RetroScan Universal 2K Software Index

Update 9-3-2017 for Software V4.0.1

Alarm11
Auto Exposure3, 4, 9
Camera Gain9
Camera Resolution5
Capture Drive Type5
Capture Pause10
Capture Preview10
Capture Start10
Capture Stop10
Capture Window13
Change Album Info12
Change File Info14
Choose Playback Speed17, 19
Close Album15
Color Correction8
Drive Selection2, 12
Drop Frame Counter14
Export Options19, 20, 21
Film Type8
Frame Counter14
Grain Reduction3, 11
Live View10
Make New Album12
Manual Exposure9
.MOV and .AVI selection6
Negative Film8
Numbered Image Type6
Play Album17
Print Report18
Settings Page 1, 7
Shadow Detail4
Shutdown After Capture11
Snapshot/Still Frame Export17
Shutdown After Export21
Sort Album15
Sort Capture Files15
TrueView10
Uncompressed Capture4
View Capture Files16, 17

Entire contents Copyright 2017 MovieStuff, LLC - All rights reserved.

Universal 2K Software Instructions

Please read through these instructions thoroughly before attempting to use the Universal unit. These instructions cover both HD as well as 2K usage. Please verify that you have a PC that matches the required specifications for this software. While this software will work on a Mac running Windows, we do not support it and can not answer any questions related to using this software on a Mac. If it works for you, that's terrific! But, if not, we will not be able to assist because we are not a Mac shop and would have zero relevant information. Also, we would not know whether the problem was due to a problem with the unit, a problem with the software, user error or because it was PC software being used on a Mac platform.

Overview of how the software works:

When capturing with the Universal, you are not scanning to a standard video file. Instead, you are scanning each frame of film to an individual Photoshop quality digital still frame numbered sequentially in a folder. This avoids the massive compression often associated with video files. Despite not being a video file, the Universal software will play back those numbered stills fast enough to see motion so that you can check your transfers. However, the original capture files are proprietary and can not be imported into any known edit system. As a result, you must use the Universal software to export your captures into a file appropriate for your needs. The export function of the software will allow you to output a variety of file types, including .MOV, .AVI and numbered image sequences, all in SD, HD or 2K resolution.

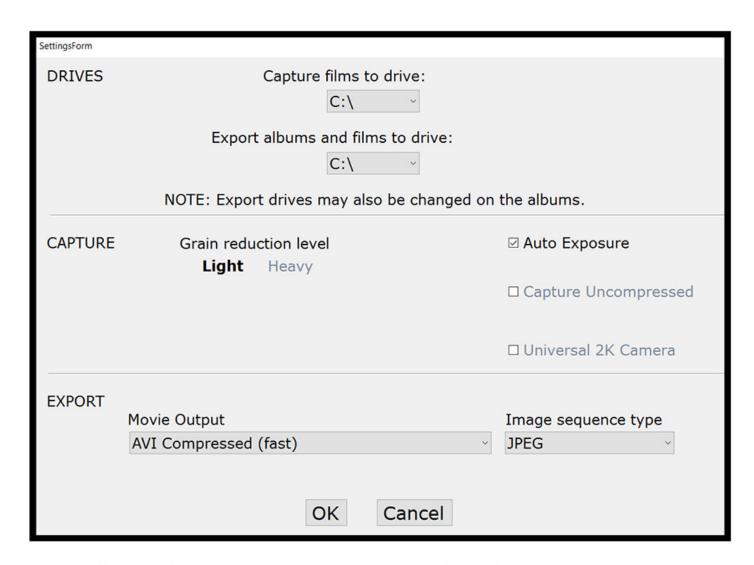
So, from a workflow standpoint, using the Universal is a two step process: First you capture all day long without regard to film playback speed or required resolution. Then you set up the Universal software at the end of the day to batch process all your captures. Based on your choices, the Universal software will then export HD, SD or 2K files which can then be imported into your desired edit program. This processing is generally done most efficiently overnight. Most people capture on a cheap PC and then set up the Universal software to export to an external USB drive (no thumbdrive). The next morning, all the new files will be on the external drive which can then be unplugged and brought over to the desired PC or Mac edit suite. So while we don't recommend that you capture on a Mac, the exported files are Mac compatible.

If you have any questions or problems, feel free to email us at retrofix@swtexas.net or call us at 830-966-4664. For online trouble shooting tips, see

RetroScan Universal 2K Settings

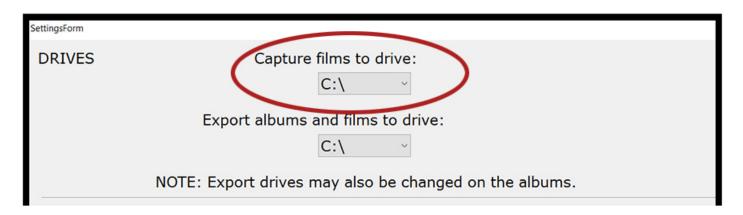


When you launch RetroScan-HD, click the Settings icon in the upper right hand corner. The following settings box will appear.

