

# IvsEncoder Users Guide v.1.0

## INTRODUCTION

ivsEncoder is an advanced capture application, designed to improve capture quality and to provide several time saving tools. IvsEncoder is dedicated to Velocity systems, but not only, since it allows to capture in other file formats, like WMV, MPEG2 TS, AVI DV. It adds several features to standard VelocityTM capture window. The main advantages are in the hardware independent approach that allows to Velocity users to edit during capture, Play and Edit while Rec that allows to edit the same file you're capturing, 4 audio channels capture, render free editing (enabling real time effects during capture, like GLOW and BLUR) and much more.

## SYSTEM REQUIREMENTS

ivsEncoder is a capture application with CPU based compression, for this reason to get the best a dual core CPU is recommended to get the best results.

Minimum requirements are:

Operating Systems: Windows 2000 SP4\*, XP or Vista

CPU: Intel P4 3200 (Intel Dual or Quad Core Recommended)

RAM: 512MB (1GB Recommended)

HDD: 15MB Free Space for installation, Dedicated AV HDD for video capture

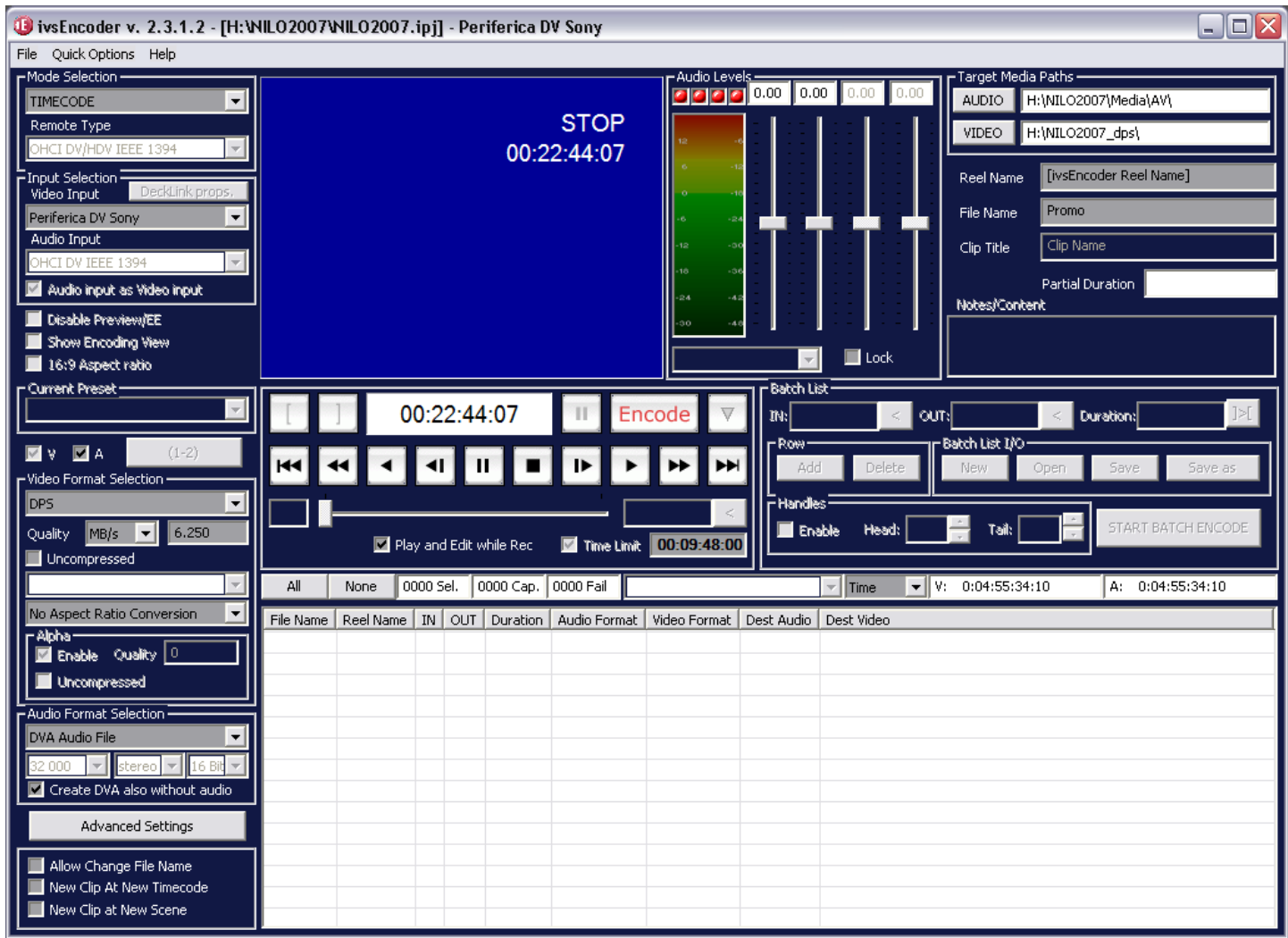
\*Windows 2000 can't capture from HDV devices

## INTALLATION

In order to complete the installation, you must run two files. The first file is the setup file, while the second one is your licence file. They must be executed in the correct order (first the setup file and then the licence one). To begin installation, run Setup\_ivsEncoder.exe. An automated installer will guide you through the installation process. When installation is complete you can run the second file ivsEncoder\_enabler.exe . Please note that each version of ivsEncoder requires its dedicated enabler file (e.g. If you use the externalapp file for v.2.2 with ivsEncoder v.2.3, ivsEncoder won't work. To Run ivsEncoder 2.3 you need the setup file V.2.3 and the externalapp.exe v.2.3 ).

