



FrameCycler Pro 2009

User Guide

IRIDAS.

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Credits

This documentation includes images from Saigon Eclipse, courtesy of Chanh Phuong Films; The Eagle Hunter's Son, courtesy of Stromberg Productions. Additional images from Erwin Van Der Stappen, Kadenza Media, Mnogo Pictures, ARRI Film&TV Services

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What's new in 2009

UI Improvements

- Breadcrumb control in the desktop browser: Easier navigation and right click menu for copying/deleting folders
- ReviewLink panel now includes the Edit Path directly in the panel.
- Enable/Disable Versions button to avoid issues with versions being detected when no project path is specified.
- Metadata display window: press ALT + M to activate

Improved Stereoscopic Support

- Stereo eyes can now be globally swapped for displays that have reversed eye settings
- Left/Right Eye Swap per clip
- New Line-by-Line mode for Hyundai and JVC monitors
- Easy side-by-side monitoring: press ALT + D to go from any stereo mode to side by side.
- Support for Additional Naming Conventions

Extended File Format Support

A number of new cameras and newer versions of existing digital film cameras have been released since the FrameCycler 2008 release. Version 2009 aPro support for:

- RED One (.R3D)
- Silicon Imaging SI2K uncompressed RAW (.siv)
- Phantom HD B-Sensor (.cine)
- Support for timecode from Phantom Cine files
- Support for WEISSCAM HS2 digimag frame RAW format
- Support for Megacine FHGDI YUV format
- OpenEXR library now supports B44
- Additional support for .wav audio files (Extensible Format, PCM)
- DynamicResolution tab in Settings (press S, select DynamicResolutions) with support for REDCode and Cineform dynamic resolution for playback/pause/idle

Miscellaneous Improvements

- Improved performance when loading existing projects
- MacOS X: New “drag-and-drop” installer
- Global default values (in Global_Settings.xml) for I/O LUTs
- Error frame is now customizable (Place ErrorFrame.tga in Settings)
- 64 bit Support for Windows and Linux



Installation

Supported Graphics Cards

FrameCycler Pro relies on the OpenGL and shader technologies of modern graphics cards.

The NVIDIA® QuadroFX cards are certified for use with FrameCycler Pro 2009. Current NVIDIA Geforce cards will usually work fine as well. ATI cards are currently not supported.

	XP32	XP64	OS X	Linux 32	Linux 64
QaudroFX	182.65	182.65	-*	190.44	190.44

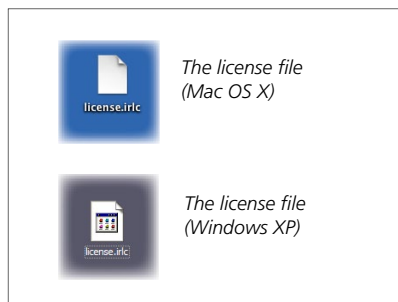
* OS X doesn't require additional drivers, it comes with the OS

Installing FrameCycler

Extract License File

Licenses are packaged as zip files and sent to you by email. Before launching the installer, you need to place the license file on your desktop.

1. Delete any previous license files on your desktop.
2. Drag the zipped license file from the email to your desktop.



3. Double-click the zipped file to extract the license (license.irlc). Windows users: drag the license file from the Zip window to your desktop, then close the Zip window.

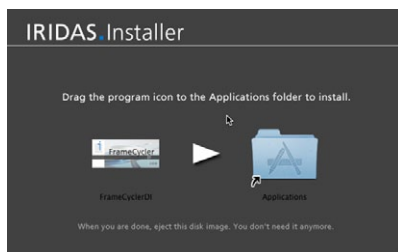
Mac OS X Installation

Step 1: Download and Install

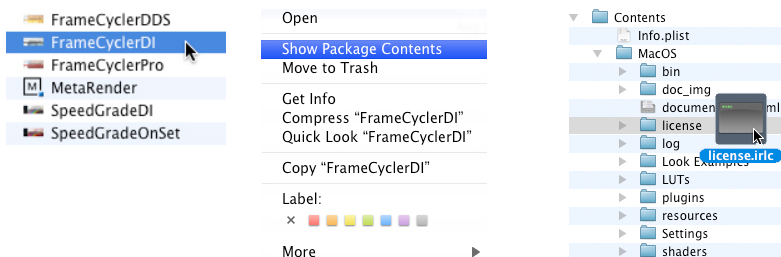
Download the Disk Image (.dmg) to your desktop and mount it with a double click. Launch the setup application.

Follow the prompts in the installer.

Note: If you have more than one hard disk on your system, choose the one which contains your Applications folder.



Step 2: Activate Your License



Navigate to your Applications folder and find FrameCycler.

Right-click (or Ctrl+click) on the product icon

Select "Show package contents" from popup menu and new finder window will open.

Double click on the contents folder to open it. Then open the MacOS folder.

Then copy or drag and drop your license file (license.irlc) into the license folder found there.

Close finder window

Step 3: Launch FrameCycler

To launch FrameCycler, click the icon in the Applications folder, or create an icon for the dock and launch it from there.

Windows XP Installation

Step 1: Download and Install

Download the setup executable to your computer.

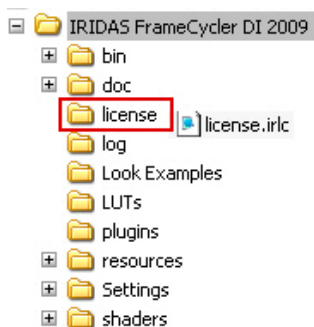
Double click on the setup executable and follow the instructions on the screen.

Step 2: Activate Your License

Copy the license file that has been sent to you via email to an empty folder and extract it there.

Open an Explorer window, then navigate to your Program Files folder and find your FrameCycler installation.

Then copy or drag and drop your license file (license.irlc) into the license folder found there.



Step 3: Launch FrameCycler

To launch FrameCycler, click on the start menu, click on All Programs, open the IRIDAS entry and find the submenu with your product.

Linux Installation

Step 1: Download and Install

- Download .tar.gz archive to your hard disk.
- Extract archive to folder (tar xvfz archive.tar.gz).
- Verify the bin subdirectory is executable (chmod 777)

Note: Because of binary compatibility problems between different LINUX distributions, please make sure you download the LINUX installer package that was created for your LINUX distribution. If your LINUX distribution is not supported, please contact us for help in selecting the right package.

Step 2: Activate Your License

Copy the license file that has been sent to you via email to an empty folder and extract it there. Then copy your license file (license.irlc) into the license subdirectory in your FrameCycler installation.

Step 3: Launch FrameCycler

To launch your product, start the shell script from the /bin subdirectory (for example ./bin/framecyclr)



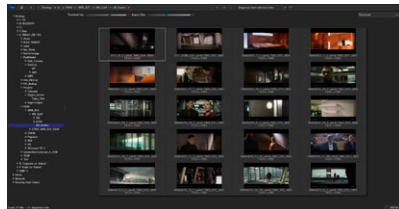
Getting Started

Getting to know the User Interface

There are 6 main areas in FrameCycler that you will use for assembling data, playback, quality control and rendering:

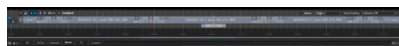
Desktop: The Browser

This is the area where you load individual frame sequences, RAW sequences, movie files or FrameCycler projects. The most basic way to get started is to locate the footage directory with the bread-crumb control, then double click on a thumbnail preview in the main part of the desktop to add it to the timeline. To open and close the desktop press <D> on your keyboard.



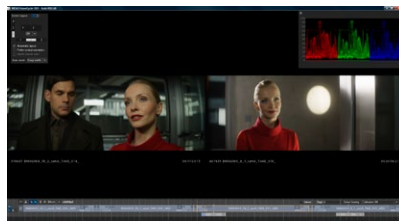
The Timeline

The timeline shows the assembly of clips from the desktop or FrameCycler project. It allows for applying a calibration LUT, working with different views of the edit and creating multiple playheads along the edit. The pull-downs for resample, crop, burn-in allow for customizing your image display.



The Viewport

The viewport is hidden under the desktop when you launch the application. Close the desktop to view the viewport. Use <CTRL + HOME> to adjust the size of the image to your screen size.



The FrameCycler Panel

Directly above the timeline is the panel for setting clip properties, annotations and matrix & LUT settings. This is also where the scopes will first show up when activated. You can change the size of the panel by positioning the cursor over the top of the panel, and dragging the highlighted line. Show or hide it with <SHIFT + S>



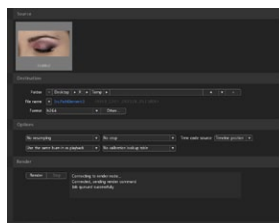
Browser Windows

Additional Browser Windows can be activated as needed. The .Look Browser shows .Look presets already created. The Reel Browser (use <ALT+R> to open and close it) shows all reels of the current edit and can be used to manipulate offsets Stereo 3D settings.



The Render Dialog

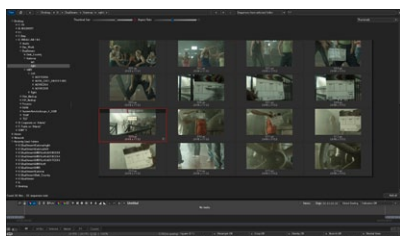
The render dialog allows for selecting the output format of choice as well as a number of options such as resample and crop or adding a preview LUT. Press the render button in the interface or use <CTRL + R> to open and close the render dialog.