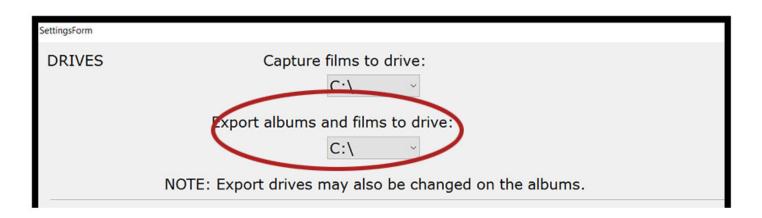


Please note that all choices are global and affect all captures and exports.

Drive Selection for Capture and Export



In this section, you select the drive that you wish to capture to. This ideally should be a fast, internal drive. If capturing 2K files, it is best to have an internal Raid-0 drive array with a separate internal system drive. Some people do capture to external drives but it is not something we recommend or support. If using this to capture uncompressed or 2K, please make sure that you have plenty of drive space as these types of files are quite large. In general, it is ideal to have at least 40% open headroom on your capture drive.

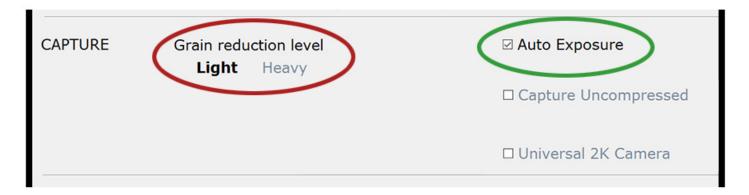


You also select the drive that you wish to export files to after capture. They can be the same as the capture drive or they can be different or external drives. Please note that the export destination drives can also be changed on the albums, themselves. You can also export via a network but it is not recommended due to slow render speeds.

NOTE: All files must be exported.

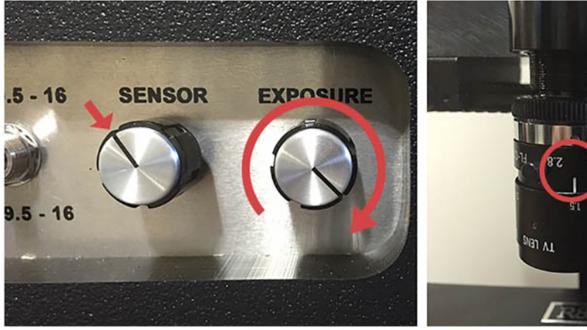
You can not import the original capture files into any edit program.

Capture Settings



In this section, you choose the degree of grain reduction desired. This can be previewed in the set up mode of the capture control panel. Please note: The RetroScan grain reduction is passive. Rather than apply grain reduction processing to the image, RetroScan simply reduces the degree of sharpening applied to each frame. So the higher the grain reduction, the lower the sharpening.

Here you activate the RetroScan Auto Exposure function. (The software defaults to Auto Exposure when you first install it.)





For using the auto exposure function on typical home movies, turn the exposure knob to full brightness. Make sure that the lens is set to between f2.8 and f4. If scanning in 2K, you may need to set the lens between f4 and f8 for adequate depth of field. The normal starting point for the sensor is about 11:00, which is a half turn back from full right. Adjust the sensor as needed for smooth transport of the film. (see Universal hardware instructions for more detailed information.)

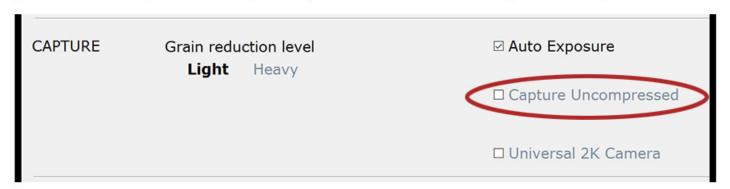
Capture Settings



On the capture screen, the default starting point for the Auto Exposure level is somewhere near the "L" of "Level" but can be changed as needed.

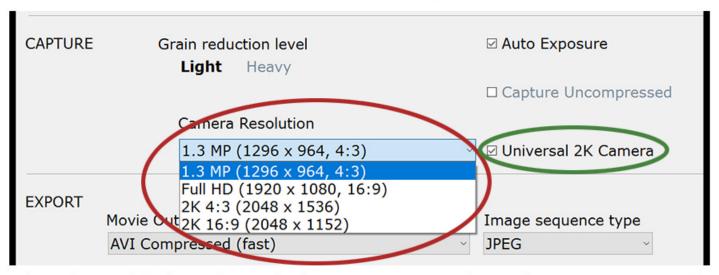


Shadow Detail is normally at -20 but can also be changed to suit the needs of the footage. In general, these settings are a good starting point that will work for Auto Exposure on most home movies with moderate over and under exposure. For radically under exposed or over exposed films, you may have better results using manual exposure.



RetroScan-HD can capture in both compressed or uncompressed formats. The default setting is for compressed, where every frame is stored as a hi-resolution JPEG. Checking the box will allow you to capture uncompressed, where each frame is a BMP. Please note that capturing uncompressed requires an increased amount of drive space and speed.

Capture Settings



The software defaults to the standard 1.3 HD camera. In that mode, you can capture only as 1.3mp but can still output SD files as well as HD files in 720 and 1080p. But if you have the Universal 2K camera, check the Universal 2K Camera box as shown. Within the drop down menu, you can choose a variety of resolutions and aspect ratios to capture with from 1.3mp 4:3 all the way up to full 2k, either as 4:3 or 16:9.