QUICK START

There are two ways to run ivsEncoder; as a Velocity(TM) plugin or as stand alone software. The first one gives you the advantage to detect and set for ivsEncoder the same project folders of your VelocityTM project. If you run ivsEncoder in stand alone mode, a dialog will ask you to create a new project, to open a preexisting one, or to browse through the list of the most recent projects.



Picture n.001 Main Program Layout

TITLE BAR

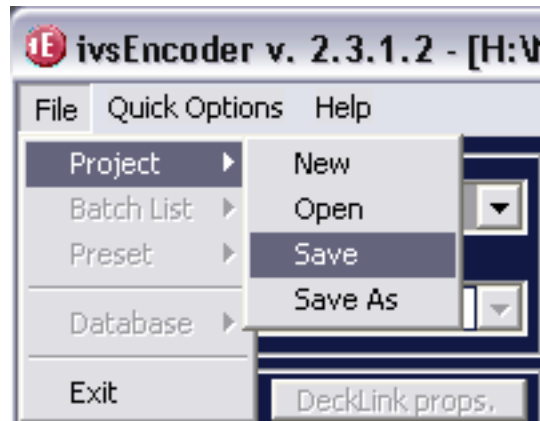
The Title Bar shows from the left the current version of ivsEncoder, the full path of the selected project and the currently selected video source.



Picture n.002 Title Bar and Main Menus

## MAIN MENUS

The program has three menus; File Menu, Quick Options Menu and Help Menu:

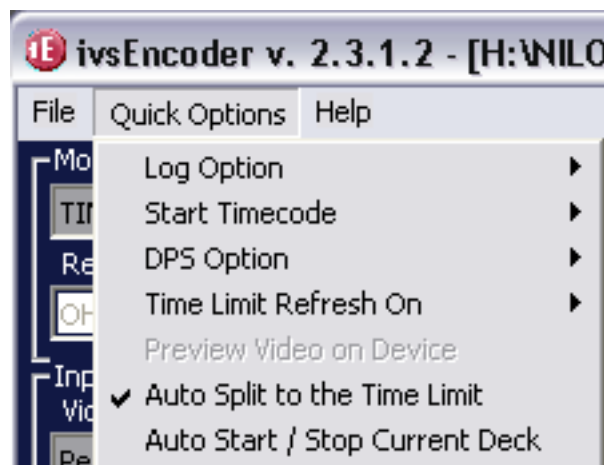


Picture n.002

## FILE MENU

The file menu includes options to open and save project and some greyed out options (not active in the current version). An ivsEncoder project allows to save all capture settings, like capture codec, data rate, aspect ratio conversion, color correction, destination folders, etc. Creating a new project ivsEncoder can create a folder sub-system similar to the one of advanced editing softwares like VelocityTM.

## QUICK OPTIONS MENU



The Quick Options menu lists some important options and sub-menus:

### LOG OPTION SUB-MENU:

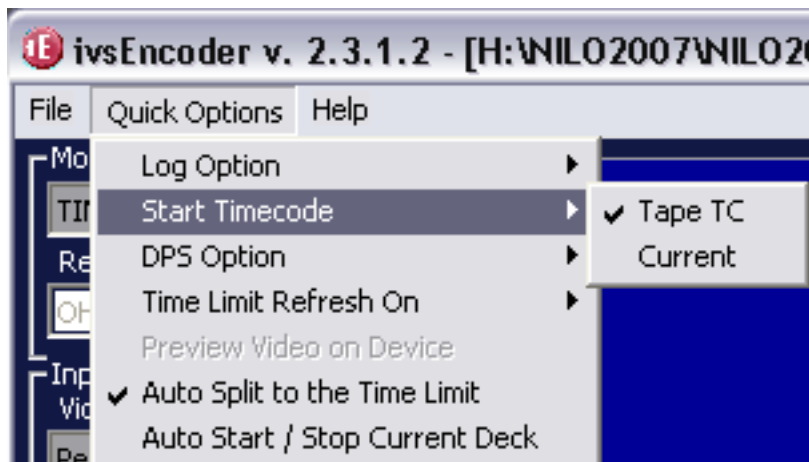
Log Option, allows to choose to display in the lower part of the screen different informations. When Log is selected, ivsEncoder shows a log with the list of captured files with infos about data rate, file path, etc.

When Batch is selected, ivsEncoder shows the batch list of captured clips.

Log & Batch: The program displays both Log and Batch options.

### START TIMECODE SUB-MENU:

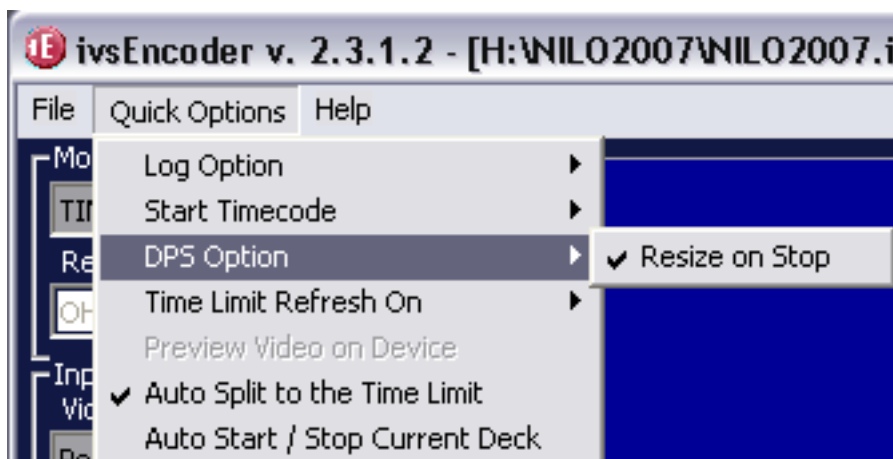
Start Timecode sub-menu allows to choose the starting timecode of a clip between “Tape TC” (the one on the tape master) or “Current” (the program adds as Timecode the current time from Windows/PC clock)



