

TF5800PVR recording to DVD using ProjectX and Nero

Summary How to burn Topfield recordings, .rec files, to DVD using ProjectX, PVAstrumento and Nero on a Windows PC.

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1. Overview

This guide details how I make DVDs from my recordings on the toppy. Others use different software and different methods. There is some redundancy in the method as I now always run the .rec files first through ProjectX and then through PVAstrumento. Either can in theory convert the .rec files however, my experience is that some recordings are problematic in Nero Vision Express when processed with only ProjectX or, with only PVAstrumento. Processing through ProjectX then PVAstrumento seems to fix all errors (so far). PVAstrumento seems to be especially good on the audio side.

The two tools ProjectX and PVAstrumento are freeware so there is no reason not to use these. Nero Vision Express is the video editing program of Nero. The full Nero package is currently \$60 if you download the programs and just buy the serial number. However, they offer discounts if you already have a version of Nero as is sometimes supplied with CD or DVD drives. That was the route I took and hence one reason I use Nero. Nero's web site is:

<http://www.nero.com/eng/index.html>

There are other tools available, but mostly they are not freeware, the choice is yours.

The screen shots in section 4, Nero Vision Express, show some colour banding due to the compression applied to make this file a reasonable size. On the PC screen there is no banding.

2. ProjectX

ProjectX is needed to convert the Topfield .rec file into something that Nero, or any similar tool for that matter can work with directly. Nero will, in some cases, work with .rec files, however it does so by re-coding which takes a long time and also probably reduces quality.

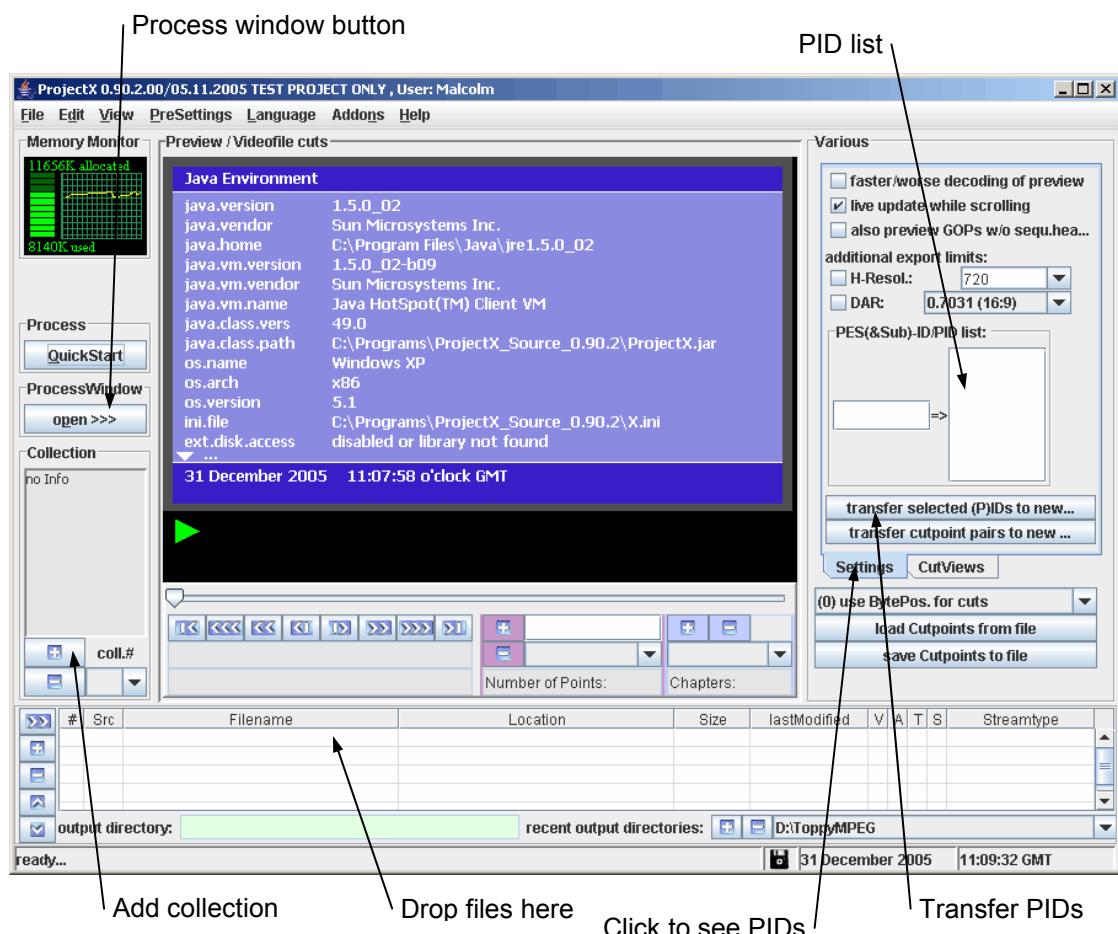
ProjectX is a Java application so the first step is to download and install the latest version of Java from:

