "Record" dialog.

Keyboard shortcut: Alt + Shift + D

Burn an already created (S)VCD/Video DVD

All necessary files, menus, and encoded video files needed to burn a CD/DVD will be temporarily stored on your hard drive. After your disc is burned, these are **not** automatically deleted. Using "Disc image" multi-copy, you can use these images to burn as many discs as you would like without having to encode the files again.

In the dialog, choose the image you want. All necessary files are then transferred to the MAGIX Speed burnR burning tool.

For more information on using MAGIX Speed burnR, read the program's help file.

Internet

This is a list of menu entries regarding all of the services that are available directly from within MAGIX Video Pro X2.

MAGIX Online Album/MAGIX Online Print Service/Catooh

For www.magix.de please read menu item Online!

Export to magix.info

This command allows you to export your movie to magix.info.

First, export your project in one of the following formats: asf, mov, mpg, mpeg, mp4, wmv, 3gp, or avi. Next, access "File > Internet > magix.info > Present videos on magix.info" to reach a page where you can upload your video. You may need to register with magix.info.

Online login details

In this dialog, you can save your login information (login and password) for MAGIX Online Album and all other www.magix.de as well as for Catooh, making it unnecessary to login each time you access www.magix.de.

The saved data are valid for all other MAGIX programs for the corresponding computer user.

MAGIX Community

This is a direct connection between MAGIX and different communities like YouTube™ or Vimeo™.

Upload current movie as video

Uploads the current film to the selected portal or to the selected community. Enter the data for video into the fields provided, so that the search function for this portal can also find this video.

MAGIX Video Pro X2 partially uses the H.264 format for this, which is a component of the MPEG-4 codec. Since Flash supports this format directly and most communities and portals use the format, the film does not need to be re-rendered on the corresponding server. This avoids loss of quality.

When HD material is uploaded, a resolution of 720p is used for the HD format.

Upload all selected media in Media Pool

Uploads the media selected in the Media Pool to the corresponding portal or the selective community.

Backup copy

Files must be saved to be able to be easily retrieved in case of a hard drive crash or some other error.

For detailed information, read the Backup (view page 178) section in the "Video project management" ("Managing video projects") chapter.

Load backup project

This option loads an automatically created slideshow backup. This type of automatic backup gets the file extension MV_ (underscore). This command is only intended for use in emergencies, for example, if you unintentionally saved your change and wish to return to the previous version of the movie.

Keyboard shortcut: Alt + O

Clean-up wizard

The clean-up wizard helps you delete projects from your hard drive, including all media files. Use this function to free up disk space for future projects.

Caution: If the files you used in the slideshow have also been used in other slideshows (like trailers, opening music, etc.), then you should make backup copies of these files beforehand.

Shortcut: Ctrl + Alt + G

For detailed information, read the clean-up wizard (view page 180) section in the "Video project management" ("Managing video projects") chapter.

Settings

Movie settings

Opens the movie settings of the currently selected movie.

Keyboard shortcut: E

Program settings



Opens the program settings (view page 254).

Keyboard shortcut: Y

Edit Keyboard shortcut

This menu entry opens a dialog for editing the keyboard shortcuts (view page 274). This allows you to adjust MAGIX Video Pro X2 to your own specific needs.

Exit

Closes MAGIX Video Pro X2.

Keyboard shortcut: Alt + F4

Edit menu

undo

During project editing, you can undo the last changes you made. This way it's no problem if you want to experiment with critical operations. If you don't like the results, then you can always revert to the previous state by using "Undo".

Keyboard shortcut: Ctrl + Z

Restore

The "Redo" function undoes the previous "Undo" function.

Keyboard shortcut: Ctrl + Y

Cut objects



This function deletes the selected scene (or the selected object in "Timeline" mode) and copies it to the clipboard. You can then use the "Paste" command to copy it into any movie.

Keyboard shortcut: Ctrl + X

Copying objects



This function copies the selected scene (or the selected object in Timeline mode) to the clipboard. You can then use the "Paste" command to place it into any movie.

Keyboard shortcut: Ctrl + C

Paste objects



This command inserts the clipboard material (photo or object) at the current position of the start marker.

Keyboard shortcut: Ctrl + V

Duplicate objects



This command duplicates all selected objects. The copies appear beside the original and can be placed in the correct position using drag & drop.

Keyboard shortcut: Ctrl + D

Delete objects



This function deletes the selected scene (or the selected object in "Timeline" mode).

Keyboard shortcut: Del

Select all objects

All objects in the arrangement will be selected.

Keyboard shortcut: Ctrl + A

Cut**Split scene**

This command cuts a scene at the point where the playback marker is positioned. This way, two free-standing objects are created.

Keyboard shortcut: T

Delete scene start

This command cuts a scene at the point where the start marker is positioned, and deletes all material that precedes the start position simultaneously.

Shortcut key: Shift + T

Delete scene end

This command cuts a scene at the point where the start marker is positioned, and deletes all material behind the start position simultaneously.

Shortcut: Shift + Z

Remove scene

If you want to cut a scene out of a movie retroactively, this option automatically moves all objects, titles, and transitions on all tracks forwards so that no gaps result.

Objects on other tracks which project into the area of the selected scene will not be moved automatically; they will remain at the current position.

Keyboard shortcut: Ctrl + Del

Split movie

This command splits a movie at the point where the playback marker is positioned, making two separate movies. The part before the playback marker will remain in the arranger. The remaining part will be erased from the current arranger and turned into a new movie, which can be found in the "Window" menu.

Keyboard shortcut: Alt + T

Adjust music to section

If you have edited your background music with the tempo detection wizard and a musical tempo was provided, then you can adjust the cuts to change automatically in time with the beat using this command. All hard cuts (edits without transitions) will be moved to occur on the musical quarter notes.

Keyboard shortcut: Ctrl + Shift + U

Wizards

Slideshow Maker

Opens the Slideshow Maker (view page 128)

Keyboard shortcut: Ctrl + Shift + M

Soundtrack Maker

This command opens MAGIX Soundtrack Maker (view page 154).

Keyboard shortcut: W

Travel route animation

This menu entry opens the separate Travel route animation program. This enables simple creation of animated travel routes with the help of online maps.

Note: In order to be able to use current map data, maps are fetched by Travel route animation directly from the Internet. This requires an active Internet connection. More information about the program is available in the help file, which can be opened by pressing the "F1" key.

Mixdown Audio

This option joins all audio objects in one audio file. The sound material will only occupy one track of the arranger and will hardly affect the RAM, but it will occupy approximately 10 MB (in stereo) on the hard drive. This will give you more control over the arranger and more space for additional objects.

MAGIX Video Pro X2 automatically normalizes the audio file, i.e. the loudest part of the wave audio object is identical with the highest figure of the 16-bit resolution ceiling. This guarantees the same sound quality, even if you repeat the mix down procedure or you combine the mix down file with other wave audio objects again and again.

The mix function is very helpful if you want to go on using the mixdown object. For the final AVI or WAV (or any other multi-media) file, which is designed for burning a CD or for use on other PCs, use the "Export arrangement" submenu options from the file menu instead of the mixdown function.

Tip: Instead of using the mixdown function, you can use the various options of th submenu "Export movie" in the File menu to create a final final *.avi or *.wav (or any other multimedia) file.

Keyboard shortcut: Shift + M

Audio and video mixdown

In addition to the "Mix down audio" function (see above), all video objects including effects, fades, and edits in a single MAGIX video file (view page 183). If this overloads your CPU, try closing some other programs.

Edit snap point

If the position of objects, object borders, markers, or the playback marker is changed with the mouse, these will automatically spring to certain "key positions" if you get close enough to them. This functions as a "notch", i.e. even objects in a higher zoomed resolution can be precisely positioned, without any gaps, which you wouldn't normally see in that resolution. Normally, all object borders and all markers lock to one another.

- Per object, one additional snap point can now be placed within an object to mark positions where other objects should snap to. This is helpful if you want to show a title at a certain spot in a video object, for example.
- To set a snap point, select an object and place the playback marker at the position where you would like the snap point to be.
- Next, use "**Set snap point**" to set the point. Likewise, "**Delete snap point**" removes a snap point. As soon as you select the option "Set snap point" at another position it will be moved automatically.
- "**Delete all snap points**" deletes all snap points for all objects.

Keyboard shortcut: Alt + Shift + P

Marker

Set project marker

This option sets a project marker at the current playback position. More information about project markers is available in the chapter "Markers" under "Set project marker (view page 99)".

Delete project marker

Deletes the selected project marker (view page 99). Project markers can be deleted and renamed via the context menu.

Set chapter marker



Sets a chapter marker at the position of the playback marker. This creates a chapter entry in the disc menu, in case you are planning to burn the movie to CD/DVD.

You can rename your chapter markers by right clicking and selecting "Rename". The name then appears in the chapter menu.

Shortcut: Shift + Enter

Automatic chapter markers

Automatically sets chapter markers in the arrangement based on certain rules. These chapter markers determine the chapters in your DVD menu. This function is useful if you want to burn your recording onto disc right away.

There are a few options for automatic chapter generation:

At the beginning of the movie: The movie contains only one chapter

At the object starts in a track...: Every object in a track creates a chapter. Track 1 is preset.

At the position of existing title objects: Subtitles, for instance as faded-in subheadings, give the position of the chapter markers.

Provide interval (in minutes)/provide quantity: If the chapters are separated without any particular method and are just needed for quicker navigation, you can also insert chapter markers in pre-defined intervals or as a pre-defined number of chapter markers.

Titling the chapter markers: To title the chapter markers, you can use a user-defined name with consecutive numbers or the object name or text from the text objects.

Optionally, you can delete existing chapter markers and confine the automatic chapter marker function to the area between the start and end markers.

Keyboard shortcut: Alt + Shift + Enter

Delete (all) chapter markers

Deletes one or all chapter markers. This removes chapter entries from the disc menu. Read more in "Burn screen".

Keyboard shortcut: Ctrl + Enter / Alt + Ctrl + Enter

Marker -> Set range start/end

Sets a range start/end marker at the position of the playback marker.

Keyboard shortcut: I/O

Marker -> Jump to range start/end

Sets the playback marker at the position of the range start/end.

Shortcut: Shift + I/O

Marker -> Reset selected range

Deletes the range start and the range end.

Move screen view

Using these commands, a viewable portion together with the start marker will be moved in the timeline. You can quickly skip between different markers (skip, chapter, scene, ad-marker) and object edges.

Keyboard shortcut: See "Keyboard shortcuts", "Arranger". (view page 269)

Effects (FX)

Master effects

This menu item accesses the movie's effects settings (view page 130). The settings made in this case will affect the entire film.

Shortcut: Ctrl + B

Video object effects

Scene recognition

Calls up the automatic scene recognition, which "cuts up" longer videos into scenes for storage in the "Takes" directory.

Keyboard shortcut: Shift + Z

Motion stabilizer

Opens the "Motion stabilizer" dialog for you to correct shaky footage. Please read the chapter "Motion stabilizer (view page 121)".

Keyboard shortcut: Shift + K

Search for and remove ads

Opens the dialog for searching and removing advertising.

Keyboard shortcut: Shift + C

Edit in external Editor

Graphic files (BMPs or JPEGs) from the arranger can be post-edited in an external graphics program. The selected image file is loaded automatically and, once editing has been completed, is used in the MAGIX Video Pro X2 instead of the original material. For this, MAGIX Video Pro X2 offers the high-performance photo editing program MAGIX Video Pro X2.

Save photos with effects

This allows you to save photos used in the movie and add the object effects used in MAGIX Video Pro X2 (e.g. StoryMaker) to the photo.

Create panorama...

Opens the dialog for setting a panorama. Place as many photos in the correct order as you like, and align brightness and color settings to get the best results. You should make sure that the photos harmonize at the transitions.

Video effects

These are the various effects which can be applied to videos and stills. The effects can be set after an object is selected in the respective effects dialog which appears. For more information, see the "Video effects in the Media Pool (view page 108)" chapter.

Video effect templates

This features general templates that can be added to the video objects via drag & drop and several video mix effects that can be quickly and easily applied, e.g. bluescreen.

Movement effects

These are movement effects you can use to animate the frame by using zoom or camera movements. For more information, go to the "Effects and titles" chapter in "Movement effects in Media Pool (view page 115)".

Movement effect templates

These are templates for movement effects. These can be added from the Media Pool into the arrangement by double-clicking or via drag & drop.

Section

Places video objects in a particular part of the screen. Please read the "Video effects" chapter for more details.

Background design

Select a color, a picture, or any video on your hard disk which you would like to serve as the background for the photo displayed. This function is especially useful when photos have black bars around them, or if they are reduced in size.

Reset background

Resets the background design (view page 227) settings to default settings.

Set as background

Uses the selected photo or video as the background.

Save video effects

This command lets you save the current effects combination for each object separately.

Shortcut: Alt + Shift + S

Reset video effects

This option allows you to deactivate all currently used effects entirely if you want to undo the changes.

Shortcut: Alt + Shift + C

Audio object effects

Normalize

The "Normalize audio" function increases the level of the audio object to the maximum possible without overmodulating the material. To do this, the largest signal peak in the audio material and the level of the object are detected so that this point corresponds exactly to 0dB (full modulation).

Keyboard shortcut: Shift + N

Reduce volume

Please see "Reducing volume (view page 147)" in the audio effects chapter.

Keyboard shortcut: Alt + Shift + L

Set volume

This function, located in both the effects menu and the context menu, controls the sound volume for individual objects, just like the object handles in the arranger.

Audio cleaning

Please see "Audio cleaning (More Informationen can be found in the section "Sound optimization" on page 135)" in the "Audio effects" chapter

Keyboard shortcut: Shift + W

Echo/Hall

Please see "Reverb/Echo ("Reverb/Delay")" in the chapter "Audio effects".

Keyboard shortcut: Shift + H

Timestretch/Resample

Read more about this in "Timestretch/Resample".

Keyboard shortcut: Shift + Q

Surround

Surround, see Surround, chapter Audio effects

Keyboard shortcut: Ctrl + Shift + N

Load audio effects

This command lets you load a saved effects combination for the currently selected object. If you have selected multiple objects, then the effects combination for each objects will be applied.

Keyboard shortcut: Ctrl + Alt + O

Save audio effects

This command lets you save the current effects combination for each object separately.

Keyboard shortcut: Ctrl + Alt + S

Reset audio effects

This option allows you to deactivate all currently used effects entirely if you want to undo the changes.

Keyboard shortcut: Ctrl + Alt + K

BPM Wizard

Please see "BPM wizard" in the chapter "Audio".

Keyboard shortcut: Shift + E

Volume curve

The most important object effects curve, allowing the volume to be immediately accessible. Volume is also located in the Media Pool under "Effects -> Audio effects -> General", and can also be animated there.

Keyboard shortcut: Alt + X

Title Effects**Title Editor**

Opens the title editor (More Informationen can be found in the section "Title Editor" on page 124) for the selected photo, video, or title object.

Keyboard shortcut: Ctrl + T

Load Title Effects

You can store the current preset effects combination for each title object separately and later apply them to other title objects if they have worked satisfactorily.

Save Title Effects

You can store the current preset effects combination for each title object separately and apply it later to other title objects.

Keyboard shortcut: Alt + T

Design elements

Multi picture-in-picture: These are various effects presets for image stacking.

Collages: These work similarly to normal picture-in-picture effects, but more objects are used. Depending on the collage, arrange the selected objects one after the other and drag the collage onto the first object.

Portrait effects: Select individual effects which are especially suited to vertically formatted photos.

Image objects: These are various image objects like black bars, thought bubbles for cartoons, etc.

Intros/Outros: These are beginning and end scenes for films with various themes.

Visuals: Graphical displays of any played sounds which can be combined with other video material.

Effects library

Using these menu choices, you can control the corresponding directories in the Media Pool.

Synthesizer

Synthesizers in MAGIX Video Pro X2 can be loaded as individual objects. This is less of an effect than a technical means of producing your own sound effects. More information is available in "Synthesizers".

Windows menu

Workspace

Switch between the classic Movie Edit Pro screen with a single monitor or the normal MAGIX Video Pro X2 view. More information can be found in the chapter "Notes for MAGIX Movie Edit Pro users (view page 18)".

Cut Trimmer

Shows or hides the "Cut trimmer" window. This allows you to make fine adjustments to the position of the selected video or image objects and their handles – as well as the transition characteristics (transition type, length). Please read the "Fine adjustment of video ("Trimming")" chapter for more details.

Keyboard shortcut: N

Object trimmer

Shows or hides the "Cut trimmer" window. Opens up the video trimmer to help you fine tune the position and the handles of a video object. Please read the "Fine adjustment of video ("Trimming")" chapter for more details.

Shortcuts: Q

Mixer



This option allows you to display or conceal the real-time mixer. You will find further information, especially with regard to the integration of effects plug-ins, in the chapter "Mixer".

Keyboard shortcut: M

Master audio effect rack

Opens or closes the master effects rack; you can also use the "Master FX" button in the mixer window for this.

Keyboard shortcut: B

Mastering Suite

This opens the Mastering Suite (view page 143).

Source monitor

The source monitor provides an opportunity to preview and edit files in the Media Pool, and these can in turn be dragged into the project folder or the arrangement from the source monitor.

For the exact options for cutting in the source monitor, please see the chapter "Section markers in the source monitor (view page 100)".

Program monitor

Hides or shows the program monitor.

Keyboard shortcut: V

Media Pool

This option can be used to conceal the Media Pool or make it visible again.

Keyboard shortcut: F

Project

Shows/Hides the arranger

Project folder

Hides or shows the project folder.

Display settings

See program settings -> "Display presets (view page 259)".

Shortcut: Alt + Shift + V

Show movie overview

With this option, you can display an overview of the entire arrangement on the video screen. It is particularly suitable for long and complex arrangements to prevent you from losing track. You can view the whole movie and you are, despite this, able to access the object you're looking for in a split second – you can zoom in directly on the video monitor or move around the clip displayed in the arranger.

Shortcut: Shift + A

Optimize movie view



The zoom level is set to 100% so that you can see every object and the entire film.

The start and end markers are set to the beginning or end so that the entire movie can be played.

Shortcut: Shift + B

Zoom horizontal

Here you will find a range of functions for altering the visible time axis section.

Zoom vertical

The number of simultaneously visible tracks can be changed here. The more tracks are visible, the smaller they will appear.

Close all movies

Closes all opened movies.

Help menu

Help

This command is available for almost every feature of the program, and it opens the "Help" file for the corresponding topic. Use this command to get help on any of MAGIX Video Pro X2's functions.

Keyboard shortcut: F1

Content

Use the command "Content" in the "Help" menu to open the start page of the help file. You can read through the help file step-by-step and jump to specific sections via the tree structure on the right hand side.

Context help



By choosing the context help entry from the "Help" menu, or by clicking on the button in the top toolbar, the mouse cursor will turn into an arrow with a question mark.

Then, when you click on any button of the main screen, program help describing the control element in question will open.

Shortcut key: Alt + F1

Online tutorials

Interesting tutorials and useful tips for working with MAGIX Video Pro X2 can be found on the MAGIX website.

An online connection is required.

Display tool tips

Tooltips are small information windows that open up automatically if the mouse pointer stops briefly on a button or some other area. They provide information about the function of the button. These information boxes can be switched on or off with this option.

Keyboard shortcut: Ctrl + Shift + F1

About MAGIX Video Pro X2

Displays copyright info and version number of MAGIX Video Pro X2.

Register online

This option opens the MAGIX homepage for online registration where you can register yourself as a MAGIX user.

Registration grants you access to the MAGIX support website (see support) where various program updates and help programs can be downloaded.

With the registration form supplied (start menu under "MAGIX Video Pro X2 -> Service and support -> Register") you can register via post or fax. Simply print it out, fill it in, and send it off!

Online update

Connects directly to the MAGIX online update page where you can get the latest version of your program.

System information

Information on the current date and time appear in this Information window, in addition to the number of files that have just been opened, the total size of the memory in the system and the size of the memory used by the MAGIX Video Pro X2. In short, a list of all available drives and their available memory capacity.

The memory area used by the MAGIX Video Pro X2 should never be larger than the physical RAM in the computer, as otherwise the performance will drop drastically during replay as a result of virtual memory swapping!

Keyboard shortcut: Ctrl + I

Reset program settings to default...

Use this function to reset all program settings you made in MAGIX Video Pro X2 to their original settings.

Context menu (right click)

Context menu can be reached by right clicking on a selected object. It offers functions which are available and can be expected in the given context.

Video objects

Create frame table (new)

Sometimes, rebuilding a frame table can get rid of problems in certain MPEG files. For example, such problems can be present if the navigation (positioning of the playback marker, transport) is bumpy or doesn't function at all.

