Dragonframe User Guide

For Windows

Welcome

Dragonframe is a stop-motion solution created by professional animators—for professional animators. It's designed to complement how the pros animate. We hope this manual helps you get up to speed with Dragonframe quickly.

The chapters in this guide give you the information you need to know to get proficient with Dragonframe:

"Big Picture" on page 1 helps you get started with Dragonframe.

"User Interface" on page 15 gives a tour of Dragonframe's features.

"Camera Connections" on page 47 helps you connect cameras to Dragonframe.

"Cinematography Tools" on page 63 and "Animation Tools" on page 95 give details on Dragonframe's main workspaces.

"Using the Timeline" on page 119 explains how to use the timeline in the Animation window to edit frames.

"Time-lapse" on page 133 explains how to use Dragonframe for time-lapse.

"Managing Your Projects and Files" on page 135 shows how to use Dragonframe to organize and manage your project.

"Adding and Editing Audio Clips" on page 143 and "Reading Dialogue Tracks" on page 153 explain how to add audio clips and create a track reading.

"Using the X-Sheet" on page 169 explains our virtual exposure sheet.

"Automate Lighting with DMX" on page 187 describes how to use DMX to automate lights.

"Adding Input and Output Triggers" on page 209 has an overview of using Dragonframe to trigger events.

"Motion Control" on page 217 helps you integrate your rig with the Arc Motion Control workspace or helps you use other motion control rigs.

"Shooting in 3D" on page 251 explains how to connect Dragonframe to a stereo slider, set up 3D exposures, and review your 3D sequence.

"Exporting Your Take" on page 269 explains how to access your files for post-production.

"Preferences" on page 281 explains all of Dragonframe's preferences and settings.

New Features for this Version

See Dragonframe's new features in action on our website. There you'll find a variety of Dragonframe tutorials:

http://www.dragonframe.com/tutorials.php

We're pleased to introduce the following improvements:

Tabbed Workspaces

Navigate through multiple Dragonframe workspaces within one window, or detach a workspace for dual monitor support.

See also:
"Animation Workspace Overview" on page 15.

Docked X-Sheet

Dock the highly configurable X-Sheet within the Animation workspace for easy viewing.

See also:
"Animation Workspace Overview" on page 15.
"Using the X-Sheet" on page 169.

Vector-Based Drawing Tools

Draw lines, ticks, shapes and free form. Then select drawing objects to scale or rotate them. Use the increment editor to visualize movement along a path over time.

See also:
"Drawing on the View Pane" on page 111.

Lipsync

Import a face set library and create a perfect track reading in our revamped audio workspace.

See also:
"Reading Dialogue Tracks" on page 153.

Visual Timeline

View thumbnails and edit your sequence directly in the new timeline, which is part of the Animation workspace. You can quickly pull holds to adjust timing for pop-through tests.

See also:
"Using the Timeline" on page 119.

DMX

Improved keyframe editing and visualization in Dragonframe 3. Create custom lighting programs per exposure.

See also:
"Automate Lighting with DMX" on page 187.

Arc Motion Control

Set up multiples axes, jog motors, set keyframes and run move tests. Currently interfaces with the IOTA Controller and Arduino boards.

See also:
"Using the Arc Motion Control Workspace" on page 217.

Video Assist Levels

Adjust video assist levels to compensate for low-light situations.

See also:
"Adjusting Video Assist Levels" on page 117.

Portrait Image Orientation

Switch to portrait orientation for still photography.

See also:
"Portrait versus Landscape Orientation" on page 80.

Floating License Server

For schools and large organizations, configure Dragonframe to use a floating license server.

Linked Exposures

Link two or more exposures together so their settings stay in sync.

See also:
“Linking Exposures in the Cinematography Workspace” on page 83.

Template Scene

Configure a template scene to base all new scenes on. Useful for large productions with lots of common settings on every project.

See also:
“Using a Scene Template” on page 140.

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Chapter 1: Big Picture

This chapter will help you get started using Dragonframe. It includes an overview of how Dragonframe works, gets you acquainted with its main workspaces, and helps you quickly connect cameras to your computer. Finally, it explains some important Dragonframe concepts, like the takes and exposures that enable you to do more complex effects, as well as how to use Dragonframe to work with RAW and HDR files.

This chapter includes the following sections:

"How Dragonframe Works" on page 1.
"Powerful Tools" on page 2.
"Quick User Interface Overview" on page 4.
"Activating Your Software" on page 6.
"Quick Set-Up Guide for Supported Video and Still Cameras" on page 9.
"Passes, Takes and Exposures Explained" on page 10.
"RAW File Workflow" on page 13.
"HDR (High Dynamic Range) Workflow" on page 14.

See also:
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

How Dragonframe Works

When shooting animation, Dragonframe will create two separate image sequences in tandem. The first is a series of low-res frames derived from a live video source for use in refining animation. The second is from a high-quality capture source, such as RAW files from a DSLR, for finished frames. These image sequences are kept in perfect tandem during shooting and editing within Dragonframe.

This process takes particular advantage of the new DSLR Live View capabilities. Dragonframe switches the DSLR from a video assist mode to a full-fledged high-quality capture mode every time you shoot a frame.

Basic Overview of DSLR Shooting

1. The animator compares the live video with stored video assist frames taken from the video source. Because the video assist is live, they can make changes and test them immediately.

2. When the animator is ready to capture the new frame, they press **SHOOT**.

3. Dragonframe grabs a video assist frame from the video source and stores it on disk and in RAM, ready for playback.

4. Immediately after capturing the video assist frame, Dragonframe switches the camera into full-quality mode and captures a high resolution still. Dragonframe also immediately downloads this high-quality image to disk.

Dragonframe names and numbers both the feed frames and high-quality captures with the scene and take info for your shot.

- Find your feed frames within your Scene folder: in the folder called **PROJECT NAME_TAKE NAME_FEED.**

- Find your high-quality capture frames within your Scene folder: in the green frame folder.

See also:
"Finding Your Source Files" on page 270.

Other Configurations:

There are other configurations for shooting with Dragonframe, such as:

- Shooting DV or HD video only.

- Using a DSLR with a separate video feed (DSLR with no Live View).

- Using a film camera with a separate video feed source.

- Shooting with a DSLR and foregoing the live video.

By leveraging the instant feedback of live video assist and the beautiful image quality from digital still capture, Dragonframe can help you move quickly while producing feature-film-quality results.

See also:
"Camera Connections" on page 47.

Powerful Tools

Dragonframe brings together a powerful set of stop motion tools into one production-savvy application.

Animation Tool

Using a live video source, Dragonframe shows the animator a preview of the frame they are preparing to shoot and the frame's relationship with previously captured frames. The animator can compare this frame to the last frames by stepping one frame at a time, using full-speed play-back or using the onionskin feature.

See also:
"Animation Workspace Overview" on page 15.

High-Quality Image Capture Tool

Whether you are shooting with HD video or a digital still camera, Dragonframe carefully captures the highest-quality images possible. These high-quality frames can come from a different source than the video assist. Dragonframe stores the high-quality frames on disk as soon as you shoot them.

When storing images from your camera, Dragonframe does not reprocess them. Dragonframe delivers RAW files and other formats straight from your DSLR to a folder without ever hiding them from you.

If you are shooting HD or SD video as your final capture, your images can be made from a series of averaged video frames. This process reduces noise and video artifacts.

Cinematography Tool

Our Cinematography workspace is your starting point for adjusting your camera's settings and comparing test shots. You can set up masking and broadcast-safe guides simultaneously. Dragonframe gives you histograms and a digital densitometer to evaluate image quality and consistency between scenes and takes.

See also:
"Cinematography Tools" on page 63.

Production Tool

Dragonframe is a production-savvy system with features that help you manage your production.

- Dragonframe uses the same naming hierarchy used on live-actions sets around the world.
- Each Dragonframe project folder is easily to navigate—even during shooting.

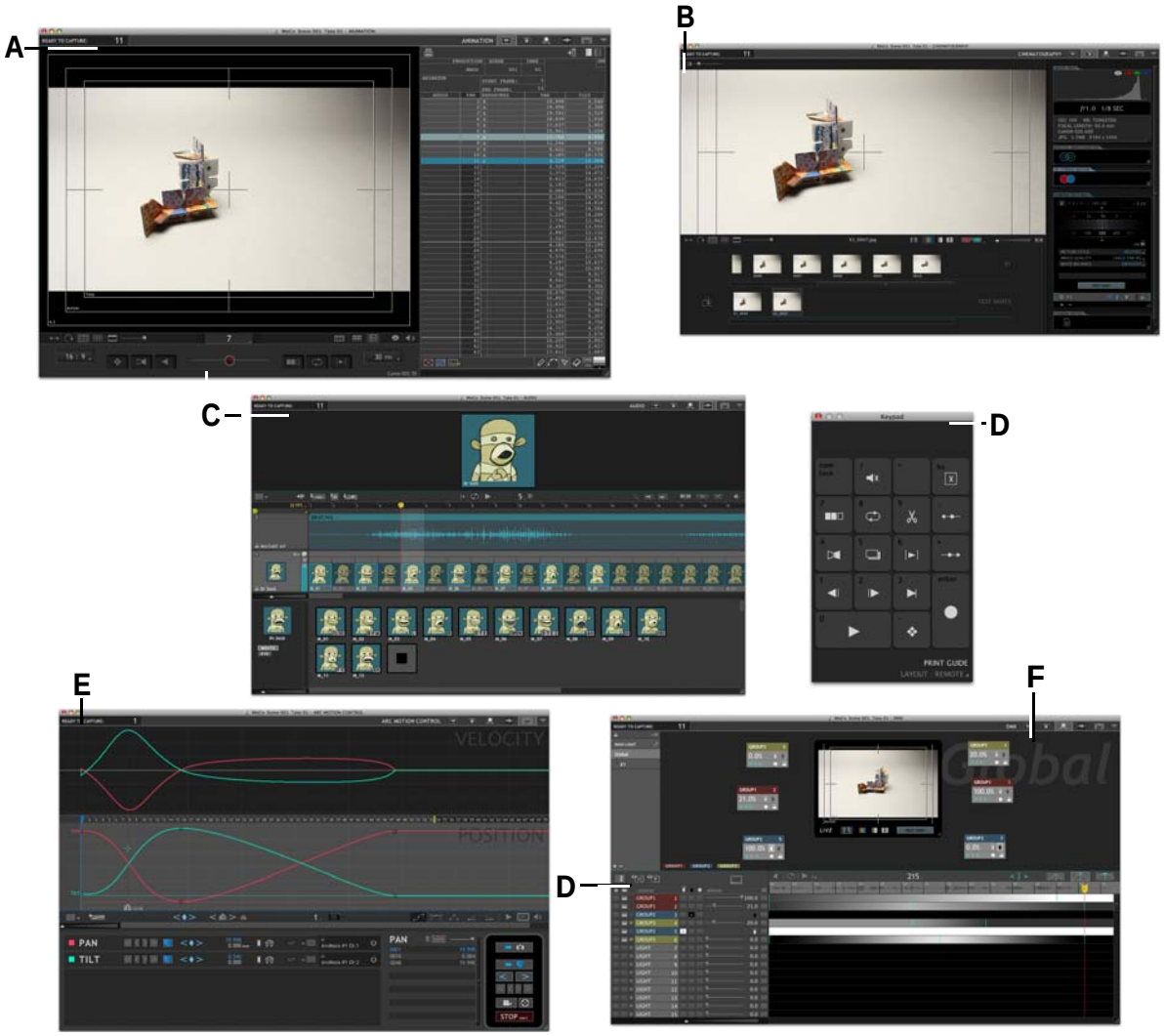
- Our frame sequences are a snap to load into compositing software.
- Multiple passes and extra exposures are organized simply for stereo (3D) shooting, clean passes and other post effects.
- Every frame shot with Dragonframe is easily searchable by scene, take and exposure name.
- Our QuickTime export produces QuickTime movies in all of the standard video formats.

See also:
"Exporting Your Take" on page 269.
"Finding Your Source Files" on page 270.
"Passes, Takes and Exposures Explained" on page 10.
"Creating a QuickTime Movie of Your Take" on page 274.

Quick User Interface Overview

The core of Dragonframe's user interface revolves around the two key artistic practices involved in shooting stop motion: animation and cinematography. From there our platform branches out into the DMX

workspace, audio and dialogue editing, the Arc motion control interface, and the keypad.



A. *Animation workspace with X-Sheet.* ***B.*** *Cinematography workspace.* ***C.*** *Audio workspace.* ***D.*** *Keypad.* ***E.*** *Arc Motion Control Workspace.* ***F.*** *DMX Workspace.*

See also:

"Animation Workspace Overview" on page 15.

"Cinematography Workspace Overview" on page 24.

"X-Sheet Overview" on page 27.

"Dragonframe Keypad Overview" on page 31.

"Audio Workspace Overview" on page 29.

"DMX Workspace Overview" on page 26.

"Motion Control Workspace Overview" on page 30.

Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Activating Your Software

Once you download a copy of Dragonframe, you'll need to activate the copy to use it.

Activating a License for the First Time

When you start up the program for the first time, a dialog box appears asking for a serial number and activation code. To activate your software:

1. Enter a serial number:

    - If you want to use Dragonframe on a trial basis, enter a trial serial number. To get the number, enter your e-mail address in our Download page:
      http://www.dragonframe.com/download.php
      You'll receive a trial serial number via e-mail.

- If you've purchased a copy, enter your full serial number from the invoice you received via e-mail:

INVOICE

Date: 01-01-2011 10:25
Order id: #12345
Order status: Complete
Payment method:
Credit Card
Delivery method:
USPS Priority Mail

DZED Systems LLC
1106 2nd St. #872, Encinitas
92024, California
United States
CALL US: +1.800.530.9124
Fax: +1.877.302.6704
purchase@dragonframe.com

Email: janedoe@fakemail.com
Company: Doe Motion

Billing address

First name:	Jane
Last name:	Doe
Address:	316 Cross Wy
City:	New York
State:	NY
Country:	United States
Zip/Postal code:	10001
Phone:	

Shipping address

First name:	Jane
Last name:	Doe
Address:	316 Cross Wy
City:	New York
State:	NY
Country:	United States
Zip/Postal code:	10001
Phone:	

Products ordered

SKU	Product	Item price	Quantity	Total
DF3	Dragonframe 3 + Controller SN: D3R01-XXXXX-XXXXX-XXXXX-XXXXX	US$295.00	1	US$295.00

Subtotal: US$295.00
Shipping cost: US$5.95
Total: US$300.95

Thank you for your purchase!

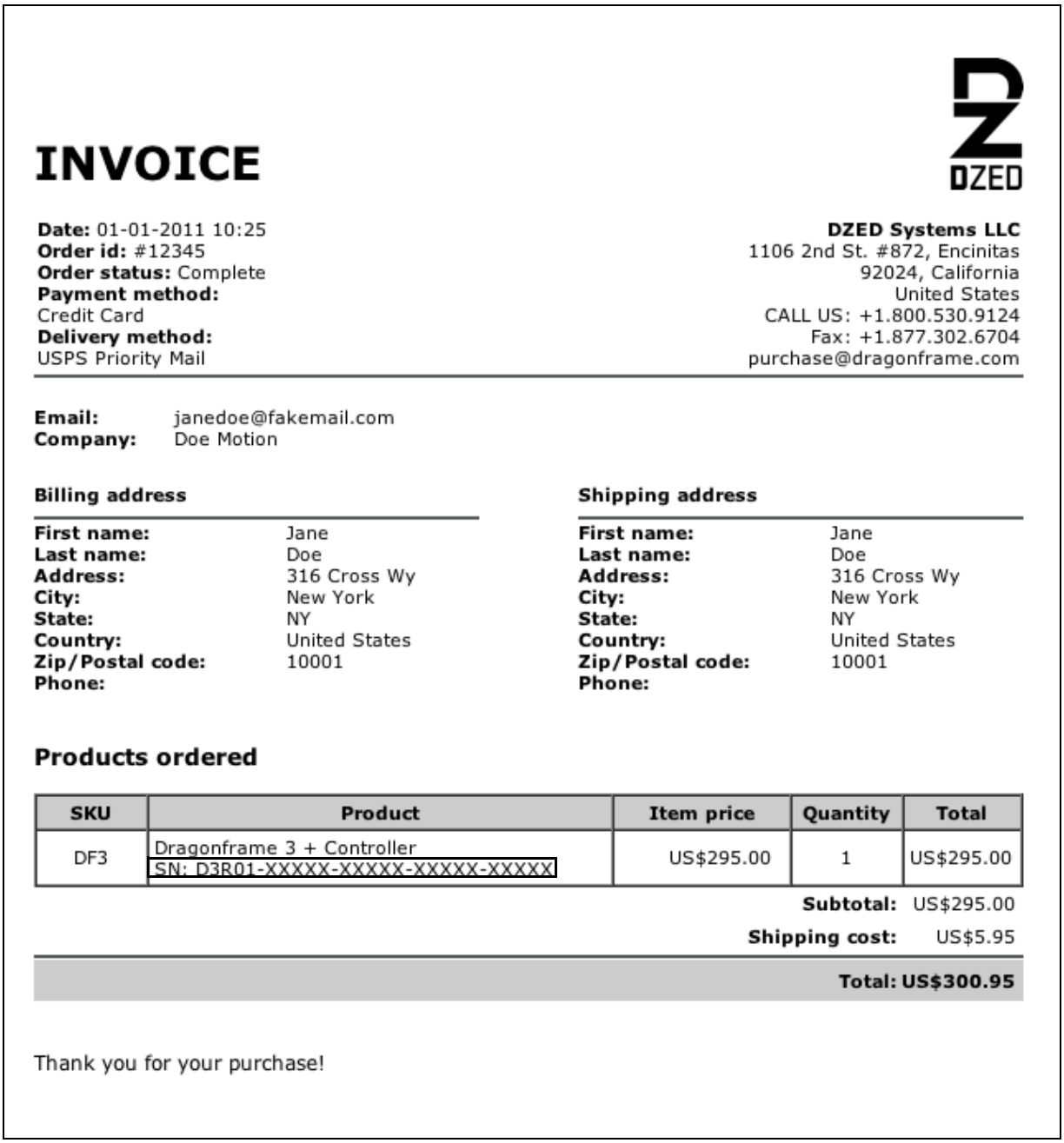
D-Zed Software Invoice with serial number marked

2. Enter a name you want associated with the license in the **REGISTERED TO** field. It must be at least three characters.