<http://www.java.com>

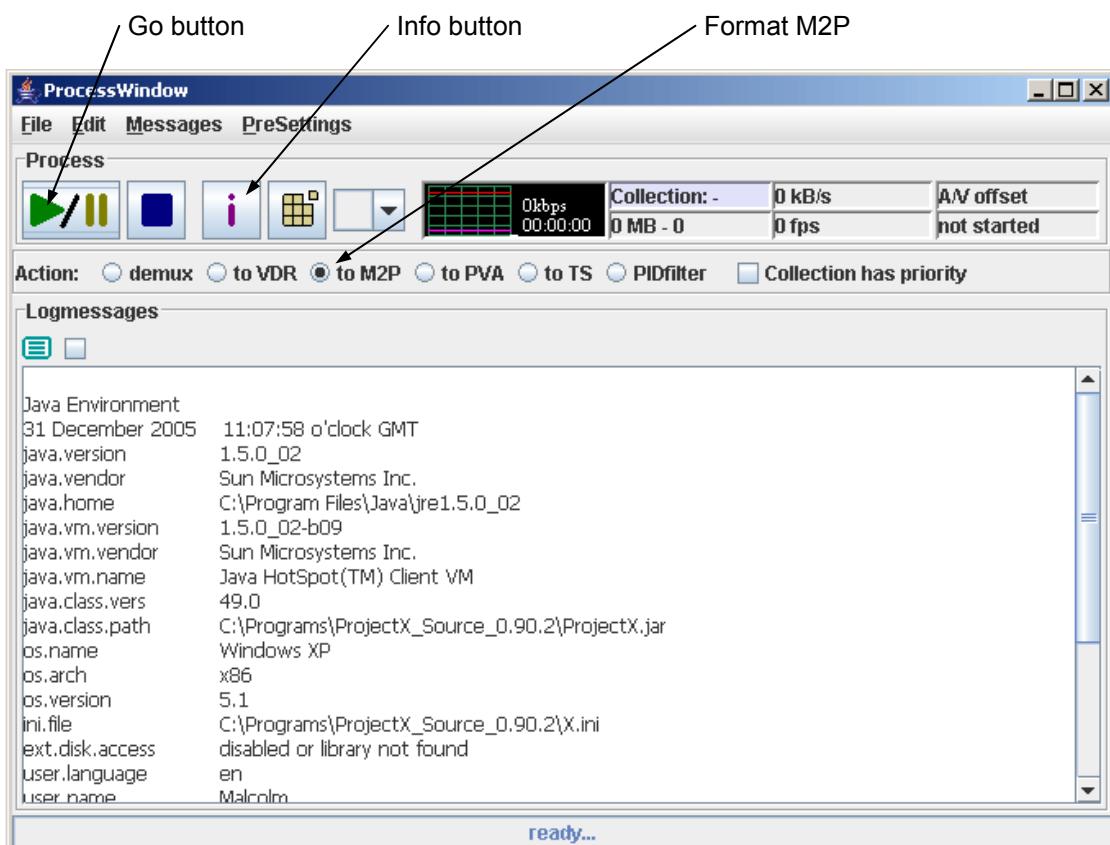
Next we need ProjectX which, unless you want to compile yourself, it is best downloaded from Doom9, <http://www.doom9.org>, under Downloads, Digital TV. The current direct link is:

http://www.doom9.org/Soft21/DigiTV/ProjectX_0.90.2.zip

Unzip this into a new directory using the recreate sub-directories option of your zip program. Double click the .jar file to see if it runs, that is test that the java has created the association to a .jar. It didn't for me so if the same happens for you, right click the .jar and select "open with...". Point to the java.exe (or javaw.exe) file in the java directory (C:\Program Files\Java\jre1.5.0_02\bin\java.exe or similar). Make sure the "always use this application" option is ticked. Once double-click works to run ProjectX you can right drag the .jar file to the program menu to make a short cut as usual.



The main window for ProjectX is shown above. As you can see there is a lot to it. The window at the bottom is the file list. The files here will be processed and output as **one** file. In general then there will be just a single .rec file in this window. If you want to batch process you need to add another collection with the add collection button, select that window with the col.# drop down box and drop the next file into the file window. And so on for each file in the batch. After dropping in the .rec file click the open process window button which opens:



In the process window the format should be set as M2P which keeps the video with the audio. M2P format is the same as a normal PC mpg/mpeg file. Click the info button which will make ProjectX do a small process of the .rec file to extract the PIDs of the video and audio streams. Scroll back up the results and make a note of the video PID. Switch back to the main window and click the setting tab on the right to see the PIDs. Delete, by double clicking the PID, all but the video PID and the correct audio PID which is video PID +1. PIDs are hexadecimal numbers, base 16, which means that rather than the digits just being 0->9 as is the case for base 10 numbers, they use 0->9,A,B,C,D,E,F. Then click the transfer PID button to apply these changes.

Swap back to the process window and click the process (go) button. About 5 minutes later the m2p file will be ready for the next stage.