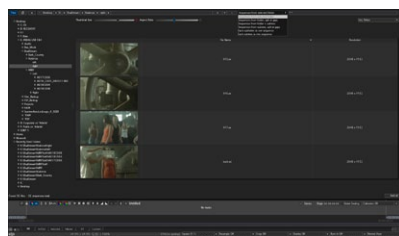
Loading Sequences: The Desktop

The first thing you see when you open up FrameCycler is the desktop. You can show or hide it at any time by pressing **< D >**.

The desktop can be used to navigate through folders with image sequences, movie files or RAW file formats. FrameCycler will present thumbnails in the main area of the desktop. Alternatively you can load existing FrameCycler projects (.ircp) or load an EDL to start the conform process.



Desktop: Thumbnail View (default)



Desktop: List Video

Loading a Single Sequence

Use the bread-crumb control to navigate to the correct folder on your drive or network.

If you prefer tree view navigation, turn on the tree view control (first button top left on the desktop).



Toggles the tree view

For easier viewing you can adjust the thumbnail size, drag the slider "Thumbnail Size" to the right to enlarge the thumbnails.



Thumbnail Size. Drag slider to the right to enlarge thumbnails on the desktop

If you want to only display data with a specific file extension or files starting with specific characters enter search criteria, such as file extensions in the top right field (e.g. "*.R3D").



Search Criteria.
Default is *.*

Double click on a thumbnail or select and drag it onto the timeline in order to add clips to the timeline. Close the desktop by pressing **<D>**. Press **<Space>** to start playback.

Loading Multiple Sequences

Open the desktop. Double click on a thumbnail or select and drag to the timeline to add the clip to the timeline. Repeat this with any additional thumbnail that you'd like to add to your timeline. Every item you add will get placed after the last clip on the timeline.

Loading Multiple Sequences at once

Open the desktop. Browse to the folder that includes sequences you want to bring to the timeline. Click "Add all" at the bottom of the desktop to add all files in order of appearance.



Tip: How to delete an existing timeline?

If you want to delete a timeline simply click on the "x" icon at the right end of the row of buttons above the clips on the timeline. You'll need to confirm that you want to delete the timeline.

Inserting a Sequence inbetween Clips

If you need to place a clip inbetween material that's on the timeline already drag and drop the thumbnail from the desktop onto the position on the timeline where you'd like to place it. A highlighted red line will appear once you're at the right position. Release the mouse.



Loading a FrameCycler Project

Open the desktop. Navigate to the folder that contains the .ircp file that you want to load. Double click on the thumbnail.

Playback

Once a sequence or FrameCycler project is on the timeline, it's ready for playback. Make sure to close the Desktop before you hit play (press **<D>** or click on the Desktop button to close it).

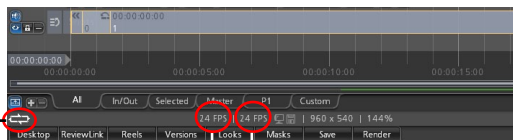
You can use the on-screen playback buttons at the bottom of the control console, or Hotkey shortcuts to control playback (for a full set of Hotkey shortcuts please refer to the last chapter).

To Play/Pause use the Space Bar. If you want to use step forward and backward use the right and left arrow keys.

To go to a different position on the timeline drag the playhead to the desired position.

Playback Mode

Press **<F6>** to switch modes:
Single Run, Ping Pong, Loop

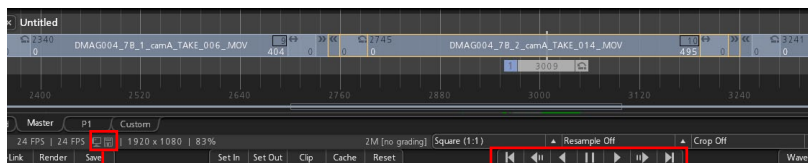


User-specified fps

To change the current playback speed, double click on the number and enter a new value. Press **< ENTER >** to apply it. Alternatively use page up and page down to change playback speed by 1 fps

Base frame rate (fps)

To choose a different base fps open the settings and select "playback"



Disk icon turns red when disk subsystem / CPU can not deliver real time decoding.

Display icon turns red when GPU cannot provide real-time performance

Playback Buttons

From left to right:

- Go to in point
- First position of current clip / edit
- Play backwards
- Pause
- Play forward

Positioning Images: The Viewport

The Viewport shows the image according to the position on the timeline. If multiple playheads are in use, the Viewport will display images according to your screen layout definitions. This can be up to 9 images in parallel. For further info on using multiple playheads please refer to the chapter Multiple Playheads.

You can change the magnification and the positioning of the images in the Viewport. Use Hotkeys for zoom to fit and zoom to 100%:

Zoom to fit: <Ctrl + Home>

Zoom to 100% <Ctrl + Shift + Home>

To zoom in and out of the image use <Ctrl + Mouse Wheel> or use <+> and <-> on the number pad.

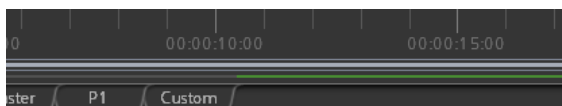
Real Time Playback

FrameCycler Pro supports precaching to achieve real time playback through RAM-buffering. The 32 bit versions of FrameCycler Pro can use up to 2 GB RAM, all 64 bit versions can take advantage of up to 80% of the total amount of RAM available.

This works different than real time direct-from-disk playback like FrameCycler DDS and DI offer as it requires you to identify the area which you'd like to play:

- load the sequence(s) you'd like to play
- press <ALT + I> to set in- and out-points according to available RAM
- press play. After the first run, all frames will be cached, you can now loop the selected frames in real time (and beyond). Changing the fps rate won't affect FrameCycler's ability to play real time as long as you don't change the in- and out-point.

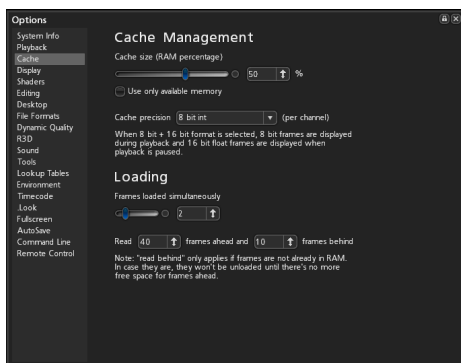
Which frames are in RAM is indicated by the green precaching line:



Adjust Settings for Precaching

Press <S> to open the settings, select Cache to increase or decrease the total amount of RAM you want to assign to be used by FrameCycler.

You can also change the amount of frames that will be precached as you add material to the timeline, enter values for "Read" to adjust the amount of frames FrameCycler will precache from the current position of the Master Playhead.





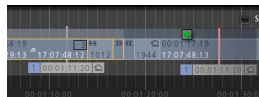
Working with the FrameCycler Timeline

The Timeline

In FrameCycler, all of your work is arranged on the timeline. Determine which part of the timeline you want to play by positioning the in- and outpoints.



The playhead shows which frame is being viewed at any given moment. To view more than one at the same time (for example to compare different parts of the same shot or scene) create additional playheads by control clicking the playhead and dragging second playhead to desired position: this will result in multiple pictures in the Viewport.

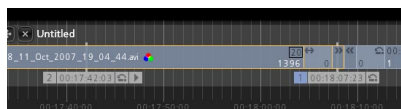


Typical setup: "All" view is selected. This shows all material placed on the timeline as well as all playheads placed on the timeline. The active playhead (in this example playhead 1) is marked blue. 2 Playheads are available, both are on display in the Viewport.

Timeline Elements

Playheads

One playhead is always present with each timeline. The Master playhead is marked blue.



In-Points and Out-Points

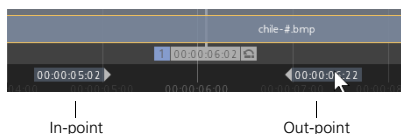
The default position is at the start and end of a clip or playlist, however you can move them manually with the mouse or by double-clicking on the frame number and entering a new number

Ctrl + Click on in or out point to restore default position.

Double click on a clip to set in and out points for that clip.

Use <I> to set In-point to current position of Master playhead.

Use <O> to set out-point to current position of Master playhead



Tracks

FrameCycler uses tracks on the timeline for:

- Footage Clips (blue)
- Audio (solid green)

Navigating along the Timeline

On a Timeline with multiple clips and multiple tracks you can navigate clip by clip and track by track. Navigating clip to clip changes your master playhead position on the timeline. Navigating up and down the tracks changes your selection that is reflected in the FrameCycler Panel.

The most important Hotkeys are:

< CTRL > + < SHIFT > + Arrow Key Right	Go to next clip
< CTRL > + < SHIFT > + Right Arrow Key Left	Go to previous clip
< CTRL > + < SHIFT > + Arrow Key Up	Switch to track above
< CTRL > + < SHIFT > + Arrow Key Down	Switch to track below

For a full list of Hotkeys please refer to the Hotkey chapter at the end of this document.



Complex Timelines and Advanced Viewing Features

Managing Complex Timelines

To keep an overview of a very long or complex timeline, FrameCycler offers a variety of timeline views.