Upgrading to a Full License from a Trial License

If you have been using a trial serial number and have now bought the program, enter a full serial number.

1. Find the serial number in the e-mail invoice you received from D-Zed Software.



INVOICE

Date: 01-01-2011 10:25
Order id: #12345
Order status: Complete
Payment method:
Credit Card
Delivery method:
USPS Priority Mail

DZED Systems LLC
1106 2nd St. #872, Encinitas
92024, California
United States
CALL US: +1.800.530.9124
Fax: +1.877.302.6704
purchase@dragonframe.com

Email: janedoe@fakemail.com
Company: Doe Motion

Billing address

First name:	Jane
Last name:	Doe
Address:	316 Cross Wy
City:	New York
State:	NY
Country:	United States
Zip/Postal code:	10001
Phone:	

Shipping address

First name:	Jane
Last name:	Doe
Address:	316 Cross Wy
City:	New York
State:	NY
Country:	United States
Zip/Postal code:	10001
Phone:	

Products ordered

SKU	Product	Item price	Quantity	Total
DF3	Dragonframe 3 + Controller SN: D3R01-XXXXX-XXXXX-XXXXX-XXXXX	US$295.00	1	US$295.00

Subtotal: US$295.00
Shipping cost: US$5.95
Total: US$300.95

Thank you for your purchase!

D-Zed Software Invoice with serial number marked

2. Start Dragonframe. If your trial license is expired, Dragonframe will open the license dialog.

3. If the license dialog does not appear, click **HELP|ACTIVATE LICENSE...**

4. In either dialog, enter your full serial number.

5. Enter a name you want associated with the license in the **REGISTERED TO** field. It must be at least three characters.

6. Click **ACTIVATE**. Dragonframe activates your license.

Transferring a License

To transfer your license to another machine:

1. Click **HELP|DEACTIVATE LICENSE...** to deactivate it on your current machine.

2. Open Dragonframe on your other machine.

3. Select **HELP|ENTER LICENSE...** Dragonframe opens the license dialog.

4. Enter your full serial number.

5. Enter a name you want associated with the license in the **REGISTERED TO** field. It must be at least three characters.

6. Click **ACTIVATE**. Dragonframe activates your license on the other machine.

NOTE: If the machine that was activated is no longer working, send in a support request. Make sure to include your serial number.
http://www.dragonframe.com/tt/ticket.php

Quick Set-Up Guide for Supported Video and Still Cameras

This section explains how to connect video and capture sources.

1. Configure the camera's settings to work with Dragonframe.

   Check our camera web page for a list of supported cameras and specific set-up guides:
   http://www.dragonframe.com/camera.php

2. Connect the camera(s) to the computer according to the manufacturer's directions.

- Digital still cameras generally connect via USB.
- DV and HDV sources generally connect via Firewire.
- HDMI sources generally connect via an HDMI cable, using a video card such as the Blackmagic Intensity: http://www.blackmagic-design.com/products/intensity/

3. Turn off other camera software.

   Make sure no other software has detected your camera and started up. Quit any software that wants to connect to the camera.

4. Open Dragonframe.

   Dragonframe should auto-detect the camera and send a live video signal (if available) into the Animation workspace. Click **CAPTURE|VIDEO SOURCE** and **CAPTURE|CAPTURE SOURCE** to check the status of camera connections.

5. Remember the keystroke **CTRL R**. It resets connections to cameras.

   Or, select **CAPTURE|RESET/REFRESH CONNECTIONS**.

   If you are connecting a camera to a computer while Dragonframe is already running, press **CTRL R** to activate a connection to Dragonframe.

If you are using a DSLR, go directly to the Cinematography workspace to adjust all of your exposure-related settings, including image quality and white balance.

See also:
"Camera Connections" on page 47.
"Connecting an Unsupported Camera to Dragonframe" on page 55.

Passes, Takes and Exposures Explained

Effects shots can take many forms, such as clean passes, plate shots and matte passes. In this section, we cover how Dragonframe can make the multi-pass process simple and organized.

Dragonframe creates effects passes in two specific ways:

1. *Straight Pass:* Shooting a continuous series of frames before or after other passes are complete.

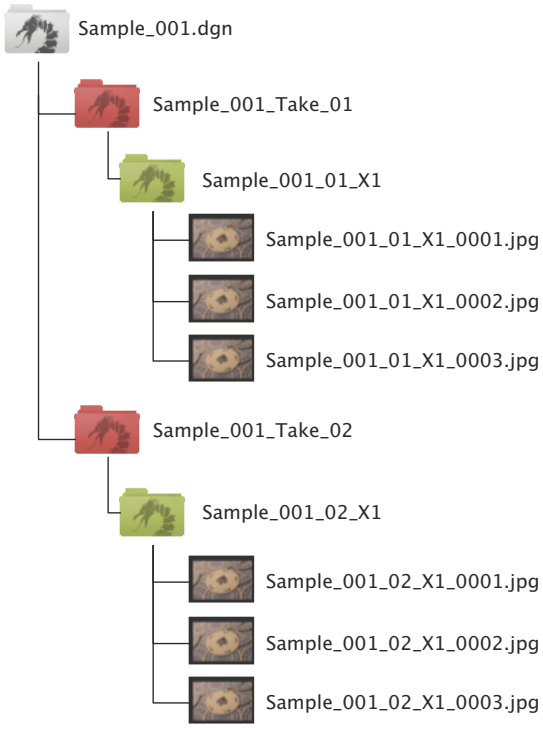
To set up a straight pass in Dragonframe, create a new take within your scene.

2. *Sub-Frame Pass:* Capturing two or more images for each frame in time. In Dragonframe, this is called an exposure. Each take may contain up to twelve exposures.

To set up a sub-frame pass in Dragonframe, create a new exposure from the Camera Control in the Cinematography workspace.

As you read the examples of these passes that follow, keep Dragonframe's folder and frame hierarchy in mind.

- A Dragonframe project is known as a scene (gray folder). Here, the scene is named "Sample".
- A scene folder holds takes (red folders).
- Take folders hold exposures (green folders).



See also:
"Creating a New Take" on page 138.
"Multiple Passes and Exposures" on page 80.
"Finding Your Source Files" on page 270.

Straight Pass

A straight pass is a separate sequence that is usually the length of the main beauty pass and is shot straight through from frame 001 to the end.

A common use for a straight pass is the clean pass or clean plate. There are times when the rigging in a shot is tough to hide. You may choose to mask out the rigging in post-production. After you are done with your main take, remove the characters and objects that were animated and shoot a new take of the set. Now you have a clean version of your shot to mask over the rigs.

Shooting your animation on green screen for a main take and shooting a separate background to composite the animation into is an example of using two straight passes.

The simplest way to create a new straight pass is to add a new take to the scene you are working in. This will keep all of the scene information from the previous take and set you to frame one. Or, create a new scene file for the extra passes. You can import scene settings from a previous scene if necessary.

See also:
"Creating a New Take" on page 138.
"Creating a New Scene" on page 135.
"Importing Scene Settings" on page 140.
"Using Chroma Key" on page 111.

Sub-Frame Pass

The sub-frame pass refers to secondary frames taken while animating. Because stop motion animation is most likely non-repeatable, some passes need to be generated on a frame-by-frame basis. Mattes, stereo pairs, and special lighting passes are all examples of sub-frame passes.

To create a sub-frame pass, add an Exposure from the Camera Control pane within the Cinematography workspace.

A common example of a sub-frame pass is the front light/backlight pass. The front light frames are the images you see (beauty pass), while the backlight frames are used to generate a matte for compositing. In the film days, this would be called a checkerboard matte because the beauty and matte pass were shot on a single strip of film. The film would look like alternating dark and light squares. The passes would be separated through the use of an optical printer. In Dragonframe, the exposures are separated and organized as you shoot.

Here is an example of a checkerboard-style matte using a green screen card instead of a backlight. By placing the card behind your subject during a second exposure, you can create a matte pass as you shoot.

1. Shoot the beauty shot: **FRAME 001, EXPOSURE 1.**

2. Place a green screen card behind your subject. Shoot the second exposure of frame 001 to create a matte frame: **FRAME 001**, **EXPOSURE 2**.

3. Shoot the second beauty shot: **FRAME 002**, **EXPOSURE 1**. When you step through your animation, you will only see the beauty pass.

4. Repeat this process until you're done with the scene.

Dragonframe automatically places the beauty and matte exposures into separate folders, ready for post-processing.

See also:
"Multiple Passes and Exposures" on page 80.
"Using Chroma Key" on page 111.
"Shooting in 3D" on page 251.
"Creating Custom Lighting Programs per Exposure" on page 200.

RAW File Workflow

With the development of the RAW file, digital still cameras are now rivaling the tonal fidelity and flexibility of 35mm film.

Working with RAW Files in Dragonframe

Most digital still cameras give you the choice of shooting RAW with an 8-bit file (.jpg, .tiff) or RAW only.

- If you choose to shoot RAW with .jpg or .tiff, Dragonframe will download both the RAW and the 8-bit files into the same exposure folder with matching names. The Cinematography workspace will display only the 8-bit file for evaluation and high-res playback in the Animation workspace.

- If you shoot RAW only, Dragonframe will download the RAW files into the proper exposure folder. Each RAW file has an embedded .jpg file. Dragonframe will use the embedded .jpg for display in the Cinematography workspace and for high-res playback in the Animation workspace.

Final Raw Processing

Dragonframe names all of your RAW files with the specific scene, take and frame numbers from your animation. The RAW frame sequence is ready for import into your post-production pipeline.

If you need a quick way to convert your cameras native RAW files into Adobe's DNG file format, we suggest using Adobe's free DNG converter: http://www.adobe.com/products/dng/

Dragonframe doesn't reprocess RAW files. We suggest programs like Adobe's After Effects to process and resize your RAW files.

After Effects CS4 can easily recognize many RAW formats and import them as an image sequence straight from your Dragonframe exposure folder (green folder).

See also:
"Animation Workspace Overview" on page 15.
"Cinematography Workspace Overview" on page 24.
"High-Res Key" on page 98.
"Adjusting and Locking Camera Settings" on page 78.
"Exporting Your Take" on page 269.
"Finding Your Source Files" on page 270.

HDR (High Dynamic Range) Workflow

Create HDR images by combining images with different exposure levels. First, use Dragonframe's multi-exposure system to create two or more frame sequences with varying exposure levels. Then, import the frame sequences into an HDR-creation application or batch-process them in Adobe Photoshop.

See also:
"Passes, Takes and Exposures Explained" on page 10.
"Adding Multiple Exposures in the Cinematography Workspace" on page 81.
"Exporting Your Take" on page 269.
"Finding Your Source Files" on page 270.

Chapter 2: User Interface

Dragonframe's workspaces, tools, and hardware have been designed with you in mind. We've not only taken our team's experience with animation, but worked with top animators for their feedback. We hope the result is a usable and beautiful interface.

This chapter includes the following sections:

"Animation Workspace Overview" on page 15.
"Cinematography Workspace Overview" on page 24.
"DMX Workspace Overview" on page 26.
"X-Sheet Overview" on page 27.
"Audio Workspace Overview" on page 29.
"Motion Control Workspace Overview" on page 30.
"Dragonframe Keypad Overview" on page 31.
"Keypad Window Overview" on page 33.
"Using Workspaces" on page 34.
"Menu Overview" on page 35.

See also:
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

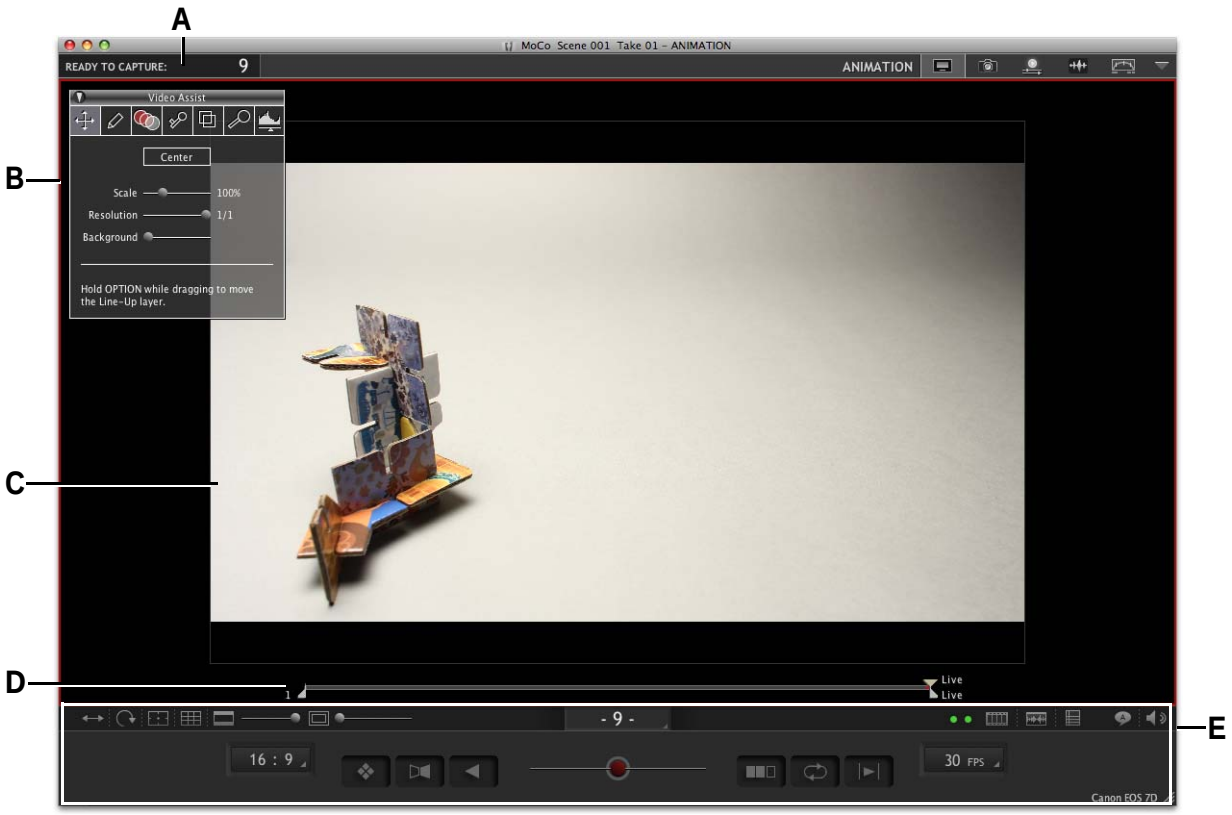
Animation Workspace Overview

The Animation workspace is the central location for all your animation features and tools. It opens when you open Dragonframe.

The Animation workspace:

- Displays the Live View.
- Plays back video assist frames for testing and reviewing animation.
- Controls animation aids such as onionskin and drawing tools.
- Displays the frame counter and capture counter.
- Contains the timeline for frame editing and viewing track readings.
- Contains the Nav-Line for navigation, playback, and memory management.

Animation Workspace Map



A. *Capture Counter: Shows which full-res frame you're ready to capture.*

B. *Animation Palette: Shows tools, including Move, Draw, Onionskin, Chroma Key and Lineup Layer.*

C. *View Pane: Shows a video assist or a high-res preview still. A red line around the frame (shown) indicates that you're looking at the Live View. A blue line means Live View has stopped.*

D. *Nav-Line: See a visual representation of your frame sequence. Use it to select frames for playback, to edit frames, or work with very large scenes.*

E. *Animation Tools: Work with the View pane image and playback.*

Frame Counters Overview

- The capture counter tells you which high-res frame you're about to capture.
- The frame counter tells you which frame you're currently viewing in the Animation workspace.

A. *The capture counter: Tells you which high-res frame you're about to capture.*
B. *The frame counter: Tells you which frame you're currently viewing in the Animation workspace.*

As you use Dragonframe, other features will correspond to either the capture source or the video assist. Keeping the two straight will help you use Dragonframe.

The Capture Counter

The counter at the top of the workspace is the capture counter (A.). It shows the frame you are about to capture. The frame in this counter will match the information in the X-Sheet. For example, if the X-Sheet

shows that you've captured 20 full-res stills, the capture counter will read 21.

See also:
"How Dragonframe Works" on page 1.
"X-Sheet Overview" on page 27.

The Frame Counter

The frame counter (B.) displays the frame number for the image currently in the Animation workspace. As you step though or play your animation, this counter tracks with the corresponding images.

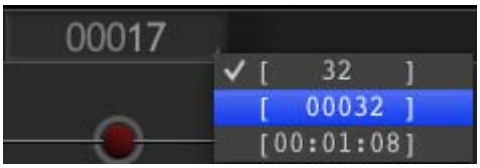
When you step forward onto the Live View frame, the frame counter will display the frame number for this yet-to-be-captured image. At that point, the frame counter's number will match the number in the capture counter.

When you're viewing the Live View, white dashes appear on either side of the frame number.

When you're viewing a frame you've already captured, the number is white.

When you've moved past the Live View, the number is gray. The options for stepping past the Live View are in Preferences.

Click the frame counter to open its drop-down menu:



From there change how Dragonframe displays the frame numbers.

See also:
"How Dragonframe Works" on page 1.
"General Preferences" on page 282.

Animation Tools Overview

The tools at the bottom of the Animation workspace help you animate, control your image, and manage playback.