Normally, when loading MPEG video, a frame table is not created in order to speed up the loading process. If you do create one anyway, MPEG files are normally noticeably faster and easier to edit.

Scene recognition

Calls up the automatic scene recognition, which "cuts up" longer videos into scenes for storage in the "Takes" directory.

Keyboard shortcut: Shift + Z

Motion stabilizer

Opens the "Motion stabilizer" dialog for you to correct shaky footage. Please read the chapter "Motion stabilizer (view page 121)".

Keyboard shortcut: Shift + K

Search for and remove ads

Opens the dialog for searching and removing advertising.

Keyboard shortcut: Shift + C

Cut Trimmer

Shows or hides the "Cut trimmer" window. This allows you to make fine adjustments to the position of the selected video or image objects and their handles – as well as the transition characteristics (transition type, length). Please read the "Fine adjustment of video ("Trimming")" chapter for more details.

Keyboard shortcut: N

Object trimmer

Shows or hides the "Cut trimmer" window. Opens up the video trimmer to help you fine tune the position and the handles of a video object. Please read the "Fine adjustment of video ("Trimming")" chapter for more details.

Shortcuts: Q

Edit snap point

If the position of objects, object borders, markers, or the playback marker is changed with the mouse, these will automatically spring to certain "key positions" if you get close enough to them. This functions as a "notch", i.e. even objects in a higher zoomed resolution can be precisely positioned, without any gaps, which you wouldn't normally see in that resolution. Normally, all object borders and all markers lock to one another.

- Per object, one additional snap point can now be placed within an object to mark positions where other objects should snap to. This is helpful if you want to show a title at a certain spot in a video object, for example.
- To set a snap point, select an object and place the playback marker at the position where you would like the snap point to be.
- Next, use "**Set snap point**" to set the point. Likewise, "**Delete snap point**" removes a snap point. As soon as you select the option "Set snap point" at another position it will be moved automatically.
- "**Delete all snap points**" deletes all snap points for all objects.

Keyboard shortcut: Alt + Shift + P

Create still frame

MAGIX Video Pro X2 can create a still frame of an object at the position of the start marker.

Audio cleaning

Please see "Audio cleaning (More Informationen can be found in the section "Sound optimization" on page 135)" in the "Audio effects" chapter

Keyboard shortcut: Shift + W

Motion

Lets you move video objects on the screen. See "Movement" in the "Video effects" chapter.

Section

Places video objects in a particular part of the screen. Please read the "Video effects" chapter for more details.

Attach to picture position in the video

This can be used to attach the current video, image, or (3D) text object to a movement path in another video object. Read more about this in the chapter "Magnetic objects (view page 90)".

Interpolation for interlace material

Choose this option to remove interlace artifacts from your video image. If, for instance, you extract freeze frames from a video, ridge structures appear in sequences which feature movement.

Anti-flicker filter

Choose this option for still pictures with detailed structures and high contrast. This filter reduces line flickering during TV playback.

Border cropping adjustment:

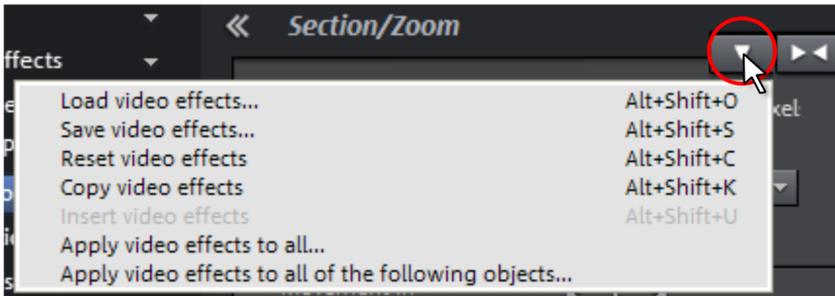
Select this option if the edges are cropped during playback on your television. Values stored in "Movie effects settings (view page 131)" ("Effects" menu) will be applied.

Background design

Select a color, a picture, or any video on your hard disk which you would like to serve as the background for the photo displayed. This function is especially useful when photos have black bars around them, or if they are reduced in size.

Video effects

The entries for this submenu are directly available in the Media Pool.

**Load video effects**

This command lets you load a saved effects combination for the currently selected object. If you have selected multiple objects, then the effects combination for each object will be applied.

Shortcut: Alt + Shift + O

Save video effects

This command lets you save the current effects combination for each object separately.

Shortcut: Alt + Shift + S

Reset video effects

This option allows you to deactivate all currently used effects entirely if you want to undo the changes.

Shortcut: Alt + Shift + C

Copy video effects

Effects settings for an object can be copied to the clipboard to add (view page 237) them to other objects.

Insert video effects

Video effects can be added from other objects to the one selected. The settings must be copied (view page 237) to the clipboard beforehand to do so.

Apply video effects to all

The current effects settings will be applied to all scenes and photos in your movie.

Apply video effects to all of the following

The current effects settings will be applied to all scenes and photos in your movie which lie behind the selected object.

Copying objects



This function copies the selected scene (or the selected object in Timeline mode) to the clipboard. You can then use the "Paste" command to place it into any movie.

Keyboard shortcut: Ctrl + C

Cut objects



This function deletes the selected scene (or the selected object in "Timeline" mode) and copies it to the clipboard. You can then use the "Paste" command to copy it into any movie.

Keyboard shortcut: Ctrl + X

Delete objects



This function deletes the selected scene (or the selected object in "Timeline" mode).

Keyboard shortcut: Del

Insert objects into the project folder

Every single object can be added to the project folder and used again later. All of the object's properties will be maintained. This is useful, for example, if the video material should be edited beforehand and then arranged in the next step.

Add time code

MAGIX Video Pro X2 can add a time or date ("timecode") to the picture material. To add a timecode, right click on the video object and choose the "Fade in date as title" option from the context menu.

- If you're using a DV-AVI file (a digital recording from a camcorder, for instance), then the recording date will be used from the selected section.

- If you're using a different file, the creation date will be used as the timecode.

The title editor is then opened in order to customize the entry.

Object properties

This function displays all of the information about the currently selected objects such as file name, position on the hard drive, tempo, etc. The object editor also defines the foreground and background color of every object in the arrangement. Depending on the type of object, the elements displayed will vary.

General information

The name of the selected object and the fore/background color for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

Interlace/Deinterlace (only for video objects)

The tab "Interlace/Deinterlace" lets you specify the interlace editing of the video material.

Interlace properties: Normally, MAGIX Video Pro X2 automatically makes suitable settings for this; however, if the video material is faulty, you may have to make some adjustments yourself. If playback of the exported movie is very jittery or if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

Deinterlace options: Normally, the setting "**Automatic interlace processing**" does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Video Pro X2 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace (view page 304)".

Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. The tempo can be detected using Tempo and beat recognition.

Keyboard shortcut: Ctrl + E

Image objects

Create frame table (new)

Sometimes, rebuilding a frame table can get rid of problems in certain MPEG files. For example, such problems can be present if the navigation (positioning of the playback marker, transport) is bumpy or doesn't function at all.

Normally, when loading MPEG video, a frame table is not created in order to speed up the loading process. If you do create one anyway, MPEG files are normally noticeably faster and easier to edit.

Scene recognition

Calls up the automatic scene recognition, which "cuts up" longer videos into scenes for storage in the "Takes" directory.

Keyboard shortcut: Shift + Z

Edit snap point

If the position of objects, object borders, markers, or the playback marker is changed with the mouse, these will automatically spring to certain "key positions" if you get close enough to them. This functions as a "notch", i.e. even objects in a higher zoomed resolution can be precisely positioned, without any gaps, which you wouldn't normally see in that resolution. Normally, all object borders and all markers lock to one another.

- Per object, one additional snap point can now be placed within an object to mark positions where other objects should snap to. This is helpful if you want to show a title at a certain spot in a video object, for example.
- To set a snap point, select an object and place the playback marker at the position where you would like the snap point to be.
- Next, use "**Set snap point**" to set the point. Likewise, "**Delete snap point**" removes a snap point. As soon as you select the option "Set snap point" at another position it will be moved automatically.
- "**Delete all snap points**" deletes all snap points for all objects.

Keyboard shortcut: Alt + Shift + P

Edit in MAGIX Video Pro X2

Graphics files (BMPs or JPEGs) can be edited in MAGIX Video Pro X2. The selected image file is loaded automatically and, once editing has been completed, is used in the MAGIX Video Pro X2 instead of the original material.

Save photos with effects

This allows you to save photos used in the movie and add the object effects used in MAGIX Video Pro X2 (e.g. StoryMaker) to the photo.

Create panorama...

Opens the dialog for setting a panorama. Place as many photos in the correct order as you like, and align brightness and color settings to get the best results. You should make sure that the photos harmonize at the transitions.

Motion

Lets you move video objects on the screen. See "Movement" in the "Video effects" chapter.

Section

Places video objects in a particular part of the screen. Please read the "Video effects" chapter for more details.

Attach to picture position in the video

This can be used to attach the current video, image, or (3D) text object to a movement path in another video object. Read more about this in the chapter "Magnetic objects (view page 90)".

Cut automatically to fit screen

This function ensures that images don't have black edges (in case they don't fit into the given format).

Anti-flicker filter

Choose this option for still pictures with detailed structures and high contrast. This filter reduces line flickering during TV playback.

Border cropping adjustment:

Select this option if the edges are cropped during playback on your television. Values stored in "Movie effects settings (view page 131)" ("Effects" menu) will be applied.

Background design

Select a color, a picture, or any video on your hard disk which you would like to serve as the background for the photo displayed. This function is especially useful when photos have black bars around them, or if they are reduced in size.

Export to MAGIX Online Album

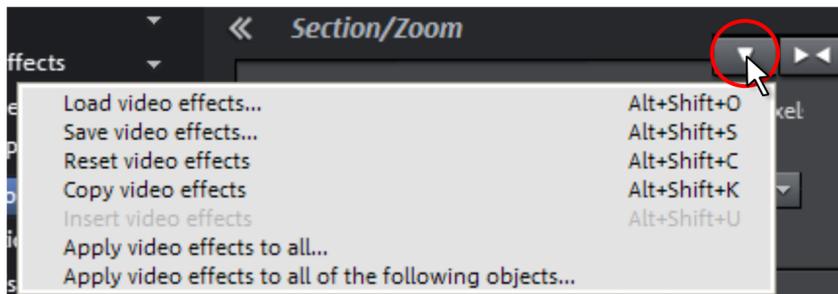
Log in to the MAGIX Online Album service and load images and music into the album to share them with your friends and acquaintances in the Internet. The assistant will lead you step-by-step through the uploading process. After the process is finished, you can access your updated MAGIX Online Album.

Export to MAGIX Online Print Service

Use MAGIX Online Print Service to order high-quality photo prints or fantastic printed photo gifts of your valuable digital photos simply with one click.

Video effects

The entries for this submenu are directly available in the Media Pool.



Load video effects

This command lets you load a saved effects combination for the currently selected object. If you have selected multiple objects, then the effects combination for each object will be applied.

Shortcut: Alt + Shift + O

Save video effects

This command lets you save the current effects combination for each object separately.

Shortcut: Alt + Shift + S

Reset video effects

This option allows you to deactivate all currently used effects entirely if you want to undo the changes.

Shortcut: Alt + Shift + C

Copy video effects

Effects settings for an object can be copied to the clipboard to add (view page 237) them to other objects.

Insert video effects

Video effects can be added from other objects to the one selected. The settings must be copied (view page 237) to the clipboard beforehand to do so.

Apply video effects to all

The current effects settings will be applied to all scenes and photos in your movie.

Apply video effects to all of the following

The current effects settings will be applied to all scenes and photos in your movie which lie behind the selected object.

Copying objects

This function copies the selected scene (or the selected object in Timeline mode) to the clipboard. You can then use the "Paste" command to place it into any movie.

Keyboard shortcut: Ctrl + C

Cut objects

This function deletes the selected scene (or the selected object in "Timeline" mode) and copies it to the clipboard. You can then use the "Paste" command to copy it into any movie.

Keyboard shortcut: Ctrl + X

Delete objects



This function deletes the selected scene (or the selected object in "Timeline" mode).

Keyboard shortcut: Del

Insert objects into the project folder

Every single object can be added to the project folder and used again later. All of the object's properties will be maintained. This is useful, for example, if the video material should be edited beforehand and then arranged in the next step.

Object properties

This function displays all of the information about the currently selected objects such as file name, position on the hard drive, tempo, etc. The object editor also defines the foreground and background color of every object in the arrangement. Depending on the type of object, the elements displayed will vary.

General information

The name of the selected object and the fore/background color for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

Interlace/Deinterlace (only for video objects)

The tab "Interlace/Deinterlace" lets you specify the interlace editing of the video material.

Interlace properties: Normally, MAGIX Video Pro X2 automatically makes suitable settings for this; however, if the video material is faulty, you may have to make some adjustments yourself. If playback of the exported movie is very jittery or if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

Deinterlace options: Normally, the setting "**Automatic interlace processing**" does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Video Pro X2 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace (view page 304)".

Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. The tempo can be detected using Tempo and beat recognition.

Keyboard shortcut: Ctrl + E

Transitions

Cut Trimmer

Shows or hides the "Cut trimmer" window. This allows you to make fine adjustments to the position of the selected video or image objects and their handles – as well as the transition characteristics (transition type, length). Please read the "Fine adjustment of video ("Trimming")" chapter for more details.

Keyboard shortcut: N

Settings...

A dialog with the settings for the corresponding transition will be displayed. Depending on the transition, different settings are available.

Audio objects

Normalize

The "Normalize audio" function increases the level of the audio object to the maximum possible without overmodulating the material. To do this, the largest signal peak in the audio material and the level of the object are detected so that this point corresponds exactly to 0dB (full modulation).

Keyboard shortcut: Shift + N

Reduce volume

Please see "Reducing volume (view page 147)" in the audio effects chapter.

Keyboard shortcut: Alt + Shift + L

Set volume

This function, located in both the effects menu and the context menu, controls the sound volume for individual objects, just like the object handles in the arranger.

Edit snap point

If the position of objects, object borders, markers, or the playback marker is changed with the mouse, these will automatically spring to certain "key positions" if you get close enough to them. This functions as a "notch", i.e. even objects in a higher zoomed resolution can be precisely positioned, without any gaps, which you wouldn't normally see in that resolution. Normally, all object borders and all markers lock to one another.

- Per object, one additional snap point can now be placed within an object to mark positions where other objects should snap to. This is helpful if you want to show a title at a certain spot in a video object, for example.
- To set a snap point, select an object and place the playback marker at the position where you would like the snap point to be.
- Next, use "**Set snap point**" to set the point. Likewise, "**Delete snap point**" removes a snap point. As soon as you select the option "Set snap point" at another position it will be moved automatically.

- **"Delete all snap points"** deletes all snap points for all objects.

Keyboard shortcut: Alt + Shift + P

Audio cleaning

Please see "Audio cleaning (More Informationen can be found in the section "Sound optimization" on page 135)" in the "Audio effects" chapter

Keyboard shortcut: Shift + W

Echo/Hall

Please see "Reverb/Echo ("Reverb/Delay")" in the chapter "Audio effects".

Keyboard shortcut: Shift + H

Timestretch/Resample

Read more about this in "Timestretch/Resample".

Keyboard shortcut: Shift + Q

Load audio effects

This command lets you load a saved effects combination for the currently selected object. If you have selected multiple objects, then the effects combination for each objects will be applied.

Keyboard shortcut: Ctrl + Alt + O

Save audio effects

This command lets you save the current effects combination for each object separately.

Keyboard shortcut: Ctrl + Alt + S

Reset audio effects

This option allows you to deactivate all currently used effects entirely if you want to undo the changes.

Keyboard shortcut: Ctrl + Alt + K

Copying objects



This function copies the selected scene (or the selected object in Timeline mode) to the clipboard. You can then use the "Paste" command to place it into any movie.

Keyboard shortcut: Ctrl + C

Cut objects



This function deletes the selected scene (or the selected object in "Timeline" mode) and copies it to the clipboard. You can then use the "Paste" command to copy it into any movie.

Keyboard shortcut: Ctrl + X

Delete objects



This function deletes the selected scene (or the selected object in "Timeline" mode).

Keyboard shortcut: Del

Insert objects into the project folder

Every single object can be added to the project folder and used again later. All of the object's properties will be maintained. This is useful, for example, if the video material should be edited beforehand and then arranged in the next step.

BPM Wizard

Please see "BPM wizard" in the chapter "Audio".

Keyboard shortcut: Shift + E

Volume curve

The most important object effects curve, allowing the volume to be immediately accessible. Volume is also located in the Media Pool under "Effects -> Audio effects -> General", and can also be animated there.

Keyboard shortcut: Alt + X

Audio effects curves

This feature provides direct access to diverse object effects, and these can be automated using a curve. All of the audio effects listed here are found in the Media Pool under "Effects -> Audio effects -> General".

Snap to other audio objects

Video objects grouped with audio objects can be used to synchronize recordings from different camera perspectives.

For more information, please see the topic "Synchronize video objects using the audio track (view page 107)".

Split stereo objects into mono objects

An audio object in stereo format can be split into two mono objects very easily using this function. The original track will then feature the audio object with the left channel, and an automatically added track will feature the object with the right channel.

This is useful if the channels were switched by accident during recording, i.e. due to incorrect cabling. In this case, simply open the mixer and set the pan setting to the correct position for each channel.

Display track curves

The most recently selected track curve is displayed on the object for editing. Use of a curve causes the parameters set in the mixer to be disregarded.

Note: The track curves of audio objects can be animated in the same way as video effects. Read more about this in the chapter "Animating objects (view page 147)".

Reset track curves

All track curves can be reset with this function. The settings made in the mixer will be applied to the track again.

Caution! Before applying this function, make sure none of the track curves will be need in the future.

Export to MAGIX Online Album

Log in to the MAGIX Online Album service and load images and music into the album to share them with your friends and acquaintances in the Internet. The assistant will lead you step-by-step through the uploading process. After the process is finished, you can access your updated MAGIX Online Album.

Object properties

This function displays all of the information about the currently selected objects such as file name, position on the hard drive, tempo, etc. The object editor also defines the foreground and background color of every object in the arrangement. Depending on the type of object, the elements displayed will vary.

General information

The name of the selected object and the fore/background color for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

Interlace/Deinterlace (only for video objects)

The tab "Interlace/Deinterlace" lets you specify the interlace editing of the video material.

Interlace properties: Normally, MAGIX Video Pro X2 automatically makes suitable settings for this; however, if the video material is faulty, you may have to make some adjustments yourself. If playback of the exported movie is very jittery or if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

Deinterlace options: Normally, the setting "**Automatic interlace processing**" does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Video Pro X2 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace (view page 304)".

Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. The tempo can be detected using Tempo and beat recognition.

Keyboard shortcut: Ctrl + E

Text objects

Title Editor



Opens the title editor (More Informationen can be found in the section "Title Editor" on page 124) for the selected photo, video, or title object.

Keyboard shortcut: Ctrl + T

Disable effects

All effects applied to the text will be deactivated.

Edit snap point

If the position of objects, object borders, markers, or the playback marker is changed with the mouse, these will automatically spring to certain "key positions" if you get close enough to them. This functions as a "notch", i.e. even objects in a higher zoomed resolution can be precisely positioned, without any gaps, which you wouldn't normally see in that resolution. Normally, all object borders and all markers lock to one another.

- Per object, one additional snap point can now be placed within an object to mark positions where other objects should snap to. This is helpful if you want to show a title at a certain spot in a video object, for example.
- To set a snap point, select an object and place the playback marker at the position where you would like the snap point to be.
- Next, use "**Set snap point**" to set the point. Likewise, "**Delete snap point**" removes a snap point. As soon as you select the option "Set snap point" at another position it will be moved automatically.
- "**Delete all snap points**" deletes all snap points for all objects.

Keyboard shortcut: Alt + Shift + P

Load title template

A dialog for loading a title template will open.

Save as title template

This allows you to create your own templates using your title creations. The function "Load title template" enables these templates to be used again quickly.

Save as special effect

This function saves the title with all objects that have been grouped (view page 222) with the title object. This enables you to create title templates that contain all required overlay objects.

Convert to 3D title

The title object will now be turned into a MAGIX 3D Maker object, and a limited version of MAGIX 3D Maker will open.

Attach to picture position in the video

This can be used to attach the current video, image, or (3D) text object to a movement path in another video object. Read more about this in the chapter "Magnetic objects (view page 90)".

Border cropping adjustment:

Select this option if the edges are cropped during playback on your television. Values stored in "Movie effects settings (view page 131)" ("Effects" menu) will be applied.

Copying objects

This function copies the selected scene (or the selected object in Timeline mode) to the clipboard. You can then use the "Paste" command to place it into any movie.

