

- 1) **The Ffmpeg Adjust-Correct-Encode.bat “Swiss Army Knife” of Video Processing, One More “ACE”.**
First an explanation of the options for calling this batch file and how to use it for different purposes: Single File Mode works best for most people. Looping Mode is for those processing files as a batch. This is ideal for professionals specialising in converting tapes to digital files, as they may prefer to do their capturing during the day and then set this batch file to process all captures together overnight.

First select Operating Mode:

1.1) Single File Mode

By default the Single File Mode is enabled. Press Enter with Nothing or Anything but “y” or “Y” when asked “Want Looping Instead of Single File? Then Enter Y:”

Now all Functions etc. operate as shown in Section 2 onwards.

To invoke this batch file you can use it with any of the following three methods:

Method 1) Place this batch file in the same directory as your Video File, or add it to your Windows PATH.

Open a Command Line and go to the Video File directory,
Enter the batch file name followed by your Video filename.

Method 2) Use the Right Click “Send To” method if you have placed the batch file as described in Section 4.

Method 3) Drag and Drop your Video File onto a copy of the batch file or shortcut placed on your desktop.

1.2) Looping Mode

Alternatively, Press “y” or “Y” and Enter when asked “Want Looping Instead of Single File? Then Enter Y:”

This mode allows you to loop through ALL Video Files in a specified source directory, by default C:\VidSrc.

Adjusted, Corrected, Encoded Results are put in another specified output directory, by default C:\VidOut.

The Photoshop/IrfanView Curves files, where needed, should be placed in the C:\VidAcv directory.

All three of these Looping Mode directories are easily changed by editing the relevant lines near the top of the batch file, between the dotted lines. Please note: VidSrc drive & directory are specified separately. Here you can also edit most other default settings to your choice of defaults to avoid frequently having to change the initial defaults. As always, I recommend editing the “.txt” file and then also saving as “.bat”.

NOTE: If RGB Curves is Enabled: In Single File Mode, a missing .acv file raises a warning & processing stops. In Looping Mode .acv files can be provided if required, but missing .acv files are ignored to allow flexibility.

If you choose Processing Option 7) “Test Mode” then all source files are displayed in sequence. Closing the display window, or pressing “Escape”, lets the batch file move on to the next video source file for checking.

To invoke this batch file in Looping Mode you can use any of the three methods used for Single File Mode. They also work in Looping Mode, but in this case only video files from the video source directory will be processed, and any video file which would have been processed in Single File Mode is ignored, unless it is one of those in the video source directory! So video file selection varies depending on the operating mode.

Method 1) Place this batch file in the same directory as your Video File, or add it to your Windows PATH.

Open a Command Line and go to the Video File directory,
Enter the batch file name followed by your Video filename.

Method 2) Use the Right Click “Send To” method if you have placed the batch file as described in Section 4.

Method 3) Drag and Drop your Video File onto a copy of the batch file or shortcut placed on your desktop.

NOTE: In all three cases the batch file will be triggered. Then Enter “y” or “Y” for Looping Mode of course. The batch file then processes ALL video files from the source to the output directories as described above. However, there is one more method: IF AND ONLY IF you choose (or have edited as default) Looping Mode:

Method 4) Just place the batch file anywhere and click on it to invoke it, without linking to any specific file. If you do this and do not choose “Looping Mode” then the batch file fails as it won’t know what to process!

NOTE 1: The restriction in Single File Mode on source filename extension being different from the output filename extension does not apply to Looping Mode as source & output files are in different directories.

NOTE 2: For flexibility NO individual parameters are checked. Missing directories are however flagged.

NOTE 3: For optimum speed the Ffmpeg command line produced has only Required Functions inserted.

2) The Ffmpeg Adjust-Correct-Encode.bat “Swiss Army Knife” of Video Processing, One More “ACE”.
Next a List of Functions. All can be Enabled by answering “y” or “Y”. Just press “Enter” for “NO”!
Then you can pick any parameters you wish to change. You only need to change the relevant ones!
Pressing “Enter” on the other options or parameters that are OK leaves them as the current default.

2.1) Chroma Shift

By default this is absent. If Enabled, this function moves the chroma up or down and left or right. Defaults are “0”:
How many Lines Vertically DOWN - Negative for UP?: Chroma Shift: No obvious limits. For No change use 0 or Enter.
How many Pixels Horizontally - Negative for Left?: Chroma Shift: No obvious limits but for No change use 0 or Enter.
NOTE: For both Vertical and Horizontal shifts Ffmpeg works better than the ACE as it leaves all edges with colour.