In addition, you can collapse (and expand) timeline tracks manually or automatically when you want to focus on specific clips.

Press < **Tab** > to hide and show the timeline.

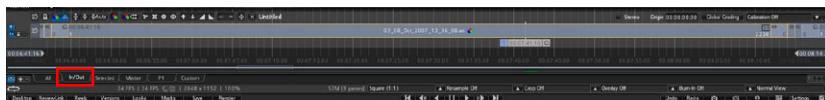
Timeline View Tabs

All View

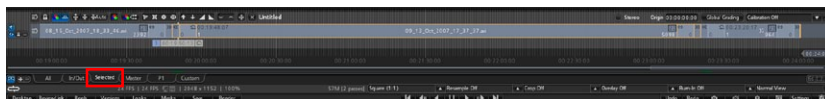
shows the entire timeline. If you have many clips they will appear compressed together.



In/Out shows the section of the timeline between the in- and out-points.



Selected displays the currently selected clip. A selected clip is highlighted with yellow outlines. If you're in this mode the playhead will move along one clip and keep the full length of the clip visible. As soon as the playhead hits the next clip the view will change and show the new clip in its entire length.



Master places the playhead in the center of the screen. During playback, the timeline rolls past the playhead which remains fixed in position. With multiple playheads, you can click on the **P1** or **P2** for the same effect.



Custom allows you to determine which part of the timeline you display. This mode works independently from playhead positions. Click the "+" button next to "All" to generate additional custom views. You can change the area of interest with the timeline zoom features.

Timeline Zoom

In Master, in P- and in Custom view mode you can zoom in and out by holding < CTRL > and scrolling the mouse wheel while your mouse pointer is over the timeline.

To speed up the zoom process hold down < CTRL > + < SHIFT > and scroll the mouse wheel.

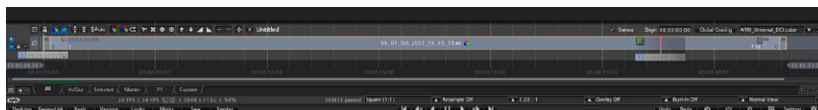
In custom mode you can additionally shift the entire timeline display to the left or the right, just hold down left mouse over any part of the timeline display underneath the clips and move to the left or to the right.

Working with Multiple Playheads

FrameCycler supports up to 9 playheads. You can use multiple playheads to create A/B and splitscreen scenarios, to compare the beginning of a shot with its end, to compare multiple versions of the same shot or to compare different episodes. Please refer to the Screen Layout chapter for details about arranging playheads manually in the Viewport.

Creating additional Playheads

Creating additional playheads is a simple drag and drop operation. Click on the handle area of the master playhead (the area to the right of the “1” marked in blue). Hold down < CTRL > and move away from the current position. You’ll see a semi-transparent copy of the playhead, above it a green “+” sign. Drop the playhead at any position along the timeline where you want it. At the release position there’s now a second playhead. If the screen layout is on “Automatic Layout” a second image will show in the Viewport.



Tip: to see both pictures completely use < CTRL + HOME >, to see them pixel accurate use < CTRL + SHIFT + HOME >.

If you want to create additional playheads you can drag and drop again from the first playhead or from the newly created 2nd playhead.

To delete additional playheads simply drag and drop them into the viewport. Click on a playhead’s handle icon to start the process. Note that you can’t delete the master playhead (marked blue).

The Screen Layout

To open the Screen Layout window click on the button with the 9 squares right next to “Settings” (button section bottom right). The default settings will show “Automatic Layout” turned on.

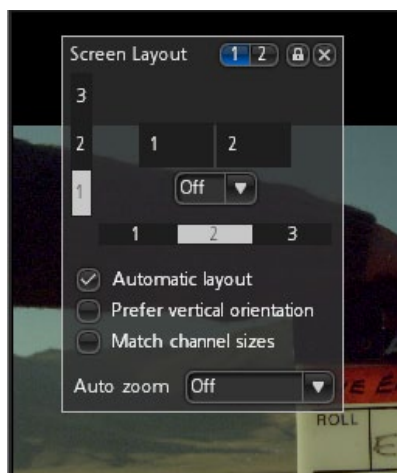
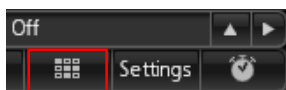
Automatic Layout will allow you to:

- Add Playheads and automatically display them
- Remove playheads and automatically reflect the change in the screen layout

While in automatic layout you can additionally turn on “Prefer vertical orientation”. This will add images for every additional playhead in vertical orientation.

You can also turn on “Auto Zoom”. This will automatically upscale all images along the timeline to the highest resolution placed on the timeline in either horizontal or vertical resolution (select “keep width” or “keep height” from the pull-down).

Note: all settings you make in the Screen Layout will not effect your render output settings.



Working with A/B and Splitscreen Views

Whenever you select 2 playheads you can choose between 3 view modes:

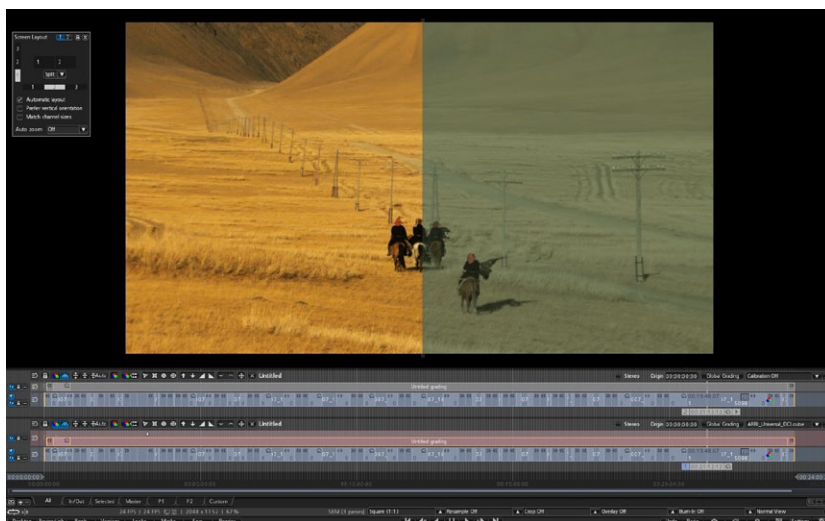
A or B: Select 1 and 1 in the screen layout. Use the pull-down for playhead numbers to select the playhead you'd like to display.

A/B side by side: Select 1 and 2 in the screen layout. This will display both playheads side by side. You can place them top to bottom by selecting 2 and 1. Alternatively push < F10 > to change the orientation.

Splitscreen: to go from A/B to splitscreen select "split" from the pull-down or press < F9 >

To change the orientation of the split press < F10 >

To move the split position hold down < CTRL > over the viewport and move the mouse.

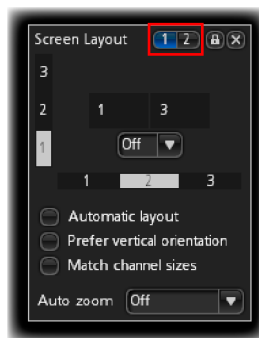


Splitscreen Layout: the operator has opened 2 timelines. Timeline 1 (with playhead 1) shows a calibrated and corrected image, timeline 2 a copy of timeline 1 without correction and calibration. Playhead 1 is the left half of the split. To show just the corrected picture instead of the splitscreen press < F9 >.

Working with alternating Screen Layouts

The Screen Layout allows for setting up two alternate layouts. You can use this to create a general purpose layout that will work for all standard viewing purposes and a second layout with either an advanced setup or a setup you alter whenever you need viewing options aside from "Automatic Layout".

By default layout 1 is active. To change to layout 2 click on "2". The button will turn blue. Changes you make in layout 2 will not affect layout 1, you can interactively switch between them.



Editing Features

FrameCycler offers editing features for splitting and trimming video and audio tracks

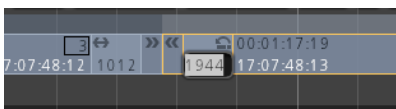
Split clips

You can split the clip currently selected at the position of the master playhead. Move the playhead to the position where you'd like to split the clip, then press <ALT + S> to split it.

Trim clips

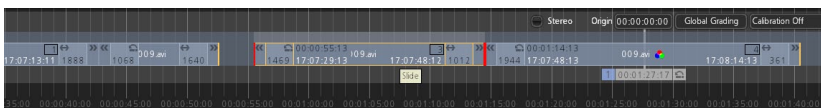
If you prefer to trim using your mouse, just work with the double arrow areas at the very beginning and end of each clip. It's easiest to accomplish this when the timeline is zoomed to show the current clip in detail, use either the timeline zoom in master view or simply use the selected view.

If you prefer to work with numerical input, just double click on in or out point of the current clip and change the offset with your keyboard. Press enter to commit the change.



Ripple all / remove gaps

If you trim a clip and want to remove the gap it creates between the current and all following clips, just drag the next clip (hold your mouse down over the center part of the clip) and move it until the gap is closed. FrameCycler indicates that it ripples clips by showing a thick red line between the clip you drag forward and the next clip on the timeline.