2.1 More info.

You can read more about ProjectX on the Doom9 site at:

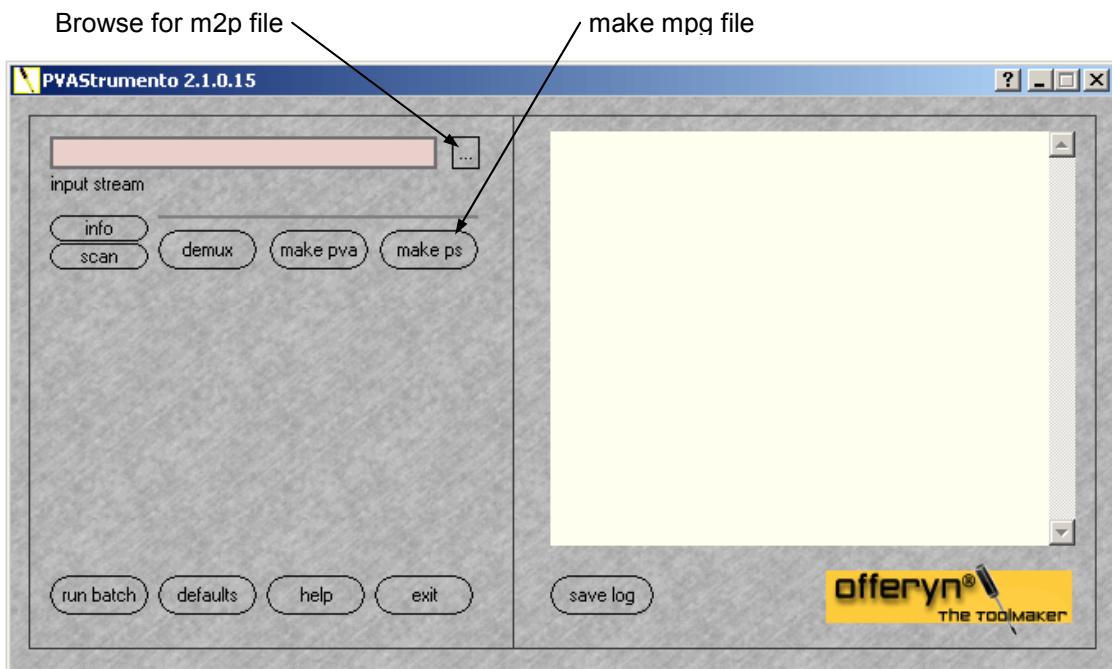
<http://www.doom9.org/index.html?/DigiTV/projectx.htm>
<http://www.doom9.org/index.html?/DigiTV/projectx-fullguide.htm>

3. PVAStrumento

PVAStrumento can also be downloaded from Doom9, <http://www.doom9.org>. Again it is under Downloads, Digital TV. The current direct link is:

<http://www.doom9.org/Soft21/DigiTV/pvas21015.zip>

Extract the 2 exe files to a new directory and make a program menu shortcut to PVAStrumento.exe in the usual way.



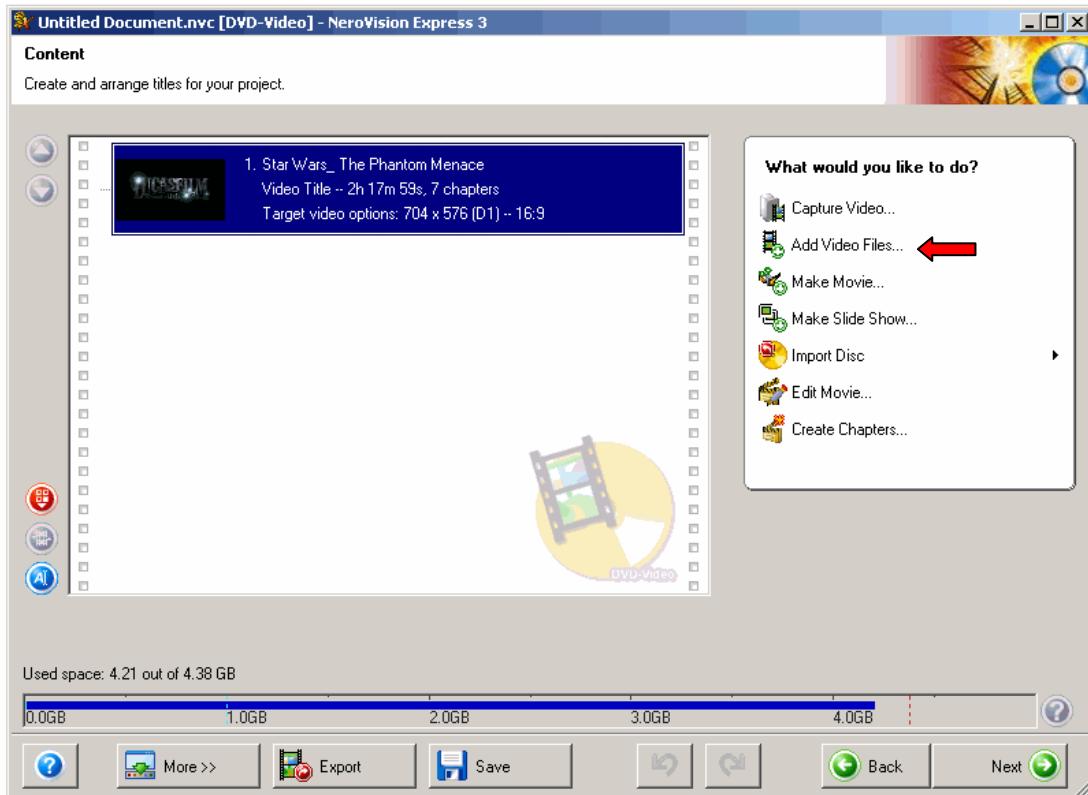
Run PVAS(trumento) which will open a window as above. Browse and select the m2p file that ProjectX created then click make ps to make an mpg file. Clicking make ps will open a second window. In general the defaults values are ok so just click start on that window. The result will be an mpg file suitable for Nero.