Keyboard shortcut: Ctrl + C

Cut objects

This function deletes the selected scene (or the selected object in "Timeline" mode) and copies it to the clipboard. You can then use the "Paste" command to copy it into any movie.

Keyboard shortcut: Ctrl + X

Delete objects

This function deletes the selected scene (or the selected object in "Timeline" mode).

Keyboard shortcut: Del

Insert objects into the project folder

Every single object can be added to the project folder and used again later. All of the object's properties will be maintained. This is useful, for example, if the video material should be edited beforehand and then arranged in the next step.

Object properties

This function displays all of the information about the currently selected objects such as file name, position on the hard drive, tempo, etc. The object editor also defines the foreground and background color of every object in the arrangement. Depending on the type of object, the elements displayed will vary.

General information

The name of the selected object and the fore/background color for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

Interlace/Deinterlace (only for video objects)

The tab "Interlace/Deinterlace" lets you specify the interlace editing of the video material.

Interlace properties: Normally, MAGIX Video Pro X2 automatically makes suitable settings for this; however, if the video material is faulty, you may have to make some adjustments yourself. If playback of the exported movie is very jittery or if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

Deinterlace options: Normally, the setting "**Automatic interlace processing**" does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Video Pro X2 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace (view page 304)".

Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. The tempo can be detected using Tempo and beat recognition.

Keyboard shortcut: Ctrl + E

MAGIX 3D Maker objects

Edit settings...

A limited MAGIX 3D Maker version is opened to edit the selected object.

Edit snap point

If the position of objects, object borders, markers, or the playback marker is changed with the mouse, these will automatically spring to certain "key positions" if you get close enough to them. This functions as a "notch", i.e. even objects in a higher zoomed resolution can be precisely positioned, without any gaps, which you wouldn't normally see in that resolution. Normally, all object borders and all markers lock to one another.

- Per object, one additional snap point can now be placed within an object to mark positions where other objects should snap to. This is helpful if you want to show a title at a certain spot in a video object, for example.
- To set a snap point, select an object and place the playback marker at the position where you would like the snap point to be.
- Next, use "**Set snap point**" to set the point. Likewise, "**Delete snap point**" removes a snap point. As soon as you select the option "Set snap point" at another position it will be moved automatically.
- "**Delete all snap points**" deletes all snap points for all objects.

Keyboard shortcut: Alt + Shift + P

Create still frame

MAGIX Video Pro X2 can create a still frame of an object at the position of the start marker.

Audio cleaning

Please see "Audio cleaning (More Informationen can be found in the section "Sound optimization" on page 135)" in the "Audio effects" chapter

Keyboard shortcut: Shift + W

Motion

Lets you move video objects on the screen. See "Movement" in the "Video effects" chapter.

Section

Places video objects in a particular part of the screen. Please read the "Video effects" chapter for more details.

Attach to picture position in the video

This can be used to attach the current video, image, or (3D) text object to a movement path in another video object. Read more about this in the chapter "Magnetic objects (view page 90)".

Interpolation for interlace material

Choose this option to remove interlace artifacts from your video image. If, for instance, you extract freeze frames from a video, ridge structures appear in sequences which feature movement.

Anti-flicker filter

Choose this option for still pictures with detailed structures and high contrast. This filter reduces line flickering during TV playback.

Border cropping adjustment:

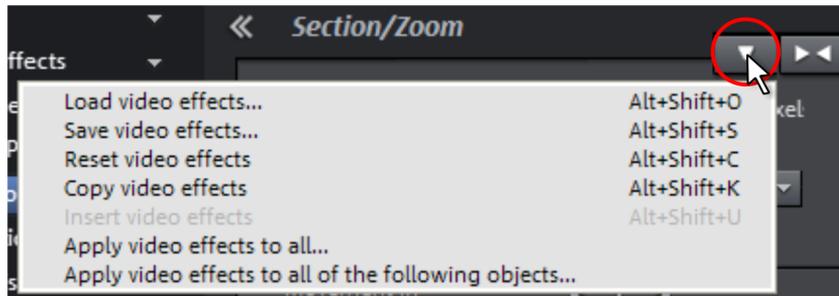
Select this option if the edges are cropped during playback on your television. Values stored in "Movie effects settings (view page 131)" ("Effects" menu) will be applied.

Background design

Select a color, a picture, or any video on your hard disk which you would like to serve as the background for the photo displayed. This function is especially useful when photos have black bars around them, or if they are reduced in size.

Video effects

The entries for this submenu are directly available in the Media Pool.



Load video effects

This command lets you load a saved effects combination for the currently selected object. If you have selected multiple objects, then the effects combination for each object will be applied.

Shortcut: Alt + Shift + O

Save video effects

This command lets you save the current effects combination for each object separately.

Shortcut: Alt + Shift + S

Reset video effects

This option allows you to deactivate all currently used effects entirely if you want to undo the changes.

Shortcut: Alt + Shift + C

Copy video effects

Effects settings for an object can be copied to the clipboard to add (view page 237) them to other objects.

Insert video effects

Video effects can be added from other objects to the one selected. The settings must be copied (view page 237) to the clipboard beforehand to do so.

Apply video effects to all

The current effects settings will be applied to all scenes and photos in your movie.

Apply video effects to all of the following

The current effects settings will be applied to all scenes and photos in your movie which lie behind the selected object.

Copying objects

This function copies the selected scene (or the selected object in Timeline mode) to the clipboard. You can then use the "Paste" command to place it into any movie.

Keyboard shortcut: Ctrl + C

Cut objects

This function deletes the selected scene (or the selected object in "Timeline" mode) and copies it to the clipboard. You can then use the "Paste" command to copy it into any movie.

Keyboard shortcut: Ctrl + X

Delete objects

This function deletes the selected scene (or the selected object in "Timeline" mode).

Keyboard shortcut: Del

Insert objects into the project folder

Every single object can be added to the project folder and used again later. All of the object's properties will be maintained. This is useful, for example, if the video material should be edited beforehand and then arranged in the next step.

Add time code

MAGIX Video Pro X2 can add a time or date ("timecode") to the picture material. To add a timecode, right click on the video object and choose the "Fade in date as title" option from the context menu.

- If you're using a DV-AVI file (a digital recording from a camcorder, for instance), then the recording date will be used from the selected section.
- If you're using a different file, the creation date will be used as the timecode.

The title editor is then opened in order to customize the entry.

Object properties

This function displays all of the information about the currently selected objects such as file name, position on the hard drive, tempo, etc. The object editor also defines the foreground and background color of every object in the arrangement. Depending on the type of object, the elements displayed will vary.

General information

The name of the selected object and the fore/background color for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

Interlace/Deinterlace (only for video objects)

The tab "Interlace/Deinterlace" lets you specify the interlace editing of the video material.

Interlace properties: Normally, MAGIX Video Pro X2 automatically makes suitable settings for this; however, if the video material is faulty, you may have to make some adjustments yourself. If playback of the exported movie is very jittery or if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

Deinterlace options: Normally, the setting "**Automatic interlace processing**" does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Video Pro X2 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace (view page 304)".

Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. The tempo can be detected using Tempo and beat recognition.

Keyboard shortcut: Ctrl + E

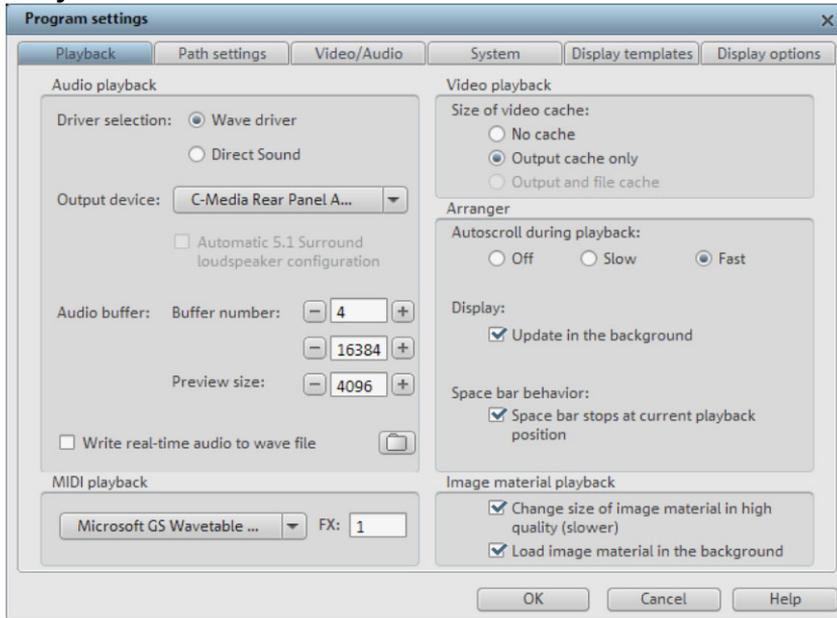
Program settings



All basic settings for MAGIX Video Pro X2 are made in this window. This allows you to influence the settings in MAGIX Video Pro X2 in detail.

Keyboard shortcut: P

Playback



Audio playback

Driver selection WAV/DirectSound: Specify whether you wish to use the standard Windows driver for the sound card or the DirectSound driver. DirectSound is a component of DirectX and, if necessary, is installed together with MAGIX Video Pro X2. DirectSound has the advantage that the sound output (for all modern sound cards or onboard sound chips) can also be used by other programs open simultaneously. WAV drivers are recommended if the CPU load is higher, as the larger buffers allow load peaks to be absorbed better (otherwise this would cause crackling).

Output device: Use this option to specify which sound card plays the wave audio objects. This is especially important if you have multiple sound cards installed on your computer, e.g. "onboard sound" as well as an additional sound card.

Audio buffer: In order to allow smooth playback of a complex arrangement, MAGIX Video Pro X2 creates a RAM data buffer into which the current data is loaded. Therefore it is not the entire arrangement that is preprocessed; processing usually occurs step-by-step.

Multitrack/Previewing size: Specify the buffer size that should be used for playback of the entire arrangement or for previewing waves in the file manager.

Number of buffers: Specify how many buffers you want to use. More buffers increase the safety for crackle-free playback of the arrangement, but also increase the memory requirement. If played via DirectSound (see settings in the "Playback parameter" dialog), only one buffer is used automatically.

Note: If response and loading times are too slow, reduce the buffer size; otherwise, increase the buffer size if the audio playback is choppy or if real-time errors occur. Since error-free playback is usually more important than fast reaction times, the buffer size should be raised to 16384 or 32768 if dropouts occur. The possible number of buffer updates is between 2 and 10.

Write real-time audio to wave file: If this option is activated, the entire soundtrack can be mixed live and recorded simultaneously. For example, you can control mixer fades and effects live during playback. All real-time activities are recorded and saved in a separate wave file.

MIDI playback

Specify which sound card or which MIDI interface should be used for MIDI playback.

Video playback

Video cache size: The video cache ensures a smooth on-screen playback of files and effects by preloading them. The ideal settings depend on your system; experiment to see what results in the best playback performance.

Arranger

Autoscroll during playback: If autoscroll is activated, the screen view automatically shifts when the playback cursor reaches the right edge of the screen, which is particularly useful for longer arrangements. You can select the size of the scrolling steps from either "Fast" (whole pages) or "Slow" (half pages).

Warning: Scrolling requires constant recalculation of the screen view, which may lead to interrupted playback if the amount of system RAM is too low. If this happens, simply deactivate the autoscroll feature.

Display (update in background): The object display update after move and zoom operations in the Arranger is performed in the background to guarantee smooth performance.

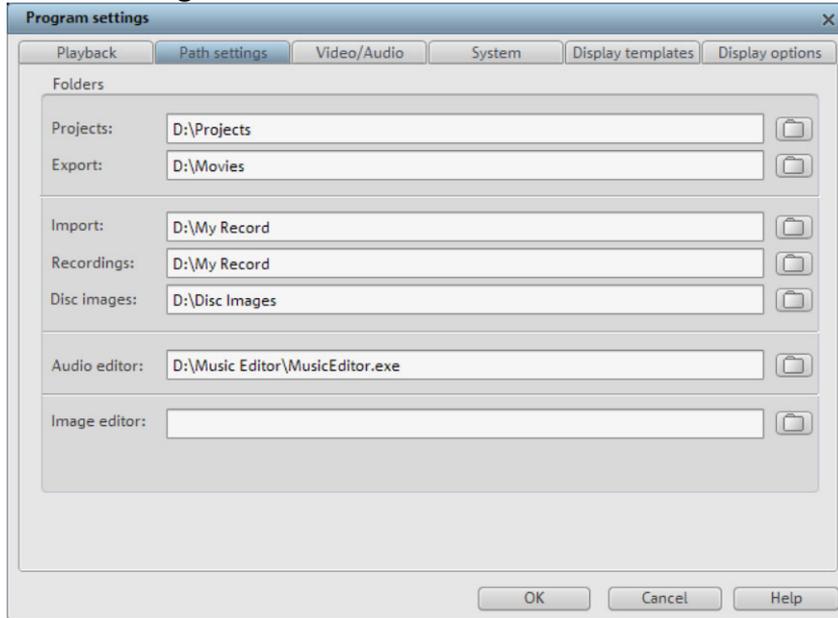
Space bar behavior: You can set whether stopping playback with the space bar moves the playback marker to the current position or returns the marker to its original position.

Image material playback

Resizing high-quality image material: You can use this feature to improve the quality when resizing, particularly when downsizing to less than half of the original size, e.g. for picture-in-picture effects. This also requires more CPU power.

Load image material in background: Image material is loaded in the background to save processor performance.

Path settings



Here you can set the path where:

- projects are saved (**Projects**),
- where exported (**Export**) or imported (**Import**) files, and recordings (**Recordings**) and VCR recordings (**TV recordings**) are saved,
- where **disc images** are saved,
- and where EXE files for the external **audio** and **picture editor** are located so that they can be launched via the context or effects menu.

Video/Audio

In this tab you will find all settings concerning video and audio files.

Video standard

PAL is used in Europe, the US and Japan use NTSC.

Movie display

The resolutions that can be set here concern only the picture display in the Arranger. If playback becomes jerky, we recommend entering a lower value. The quality of exported videos is not influenced by this.

Automatic interlace processing: MAGIX Video Pro X2 normally detects whether the loaded video files were recorded with the interlace or progressive processes automatically, and half-image format is detected for interlaced movies. In case automatic detection fails,

you can deactivate it here and set the object properties (view page 238) of video objects to the correct process.

Video options

Extract sound from video: If a video file contains video and audio data the audio track of the video will also be imported if this option is activated. It will be displayed as an audio object in the arrangement below the video object. Both are automatically grouped together. If the audio track has to be edited or replaced later, you first have to ungroup it ("Ungroup" button in the tool bar or via the "Edit" menu).

Allow user-defined names for sound extracted from VOBs: Specifies whether a warning will be displayed for each imported file during VOB import (VTS_01_1.vob) allowing you to enter a name for your movie (check box "checked") or whether you would like an automatically generated name to be assigned (check box "unchecked").

Automatically copy exported material to clipboard: This option is particularly useful when used with other programs, such as Microsoft Powerpoint. If activated, a multimedia file you have just created is immediately copied to the clipboard and can be used in other applications. For instance, you can insert it into an opened MS Powerpoint template by pressing "Ctrl + V".

Adjust 4:3 aspect ratio to screen: This option automatically customizes photos that have an approximate 4:3 aspect ratio to the television's 4:3 picture. The pictures are therefore easily stretched or compressed. This inevitably brings about distortions in the picture. If this option is deactivated, black bars appear to the sides.

Automatically preview exported clips: This option starts the clip immediately after exporting for verification.

Automatically load/save picture effects from JPX file: If you have edited pictures using another MAGIX program (e.g. MAGIX Digital Photo Maker), then a .jpx description file is saved along with the image which contains information about effects editing and texts. This option adds that information into your editing process.

Use picture effects when exporting to MAGIX Online Services: If this option is selected, all the picture effects are included with the sent file.

Hardware acceleration for 3D effects: Here you can (de)activate hardware acceleration of your graphics card for 3D effects. You can find more information about this topic in the 3D fades (view page 92) chapter.

Automatically create frametable during importing: Sometimes, rebuilding a frame table can get rid of problems in certain MPEG files. For example, such problems can be present if the navigation (positioning of the playback marker, transport) is bumpy or doesn't function at all.

Normally, when loading MPEG video, a frame table is not created in order to speed up the loading process. If you do create one anyway, MPEG files are normally noticeably faster and easier to edit.

Reduce bitmap resolution for preview: The resolution of image files is reduced during playback to decrease required memory. This requires less computing power than playback in full resolution; full resolution is always calculated during export.

Arranger

Simple display of video objects: Displays only the first and last image of a video in the Arranger.

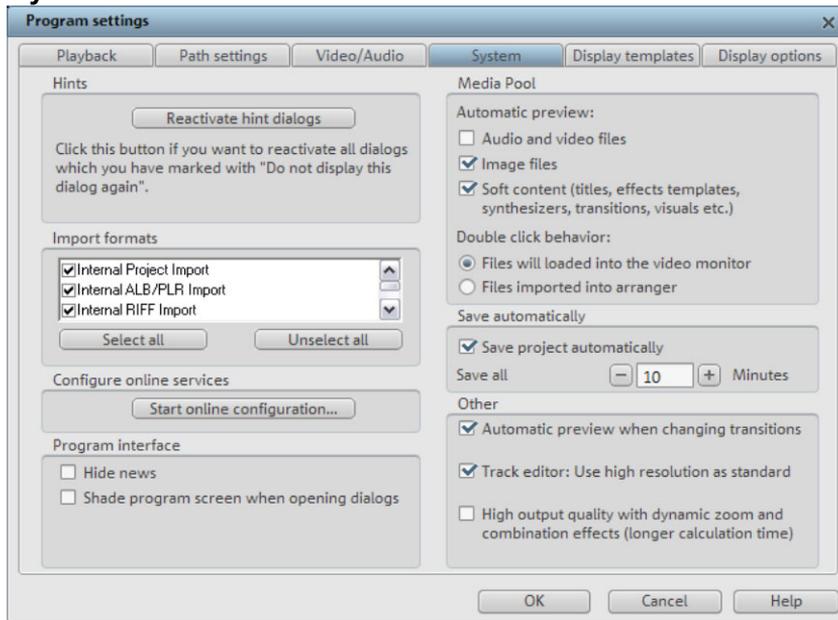
Simple display of audio objects: Does not display a waveform for audio objects in the Arranger.

3D object display: Shows objects in the Arranger three-dimensionally.

Standard picture length

Determines how long an image loaded in MAGIX Video Pro X2 is shown for by default.

System



Dialogs: Once installed, MAGIX Video Pro X2 displays a number of security queries in various parts of the program. Each of them can be switched off by clicking the small box at the bottom that says "Don't show this message again". To display these warning messages, select the "Reactivate dialogs" option.

Import formats: You can deselect file formats that you never use so that they are no longer imported. Please keep in mind that several import modules exist for some file types (AVI, WMA); MAGIX Video Pro X2 uses the fastest one in each case. If you experience problems

while importing certain files, you can experiment with deactivation of certain import modules, forcing the program to use the slower, more compatible import module.

Configure Online Services: Configure the various www.magix.de services here.

Program interface: Select if you would like to have news regarding MAGIX Video Pro X2 displayed here ("Hide news") and if the main screen should darken when dialogs are opened.

Media Pool: Select which file types should be automatically previewed. You can also select whether double-clicking a file starts a preview in Media Pool or imports it directly into the Arranger.

Automatic save: The automatic backup function can be set to save the project in the project folder as a backup file with the ending "MV_" (instead of the normal "MVD"). You can select if and how often the project is saved as a backup.

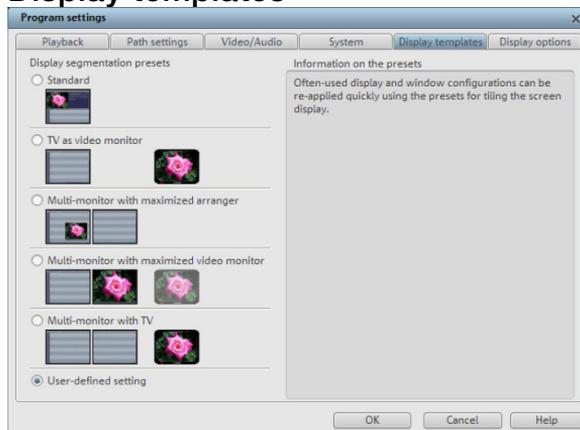
Other

Automatic preview during transitions: If this option is activated, a short preview of the transition effect will be quickly played between two objects.

Use Title Editor with high resolution as default: The Title Editor is used in high resolution by default. The display quality of titles is improved, but this also results in longer loading times for movies.