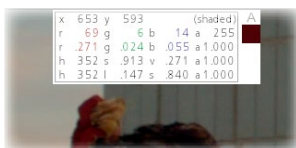




Advanced Features

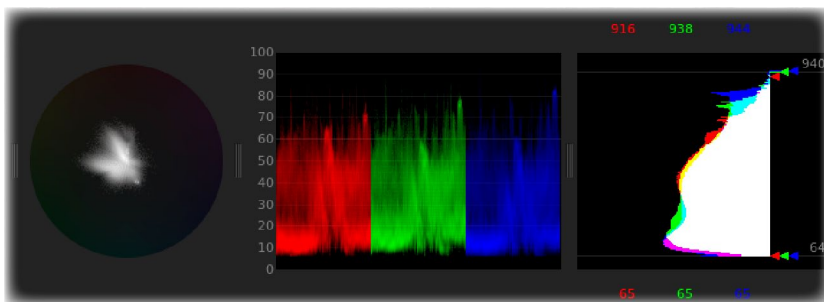
Image Analysis Tools

FrameCycler provides a variety of tools for checking your image. **Histogram**, **Vectorscope** and **Waveform** are part of the FrameCycler panel, use hotkeys to activate or deactivate. The **color picker** shows pixel color data, **channel views** allow you to check specific color channels. Use it, for example, to check for compression artifacts or noise in R,G or B channel.



Color picker

Click anywhere on image to show pixel color data



Vectorscope

Press < V >

Resize by dragging the handle to left or right

Waveform

Press < W >

Resize by dragging the handle to left or right

Histogram

Press < H >

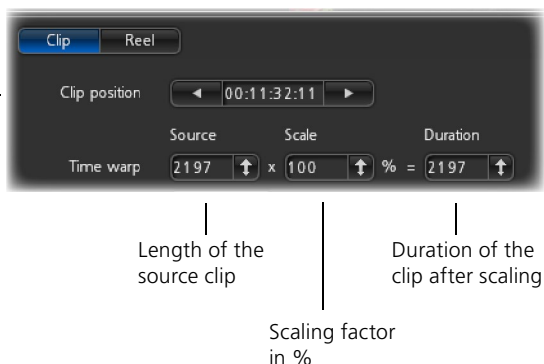
Resize by dragging the handle to left or right

Tip: You can adjust the ranges for the scopes, limit warnings and the way the scopes get updated during playback in the Settings. Press < S > and select Tools to make changes.

Clip Properties

The Properties Panel shows clip based info such as clip position on the timeline, time warp and display options to mirror the picture or reverse the clip.

Clip position
Click on left or right
button to change the clip
position on the timeline



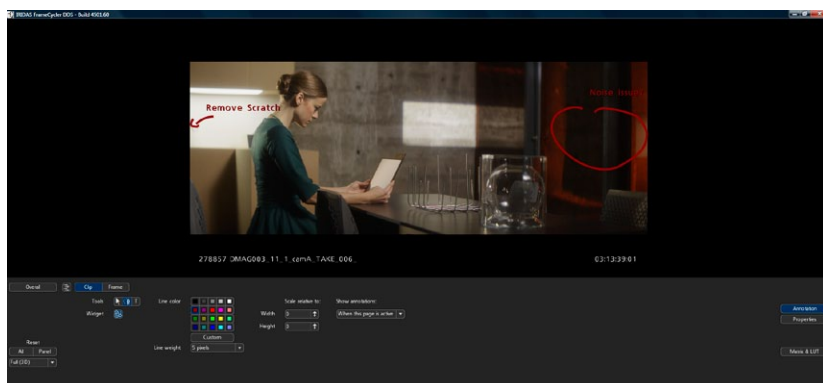
Timecode for current clip
based on source reel

Reverse playback
for current clip



Annotations

Use **Annotations** to save and exchange notes and drawings. Annotations are saved in the XML session script (.ircp). When the next user opens the script the annotations appear for review.

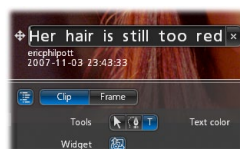


Adding Notes

Select the text tool and click on the image. Type notes into the text box. Color or size of type can be changed. Click elsewhere to close text box.

Click on the text again to edit or move note to another part of the image.

If you want this to appear on a single frame only instead of the full clip select "Frame" before making an annotation.



Removing Notes

To remove notes click on the delete sign (x) at the right of the text box.

To delete drawings, select the line and click on the delete sign (x) next to text tool button



.Look Files

FrameCycler can apply .Look files created with SpeedGrade OnSet or SpeedGrade XR/DI. .Look files are only a few kilobytes so they can easily be exchanged with others, such as the cinematographer, the director, VFX supervisors etc. .Look files can be applied and viewed in all current versions of FrameCycler and SpeedGrade. They can also be used with MetaRender to apply preliminary looks to offline editing files.

Applying a .Look

1. Select a clip
2. Open the **Look browser** by clicking on the Looks button or use < P >
3. Navigate from the browser tab to the folder containing the .Look(s) you want to use. Use the arrow keys to navigate.
4. click on a .Look, and press < ENTER > to apply the .Look.

The .Look Browser

The .Look Browser can be used to organize .Look presets. The default location for the first tab in the look browser is ../FrameCycler Pro/Settings/Looks. You can copy .Looks already generated with applications such as SpeedGrade OnSet into this folder, they will show up next time you open the .Look Browser. To open and close the .Look Browser click on the Looks button.

Click on the plus or minus signs to view or hide additional folders in the browser

Look Browser



Click to show or hide Look Browser

The LUT saved with every .Look file

The IRIDAS .Look format includes the full set of parameters required to reproduce the grading settings at any other position along the same project or a different project (or even on a different workstation).

Therefore an additional LUT is not required to communicate .Looks as long as you're using IRIDAS products.

3rd party products such Digital Fusion by Eyon or the Cinemage by Cine-tal require a LUT to be able to interpret the values you designed with your .Look. Therefore each .Look includes an additional LUT inside the same file. This eliminates the need to export to other formats.

The LUT size

In order to keep the .Look files as small as possible the 3D LUT inside the .Look has a size of 8x8x8. This is usually precise enough for all primary color changes. If you need a more detailed LUT you can change the size of the LUT that gets stored with every new .Look.

Related Links:

Cine-tal Cinemage Support

http://doc.irdas.com/index.php/Cine-tal_Live_Integration

Updating existing LUTs within a .Look file with new LUT size:

<http://doc.irdas.com/index.php/LUTranslator>



Customizing

Customizing FrameCycler

Many aspects of FrameCycler can be adapted to fit best into your workflow. This goes for the presets for Aspect Ratio, Crop, Resample and the Burn-in Overlays.

The presets that come with FrameCycler are designed to serve a wide range of workflows, so there are usually 2 scenarios where it's useful to apply changes:

- 1) The presets include more options than you need to be covered, so you drill them down to a much shorter choice of options.
- 2) Your current project requires a specific option that is not covered by industry standards, so you add a new choice to the template.

All presets are done as simple, human readable text files. It is easy to make changes. Presets are stored in the settings folder of FrameCycler.

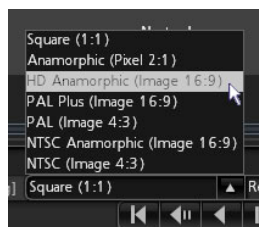
Note: you need to restart FrameCycler before any changes will get applied. It is recommended to create backup files of preset files you intend to change.

You can open all preset files with simple text editing applications such as Wordpad (Windows) or Textedit (OS X).

Aspect Ratio Menu: AspectRatio.fcps

What it does: if you are using a special pixel aspect ratio, for example for anamorphic frames, you can choose between two kind of presets in the pixel aspect ratio menu or add additional presets to the menu.

Changing the pixel aspect ratio is done in the display in real-time. Unlike resampling, this command does not require reloading the frames into RAM.



How to change it: to add custom aspect ratios to the menu open AspectRatio.fcps. This is how it looks in Wordpad or Textedit:

```
Anamorphic (stretch 2:1)    2:1
Anamorphic (squash 1:0.5)  1:0.5
```

To add a custom preset simply copy an existing entry and replace the part before the TAB with the display name for the menu you'd like to use, then replace the actual aspect ratio after the TAB with the aspect ratio you'd like to add. If you'd like to add 1.33:1, this would look like this example:

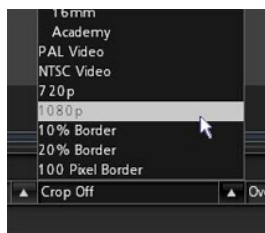
```
AVID 1.33 (1.33:1) 1.33:1
```

After adding a custom preset save and close the file. The new preset will be available next time you launch FrameCycler.

Crop Menu: Crop.fcps

What it does: The Crop Menu allows you to resize your frames by cropping away part of the image. This can be useful for removing black borders or to check how the sequence will appear on different display devices.

After cropping, the image width or height will always be less than (or max. equal to) the actual frame size. FrameCycler will not accept larger values - this would be a job for a Pan & Scan track that also allows for scaling and repositioning.



How to change it: To customize the Crop Menu open Crop.fcps with a Text Editor. Crop.fcps is located in the Settings directory of FrameCycler.