Sometimes PVAS will generate a lot of files rather than just one. This is controlled by the option tabs on the second window. On the audio there are options to split the file on change and likewise split the file on video errors. Un-ticking these will give you one file which will be easier to handle. Sometime the split is helpful as it can happen at the end of adverts or just at the start of the film.

4. Nero Vision Express

4.1 DVD Content

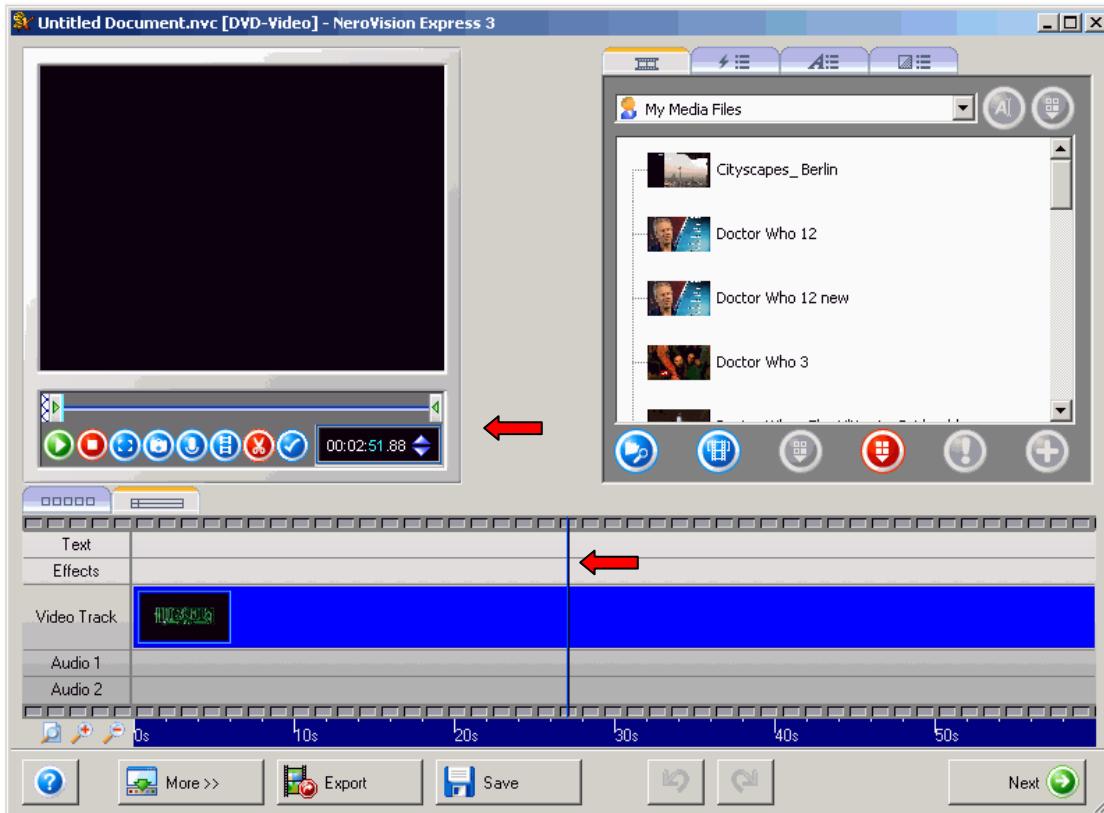
Start Nero Vision Express (NVE) and select make DVD-Video. In the next window, the content window, select add video files (see red arrow) and choose the files PVAInstrumento has produced.



If these exceed the size of the DVD NVE will offer to re-code these smaller. This will take a long time and reduce quality. Instead you can opt to exceed the size of a DVD and keep the quality. You can then edit out the adverts etc. to reduce the file size back to fit on a DVD. Section 4.8, Large Videos covers what to do if you still end up with a file too big to fit on DVD even with the adverts removed.

4.2 Video Edit

On the content window to edit a video double click the file in the left window or right click it and choose edit. This opens up the edit window.