Obviously, the new 2K camera can capture much higher resolution than the previous HD camera. However, we decided to allow 2K camera uses to capture at the original 1296 x 964 HD resolution because experience has shown that a large number of users are still only outputting standard definition DVDs. By choosing the original 1296 x 964 capture resolution, your file sizes will remain the same but you will still benefit from the superior picture capability of the new 2K imaging chip. You can simply increase the resolution as your customers or needs demand. Whereas if we made all 2K users capture at full resolution, you might need to upgrade your PC requirements for no reason.

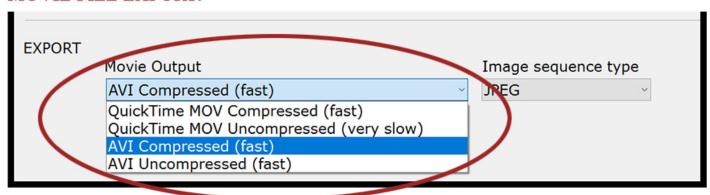
Most single drive PCs and laptops can capture both in 1296 x 964 as well as 1920 x 1080 with no problems, both compressed or uncompressed. However, capturing anything above 1920 x 1080 may require an internal Raid-0 drive array with a separate system drive. Tested SSD drives that are big enough can also work but please note that we have encountered differences in performance from one SSD drive to the next. The only way to know for sure is to try it and see. On the other hand, internal Raid-0 drive arrays are a known technology that always work and are cheap and very dependable. So make your choice based on your specific needs.

Also, the software will auto-detect which camera you have plugged into the PC. If you change cameras, you do not need to reload the software as this software works with both equally as well.

Export Settings

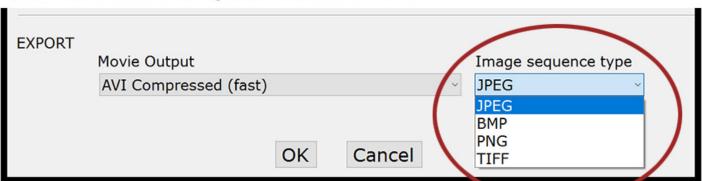
This section applies to EXPORT only. These settings do not affect your captures in any way and can be changed at any time before or after capture. After capture, you can export your files in two different ways. One way is a MOVIE FILE and the other is a NUMBERED IMAGE SEQUENCE. Please note that Movie Output choices do not affect Image Sequence choices and Image Sequence choices do not affect Movie Output choices. They are two separate files types. Your choices are explained as follows:

MOVIE FILE EXPORT:



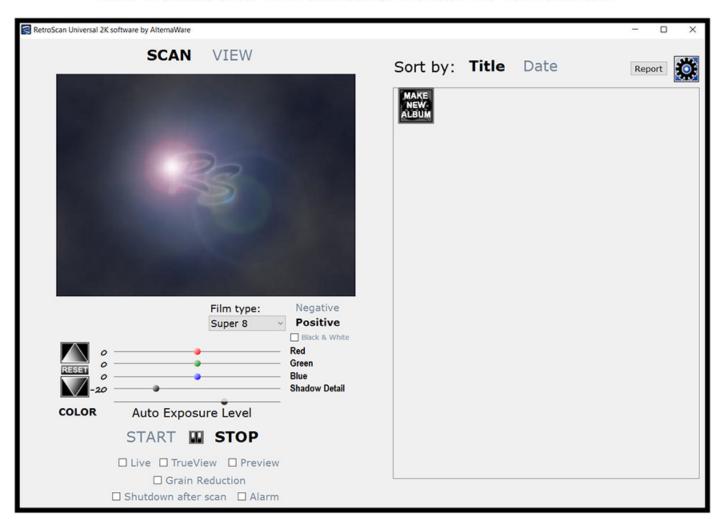
You have two types of video files: .MOV or .AVI. The quality of the two is essentially the same. However, some edit programs work better with one or the other. For most projects, exporting as a compressed video file will look fine. For critical projects, you can also export uncompressed. Please note that exporting as a uncompressed .MOV file is very slow, for some reason. Exporting as uncompressed .AVI isn't. Also, unless you have a way to edit uncompressed, it is pointless to capture and export uncompressed.

NUMBERED IMAGE SEQUENCE FILE EXPORT:

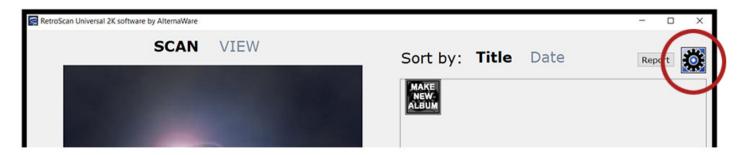


For highest quality, you can export as a numbered image sequence, which puts each frame of film on a separate digital still frame in a folder. A numbered image sequence can be imported into most any computer edit system which will automatically string the separate images together to create a video movie file. From smallest file size to largest, they are JPEG, PNG, BMP and TIF. Most people use JPEG. If capturing uncompressed and you wish to stay uncompressed, then you would need to export PNG, BMP or TIF.