You can simplify the menu by taking out entries that are not relevant to your workflow or current project. A crop preset always includes the actual crop value and any number of Display Names. If one Display Name is sufficient you can make the Display for 2.35:1 much shorter. The Original preset is:

```
2.35 : 1
CinemaScope 2.35 : 1
UltraPanavision 2.35 : 1
Panavision 2.35 : 1
Technirama 2.35 : 1
Todd-AO 2.35 : 1
Super 35 2.35 : 1
```

The shortest version for this preset would be:

```
2.35 : 1
CinemaScope 2.35 : 1
```

You can also use crop values based on pixel values, Crop.fcps already includes the following:

```
PAL Video W720 H576
NTSC Video W720 H486
720p W1280 H720
1080p W1920 H1080
```

To add an additional pixel value based crop format simply add one line to this list, put a Display Name first, press TAB, then put a value for W and for H.

A third method of defining crop values in Crop.fcps is using values in percentage or absolute pixels. This method allows to define values for left, top, right and bottom individually:

```
10% Border 10% 10% R10% B10%
20% Border 20% 20% R20% B20%
100 Pixel Border 100 100 R100 B100
```

If you'd like to crop 200 pixels from top and bottom, 140 from left and right, add this line to Crop.fcps:

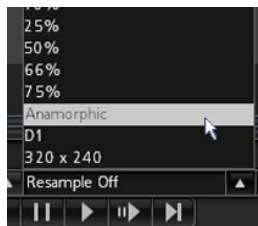
```
200/140 Pixel Border 140 200 R140 B200
```

After adding a custom preset or changing the list of presets save and close the file. The updated list of presets will be available next time you launch FrameCycler.

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Resample Menu: Resample.fcps

What it does: The Resample Menu allows you to change the resolution of a sequence. In contrast to the Aspect Ratio or the Zoom function, the Resample function actually changes the number of pixels in the image. If you apply a preset in the resample panel, the image cache is cleared and the frames are reloaded.



How to change it: to add custom resample values to the menu open Resample.fcps with a Text Editor.

AspectRatio.fcps is located in the Settings directory of FrameCycler. A custom preset can be added in either percentages or pixel data. To add a preset for resampling to 93.75% (2K -> HD) to the menu add the following line to Resample.fcps:

```
HD to 2K      93.75% 93.75%
```

The same result can be achieved by using pixel data - this will produce a result that is independent of the resolution of the source format:

```
1080p  1920 1080
```

After adding a custom preset save and close the file. The new preset will be available next time you launch FrameCycler.

Burn-in Menu: .burnin files

The preset files to create burn-in data are slightly more complex than any of the .fcps files. You can select the kind of data on display as well as its position and size on screen. To allow for simple management of such presets, burn-in presets are stored in a separate folder in the settings directory, each .burnin files shows up as one selection in the Burn-in Menu in FrameCycler.

What it does: You can use Burn-In templates to add text and graphical elements to your frames at load time (and for rendering) . Placeholders are replaced with the current file name, time code etc.

Using the Standard Burn-In

If you choose "Standard" from the list, three elements will be superimposed on the footage displayed in the viewport:

- Current frame number
- Location on disk of current sequence
- Native Time Code of current frame (if this field doesn't exist in the header of the file format you're using there will be no display of Time Code information)

The location of all three elements is always absolute to the actual image size. If you want to be sure you see all burn-in elements, zoom to fit using < Ctrl + Home >

Using the All Fields Burn-In

The "All Fields" Burn-In will display all data in the header of the file that is on display in the viewport. This view is usually used for quality control purposes but also gives the full representation of Placeholders that can be used to create a custom Burn-In template.

Creating a Custom Burn-In

The easiest way to generate a customised Burn-In is to open the Standard Burn-In and change it according to your needs. The Standard Burn-In file is located in your FrameCycler folder under settings/burn-in.

Open the file Standard.burnin with a Text Editor. Save the file under a different name inside the same folder and then start to make changes (please refer to the paragraph below on how to change the file). Next time you launch your IRIDAS application the new template will show in the pull-down for Burn-Ins.

Elements of a .burnin file

If you'd like to use a different frame size as reference for placing the burn-in content you can make changes in the first section of the .burnin file:

```
<width>"2048"</width>  
<height>"1556"</height>
```

For using the same file for full HD content please change this section to:

```
<width>"1920"</width>  
<height>"1080"</height>
```

The next section includes the actual Parameters shown in the viewport. Every element is called a textnote. In Standard.burnin the first textnote is

```
<textnote>  
  <text>"{Src.FrameNo}"</text>  
  <textsize>"2"</textsize>  
  <textcolor>"255,255,255,255"</textcolor>  
  <backgroundcolor>"0,0,0,0"</backgroundcolor>  
  <arrow>"0"</arrow>  
  <position>"40,40"</position>  
</textnote>
```

If you want to change the size you can select from presets 0 (small) to 2 (large) or enter pixel values. A much larger text than preset 2 can be created using the pixel value method, e.g.:

```
<textsize>"60px"</textsize>
```

To change the color from white to black change the text color to (all color values are listed in RGBA)

```
<textcolor>"0,0,0,0"</textcolor>
```


The background color is defined in RGBA as well, this example would give a solid black bar:

```
<backgroundColor>"0,0,0,255"</backgroundColor>
```

To change the position of a text note just use x,y values, this example would place the text note above the image:

```
<position>"40,-40"</position>
```

Adding a new Text Note

To add a new text note simply copy an existing text note in the standard.burnin and paste it after the last text note. Change the position next to make sure the new text note is not overlapping with any existing text note. Then replace the Placeholder with the new Placeholder you want to add. The full list of Placeholders for the file format you'd like to use is available in the All Fields view inside FrameCycler, the item in front of the colon can be used as a Placeholder in a text note.

Here's a list of typical Placeholders that would apply to formats such as DPX, CIN, TGA:

Src.FileFormat

Src.SequenceName

Src.SequencePath

Src.FrameNumber

Timeline.Position

Timeline.FrameRate

If you'd like to add a text note for Playhead Position this could look like this:

```
<textnote>
  <text>"{Timeline.Position}"</text>
  <textsize>"2"</textsize>
  <textcolor>"255,255,255,255"</textcolor>
  <backgroundcolor>"0,0,0,0"</backgroundcolor>
  <arrow>"0"</arrow>
  <position>"40,100"</position>
</textnote>
```

After adding or changing text note elements, save the .burnin file. The new template is ready to use and will show up in the pull-down for Burn-Ins next time you launch FrameCycler.



Rendering

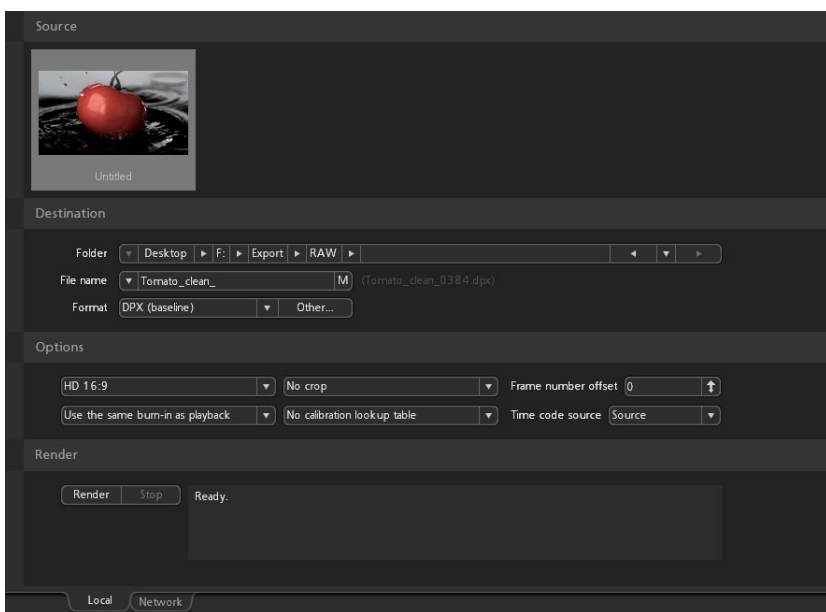
Simple Rendering

This section describes how to render an entire timeline or part of a timeline with the internal render engine.

1. Select the area of the timeline you want to render. Set an in and out point along the timeline to define the area for rendering.



2. Open the render dialog (click on the Render button in the user interface or press CTRL + R).

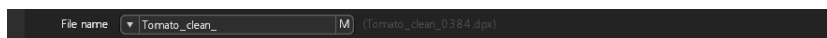


3. Select the output path



4. Select the file output name

If you want to create frame sequence output, padding will be added automatically. It is recommended to use an underscore after the actual frame sequence name. A preview of the resulting output name is displayed in 50% grey next to the field for entering the output name.



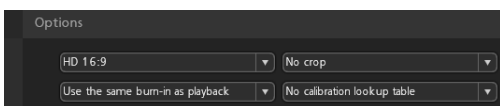
5. Select the file output format

FrameCycler comes with output presets for the most popular frame sequence formats and Quicktime formats. FrameCycler interprets internally (see also the chapter on supported file formats for playback and rendering). Select a format from the list or click on “Other” to see a list of available formats and output options.