The edit window is shown above with red arrows pointing to the import features. The timeline is at the bottom, playback is on the left and functions/media is on the right. The right hand pane will not be used unless you want to add transitions, other files, etc. Note that the screen captures do not capture the playback window, in use this will be showing the video.

There are multiple ways to move through the video file, these are:

- Drag the blue bar in the timeline window, or click at the new point
- Drag the blue bar under the playback window, or click at the new point
- Use the up/down arrows in the time counter under the playback window
- Type two digits into the time counter under the playback window

Dragging is useful for large time jumps. The timer counter is best for fine adjustment. The time reading is hours : minutes : seconds : hundredths. The arrow keys adjust the highlighted numbers so these can increment in hours, minutes, seconds or hundredths, although hundredths will jump frame to frame. To change the selection click with mouse. When you have clicked the timer so it has the focus then you can also type digits to jump times or use the arrow keys to switch between hours, minutes, seconds and hundredths.

Having set the time to the start of the adverts the next step is to split the file which is the button to the left of the red scissors. You can now check that the advert section is just adverts and you don't have any program video or sound and vice versa that the program end doesn't have any adverts. If you have made an error then you can undo the split with the undo key at the bottom and try again.

The same is done for the end of the adverts which then leaves the advert break on its own as a section of film. Click in it to select it then hit the delete key to remove it. This will move you back to the start of the previous film section so hit right arrow to move to the start of the next, i.e. the end of the adverts you just cut.

To test how the cut play click just before the cut to set the start point. Now click the film sprocket holes. These will turn blue and the section will turn light blue. The video will now play as all one, i.e. it will not stop at the cut. So press play and see how the cut seems. When you are past the cut press pause not stop as stop will take you back the beginning of the entire video. If all is ok then click on the blue video to change the handling back to individual video sections. If not, then use undo and try again (or see section 4.2.1, Problem Adverts, below).

Repeat for all the advert breaks and the start and end of the program. Click next to return to the content window and do the same for any other video files.

There are some more subtleties. The +, - icons on the lower left expand or contract the timeline view. The page icon sets the timeline view to all. The timeline can be dragged by left clicking and dragging when you get the hand icon. And as has been mentioned, if you have segments of video and click one (goes dark blue) then the controls operate just on that section. That is the stop button takes you back to the start of that section and playback stops when it reaches the end of that section. You can change this behaviour by clicking in the film sprocket holes. These then turn blue and the video is treated as one item. The time calculation changes too. It this way you can play through a removed advert break to see if the result is satisfactory.

The tabs on the top of the timeline allow you to change to a section view where each section is just a box. This is the view where you can insert transitions. It can be a useful view for deleting adverts if they are too small to see in the timeline view as it is quicker than expanding then contracting the timeline view.

NOTE: if you right click on the blue video track and select properties a sound menu pops up. On this you can select the sound track if you have included more than one. And, most importantly set the volume back to 100%. NVE defaults to 33% which not only makes the programme quieter but also means NVE has recode all the audio increasing the processing time.

4.2.1 Problem Adverts

Some TV stations have the annoying habit of putting a logo over the end of the film rather than joining it after a cut at advert breaks. This often means that if you cut just at the start of the logo then the dialogue or background sound ends abruptly, i.e. "don't shoot", ba (cut) ng. You can also get the same problem at the restart after the adverts with the sound starting before the logo has been removed, i.e. "do (cut) n't shoot". My solution to this is to turn the cut into a black frame transition, i.e. film (cut) black (cut) film. This is a standard cut type that you will find in films.

The method is to cut out the adverts but leave enough logo so that all the film sound is there but not advert sound. About a second is usually all that is needed. First position the cursor on the video near the logo. Next on the right hand window click the second tab from the left to display the video effects if this is not already displayed. Select the multiply pixel effect and click the + button to insert it. Right click the multiply pixel bar on the timeline and select properties. Set the multiply value to 0 (i.e. black) and set the time to 1s.