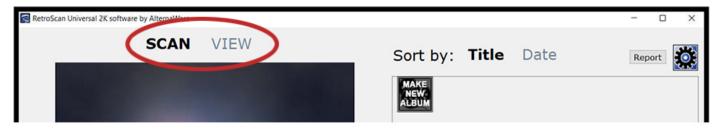
Once you launch the software, the first screen you will see is this.



If this is the first launch during installation, it is advised to wait a few minutes for drivers and background processes to complete before attempting to perform your first scan. The default mode of the software is Auto Exposure. This can be changed to Manual Exposure easily via the settings panel of the software.



To access settings, just click on the settings icon in the upper right hand corner. It is suggested that you continue reading the following scan functions to familiarize yourself with the various functions before making changes to the software settings.



Here you toggle between the scanning function and the viewing function. "Scan" is selected to transfer your film and contains various image controls and functions. "View" is selected after scanning to watch or export your films into desired formats.



Use this drop down menu to select the format of the film you are transferring (Super 8, Regular 8, 16mm, etc) NOTE: If you choose the wrong format, you will not hurt anything and the film will still capture but the footage will not calculate properly in the software.



You will find that old home movies are always "Positive", which is the default state for the software. "Negative" should be selected when transferring modern negative. If working with black and white film (positive or negative) you can get true black and white by checking the box for Black and White. However, please note that after each capture in black and white, the software will revert back to the default state of color to prevent users from accidentally transferring color film in the black and white mode.



The Red-Green-Blue sliders control the color of your image and can be changed before or during capture. Shadow Detail is preset to -20 for powerful blacks and good contrast but can be adjusted at any time to bring out more information in shadow areas if required. The up and down keys to the left move all RGB sliders together. "RESET" brings all RGB sliders back to center. This action does not reset the Auto Exposure level nor the Shadow Detail level.



Note the default position of the Auto Exposure slider, which is near the L on "Level". Combined with the default -20 default position of the Shadow Detail slider, this should provide bright, snappy transfers of most home movies that vary in exposure from slightly under to slightly over exposed. The Auto Exposure Level can be adjusted as needed to accommodate a wide variety of color or black and white film.



For using the auto exposure function on typical home movies, turn the exposure knob to full brightness. Make sure that the lens is set to between f2.8 and f4. If scanning in 2K, you may need to set the lens between f4 and f8 for adequate depth of field. The normal starting point for the sensor is about 11:00, which is a half turn back from full right. Adjust the sensor as needed for smooth transport of the film. (see Universal hardware instructions for more detailed information.)



For manual mode, uncheck the "Auto Exposure" box in settings. When in manual exposure mode, all exposure adjustments will be made via the exposure control knob on the Universal. You can adjust the sensitivity of the camera by using the Gain drop down menu. You have a choice of 0, 5, 10 and 15 db. The default for manual exposure is 5. The higher the gain, the more "noise" may appear in the image, so this function should be used carefully for best picture quality. This gain level will adjust automatically when Auto Exposure is activated.

START IN STOP	
☐ Live ☐ TrueView ☐ Preview	
☐ Grain Reduction	
☐ Shutdown after scan ☐ Alarm	

The "Start" button will begin your actual capture and the "Stop" button will end your capture. In between "Start" and "Stop" is a Pause symbol "II", which will let you pause the recording. Press the Pause symbol to pause the recording. Press the Pause symbol again to resume recording. NOTE: You can not go directly from Pause to "Start" or "Stop". Also, the software Start, Pause and Stop buttons do not control the motor functions of the Universal. So to start a capture, you must first switch the Universal to Forward and then press Start on the software. To end a capture, press Stop on the software and then switch the Universal back to stop.



PREVIEW can be used to see how your film will look without actually capturing it to your harddrive. Just start your film running on the Universal and check the box for "Preview" and your film will appear in the capture window.

LIVE + PREVIEW will allow you to have a live view of the camera. This can be used to facilitate focusing on a stationary frame. If using the 2K camera, just switch the camera to "STILL". If using the original HD camera, reach in the back and switch the unit to "SLIDE" mode. After either choice, switch the Universal to "FORWARD" and the light will come on but the motor will not pull the film through. If using this mode to check focus on a stationary frame, make sure that you put tension on the film so that it will be flat in the gate, otherwise your focus will shift once you start the film. To exit the live mode in the software, uncheck the Preview box and then the Live box.

TRUEVIEW can be used with Preview, Live+Preview, or actual capture mode. Selecting TrueView will popup a larger viewing window which offers a sharper image to facilitate finer focusing of the film. If you have only a single monitor, you will not be able to see the entire TrueView picture, so single monitor users should not attempt to use TrueView for framing. Ideally, you would expand your desktop to a second monitor. At that point, you can drag the TrueView window over to that second monitor where it will appear every time you check the TrueView box. It should be noted that TrueView exhibits your image at true resolution. If you are capturing at 1920 x 1080, you will need a full 1080 height on your monitor. If capturing in 2K at 2048 x 1536, you will need a monitor with a full 1536 height or you will not see the entire image.

10.



"Grain Reduction" will make the grain of the film less noticeable by reducing the degree of sharpening applied to each frame. This is a passive method which is preferred to processing the image since many users like to use third party software for sharpening or grain reduction. By simply reducing the degree of sharpening applied to the image during capture, this avoids over-processing of the final image later in post.