2.2) RGB Curves

By default this is absent. If Enabled, this function adjusts the Brightness, Contrast, Gamma and White Balance. This function requires a “.acv” file with same name as the video file. “.acv” files are created by Adobe Photoshop or IrfanView as described below. All versions of Photoshop work from Version 7.0 at least, to CS6+. See Section 3. NOTE: If you choose this function and the required “.acv” file is missing the batch file will warn you and then stop.

2.3) Chroma Saturation

By default this is absent. If Enabled, this function adds the one missing colour adjustment. A value of “1” leaves saturation unchanged. A value of “0” will remove all colour and a value “3” is the maximum allowed by Ffmpeg: *Chroma Saturation Ratio. Available Range 0.0-3.0?:* Use a value of 1 to leave saturation unchanged of course.

2.4) Audio Timing (IGNORED ON TEST MODE – Ffplay CAN’T DO IT)

By default this is absent. If Enabled, you can alter audio timing in both directions: Negative Earlier, Positive Later. *Audio Delay SS.Milliseconds - Negative for Early?:* Audio Timing: No obvious limits. For No change use 0 or Enter. You can use Seconds without Milliseconds. Ideally use multiples of the frame length for best audio/video sync. To move audio one frame later at 25 frames per second frame rate use "0.040", i.e. 0 Seconds + 40 Milliseconds. If audio is delayed then the audio starts late and last video frame is held until the audio ends. Total length increases. If audio is advanced then the start of the audio is lost and it ends before the video. Total video length is unchanged. Of course all these timing issues are normally negligible and not obvious in the output when correcting small errors.

2.5) Codec Processing Options (Interlaced or Progressive to MP4 and Interlaced 25i to MPEG-2)

The default is currently Option=1: Perfect for 25i>25p, 25p>25p or 50p>50p Progressive Out, No Framerate Doubling. This flexible default is easily changed, by editing lines at the start of the batch file (edit “.txt” file then save as “.bat”). Due to its better compatibility my favourite is Option=2: 25i video de-interlaced & output frame-rate doubled to 50p. There are also options to keep 25i video interlaced: Just choose BFF for Bottom Field First or TFF for Top Field First. If you are unsure of your source video I suggest using MediaInfo: <https://mediaarea.net/en/MediaInfo/Download> Please see Section 3 below for full details of all the Encode Options and the Test Option (Video, NOT Audio Sync).

2.6) Codec Processing Parameters (Only Available for MP4 Output)

The default is preset to “slow”, CRF=23 and Audio Bitrate 256kb/s (AAC). The BBC uses 128k for MP4 but 256k is best. They can be changed when running the batch file by entering “y” or “Y” when asked if the current defaults are wrong. Then you only need to change relevant parameters. Pressing “Enter” on the others leaves them at the current default. However all defaults can be changed by editing lines near the start of the batch file. Edit “.txt” file then save as “.bat”.

3) Encode & Test Options. (If necessary use MediaInfo to check source scan type.)

Option 1) 25i>25p, or 25p>25p, or 50p>50p (MP4) (Flexible Default Option but Can be Changed)

Encoding 25i or 25p to MP4 will both give 25p Progressive. Encoding 50p to 50p MP4 gives Progressive unchanged.

Option 2) 25i Video IN to Progressive 50p (MP4)

This is my preferred solution for 25i video, as 25i > 50p keeps the smooth motion but loses the interlace artifacts and is much better on PC monitors. On TVs it also looks at least as good. The Ffmpeg “bwdif” filter gives excellent quality progressive results from interlaced sources, with the frame rate doubled (e.g. from 25 to 50).

Frame rate doubling is why this should not be used on 50p material as it gives 100p which isn’t very compatible!

Option 3) 25i Video BFF to Interlaced 25i (MP4)

This leaves 25i Video Unchanged to 25i Output. Choose BFF (Bottom Field First) or TFF (Top Field First) to suit.

Option 4) 25i Video TFF to Interlaced 25i (MP4)

This leaves 25i Video Unchanged to 25i Output. Choose TFF (Top Field First) or BFF (Bottom Field First) to suit.

Option 5) 25i Video to MPEG2 Std for DVDs (SD, not HD)

The bit rate is set for 2 Hours High Quality on a DVD (Can be Changed). The Standard MPEG-2 Matrix is used.

Option 6) 25i Video to MPEG2 Fox for DVDs (SD, not HD)

The bit rate is set for 2 Hours High Quality on a DVD (Can be Changed). Uses the “Fox New” MPEG-2 Matrix. This Custom Matrix reduces low level noise without bad side effects and is thus thoroughly recommended.

Option 7) Testing Proposed Chroma Setting (FFPLAY CAN'T TEST AUDIO SYNC)

This just plays the video/audio, allowing you to enter values to try to help you test the correct Chroma adjustment.

4) How to use FFmpeg Adjust-Correct-Encode.bat

4.1) Purpose.