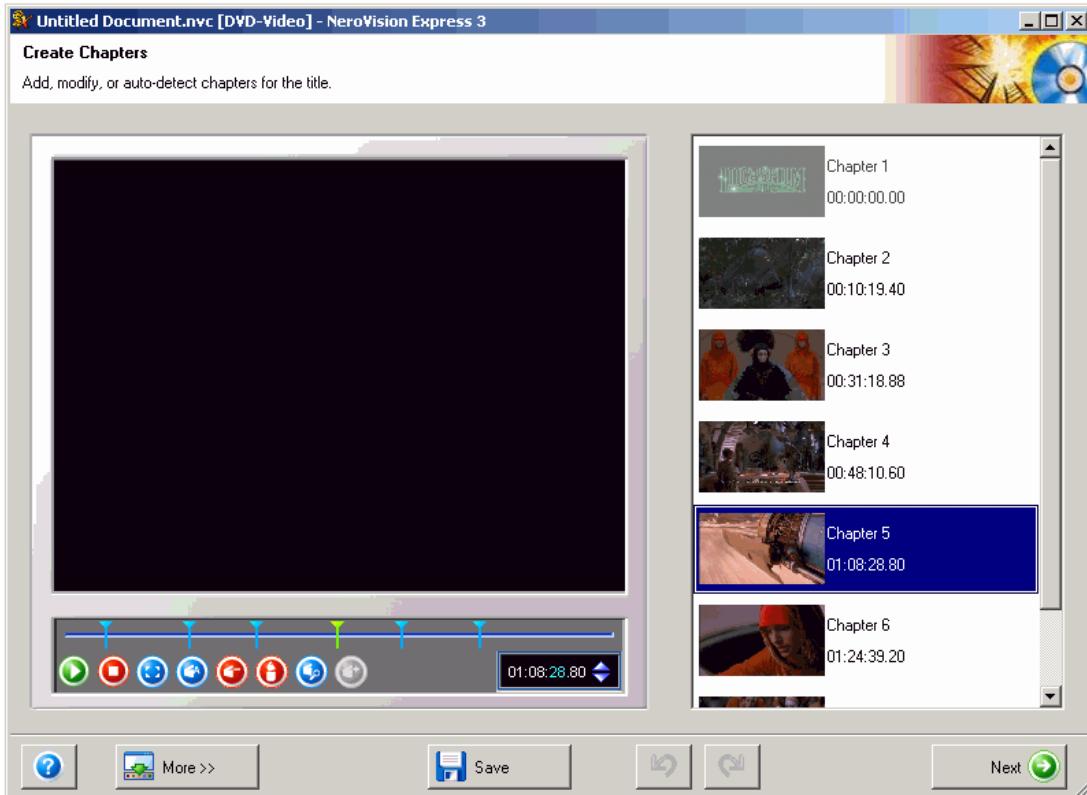
Zoom in using the plus magnifying glass so you have fine control. With the multiply effect selected (i.e. dark blue) position the cursor over the start of the effect until you get the two headed arrow. Left click and drag this edge watching the preview picture until you are just at the last frame before the logo. If you pinned the properties box then each time you release the left mouse the time in that will change. If you are zoomed in enough you can change the edge a frame at a time. Repeat for end of the effect.

The double headed arrow is sometimes a little trick to get. Instead the hand cursor appears which will move the whole effect not the edge. If you slide the cursor over the effect horizontally this will bring up the double headed arrow at the edges. Sliding in vertically will bring up the hand.

Another problem are announcements over the beginning credits. One partial solution is to split the video after the announcement. On the first part right click and set the sound to zero. NVE doesn't have a sound fade in but usually the programme has the sounding fading up after the announcement.

4.3 Chapters

In the content window, right click on a video file and select make chapters.



In the chapter window you can let NVE auto detect chapters (last but one button on the right in the playback window). This takes quite a time so you may just want to insert them by hand, every few minutes say. To insert a chapter position the playback using the slider or timer the same as for the edit window. Then click the add chapter button (last button on the right).

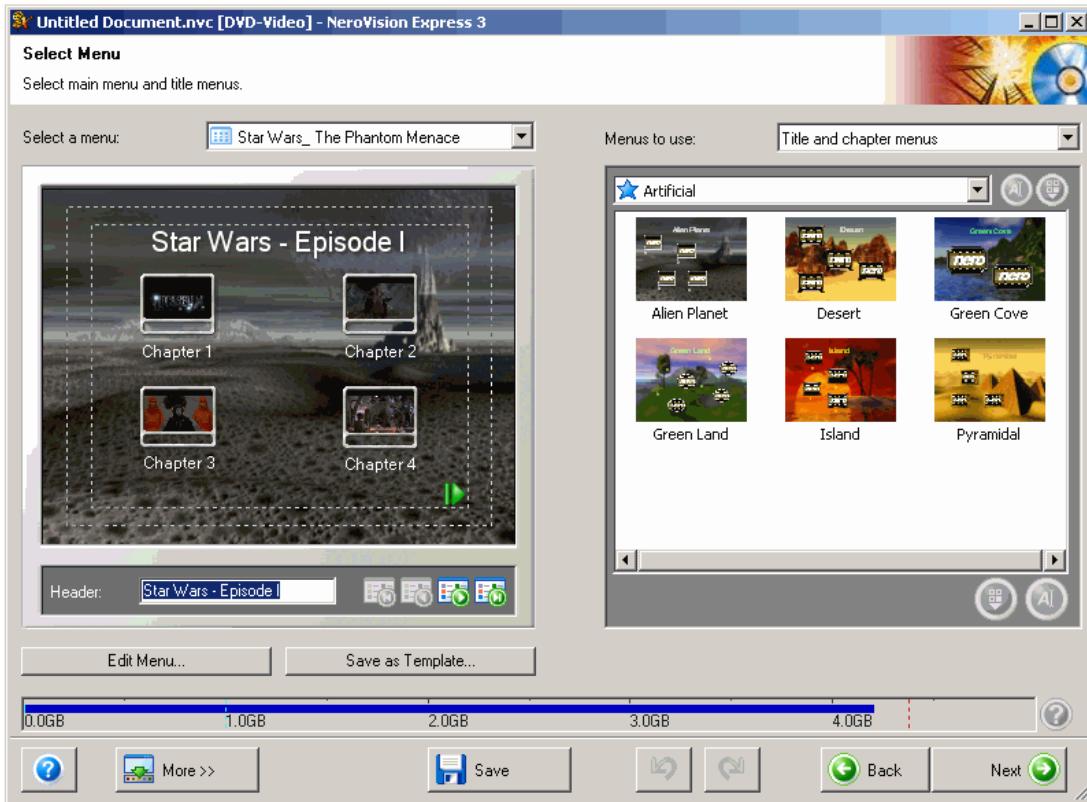
Clicking on the chapter in the right list pane or on the mark on the slider selects that mark. The timer can then be used to move it by changing the time. Or the mark can be dragged for large jumps. When selected the 4th button from the right will delete the mark. Clicking the chapter name in the right list pane allows the chapter name to be edited.