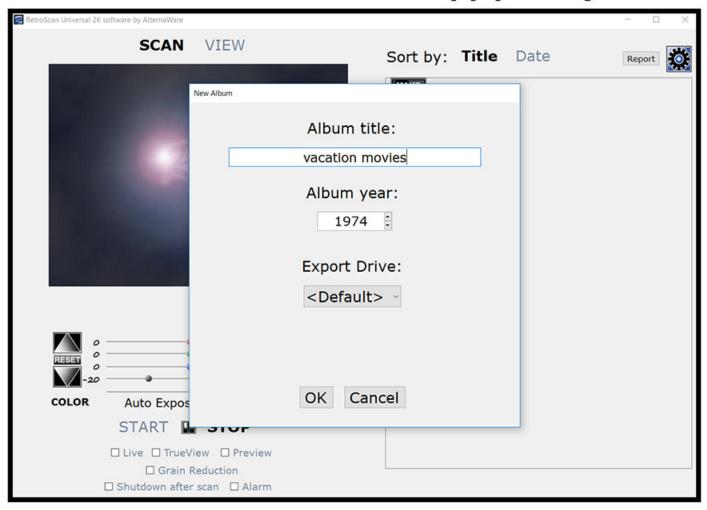
"Shutdown after scan" will turn off the PC after the scan has completed or if the unit stops for some reason such as an end of reel, jam or break in the film. This is useful if starting a scan to run and you need to step away and must leave the unit running unattended but need the PC to shut down once the scan has completed.



"Alarm" will sound if the capture stops unattended, such as the end of a roll, a jam or a break in the film. The alarm will also sound if the capture ends prematurely due to a lack of drive space or some other error during the capture process. This is handy if working in another part of the shop but need to know if there is an interruption in the scanning process. The alarm is heard from your PC so adjust your speaker volume accordingly.

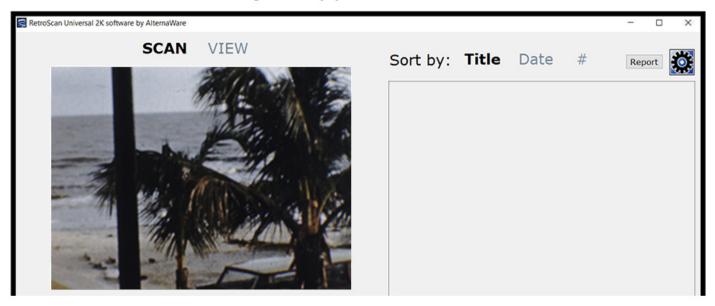


Before you can scan any movie, you must first create an album to put it in. Click on "Make a New Album" icon which will pop open a dialog box.



Fill out the necessary fields. The album title will be the prefix for all files created in that album and will number consecutively automatically, starting with "001" but you can also give unique names to each file. The default year is 1974 but can be changed as desired. Album information can be changed later by right clicking on the album. The Export Drive for this album can be selected here. Default is usually "C" but you can designate a different export drive in Settings. Also, you can plug in as many other Export destination drives as you have USB ports and each folder could export to its own drive, if desired. Just make your choice for export drives here or on the export page. Please note that Export Drive choice does not affect your choice for Capture drive, which should ideally be internal.

Once you create an album, double click to open it. With film loaded on the Universal, check the Preview box and start your film running. Depending on the camera/resolution choices made in Settings, you will see either a full frame 4:3 window or a window that is 16:9 with a "safe area" designated by yellow dashed lines.



If capturing 4:3 (in HD or 2K) you will see the image extending out to the edge of the capture window. Anything that you do not see in the capture window will not be included in the captured file. When exporting, you can either output as a 4:3 image or you can export as a 16:9 image with black pillar bars added to each side of the captured frame.

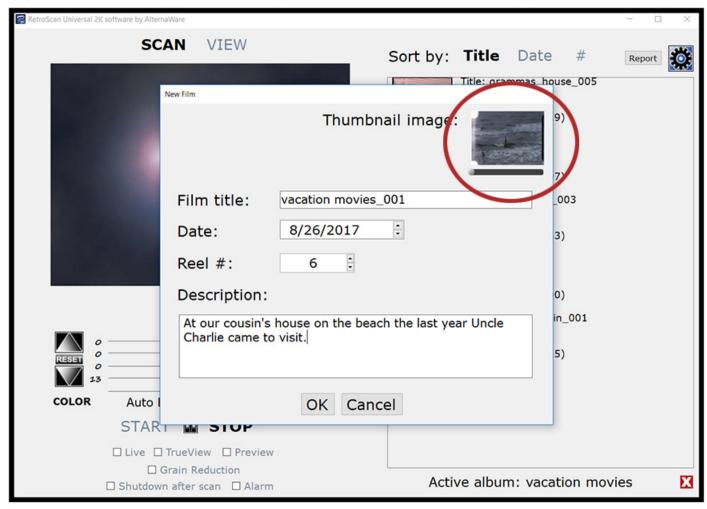


If capturing in the 16:9 mode, areas left and right of the yellow box will also be captured along with the center. During HD or 2K export, you can cover those areas with black pillar bars or leave them visible. During SD export, the software will use only the area within the yellow box, which is standard TV format. Please note that some home movies have imagery which goes well outside that aspect ratio so a loss of picture information from the film edges is not unusual when converting home movies to SD.