6. Choose options for resample, crop, burn-in and calibration LUT

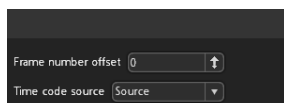
By default resample, crop and burn-in will show “use the same as playback”, thus making this process wysiwyg. The calibration LUT is set to use no LUT since usually the calibration LUT shouldn’t be part of the rendering process. If you require a LUT to be part of the output (e.g. for sending it to devices that can’t handle LUTs), select the LUT that should be used for rendering.



7. Select frame number offset and TimeCode option (selected formats only)

If the output format is a frame sequence type format, you can select an offset for the padding for the sequence. Type the offset in frame numbers.

If the output format supports TimeCode as header information (this will always work for DPX, CIN, also for Quicktime if it is selected as an option for the respective Quicktime codec).





Stereo 3D Workflow

DualStream 3.0

The 3rd generation of IRIDAS DualStream support for working with Stereo 3D material includes support for virtually every display technology available today. A list of the most common technologies and the required changes in your FrameCycler setup starts this section about using DualStream.

To take advantage of FrameCycler's capability to automatically load left and right eye footage be sure to adopt one of the file naming conventions listed in the section after the display setup scenario.

Stereo 3D Setup Scenarios

FrameCycler Pro can be used on a single screen with both 3D image and UI on one display.

FAQ: do I need to enable the stereo settings in the NVIDIA Control Panel?

FrameCycler can drive most current Stereo 3D displays directly, changing the NVIDIA settings is not required except for active shutter glasses that are directly attached to the NVIDIA Stereo DIN connector and systems that require one DVI input per channel.

3D DLP systems

Samsung and Mitsubishi both offer 3D DLP products. The monitors run at 120 Hz, sizes vary between 48" and 73".

To view stereoscopic content active shutter glasses are required. The stereo mode in FrameCycler to drive these monitors is called "pattern", select it from the stereo mode list in the application's settings under Display.

JVC and Hyundai 3D TV systems

These 46" Stereo 3D Displays are line-by-line systems (interlaced scanline stereo).

Select "interlaced scanlines" in the stereo display mode selector under Settings/Display to enable Stereo 3D viewing on the JVC and Hyundai 46".

Dual DVI stereo

A number of stereo display setups require 2 DVI outputs from the workstation. Each output carries one eye only. This applies to:

- Planar stereo screen (with passive glasses, linear polarization)
- Dual Projection (with passive glasses, linear or circular polarization)
- L/R side by side setups using 2 displays

Basic Dual DVI Setup: NVIDIA OpenGL Stereo

Requirements:

- Windows XP32 / XP64
- NVIDIA QuadroFX
- certified driver for OpenGL Stereo

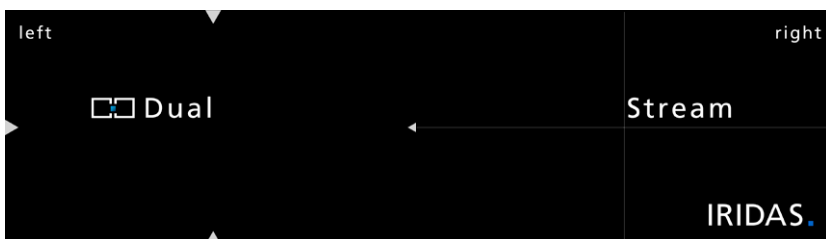
This setup allows you to send left and right image to 2 separate DVI outputs. The user interface will appear on the stereo output on both eyes. To enable OpenGL Stereo access the NVIDIA control panel, set both displays to NVIDIA clone mode. Then change the following settings under "3D Performance Settings":

- OpenGL Stereo: ON
- Tripple Buffering: ON

Restart the machine after making these changes. Then open the settings in FrameCycler (push "S"), choose Display. Select "Shutter Glasses" from the stereo pull-down menu. Restart the application.

Testing your Stereo Setup

Before you start working on a new project it's recommended to run the test file you'll find in the stereo folder of your FrameCycler installation. This file allows for avoiding inversed stereo settings on your display. To load the files, click the stereo checkbox on the timeline. Then open the desktop, find the folder stereo in your FrameCycler installation. Load either left or right (FrameCycler will automatically load both eyes). Hit <ALT + D> to put the images in side-by-side view. You should see both images for left and right side-by-side:



Hit <ALT + D> again to turn on the selected stereo mode and turn on your glasses. "left", "Dual" and the 4 arrows should only be visible to your left eye. "right", "Stream", the 4 lines and the IRIDAS logo should only appear on right eye. If this is inversed check the following:

- Active shutter glasses: some emitters have a switch to inverse stereo. Reverse the settings of the emitter.
- Active shutter glasses on Samsung and Mitsubishi displays: both the emitter as well as the display itself have switches to inverse stereo. Refer to the user manual, be sure both don't use inversed settings
- Passive systems (such as the JVC 46"): These systems don't have a switch to inverse stereo. If the image seems to be inverted, it's easiest to swap eyes in the settings of FrameCycler. Open the settings, choose Display, use the checkbox for "swap eyes".

Organizing Stereo 3D Footage

DualStream applications automatically find the corresponding footage for the other eye (stereo) or other channel (ARRI Mscope) when you drop a sequence into the timeline. In order for this to work, the sequences need to use either one of the following naming conventions in the same position in their fully qualified path:

- "left" and "right"
- "Left" and "Right"
- "LEFT" and "RIGHT"
- "_L" and "_R"
- "lf" and "rt"
- "LF" and "RT"
- "CamA" and "CamB"
- "LinkA" and "LinkB"
- "Link_A" and "Link_B"

The folder naming that includes the Link definition is usually used for Mscope only.

File Path Examples:

Scenario A: both left and right eye are on the same Volume:

- X:\Footage\left\Shot\Version\Test\frame#.dpx
X:\Footage\right\Shot\Version\Test\frame#.dpx
- X:\Footage\left_eye\Shot\Version\Test\frame#.dpx
X:\Footage\right_eye\Shot\Version\Test\frame#.dpx
- X:\Footage\left\Shot\Version\Test_L\frame#.dpx
X:\Footage\right\Shot\Version\Test_R\frame#.dpx
- X:\Footage\left\Shot\Version\Test\left#.dpx
X:\Footage\right\Shot\Version\right#.dpx

Scenario B: left and right eye are stored on 2 discrete Volumes:

Running OS X please ensure to use Volume Names LEFT and RIGHT. Running Windows please use R:\ and L:\ drive letters.

- L:\Footage\Shot\Version\Test\frame#.dpx
- R:\Footage\Shot\Version\Test\frame#.dpx

Note: Make sure you don't have any of the replacement wildcards as part of your regular filename, otherwise they will be replaced. These examples would not work:

- X:\Footage\left\Shot\Version\Test\Compositing_Shot_left_Lowres.#.dpx
- X:\Footage\right\Shot\Version\Test\Compositing_Shot_right_Lowres.#.dpx

(The _L in the left eye filename's _Lowres would be substituted with _R, and result in right right_Rowres.#.dpx which cannot be found)

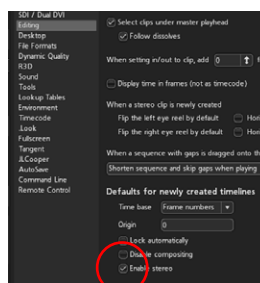
Working with Stereo 3D Footage

To work with a stereo timeline, enable the Stereo checkbox in the timeline.



Now use the desktop to add a shot or multiple shots from either left or right eye branch to a new timeline. The corresponding other eye will automatically be loaded.

Note: If you mainly work in stereo, you can change the default for new timelines by checking the “Enable Stereo” checkbox in the Editing settings. Now newly created timelines are stereoscopic by default.



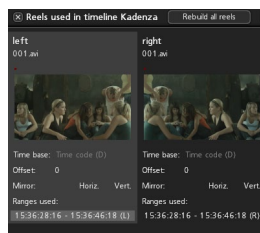
Applying Basic Stereo Parameters

Verify left and right eye pairs

To verify that both eyes are loaded, open the Reel Browser (ALT + R) .

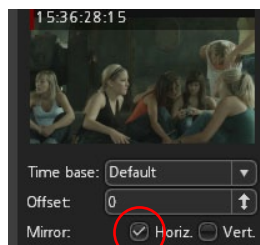
Each shot that you add to the timeline will appear as left and right eye pair.

Adjust the basic stereo parameters next. If the footage is recorded with a side-by-side rig, you can skip the next step.

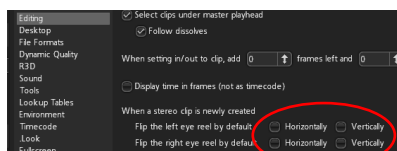


Adjust horizontal and vertical mirror

If the footage is recorded with a mirror rig, invert the horizontal or vertical mirroring with the checkboxes in the Reel Browser. Check the footage to see which eye needs the inversion.

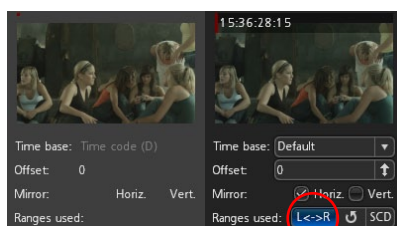


Tip: If the majority of your clips is flipped, you can change the defaults before adding them to the timeline. Open the Settings (press <S>), select Editing. Use the checkboxes for vertical or horizontal mirroring. All clips you add to a timeline after changing these presets will be loaded flipped according to your new settings. You can still make changes in the Reel Browser after your have added the clips.