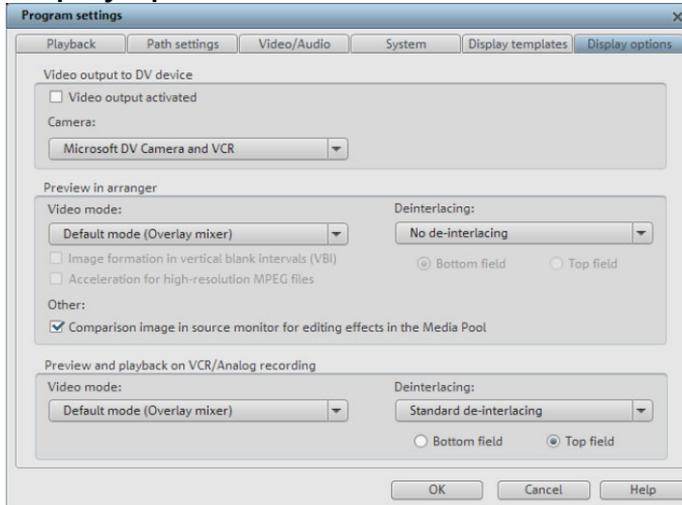
High-quality output for dynamic zoom and combination effects: This improves the display quality of zooms and effects, but results in longer loading times.

Display templates



These presets provide a collection of useful configurations for display on the monitor. On systems with only a single connected monitor, only the first two are practical. The presets are explained on the right side of the dialog. All window properties of the arranger, program monitor, etc. can still be changed manually after the application of a preset.

Display options



Video output to DV device

Video output on a DV device: This option displays your arranger view on your TV via your DV camera. This is useful if your graphics card doesn't have a TV output. However, since your PC must then compress the video signal in real time in DV-AVI format and in addition to processing all real-time effects, so you need to have a powerful PC for jitter-free playback. Even if your computer is not particularly powerful, you can still use this function to see how your video looks on your TV screen, since the analog video output signal of a good DV camera is better than the TV output of an average graphics card.

Playback in the Arranger/Preview and playback in video recorder

You can set the playback mode separately for the arranger (including all preview windows and effect dialogs), and the preview monitors during recording and in the video recorder.

Video mode

Standard playback (video for windows): This is the standard mode that functions on all systems.

Direct 3D (hardware mixer): This mode provides an extreme increase in speed by letting the mixing, many effects, and various transitions be calculated directly on the graphics card. Depending on the graphics card, performance can increase by 300%. The graphics card will not be used during export.

Note: To use this mode the graphics card must possess at least 128 MB own memory. You will need to install Direct 3D 9 or higher, and the graphics card driver must support "High Level Pixel Shader Language 2.0". MAGIX Video Pro X2 checks the corresponding properties when this mode is selected, and switches it off if necessary.

Standard mode (overlay mixer): In this mode you can use a hardware-like de-interlacing for the output on your PC screen or progressive scan-capable projector. Playback of recordings with interlace turns out much better.

Alternative mode (video mixing renderer 9): This mode uses the hardware de-interlacing function of modern graphics cards together with DirectX 9. Make sure that you are using the most recent version of your graphics card driver, which must be compatible with DirectX 9 to function properly. This mode works better than the standard mode (overlay mixer) only for a few graphics card models.

Image formation in Vertical Blank Intervals (VBI)

The image formation takes place in the vertical blank intervals of the monitor signal (or the connected TV signal). This helps avoid image interruptions. Warning: Because of the necessary waiting time on the next VBI, this process adds significant computation time!

You can deactivate this option for digital displays such as TFT monitors. In "Overlay" mode, image formation occurs exclusively via VBI.

Acceleration for high-resolution MPEG2 files

This option can be selected only in the "Hardware acceleration (Direct 3D)" video mode and indicates that videos in MPEG-2 format will be processed directly from the graphics card GPU. Depending on the graphics card performance, an improvement of up to 300% can be achieved!

De-interlacing

In the DirectShow modes "Overlay mixer" and "Video mixing renderer 9", you can activate hardware de-interlacing with your graphics card. For general information on de-interlacing and the options "Top/Bottom field first", please read the corresponding article "De-interlacing (view page 304)".

Comparison image in source monitor for editing effects in the Media Pool

If this option is activated, the "Selected objects without effects" comparison mode will be automatically activated when switching into the Media Pool effects, and will be automatically deactivated when the mode is exited. This serves to compare the original and edited image.

This automation will be suppressed if the option is deactivated.

Problems and solutions

File will not load

If files cannot be loaded, this means that the format is either not supported by MAGIX Video Pro X2, or the corresponding codec must be activated first. Read the section "Import formats" for more information.

In case of AVI files, it is possible that the necessary codec is not installed. For more, please refer to "General tips for AVI videos (view page 277)" in the appendix "Digital video and storage devices".

Choppy or uneven playback

Don't panic if the picture on your screen is choppy or uneven. The finished product will look perfect and play smoothly. Don't forget that MAGIX Video Pro X2 calculates all effects in real time. This lets you see for yourself what sort of influence each of the effects will have on your video footage. Some effects make even today's high-performance PCs work quite hard, and often, a steady, continuous video stream is simply not possible on your PC. The final product, free from previous choppiness, is only available after rendering it to DVD or exporting it. For that reason, you should first edit the movie in its raw version without effects. The preview generally delivers a steady picture, allowing you to work quickly and quietly. Towards the end, you can add effects to your movies to give them a special touch of Hollywood!

Problems and Remedies regarding the Auto Remix Assistant

Problem: The playback stutters, the metronome is suspended, the computer is overloaded... (on older computers.)

Remedy: We recommend changing to wave drivers ("P" key, "Playback parameter" dialog) instead of DirectSound.

Problem: The metronome does not work and there are no lines on the the wave-shaped display.

Probable cause: The material does not contain beats or the song contains a passage without beats.

Remedy: The song should be limited in such a way that only rhythmic passages are contained.

Possible 2nd reason: Inaccurate tapping or a false BPM value has been entered.

Remedy: Try the tempo correction buttons or tap until the "locked" condition is attained.

Problem: The metronome sounds inaccurately or is jerky, the lines in the wave-shaped display are irregular and thinly drawn.

Activation problems

Problem: The entered code is incorrect (telephone activation)

Make sure your entry is correct; in most cases a typo is to blame.

If the code is entered correctly, dial the number of our Call Center. Our coworkers will gladly help you.

The MAGIX website won't open

- Check your Internet connection; you may have to use manual dial-up.

The form for ordering via post/fax won't open

- Check that an adequate text editing program is installed and activated (for example, MS Word).

I still haven't received an email with the activation code

- Check that your inbox isn't full.
- Have a look in your spam folder.

You can always send questions via email to our support whenever you like. Please have the following information at hand so that we can assist you as quickly and as specifically as possible.

- Complete product name
- Exact version number (to be found in the about box in the "About" menu item of the "Help" menu)
- Encoder/Decoder name
- Your user code (accessible via the "Activate via post/fax" dialog)

Problem: I installed my MAGIX program onto my new computer or built a new hard disk (sound card, memory...) into my old computer. Now my activation code is no longer accepted.

Activation is linked to a specific computer. Changes to the computer's hardware, for example, integrating a larger hard disk can lead to the computer no longer being recognized as the one for which the activation code has been calculated. This will most likely happen if you install MAGIX Video Pro X2 on a new computer. If this is the case, simply request a new activation code. Since you're already registered as a MAGIX customer, you won't have to pay for another activation.

Online: When registering on the MAGIX website use your existing MAGIX login details.

Post/fax: Print out the order form again and send it to the address or fax number stated.

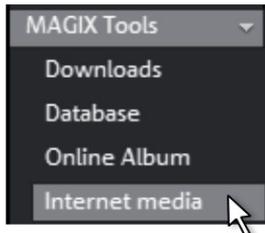
Online functions

Integrated browser

The integrated browser offers many useful functions that help you collect material for using in your project. All kinds of media can be collected – images, videos, sound or simply text can be all integrated using the built-in browser with great results.

Tip: You must have an Internet connection to use the full range of options offered by the integrated browser.

Open browser



The integrated browser is opened by clicking on the "Internet media" button in the Media Pool (see Media).

Navigation in the browser



One page back: Switches to the previous page.



One page forward: Switches back to the page before the "One page back" button was pressed.



Stop: Stops loading the selected page.



Reload: The current page will be reloaded.



Home: Returns to the home page.

In the address header, next to the navigation buttons, you can simply enter an Internet address like <http://www.magix.com>. Press the enter button and the corresponding page will be loaded.

Loading Internet media

The buttons described here are used to collect and load media directly from the Internet into the current film. The corresponding functions can be found in the context menu of the browser.



Save selected text: The selected text will be saved. It can then be edited using the title editor (view page 124).



Start screen capture: Opens the capture dialog for starting screen capture.



Download selected images: The selected images will be saved to your computer.



Import screen capture of the opened Internet page: The loaded Internet page will be saved as an image file.



Start audio recording: A dialog for audio recording opens.

Hint: For recording from the Internet, it is important that the sound card is selected as the sound source.

Accept media after download

This option makes sure that the downloaded media are loaded into the current movie right away.

Define the path for saving Internet media.

To define the path for saving Internet media, simply click on the folder symbol and navigate to the desired folder. Confirm your selection with OK.



D:\Eigene Dateien\MAGIX downloads



Apply media after download

MAGIX News Center



MAGIX can supply you with all of the latest information about your software. In the MAGIX News Center, you will find all of the links to current online tutorials as well as tips & tricks on individual topics or software application examples.

You will also be informed of the availability of brand new updates and patches for your program as well as special offers, contests, and surveys.

The news is split into three color-coded sections:

- Green for practical tips & tricks for your software
- Yellow reports the availability of new patches and updates for your product
- Red for special offers, contests, and surveys
- And if there are no new messages, then the button will be grey

All available information is shown as soon as you click on MAGIX News Center. If you click on one of the news items you will be forwarded to the corresponding website.

Embed Flash videos into your own web page

To do this, you will need a basic knowledge of HTML pages and all technical requirements for uploading your files to your web page.

Tip: If you do not have HTML skills, we recommend using MAGIX Online Album. Without any previous knowledge, you can present videos, photos and music on your own web page – all completely for free. Videos from MAGIX Online Album can also be embedded in other websites as well.

Please note that a Flash video cannot be directly embedded into an HTML page like a picture in JPEG format. For a Flash video, you will need a Flash player embedded in the website to play back your video.

MAGIX offers you a download package with some Flash player goodies. It can be downloaded here <http://support.magix.net/dl/flvplayer.php>.

The package contains the following files:

- standalone_omk.swf - the Flash player
- demo.html - a sample website, which demonstrated how the player can be used
- demo.flv - a demo video, which will be played by the Flash player on the demo website

To reach your target quickly, simply adjust the demo website to your own requirements and replace the demo video with your own. At the end, upload all three files to your website.

If you need more information about the website's HTML code, we recommend that you read an explanation of HTML documentation to better understand the structure and functions of HTML.

If you understand HTML code, you will find another explanation of various parameters using which you can influence the appearance and function of the Flash player.

url	The path to the video which is to be played back.
preview	The path to an image in JPEG format. It is displayed as a preview in stopped state before the video is played back.
sound	The sound contained in the video will be played back if this parameter is "true".
loop	The video will be automatically played back from the start after reaching the end if this parameter is "true".
tooltip	Changing the position of the position cursor will display a tooltip with position information if this parameter is "true".
swfborder	A limiting line will be drawn around the player if this parameter is true.
autoplay	The video will be played back automatically when the page or the player are loaded.

Keyboard shortcuts

Playback functions

Start/Stop	Space bar
Transport buttons	J / K / L
In/Out points for punch recording	I/O
Stop (playback marker is stopped at the current position)	K
Restart beginning at playback marker	Backwards
Playback marker back to the beginning	Home
Playback marker to end	End
1 frame back	Left arrow
1 frame forward	Right arrow
5 frames back	Ctrl + left arrow
5 frames forward	Ctrl + right arrow
Fast forward	Shift + right arrow
Fast rewind	Shift + left arrow
Set project marker	Shift + 1/2/3

Arranger view

Zoom in	Ctrl + up cursor key
Zoom out	Ctrl + down cursor key
Full screen playback	Alt + Enter
Movie overview	Shift + A
Optimize view	Shift + B
Zoom 1 frame / 5 frames	Ctrl + 1/2
Zoom 1s / 5s / 1min/ 10min	Ctrl + 3/4/5/6
Zoom between red area markers	Ctrl + 7
Entire movie	Ctrl + 8

Move view

To next object edge	Ctrl + 0
To previous object edge	Ctrl + 9
To movie start	Home
To movie end	End
To beginning of section	Ctrl + Home
To end of section	Ctrl + End
Page to right/left	PgDn/PgUp
Grid unit right/left	Ctrl + PgUp/PgDn
To project markers 1-10	1/2/3/4/5/6/7/8/9/0
To next/ previous project marker	Ctrl + Shift + PgDn/PgUp
To next/ previous scene marker	Shift + PgDn/PgUp
To next/ previous chapter marker	Alt + PgDn/PgUp
To next/previous ad marker	Ctrl + Shift + W Ctrl + Alt + W
Scroll to left/right marker	Alt + Home/Alt + End
To next/previous empty section	Shift + 4/Shift + 5

Transport control in Media pool

Set InPoint	I
Set OutPoint	O
Go to InPoint	Shift + I
Go to OutPoint	Shift + O
Play from InPoint to OutPoint	Ctrl + K
Save Take	Shift + T
Apply range to movie	Ctrl + P

Mouse modes

Intelligent mouse mode	Alt + 1
Mouse mode for individual objects	Alt + 2
Curve mouse mode	Alt + 3
Object stretch mouse mode	Alt + 4
Preview audio objects	Alt + 5
Scrub mouse mode	Alt + 6
Context help	Alt + 7

File menu

New movie	Ctrl + N
Open movie	Shift + O
Save movie	Ctrl + S
Save movie as	Shift + S
Close movie	Ctrl + F4

Load/Save project

Load project	Ctrl+Shift+O
Save project	Ctrl+•+S
Save project as...	Ctrl + Shift + D
Clean-up wizard	Ctrl + Alt + G

Twain scanner

Select Source	Alt + Q
Scan	Alt + Shift + Q
Read tracks from audio CD	C
Play Audio/Video	H
Slideshow Maker	Ctrl + Shift + M
Soundtrack Maker	W

Export movie

Export as AVI	Alt + A	Alt + A
Export as DV AVI	Alt + B	Alt + B
Export movie as an MPEG	Alt + C	Alt + C
Video as MAGIX video	Alt + D	Alt + D
Video as QuickTime movie	Alt + E	Alt + E
Uncompressed movie	Alt + U	Alt + U
Movie as sequence of individual pictures	Alt + V	Alt + V
Windows Media Export	Alt + F	Alt + F
Real Media export	Alt + G	Alt + G
Video as MPEG-4 video	Alt + K	Alt + K
Audio as wave	Alt + H	Alt + H
Single frame as BMP file	Alt + M	Alt + M
Single frame as JPEG	Alt + N	Alt + N
Output audio/video	H	
Batch conversion...	Alt + S	

Burn CD/DVD

Manually compile files...	Alt + Shift + R
Copy CD/DVD directly...	Alt + Shift + D

Internet

Send movie as email	Shift + U
Internet connection	Ctrl + W
Burn CD/DVD	Alt + Shift + R

Audio / Video recording	G
Audio recording	R
Backup copy	
Copy movie and media into folder	Shift + R
Copy project, movie, and media into folder	Ctrl + Q
Burn movie and media to CD/DVD	Ctrl + Shift + R
Burn project, all movies, and media	Ctrl + Shift + Q
Restore disc project from (S)VCD/video DVD	Ctrl + Shift + P
Load backup film	Alt + O
Slideshow Maker	Ctrl + Shift + M
MAGIX Soundtrack Maker	W
Movie properties	E
Program settings	Y
Exit	Alt + F4

Edit menu

Undo	Ctrl + Z
Restore	Ctrl + Y
Cut objects	Ctrl + X
Copy objects	Ctrl + C
Paste objects	Ctrl + V
Duplicate objects	Ctrl + D
Deleting objects	Del
Select all objects	Ctrl + A

Cut

Split scene	T
Delete scene start	D
Delete scene end	U
Remove scene	Ctrl + Delete
Split movie	Alt + W
Adjust music to section	Ctrl + Shift + U

Edit range

Cut section	Ctrl + Alt + X
Copy section	Ctrl + Alt + C
Delete range	Ctrl + Delete
Insert section	Ctrl + Alt + V
Extract section	Ctrl + Alt + P
Group objects	Ctrl + L
Ungroup objects	Ctrl + M
Mix audio	Shift + M
Set snap point	Shift + Alt + P
Set project marker	Shift + 1/2/3/4/5/6/7/8/9/0
Set chapter markers	Shift + Enter
Set chapter markers automatically	Alt + Shift + Enter
Delete chapter markers	Ctrl + Enter
Delete all chapter markers	Alt + Ctrl + Enter

Move view

see "Move view" (view page 269)

Effects menu

Master effects	Ctrl + B
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Video object effects

Scene recognition	Shift + Z
Image stabilization	Shift + K
Find and remove ads	Shift + C
Edit bitmap externally	Alt + P

Movement

Pan left -> right	Ctrl + Shift + A
Pan right -> left	Ctrl + Shift + B
Pan up -> down	Ctrl + Shift + Y
Pan down -> up	Ctrl + Shift + Z
Zoom out	Ctrl + Shift + X
Zoom in	Ctrl + Shift + F
Restore movement	Ctrl + Shift + G

Cropping

Zoom 2	Ctrl + Alt + 4
Zoom 3	Ctrl + Alt + 5
Free zoom selection	Ctrl + Alt + 6
Fix picture proportions	Ctrl + Alt + 7
Restore selection	Ctrl + Alt + 8
Load movie effects	Ctrl + Shift + O
Save movie effects	Ctrl + Shift + S
Restore movie effects	Shift + C

Audio object effects

Normalize	Shift + N
Automatic track damping	Shift + L
Audio Cleaning	Shift + W
Echo/Hall	Shift + H
Timestretch/Resample	Shift + Q
Surround Editor	Ctrl + Shift + N
Load/Save settings	Ctrl + Alt + Shift + J/K
Load audio effects	Ctrl + Alt + O
Save audio effects	Ctrl + Alt + S
Restore audio effects	Shift + Alt + K
Tempo Recognition Wizard	Shift + E
Externally edit Wave	Alt + Z
Volume curve	Alt + X
Object properties	Ctrl + E

Title effects

Title Editor...	Ctrl + T
Load title effects...	Alt + Shift + T
Save title effects	Alt + T

Effects library

Audio and video effects	Ctrl + Alt + E
Transition effects	Ctrl + Alt + B
Title effects	Ctrl + Alt +

Window menu

Edit trimmer	N
Object trimmer	Q
Mixer	M
Master audio effects rack	B
Standard layout	L
Program monitor	V
Media Pool	F
Display settings	Alt + Shift + V
Film overview	Shift + A
Optimize view	Shift + B
Timeline mode/scene overview	Tab
Zoom horizontally/vertically	see "Arranger view (view page 268)"

Help

Help	F1
Context help	Alt + F1
Show tool tips	Ctrl + Shift + F1
System information	Ctrl + I

Edit keyboard shortcut

In this dialog you can specify keyboard shortcuts for all menu function of MAGIX Video Pro X2. This allows you to adapt existing shortcuts to your requirements or to add new ones.

The settings are automatically saved in a file upon closing the program, i.e. they will be available the next time the program is used.

The display of the entire menu tree is the key function of MAGIX Video Pro X2.

Add keyboard shortcut

To add a keyboard shortcut, proceed as follows:

- Look for the required menu point and select it with a simple mouse click. Under "Current menu point" the currently selected menu point will be displayed.
- Then, click on the "New keyboard shortcut" field.
- Type in the keyboard shortcut. You can also use combinations of any key with "Shift", "Alt", and "Ctrl".
- Then click on "Assign shortcut". If the shortcut should already have been assigned a corresponding warning will be displayed.

Note! Please do not use the space bar, "Esc", or "Insert" key ("0" in the number block), since the functions of these keys are permanently assigned in MAGIX Video Pro X2 and can not be changed.

Keyboard shortcut list

Reset: Activates all preset shortcuts again.

Load: Previously saved shortcuts are loaded and activated again.

Tip: MAGIX Video Pro X2 offers additional presets for those switching over from other programs. This significantly simplifies getting used to MAGIX Video Pro X2!

Note! The current settings will be overwritten during loading! Save your current keyboard shortcuts in advance if you would like to keep them.

Save: The current keyboard shortcuts can be saved after naming the file appropriately.

List: This button opens a window where a complete list of current keyboard shortcuts appears. The included "Copy" button can be used to copy this list to the Windows clipboard and then edit and print it using a text editor.