Once you are satisfied with your Preview, uncheck the Preview box, start your film from the beginning and press the "START" button to begin capture.

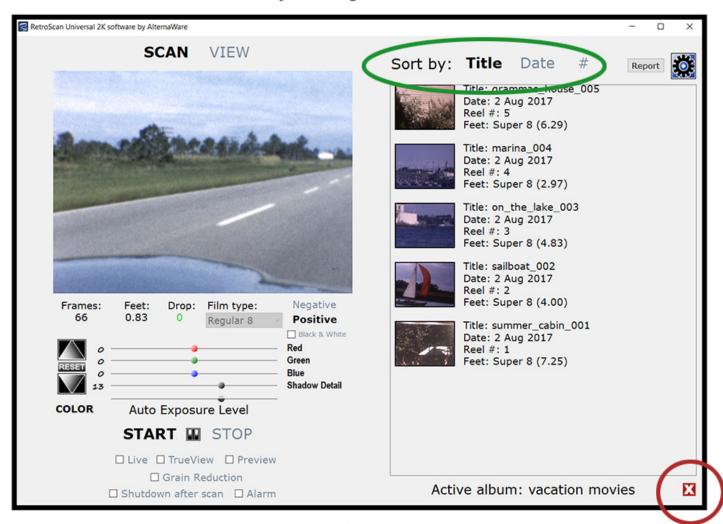


During capture, you will see Frames and Feet displayed. The software will keep track of this data and it can be used later to print out a report showing total footage transferred. Also, while capturing, the Drop Frame display will let you know if your PC has dropped any frames. It should be noted that "dropped frames" only refers to your hard drive not being able to keep up with the capture data rate, such as when capturing uncompressed or 2K (or both!). "Dropped frames" does not refer to frames that were missed during capture due to bad splices or the sprocket hole sensor not reading the film correctly.

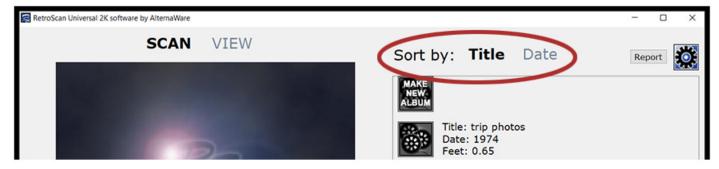


When you click "Stop", a box will pop up that lets you change the name of the file, or add a date and a description, as well. In the upper right hand corner there is a tiny window with a scroll bar. This image will appear as the thumbnail for your file in the album. You can use the tiny scroll bar to find another frame to use for your thumbnail.

Once you close the pop up box, the file will take its place in the album. Note that all files in the album can be sorted by clicking on Title, Date or Reel #.



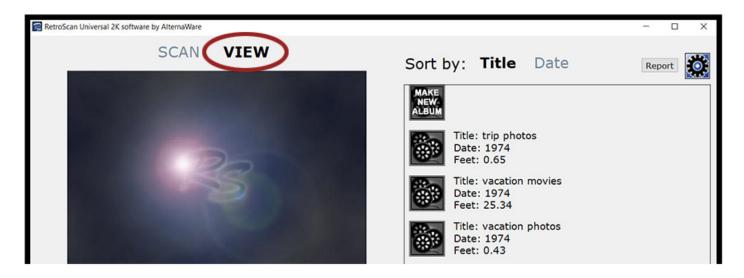
To close that album, click on the X in the lower right hand corner. If you can not see the X because it is off the screen, then you have your Font Size in your PC set at something greater than 100%. This is not resolution size but a setting referred to by Windows as "Font Size". You can make this adjustment in your PCs control panel.



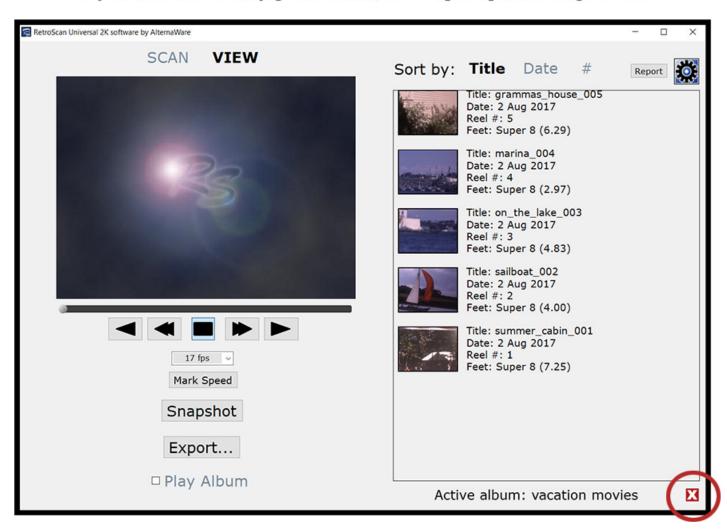
After closing that album, it will show up along with all the other albums, one above the other. Albums can be sorted by clicking on Title and Date.