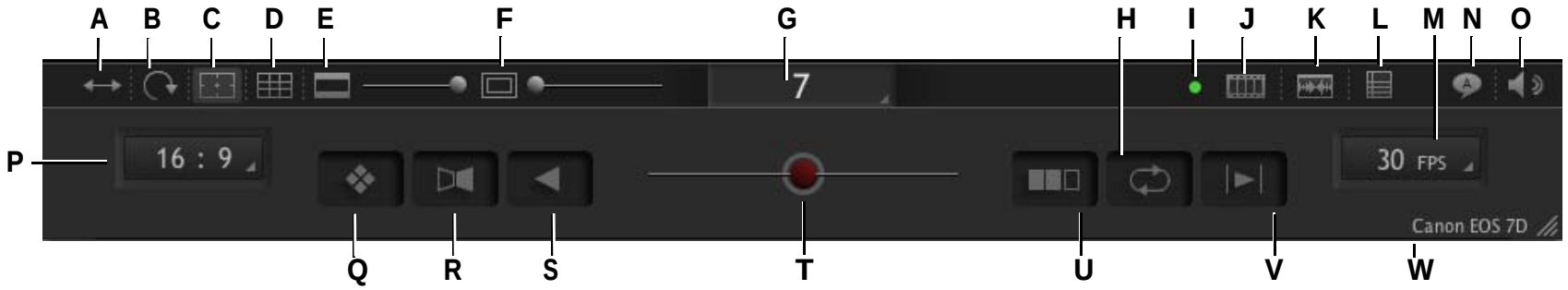
NOTE: Many of the most frequently used Animation tools (such as loop, onion-skin, and end in black) are keys on the Dragonframe Controller that came with your software.

The map that follows gives a visual overview of all the tools.

See also:

"Dragonframe Keypad Overview" on page 31.
"Adding a Broadcast-Safe Overlay" on page 65.
"Adding a Grid Overlay" on page 66.
"Adding an Aspect Ratio Mask" on page 65.
"Pushing In the Broadcast-Safe Overlay and Aspect Ratio Mask" on page 66.
"Loop Key/Ping-Pong" on page 97.
"Short Play Key" on page 98.
"X-Sheet Map" on page 170.
"Playback Speed" on page 99.
"Connecting Dragonframe to MoCo Hardware" on page 220.
"Connecting DMX to Dragonframe" on page 189.
"Connecting to a 3D Slider" on page 251.
"Using the Timeline" on page 119.
"The Heads-Up Display" on page 165.
"High-Res Key" on page 98.
"Auto-Toggle Key" on page 96.
"Using Onionskin" on page 105.
"Black (End in Black) Key" on page 98.
"Camera Connections" on page 47.

Animation Tools Map



A. *Mirror: Mirrors image.*

B. *Rotate: Flips image 180 degrees.*

C. *Broadcast-safe: Toggles a TV-safe overlay.*

D. *Grid: Overlays a grid on the View pane.*

E. *Aspect Ratio: Adjusts the opacity of the aspect ratio mask.*

F. *Mask Push-In: Adjusts push-in mask on all sides of the image.*

G. *Frame Counter: Shows the live feed (dashes) or a previous frame (number only).*

H. *Loop: Loops playback. Press* **ALT LOOP** *to turn on ping-pong playback, moving forward, then reversing through the frame sequence.*

I. *Green Light: Confirms that the hardware required for shooting, such as the DDMX-S2 or the IOTA, are connected correctly.*

J. *Timeline: Open the timeline for frame editing.*

K. *Audio Timeline: Open the Audio timeline.*

L. *X-Sheet Button: Opens the X-Sheet alongside the Animation workspace.*

M. *Playback Speed.*

N. *Heads-Up-Display: Open the audio Heads-Up Display to see face cues and phonetic cues while animating.*

O. *Volume.*

P. *Aspect Ratio: Sets the aspect ratio mask.*

Q. *High-Res Preview: Use high-res stills for preview.*

R. *Auto-Toggle: Continuously toggles the Live View with the selected frame.*

S. *Reverse: Reverses play.*

T. *Onionskin Opacity Slider: Adjusts onionskin opacity.*
Center: Clean Live View.
Right: Live View with last frame.
Left: Live View with any frame.

U. *Black: Adds black frames to the end of playback.*

V. *Short Play: Includes only the last twelve frames for playback, or the number you choose.*

W. *Camera: Names the connected camera.*

Animation Palette Overview

The Animation palette appears any time you move the mouse over the View pane, and disappears again when you move it over the rest of your computer screen. It contains seven tools:

- Video Assist,
- Draw,
- Onionskin,
- Chroma Key,
- Line-up Layer,
- Live View Magnification and
- Video Assist Levels.

Click and drag the title bar to move the Animation palette anywhere in the View pane.

See also:
"Using the Video Assist Tool" on page 116.
"Drawing on the View Pane" on page 111.
"Using Onionskin" on page 105.
"Using Chroma Key" on page 111.
"Adding a Line-Up Layer (Movie or Still)" on page 109.
"Punch-in with Live View Magnification" on page 116.
"Adjusting Video Assist Levels" on page 117.

Animation Timeline Overview

The Animation timeline shows you thumbnails of your frames. From the timeline you can edit your frames, retrieve frames from the delete bin, or view audio information.

- Click to open the timeline.
- Click to open the audio timeline.

See also:
"Using the Timeline" on page 119.
"Timeline Map" on page 120.

Animation Nav-Line Overview

The Nav-Line is a visual representation of your frame sequence, allowing you to:

- See where you are in your scene as you step through frames,
- Select frames for playback,
- Play back very large scenes.

The Nav-Line appears any time you move the mouse over the View pane, and disappears when you move it over the rest of your screen. The map that follows gives an overview of the Nav-Line's features.

See also:
Dragonframe tutorials:
http://www.dragonframe/tutorials.php
"Play Section" on page 99.
"Memory Management" on page 100.
"Using the Timeline" on page 119.

Animation Nav-Line Map

A. *Blue Memory Management Bar: Shows which frames are not stored in RAM or included in playback.*

B. *In point: Marks the beginning of a section for playback or memory management. Moving the in point moves the playhead as well.*

C. *Playhead: Marks where playback will begin. Double-click the playhead to move the Live dot to the playhead's current location.*

D. *Live Dot: Marks where the next frame would be captured.*

E. *Live: Shows that the playhead, an in point or an out point is currently on the Live dot.*

F. *Frame Number: Indicates which frame the in point marks: in this case, frame 73.*

G. *Gray Memory Management Bar: Shows which frames are included in playback and stored in RAM. Click and drag the bar to adjust which frames to include.*

H. *Frame Number: Indicates which frame the playhead marks: in this case, frame 413.*

I. *Out point: Marks the end of a section for playback or memory management. Moving the out point moves the playhead as well.*

Cinematography Workspace Overview

The Cinematography workspace provides a place to set up the composition and exposure of your scene. Use the Cinematography workspace to adjust camera settings, take test shots, preview 3D images, set up exposures with different camera settings, or test lighting.

The Cinematography workspace should be your first stop before animating. From there make sure your lighting, camera settings, and image quality are right. Once you start shooting, return to the Cinematography workspace during the shoot to check your captured frames.

Click (at the top of the window) to open the Cinematography workspace.

The map that follows shows the different parts of the workspace.

See also:

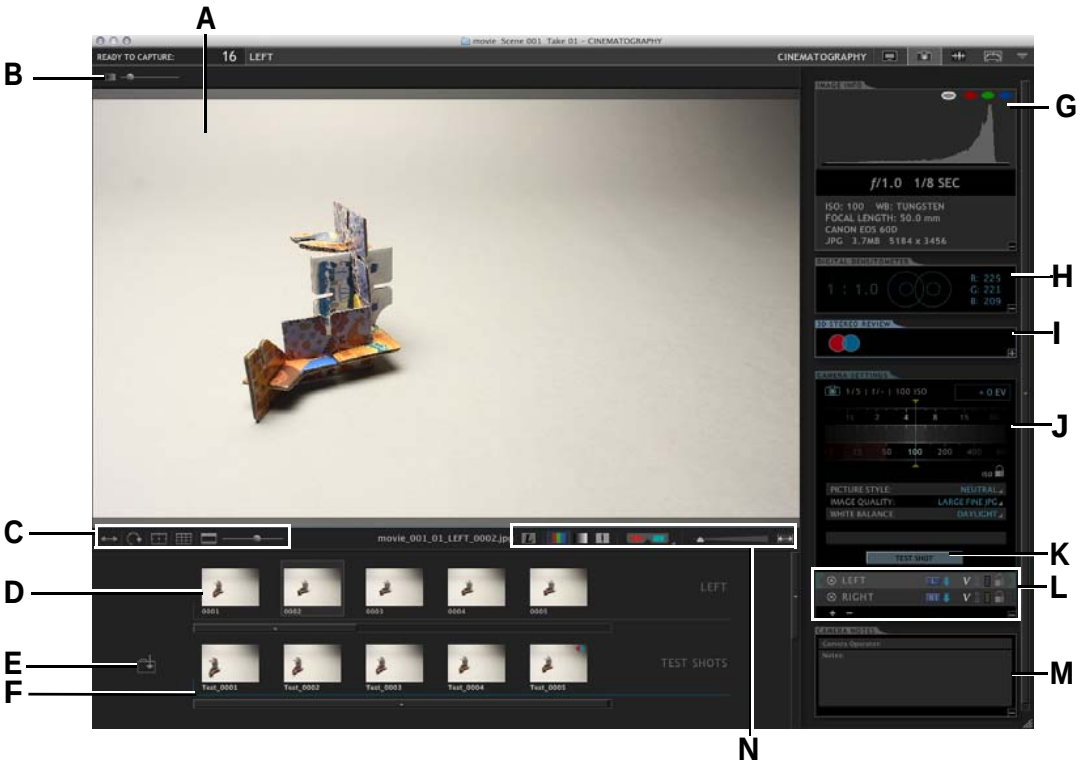
"Cinematography Tools" on page 63.

"Reviewing 3D Images" on page 260.

Dragonframe tutorials:

http://www.dragonframe/tutorials.php

Cinematography Workspace Map



A. *View Pane: View the selected frame, test shot, exposure, or the Live View.*

B. *Background Color: Adjust the background to help you see image edges.*

C. *Image Tools: Rotate the image and add masks or overlays to it.*

D. *Exposure Images Tray: View image thumbnails from the exposure, in this case,* **LEFT**. *Click a thumbnail to view the image in the View pane.*

E. *Import Test Shots: Import any image into the Test Shot Tray.*

F. *Test Shot Tray: View test shots. Click a thumbnail to view the image in the View pane. Or, drag and drop images from the Exposure Images tray here. 3D test shots look like stacked images.*

G. *Image Info: View RGB values and image information.*

H. *Digital Densitometer: View relative light values.*

I. *3D Stereo Review: Take 3D test shots and adjust 3D settings.*

J. *Camera Control: Adjust and lock camera settings.*

K. *Test Shot: Take mono test shots with current camera settings.*

L. *Exposures: Add exposures and adjust and lock camera settings for each exposure.*

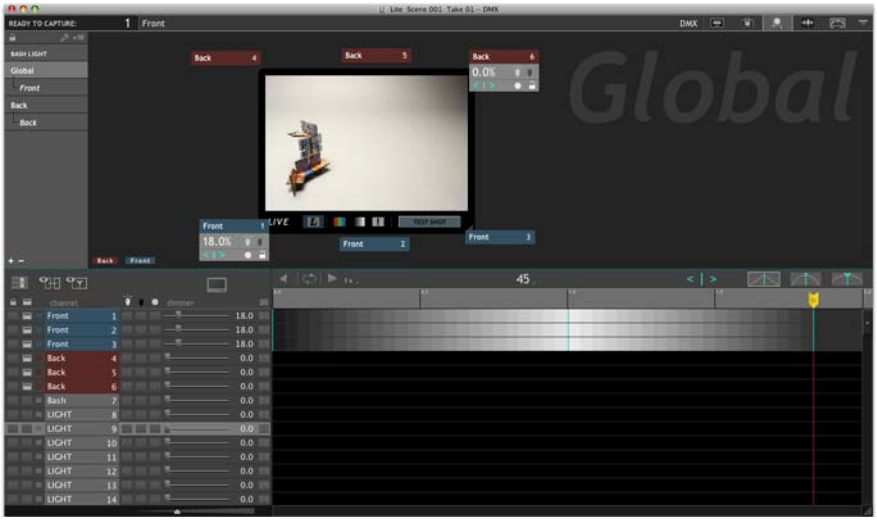
M. *Camera Notes: Add notes about the current setup.*

N. *Cinematography Viewing Modes: See the Live View, view the image in color or gray-scale, see clip info or 3D composites, and adjust image size.*

DMX Workspace Overview

Use the DMX workspace to set up an animated lighting program for your scene. Connecting DMX-enabled tools to Dragonframe, like the DDMX-S2 or IOTA Controller and a dimmer pack, allows you to automate lighting or turn off work lights automatically.

Click at the top of the Dragonframe window to open the DMX Workspace:



See also:

"Automate Lighting with DMX" on page 187.

"DMX Workspace Map" on page 188.

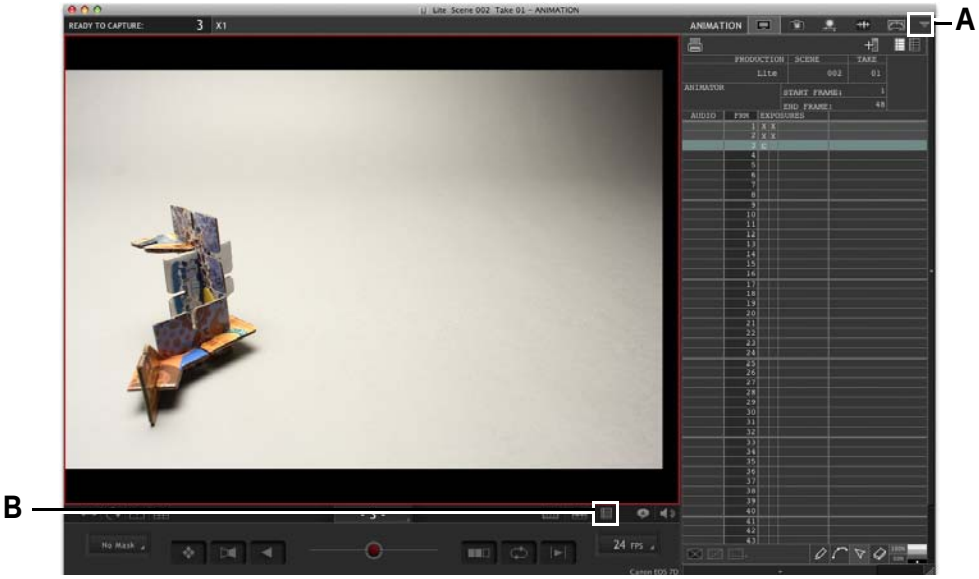
Dragonframe tutorials:

http://www.dragonframe/tutorials.php

X-Sheet Overview

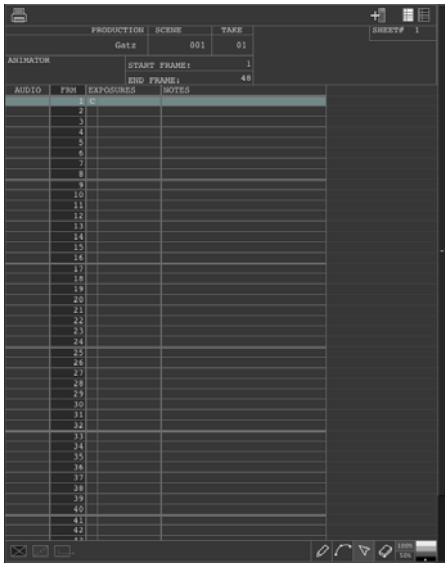
The X-Sheet is an editable exposure sheet based on the production information for your scene.

- Click in the Animation tools to dock the X-Sheet alongside the Animation workspace.



A. *Workspace menu button. Click to open the X-Sheet up independently.* ***B.*** *X-Sheet button in Animation tools. Click to dock the X-Sheet within the Animation window.*

- Or, click the workspace menu button, then select **X-SHEET** to open the X-Sheet on its own.



As you create your scene, Dragonframe updates the X-Sheet dynamically. Open the X-Sheet and edit it, changing the scene length, editing frames, and adding reminders for a particular frame. Draw on the X-Sheet, or view dialogue waveforms and track readings. Or, print your X-Sheet for a hard copy of your scene.

See also:

"Using the X-Sheet" on page 169.

"X-Sheet Map" on page 170.

Dragonframe tutorials:

http://www.dragonframe/tutorials.php

Audio Workspace Overview

The audio workspace helps you load audio clips, edit them, and set up track readings. Use face sets to animate eyes and mouths, add dialogue cues and phonetics, and export your track reading and a preview of the face set animation.

Click at the top of the Dragonframe window to open the Audio workspace:

See also:

"Audio Workspace Map" on page 145.

"Adding and Editing Audio Clips" on page 143.

"Reading Dialogue Tracks" on page 153.

"Viewing Audio Information in the X-Sheet" on page 180.

"Viewing the Track Reading in the X-Sheet or Timeline" on page 164.

"Using the Timeline" on page 119.

Dragonframe tutorials:

http://www.dragonframe/tutorials.php

Motion Control Workspace Overview

Use the Arc motion control workspace to pro gr a mm complex, multi-axis camera moves directly within Dragonframe. Click at the top of the Dragonframe window to open the Arc Motion Control Workspace:

See also:

"Using the Arc Motion Control Workspace" on page 217.

"Arc Motion Control Workspace Map" on page 222.

Dragonframe tutorials:

http://www.dragonframe/tutorials.php

Dragonframe Keypad Overview

Most copies of Dragonframe include a remote keypad, the Dragonframe keypad, with a long USB cable. The keypad makes it easy to move away from your computer and still control Dragonframe.