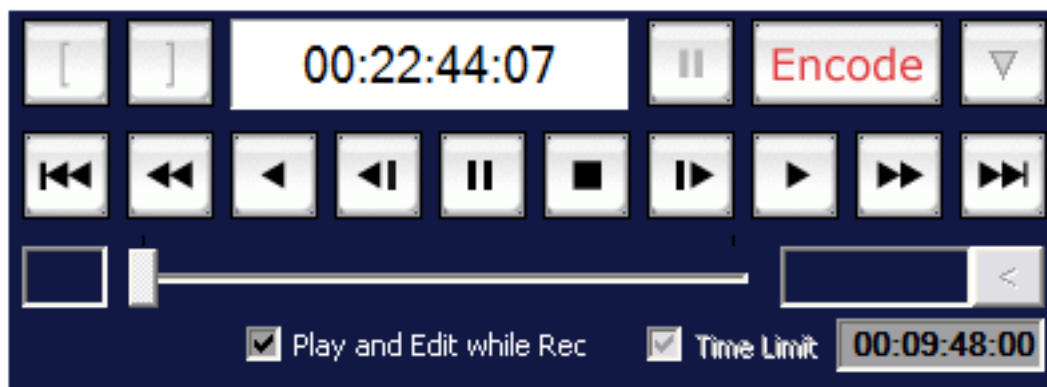
Picture n.000 Start Timecode Option

### DPS OPTION SUB-MENU:

DPS Option allows to activate “Resize on Stop” feature. When “Play and Edit while rec” is enabled, ivsEncoder creates a DPS files with a length determined by “Time Limit” setting.



IvsEncoder Quick Options DPS Option

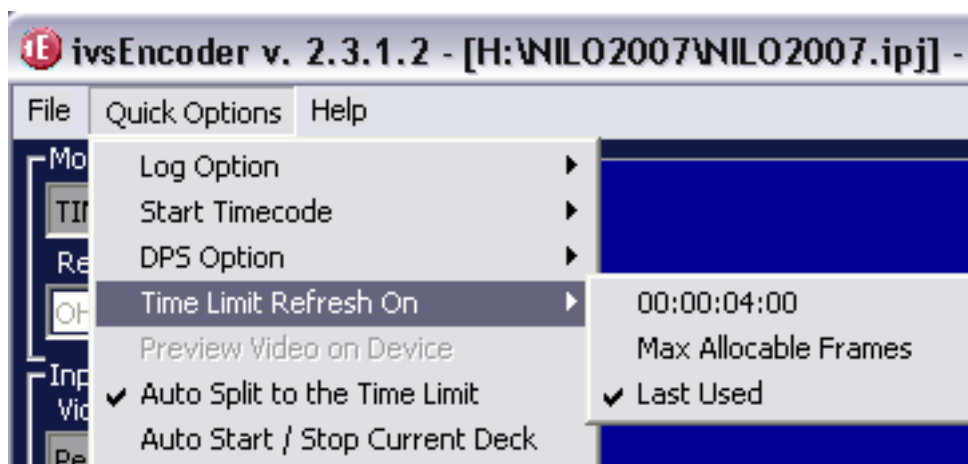


ivsEncoder\_Deck Control with Time Limit field and Play and Edit while Rec option

Play and Edit while Rec feature creates your DPS/DVA file as soon as you press the Encode button, to allow you to edit the file during the recording. The duration of this instant-created files is determined by “TIME LIMIT” setting. If you stop the capture before the end of the “Time Limit” the file will have the pre-determined duration. When active, The feature “Resize on Stop” automatically deletes the unused part of the file avoiding space wasting on the hard drive.

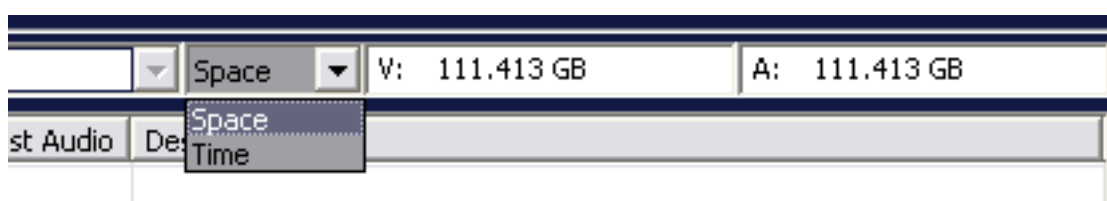
### TIME LIMIT REFRESH ON SUB-MENU:

“Time Limit refresh on” is an option for the “Time Limit” field . As explained in the previous paragraph, TIME LIMIT is a feature that allow to the user to set a maximum duration for the next capture. Setting this sub-option to 4 seconds (00.00.04.00), ivsEncoder will set the “TIME LIMIT” field on 4 seconds. Setting Max Allocable frames, ivsEncoder will create a clip to fill all the available space on the defined capture drive. “Last used” sub-option won't change the previous setting (it is the only option that doesn't change the “Last used” field).