Activate additional functions

You can activate encoders/decoders for various file formats as required. The corresponding activation dialog will appear automatically when the codec is used for the first time, e.g. when a DVD is burned and the MPEG-2 codec is used.

Why does it have to be "activated"?

To import (decode) or export (encode) certain video and audio formats, you will require a specific codec. MAGIX Video Pro X2 will ask you if you want to activate the codec as soon as you need it. The integration of decoders and encoders from third parties into programs usually costs money. These codecs are integrated via additional, voluntary activation in MAGIX programs which, according to usage and degree of prevalence, can be free or fee-based for special high-quality codecs. This way, MAGIX can continue to be able to provide you with optimum value for money for your software.

Free activation (MPEG-2, MPEG-4, Dolby Digital 2.0 & 5.1)

To be able to use MPEG-2, MPEG-4, the Dolby Digital stereo import, and Dolby Digital 5.1, you will have to activate the codec for free.

Activation can be done online via telephone or via post/fax. The quickest and easiest way to order an activation code is via the Internet.

Order activation code online

Click on "Order online..." (Field 1). MAGIX Video Pro X2 will automatically contact the MAGIX server and load the corresponding codec.

Note: Activation of the codec checks the registration data as required. Activation of the codec only functions if your version of the program has already been registered in your name. If you haven't registered MAGIX Video Pro X2, then you can do this at any time.

If your computer has no Internet access, you have the following options for activation:

Order activation code in MAGIX Service Center

Use this option to conduct activation from a different computer which has Internet access.

Order activation code via post/fax

After clicking on "Order via post/fax" (field 2), your user code will appear. This automatically assigns your personal activation code to your PC. Click on "Continue to order form" to transfer your user code automatically to the post/fax form. Now send the completed form as a print out to the address/fax no. mentioned. Your activation code will be sent to you in just a few days via post or fax. It can also be sent by mail if an email address is stated.

Enter activation code

After receiving your personal activation code use the export or burn function to reopen the activation dialog for the corresponding file format. Type or copy the activation code into the input field in the dialog and click on "**Activate...**".

Annex: Digital Video and Data Storage

Video Editing on the PC

Digital video processing with the PC is comparable to audio processing. The analog medium that is video must first be digitized before it can be processed by the computer.

Digital video processing functions quite similar to recording via a sound card. The signal flow is measured in very short, regular intervals, and the values resulting from it can then be processed by the computer. The accuracy of each individual measurement results in the resolution, and the frequency of the measurements results in the frame rate. The more precise and frequent the signal is measured, the higher the quality of the digitized video, but also the higher demands on the capture performance and the required storage space. The Windows standard format for video files is AVI (audio and video Interleaved).

Digitizing video adopts either the camera or the graphics card, a TV card (e.g. Miro PCTV), or a video card (e.g. Fast AV Master). However, video handling makes much higher demands upon the hardware if good image quality is required. In order to be able to reasonably process video files on today's PCs, they must be compressed. Digital audio, on the other hand only uses compression for saving storage space.

MPEG Compression

MPEG means "Moving Picture Experts Group" and defines a workgroup which cooperates with the International Standards Organization (ISO) as well as the international Electro Technical Commission (ETC) to develop standards for video and audio coding.

Generally, the graphic data rate of the digital video standard is 167 megabits per second, which, when not compressed, requires a far higher storage capacity than a DVD can offer. A one-sided DVD 5 with 4.7 GB storage capacity is enough for 4 Minutes. For this reason, the available pictorial material must be effectively compressed – a function which is achieved with the MPEG procedure.

This procedure is based on the simple fact that up to 96% of digital video data consists of repetition and can be compressed without visible degradation of the pictorial quality.

Each MPEG compression is, however, a data reduction and as such connected with information loss. If the video consists of very extensive details, or if the content changes very fast, then the picture may blur (dependent on the strength of the compression and the quality of the encoder).

Errors can also result from so-called compression artifacts such as small color defects or images that are too dark.

At average compression rates under 3 megabits per second it is probable that you will notice reduced quality. At rates around 6 megabit per second the degradation in quality becomes almost invisible.

General notes on AVI videos

The AVI format (**A**udio **V**ideo **I**nterleaved) isn't actually a proper video format! Rather, it is a so-called "container", where the conventions for transferring audio and video files to the program are only loosely defined. The codec (**c**oder/**d**ecoder) actually defines what storage format is used. A codec compresses audio/video data into its own unique format which can only be read by the codec itself and is decoded when the film is played.

In concrete terms, a computer-generated AVI file **can only** be loaded by and played on a different computer if the same codec is installed on it.

Many codecs (e.g. Intel Indeo® video) have now become standard components of the Windows™ installation. Others like the popular DivX codec are not standard. If you are generating an AVI file for future play on another computer using one of these codecs, you should first install this codec on the other PC. The best method available is to copy the codec installer to your export directory and burn it every time you create a video disc (slideshow disc) for play on computers.

You may encounter some problems when using older video editing cards with codecs which only function with the card's hardware. Such AVIs can **only** be used on the computer which was used to create them. Try to avoid using this kind of codec.

Overview of the different disc types

MAGIX Video Pro X2 contains many disc types depending on whether you want to burn a movie or slideshow and which disc type you are using (CD or DVD), or the type of playback device or quality required.

The table below will explain which disc types can be best employed in different cases, the differences in quality, and how much storage space each format requires.

For further information please read the chapters on the individual disc types.

Disc type	Media	Menu	Quality	ca. length	Suitable for	Playback on
VCD (See "Video CD (VCD)")	CD	Yes	*	approx. 70 minutes	Movie	DVD player on TV
S-VCD (See "Super Video CD (SVCD)")	CD	Yes	**	ca. 30-70 minutes	Movie photos	DVD player on TV
DVD ("Digital Versatile Disc (DVD)")	DVD	Yes, advanced	***	approx. 2 hours	Movie photos	DVD player on TV
miniDVD (view page 282)	CD	Yes	***	ca. 20 minutes	Movie photos	DVD player on TV

JPEG DISC	CD DVD	No	****	Depends on original images and DVD player*	Photos	DVD player on TV without sound, effects or transitions
Slideshow	CD DVD	No	****	Depending on original images and DVD player	Pphotos	Every PC with some effects, or as a backup
WMV HD	CD DVD	Yes	****	3 hours / DVD 30 min /CD	Movie photos	PC from Windows Media Player 9 format
Multi Disc	CD DVD	Yes	****	45 min/ DVD 7min/CD	Movie photos	PC from Windows Media 9 format + DVD player

* The display duration for some DVD players may be set in this menu. The number of photos that can be burned onto a CD or DVD depends on the sizes of the picture files.

You can also use the menu templates from the category "TV Showtime DVD" for the disc types mini DVD and DVD. Each picture of a slideshow is then displayed in fullscreen on its own menu page without having to playback the slideshow.

Digital Versatile Disc (DVD)

Quality

The exceptional color quality, image definition, and contrast of the DVD format are all well known.

A resolution of 720 x 576 (PAL) and coded using MPEG-2, 25 pictures per second produces very good results. The quantity of data is approx. 5 times as much as a VCD.

DVD size

DVDs look similar to CDs. The only visible difference is that double-sided DVDs have no label. Otherwise, both formats have the same dimensions.

- Diameter: 12 cm, like a normal CD (there are also DVDs with a diameter of only 8 cm)
- Thickness: 1.2 mm, just like a normal CD

DVD media (overview)

The DVD does not differ outwardly from a conventional CD-ROM. Higher memory density (up to 17 GB as opposed to 650-780 megabytes) results from the fact that information is stored more densely (double-capacity) and that up to four layers can be used. In order to be able to read the information, a special laser with modified wavelength is required. Therefore, DVDs cannot be read using conventional CD-ROM drives.

Writable disc formats

The recordable DVD market is split for the time being into three types: DVD-RAM, DVD+RW and DVD-RW.

DVD-R: Once-only writable medium. The DVD-R can be specified with the file structures of DVD Video, DVD Audio, or DVD-ROM.

DVD+RW: Re-recordable DVDs can be created using +RW drives and can be read by almost any commercial DVD-ROM or DVD player. The companies involved are mainly Philips, Sony, HEWLETT PACKARD (as well as Ricoh, Yamaha, and Mitsubishi).

DVD-RW: Writable and erasable DVD technology is promoted by Pioneer and Sharp. This format was developed by the Pioneer company and should be compatible with existing DVD players.

DVD-RAM: This standard is not recommended due to small storage capacity and incompatibility with DVD players.

Note: MAGIX Video Pro X2 supports DVD -R, DVD+R, DVD +RW, DVD -RW, but not DVD-RAM!

Blank discs: Single-sided recordable blanks with a capacity of 4.7 GB and a playback time of approx. 2 hours serve as storage media for all DVD burning formats at present.

Copy Protection

Macrovision (APS): The movie industry claims that even DVD-ROM drives and decoders or diagram cards with composite outputs or s-video outputs must support the Macrovision analog copy protection (APS). Only some older DVD players do not possess APS.

APS adds additional signals to a DVD's stored graphical data. The data is almost unchanged. These supplementary signals disturb the synchronization and the automatic recording regulation of most video recorders to prevent recording of the video. They are not noticeable on the television or the monitor, however.

Content Scrambling System (CSS): CSS prevents saving and duplication of DVD video tracks to hard disk. The VOB streams of DVDs without CSS can otherwise (like other video files) be loaded via the Import Video button

There are further types of copy protection besides APS and CSS which ensure that retail DVDs cannot be copied without distortion

Blu-ray Disc

Alongside HD-DVD, the Blu-ray Disc is viewed as the successor to DVDs and offers especially high storage capacity of up to 27 GB as a single-layer disc (double-layer up to 54 GB) with very few write errors.

The term Blu-ray Disc comes from the blue color of the laser. Because a color cannot be registered as a trademark, the letter "e" was removed from the word "blue".

The high storage capacity of the Blu-ray Disc suits high definition videos and slideshows in high quality perfectly, since these are characterized by large file sizes (depending on material approximately 40 MB/sec) and very high memory use.

Hint: A corresponding device is required for viewing Blu-ray Discs. To fully enjoy the benefits of high definition video, you should also use an HD-enabled TV.

Companies that were involved in developing Blu-ray technology have united themselves into the Blu-ray Disc Association (BDA).

Blu-ray Discs come in three varieties:

- Only readable **BD ROM** (comparable to DVD video),
- rewritable **BD-RE** (comparable to DVD±RW or DVD RAM),
- and as a disc that can be written to only once **BD-R** (comparable to DVD±R).

AVCHD disc

Use this command to create a high-resolution video. You can even burn Blu-ray (BD-R/RE) blanks as well as conventional DVD±R/RWs. In contrast to Blu-ray Discs (view page 280), MPEG-4/AVC codec is applied as the video format, which requires less memory at a comparable image quality. There is no disc menu on AVCHD discs.

Tip: To fully enjoy the benefits of high definition video, you should also use an HD-enabled TV.

Compatibility

AVCHD disc on Blu-ray: Since this is a BD-conformant format, the disc created can be played back in any conventional Blu-ray player. Playback problems can almost always be traced to incompatibilities between Blu-ray blanks and Blu-ray players. In this case, consult the instructions for your Blu-ray player or ask the manufacturer which blanks are compatible with the device.

AVCHD disc on DVD: The DVDs created with AVCHD video are not supported by all Blu-ray players. The behavior of the devices is quite different. Normal DVD players cannot replay AVCHD discs, since the AVC format is not supported.

Super Video CD (SVCD)

The Super Video CD (SVCD) is a technological advancement of the video CD. SVCDs are also like VCD-specified CD-ROMs which can be played using either a Super Video CD player (connected to the television), or directly with the CD-ROM drive of a computer. Many DVD players can also play SVCDs. MPEG-2 and the increase of the data transfer rate makes it hard to tell videos from videos in DVD quality apart.

Resolution: SVCDs use the better MPEG-2 encoder in a standardized resolution of 480 x 576 (PAL). The MPEG-2 format offers a maximum resolution of up to 720 x 576 points and improved compression methods characterized by excellent image definition and homogeneity.

Hard disk capacity: An average 90-minute movie must be spread across 3 CDs. On one SVCD you can get about 30 minutes of good-quality movie.

Encoder setting: Compared to the VCD with 1.3, the data transfer rate is doubled to 2.6 Mbit/s.

MPEG-2 format introduces the so-called variable bit rate (VBR). In contrast to the constant bit rate (CBR) of the MPEG-1 encoders, this encoder has the option of using more bits for movement-intensive sections, as well as saving bits if picture content remains the same.

Video CD (VCD)

Video CDs are specific CD-ROMs for storing videos in certain forms. Compression takes place using the MPEG-1 codec. VCDs can be played on either a video CD player attached to a television or directly via the computer's CD-ROM drive. Most DVD players can play VCDs.

Resolution: VCDs can play movies with a maximum resolution of 352 x 288 pixels (PAL) or 352 x 240 (NTSC) at 25 pictures per second. The resolution of a VHS cassette offers for instance 300 x 360 pixels. More important than the resolution is the use of a good MPEG-1 encoder. Since video images constantly change, errors cannot always be perceived by the viewer.

Hard disk capacity: A VCD can store about 70 minutes of video. A typical motion picture must therefore be stored on two VCDs. In order to get as much video data on a normal CD as possible, one must forego correction information on VCD/SVCD formats within the individual sectors (sub-ranges) of a CD. You can therefore fit 720 MB of video data on a 650 MB blank CD. Due to improved burning and scanning technology it is now possible to burn up to 985 MB video data on a 99min blank CD.

Encoder settings: Normally the video CD data is played at a data rate of 1150 kBits video and 224 kBits audio. By increasing the video bit rate to 3000kBits you can get the same resolution and an better-quality audio bit rate. Movement artifacts disappear almost completely at approx. 2000 kBits with the picture appearing a little less sharp. This pre-supposes, however, that the player can also play back such a bit rate. The fact that many DVD players can handle an increased data rate is due to well written player software.

Experiment with higher data rates: If you do not need the full running time of the VCD, then you can experiment with space to improve the quality of the video!

miniDVD

The miniDVD is nothing more than the DVD data format burned onto a CD-ROM. Thus the MPEG-2 encoder and all other specifications of the DVD data format are used, and only the data carriers are different. Because the CD-ROM can only save about a sixth of the quantity of data a DVD can hold, the capacity of a miniDVD is accordingly limited to approx. 20 minutes of movie.

MiniDVDs are particularly suitable for playing on the computer. For stand-alone devices they must be tested on an individual basis as to whether the device can handle the DVD format on a CD-ROM.

JPEG disc

The "**JPEG disc**" is a special case for slideshows. No video file is created to be burned, but rather every photo in the disc project is exported individually with effects and burned to CD or DVD. Many modern DVD players can play JPEG files directly.

If a project contains several slideshows, a subfolder will be created for each one, and the corresponding images will be placed into each one. This means that there are no menus, no sound, no animated effects or transitions – although it does offer the best possible quality available for playback on TV. This means that there are no menus, sounds, animated effects or transitions, it does, however, offer the best possible quality available for TV playback.

Slideshow disc

All slideshow image and audio files will be burned onto CD or DVD, together with any effect settings and the MAGIX Media Manager CDR player program.

A MAGIX Media Manager CD is designed especially for photo projects (slideshows). The original photos are burned onto CD;

Ideal for backing up valuable recordings. During playback on your PC, the highest possible picture quality is made possible. The following photo effects can be played by Media Manager.

- Brightness, contrast, gamma
- Cropping and rotation
- Title text (without text effects)

If your project uses more effects, they won't be visible on the Media Manager CD. A VCD or DVD is more suitable for such projects.

The MAGIX Media Manager CDR ensures that the CD-ROM can be played back on any Windows PC regardless of the software installed. The disc will automatically begin playing the slideshow after the CD-ROM has been inserted into the drive, provided the auto-play feature is enabled on your PC. To enable the auto-play feature on your PC, select the "Auto Insert Notification" option for your CD-ROM drive from the Windows Control Panel.

If deactivated, you can also start your CD-ROM slideshow manually:

1. Place your home-burned CD-ROM into your CD-ROM drive.
2. Open Explorer and click on the drive letter of the CD-ROM drive (usually D:\).
3. Double-click "MediaManager.exe" to start the MAGIX Media Manager CDR.
4. In the Explorer window of MAGIX Media Manager CDR, open the slideshow playlist file ending with *.PLR and start the slideshow.

Additional information can be found in the help feature of MAGIX Media Manager CDR (F1 key).

WMV HD (Windows Media High Definition Disc)

WMV WMV HD (Windows Media High Definition Disc) is a type of disc optimized for playback of slideshows on PC. The movies are converted into high-resolution Windows Media 9 format and a menu is added, like with DVDs. You must have Windows Media Player 9 or higher installed on your PC.

Video encoding will be preset for HDTV resolution (1280 x 720, also known as "720p"). To select different resolutions, click on the button "Encoder settings" and in "Presets" choose the following:

- Standard PAL (720x576) or NTSC (720 x 480)
- Standard PC resolutions (1024 x 768 or 1280 x 1024)
- HDTV 720p (1280x720) or 1080i (1920x1080)

Multi Disc

A multidisc is a combination of different disc formats on one DVD. It consists of 3 parts and offers the following advantages:

- Maximum quality when played on a PC with WMV HD (Windows Media High Definition Disc)
- Fully compatible with DVD players due to a DVD part (Digital Versatile Disc) (view page 279)
- Greatest possible safety as a data backup of the project is added (burn option (view page 210)).

Backup disc

Use this option to compile all movies in the current disc project, including all connected media and burn them to disc.

Even larger projects can be burned straight to disc. The project, if necessary, will be split up and burned automatically to multiple discs. A restore program which is burned to the first disc of such a backup, guarantees easy re-recording of the backup.

MPEG-4 encoder settings

Behind MPEG-4, you'll find a highly complex "academic" standard that operates and is supported variably according to make.

Tip: First, check if there is a suitable preset in the export dialog for your purposes. Before changes are made in "Advanced settings", the effects and interplay of the different parameters should be familiar.

The "**Advanced settings**" are divided into "Video", "Audio", and "Multiplexer".

Under "**Video**", there is a choice between "MPEG-4 (view page 285)" (H.263) and "AVC/H.264 (view page 290)". Depending on the purpose of application of the material to be exported, both of these encoder settings can be selected for compressing the video material. It is important in this case to know how the material will be played back.

Under "Audio", there is a choice between "AMR (view page 295)" and "AC (view page 295)". The AMR format is more suitable for mobile devices that don't necessarily require high playback quality. ACC is more flexible, on the other hand, but it is supported by fewer mobile devices.

For material that is not exactly specific, encoder qualities recommend AVC image and AAC sound, since these encoders are equally suitable for all source material.

The option "Export as website" also creates an HTML page in an integrated Flash player that can play back the video created. Read the topic "Embed Flash videos into your own web site (view page 266)".

MPEG-4

The MPEG-4 (H.263) codec is especially useful for video material with little or only slower movements.

Generic

MPEG-4 preset

Different presets located within the encoder.

(A)SP@L0-L5: (Advanced) Simple Profile in Level 0-5

(Q)CIF (Common Intermediate Format): CIF is a video format produced as soon as 1990 with the video compression format H.261. At that time, the format was used for video telephone conferences.

The "Q" in QCIF stands for "Quarter", and since resolution is halved in terms of height and width compared to CIF, the entire size is only a quarter of CIF.

QCIF was popular with mobile telephone manufacturers, since the resolution of 176 x 144 pixels was sensible for the first affordable Smartphones (144 x 176).

(Half)D1: D1 corresponds with MPEG-2 DVD. HalfD1 has exactly half of the entire number of pixels, meaning that the pixel number of the height and weight is 2/3 of D1.

720p: Video stream with a resolution of 1280 x 720p (progressive).

Apple iPod: Apple iPod-compatible stream.

Sony PSP: Sony PSP-compatible stream.

Profile/Level

So that profile and level are conformant with the other settings, pay attention to the minimum and maximum values in the following tables.

Note! In case the settings are not included in this information, problems playing back the encoded videos can lead to problems.