NOTE: Install Dragonframe before plugging in the Dragonframe keypad. Otherwise your computer will prompt you to identify the "keyboard". If you get that prompt, close it. After you install Dragonframe, it will recognize the keypad automatically.

A visual map follows showing how the Dragonframe keypad's commands relate to the Animation tools.

NOTE: The keypad on the next page is the Dragonframe keypad included with your copy of Dragonframe. If you use the keypad included on the right side of your Mac or PC keyboard, the placement of the **MUTE**, **DELETE** and **ONIONSKIN** keys will vary slightly, but they'll work the same way.

See also:

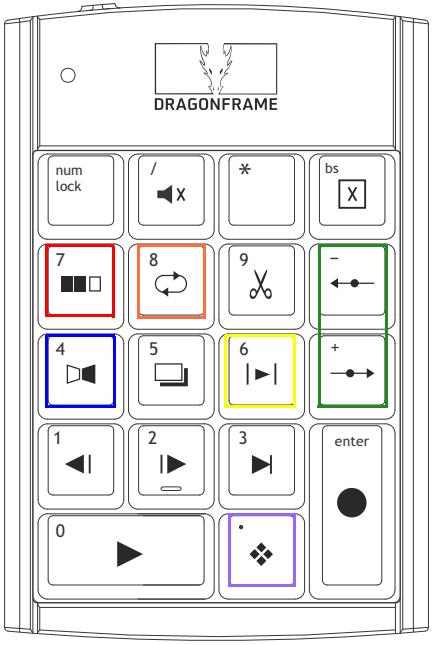
"Keypad Controls" on page 95.

"Keypad Window Overview" on page 33.

Dragonframe tutorials:

http://www.dragonframe/tutorials.php

Dragonframe keypad Map



MUTE (/) ..... Turns audio playback off.

DELETE (bs) ..... Deletes the last frame shot.

BLACK (7) ..... Cuts to black at the end of playback.

LOOP (8) ..... Loops the frame sequence.

CUT BACK (9) ..... Eliminates a selected group of recently shot frames.

AUTO-TOGGLE (4) ..... Toggles the Live View at an adjustable rate.

LIVE TOGGLE (5) ..... Toggles the Live View each time you press the key.

SHORT PLAY (6) ..... Plays a selected number of previously shot frames.

ONIONSKIN (+, -) ..... Dissolves the Live View over shot frames.

STEP (1, 2) ..... Steps frame-by-frame through the sequence.

LIVE (3) ..... Jumps to the Live View frame in the sequence.

PLAY (0) ..... Plays the sequence at full speed.

HIGH-RES (.) ..... Switches from video assist frames to high-res proxies.

SHOOT (enter) ..... Captures a frame.

The Animation tools (below) serve as a dashboard, indicating what playback modes are active, if the Onionskin slider is adjusted, and what frame you're on.

Keypad Window Overview

The keypad window is a learning aid. Keep it open when first getting acquainted with Dragonframe to help you learn the keypresses for your Dragonframe keypad, or for the keypad on your Mac or Windows keyboard.

To open the keypad window, click **WINDOW|SHOW KEYPAD**.

Keypad Window. Click **LAYOUT** *to change how the keypad looks.*

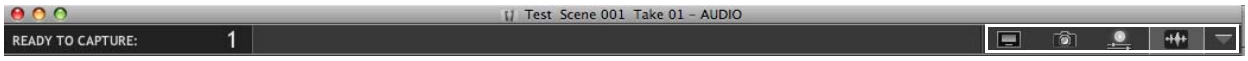
Once you open the window, you can change the layout of the keypad by clicking **LAYOUT** in the bottom right corner. Change the layout in the following ways:

Select:	To:
MAC KEYPAD	Lay out the keypad like the one on a Mac keyboard.

Select:	To:
PC KEYPAD	Lay out the keypad like the one on a Windows keyboard.
REMOTE KEYPAD	Lay out the keypad like the one included with Dragonframe.
DISPLAY ICONS	Show only the icons describing each keypress on the keypad window.
DISPLAY TEXT	Show the text describing each keypress on the keypad window.
TOP DISPLAY ON	Display the text and icon describing each key-press at the top of the window each time you roll over a key.
TOP DISPLAY OFF	Do not display text and icons at the top of the window.
NORMAL SIZE	Display a larger keypad.
SMALL SIZE	Display a smaller keypad.

Using Workspaces

Dragonframe's main tools each appear in a workspace, a window that you can arrange easily. The main workspaces appear as tabs in the upper right corner of the program:



Animation, Cinematography, DMX, Audio tabs, and the workspace drop-down menu.

- Click the drop-down menu to open additional tabs, such as the Arc Motion Control workspace or the full-size X-Sheet.
- Drag and drop a workspace tab to open the workspace in a new window. Drag it back to the tabs to open it within the main Dragonframe window.

NOTE: Click the X-Sheet icon in the Animation tools to dock the X-Sheet within the Animation workspace.

See also:
"Animation Tools Overview" on page 18.
"Using the X-Sheet" on page 169.

Menu Overview

The tables that follow give more information about each of Dragonframe's menus.

File Menu

Select this menu item:	To:	See also:
NEW TAKE...	Open the New Take dialog.	"Creating a New Take" on page 138.
NEW SCENE...	Open the New Scene dialog.	"Creating a New Scene" on page 135.
OPEN SCENE...	Open the Open Scene dialog.	"Opening a Previously-Shot Scene" on page 137.
OPEN RECENT >	Select from a list of recently opened files.	N/A
DUPLICATE SCENE...	Save the current scene as a new scene.	"Duplicating Your Scene" on page 138.
SAVE SCENE SETTINGS	Save TAKE.XML to make sure any important changes you've made to the scene will be saved.	N/A
CONFORM CURRENT TAKE	Conform edits for the take. This makes Dragonframe place frame order numbering on your source files to reflect edits such as deletes and cutbacks.	"Conforming Timeline Edits" on page 129.
CONFORM ALL TAKES	Conform edits for all takes. This makes Dragonframe place frame order numbering on your source files to reflect edits such as deletes and cutbacks.	"Conforming Timeline Edits" on page 129.
SWITCH TAKE>	View a drop-down list of takes associated with the scene you're working on.	"Switching Takes" on page 139.
MANAGE TAKES...	Open the Manage Takes dialog, where you can duplicate or rename a take.	"Managing Takes" on page 139.
LOAD LINE-UP IMAGE...	Load a still image into the current scene.	"Adding a Line-Up Layer (Movie or Still)" on page 109.
LOAD LINE-UP MOVIE...	Load a Dragonframe scene or a QuickTime movie as a roto-layer.	"Adding a Line-Up Layer (Movie or Still)" on page 109.

Select this menu item:	To:	See also:
IMPORT>	Import dialogue cues, camera moves, exposures, or drawings from another scene. Or import the phonetics from scrubbed audio.	"Importing Scene Settings" on page 140.
EXPORT TO QUICK-TIME...	Open a Create QuickTime dialog.	"Creating a Quick-Time Movie of Your Take" on page 274.
EXPORT IMAGE SEQUENCE...	Export an image sequence with attri-butes you choose (instead of accessing your files directly).	"Exporting Image Sequences" on page 279.
EXPORT STEREO (3D) QUICKTIME...	Export stereo images for preview in QuickTime.	"Exporting Stereo Sequences to QuickTime" on page 268.
EXPORT STILL IMAGE...	Export the image you're viewing in the Cinematography workspace.	"Exporting the Cinematography View" on page 71.
EXPORT X-SHEET	Export the X-Sheet to a CSV file.	"Exporting the X-Sheet as a CSV" on page 183.
PRINT...	Print a copy of the X-Sheet.	"Printing the X-Sheet" on page 181.
PREFERENCES	Open Preferences. There, you can adjust settings for your entire project.	"Configuring Pref-erences" on page 281.
QUIT	Exit Dragonframe.	N/A

Edit Menu

Select this menu item:	To:	See also:
UNDO	Undo actions: capturing a frame, deleting, cutting back, or editing.	N/A
REDO	Cancel any action you undid.	N/A
CUT	Cut the selected frames.	• "Cutting, Copying or Pasting Frames with the Timeline" on page 123. • "Cutting or Copying from the X-Sheet" on page 173.
COPY	Copy the selected frames.	• "Cutting, Copying or Pasting Frames with the Timeline" on page 123. • "Cutting or Copying from the X-Sheet" on page 173.
PASTE...	Paste the selected frames.	• "Cutting, Copying or Pasting Frames with the Timeline" on page 123. • "Pasting Frames from the X-Sheet" on page 173.
DELETE	Delete the selected frames.	• "Deleting Frames from the Timeline" on page 125. • "Deleting Frames from the X-Sheet" on page 177.
SELECT ALL	In the DMX workspace, select all the keyframes if you have a keyframe selected. Otherwise, select all of the channels.	"Selecting Keyframes" on page 194.

Select this menu item:	To:	See also:
PASTE INSERT	Insert frames.	"Cutting, Copying or Pasting Frames with the Timeline" on page 123.
PASTE OVERWRITE	Replace frames.	• "Cutting, Copying or Pasting Frames with the Timeline" on page 123. • "Pasting Frames from the X-Sheet" on page 173.
PASTE REVERSE	Insert frames in reverse order.	• "Cutting, Copying or Pasting Frames with the Timeline" on page 123. • "Pasting Frames from the X-Sheet" on page 173.
PASTE REVERSE OVERWRITE	Replace frames with frames in reverse order.	• "Cutting, Copying or Pasting Frames with the Timeline" on page 123. • "Pasting Frames from the X-Sheet" on page 173.
HIDE FRAMES	Remove frames from the timeline or X-Sheet without deleting them.	• "Hiding Frames with the Timeline" on page 124. • "Hiding a Frame in the X-Sheet" on page 175.
HOLD FRAME...	Repeat a frame, as if you were to copy and paste it multiple times.	• "Holding Frames with the Timeline" on page 122. • "Holding a Frame in the X-Sheet" on page 174.

Select this menu item:	To:	See also:
MARK IN	Set the in point for playback.	• "Animation Nav-Line Overview" on page 22. • "Play Section" on page 99.
MARK OUT	Set the out point for playback.	• "Animation Nav-Line Overview" on page 22. • "Play Section" on page 99.
GO TO IN POINT	View the in point's frame in the View pane.	"Animation Nav-Line Overview" on page 22.
GO TO OUT POINT	View the out point's frame in the View pane.	"Animation Nav-Line Overview" on page 22.

View Menu

Select this menu item:	To:	See also:
SIZE >	Select from a drop-down list of image sizes.	N/A
ORIENTATION >	Select from a drop-down list of orientations.	N/A
GRID>	Overlay a grid on the View pane.	"Adding a Grid Overlay" on page 66.
COMPOSITION GUIDES...	Open the Composition Guides dialog, where you can adjust the broadcast-safe overlay, the Aspect Ratio Mask, and the mask push-in.	"Adjusting Composition Guides from the Dialog" on page 63. "Composition Guides" on page 63.
AUXILIARY MONITOR>	Display a full screen view of the Live View or playback on another monitor	"Using an Auxiliary Monitor" on page 100.

Scene Menu

Select this menu item:	To:	See also:
GENERAL...	Adjust scene settings.	"Configuring Scene Settings" on page 290.
EXPOSURES...	Add multiple exposures to your scene.	"Working with Multiple Exposures from the Menu" on page 86.
CONNECTIONS...	Connect supported hardware, like the DDMX-S2 or a stereo slider, to Dragonframe.	"Connecting DMX to Dragonframe" on page 189. "Connecting to the DESC through Dragonframe's Connections Tab" on page 244. "Connecting to a 3D Slider" on page 251. "Connecting Dragonframe to MoCo Hardware" on page 220.
TRIGGERS...	Work with electrical inputs or outputs.	"Adding Input and Output Triggers" on page 209.

Capture Menu

Select this menu item:	To:	See also:
SHOOT SINGLE FRAME	Shoot a frame with your capture source.	"Keypad Controls" on page 95.
SHOOT MULTIPLE FRAMES...	Shoot more than one frame.	"Shoot Multiple" on page 101.
TIME-LAPSE...	Shoot a time-lapse sequence.	"Time-lapse" on page 133.
SHOOT 2 FRAMES	Shoot two frames with your capture source.	"Shoot Multiple" on page 101.
SHOOT 3 FRAMES	Shoot 3 frames with your capture source.	"Shoot Multiple" on page 101.
SHOOT 4 FRAMES	Shoot 4 frames with your capture source.	"Shoot Multiple" on page 101.

Select this menu item:	To:	See also:
SHOOT PREVIEW IMAGE	Use Dragonframe without a video assist.	"Shooting Without a Video Assist" on page 59.
CUT BACK...	Jump to a frame and, if you wish, delete the intervening frames.	"Cut Back Key" on page 97.
VIDEO SOURCE >	Select your video source.	• "How Dragonframe Works" on page 1. • "Camera Connections" on page 47.
CAPTURE SOURCE >	Select your capture source.	• "How Dragonframe Works" on page 1. • "Camera Connections" on page 47.
CAMERA SETTINGS...	Open the Camera tab of the Settings dialog.	"Camera Settings" on page 291.
PAUSE CAMERA	Pause your camera's Live View to avoid overheating.	N/A
RESET/REFRESH CONNECTIONS	Reset connections to cameras.	"Switching Video or Capture Sources" on page 60.
LOCK/UNLOCK FOCUS	Lock the camera's focus (Canon PowerShot only).	"Adjusting Focus and Zoom with the Canon PowerShot Camera" on page 79.
ZOOM IN	Zoom in on the image (Canon PowerShot only)	"Adjusting Focus and Zoom with the Canon PowerShot Camera" on page 79.
ZOOM OUT	Zoom out from the image (Canon PowerShot only).	"Adjusting Focus and Zoom with the Canon PowerShot Camera" on page 79.

Playback Menu

Select this menu item:	To:	See also:
FPS >	Select from a drop-down list of frame rates.	"Playback Speed" on page 99.
PLAY TO BLACK	Add black frames to the end of playback.	"Black (End in Black) Key" on page 98.
LOOP	Loop playback.	"Loop Key/Ping-Pong" on page 97.
SHORT PLAY	Play back only some of the frames from a sequence.	"Short Play Key" on page 98.
REVERSE	Play the sequence backwards.	N/A
TOGGLE >	Toggle the last frame and the Live View.	"Auto-Toggle Key" on page 96.
EXPOSURES>	Switch which exposure you'll view during playback. Usually, you'll view the exposure that you're ready to capture, or the AUTO option. You can switch to other exposures and view those instead.	N/A
MONO	Play back images normally.	"Playing Back Stereo Sequences in Dragonframe" on page 267.
3D ANAGLYPH COLOR	Play back frame sequence using anaglyph images, in color.	"Playing Back Stereo Sequences in Dragonframe" on page 267.
3D ANAGLYPH B/W	Play back frame sequence using anaglyph images, in black and white.	"Playing Back Stereo Sequences in Dragonframe" on page 267.
3D TRANSPARENT COLOR	Play back frame sequence using transparent 3D images, in color.	"Playing Back Stereo Sequences in Dragonframe" on page 267.
3D TRANSPARENT B/W	Play back frame sequence using transparent 3D images, in black and white.	"Playing Back Stereo Sequences in Dragonframe" on page 267.

Window Menu

Select this menu item:	To:	See also:
MINIMIZE ALL	Minimize all of Dragonframe's workspaces.	N/A
SHOW/HIDE CINEMATOGRAPHY	Open the Cinematography workspace, or close it if it's already open.	"Cinematography Workspace Overview" on page 24.
SHOW/HIDE X-SHEET	Open the X-Sheet in its own window, or close it if it's already open.	• "X-Sheet Overview" on page 27. • "Using the X-Sheet" on page 169.
SHOW/HIDE DMX	Open the DMX workspace, or close it if it's already open.	• "Automate Lighting with DMX" on page 187.
SHOW/HIDE AUDIO	Open the Audio workspace, or close it if it's already open.	• "Adding and Editing Audio Clips" on page 143. • "Reading Dialogue Tracks" on page 153.
SHOW/HIDE KEYPAD	Open the practice keypad, or close it if it's already open.	"Keypad Window Overview" on page 33.
SHOW/HIDE MOTION CONTROL LOG	Open the Motion Control log, or close it if it's already open.	"Using External Motion Control Systems with Dragonframe" on page 240.
ANIMATION [PROJECT NAME]	Open or close the Animation workspace.	"Animation Workspace Overview" on page 15.

Help Menu

Select this menu item:	To:	See also:
USER GUIDE...	Open the current version of this User Guide	N/A
WEB SITE SUPPORT	Open an Internet browser and link to Dragonframe's support web site.	N/A

Select this menu item:	To:	See also:
REPORT A PROBLEM/CRASH/ BUG	Open a support ticket, notifying us of any problems you run into with Dragonframe. The Dragonframe team resolves or addresses each ticket and posts updates on the Help Ticket site. Every ticket is assigned a number so you can track the resolution of your ticket.	N/A
CAMERA TEST...	Run a test of your camera to help us assist you with connection problems.	N/A
ACTIVATE LICENSE	Enter a license key if you've just switched from a trial version of Dragonframe to the full version.	“Upgrading to a Full License from a Trial License” on page 8.
DEACTIVATE LICENSE	Deactivate Dragonframe on one computer to allow you to transfer it to another one.	“Transferring a License” on page 9.
ABOUT DRAGONFRAME	View a dialog with version information.	N/A

Chapter 3: Camera Connections

Dragonframe generally uses two image sources while shooting.

1. A capture camera shooting high-quality images. These frames make up your final animation. For example, you might use:

    - A supported DSLR camera.
    - A supported non-SLR digital camera (such as the Canon PowerShot).
    - A digital video camera.
    - An HD video camera.
    - A film camera.
    - An unsupported camera.