Picture n.000 Time Limit Refresh On

IMPORTANT NOTE: WE SUGGEST TO USE THE “LAST USED” SETTING (ESPECIALLY IF YOU'RE CAPTURING ON THE P: DRIVE) AND SET THE DESIRED DURATION MANUALLY. THE TOOL TO KNOW THE FREE SPACE ON YOUR CAPPTURE DRIVE IS THE FOLLOWING (IT IS LOCATED ON THE RIGHT UNDER BATCH LIST TOOLS)



Free Space/Time Bar

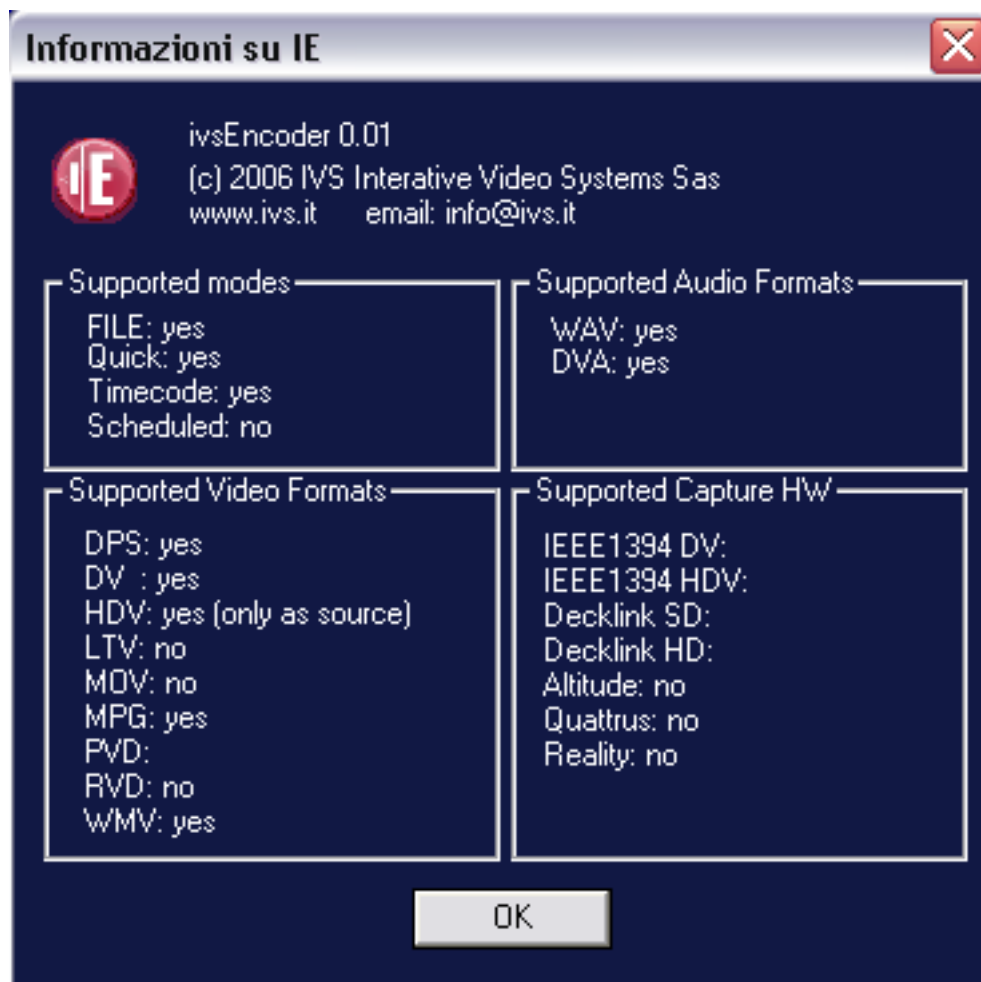
## AUTOSPLIT TO THE TIME LIMIT AND AUTO START/STOP CURRENT DECK:

“Auto Split to the Time Limit” allows to split a long capture into several short files, in order to use better the space on your hard drive or to get easier to handle clips for editing. When captures reach the Time Limit, ivsEncoder makes a new file. Files usually can be seamless linked.

“Auto Start/Stop Current Deck” gangs the “ENCODE/STOP” button with the PLAY/STOP button of the Deck Control. With this option enabled, when the user presses “ENCODE” button, ivsEncoder will give the PLAY command to the current selected tape player. In the same way, stopping the capture, ivsEncoder will stop the source tape player.

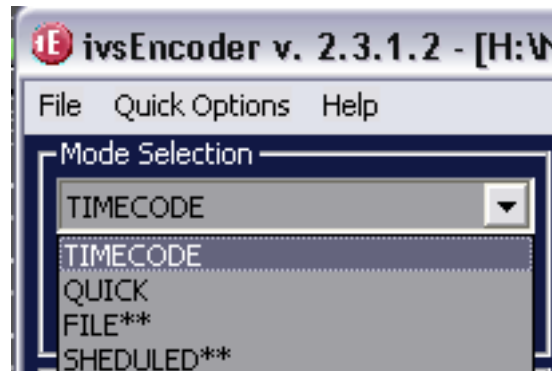
## HELP MENU

The Help Menu, has the option to get the online help and the About option, useful to know the current version and the options enabled by the ivsEncoder\_Enabler.exe file