Table 1: The levels of the MPEG-4 simple profile (SP)

Level	Typical visual session size	Max. number of objects	Maximum number objects per type	Max. unique quant. tables	Max. VMV buffer size (MB)
L0	QCIF	1	1 x simple	1	198
L1	QCIF	4	4 x simple	1	198
L2	CIF	4	4 x simple	1	792
L3	CIF	4	4 x simple	1	792

Continuation of table 1

Level	Max. VCV buffer size (MB)	VCV decoder rate (MB/s)	Max. total VBV buffer size (units of 16384 bits)	Max. VOL VBV buffer size (units of 16384 bits)	Max. video packet length (bits)	Max. bitrate (kbit/s)
L0	99	1485	10	10	2048	64
L1	99	1485	10	10	2048	64
L2	396	5940	40	40	4096	128
L3	396	11880	40	40	8192	384

Table 2: The levels of the MPEG-4 advanced simple profile (ASP)

Level	Typical visual session size	Max. number of objects	Max. number per type	Max. unique quant. tables	Max. VMV buffer size (MB)	Max. VCV buffer size (MB)	VCV decoder rate (MB/s)
L0	176x144	1	1x AS or simple	1	297	99	2970
L1	176x144	4	4x AS or simple	1	297	99	2970
L2	352x288	4	4x AS or simple	1	1188	396	5940
L3	352x288	4	4x AS or simple	1	1188	396	11880
L4	352x576	4	4x AS or simple	1	2376	792	23760
L5	720x576	4	4x AS or simple	1	4860	1620	48600

Continuation of table 2

Level	Max. percentage of intra MBs with AC prediction in VCV buffer	Max total VBV buffer size (units of 16384 bits)	Max. VOL VBV buffer size (units of 16384 bits)	Max. video packet length (bits)	Max. bitrate (kbit/s)
L0	100	10	10	2048	128
L1	100	10	10	2048	128
L2	100	40	40	4096	384
L3	100	40	40	4096	768
L4	50	80	80	8192	3000
L5	25	112	112	16384	8000

Picture type

"Picture type" specifies which parts of a frame should be used as the basis for the encoding:

- **Frame:** A frame is a single image from a video sequence, also called a full image.
- **Field:** A half-image, two of which combine to produce a frame. Read more about this explanation regarding "Interlace (view page 304)".

Field order

Note: This parameter is only available if the setting "Field" is selected for "Picture type".

In case of interlaced streams, the half-image sequence is set. Read more about this explanation regarding "Interlace (view page 304)".

Pulldown

Note: This parameter is only available if the setting "Frame" or "MBAFF" (only for AVC/H.264) is selected for "Picture type".

In normal cases, an image playback rate of 24 (or 23.976) frames per second is used; the NTSC system however requires 30 (or 29.97) frames/s, and there is a special algorithm for converting the video's frame rate. For compilations or test purposes, switch this option to "No". In normal cases, the setting can be set to "Auto".

Slice count

A frame can be divided into multiple slices for encoding. Specify the maximum number of slices are permitted. If set to "0", then the number will be determined automatically.

Bit rate control

The bit rate indicates how much data per second is saved in the video (playback speed). This makes the bit rate the deciding parameter for the video to be encoded.

Mode

- **Constant bit rate:** The constant bit rate should only be used if the device used to play the video supports constant bit rates.
- **Variable bit rate:** The bit rate varies. For faster movements in the video, the bit rate increases, and for still images or slow pans, a lower bit rate is sufficient for creating the video in constant quality.
- **Constant quality:** Similar to the "Variable bit rate" mode, the bit rate varies according to the video material. The quality depends on the selected profile and can be changed.
- **Constant quantizer:** In this mode, a fixed colour quantization is used for the macro blocks. Under Advanced settings, a value between 1 and 32 can be set independent of the respective frame (I-Frame (view page 304), P-Frame, or B-Frame (view page 305)). The higher the value, the stronger the quantization: small values produce qualitatively high-quality images and the data rate increases, and larger values produce a reduction in data, but the quality suffers.

Bit rate (Bits/s)

- In "**Constant bit rate**" mode: Exactly those values entered are applied to be able to calculate the size of the video precisely.
- In "**Variable bit rate**" mode: The values entered here are applied to the video as an average as a guideline. The size of the video to be exported can only be approximated.

Max. rate

This is the maximum bit rate that should be present in the video stream, i.e. maximum number of bits that may be transferred to the decoder.

Note: This option is only available in "Variable bit rate" mode.

VBV buf. size

VBV is the abbreviation for "**V**ideo **r**ate **b**uffer **v**erifier **d**efinition" and the size of the buffer (storage area) that is applied to the encoding.

The larger the buffer is, the better the results will be, but the processing will also take much longer. The smaller the buffer is, the more parallel processing can take place at the same time in RAM.

Pixel aspect ratio

Specifies the page ratio of the individual image points (pixels).

Meaning: Different television norms and the standard pixel ratio. Select a setting and the results are displayed as "X" and "Y".

X/Y: The actual pixel ratio. If under "Meaning" the setting "Custom" is selected, then a custom ratio can be set.

GOP structure**Max key interval**

Determines the maximum GOP (view page 303) length. High values mean improved compression. Lower values create stronger security protection and enable improved access to individual frames for processing the video.

B-frames count

The number of B-Frames (view page 305). Several applications, e.g. video conferences, require a setting of "0" for this, i.e. no B-Frames, in order to enable the shortest possible reaction times for transfer.

Scene change detection

If this option is activated the scenes will be detected during encoding, thus allowing you to insert an I frame (view page 304) after a scene change.

Input info

Information about the incoming video stream is displayed here during live recordings.

Statistics

Information about the encoder activity is displayed here during live recordings.

AVC / H.264

The H.264/AVC codec is suitable for all types of material; however, it requires relatively higher CPU power for later decoding.

In the advanced encoder settings of the AVC encoder the "Generic" options in "Main Settings" are mainly interesting.

The AVC preset and video format can be adjusted here. For instance, if DVD quality is desired you should select "DVD". The video format should be selected specific to the country so that the material can be played on the devices most commonly available in these countries. For instance, you should select PAL for Germany, SECAM for France and NTSC for the US.

Generic

AVC preset

This is where the actual video stream that will be exported is selected.

- **Baseline:** According to ISO/ICE 11172-1/2 standard
- **CIF:** Corresponds with MPEG-1 VideoCD
- **Main:** Corresponds with ISO/ICE 13818-1/2 standard
- **SVCD:** Corresponds with MPEG-2 Super VideoCD
- **D1:** Corresponds with MPEG-2 DVD
- **High:** HIGH profile 1920x1080i
- **DVD:** DVD video
- **HD DVD:** HD DVD video
- **Blu-ray:** Blu-ray Disc
- **Blu-ray HD:** Blu-ray Disc in high definition
- **Sony PSP:** Sony PSP-compatible format
- **HD 1280 x 720p:** High profile with a resolution 1280x720p (progressive)
- **HD 1440 x 1080i:** High profile with a resolution of 1440 x 1080i (interlaced)
- **Apple iPod:** Apple iPod-compatible stream.

Video format

Specifies where the video to be exported should be. The encoder optimizes video material for the selected mode of playback.

- **Auto:** The format from the MAGIX Video Pro X2 project.

PAL: Phase **A**lternating **L**ine, or **PAL**, is a process for color transmission for analog TV that is primarily used in Europe, but also in Australia, South America, and many African and Asian countries.

- The image repetition rate for PAL is 25 Hz.

NTSC: NTSC stands for "**N**ational **T**elevision **S**ystems **C**ommittee". This is a US institution that defined the first color carrier system for TV which is now used in most of America and some East Asian countries.

- The image repetition rate for NTSC is 29.97 Hz.

- **SECAM:** SECAM is a TV norm in France and eastern Europe for transferring analog color video signal.
- **MAC:** The MAC process (**M**ultiplexed **A**nalogue **C**omponents) involves TV norms developed for satellite TV. They have also been developed for an HDTV standard (HD-MAC).
- **Unspecified:** This setting does not make any special optimization.

Tip: The best results are achieved with the setting "Auto", since this automatically uses the project settings as a basis by MAGIX Video Pro X2.

Profiles

Defines which profile is applied in the AVC/H.264 stream.

- **Baseline profile:** The basis of applications with limited computing performance, especially for video conferences or videos on mobile telephones.
- **Main profile:** This profile was originally intended for the broadcast industry and for backup purposes. The process has however retreated somewhat from use, since "High Profile" has been developed for these purposes.
- **High profile:** This profile is used for broadcast and backup applications, and it is also used sometimes in the HDTV industry (**H**igh **D**efinition **T**elevisi**o**n). For example, this profile for HD-DVD and Blu-ray Discs.

Level

H.264 defines different levels. The higher the level, the larger the video's bit rate. In this table, you can see the maximum permitted values for the respective level in relation to the selected profile.

Level	Max. macro blocks per seconds	Max. image size in macro blocks	Max. video bit rate (VCL) for baseline and main profile	Max. video bit rate (VCL) for high profile	Examples (Resolution / image rate in Hz)
1	1485	99	64	80	128 x 96/30.9
1.1	3000	396	192	240	176 x 144/30.3
1.2	6000	396	384	480	320 x 240/10
1.3	11880	396	768	960	320 x 240/36
2	11880	396	2 Mbit/s	2.5 Mbit/s	320 x 240/36
2.1	19800	792	4 Mbit/s	5 Mbit/s	352 x 480/30
2.2	20250	1620	4 Mbit/s	5 Mbit/s	352 x 576/25.6
3	40500	1620	10 Mbit/s	12.5 Mbit/s	720 x 480/30
3.1	108000	3600	14 Mbit/s	17.5 Mbit/s	1280 x 720/30
3.2	216000	5120	20 Mbit/s	25 Mbit/s	1280 x 1024/42.2
4	245760	8192	20 Mbit/s	25 Mbit/s	1920 x 1080/30.1 2048 x 1024/30
4.1	245760	8192	50 Mbit/s	62.5 Mbit/s	1920 x 1080/30.1 2048 x 1024/30
4.2	522240	8704	50 Mbit/s	62.5 Mbit/s	1920 x 1080/64 2048 x 1024/60
5	589824	22080	135 Mbit/s	168.75 Mbit/s	1920*1080/72.3 2048 x 1080/67.8 2560 x 1920/30.7
5.1	983040	36864	240 Mbit/s	300 Mbit/s	1920 x 1080/120.5 4096 x 2048/30

The setting "Level auto" specifies the encoder levels automatically, among other things for the resolution of the video format specified under "AVC preset" and the set profile bit rate. If a level is manually set in this case, then other parameter values may not exceed the permitted maximum values.

Picture type

"Picture type" specifies which parts of a frame should be used as the basis for the encoding:

- **Frame:** A frame is a single image from a video sequence, also called a full image.
- **Field:** A half-image, two of which combine to produce a frame. Read more about this explanation regarding "Interlace (view page 304)".
- **MBAFF (macro block adaptive frame field):** A macro block consists of 16 x 16 pixels. The encoder creates a "frame field" on this basis for encoding.

Field order

Note: This parameter is only available if the setting "Field" is selected for "Picture type".

In case of interlaced streams, the half-image sequence is set. Read more about this explanation regarding "Interlace (view page 304)".

Pulldown

Note: This parameter is only available if the setting "Frame" or "MBAFF" (only for AVC/H.264) is selected for "Picture type".

In normal cases, an image playback rate of 24 (or 23.976) frames per second is used; the NTSC system however requires 30 (or 29.97) frames/s, and there is a special algorithm for converting the video's frame rate. For compilations or test purposes, switch this option to "No". In normal cases, the setting can be set to "Auto".

Slice count

A frame can be divided into multiple slices for encoding. Specify the maximum number of slices are permitted. If set to "0", then the number will be determined automatically.

Bit rate control

The bit rate indicates how much data per second is saved in the video (playback speed). This makes the bit rate the deciding parameter for the video to be encoded.

Mode

- **Constant bit rate:** The constant bit rate should only be used if the device used to play the video supports constant bit rates.
- Constant quantizer:
- **Variable bit rate:** The bit rate varies. For faster movements in the video, the bit rate increases, and for still images or slow pans, a lower bit rate is sufficient for creating the video in constant quality.

Pass

- **Single pass:** The encoder process takes place without prior analysis. This requires the least amount of time, however quality suffers.
- **Multi-pass analysis:** The first encoding is carried out at the same time as the analysis for the second encoding is calculated.
- **Multi-pass encode:** The first encoding is carried out at the same time as the analysis for the second encoding is calculated and updated. This produces the best results, but the process requires the most time.

Bit rate (Bits/s)

- In "**Constant bit rate**" mode: Exactly those values entered are applied to be able to calculate the size of the video precisely.
- In "**Variable bit rate**" mode: The values entered here are applied to the video as an average as a guideline. The size of the video to be exported can only be approximated.

HSS rate

This is the maximum bit rate that should be present in the video stream, i.e. maximum number of bits that may be transferred to the decoder.

Note: This option is only available in "Variable bit rate" mode.

CPB size

This sets the size of the "coded picture buffer" in bits. This is the buffer where the encoding is carried out. The larger the buffer is, the better the results will be, but the processing will also take much longer.

Init delay (90 kHz)

Image and sound offset is compensated as per the source material.

Tip: Detects asynchronicity that should be compensated directly in MAGIX Video Pro X2.

Dest delay (90 kHz)

Certain mobile playback devices create an offset of image and sound during playback, even if material is exactly synchronous. This option ensures that the device offsets the image for the value entered to counteract asynchronicity.

Example of calculation

Suppose a device creates an offset of 13 ms, then the following calculation must be made:

$$13 \text{ ms} = 0,013 \text{ s}$$

$$0,013 \text{ s} \times \frac{90.000}{\text{s}} = \underline{\underline{1170}}$$

(Hz = 1/s)

Note: Only positive offsets are compensated, i.e. image comes after the matching sound.

Aspect ratio

In the film industry, this is an indication of the ratio between width and height of a rectangle, monitor, or screen.

There are 3 different sizes available:

- **Picture Aspect Ratio** (also **Display Aspect Ratio, DAR**): This indicates the desired aspect ratio of the video to be exported. Here are some examples of typical aspect ratios: at home **4:3**, **16:9** (typical for TV sets) or **16:10** (widescreen-flatscreens, widescreen notebooks), **3:2** for 35mm films and photos. In cinemas you mostly find **1.85:1**.
- **Pixel Aspect Ratio (PAR, pixel aspect ratio)**: Indicates the aspect ratio of individual pixels. The majority of computer monitors have quadratic pixels (PAR=**1:1**), for analog television monitors (PAL at 4:3) **128:117**.
- **Sample Aspect Ratio (SAR, also Storage Aspect Ratio)**: Aspect ratio of the saved resolution (number of pixels), e.g. 720:576 at PAL. It also calculates picture aspect ratio and pixel aspect ratio: **SAR = DAR / PAR**.

Note: In the standard case, the "Aspect ratio" remains set the way it is. You should only change the settings if the resulting video is exported distorted or stretched or if you need to correct the video because it is in the wrong aspect ratio.

GOP structure

Max GOP length

Determines the maximum GOP (view page 303) length. High values mean improved compression. Lower values create stronger security protection and enable improved access to individual frames for processing the video.

Max b-frames count

The maximum number of b-frames (view page 305). Several cases of application, e.g. video conferences require "no b-frames" in order to achieve the shortest possible reaction times during transfer.

Scene change detection

If this option is activated the scenes will be detected during encoding, thus allowing you to insert an I frame (view page 304) after a scene change.

Input info

Information about the incoming video stream is displayed here during live recordings.

Statistics

Information about the encoder activity is displayed here during live recordings.

AMR

AMR involves a parametric codec with different data rates between 4.75 and 12.2 kbit/s. The 12.2-kbit/s settings throughly corresponds with the GSM-EFR codec in terms of algorithm and audio quality.

This audio format is used by mobile telephones for transferring the conversation and is optimized for encoding conversation (voices). Low bit rates provide compensation for mobile phones in case of transfer errors, i.e. bad reception. Depending on the signal strength, the compression increases or decreases to enable the best possible quality for a conversation. The AMR sound, on the other hand, encodes a fixed sample rate of 8,000 Hz compared to AAC sound.

The advanced AMR audio menu includes the following settings options:

The bit rate can be set between 4.75 and 12.2kbit/s. The higher the bit rate, the greater the file size and the higher level of audio quality. The standard settings provide a bit rate of 7.4 kbit/s. The highest bit rate for this format is more suited for transferring conversations.

AAC

The AAC audio was developed by MPEG, the Moving Picture Experts Group (Dolby, Fraunhofer Institut für Integrierte Schaltungen in Erlangen, AT&T, Nokia, Sony) as an audio data compression process, that was specified as a further development of MPEG-2 Multichannel in the MPEG-2 standard.

It's also a further development of MPEG-2 audio. This format is equally suitable for encoding general audio information and not especially optimized for certain types of audio material. As with video material, the audio format should be considered for playback later.

AAC audio can be encoded with a sample rate of 8,000, 16,000, 24,000, 32,000 or 48,000 Hz and in mono and stereo sound, respectively. By default, the sound is set to 48,000 Hz stereo. The higher the sample rate is, the larger the resulting file and higher the audio quality.

The advanced AAC audio menu includes the following settings options:

- The **bit rate** can be set between 6 and 512 kbit/s. 160 kbits/s is active by default. The higher the value is, the larger the resulting file and higher the audio quality. After a certain limit, additional improvements to audio quality will not be perceived. Bit rates under 64 kb/s are not recommended.
- As an **MPEG version**, set MPEG-4 or the older, proven MPEG-2 format.
- For the **File Header Type**, choose either RAW or ADTS. The "Header" indicates an explanatory head for the beginning of the file segment, which in fact takes up extra space, but is required for decoding under circumstances.
 - **RAW** indicates material which does not include a file header in audio format. The audio material is therefore transferred directly without any special additional information (raw). This requires that decoding routines are able to process the material without the explanatory file header. Especially in case "exotic" sample rates are set, this can lead to problems during RAW encoding.
 - **ADTS** indicates a file header type which contains information for encoded audio material. In case of doubt, select this file header type, since fewer problems can be expected in this case.

Object type: This provides selection between "Main" and "Low complexity".

- **Low complexity:** Data is present in a form that hinders different decoding algorithms (noise replacement), but enables others (temporal adjustment noise formation).
- **Main:** This sets other focuses in the encoding, and other decoder algorithms can be used.

Note: For example, Apple iPod requires "low complexity encoding". However, you don't need to worry if you select the right preset for Apple iPod in the export dialog.

Multiplexer

The multiplexer is a component of the encoder which combines audio and video streams.

Output format

MPEG-4 file: This is an MPEG standard (ISO/IEC-14496) with the original goal of supporting devices with less computing performance. Currently, MPEG-4 has reached a wide bandwidth of application, from HD video to support for mobile telephones.

JPEG2000 file: DCI (**D**igital **C**inema **I**nitiative) has been replaced by the JPEG2000 format for encoding movies. The current distribution and presentation of films has been taken over by digital projectors that play back **high-resolution Mj2 streams** in outstanding image and sound quality.

3GPP file: A standard supported by plenty GSM and UMTS mobile telephones. 3GPP is very similar to the MPEG-4 standard, but also supports formats that are not permitted by MPEG-4.

ISMA compatible

The "Internet **S**teaming **M**edia **A**lliance" combines video codec standards (e.g. MPEG) and continuous transfer within computer networks (e.g. RTP **R**eal-time **T**ransport **P**rotocol) to ensure that videos available online can be correctly transferred and played back.

Note: This option can only be activated, if under "Format" the entry "MPEG-4 file" has been selected.

For Sony PSP

Switch on this option if the video should be played back with the Sony PSP.

Note: This option can only be activated, if under "Format" the entry "MPEG-4 file" has been selected.

For iPod

Switch on this option, if the video should be played back with the Apple iPod.

Note: This option can only be activated, if under "Format" the entry "MPEG-4 file" has been selected.

Live mode (get times from samples)

This option is only important for live transfers and is therefore not required in MAGIX Video Pro X2.

Appendix: MPEG Encoder Settings

General settings

MPEG type: Set the output type of the created MPEG file. You can adjust the encoder settings freely (to export your video in the corresponding format, for instance) for further use in other programs or on your own website.

If you open the encoder from a burn dialog, or intend to use the exported material for VCDs, SVCDs or DVDs, then select the corresponding option. This will adjust the settings of the encoder according to the standards required for the corresponding discs to be played in a compatible player.

Video format: Automatically specifies the video format, aspect ratio, and frame rate (see video settings (view page 299)). You can choose between PAL or NTSC.

Interlace mode: The movie is encoded interlaced (i.e. in two half-screens, so-called fields). This is essential for later playback on TV screens. If you want to view the exported movie on your PC only and like a "cinemascope" view, you can also encode by frame (progressively). Some video projectors also support playback of progressively encoded image material. See Interlace (view page 304).

Bit rate: The bit rate determines the memory requirement by the completed video. The amount of data available can be used differently for different display modes. 20 MB can be 4 seconds of DVD video, or 5 minutes of Internet streaming at the thumbnail size. The quality of an MPEG video is measured by the width of the created data stream, i.e. the bit rate. This is the amount of transmitted data per time unit and is indicated in kBit/s or bit per second.

Quality: Determines the quality of the encoding process, or the quality of the movement (view page 302) to be more precise. The higher the quality, the better the finished video will look, but encoding will take considerably longer. The preset value "10" is a good compromise between speed and quality.