2. A live video source, letting you step to the Live View from the captured frames, and giving you access to a variety of Dragonframe's animation tools. For example, you might use:

    - The Live View on your digital still camera.
    - A video feed from your digital still camera.
    - A digital video camera.
    - A lipstick camera or spy cam set up through your capture camera's viewfinder.
    - An analog video source connected to your computer through an AV/DV bridge.

Dragonframe doesn’t have to control both sources for you to use the program. For example, you might want to use Dragonframe as a feed-only frame grabber: using a digital video camera to preview your animation, but a film camera to capture your full-res images. Or, you might work without a video source, using the still images captured from your cameras to preview frames.

CAUTION: Canon PowerShot and Olympus DSLR camera support is deprecated as of Dragonframe 3. The next major version of the software (Dragonframe 4) may not include support for these cameras.

This chapter reviews how to connect different camera types to Dragonframe. It contains the following sections:

"Camera Options" on page 48.
"Connecting DSLRs or DSCs with Live View" on page 50.
"Connecting DSLRs or DSCs without Live View" on page 51.
"Connecting Digital Video Cameras" on page 51.
"Connecting HD Video Cameras with HDMI" on page 52.
"Connecting HD Video Cameras with HDV" on page 52.
"Connecting an Unsupported Camera to Dragonframe" on page 55.
"Shooting Without a Video Assist" on page 59.
"Switching Video or Capture Sources" on page 60.

See also:
"Camera Options" on page 48.
The camera page on our website:
http://www.dragonframe.com/camera.php
"How Dragonframe Works" on page 1.
"Quick Set-Up Guide for Supported Video and Still Cameras" on page 9.

Camera Options

The sections that follow give tips for different camera configurations you might use with Dragonframe. Each one also explains how that particular configuration works with Dragonframe.

See also:
The camera page on our website:
http://www.dragonframe.com/camera.php
"Finding Your Source Files" on page 270.
"How Dragonframe Works" on page 1.
"Quick Set-Up Guide for Supported Video and Still Cameras" on page 9.

DSLR or other DSC with Live View

This is the optimum configuration for Dragonframe. Both the video assist for previewing animation and the high-res capture frames, which can include RAW, are pulled from the same digital still camera (DSC). When you connect your camera to your computer, Dragonframe will automatically detect that you have a DSC with Live View and set up the sources accordingly.

See also:
"Connecting DSLRs or DSCs with Live View" on page 50.

DSLR or other DSC with a Separate Video Source

Many people set up their preview frames from a separate DV or HD camera while shooting high-res frames from a digital still camera (DSC). Some people set up spy cams that look through the DSC's view-finder. Or, you can set up a DV camera close to your DSC. Check your animation with the video assist; Dragonframe grabs the high-res frames from the DSC.

"Connecting DSLRs or DSCs without Live View" on page 51.

Video Only

If you are shooting with video only, Dragonframe will extract a video assist and capture frames from the same video signal. When you shoot, Dragonframe grabs a low-res preview image for frame flipping. It also generates a high quality still from the video stream and saves it in the captured frames folder.

See also:

"Connecting Digital Video Cameras" on page 51.

"Connecting HD Video Cameras with HDMI" on page 52.

"Connecting HD Video Cameras with HDV" on page 52.

Motion Picture Film and a Video Source

Dragonframe works very well for film. Set up Dragonframe with a video signal from the film camera's video assist. You will need to convert the analog signal to DV. If you do not have video assist, set up a DV camera alongside the film camera. Whether you use video assist or not, you will need to trigger the film frames from a separate control.

See also:

"Connecting Digital Video Cameras" on page 51.

"Using External Motion Control Systems with Dragonframe" on page 240.

An Unsupported Camera

If Dragonframe does not currently support your camera, you can still use the software. Set up folder watching so Dragonframe can look for the frames your camera captures in the folder where they're stored.

Or, if your camera doesn't work with folder watching, you might connect your camera to Dragonframe via the DDMX-S2, and use the DDMX-S2's switch/relay output to trigger the camera.

See also:
"Connecting an Unsupported Camera to Dragonframe" on page 55.
"Adding a Switch/Relay Output Trigger" on page 210.

Digital Camera without Live View and without Live Video

If you're unable to work with a video feed for some reason (your camera doesn't support Live View, and you don't have a digital video camera), you can use Dragonframe to shoot "preview" frames that substitute for a Live View.

See also:
"Shooting Without a Video Assist" on page 59.

Connecting DSLRs or DSCs with Live View

To connect to digital still cameras (DSCs), including DSLRs, with a Live View output:

1. Check our website's camera page for individual setup instructions:
   http://www.dragonframe.com/camera.php
   Scroll down the list of supported cameras and find your camera.
   Click **DETAILS** to view setup instructions.

2. Set the camera's shooting mode to **MANUAL.**

3. Turn on the camera and connect it to your computer:

   - For Canon and Nikon digital still cameras, connect the camera with a USB cable.
   - For Olympus DSLRs, make two connections, one for camera controls, and one to receive the Live View.
     For camera controls, connect the camera to your computer with a USB cable for camera controls.
     For Live View, decide whether to use the camera's AV output or HDMI output. For AV, connect your camera to your computer with an AV cable. For HDMI, install an HDMI conversion card, then plug your camera into it with an HDMI cable.

4. Open Dragonframe.

Dragonframe should connect to the camera and show the Live View in the Animation workspace.

5. Use the Camera Control pane in the Cinematography workspace to set the camera's exposure, white balance and image size.

See also:
"Connecting HD Video Cameras with HDMI" on page 52.
"Adjusting and Locking Camera Settings" on page 78.

Connecting DSLRs or DSCs without Live View

If your digital still camera (DSC), such as a DSLR, does not have Live View, connect it to Dragonframe in this way:

1. Check our website's camera page for individual setup instructions:
   http://www.dragonframe.com/camera.php
   Scroll down the list of supported cameras and find your camera.
   Click **DETAILS** to view setup instructions.

2. Set the camera's shooting mode to **MANUAL.**

3. Turn on the camera and connect it to your computer with a USB cable.

4. Open Dragonframe.

Dragonframe should connect to the camera.

5. Select **CAPTURE|CAPTURE SOURCE** to make sure your camera is selected.
   Or, check that your camera's name appears in the bottom right corner of the Animation workspace.

6. Use the Camera Control pane in the Cinematography workspace to set the camera's exposure, white balance and image size.

7. Choose a video source:

   - Use a video source for the video assist frames.
   - Shoot with the DSLR only.

See also:
"Connecting Digital Video Cameras" on page 51.
"Connecting HD Video Cameras with HDMI" on page 52.
"Shooting Without a Video Assist" on page 59.
"Adjusting and Locking Camera Settings" on page 78.

Connecting Digital Video Cameras

1. Turn on the DV camera and connect it to your computer with a Firewire cable.

2. Open Dragonframe.

Dragonframe should connect to the DV source and show the Live View in the Animation workspace.

See also:
The camera page on our website:
http://www.dragonframe.com/camera.php

Connecting HD Video Cameras with HDMI

HDMI is an un-compressed video format for delivering high-definition video to your computer. To use HDMI video with Dragonframe, you must have an HDMI conversion card like the one from Blackmagic Design:
http://www.blackmagic-design.com/products/intensity/

1. Install the HDMI conversion card into your computer according to the manufacturer's instructions.

2. Connect your camera to the card with an HDMI cable.

3. Open Dragonframe.

Dragonframe should connect to the HDMI source and show the Live View in the Animation workspace.

See also:
The camera page on our website:
http://www.dragonframe.com/camera.php

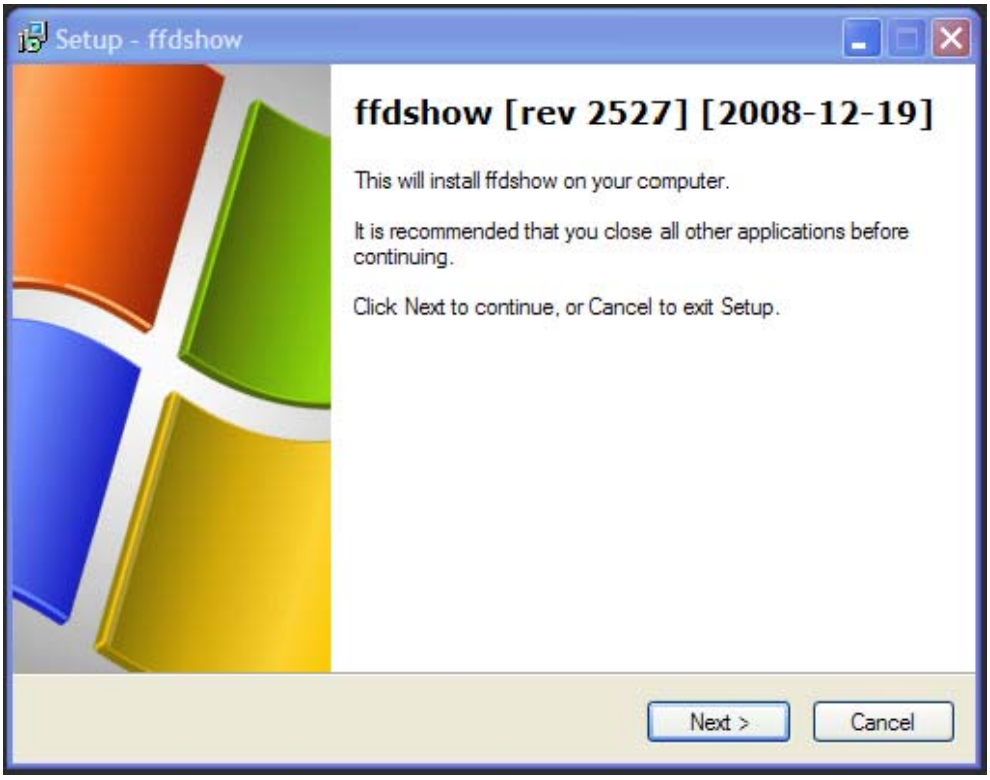
Connecting HD Video Cameras with HDV

HDV is a compressed video format for delivering high-definition video over Firewire to your computer. Windows XP, Vista, and 7 support HDV if you install an MPEG-2 decoder. Ffdshow is a free, open source MPEG-2 decoder for Windows available from our web site.

To use HDV with your Windows computer:

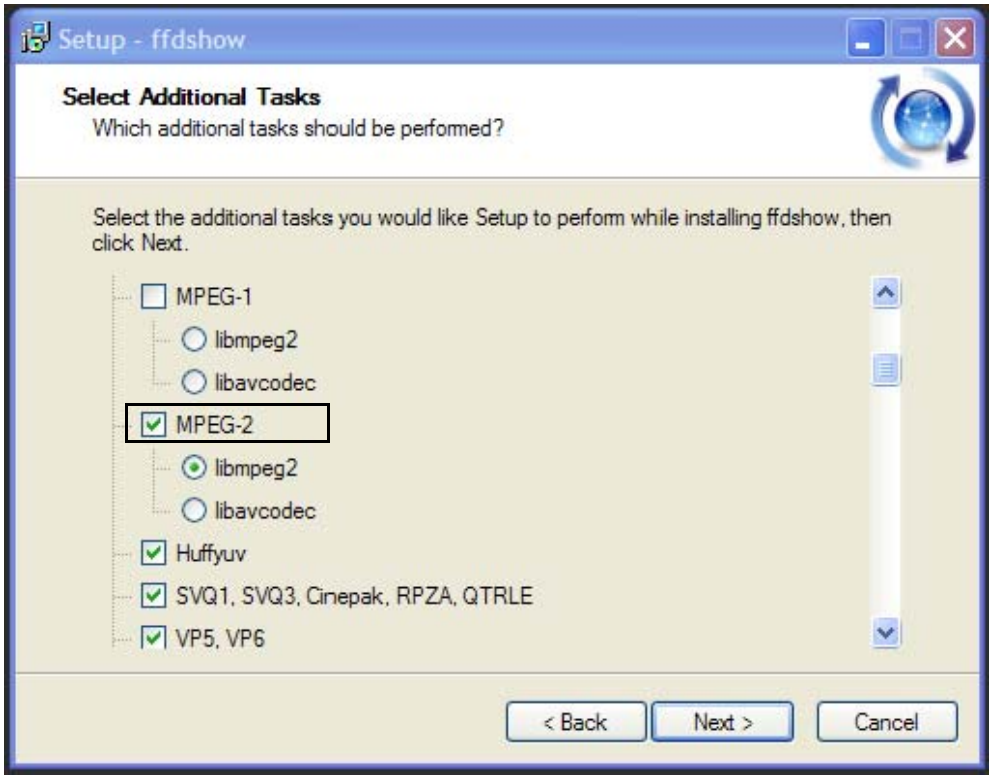
1. Download the ffdshow installer from our downloads page:
http://www.dragonframe.com/downloads/index.php

2. Run the installer. The Setup dialog appears.



3. Click **NEXT**. The Select Destination Location dialog appears.
4. Click **NEXT**. The Select Components dialog appears.
5. Click **NEXT**. The Select Start Menu Folder dialog appears.

6. Click **NEXT**. The Select Additional Tasks dialog appears:



Select Additional Tracks dialog, with MPEG-2 checked.

7. Scroll down to **MPEG-2** and check the box.

8. Click **NEXT**.

9. Click **NEXT** two more times, then click **FINISH** on the last dialog. Your computer installs **FFDSHOW.EXE**.

10. Turn on the HD camera and connect it to your computer with a Firewire cable.

11. Open Dragonframe.

Dragonframe should connect to the HD source and show the Live View in the Animation workspace.

See also:
The camera page on our website:
http://www.dragonframe.com/camera.php

Connecting an Unsupported Camera to Dragonframe

Even if Dragonframe doesn't support your camera, you can still use the program. Dragonframe can detect images downloaded from your camera through folder watching. Folder watching also lets you shoot stills directly from Dragonframe, making the integration as seamless as possible. Unfortunately, folder watching cannot integrate with some Dragonframe features, such as camera settings.

NOTE: If your camera doesn't work with folder watching, you might connect your camera to Dragonframe via the DDMX-S2, and use the DDMX-S2's switch/relay output to trigger the camera. See "Using an External Relay Switch or a Logic Output to Automate a Bash Light" on page 214.

To set up Dragonframe's folder watching for an unsupported camera, you'll:

1. Connect your camera(s) physically to your computer.
   "Connect Your Camera(s) to Your Computer" on page 55.

2. Check settings in your camera's capture utility.
   "Check Your Capture Utility's Settings" on page 56.

3. Make sure Dragonframe knows which capture utility you're using.
   "Check the Capture Utility Selected in Dragonframe" on page 57.

4. (Optional) Tell Dragonframe which keystroke your capture utility uses so Dragonframe can control your camera.
   "Set Up Dragonframe's Keystroke" on page 57.

5. Tell Dragonframe where your capture utility downloads your pictures.
   "Select Which Folder Dragonframe Will Watch" on page 58.

6. (Optional) Tell Dragonframe how many images to expect from your camera for every shot.
   "Set Up the Image Count" on page 59.

7. Verify your folder watching setup.
   "Test Folder Watching" on page 59.

Connect Your Camera(s) to Your Computer

1. Install and open a capture utility that works with your camera, such as Olympus Studio 2.
   A capture utility controls the camera on your computer, so you can shoot stills by pressing a key on the keyboard, adjust settings on

your screen, and download images from the camera onto your computer.

2. Connect your capture camera to your computer.

3. Plug your camera into its power source (or fully charge its battery).

4. Turn your camera on.

5. Set the camera to **CAPTURE** mode (not **PLAY**).

6. (Optional) Connect a video source.

Check Your Capture Utility's Settings

1. Start your camera's capture utility if it doesn't start automatically. Open up the portion of the program that remotely controls your camera.

2. Check which keypress you'd use to take a picture.
For example, for Canon cameras working with the Canon EOS Utility, you press **SPACEBAR**.

3. Set the folder where you want your stills to download on your computer. This is the folder Dragonframe will "watch".
Keep the default (usually your **PICTURES** folder) or set up a new folder. Make a note of the location.

Select Capture and Video Sources in Dragonframe

1. Open Dragonframe.

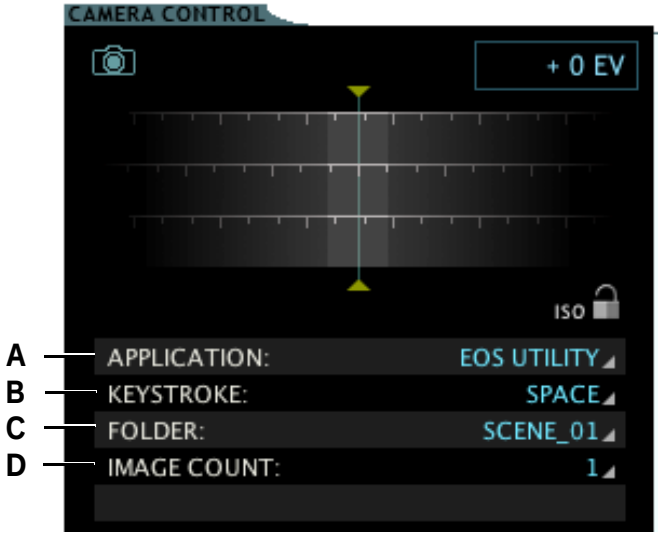
2. Select **CAPTURE|CAPTURE SOURCE|FOLDER WATCH**.

3. Check that your video source is connected:

   - If you will use stills from this camera as a video source, select **CAPTURE|VIDEO SOURCE|FOLDER WATCHING**.
   - If you are using a supported video source, Dragonframe will automatically detect and connect to your video source.
   - If you will work without a video source, see "Shooting Without a Video Assist" on page 59..