When all done click the next button to return to the content window and repeat making chapters for all the video files.

Click next in the chapter window to proceed back to the content menu window.

4.4 Menu

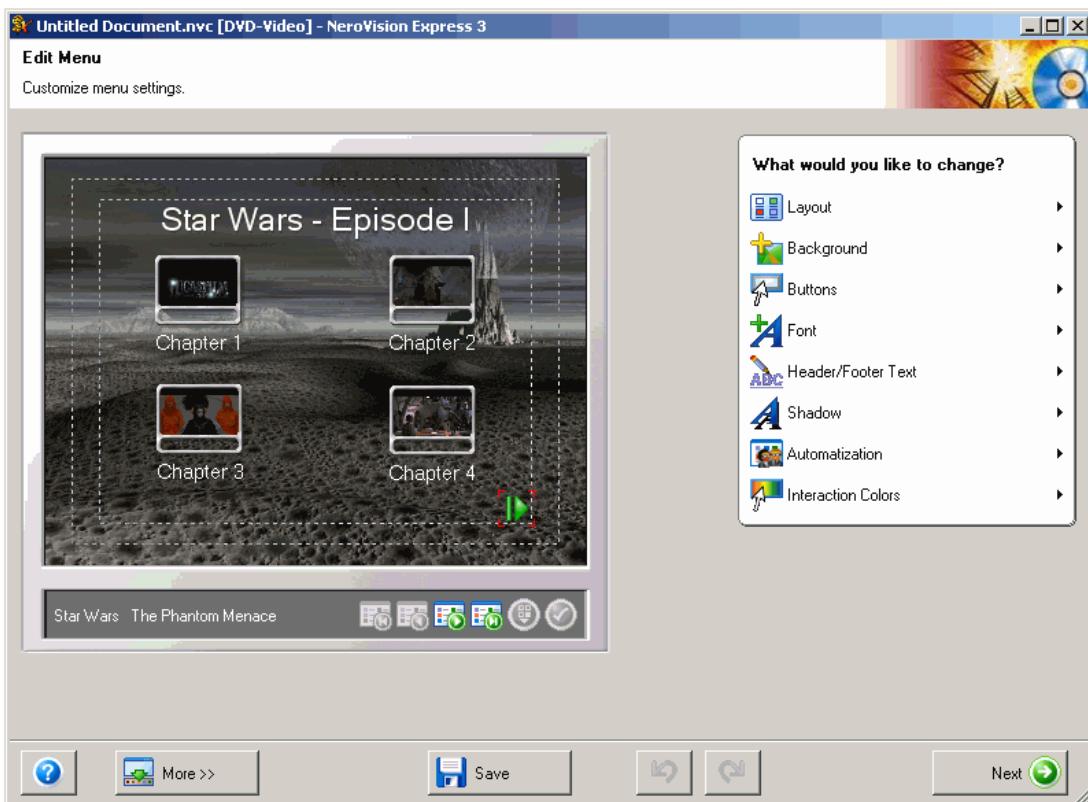
Press next on the content window to move to the menu window.



In the right hand pane are the menu templates. Select one. In the left hand pane is the menu. If you only have one video file then you won't have a title menu only a chapter menu. Likewise if you don't have any chapters you won't have any chapter menus. The different menus are selected from the drop down box at the top of the left pane. If there are multiple pages to a menu the buttons at the bottom move through the menu. Note it is important to check all pages of all menus. It is very easy to have a title that exceeds the safe lines or where buttons are on top of one another, especially if you have edited the menus.

4.5 Menu Edit

Select the menu from the top drop down box then either double click the menu in the left pane or click the edit button.



To move a menu button or arrow click and drag. To edit a button double click it. You can then select and still image from the video for the button and change the text.