This Batch file is for processing a video/audio single file of Any type to MP4, or 25i files to MPEG-2, or for Testing. Input can be any combined Video and Audio file type of any definition, Interlaced or Progressive. Output is to MP4. MP4 Video Encoding uses the CRF method. Audio uses AAC. Both are recommended for compression and quality. MPEG-2 Video Encoding is available with two different matrices (MPEG Standard and "Fox New"). Audio is MP2.

4.2) Basics & Preparation.

It can be used in a command line, with "Drag & Drop" method, with Batch File on the Desktop, or SendTo method. "Drag & Drop" simply means dragging your Input Video file to the batch file on the desktop and dropping it there. "SendTo" means adding the batch file to your Sendto menu. Then right click on Input Video and SendTo batch file. This is my preferred method as it's easy, needs no space on the desktop and places encoded file by the source file. To add SendTo link just copy the batch file to C:\Users\yourname\AppData\Roaming\Microsoft\Windows\SendTo.

4.3) Using this Batch file.

Using one of the above invocation methods all that is needed is to select those parameters which need changing. The result is placed in the source file directory with same filename as the source file but appropriate file extension. MP4 files will be given the ".mp4" file extension, and MPEG-2 files will be given the ".mpg" file extension. For MP4 encoding this assumes your source file is NOT an MP4. If it is, then change its file extension to ".m4v". For MPEG2 encoding this assumes your source file is NOT MPG. If it is, then change its file extension to ".m2v". The source files are left unchanged. The log file created during MPEG-2 encoding is deleted. The very small log files will end up in your Recycle Bin which will need emptying eventually!

5) How to create a "*.acv" file for use with the RGB Curves function.

5.1) First play the video source to find a reference frame.

First find a representative frame. This must ideally have the parts with highest and lowest brightness in the video. That is to minimise the risk of clipping other parts of the video when you increase the Brightness and/or Contrast. If your sample doesn't cover the full brightness range then don't increase contrast/brightness, or make allowances. Most video players can save a "Snapshot" as VLC calls it <https://images.videolan.org/vlc/>. There are other players: VirtualDub2 available at <https://sourceforge.net/projects/vdfiltermod/files/> calls it "Copy source frame to clipboard".

5.2) Now make your adjustments and create the ".acv" file.

After Frame Capture open the sample frame with Photoshop (V7 to CS+) or IrfanView <https://www.irfanview.com/>. Make your adjustments to this frame using ONLY the Curves function from the menu or using CTRL M for Photoshop, or with IrfanView using the menu "Image/Adobe 8BF Plugins/SmartCurve". Then make your adjustments as below:
White Balance (Use Info Panel to check levels) OR Use "Auto" (Option "Enhance Per Channel Contrast" & Clips 0.01)
If "Auto" does not give the required results or you want to control and limit changes to avoid clipping use "Manual":
Using Red/Green/Blue Channels Adjust Top Right Corner Markers LEFT ONLY or DOWN ONLY for Best White Balance.
Brightness (Use Info Panel to check levels)
Using RGB Channel Adjust Bottom Left Corner Marker UP ONLY to increase Brightness without affecting Peak White.
Contrast (Use Info Panel to check levels)
Using RGB Channel Adjust Top Right Corner Marker LEFT ONLY to increase Contrast (Use Info Panel to check levels).
Gamma

Using RGB Channel Grab the Centre of the Slope and Move It UP or DOWN Vertically to adjust Gamma as required.

5.3) Saving the ".acv".

Then save the ".acv" file in the same directory with the same name as your video but with default ".acv" extension. Then use either the Command Line, "Send To" or "Drag and Drop" methods of your choice to initiate the batch file.

6) History & Notes:

This FFmpeg Adjust-Correct-Encode.bat "ACE" Combines, Improves On, and Supersedes the Following:
ffmpeg_batch_files.zip:

1*MP4 + 2*MPEG-2 Batch Files: Fixed 2 Line Chroma Lift but no other functions + Chroma Shift Test Batch File.

ffmpeg_batch_files_adjustable.zip:

2*MP4 + 2*MPEG-2 Batch Files: A Variable Chroma Shift but no other functions + Chroma Shift Test Batch File.

ffmpeg_batch_files_adj_chr_aud.zip:

2*MP4 + 2*MPEG-2 Batch Files: Variable Chroma Shift & Audio Timing, no more + Chroma Shift Test Batch File.

Ffmpeg_AdjChrAud_PSacvSatn.zip:

2*MP4 + 2*MPEG-2 Batch Files with all the above Video/Audio functions, and the Chroma Shift Test Batch File.

NOTE 4: MPEG-2 is 25i SD Only. On other standards use Option=1 & CRF=12. Then use another Encoder.

NOTE 5: No older Encoding Batch Files had variable parameters and No Test File had all video functions.