Check the Capture Utility Selected in Dragonframe

1. From Dragonframe, open the Cinematography workspace. The Camera Control pane displays details about your camera's connection to Dragonframe:



A. *Application: Shows which camera utility Dragonframe will use to communicate with your camera.*

B. *Keystroke: The key your utility uses to capture an image. Here, the key is* **SPACE**.

C. *Folder: Shows where Dragonframe will look for pictures downloaded from your camera. This is the folder being "watched."*

D. *Image Count: How many images your camera will download for each capture. For example, if you will download both a JPEG and a RAW image, set* **IMAGE COUNT** *to* **2**.

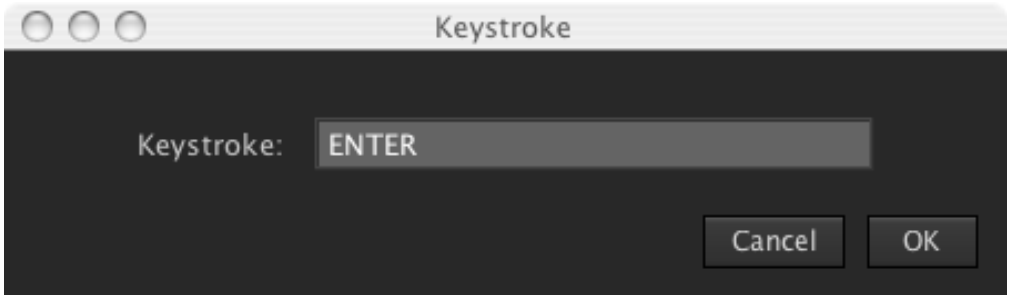
2. (Optional) Change the capture utility **APPLICATION** (A.) if it's incorrect.

Set Up Dragonframe's Keystroke

In the Cinematography workspace's Camera Control pane, you can set up the **KEYSTROKE** to take pictures without having to switch back and forth between the capture utility and Dragonframe:

1. Compare the **KEYSTROKE** displayed with the one you noted in "Check Your Capture Utility's Settings" on page 56.

2. If they don't match, click the keystroke (here, **SPACE**) and select **SET...** The Keystroke dialog appears:



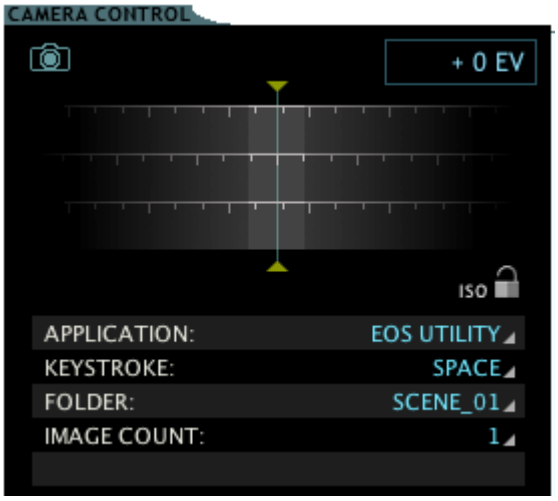
3. Press the key that your camera utility uses. Here, the keystroke is **ENTER**.

   Dragonframe displays the keypress in the dialog. Now, when you press **SHOOT**, or take a test shot, Dragonframe will have your picture utility capture a still.

NOTE: If you wish to use your camera utility to capture stills, you don't have to set up the keystroke. Dragonframe will automatically detect any stills you capture using the utility and display them.

Select Which Folder Dragonframe Will Watch

From Dragonframe's Cinematography workspace, select the **FOLDER** where your utility will download pictures.



1. Click the currently selected folder (above it's called **SCENE_01**) and click **BROWSE...** Dragonframe opens the Open dialog.

2. Navigate to the folder where the utility will download your stills and click **CHOOSE**. This is the folder you noted in “Check Your Capture Utility’s Settings” on page 56.

Set Up the Image Count

From Dragonframe’s Cinematography workspace, set the number of images to download with **IMAGE COUNT**.

- If you will only download one image from your camera, keep the **IMAGE COUNT** at **1**.
- If you will download two images, (for example, a RAW with .jpg), set it to **2**.

Test Folder Watching

To check that the integration with your camera utility is working:

- From Dragonframe’s Cinematography workspace, press **TEST SHOT** to take a test shot.
- Or, if you didn't set up a **KEYSTROKE**, take a test shot in your camera utility.

Dragonframe detects the still in the folder you're watching and displays it as a thumbnail in the test shot tray at the bottom of the Cinematography workspace.

See also:
The camera page on our website:
http://www.dragonframe.com/camera.php
“Camera Options” on page 48.

Shooting Without a Video Assist

Dragonframe will work without a video feed, using stills from your capture source as preview images. Using Dragonframe this way, however, means that you won't get automatic “updates” when you change something on your set.

To work without a video source:

1. Connect your still camera to your computer.
2. Close any associated programs that open with your camera (for example, iPhoto).

3. Open Dragonframe. Create a new scene, or open one you've already worked on.

The Animation workspace opens.

4. Select **CAPTURE|VIDEO SOURCE|[YOUR CAMERA NAME] (STILLS)**. Dragonframe configures itself to work with only a capture camera, and displays this message:

5. Click **OK** to close the message.

6. Set up your first shot. When you're ready, press **LIVE** to shoot a preview image.

7. Press **SHOOT** to shoot a capture image.

See also:
"Creating a New Scene" on page 135.

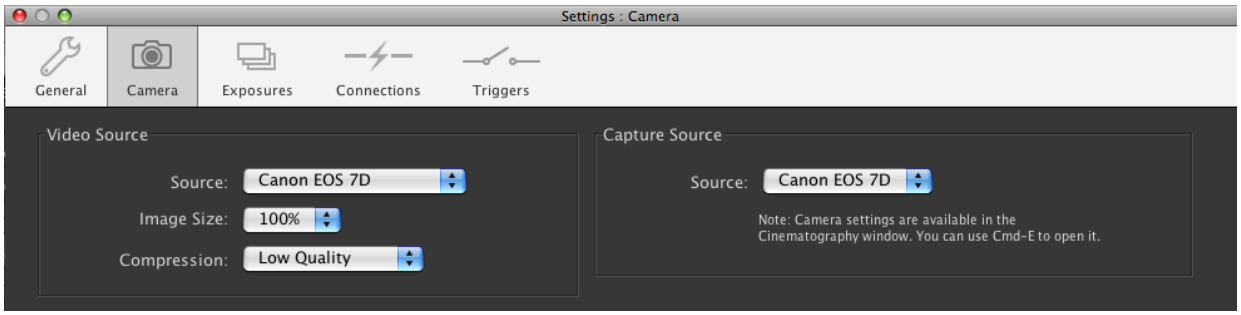
Switching Video or Capture Sources

If you decide to change the camera you're using to capture full-res stills, or you forgot to connect your video camera to your computer before opening Dragonframe, you can select a new source. To select a video or capture source:

- Press **CTRL R** to reset the connections to any cameras you've connected to your computer.
- Select **CAPTURE|VIDEO SOURCE|**your video source's name.
- Select **CAPTURE|CAPTURE SOURCE|**your camera's name.

- Or use the Scene Settings dialog:

  a. From the Scene menu, click **SETTINGS|CAMERA**. The Camera Settings window appears.



  b. Select the new video source or the capture source from the appropriate drop-down list. The settings for the source appear.

  c. Adjust the settings if you wish, and close Camera Settings.

NOTE: Dragonframe detects video sources and cameras automatically. If the source doesn't appear in the drop-down list, there is either a problem with its connection to your computer, or Dragonframe does not support it.

See also:
The camera page on our website:
http://www.dragonframe.com/camera.php

Chapter 4: Cinematography Tools

The Cinematography workspace gives you access to a variety of tools, from basic composition guides and exposure settings to planing multi-layered effect sequences.

This chapter includes the following sections:

"Composition Guides" on page 63.
"Image Controls" on page 68.
"Multiple Passes and Exposures" on page 80.
"Tricks of the Trade" on page 92.
"Special Keys and Contextual Menus for the Cinematography Workspace" on page 93.

See also:
"Cinematography Workspace Overview" on page 24.
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Composition Guides

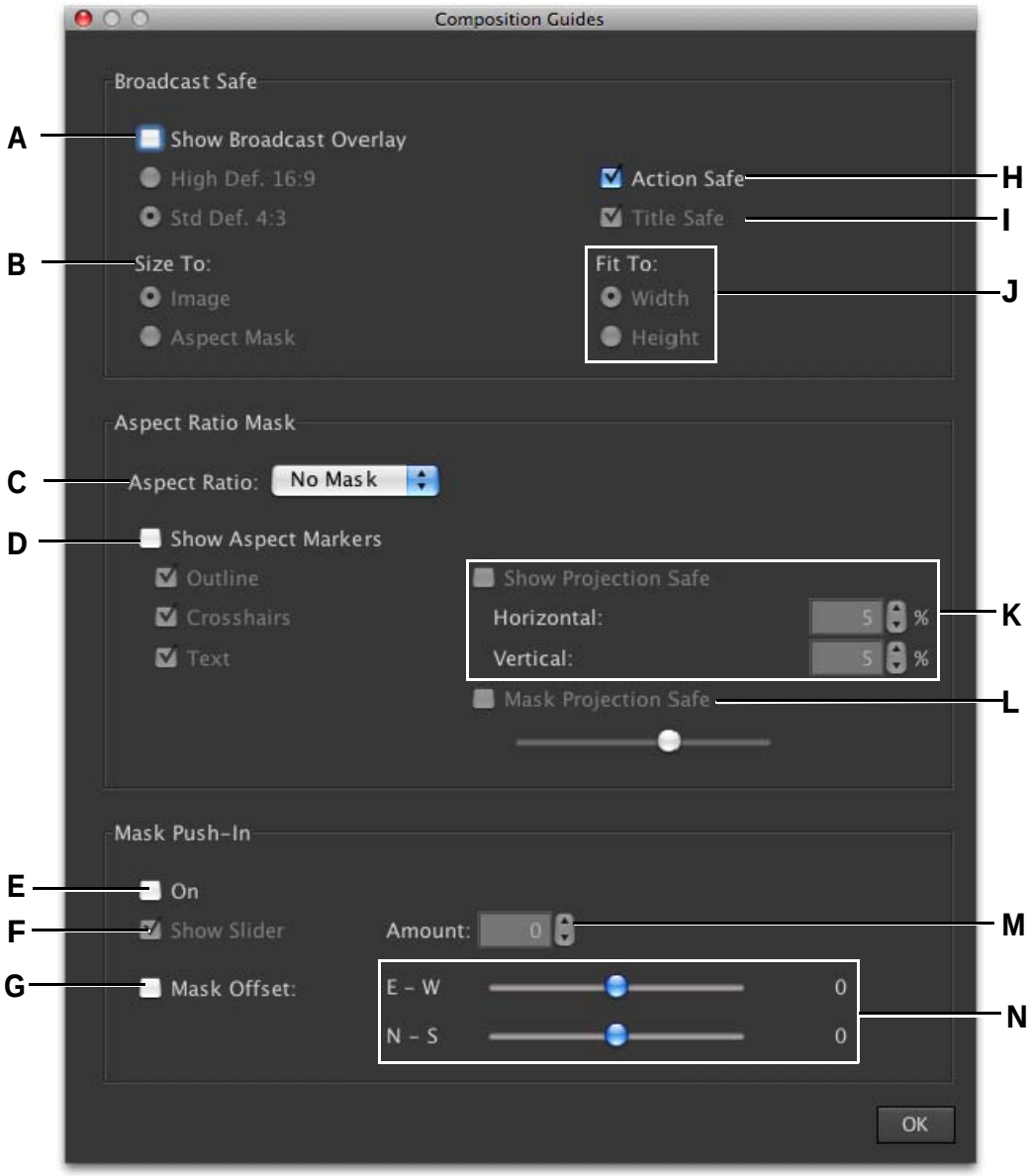
Dragonframe includes four different types of masks and overlays to aid composition:

- An aspect ratio mask,
- A broadcast-safe overlay,
- A grid overlay, and
- A mask push-in for the aspect ratio mask and broadcast-safe overlay.

Adjusting Composition Guides from the Dialog

Adjust the broadcast-safe guide, aspect ratio mask, and mask push-in all at once from the Composition Guides Menu.

Select **VIEW|COMPOSITION GUIDES** to open the dialog:



A. *Turn on the TV-safe overlay. Use the radio buttons to select the overlay's size.*

B. *Choose how to size the overlay.*

C. *Select the ratio for the mask.*

D. *Show or hide the aspect markers.*

E. *Turn on the mask push-in.*

F. *Select whether the push-in slider appears in the Animation workspace.*

G. *Mask Offset: Adjust how the push-in mask is aligned within the image. This way, you could leave all of your extra space on one side of the image.*

H. *Include action-safe boundary.*

I. *Include title-safe boundary.*

J. *Fit the overlay to the width or height of the image.*

K. *Show or hide the projection-safe guide, a customizable alternative to standard broadcast-safe values.*

L. *Set projection-safe guides as a percentage of the image width or height.*

M. *Choose how much to push in the mask.*

N. *Adjust the pushed-in image offset horizontally or vertically.*

Adding an Aspect Ratio Mask

The aspect ratio button places masks over the Live View in the Animation or Cinematography workspaces to help you see how an image might look cropped. By default, the Live View has no mask selected.

To use the aspect ratio cropping aid:

1. From the Animation tools, click the aspect mask selection button to view the drop-down list of mask options.

2. Select an aspect ratio or create a custom ratio.

3. Adjust the opacity of the mask with the mask opacity slider on the left side of the Animation tools:

   Customize your mask from **VIEW|COMPOSITION GUIDES**.

NOTE: The aspect ratio mask is a framing guide that does not crop your saved frames. You can choose to crop based on the aspect mask during a QuickTime or image sequence export.

See also:
"Creating a QuickTime Movie of Your Take" on page 274.
"Exporting Image Sequences" on page 279.

Adding a Broadcast-Safe Overlay

Use a broadcast-safe overlay as a guide for TV-safe zones. The overlays are not composited onto your final image.

1. Click the broadcast-safe icon on the left side of the Animation tools.

2. Select the type and sizing of broadcast-safe from **VIEW|COMPOSITION GUIDES**.

NOTE: Click the broadcast-safe icon to show or hide the broadcast-safe overlay.

Broadcast-Safe Options

- Aspect Ratios: **4:3** or **16:9**

- Areas: **ACTION SAFE** or **TITLE SAFE**.
- Sized to:

  Width or height of the entire image.

  Width or height of the aspect mask.

See also:
"Adjusting Composition Guides from the Dialog" on page 63.

Adding a Grid Overlay

Use the Grid Overlay for general composition concerns and other line-up needs.

Click the Grid icon on the left side of the Animation tools to add a grid:

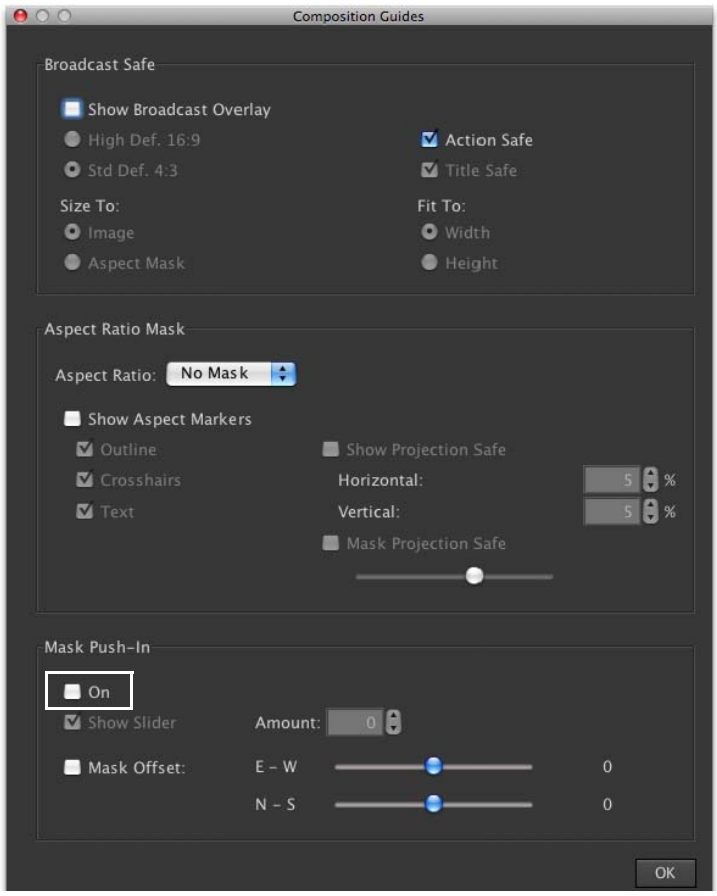
Select **VIEW|GRID** to adjust the grid's sizing (to the aspect mask or to the image) and the number of horizontal and vertical lines.

Pushing In the Broadcast-Safe Overlay and Aspect Ratio Mask

The mask push-in masks a margin. It's useful for post zooms and repositioning for 3D stereo plates.

To push in the overlay:

1. Select **VIEW|COMPOSITION GUIDES**. The Composition Guides dialog appears:



On check box for mask push-in

2. Click **ON**. A new slider appears in the Animation tools:

3. Move the slider to the right to push in the overlay.

See also:
"Using a Push-In Mask for 3D" on page 259.