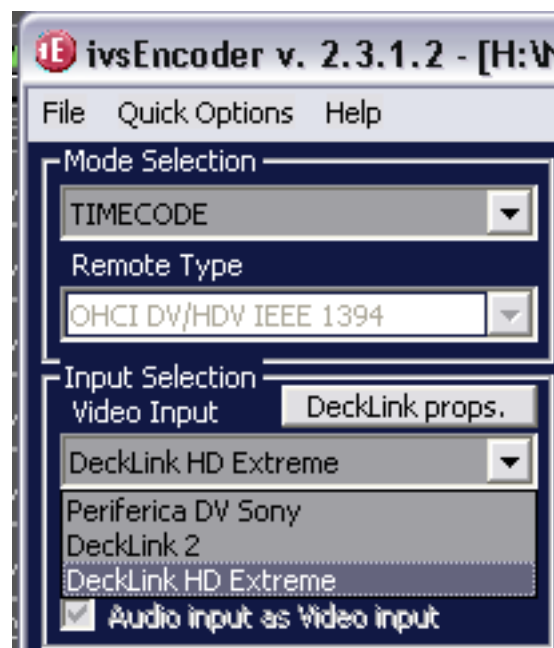


## CAPTURE SETUP

ivsEncoder has options to capture files in several formats, from several possible sources.



In the “Mode Selection” pop up menu you can choose between TIMECODE (ivsEncoder detects and records the timecode from the connected deck, via IEEE-1394 or RS422) and QUICK (ivsEncoder ignores the timecode). FILE and SCHEDULED don't work with current software version.



Mode/Input Selection Picture

In the Input Selection field there are:

“Video Input” pop up menu that allows to select the input from the currently available ones. Inputs available depend from the Deck Link cards installed in your workstation and from DV devices connected to the PC and in power ON status. While Decklink cards start each time you turn on your PC, DV devices have their own power button, and for Camcorders, their own Camera/VTR switching selector. Please remember to connect and to power ON you DV device before running ivsEncoder in order to make your DV device available in the “Video Input” list. IvsEncoder will list the DV device in the inputs if Windows OS will list it in the “Peripheral Management” dialog. You can have multiple DV devices connected to your PC, and ivsEncoderPRO can capture from them simultaneously.

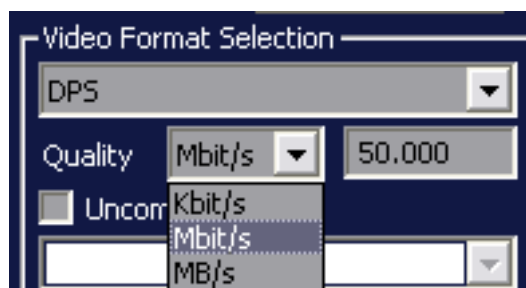
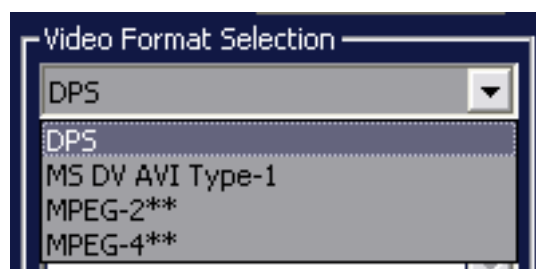
DV devices have no options, while Deck Link cards often have several audio and video inputs. For this reason, if you select a Deck Link device, you can configure it through “DeckLink props.” button

In this dialog you can choose audio and video inputs in the “Input” pop up menu. Sometimes there are two different menus for audio and video, here there's one with different audio and video combinations. Another option you can choose is Video Format. IvsEncoder Standard lets you to choose between NTSC and PAL, while IvsEncoderHD give you more options in HD video formats.



## CAPTURE FILE FORMAT AND DATA RATE

Current version supports DPS, Microsoft DV AVI, MPEG2 TS and WMV (MPEG4) file formats. Soon ivsEncoder will benefit of new HD file format capturing like H-264



### DPS FORMATS

DPS file format capture quality can be set in Kbit/s, Mbit/s, MB/s. Please note that Leitch Velocity V.8 uses MB/s while V.9 uses Mbit/s. As logic suggests, the higher the data rate, the higher the quality. The software accept any numeric value, the user must set the appropriate value from 1MBps (or 8Mb and 8000 Kb) to uncompressed (20,5MBps). When capturing on the P: drive, standard limits are 13MBps (Quattrus), 8MBps (Reality + P5K and ivsDMABoost), 4.8 MBps ( Reality P5PE/P4C800)

For the different video sources, capture settings are:

DV/DVCAM/DVCPRO25: 4.8MBps

Betacam SP/HDV: 5-6MBps

Digibeta/IMX/DVCPRO50/D-9/HD: 8-12MBps

NOTE: When “PLAY AND EDIT WHILE REC” option is enabled, all captured frames have the same data rate (constant bit rate), while when this option is disabled an algorithm variates the bit of each frame to get the assigned data rate as medium value. Usually to get the same quality level, in constant bit rate mode is better to set a slightly higher bit rate.

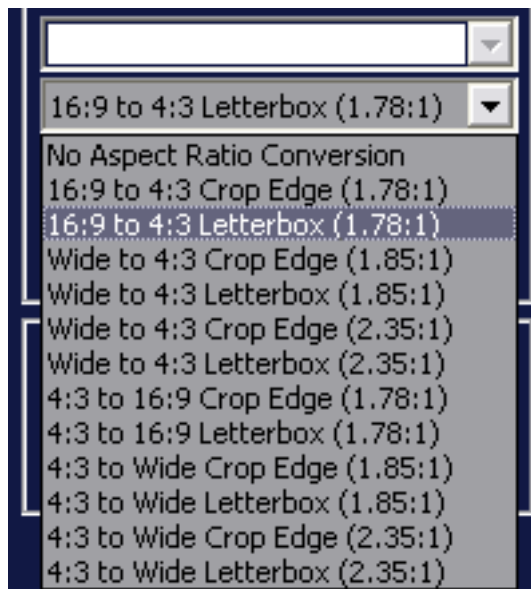
About quality suggestions there are some things to consider before setting capture.