Smart Rendering: Smart Rendering can considerably reduce the encoding/processing strain of MPEG files. The production of MPEG files re-encodes only those parts of the movie that were changed in the program (e.g. by video cleaning or effects). Please note: The MPEG files contained in the movie **must** have the same format, i.e. the bit rates (variable or constant), audio formats, image resolutions, and video formats must match.

Quick, GOP-precise copying: This special Smart Rendering mode enables MPEG material to be transferred without having to encode it for the target medium, thereby greatly increasing the encoding speed. The video material cannot appear to have been altered in any way; only hard cuts (without fades) are permitted. These won't be executed precisely to the frame, but will rather take place at the next GOP borders. For this reason, cuts should be set somewhat more generously.

To burn DVDs in original 5.1 Surround Sound (Dolby Digital Audio) without having to re-encode, this option has to be activated.

Allows you to rip the necessary settings from an existing MPEG file. This can be useful if you want to merge MPEG files together without re-rendering via Smart Rendering.

Video settings

Frame rate: PAL requires 25 frames/sec, NTSC 29.97 frames/sec. Please note: encoding NTSC material as PAL or vice versa may be possible; however, it will result in jittery images.

Aspect ratio: Lets you set the image side or pixel ratio. With MPEG 2 the image format is displayed as image ratio; correspondingly there is 1:1 (square screen, not recommended), 4:3 (regular video) and 2.21:1 (cinemascope). This applies irrespectively of the selected video format.

With MPEG 1 the pixel format is specified instead. There is 1:1, CIR601 (corresponds to regular video) for 625 lines = PAL and 525 lines = NTSC and the same in 16:9. When selecting the output format Video CD the pixel format is automatically adjusted to the selected video format. Use with caution, even if you only want to export MPEG 1.

The option **Auto** is set as default. Here you can adjust the Movie settings (view page 223) accordingly.

Resolution: Width and height of the video corresponds with the settings in the export dialog.

GOP structure: Here you can change the settings of the GOP (view page 303) sequence, i.e. the number of P frames per I frame within a GOP. Please note that the total length of the GOP must not exceed 15 frames, which corresponds to the default setting (1 I frame + 4 P frames + 5*2 B frames = 15 frames).

However, you can reduce the length of the GOP sequence (while compromising the image quality at the same bit rate). This speeds up the encoding process considerably as the motion estimation while encoding P and B frames requires high CPU performance. The speed of decoding, i.e. playback, is also increased.

If I frame is set to 1, each frame is an I frame. If the value is set larger, the setting describes the total length of the GOP.

Auto GOP: Closed GOPs do not contain relations to frames from subsequent GOPs. MPEGs where all GOPs are closed, make MPEG editing easier as the I frames only can be edited alone if the GOP is closed. Auto GOP closes GOPs at scene changes, whereby two different and complex procedures ("fast" and "VSCD") are used.

Bit rate mode

In "constant bit rate" mode a bit rate that constantly remains the same is used. This option should be used for Video CDs, as it is only required here. With a constant bit rate the full power of MPEG compression can not be used properly as bandwidth for non-moving scenes is lost.

"Variable bit rate" mode attempts to adjust the available storage space to the requirements of the video you want to encode. The actual bit rate fluctuates around a mean value. During

calm sections of the video it may drop to a minimum value, if there are movements in the scene it may rise to the maximum value. There are two different regulation processes (mode 1 and mode 128).

Advanced video settings

MPEG profile and level: The MPEG-2 standard defines so-called "profiles" and "levels". For creating SVCDs and DVDs you can use "Main profile and Main level". The high profile adds additional properties to the data stream like the option to display an image at a reduced resolution for restricted transmission quality (SNR-scalable profile), or locally scaled, for instance an HDTV data stream on a standard TV set. The 4:2:2 profile is used if the image data is to be encoded for alternative chroma scanning. However, these profiles are supported by very few encoders, and mainly only for professional use.

These levels define the restrictions to the image resolution and the maximum data rate. Low level can only reach a reduced resolution (352x288 = CIF); high level, or High 1440, enables encoding in HDTV format.

Estimate movement: These parameters are controlled via the quality controller (see General Settings).

Other

Noise sensitivity: This factor defines how sensitive the encoder will react to noise in the source material. If the source material only contains a little noise (digital recordings, computer animations, or material already de-noised by video cleaning), then you don't have to change the default value 4, or you can even reduce to increase the quality further. However, if you want to encode noisy material, then too low of a factor will considerably increase the encoding time at the cost of quality. For an unedited analog video you can increase the factor to 8-14.

Noise reduction (click on noise sensitivity): A noise filter is used with adjustable settings from 1-31.

Advanced parameters

Additional expert settings are available in the tree to the right of the window. These should only be changed by experienced users. They have been optimized for general applications to such an extent that changes are only necessary in exceptional cases.

Audio settings

Audio Type: You can use MPEG -1/-2, PCM (WAV), or Dolby® Digital. You can also select "No audio" in the export dialog.

Sample rate: You can set a sample rate of 32, 44.1 or 48 kHz for the audio track. VCDs and SVCDs require 44.1 kHz, DVDs require 48 kHz. To reduce the size of audio data it is recommended to lower the bit rate instead of the sample rate.

Mode: You can use mono, stereo, joint stereo, or dual channel. If audio type "Dolby® Digital" is used, then "5.1 Surround" mode may also be selected.

- Dual channel enables encoding of two mono tracks (e.g. different language sound tracks) that can be switched during playback.
- Joint stereo is an optimized stereo encoder which takes advantage of the fact that the signal of both stereo channels is largely identical. Use joint stereo if you can only use small audio bit rates, but still require a stereo signal.
- 5.1 Surround is available only for surround projects for burning DVDs. During this process, all 6 surround channels in the audio stream are encoded.

Note! For Surround projects "Dolby® Digital" should be selected under "Audio type", and "5.1 Surround" under "Mode".

Bit rate: Here you can set the audio signal bit rate. The higher the bit rate, the better the playback quality. VCD requires 224 kBit/s, and for SVCDs and DVDs select a value between 384 kBit/s and 448 kBit/s.

Dolby® Digital Details

Hint: These functions are available only in the "5.1 Surround" mode.

Dialog normalization: Set the dB level of spoken dialog. This value will be used to adjust the total volume of DVD movies and different programs that can be received by the DVB. To do this, you must first measure the volume of spoken dialogs in your movies. The values 1-31 correspond to volume levels of -1 to -31 dB.

Hint: Use the mixer's peakmeter to set the volume level. This process produces only approximate results, because the exact measurement requires a mean value and this cannot be easily measured with MAGIX Video Pro X2.

The displayed value serves also as a reference value for "Dynamic Range Control". Some areas are softer so that speech can be made louder, and louder areas will be made softer to avoid overmodulations.

Background: Action-filled movies have larger volume differences between spoken dialogs and loud scenes (during explosions, for example). Because of this dialogs are softer than in quieter films which can be modulated higher.

Surround mix level / Center mix level: These settings lead to an additional damping of the surround channels and the central channel. Usually both settings are set to -3 dB.

LFE channel: Switch off the LFE channel (**L**ow **F**requency **E**ffect), e.g. if you want to eliminate undesirable rumbling sounds in the low frequency range. Normally, you should leave this option activated.

LFE filter: The LFE filter is a low pass filter, which lets through only the lowest frequencies. If you are dubbing a project in Samplitude/Sequoia, and have applied the LFE filter, you can switch off this function here, since this filtering has already been accomplished.

MPEG glossary

Motion estimation

Motion estimation is a further element for reducing data used in MPEG encoding.

Motion estimation also occurs in the B and P frames. The image difference that still exist after prediction (view page 305) are examined. Complex algorithms are used to search for an original occurrence of the macro block in the reference frame of each macro block of the P or B frame (these are units of 2x2 blocks specially combined for this purpose), which have been moved either by movement or by camera pan. They can then be left out in the P and B frame. Only the information by how far and to where the macro block has been moved is saved instead. This vector is called the motion detector.

In the General encoder settings (view page 298), you can specify the quality of the final MPEG video. This factor also influences the time required for encoding. The longer it takes, the better the quality.

Bit rate

MPEG is a format used for storage and transferring. With older formats (e.g. AVI) you could predict that 20 seconds of movie would result in 20 MB of data. The file size is this a direct measurement of quality.

This is different for MPEG: The amount of data available can be used differently for different display modes. 20 MB can be 4 seconds of DVD Video or 5 minutes Internet streaming in thumbnail format. The quality of an MPEG video is measured by the width of the created data stream, the bit rate. This is the amount of the transmitted data per time unit; it is stated in kBit/s or bit per second.

Bits, not bytes are used, since the data word width has to address the transmission restrictions.

The file size can be calculated from the average bit rate, if its length is known:

$$F = (BRV + BRA) * t$$

F=File size

BRV=
Video bit rate

BRA=
Audio bit rate

t=Length in s

Block

For almost all image file editing techniques the image is subdivided into 8 x 8 pixel blocks (image points). This should be noted if you would like to used user-defined image resolutions (width/height), and they should always be a multiple of 8.

Chroma format

The color value of each image point consists of the color values for the primary colors red, green, and blue (RGB), and for traditional and technical reasons it is transformed into one

brightness value ($Y = 0.299 * R + 0.587 * G + 0.114 * B$) and two color difference values ($U = R - Y$, $V = G - Y$).

The Y value alone produces the black and white picture. These signal components allow brightness and color information to be handled separately. The first data reduction occurs when single rows comprising a picture are read. Because the human eye has a lower color resolution than a brightness resolution, the color components are recorded only for every other point of a row (4:2:2) for each four pixels grouped (4:1:0), i.e. color signal under-reading.

4:2:2 This corresponds to the established TV standard. One piece of color information is transmitted per row for two pixels which corresponds to a 2/3 compression of the output data.

4:1:0 This is the color coding used for DVDs and most other consumer video applications. For each 4 pixels grouped together on two rows, one unit of color information is saved. This corresponds to a output data compression of 1/2.

Field

A half-image, i.e. two halves which combine to produce a frame (see de-interlacing (view page 304)).

Frame

A frame is a single image from a video sequence which also called a full image. PAL video, for example, contains 25 frames per second, NTSC 29.97 frames.

Video recordings, with the exception of computer animations and still frames, don't contain full images. Instead, they have double numbers of half-images (fields) which are transmitted in an interlaced state. However, we still refer to frames, since many predecessors of MPEG compression are based on such frames. Video editing literature usually refers to frames.

GOP

Group of Pictures: The sequence of I frames and the P and B frames that belong to them.

e.g. I B B P B B P B B I ...

(This GOP has a length of 9, with 2 P frames and 2 B frames)

I frames contain the entire image information of a frame, while P and B have part of the information. So-called prediction (view page 305) and movement approximation are methods used for reduction.

The combination P B B is called a subgroup.

I frames must appear in regular intervals in the data stream for image and sound to be synchronized. Between the I frames only a limited count of P and B frames is allowed. This explains a few things: Since P and B frames contain only differential information, these differences will be larger with time, since more and more changes takes place from frame

to frame. A large count does not make much sense, since GOP has a maximum length of 15 (4P, 2B) in PAL and 18 (5P, 2B) in NTSC. (More than 2 B frames between P frames is not allowed).

In a **closed GOP**, B frames of the last subgroup may contain only backward predictions or references to the preceding P frame, but no references to the following I frame, since it belongs to the next GOP.

I frames

Intra-frames: In these pictures, the entire image information of a frame is saved and only information from this frame is used ("intra-frame encoded"). In contrast to the I frame, P and B frames save only the differences between the current frame, and preceding and/or following frame are also found in MPEG video (P frame = "predicted frame", B frame = "bidirectional frame", see Prediction (view page 305)).

Interlace

For historical reasons, pictures in a movie are always recorded and transmitted in the form of two fields; first the lines with even numbers and then those with odd numbers. These fields are alternatively displayed with double the frame rate. The (lazy) eye of the viewer or the processing of the TV tube puts the two frames together to form one.



The output image



First field



Second field

You normally don't have to worry about field processing. The video material goes through the entire processing chain as fields and is exported again as fields or burned onto DVD or shown on TV when played back on a DVD as a full picture. Only in certain rare conditions is it necessary to go deeper into this process. Two problems can occur:

1. Interlace artifacts

To be displayed on a computer monitor (during recording, in your TV/VCR, and in the arranger during editing), the two fields must be combined to form a full screen.

These two fields are not the same, since two fields are created during the recording between which a 1/50 of a second gap is evident. Moving objects can therefore produce artifacts on vertical edges.



Typical interlacing errors

You can use so-called de-interlacing to avoid this type of artifact. De-interlacing places a picture in between the two fields (interpolated). If you want to create stationary pictures from movies, then you should definitely use a de-interlace filter.

In the system settings ("File" menu -> Program settings) you can set the preview monitor display to use hardware de-interlacing during video recordings for the video recorder and for display in the arranger.

2. Incorrect field rate

If you move around the series of fields in a movie data stream, then you will see strong jitter and flicker effects. Picture objects move in a backward movement – two steps forwards, one back – since a delayed field is shown before the previous one. This can happen in the processing chain if you export video material improperly with the wrong field order and then import it into different material. We use MXV or MPEG "Top field first" format for all analog recordings ("odd" in other programs).

DV-AVI on the other hand is saved with "Bottom Field First".

You can correct the field series for each video object in its object settings. See: "Menu -> Effects -> Object properties"

P frames and B frames

P frames save only the difference between the current picture and the preceding I frame. The "P" comes from the term "prediction" which describes this process.

B frames save the differences between the current picture and the I or P frame preceding and following. This includes the information that was the same before and remained the same after the current frame. Both directions are analyzed (indicates the "B" in the name, i.e. "bidirectional-predicted"). You can read more under prediction (view page 305).

Prediction

Prediction is a method of data reduction used by the MPEG format. The image elements already known from the previous or following frames are removed from the data stream.

How does it work?

The encoder has a precisely defined GOP, for example IBBPBBPBB. This sequence is transmitted together with the encoder, which always knows exactly which kind of frame comes next. I, P, and B frames are differentiated.

Hint: When we talk about pictures, we mean frames of the video output, and I, P an dB frames are the frames of the encoded video. Just as in movement approximation, blocks (8x8 pixels) are united into macroblocks (16x16 pixels) during prediction.

The first frame is always the I frame. It is completely encoded from the first picture. Afterwards, the 4th picture is analyzed for the creation of the first P frame. (As already said,

the encoder, and later the decoder, will know that two B frames belong between them.) This image will also be completely encoded, and afterwards all macroblocks that haven't changed in comparison to the I frame will be deleted. They will be replaced by corresponding references for the decoder that tell it "you already know what should be shown here, and you can get it from the last I frame".

Now, the 2nd will be completely encoded, and all macroblocks identical to the first I frame **and** the following P frame will be removed. References to previous frames are called **backward predictions**, and references to following frames are called **forward predictions**. The third picture will be edited in exactly the same fashion.

The fourth picture we have already explained, and now we need the next P frame, or picture number 7. Pictures 5 and 6 are B frames again, which are compared to P frames to both sides of them (picture 4 and 7); these are followed by the last two B frames. These have a special place, since in closed GOPs, they may contain only backward predictions, and no references to the next I frame, because it belongs to the next GOP.

Something else: Since the decoder is no prophet, the P frames are always transmitted before the B frames! The GOP explained above will be encoded and transmitted in the order it is written.

Original GOP	$I_0 B_{01} B_{02} P_{01} B_{11} B_{12} P_{02} B_{21} B_{22}$	
Data stream	$I_0 P_{01} B_{01} B_{02} P_{02} B_{11} B_{12} B_{21} B_{22} \dots$	for closed GOPs
	$I_0 P_{01} B_{01} B_{02} P_{02} B_{11} B_{12} I_1 B_{21} B_{22} P_{11} \dots$	For open GOPs

Due to this nested structure, it is easy to see that during direct editing of MPEG material, complicated computations have to take place! These are made easier using a **frame table**. A frame table contains a list, where the information of every frame in the data stream is found, identifying the type of frame it is.

Using Movement prediction (view page 302) P and B frames are likewise reduced.

Quantization scaling

The single pictures in MPEG are saved using a compression method comparable to JPEG with bitmaps and associated with quality loss. For this single images are divided into 8 x 8 blocks (view page 302).

Each one of these blocks is then transformed into an 8 x 8 matrix (a table with rows and columns) using a **DCT** (discreet cosine transformation) mathematical method. Each of these values is produced using all 64 individual pixels of the block, but the values in the matrix are ordered in such a way that the image information is ordered according to its importance.

This matrix will then be multiplied by another matrix, i.e. the **quantization matrix**. Exactly how and why this matrix must be created is the biggest secret of encoder programmers, since this determines the quality of the whole encoding process. What is known is that the

result should contain as many zeros as possible! These zeros correspond to the "unimportant" image elements mentioned and will not be transmitted in the data stream.

Depending on the encoder parameters regarding the target bit rate, fewer or more values of the matrix will be declared unimportant by dividing the quantization matrix by the **quantization scaling factor**. Since only whole numbers are used, a division can produce a zero if the remainder is discarded.

This factor is also a direct measure of the sought image quality of the MPEG data stream, since the "Q" in "Q" factor stands for quantization and quality.

If you still have questions...

Program help

The program's help file contains hints on how to use the program and additional information. Many important terms are indicated in the text in italics and an explanation of them can be reached by clicking on them.

Homepage: The main help page can be accessed via the "Help -> Contents" menu point.

Context help: Press the "F1" key at any point in the opened program and help will open with the matching help topic (context help).

Search function: To find out information on specific words, use the search function. Enter either the individual word or use logical operators (OR, AND, NEAR) to refine your search if you have several search words.

- **"OR"** (between two words): All topics which contain both words or one of the words will be listed.
- **"AND"** (between two words): Only those topics will be listed which contain both words.
- **"NEAR"** (between two words): Only those topics will be listed which contain both words. A maximum of six other words may be added between the search terms.
- **"NOT"** (before a word): Topics which contain this word will **not** be listed.

Print: Use the help program's print function to make a printout of individual topics or entire sections. For help cases which may take a long time, this can be more practical than switching between the help window and the program. The print button is located at the top of the help window in the toolbar.