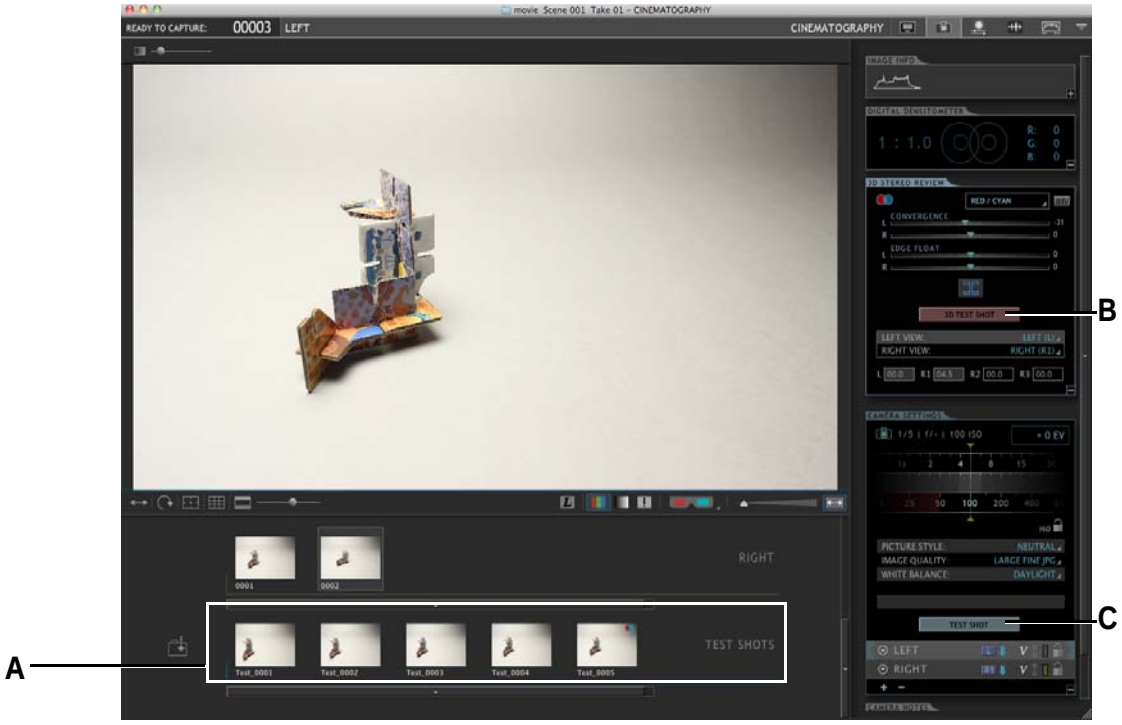
Image Controls

Working with Test Shots

As you set up the look of your shot, the Dragonframe test shot system is ideal for storing and evaluating images along the way. Here are the key features:

- Shoot and save test shots that do not interfere with your animation.
- Evaluate composition and exposure.
- Compare current images with frames from previously shot scenes or takes.

Take mono test shots using the button on the bottom of the Camera Control pane. Take 3D test shots with the button in the 3D Stereo Review pane. A thumbnail of the test shot appears in the test shot tray:



A. *Test Shot Image tray. A stereo image pair appears with a stereo icon on it.* ***B.*** *3D Test Shot button.* ***C.*** *Test Shot button.*

See also:
"Taking 3D Test Shots and 3D Images" on page 260.

Importing Images into the Test Shot Tray

Import images into the Cinematography workspace as test shots. You might want to import images from other sources (such as .jpg or RAW), frames from other scenes, or test shots from other takes. Importing test shots gives you the ability to ensure consistency throughout your project.

To import an image into the test shots folder:

1. Click (located on the bottom left of the Cinematography workspace). The Load Image dialog appears.
2. Navigate to the image you want to import and click **LOAD IMAGE INTO TEST SHOTS FOLDER.**

The new image appears as a thumbnail in the test shots tray. Click the thumbnail to view it full-size in the View pane.

NOTE: You can import .jpg, .jpeg, .tif, .png, .gif, and any RAW format, such as .cr2, .crw, .nef, .nrw, .orf, or .dng.

See also:
"Finding Your Source Files" on page 270.

Dragging and Dropping Exposures into the Test Shot Image Tray

To bring a frame from your take folder into the test shot folder, drag and drop it from the exposure tray into the test shot tray. This will make a duplicate.

Renaming or Deleting Test Shots

- To rename a test shot, right-click on the image and select **RENAME...** The Rename Test Shot window appears. Enter the new name, then click **OK**.
- To delete a test shot, right-click on the image and select **DELETE**. Dragonframe deletes the image.

Changing Test Shot Image Orientation

Rotate or mirror test shot images right from the image tray. Right-click the image and select **ROTATE 180** or **MIRROR**.

Finding Test Shot Source Files

To find out where a test shot is saved, right-click on the image, and select **OPEN IN EXPLORER**. Dragonframe opens Windows Explorer to the folder where the image is saved.

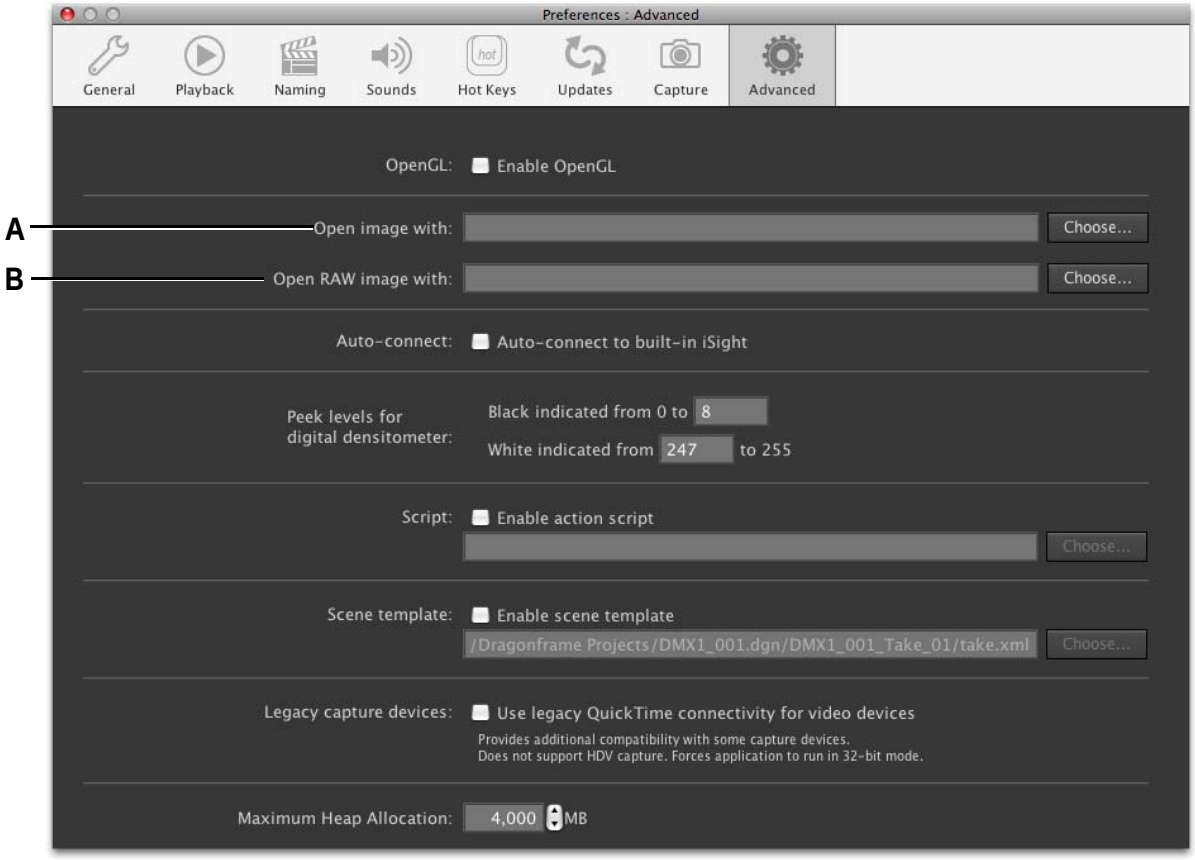
Opening Test Shot Files in Another Application

You may want to work with a test shot in a graphics program in tandem with Dragonframe. Once you choose which application to use for your images, you can open them up directly from the Cinematography workspace.

To open files in another application for the first time, you must set up Preferences:

1. Click **FILE|PREFERENCES...**, then click the **ADVANCED** tab. Dragonframe opens Advanced Preferences.

2. Choose the program you want to use for each image type.



A. *Click to select an application to use for all images.* ***B.*** *Click to select an application to use for RAW images.*

3. Close Preferences to save changes.

To open an image in another application once Preferences are set:

1. Open the Cinematography workspace.

2. Select an image:

    - Double-click the image you want to work with.
    - Or, right-click the image, and select **OPEN IN APPLICATION**.

Dragonframe opens the image in the application you set.

Exporting the Cinematography View

Export the image you're looking at in the Cinematography workspace to save the specific view of the image, such as cropping, a mask push-in, or an anaglyph.

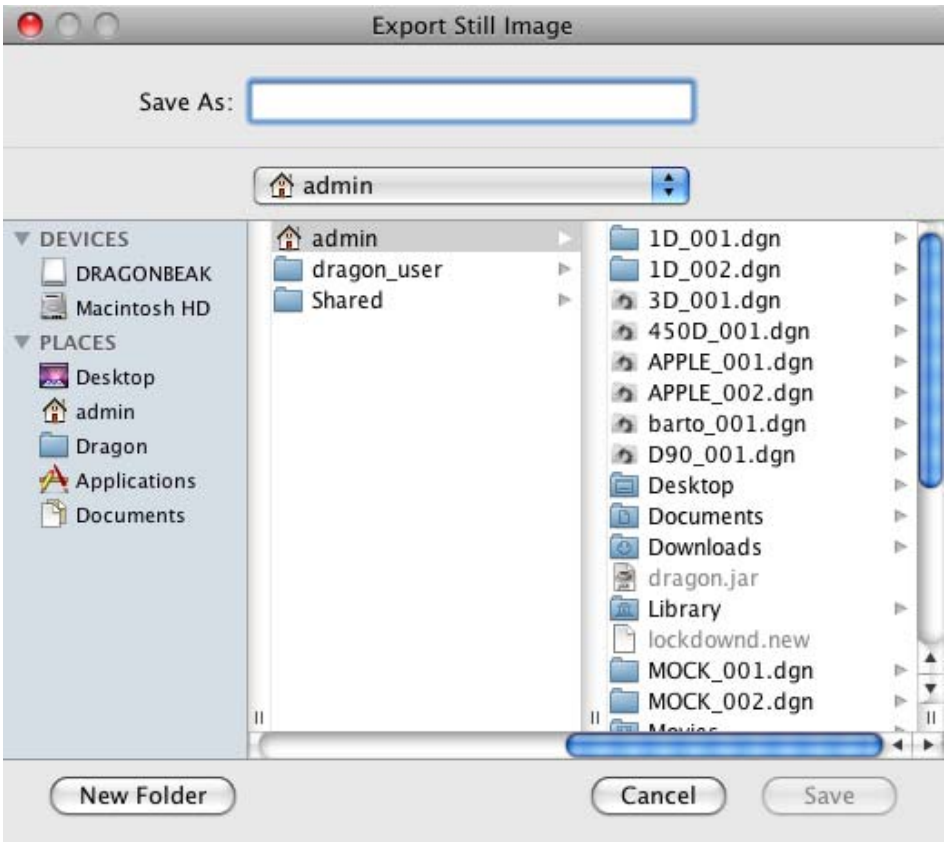
To export an image:

1. Open the Cinematography workspace.

2. Find the image you want to export in the Test Shot image tray or the Exposure Image Tray, and select it. The image appears in the View pane.

3. (Optional) Edit the image as needed, for example cropping it, viewing it as an anaglyph, or viewing clip information.

4. Right-click on the View pane and select **EXPORT STILL IMAGE...** The Export Still Image dialog opens.



5. Name the file, select where to save it, and click **SAVE**. Dragonframe exports the image.

Viewing Modes for Captured Frames

Use the Viewing Modes in the Cinematography workspace to evaluate your images, and adjust camera settings. The table that follows gives more information about each mode.

Use this mode:	To:
L	See the Live View in the View pane of the Cinematography workspace. The Live View will appear in the View pane until you: • Shoot a new frame or test shot. • Select an existing test shot or exposure thumbnail. • Activate the Animation workspace.

Use this mode:	To:
	View the current image in color.
	View the current image in gray-scale.
	View where you will lose (clip) color information because it exceeds the limits of the RGB color space.
	View the current image in 3D. • Click to view a color anaglyph. • Click the arrow to select the type of anaglyph or transparency to view.
	Resize the captured frame or Live View. Slide to the right for a one-to-one pixel ratio with your screen (capture frames only).
	Fit the image in the View pane.

See also:
"Reviewing 3D Images and Test Shots" on page 261.

Cinematography Image Presentation Modes

Press **F** to toggle through the image presentation modes. The default mode shows all of the cinematography tools.

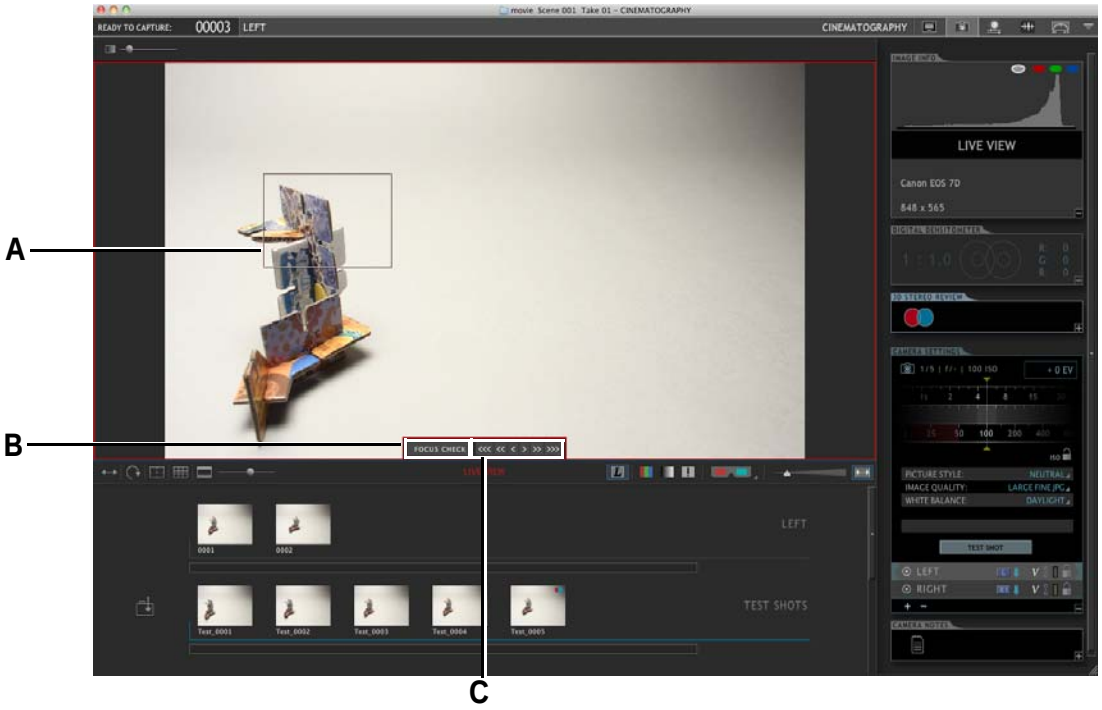
- Press **F** once to hide most of the tools and increase the image viewing area.
- Press **F** again to remove the remaining tools and increase the image viewing area even more.
- Press **F** once more to return to the default mode.

This helps you view large images and present test shots.

Focus Magnification During Live View

On Canon and Nikon DSLRs with Live View, Dragonframe's Cinematography workspace provides Live View magnification for focus check.

Your Live View image will have a white rectangle on it, representing the focus area. It will also have focus check buttons below the image:



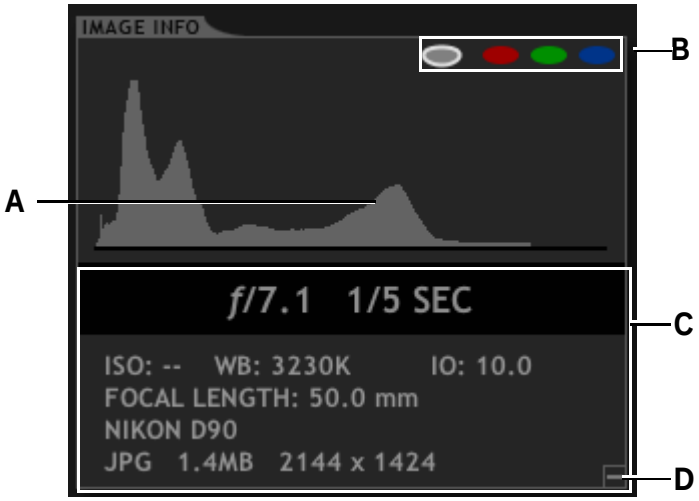
A. *Focus area.* ***B.*** *Focus check: Move in or out of the magnified view.* ***C.*** *Focus arrows: Adjust focus with digital lenses*

To work with the focus area:

1. Click and drag the focus area (A.) to any part of the image.
2. Magnify the focus area:
    - Click within the rectangle to magnify that portion of the Live View. Click anywhere within the image to revert to the full image view. Or,
    - Select and de-select **FOCUS CHECK** (B.) to move in or out of the magnified view.
3. If you have a digital lens, control focus with the focus arrows ().

Viewing Image Information

The Image Info pane in the Cinematography workspace contains a histogram of the selected image or Live View. The histogram looks at 8-bit data. For RAW files, the histogram views an 8-bit proxy.



A. *Histogram of the image or Live View.* ***B.*** *Channel Selection: Choose all, red, green, or blue.* ***C.*** *Picture Meta Data: Info about the image.* ***D.*** *Minimize or maximize the Image Info pane.*

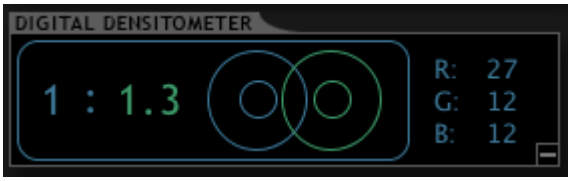
Reading Pixel Values with the Digital Densitometer

You can compare the values of light and dark areas in any image using the digital densitometer. The densitometer shows you relative pixel values of two sample areas. The scale we use is reminiscent of the Ansel Adams zone system, but should not be confused with light readings—the values represent final image densities. The densitometer also gives you a ratio of the two areas.