IvsEncoder captures without using the Leitch hardware; captured frames are processed by the PC and then stored to a system hard drive or directly on the Leitch P: drive. When you capture on a system drive, you can set any data rate from compressed to uncompressed. When you capture on the P: drive, the different DPS/Leitch boards feature different behaviours. Quattrus limit on the PCI bus is 13MBps, Reality standard\* limit is 4.8 Mbps. These limits are real if your system is fully compatible with the Leitch hardware. To check your system compatibility, please use the DPS DMA TOOL provided by Leitch, or make an MPEG2 exportation from your timeline (better if your timeline is full of effects and titles). If exportation takes more than real time, your system is not compatible with Quattrus or Reality cards. These longer time to process the exportation means that your system has problems to communicate with the DPS/Leitch cards. For this reason ivsEncoder communication with the P: drive will be slower and the maximum data rate could be affected.

On the Quattrus platform we strongly suggests to capture on system drives, in order to override this and other P: drive limitations (e.g.max number in a folder, sporadic file corruptions, etc.) On the Reality platform, if you use a new mainboard (P5K, P5B, etc.) you can get incredible performances in conjunction with ivsDMAboost (part of ivsPowerPack).

## ASPECT RATIO CONVERSION

ivsEncoder is able to make aspect ratio conversion in real time, during capture, preserving original quality to the max. The dedicated drop down menu let's you to choose between several kind of conversions. The aspect ratio conversion needs for image stretch, compress or crop. It is To set the desired scaling algorithm there is a drop down menu in the “**ADVANCED SETTINGS**” menu.

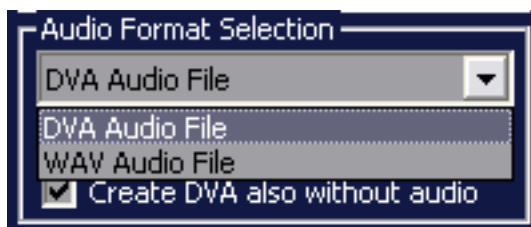


## ALPHA

This feature is inactive in the current software release. It would enable dual channel capture from FILL and KEY source in a single file.

## AUDIO FORMAT SELECTION

MS AVI DV, MPEG2 and MPEG4 captured by ivsEncoder have embedded audio. DPS media file is a video only file, for this reason audio is captured into another file. In this field of ivsEncoder, the user can select to capture the audio in the standard DVA file or in the WAV format. The DVA file is a file format very similar to the MS Windows standard WAV format; the DVA one includes a link to the associated .DPS video file. In few words when you play a DVA file the Quattrus/ Reality/ Altitude driver, plays the associated DPS video file.