Index

1

1. Wiring 27

2

2. Program start and record 28

3

3D distortion 119
 3D series 94
 3D text 107, 127
 3D transitions 92

5

5.1 Surround 169
 5.1 Surround Editor 172
 5.1 Surround mix 175

A

AAC 296
 Abbreviations 268
 About MAGIX Video Pro X2 233
 Acceleration for high-resolution MPEG2 files 261
 Accept media after download 265
 Actions at the end of the movie (only in the film menu) 205
 Activate additional functions 276
 Activating the main screen 38
 Activation problems 263
 Ad markers 103
 Adapt length to music 128
 Add keyboard shortcut 274
 Add music 17, 78
 Add sound 152
 Add time code 127, 237, 253
 Adding a sound track using MIDI songs 160
 Additional buttons in Timeline mode 48
 Additional features 18
 Additional new MAGIX Video Pro X2 features 13
 Adjust brightness 131, 166
 Adjust music to section 221
 Adjusting the signal level 78

Adjusting the workspace.....	55
Administration.....	212
Advanced.....	181
Advanced configurations in the video capturing dialog.....	75
Advanced options.....	80
Advanced Title Editor settings.....	127
Advanced video settings.....	300
Advanced.....	121
AMR.....	295
Analog video recording.....	74
Animate.....	273
Animate objects.....	148
Animated GIF.....	187
Animated selection menus.....	202
Animation.....	114, 119, 126
Annex: Digital Video and Data Storage.....	277
Anti-flicker filter.....	236, 240, 251
Appendix: MPEG Encoder Settings.....	298
Apply automatically.....	46
Apply effects to objects.....	107
Apply fades.....	107
Apply video effects to all.....	237, 241, 252
Apply video effects to all of the following.....	237, 241, 252
Arranger.....	53, 258
Arranger view.....	268
Arranging the synth object.....	162
Artistic filter.....	113
Aspect ratio.....	294
Atmos.....	163
Attach movie.....	215
Attach to picture position in the video.....	235, 240, 248, 250
Audio.....	78
Audio and video mixdown.....	223
Audio as MP3.....	186
Audio as WAV.....	187
Audio cleaning.....	228, 235, 244, 250
Audio effect dialogs.....	138
Audio effects.....	42, 169
Audio Effects.....	133
Audio effects animation in the Media Pool.....	13
Audio effects curves.....	245
Audio effects in the mixer.....	142
Audio effects presets.....	133
Audio object effects.....	227, 273
Audio objects.....	243
Audio settings.....	300
Audio track export.....	187
Automate.....	169
Automatic chapter markers.....	101, 224
Automatic scene detection.....	85

Automatic Tempo Recognition	157
Automatic track damping	147
Automatic volume damping	80
Automatically cut	85, 128
Automatically select preview image	63
Automation	169, 172
AVC / H.264	290
AVC preset	290
AVCHD activation details	15, 82
AVCHD disc	281
AVCHD Lite	15
AVCHD standard support	15

B

Background design	227, 236, 240, 251
Background music	130, 147
Backup copy	178, 218, 271
Backup disc	284
Basic view	54
Batch capturing	17
Batch Capturing	73
Batch conversion	17, 212
Batch convert	217
Batch recording	73
Bezier curves	150
B-frames count	289
Bit rate	302
Bit rate (Bits/s)	288, 293
Bit rate control	288, 293
Block	302
Blu-ray	280
Blu-ray Disc	280
Border cropping adjustment:	236, 240, 248, 251
Borders	124
BPM Wizard	229, 245
Brightness & Contrast	108
Brightness/Contrast	131
Burn an already created (S)VCD/Video DVD	217
Burn CD	217
Burn CD/DVD	217, 270
Burn dialog for DVD player	209
Burn discs	196
Burn DVD	217
Burn movie and media onto CD/DVD / Burn project and media	178
Burnable disc formats	15
Burning assistant	206
Disc limitations	207
Burning DVDs and Blu-ray Discs with interactive menus	35

C

Calculating the panorama image	123
Camera movement	116
Capturing DV recorders or cameras	68
CD Manager	152
Center title	126
Center track position	126
Change curve shape	150
Chapter markers	101
Choppy or uneven playback	262
Chroma format	302
Chroma key	112
Clean up project folder	215
Clean-up wizard	180, 219
Close all movies	232
Codec	278
Color	109, 131
Color correction	17, 110
Combine Surround and stereo tracks	175
Comparison image in source monitor for editing effects in the Media Pool ...	261
Comparison image in the source monitor	108
Compressor	137, 142
Computer	40
Connect a DV or HDV camera	65
Connect analogue video source	66
Connect AVCHD camera	65
Connect camera	65
Connecting the source for recording	78
Content	232
Context help	44, 232
Context menu (right click)	234
Continue	210
Continue burning	210
Control Effect devices	134
Convert to 3D title	248
Copy	222
Copy CD/DVD direct	217
Copy keyframe	149
Copy movie/project and media to folder	178
Copy Protection	280
Copy video effects	237, 241, 252
Copying objects	220, 237, 241, 244, 248, 252
Copyright	2
CPB size	294
Create frame table (new)	234, 238
Create movie	130
Create new video project	57
Create panorama pictures	123
Create panorama	226, 239

Create PC show	211
Create playable disc	182
Create still frame.....	235, 250
Create webDVD	211
Create your own menu background	202
Creating an ISO image	209
Creating backgrounds.....	12
Creating new movies or attaching them.....	83
Creating synth objects	162
Creating titles from a template.....	125
Creating titles without a template	125
Cropping	273
Curve mouse mode	50
Curve shape	150
Curves.....	148, 169
Custom fades with Alpha-keying	92
Cut	221
Cut automatically to fit screen	240
Cut button	47
Cut objects.....	220, 237, 241, 245, 248, 252
Cut out	222
Cut trimmer	98
Cut Trimmer	230, 234, 243
Cutaway	116
Cutting videos in the project.....	31

D

DeClipper	135
Decorate.....	124
Define DVD audio tracks	174
Define the path for saving Internet media.....	265
Dehisser	137
De-interlacing	261
Delay	140
Delete.....	220, 222
Delete (all) chapter markers.....	102, 225
Delete keyframe.....	150
Delete movie.....	214
Delete objects.....	45, 220, 237, 242, 245, 248, 252
Delete project marker.....	224
Delete scene end.....	221
Delete scene start.....	221
Delete specific files	181
DeNoiser	135
DeNoiser – Advanced settings	136
Design	128
Design button	203
Design elements	42, 229
Design page	202

Dest delay (90 kHz).....	294
Determining the start of a measure	158
Digital Audio Meter	147
Digital Versatile Disc (DVD).....	279
Direction and time.....	117
DirectX Plug Ins	166
Disable effects	247
Disc options	201
Display keyframes of individual parameters	149
Display options	260
Display settings	231
Display templates	259
Display tool tips	232
Display track curves.....	246
Distortion.....	113
Dolby Surround	169
Dolby® Digital Details	301
Drive list dialog	153
Drum & Bass machine 2.0	163
Dub	17, 78
Dub individual languages	174
Ducking	80, 147, 228
Duplicate objects	88, 220
DV	65
DV as MPEG	71
DV cameras.....	67
DV devices	67
DV export settings	191
DV recording	25
DVD authoring with up to 8 audio tracks	17
DVD files (VOB) with multiple audio tracks	84
DVD with surround sound	169

E

Echo/Hall.....	228, 244
Edit	220
Edit after recording	82
Edit color ranges individually	111
Edit disc menu.....	200
Edit in external Editor	226
Edit in MAGIX Video Pro X2	239
Edit keyboard shortcut.....	274
Edit Keyboard shortcut	219
Edit menu	87, 220, 272
Edit menu elements	200
Edit settings.....	250
Edit snap point	224, 235, 239, 243, 247, 250
Edit title	125
Edit your own menu entries.....	205

Editing an effects curve in the object	150
Effects	16, 41, 126, 129, 133, 169, 226
Effects (FX)	226
Effects and mix down of synth objects	162
Effects curves - Additional functions.....	151
Effects library	230, 273
Effects menu.....	272
Embed Flash videos into your own web page.....	266
Encoder settings.....	210
Enhanced single-frame recording dialog settings.....	77
Enriching movies.....	35
Equalizer.....	137, 142
Exit	219
Export	170
Export as transition.....	187
Export audio/video.....	188
Export Dolby Digital Surround via Smart Encoding.....	171
Export DV/HDV.....	189
Export EDL	180
Export formats	182
Export movie	182, 215, 270
Export movie file	215
Export movie information as EDL.....	187
Export to MAGIX Online Album.....	240, 246
Export to MAGIX Online Print Service	240
Export to magix.info	218
Export to mobile devices.....	191
Export video as file.....	36
Exporting as Flash	185
Extract.....	222
Extract sound from videos	89

F

Fades	41
Fades from the Media Pool	91
Features	14
Field	303
Field order	288, 292
File	214
File formats.....	278
File menu.....	214, 269
File will not load	262
Film length	129
Film menu & chapter menu	201
Film overview	51
Finished panorama (2 images).....	124
Font.....	126
For iPod.....	297
For Sony PSP	297

Foreword.....	2
Form group	49, 222
Format settings for the selected conversion process	213
Frame.....	303
Free activation (MPEG-2, MPEG-4, Dolby Digital 2.0 & 5.1)	276
Fullscreen view	51
Functionality	56
FX tracks (effect tracks).....	167

G

Games consoles.....	195
General	133
General advice for operating both trim editors	96
General notes on AVI videos	278
General settings.....	298
Generate background music.....	155
Generic	285, 290
GOP.....	303
GOP structure	289, 295
Grid and snap.....	54, 95
Group associated recordings together	129

H

HD audio support	17
HDV	65
HDV camera.....	72
Help	232, 274
Help menu.....	232
How to capture analog video	27
HSS rate.....	293
Hue	110

I

I frames	304
If you still have questions.....	308
Image formation in Vertical Blank Intervals (VBI).....	261
Image objects.....	238
Image stabilization	122
Image stabilization dialog	122
Import	170
Import audio CD	152
Import Audio CD track(s).....	216
Import EDL (edit list).....	180, 216
Import media files into project folder.....	215
Import movie file	215
Import/Export file formats.....	14

Importing	38
Importing & exporting EDL files	180
Importing and exporting surround audio files	170
Importing individual scenes from longer movies	33
Improved file import	12
Improved video upload.....	13
Including video objects.....	129
Init delay (90 kHz)	294
Input info	289, 295
Insert	222
Insert cut	106
Insert object into the project.....	84
Insert objects into the project folder	237, 242, 245, 249, 252
Insert video effects.....	237, 241, 252
Integrated browser.....	264
Intelligent mouse mode.....	49
Intelligent ripple.....	46
Intensity	128
Interlace.....	304
Internet	218, 270
Interpolation for interlace material.....	235, 251
Introduction	12
Invert image sequence for panorama image	123
ISMA compatible	297

J

JPEG disc.....	283
Jump to linked page	204

K

Keyboard layout.....	19
Keyboard shortcut list	275
Keyboard shortcuts	268

L

Level.....	291
Limiter	147
Live mode (get times from samples)	297
Load.....	38
Load and edit audio files	152
Load audio effects	228, 244
Load audio effects from the Media Pool	133
Load backup project.....	219
Load backup project.....	179
Load CD titles.....	152, 216
Load files.....	84

Load on-disc editing project from disc	200
Load project	43, 64, 214
Load Title Effects	229
Load title template	248
Load video effects	236, 241, 251
Load/Save project	270
Loading files	19
Loading Internet media	264
Loading parts of longer movie files	84
Logging	73
Lower toolbar	45

M

MAGIX 3D Maker objects	250
MAGIX Community	218
MAGIX Mastering Suite	143
MAGIX News Center	44, 266
MAGIX Online Album/MAGIX Online Print Service/Catooh	218
MAGIX Soundtrack Maker	17, 154
MAGIX tools	40
MAGIX video export	183
MAGIX Video Pro X2 as master	59
MAGIX Video Pro X2 as slave	60
Magnetic objects	90
Manage movies	214
Manager for video plug-ins	120
Managing video projects	178
Manually compile files	217
Marker	224
Marker -> Jump to range start/end	225
Marker -> Reset selected range	225
Marker -> Set range start/end	225
Markers	99
Master audio effect rack	230
Master audio track	106
Master effects	130, 226
Master track	168
Mastering Suite	230
Max b-frames count	295
Max GOP length	295
Max key interval	289
Max. rate	289
Media library	18
Media Pool	38, 231
Memory	207
Menu	198
Menu entry properties	204
Menu image	204
Menu text	204

Menus	214
MIDI Machine Control (MMC)	61
miniDVD	283
Mirror.....	118
Mix down of audio objects	177
Mixdown Audio.....	223
Mixer	45, 166, 230
Mixer tracks.....	166
Mixing stereo	175
MMC modes.....	61
Mobile phones	194
Mode.....	288, 293
Motion	235, 239, 250
Motion estimation	302
Motion stabilizer.....	226, 234
Mouse mode for individual objects	49
Mouse modes.....	49, 269
Move	87
Move screen view	225
Move view	269
Movement	273
Movement & zoom.....	117
Movement effect templates.....	227
Movement effects	41, 227
Movement effects in the Media Pool.....	115
Movement in direction.....	116
Movie as sequence of individual pictures	184
Movie information	62
Movie settings.....	57, 219
Moving objects	87
MPEG Compression	277
MPEG glossary	302
MPEG-4	285
MPEG-4 encoder settings.....	285
MPEG-4 import.....	85
MPEG-4 preset.....	285
Multi Disc.....	284
Multicam edit functions	105
Multicam editing	104
MultiCam editing.....	16
MultiMax.....	145
Multimedia editable DVD menus.....	17
Multiple sound tracks.....	53
Multiplexer	296
Multitrack ripple	47
Mute button	45
My device is not in the list, what should I do?	193
My media.....	40
My music.....	40
My pictures.....	40

My videos 40

N

Navigation 201
Navigation buttons 38
Navigation in the browser 264
New functions 12
New movie 214
New project 43, 214
New project disc settings or new movie 64
New Title Editor 13
Normalize 227, 243
Note on SVCD compatibility 202
Notes for MAGIX Movie Edit Pro users 18

O

Object grid 48
Object handles 88
Object properties 238, 242, 246, 249, 253
Object trimmer 230, 234
Object zoom 12
Ondisc Editing 205
Online functions 264
Online login details 218
Online tutorials 232
Online update 233
Open 214, 216
Open batch conversion 212
Open browser 264
Open files 152, 216, 219
Opening and closing credits 129
Optimize movie view 231
Options 210
Options for using the final movie 182
Organizers and PDAs 195
Output audio/video 217
Output format 297
Overview 54, 231
Overview mode 54
Overview of the device classes 194
Overview of the different disc types 278
Overwrite 47
Overwrite range 106

P

P frames and B frames 305

Panorama automation.....	169
Parametric Equalizer	143
Pass	293
Paste modes	45
Paste objects.....	220
Path settings.....	256
Performance test for your PC during AVCHD import.....	12
Picture type	287, 292
Pixel aspect ratio	289
Place keyframe	148
Playback.....	254
Playback functions.....	268
Playback in the Arranger/Preview and playback in video recorder.....	260
Playback marker	99
Playing videos on digital devices	189
Position	115
Prediction	305
Preparation.....	104
Preparation - Setting the start marker and object end.....	157
Preparing animations	148
Prerequisites for using the beat recognition assistant.....	157
Presets	118
Preview and editing.....	197
Preview audio mouse mode	50
Preview function	43
Problems and Remedies regarding the Auto Remix Assistant	160, 262
Problems and solutions.....	262
Profile/Level	286
Profiles	291
Program and source monitor.....	15, 50
Program help	308
Program monitor.....	231
Program settings	44, 219, 254
Programming the synth object	162
Project.....	231
Project folder	16, 19, 55, 231
Project settings.....	63
Projects	40
Properties & title	129
Pulldown	288, 293

Q

Quantization scaling.....	306
Queued entries for batch conversion	212
Quick start.....	20

R

Range	222
Range markers in the source monitor	100
Ranges (in and out points)	100
Ranges in the video monitor	100
Real time	133
Real-time multicam editing	105
Record	27
Record audio / images / video	216
Record sound	78
Recording	14
Recording AVCHD	81
Recordings	40
Red/Green/Blue	110
Red-eye-removal	109
Reduce volume	80, 228, 243
Register online	233
Regrouping scenes	34
Remote control	197
Remove a channel logo with the	121
Remove end	48
Remove object end	88
Remove scene	48, 88, 221
Remove start	47, 88
Removing unusable scenes	31
Replace	47
Replacing an object's source	106
Requirements	60, 169
Reset audio effects	228, 244
Reset background	227
Reset program settings to default	233
Reset track curves	246
Reset video effects	227, 236, 241, 252
Restore	45, 220
Restore disc project from (S)VCD/video DVD	179
Restore normal view	259
Retroactively editing an effect's keyframes	149
Reverb	138
Reverb/Delay	138
Revised DVD menu design	13
Revised MAGIX MovieShow Maker	12
Rewrite	210
Rotate	118
Rotation & Mirror	117
Run of the panorama and volume curve	169
RW	210

S

Saturation	109
Savable window layouts	16
Save as special effect	248
Save as title template	248
Save audio effects	228, 244
Save objects separately	89
Save only Tempo & Beat information	158
Save photos with effects	226, 239
Save project	44, 64, 214
Save project as	64, 214
Save Title Effects	229
Save video effects	227, 236, 241, 251
Save/delete style template	128
Scan image	216
Scanning CD tracks with the recording dialog	154
Scene change detection	289, 295
Scene markers	102
Scene overview	94
Scene recognition	226, 234, 239
Screen	80
Scrubbing	13, 176
Activate	177
Apply	177
Modes	177
Search	39
Search and delete superfluous files	181
Search for and remove ads	95, 226, 234
Secondary color correction	111
Section	227, 235, 239, 250
Select a movie to edit	45
Select all objects	221
Select files in the Media Pool	84
Select music style	155
Select objects	87
Select pictures for panorama	123
Select scanner	216
Select the recording method	67
Selecting, loading, and playing videos	21
Separate project onto multiple discs	208
Serial number	10
Set as background	227
Set chapter marker	48, 101, 224
Set mood change	155
Set project marker	99, 224
Set the format for individual DVD audio tracks	176
Set volume	228, 243
Setting the manual and and Onbeat/Offbeat	158
Setting up MAGIX Video Pro X2	60

Setting up Samplitude/Sequoia.....	61
Setting up the preview monitor	50
Settings.....	219, 254
Settings.....	243
Setup	164
Sharpness	114, 131
Shortcuts.....	268
Show movie overview	231
Shrink or interlace videos	89
Shut down PC automatically after successful export.....	213
Simple crossfade.....	91
Single frame	76
Single frame as BMP	187
Single frame as JPG	187
Single-frame recording.....	70, 76
Single-track ripple.....	46
Size	115
Size & Position.....	115
Slice count	288, 293
Slideshow disc	283
Slideshow Maker	128, 223
Snap to other audio objects.....	107, 245
Soft movement.....	149
Sound optimization.....	135
Sound restoration	135
Soundtrack Maker	223
Source and preview images	104
Source monitor.....	231
Space bar behavior.....	19
Specify synchronization	59
Speed	114
Spline curves	150
Split.....	47, 87
Split movie.....	48, 88, 221
Split scene.....	221
Split stereo objects into mono objects.....	246
Splitting objects.....	87
Standard picture length	258
Start batch conversion.....	213
Start dialogs	20
Start the scanning process	216
Starting the program and orientation.....	20
Statistics	289, 295
Steps for burning DVDs, etc.....	209
Stereo FX	137, 146
StoryMaker.....	38, 41
Straighten horizon.....	118
Stretch mouse mode	50
Style template.....	128
Super Video CD (SVCD).....	281

Support	9
Support of	17
Surround	169, 228
Synchronization	58
Synchronization dialog	58
Synchronization with external devices	17
Synchronize video objects using the sound track	107
Synchronizing Samplitude/Sequoia with MAGIX Video Pro X2.....	60
Synthesizer	133, 162, 230
System	258
System information	233
System requirements	11

T

Television.....	188, 259
Templates.....	199
Tempo adjustment.....	159
Tempo and beat recognition	156
Test series with variable encoder settings.....	207
Text objects.....	247
The.....	56
The bass section (bottom half)	165
The CD-ROM configuration dialog.....	154
The Mixer in surround mode.....	171
The rhythm section (top half)	164
The tracklist dialog.....	153
Time control.....	77
Timeline mode	29
Timestretch and pitchshift.....	140
Timestretch/Resample	228, 244
Title	41
Title editor.....	45
Title Editor	124, 229, 247
Title effects	273
Title Effects.....	229
Title effects with MAGIX 3D Maker	16
Title object.....	126
Titles and effects.....	107
Toolbars	43
Track effects automation.....	169, 172
Tracks	53
Transfer Surround tracks from Samplitude/Sequoia to MAGIX Video Pro X2	173
Transfer via infrared	193
Transfer with Bluetooth	192
Transitions	128, 243
Transitions (fades).....	91
Transport control	52
Transport control buttons.....	52
Transport control in Media pool.....	269

Travel route animation.....	223
Trim Objects.....	96
Trimmer for individual objects.....	97
TV picture.....	131, 132
Twain scanner	270

U

Using MAGIX Video Pro X2	20
Uncompressed movie	183
undo.....	220
Undo	45
Ungroup objects.....	49, 222
Unlocking MAGIX Video Pro X2.....	10
Update devices online.....	193
Upload all selected media in Media Pool	218
Upload current movie as video.....	218
Upper button bar	43
Use image file	63
Use plug-ins	119, 166
Use preview image from movie	63
Use transport console as remote control for external device.....	61
User directory.....	40
User-defined:.....	193
Using audio effects	134
Using BPM and beat detection	158
Using DVD audio tracks	174
Using video effect plug-ins	119

V

Various file list view modes.....	42
VBV buf. size	289
Video as AVI	182
Video as DV-AVI	182
Video as MotionJPEG AVI.....	183
Video as MPEG video	183
Video as MPEG-4 video	186
Video as Quicktime Movie.....	183
Video as RealMedia video	185
Video CD (VCD)	282
Video Comping.....	104
Video editing.....	29
Video Editing on the PC.....	277
Video effect plug-ins	119
Video effect templates	227
Video effects.....	41, 226, 236, 240, 251
Video effects in the Media Pool	108
Video format.....	290

Video mix.....	90
Video mode	260
Video monitors.....	18
Video object effects	226, 272
Video objects.....	234
Video output to DV device.....	260
Video playback via TV output	188
Video players	196
Video recording	65
Video settings.....	299
Video/Audio	256
View	231, 259
Vimeo	218
Virtual Dub-Plug-ins	119
Volume and panorama automation.....	169
Volume automation	169
Volume curve.....	229, 245
VST plug-ins	166

W

What is MAGIX Video Pro X2?	12
What's new in MAGIX Video Pro X2?	12
White balance	109
Window	230
Window menu.....	274
Windows Media Export	184
Windows menu.....	230
Wizards	223
WMV HD (Windows Media High Definition Disc).....	284
Working with objects.....	87
Workspace	230
Workspaces	37

Y

YouTube.....	218
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Z

Zoom horizontal.....	232
Zoom vertical	232
Zooming	53