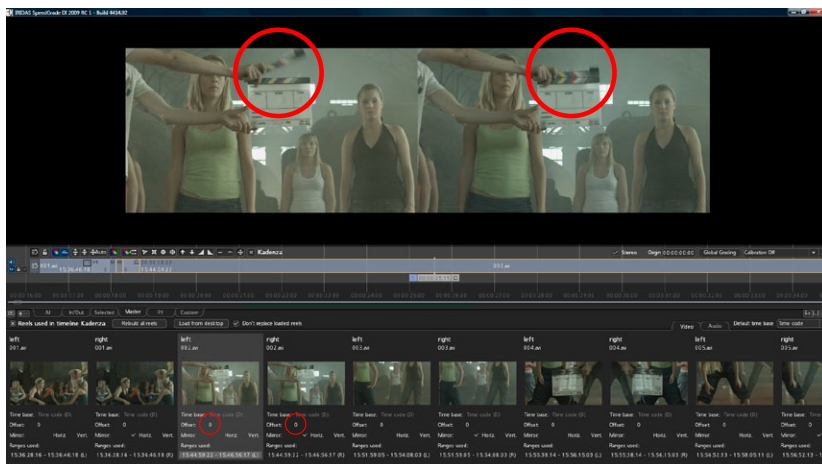


Swap eyes

If one of your reels has swapped left and right eye, you can correct for this with the Left / Right swap button. Hover the mouse over the reel you want to swap, the L<->R button becomes visible. Click it to swap eyes.



Note: Make sure your display is set up correctly. The easiest way to verify this is to load the left/right clip available in stereo subdirectory of your program installation. If left/right are reversed, flip the eyes in the display setup as discussed in the previous chapter.



Adjusting Temporal Offsets

A temporal offset occurs when the cameras were not started at exactly the same time.

If your material has been prepared already and temporal offsets have been removed, skip this step.

It is easiest to make adjustments for temporal offsets while the stereo image is displayed side-by-side. Press Alt+D to toggle side-by-side and regular stereo view. Keep the Reel Browser open and close all other browsers.

Play the shot you want to adjust. If there's a clapperboard at the beginning or end of the shot, play until you see the clapperboard closed in either left or right eye. Use frame step forward and backward (left and right arrow keys) to get this narrowed down. Identify how many frames offset exist between left and right eye. You can interactively move the offset by clicking and dragging the spinner button to the right of the offset edit box. In our example, you'd have to set +1 for left eye.

Tip: if there's no clapperboard present, find a frame with action that only lasts for one frame. If possible, use a clapperboard with time code display to help the process of straightening temporal offsets.

Working with RAW files

If your input material is RAW, make sure to apply RAW adjustments (such as .look files for D21 or SI2K or Phantom or set basic paramteres for .R3D).

The example images used for this chapter are recorded with 2 SI2K cameras as Cineform RAW. For this workflow simply open the .Look browser, select the 5600 or 3200K preset.



All RAW adjustments should be applied to the basic video layer. This will ensure that they will get applied to both left and right eye automatically.



File Format Support

FrameCycler Pro File Format Support

FrameCycler Pro supports the following industry standard file formats.

Format	Read	Write
Cineon (.cin)	Yes	Yes
DPX, DPX 2.0	Yes	Yes
Targa (.tga)	Yes	Yes
TIFF	Yes	Yes
Pixarlog TIFF	Yes	No
Floating Point TIFF	Yes	No
Maya IFF	Yes	Yes
Lightwave IFF	Yes	Yes
Softimage PIC	Yes	Yes
Wavefront RLA	Yes	Yes
Windows Bitmap	Yes	Yes
Gif	Yes	No
Jpeg	Yes	Yes
YUV	Yes	No
OpenEXR	Yes	No

Recommended Quicktime Formats

FrameCycler can utilise the Quicktime System for Windows XP32 and OS X.

Please note that there is no Quicktime 64 as of Q4 2009. If you're running Windows XP64, you'll need to run a 32 bit version of FrameCycler to be able to utilise the Quicktime System.

Codecs available to the system can usually be put to work with FrameCycler. However, not all codecs are suitable for working real time and may introduce issues such as gamma shifts, therefore FrameCycler supports the following Codecs internally. These are recommended for both playback and rendering.

- AJA Kona 10-bit Log RGB
- AJA Kona 10-bit RGB
- AJA Kona 10-bit YUV
- AJA Kona 8-bit YUV
- Apple Uncompressed 8-bit RGB
- BlackMagic 10-bit RGB
- BlackMagic 10-bit YUV
- BlackMagic 8-bit YUV

DNxHD and Prores

To put DNxHD and Prores to work, you'll need to install the Quicktime codecs provided by Avid and Apple. Please check our online documentation area to get latest recommendations on Quicktime versions and Codec updates:

http://doc.irdas.com/index.php/Quicktime_Codecs

RealTime RAW 3.0 Support

FrameCycler supports the following digital film camera formats:

ARRI D21 (.ari)	incl. exposure LUT and matrix support
ARRI D21 S.Two RAW (.dpx)	The ARRI D21 RAW files recorded on an S.Two Digital Film Recorder (.dpx file extension) are supported. To enable the ARRI .dpx RAW files open the settings dialog, select File Formats and toggle the checkbox for SMPTE DPX / ARRI D21 RAW.
Cineform (.avi/.mov)	
DALSA Origin 4K RAW (.dpx)	
Phantom HD/4K (.cine)	For older Phantom RAW files with the .cin extension, enable the corresponding flag in the File Formats tab of your user settings.
REDCode RAW (.R3D)	FrameCycler supports R3D via the RED SDK. Dynamic Qualities allow for adjusting playback parameters such as resolution to achieve faster loading for playback.
Silicon Imaging SI 2K/SI Mini (Cineform RAW .avi/.mov)	Includes matrix and .Look metadata support.
Silicon Imaging SI 2K/SI Mini (Uncompressed .siv)	Includes matrix and .Look metadata support.
Weisscam HS-1 RAW (.wcr)	
Weisscam HS-2 RAW	Support for .wcr and a subset of the DM2 Digimag



Command Line

The FrameCycler Command Line

FrameCycler supports an extensive command line interface.

Use the command line to launch the application with specified footage loaded, apply playback parameters (such as resampling, playback speed etc.), and queue sequences for dailies. These functions can, of course, all be accessed from the user interface, but the command line offers advantages for some situations:

- For experienced users, it can be quicker than using the GUI to load shots and apply parameters
- Special parameters (such as a custom crop), which are not available from the presets in the dropdown menus, can be set.
- It allows for the use of scripting to integrate in-house workflow tools with FrameCycler.

You can use the IRIDAS Product Launcher tool to apply a command to a running instance of FrameCycler or SpeedGrade.

Accessing the Command Line

Windows XP

Access the command line by clicking on the Start button and then clicking the "Run..." icon. Type cmd into the box, click OK, and the command line prompt appears. Enter the file path for the location of the application (SpeedGrade, FrameCycler or MetaRender) and press enter. You are now ready to use the command line.

Example:

```
C:\>"Program Files\IRIDAS FrameCycler Professional 2007\bin\FramCycler.exe"
```

Linux

Linux users need to run the terminal (if you are in a graphical environment). At the prompt, navigate to the directory containing your product and you are ready to begin.

Mac OS X

Start up the Terminal in the Utilities folder (inside the Applications folder). Enter the file path for your installation and you are ready to start.

The Anatomy of a Command

The core command line for all IRIDAS products consists of two parts:

[SequenceName] [Range/Offset Options]

For Example

```
FrameCycler C:\footage\frame#.dpx 1-100 -sC:\footage\test.aiff
```

The SequenceName is the fully qualified path to a frame in the sequence – or an abbreviated name such as seq#.tga. The application automatically detects all frames in a sequence and treats it as a whole.

Range refers to the number of frames which will be affected by the command. It is specified as FirstFrame-Lastframe. For example 10-100 will affect the sequence from frame 10 through to frame 100.

Note: If you specify just one number, the application will interpret this as the first frame and the command will affect the rest of the sequence from that point on.

If you specify a range that extends beyond the actual number of frames, or if frames are missing, you will see the “failed to decode frame” image displayed as a placeholder for these frames.

To reverse a clip, simply specify a reverse range:

```
FrameCycler C:\footage\frame#.dpx 100-1
```

An Offset can also be specified using -o followed by a positive or negative number denoting the desired frame offset. The frames will be moved in the time line by the specified offset. Negative offsets cut the specified number of frames from the beginning of the sequence.