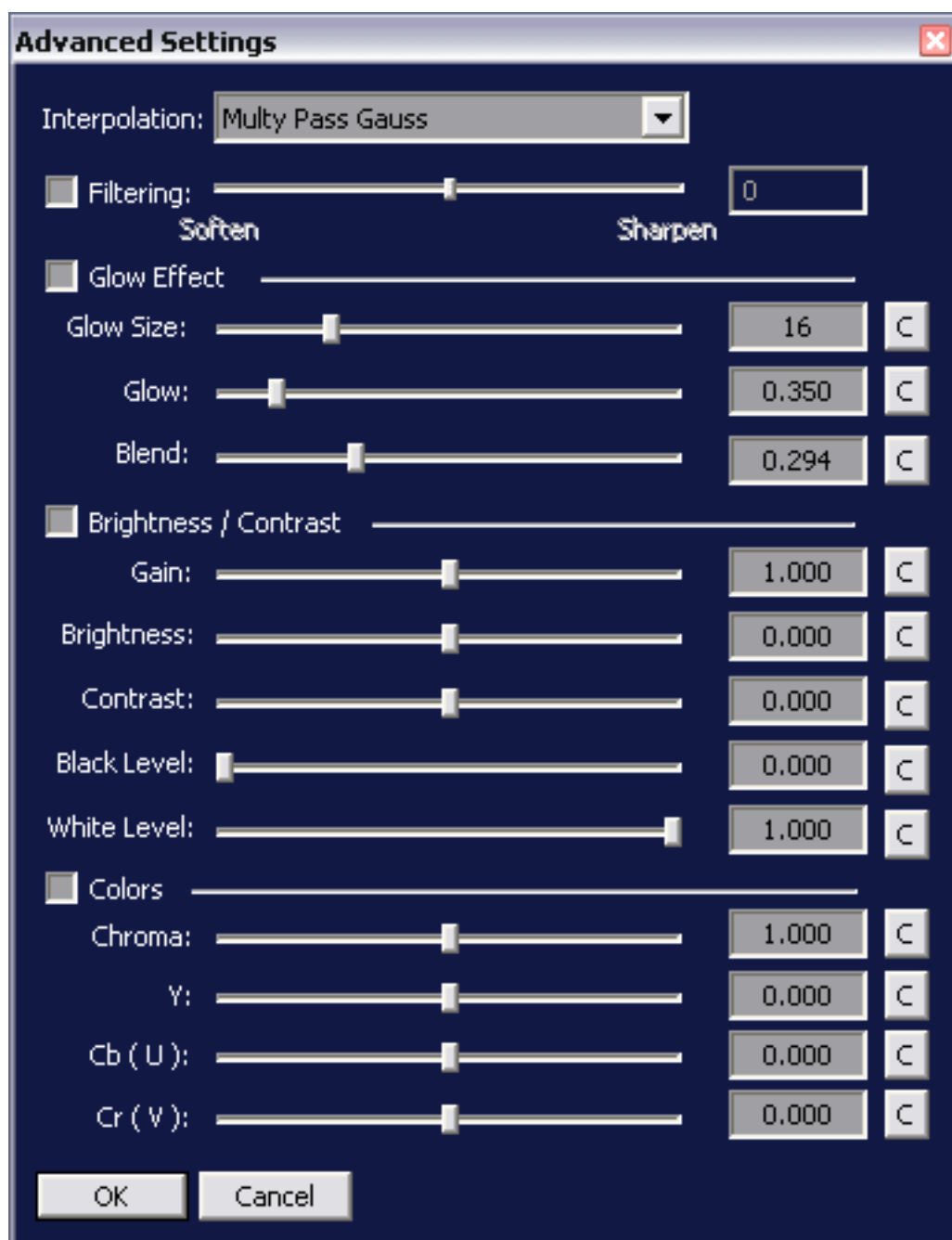


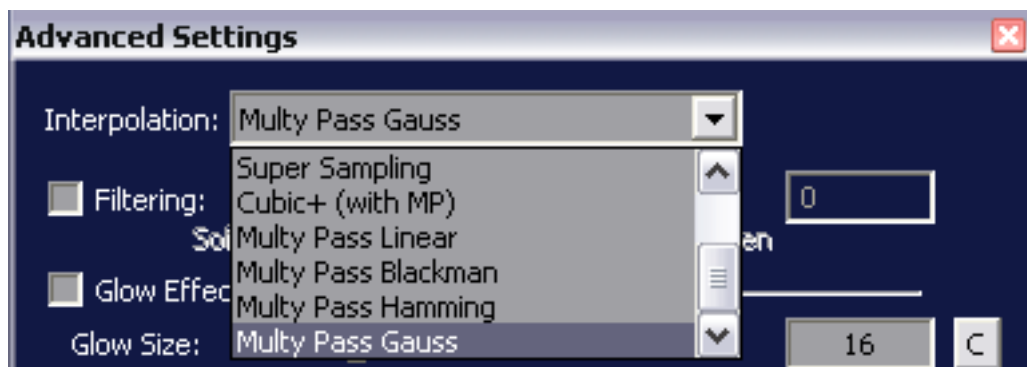
Audio sampling rate is currently inactive. IvsEncoder assigns the same sampling rate of the audio/video source.

The option “**CREATE DVA also without DVA**” allow to create a DVA file even when audio is not selected for capture. This feature is useful since allows to the user to collect all the files from a single clip collector, without leaving desired clips uncollected.

## ADVANCED SETTINGS

The Advanced settings windows includes several tools and features to process captured images





**INTERPOLATION:** This drop down menu allows to choose the algorithm that processes the video images that requires resizing during capture. Some examples are HD capture into DPS format, or in aspect ratio conversions. Suggestions for the appropriate settings for your needs are included into a specific Appendix of this user guide.

**FILTERING:** This advanced filter allow to blur or sharpen the image according your needs. For example consumer cameras have very poor detail, enabling “FILTERING” and setting its slider from 20 to 50, can improve a lot the apparent image quality, giving it a PRO look. Otherwise setting the slider to negative levels is very useful to pre process video image for low data rate applications like WEB or Satellite payout.

**GLOW EFFECT:** Many users worldwide like to improve the look of their images adding the GLOW effect, a special blur that raises up the “whites” only, and improves color saturation. GLOW SIZE slider determines the blur amount, while the GLOW one determines the effect amount. The BLEND slider allows to make a mix between the image with the effect and the original ones. This third slider is very useful to get balanced results and to eliminate some shin defect of people.

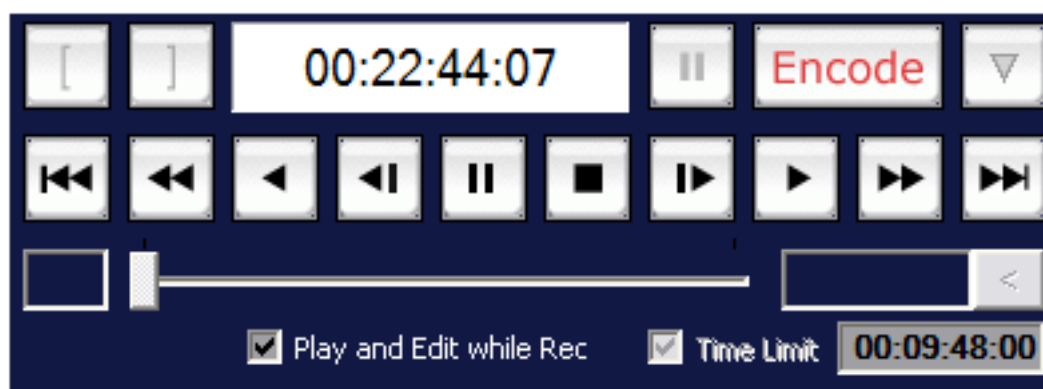
## BRIGHTNESS AND CONTRAST

This section provides some tools for image processing. The first three sliders allow to adjust GAIN, BRIGHTNESS and CONTRAST levels, while the last two, “BLACK” and “WHITE” levels allow to “clip” the dark grays into black and the light grays into White, to simulate film exposure. Professional camcorders usually have a “BLACK STRETCH” feature, to make the same thing (on the black only).