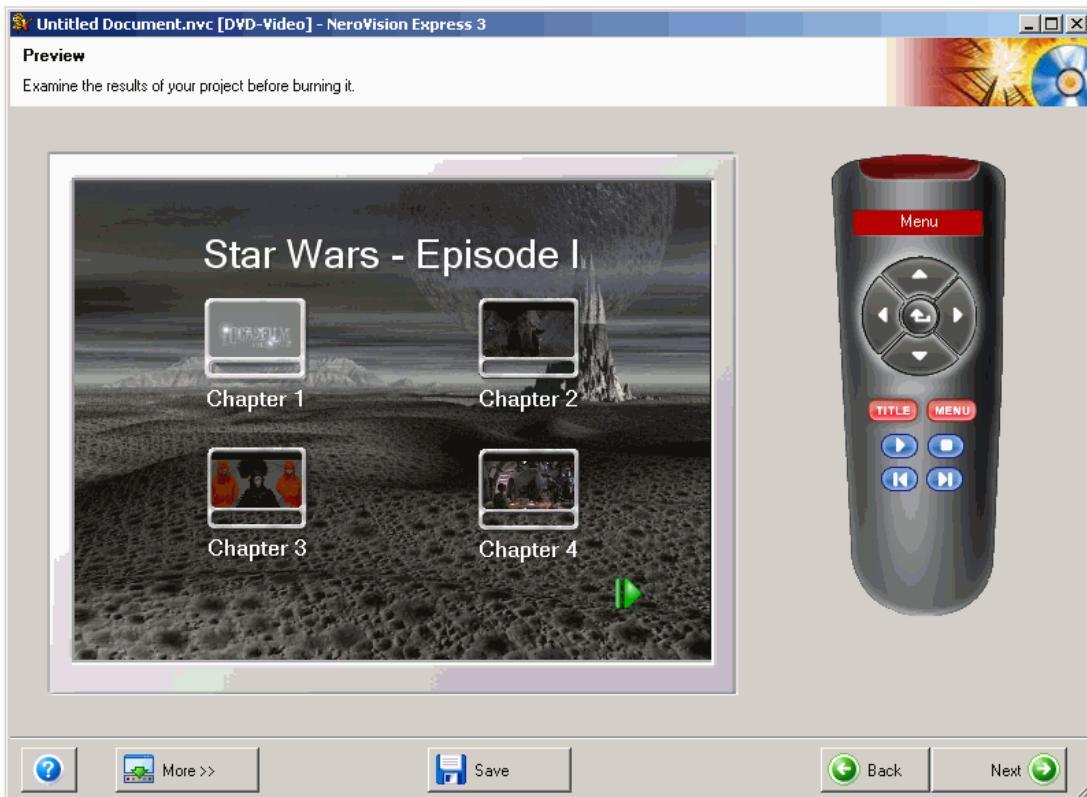
The right hand pane is a menu. Run the mouse over that to bring up a sub menu to change these items. Points to note:

- The buttons menu allows you to turn off numbering of the buttons.
- The buttons menu allows you to animate the buttons when they will play a short bit of video. The time for this is set in the automation menu. The default is 10s.
- The background menu allows you to add background music, but, if button animate is set then music restarts every time the button cycle restarts, so with the default time you would have the first 10s of a song repeating. Therefore if you add background music and animate the buttons you must set the animate time to the song time.
- The menu is always 4:3 format whatever the DVD format is set to. The background pictures that are labelled _16_9 are for letterbox i.e. where a wide screen TV zooms letterbox to full screen. For anamorphic wide screen the 4:3 menu will be stretched so you need to distort any pictures before using them to get the correct picture on the TV. This only matters where the background is people of course. Google is a useful resource for finding suitable background pictures, just type in the program name into Google's image finder.

Clicking next on the edit menu takes you back to the DVD menu.

4.6 Preview

From the DVD menu clicking next takes you to the preview menu.



On the preview menu you can test the DVD to ensure it all works. If you have edited menus and especially if you have chapter and title menus it is a good idea to check you don't have any buttons on top of one another.

4.7 Burn

Clicking next on the preview menu takes you to the final burn menu. Here you can see a summary of the options you have set and the target you are burning to. I always burn to a hard disk directory first rather than straight to DVD. This way if there are any problems in the process I haven't wasted a DVD and I can check the final product by dropping the VIDEO_TS.IFO file into Nero Showtime or just double clicking it.

To make a DVD, in Nero I select new, DVD, and a DVD-video. Then I drop the VIDEO_TS directory onto the new DVD, give it a title, and burn it. Process time is about the same.

Note that to stop Nero re-coding the mpeg files for burning you need to click the more button to reveal the options buttons. Then click the video options button. On the General tab tick enable smart encoding which lets Nero skip re-coding. On the DVD-Video tab settings should all be on automatic, except encoding mode which should be 2-pass.

4.8 Large Videos

If, even after you have trimmed the file, it still exceeds the size of a DVD then the method I use is to have NVE make the DVD to a folder on the disk, as described above, and then open this folder in DVD Shrink. DVD Shrink will automatically calculate the minimum compression needed, recompress, and burn the DVD (if Nero is available).

DVD Shrink can also be downloaded from Doom9, <http://www.doom9.org>. It is under Downloads, VOB Tools. The current direct link is:

<http://www.doom9.org/Soft21/Vobtools/dvdshrink32setup.zip>

Note that since menus, buttons, etc. all take up DVD space then for large files you might want to opt for the no menu option which is selected in the “menu to use” drop down box (see section 4.4, Menu, screen shot top right).