Related Links

The Core Command line:

http://doc.irdas.com/index.php/Core_Command_Line

Product Launcher Tool:

http://doc.irdas.com/index.php/Product_Launcher

The FrameCycler Command Line:

http://doc.irdas.com/index.php/FrameCycler_and_SpeedGrade_Command_Line



Hotkey Overview

FrameCycler Hotkeys

Application Hotkeys

Help	< F1 >	Displays hotkey shortcuts and functions
Settings	< S >	Shows or hides the settings window
Desktop	< D >	Shows and Hides the Desktop
Save Timeline	< CTRL+S >	Saves the current timeline and all its components.
Render	< CTRL+R >	Shows or hides the render window
Close	< ALT+F4 >	Closes application

Fullscreen	< ALT+Enter > or < F >	Switches fullscreen mode on or off.
Exit Fullscreen	< ESC >	Exits the fullscreen mode.
Timeline	< Tab >	Shows or hides all timelines.
.Look Browser	< P >	Activates the Browser for .Look presets
Reel Browser	< Alt + R >	Shows or hides the Reel Browser
Metadata Display	< ALT+M >	Toggles the MetaData display
Toggle SDI Mouse Focus	< CTRL+Tab >	Toggles the mouse between main display and SDI display.
Toggle Lock Windows	< Scroll Lock >	Locks or unlocks the all windows in the application.
Dual DVI Window	< SHIFT+CTRL+ALT+D >	Toggles the Dual DVI mode

Playback Hotkeys

Play/Pause	<Space>	Starts and stops playback
Unload All	< SHIFT+CTRL+F5 >	Unloads all frames
Reload Changed Frames	< F5 >	Reloads all changed frames from disk.
Unload Frames Outside of In/Outs	< SHIFT+F5 >	Unloads all frames that are not in the current in/out area.
Reverse Playback	<SHIFT+Space>	Reverses playback direction
Step Back	<Cursor Left>	Steps back a single frame
Step Forward	<Cursor Right>	Advances a single frame
Decrease FPS	<PgDn>	Decreases the frames per second value by 1fps
Increase FPS	<PgUp>	Increases the frames per second value by 1fps
Next FPS Step	<Numpad •>	Doubles frames per second
Prev FPS Step	<Numpad />	Halves frames per second
Playback Mode	<F6>	Switches between single play, loop, and ping-pong playback modes
Toggle AutoMirror	<CTRL+M>	Sequence flipped when the end point reached
Mirror Horizontal	<M>	Mirror image horizontally
Mirror Vertical	<SHIFT+M>	Mirror image vertically.
Toggle Backward	< , > (Comma)	Toggles backward playback
Toggle Forward	< . > (Period)	Toggles forward playback

Pan and Zoom View Hotkeys

Pan Down	< SHIFT+Cursor Down >	Moves image down in viewing area.
Pan Up	< SHIFT+Cursor Up >	Moves image up in viewing area.
Pan Left	< SHIFT+Cursor Left >	Moves image left in viewing area.
Pan Right	< SHIFT+Cursor Right >	Moves image right in viewing area.
Reset Pan	< SHIFT+Home >	Centers image in the viewing area.
Toggle Match Channel Sizes	< ALT+Home >	Makes all channels the same size while preserving their aspect ratio.
Zoom In	< Numpad + >	Increases the zoom level.
Zoom Out	< Numpad - >	Decreases the zoom level.
Zoom to 100%	< SHIFT CTRL Home >	Adjusts the zoom level to 100%
Zoom to Fit	< CTRL+Home >	Adjusts the zoom level so the entire image fits on screen.
Show all Viewports	< SHIFT+CTRL+ALT+Home >	Ensures that all viewports fit within the current viewing area

Splitscreen View Hotkeys

Change Split	< F9 >	Changes the current split screen mode.
Change Split Orientation	< F10 >	Changes the orientation (vertical/horizontal) of current split screen mode.
Flip Split Channels	< F11 >	Switches the channel positions in the current split.

Timeline and Navigation Hotkeys

Next Clip	< CTRL+ALT+Cursor Right >	Sets the master playhead to the beginning of the next clip.
Prev Clip	< CTRL+ALT+Cursor Left >	Sets the master playhead to the end of the previous clip.
Center Master Playhead	< CTRL+Numpad 0 >	Moves the master playhead to the center of the timeline.
Move Master Playhead to Selected Clip	< ALT+Numpad 0>	Sets the master playhead position to the start of the selected clip.
Select Clip Below	< SHIFT+CTRL+Cursor Down >	Selects the closest clip below the selected clip.
Select Previous Clip	< SHIFT+CTRL+Cursor Left >	Selects the closest clip to the left of the selected clip.
Select Next Clip	< SHIFT+CTRL+Cursor Right >	Selects the closest clip to the right of the selected clip.
Select Clip Above	< SHIFT+CTRL+Cursor Up >	Selects the closest clip above the selected clip.
Isolate Current Clip	< CTRL + Spacebar >	Sets in/out points to current clip. Press again to restore previous in/out positions
Isolate Previous Clip	< CTRL + Left >	Sets in/out points to the previous clip
Isolate Next Clip	< CTRL + Right >	Sets in/out points to the next clip
Lock Timelines	< SHIFT L >	Locks all timelines.
Unlock Timelines	< SHIFT+U >	Unlocks all timelines.

DualStream Hotkeys

Toggle side-by-side Stereo View	< ALT + D >	Toggle between regular Stereo and side-by-side view
Swap Stereo Eyes	< ALT+X >	Swap stereo eyes, affects display output only

In/Out Point Hotkeys

Toggle In-Point	<SHIFT+I>	Sets or resets the inpoint at the current master playhead position.
Toggle Out-Point	<SHIFT+O>	Sets or resets the outpoint at the current master playhead position.
Go to In-Point	<I> or <Home>	Moves the master playhead to the current in-point.
Go to Out-Point	<O> or <End>	Moves the master playhead to the current out-point.
Reset In/Out Points	<SHIFT+CTRL+ALT+O>	Resets the in and out points to default positions.
Unload Frames Outside of In/Outs	< SHIFT+F5 >	Unloads all frames that are not in the current in/out area.

Editorial Hotkeys

Split Clips	< SHIFT+ALT+S >	Splits the currently active clip and all clips directly above it at the master playhead position.
Split Clip	< ALT+S >	Splits the currently active clip at the master playhead position.

Analysis Tools Hotkeys

Toggle Histogram	< H >	Shows or hides the histogram
Toggle Waveform	< W >	Shows or hides the waveform
Toggle Vectorscope	< V >	Shows or hides the vectorscope
Toggle Zoom Overlay	< Z >	Shows or hides the zoom overlay window.
Toggle Zoom Overlay Follow Mouse	< SHIFT+Z >	Switches the follow mode on or off for the zoom overlay window.

Channel View Hotkeys

Lightness Channel	< L >	Shows the HLS lightness (L) channel of the image.
Show Alpha	< A >	Shows the alpha channel of an image.
Show Quick Alpha	< SHIFT+A >	Shows the alpha channel in quick alpha mode.
Show Quick Alpha (inverted)	< CTRL+A >	Shows the alpha channel in inverted quick alpha mode.
Red Channel	< R >	Shows the red channel of the image in grayscale.
Show Green Channel	< G >	Shows the green channel of the image in grayscale.
Show Blue Channel	< B >	Shows the blue channel of the image in grayscale.
Hide Red Channel	< SHIFT+R >	Hides the red channel of the image.
Hide Green Channel	< SHIFT+G >	Hides the green channel of the image.
Hide Blue Channel	< SHIFT + B >	Hides the blue channel of the image.

Appendix: Desktop Elements



Toggles the tree view



Refresh tree view



Go up one directory



Breadcrumb navigation: Click on an arrow to see all folders on the same path level. Click behind the last entry to manually edit the path.



Navigation history



Path search criteria: search one folder level only or browse folder and subdirectories



Search Criteria.
Default is *.*



Close Desktop



Add all sequences currently shown as thumbnails on the Desktop to the timeline



Thumbnail Size. Drag slider to the right to enlarge thumbnails on the desktop



Aspect Ratio. Drag slider to the right or the left to adjust the thumbnails to the aspect ratio of your project.

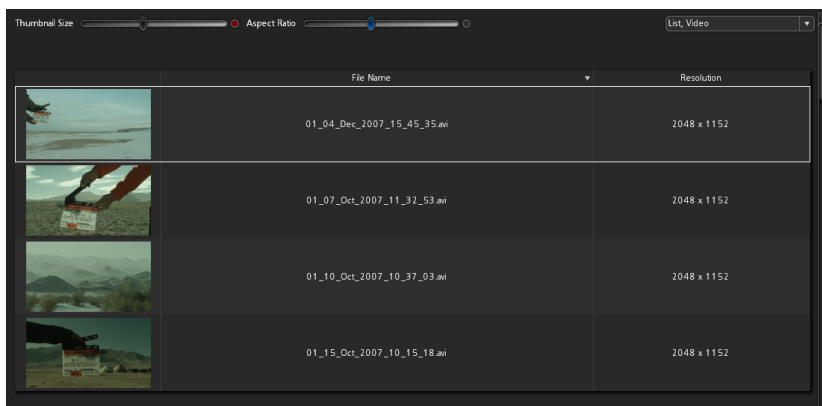


Each thumbnail on the desktop shows sequence name, frame range for frame sequences, file extension and resolution.

You can scrub by holding down the right mouse over the top part of the thumbnail, move to the right to scrub through the sequence.



Classic Thumbnail view. Use Aspect Ratio and Thumbnail Size sliders to change the amount of thumbnails on the desktop.



List View: Sort the content of the desktop by resolution or file name