Viewing Capture Files

Click on "VIEW" above the capture window and the screen will change to this:



If you then click on any given album, it will open up and change to this:



(Remember, close the selected album by clicking on the X in the bottom corner.)

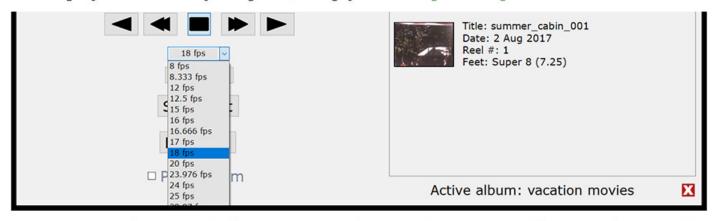
Viewing Captured Files



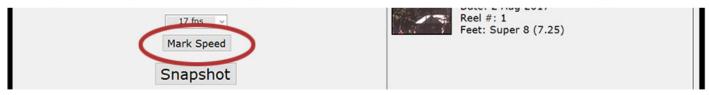
To view a captured file, double click on it and the file will appear in the player window. You can then use the standard play keys for forward, reverse or step frame by frame.



If you see a particular frame that you would like to use for an enlargement or perhaps a DVD or BluRay cover, you can click on the "Snapshot" button and the software will output a high resolution still frame which can be found in the Export folder. To see the movie played at a variety of speeds, simply use the speed drop down menu.



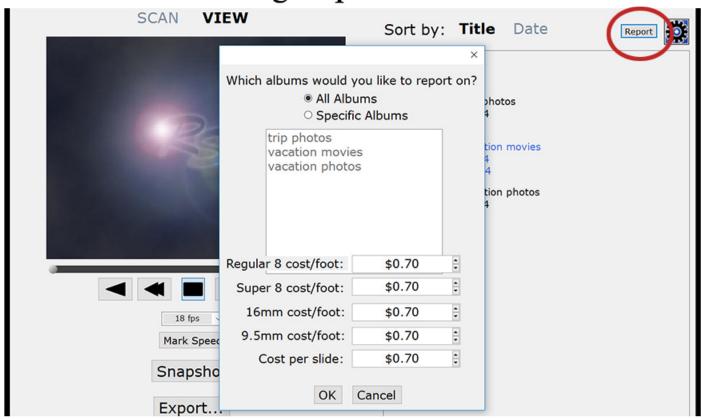
Most R8 was shot at 16fps but some was shot at 18fps. Most S8 film was shot at 18fps but sometimes 24fps. Commercial S8 films are always at 24fps. Silent 16mm film was shot at both 16fps and 18fps. Sound 16mm was shot at 24fps. The default for speed is set to 17fps, which is a convenient "in between" speed for both R8, S8 and 16mm silent films, which represents the majority of what most users will be transferring.



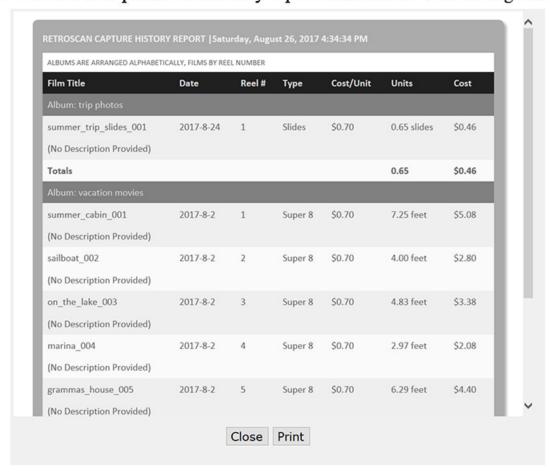
You can assign the speed later on the Export page or you can use the "Mark Speed" button to assign the speed to the file here. It can be changed later, if desired.



Viewing Captured Files



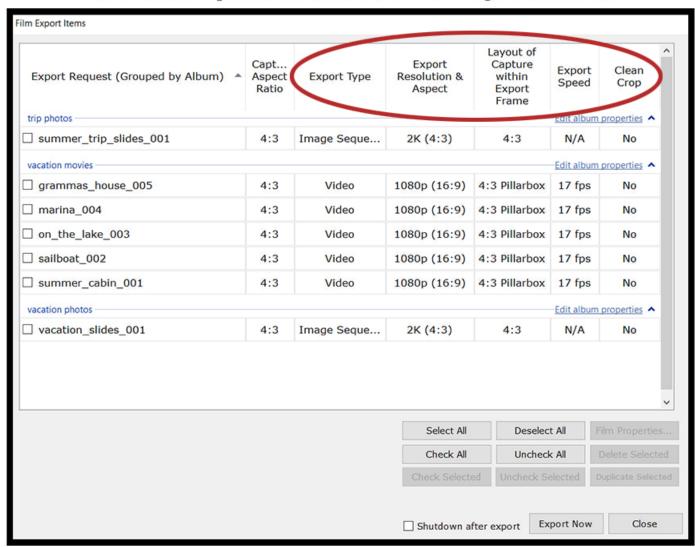
Clicking on "Report" will pop up a box that lets you assign charge amounts to your transfers. You can then print out a history report that reflects total footage and charges.