## COLOR

This section provides tools for basic color correction/proc amp. The first slider “Chroma” allows to adjust image saturation, while the other sliders, Y, U and V, allow to adjust Luminance level (Y), Blue level (U) or Red Level, with the same logic of Velocity Proc Amps. If you move the U slider (Blue component) to the right you get blue gain, while moving it to the left you’ll get more green. If you move the V (Component RED) slider to the right you’ll get more red gain, while moving it to the left, you’ll get yellow gain.

## DECK TRANSPORT/REC CONTROLS



This panel provides the buttons to remote the selected source (DV or RS422), the button to start or stop the capture (ENCODE button), to add IN or OUT points ([ and ] buttons). Two special buttons are provided for special features. The pause button near the ENCODE one allow to pause the capture of a file. If you want to capture multiple scenes into the same file, you can press this pause button until you want to resume capture pressing again it. The capture can be paused several times. The yellow triangle button allows to add clip markers during capture (CURRENT VERSIONS OF VELOCITY DON'T SUPPORT IT).

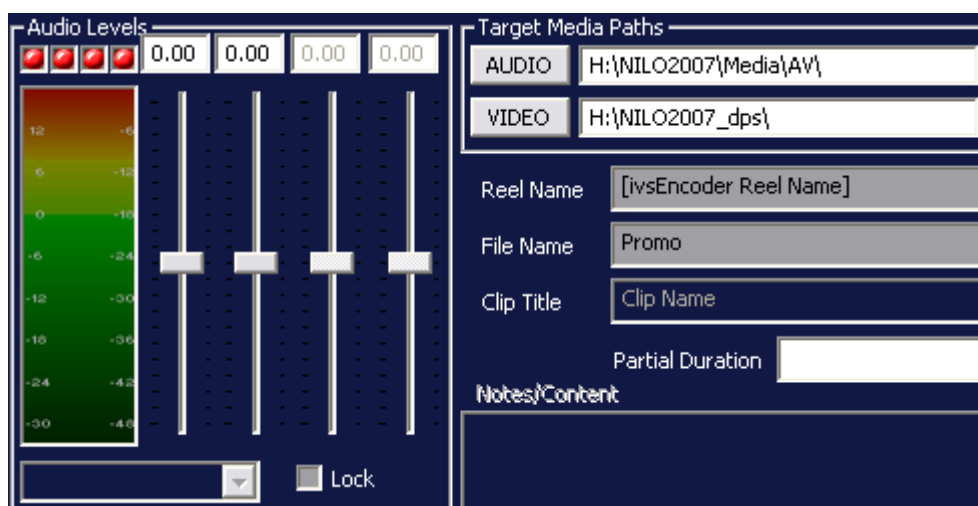
“PLAY AND EDIT WHILE REC” feature allow to edit (trim, cut, etc.) a clip during capture. Enabling this feature, ivsEncoder creates a ready to edit DPS file when you press the ENCODE button. At the beginning all the frames are black, but during the capture the black frames are swapped with the captured ones. The PLAY AND EDIT WHILE REC feature requires for a TIME LIMIT to be selected. In the Quick Options Menu there are three options about automatic settings for Time Limit duration.

You can choose between 4 seconds (Velocity has this as standard setting), Max Allocable Frames (ivsEncoder will use all the available space on the currently selected HDD) or Last Used (ivsEncoder will remember the last duration set from the user).

Time Limit can be set without PLAY AND EDIT WHILE REC too, to limit the duration of a single file. With the Quick Option “AUTO SPLIT TO THE TIME LIMIT” the software will split the capture into seamless multiple files.

## AUDIO LEVELS

These sliders allow to adjust audio level during capture. Please note that it is possible to capture 4 audio channels. When saving to DVA/DPS files, the additional 2 audio channels are saved into a wav file with the same name of the DVA file.



## TARGET MEDIA PATHS

This section displays and allows to change important features like audio and video destination paths and FILE/REEL/TITLE names. The REEL name is the name of the TAPE that will be stored within the file to allow batch recapture. Clip title allows to add a sub-name to the clip for massive clip management as well as the Notes/Content field. “Partial Duration” is an interesting field that shows the duration of the current capture. This is necessary when you are capturing with timecode. Capturing with timecode the main ivsEncoder timecode display will show the timecode of the current frame, so it is not possible to understand easily the current clip duration.

## BATCH LIST FIELD

In this section there are the tools to create a batch list, to add IN and OUT points, to know the gap duration, to add new rows into the BATCH LIST GALLERY and open/save Batch List files. The Handle field allows to enable and to adjust “HANDLES”. Handles are additional frames captured before the IN and after the OUT to enable further editing. Some times you could need more footage than the one you specified with IN and OUT. Handles avoid the need to capture again those clips.

Batch List

IN:  < OUT:  < Duration:  >]

Row

Add Delete

Batch List I/O

New Open Save Save as

Handles

☐ Enable Head:  Tail:


START BATCH ENCODE

## BATCH LIST GALLERY AND INFO BARS

In the upper part of the BATCH LIST GALLERY there is a BAR showing important infos.

[illegible]

ALL and NONE buttons allow to select or deselect all the rows,  
The next three fields show the number of selected/captured/Failed Captures.



The Right part of the screen shows the available space for Batch or Standard capture. The drop down menu allow to display the available duration in SPACE (GB) or in TIME (hh.mm.ss.ff).

The Batch List gallery shows the list of the clips already captured with the Standard capture (quick or crash capture) or the current selected Batch List.