Exporting Captured Files

Export		
□ Flay Albulli	Active album: vacation movies	X

Click on the Export button and the software will go to this screen.



Depending on the camera used, exports can be SD, HD or 2K. Full screen 4:3 and 16:9. Here are the definitions of headings displayed above their respective columns.

Export Type: Numbered Image Sequence or Video File (.MOV or .AVI)

Resolution/Aspect Ratio: 720p 4:3, 720p 16:9, 1080p 4:3, 1080p 16:9, 2K 4:3, 2K 16:9, Standard Definition PAL, Standard Definition NTSC

Layout: Letter Boxed, Pillar Bars, 16:9 full frame, 4:3 full frame

Export Speed (fps): 8, 8.333, 12, 12.5, 15, 16, 16.666, 17, 18, 20, 23.976, 24, 25, 29.97, 30

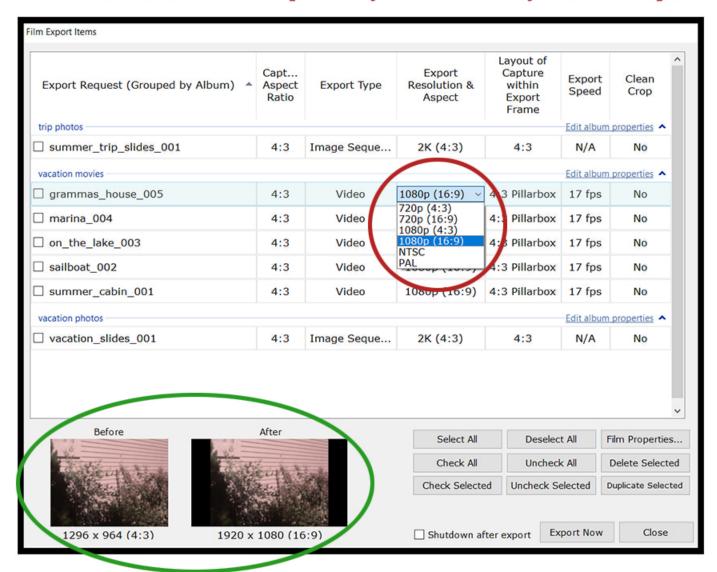
Clean Crop: Crops into the image 10% and then gently rescales to desired resolution.

This is handy if you have captured film and find that there is undesirable lint or hair at the picture edge and you don't want to rescan.

19.

Exporting Captured Files

NOTE: All files must be set up before you can check any boxes for export.

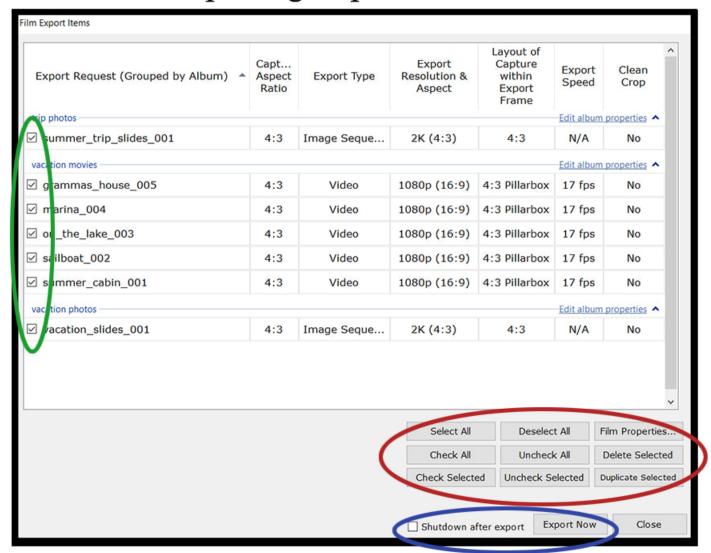


To set up a single file for export, left click once on the desired file and then access the drop down menu related to the column heading. Make your selections for Export Type, Resolution/Aspect Ratio, Layout, Export Speed and Clean Crop. Note that each change will be reflected in the "Before" and "After" thumbnails in the bottom left hand corner. This gives you a preview of what the final export will look like, in terms of layout and aspect ratio.

To set up multiple selected files at one time, single left click the first file of the desired group, hold down the shift key and single-left-click the last file of the desired group. All files in between will be highlighted. Or, if you wish to select all files, hold down the shift key and then single-left-click the top file. All files below will be highlighted.

After highlighting desired files, single-right-click on the drop down menu and make your choice, which will automatically be applied to all highlighted files in the group.

Exporting Captured Files



In the bottom right hand corner are controls that allow for a variety of single as well as group file functions. The buttons are fairly self explanatory but the button marked as "Duplicate Selected" is useful if you want to export two different types of formats from one file. As an example, if you wanted to export a file as 1080P as well as Standard Definition NTSC, you could duplicate that file and then set up each file as desired. This saves on having to export your files twice.

After setting up your files, check the boxes on the left for the files you wish to export at this time. If you wish to export all of them, just press the button "Check All". If you wish to only export a selection, highlight the desired files as described earlier and then press the button "Check Selected".

Once all desired boxes are checked, press "Export Now" to begin your export.

If you wish to save on PC wear, check the box "Shutdown after Export".

After export has completed, new files will be in the Export Folder on your hard drive.