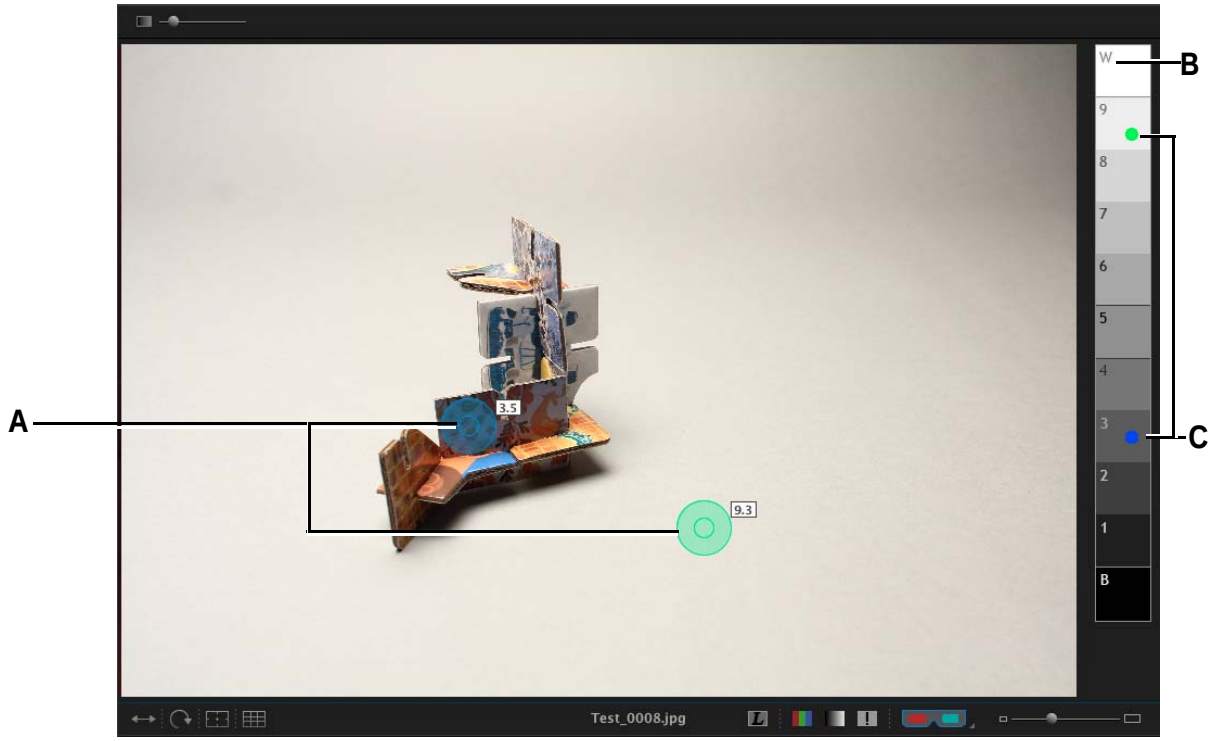
To compare two sample areas using the densitometer:

1. Select an image to use with the densitometer.

2. Click the Digital Densitometer to activate it:



In the View pane, two sample circles appear, along with a scale of gray values.



A. *Move the blue and green circles into two different areas on the test shot to compare the pixel values. Click the center of the circle to sample only the values in the center.*

B. *By default, W represents 248-255 in the RGB color value, and B represents 0-7 in the RGB color value. Set these pure white and pure black reference points in Preferences, based on an estimated viewing gamma.*

C. *Two dots appear on the scale alongside the image. The green dot corresponds with the light value for the green circle, and the blue dot for the blue circle.*

As you move and adjust the sampling circles, the information in the Densitometer changes:

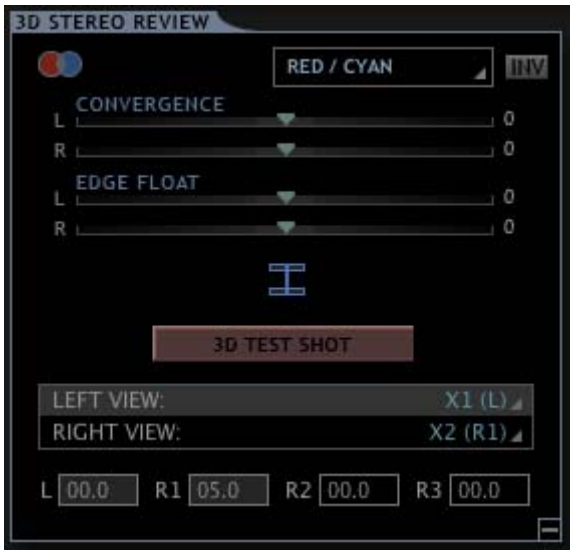
A. *Records the ratio of the darker light value to the lighter light value.* ***B.*** *Shows the RGB values of the pixel currently selected by the cursor when you place it over the image.*

3. Adjust your lighting and camera settings as needed.

See also:
"Advanced Preferences" on page 289.

Viewing Stereo Images

Take 3D test shots, review stereo images and refine interocular settings from the 3D Stereo Review pane. By default, this pane is minimized; click the arrow in the lower right corner to maximize it.



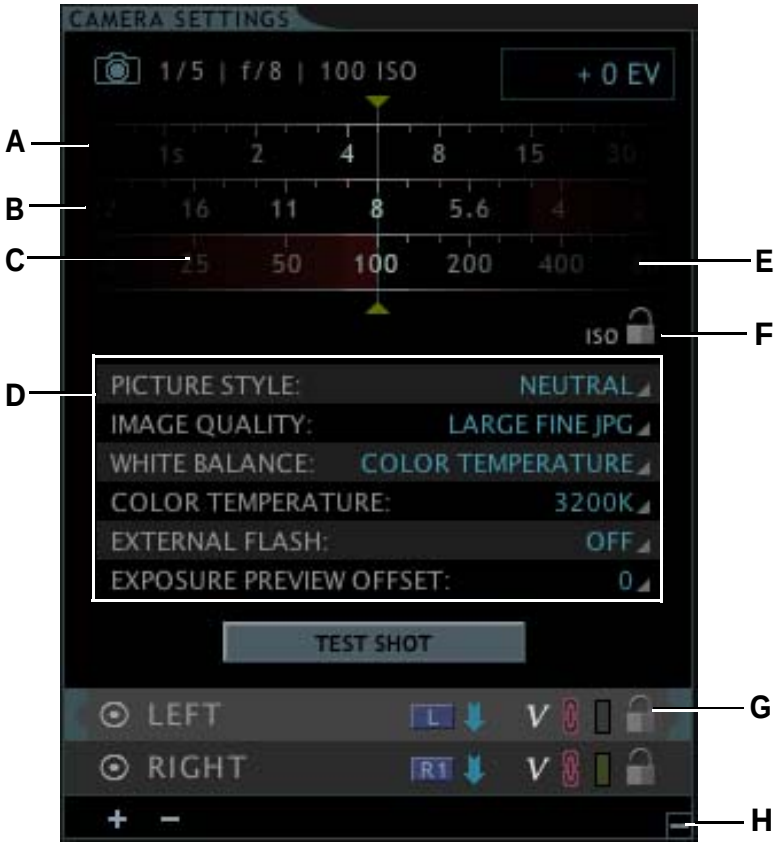
See also:

"Reviewing 3D Images and Test Shots" on page 261.

"Refining 3D Settings from the Cinematography Workspace" on page 261.

Adjusting and Locking Camera Settings

Adjust the camera settings from the Camera Control pane in the Cinematography workspace. Camera Control is a visual interface that directly controls your digital still camera.



A. *Adjust the shutter speed.*

B. *Adjust the aperture.*

C. *Red, un-selectable areas indicate settings not supported by your camera.*

D. *Adjust other camera settings. The settings here are specific to your camera.*

E. *Adjust the ISO.*

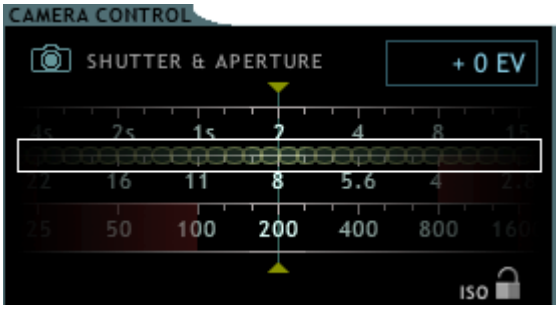
F. *Lock only the ISO setting. This applies only to the current exposure.*

G. *Lock all settings for the exposure.*

H. *Minimize the Camera Control pane.*

An additional feature of the Camera Control pane, the DF slider, is available for digital lenses only. Use the DF slider to adjust depth of field while keeping the same exposure value. When you move the two rings with the slider, their values move in opposition. In other words, the shutter speed increases while the aperture decreases, and vice-versa. That way, the DF slider keeps the exposure value steady while depth of field changes.

Click the line between the aperture and shutter speed to activate the DF slider. The line changes to green circles to indicate that the two settings are moving together:



DF Slider.

Adjusting Exposure Preview Offset

Exposure preview offset is available only for Canon DSLR cameras. Adjust the Live View shutter speed relative to the high-resolution capture shutter speed. It's helpful for manual aperture lenses.

Adding Camera Notes

Record who the camera operator for a particular scene is, as well as any notes about the scene's cinematography.

- Click the **CAMERA OPERATOR** field to open the Camera Operator dialog. Enter the name of the camera operator, then click **OK**.
- Click the **NOTES** field to open the Camera Notes dialog. Enter any relevant notes for the scene, then click **OK**.

Adjusting Focus and Zoom with the Canon PowerShot Camera

The Canon PowerShot is a relatively inexpensive, powerful tool that works with Dragonframe. However, because it doesn't have a detachable lens, it has some limitations. We've added a few features to Dragonframe to help overcome these issues.

- The camera includes an auto-focus feature that can hinder animation. Because the camera automatically focuses before each shot, and it cannot be controlled manually, it could prevent you from focusing the way you need to for your scene. Press **CTRL L** or select **CAPTURE|LOCK FOCUS** to disable the auto-focus feature. The PowerShot will use the auto-focus feature once for the first shot, but will not auto-focus for subsequent shots.

- While the PowerShot is connected to Dragonframe, you can't zoom in or out from your shot using the camera's manual controls. Select **CAPTURE|ZOOM IN** or **CAPTURE|ZOOM OUT** to use Dragonframe to control the camera's zoom feature.

CAUTION: Canon PowerShot and Olympus DSLR camera support is deprecated as of Dragonframe 3. The next major version of the software (Dragonframe 4) may not include support for these cameras.

Portrait versus Landscape Orientation

You can change the orientation of your scene to portrait from landscape. This may be useful for still photography.

Select **VIEW|ORIENTATION|PORTRAIT** to change orientation. All of the frames in your scene will change to portrait orientation.

Multiple Passes and Exposures

Add or edit multiple passes, called “exposures” in Dragonframe, from two places:

- The Camera Control pane in the Cinematography workspace. Here, you can associate camera settings with each exposure.

- The menu: select **SCENE|EXPOSURES...** Here, it’s a little easier to see all the exposures you’ve created, and the settings associated with each one.

No matter where you create your exposure, you can view it in the X-Sheet. There you can see how the exposures relate to the other elements of your scene, such as phonetic symbols or waveforms.

NOTE: If you want to create a second pass of an entire sequence of frames, (for example, a clean pass to create mattes) create a new take.

See also:
“Passes, Takes and Exposures Explained” on page 10.
“X-Sheet Overview” on page 27.

"Creating a New Take" on page 138.

Working with Exposures in the Cinematography Workspace

If you're filming multiple passes for your scene (for example, one pass with a front light and the other with a backlight), you can have camera settings associated with each pass. For example, if you want to have the first exposure with a higher shutter speed than the second, set the desired shutter speed for each pass. Then, as you're filming, Dragonframe will automatically adjust the shutter speed as it takes each exposure.

To see the exposures in a virtual exposure sheet, open the X-Sheet.

See also:
"Working with Multiple Exposures from the Menu" on page 86.
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php
"Reading the X-Sheet" on page 171.
"Shooting in 3D" on page 251.
"Creating Custom Lighting Programs per Exposure" on page 200.

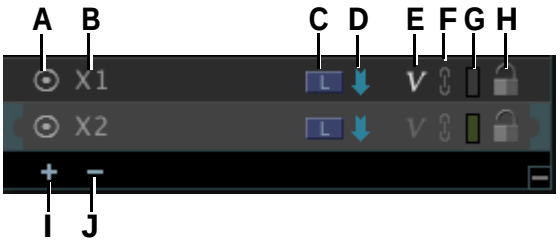
Adding Multiple Exposures in the Cinematography Workspace

To create multiple exposures with customized camera settings:

1. Set up your first exposure and lock it from the Camera Control pane.
2. (Optional) Lock the ISO settings. Doing so locks ISO for the exposure. That way, you can adjust other settings without worrying about accidentally changing ISO.
3. Click **+ (ADD EXPOSURE)**.

Add exposure (+) button.

Dragonframe adds a new exposure. By default, it will be named **x2**:



A. *Enable or disable the exposure.*

B. *Exposure name. Double-click to edit.*

C. *3-D slider position. Toggle through 3-D slider positions for the exposure.*

D. *Auto-capture arrow. Enable or disable auto-capture.*

E. *Enable or disable the video assist capture.*

F. *Link the exposure to other exposures.*

G. *Change the color associated with the exposure.*

H. *Lock or unlock all settings for the exposure.*

I. *Add an exposure.*

J. *Delete the selected exposure.*

4. Adjust any camera settings for the new exposure that you want to differ from the default exposure.

5. (Optional) Click (H.) to lock the camera settings for the new exposure.

6. (Optional) Click the 3-D slider icon (C.) to toggle through available slider positions for the exposure.

7. (Optional) De-select the blue auto-capture arrow (D.) for Dragonframe to stop capturing the exposure automatically, without you having to press **SHOOT**.

8. (Optional) Click the link to link the exposure to other exposures. When you change settings in one exposure, the settings for all exposures linked to it will change, too.

9. (Optional) Click **v** (E.) to have Dragonframe save the video assist frames from that exposure.

10. (Optional) Click the rectangle (F.) to change the exposure's cue color. The color will appear at the top of the Animation workspace when it's time to capture the exposure.

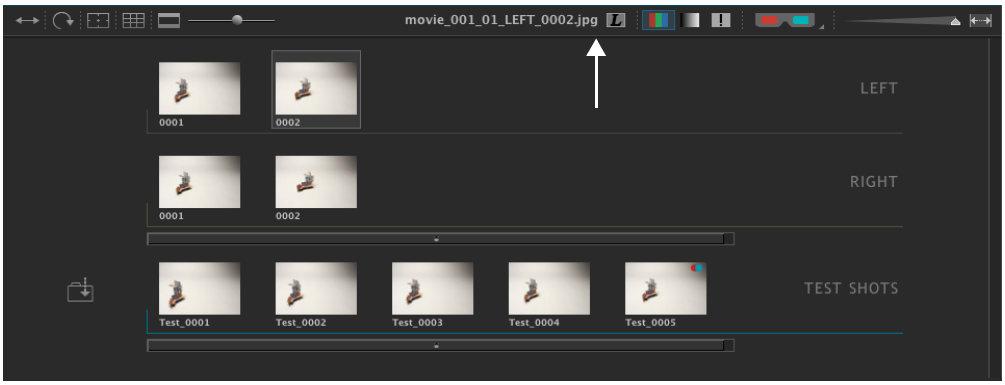
11. (Optional) Create any additional exposures (I.), adjusting the settings for each one.

- To copy settings from an exposure, drag and drop it onto the new exposure. The new exposure must be unlocked:

Dragging the Left exposure onto the Right.

NOTE: When you create multiple exposures, Dragonframe copies each new exposure's settings from the currently selected exposure.

Once you create multiple exposures, you will need to adjust the size of the View pane to see all exposure image trays in the Cinematography workspace:



Dragging the edge of the Exposure Image tray to view multiple exposures.

See also:

"Manual vs. Automatic Captures from the Cinematography Workspace" on page 84.

"Adjusting and Locking Camera Settings" on page 78.

"Linking Exposures in the Cinematography Workspace" on page 83.

"Finding Your Source Files" on page 270.

"Setting Up Exposures for 3D Shooting" on page 258.

Linking Exposures in the Cinematography Workspace

You can group exposures, or "link" them, from the Cinematography workspace. If you change the settings in one exposure, the settings for any exposures linked to it would change too. For example, when setting up stereo pairs, you could easily keep the settings the same for the left and right exposures.

To link exposures together:

1. Create the exposures you need:

2. Click next to the exposure you want to link. A drop-down menu appears:

3. Select the exposure to link to. Dragonframe links them, and turns the link icon red:

Any other linked groups you make will have a unique link color, so it's easy to tell different groups apart.

4. Adjust camera settings for one of the exposures you linked. Dragonframe will automatically adjust the settings in the exposures linked to it.

NOTE: Dragonframe will only copy *camera settings*—those settings found on your camera (such as aperture, shutter speed, white balance, etc). It will not copy exposure settings, such 3D slider positions or auto-capture settings.

Manual vs. Automatic Captures from the Cinematography Workspace

When you create multiple exposures, Dragonframe will capture each one automatically by default. In other words, you'll press **SHOOT** only once to capture both your exposures. Dragonframe will capture the first

exposure, adjust camera settings, then capture the second exposure without you having to press any more keys.

This also makes it possible for you to create multiple exposures for time-lapse, or when shooting left and right views for 3D stereo.

There are other ways to set auto-capture for your shoot:

- Keep the second exposure's capture manual, so that you have time to animate in between exposures.
- Add a capture delay before capturing a second exposure to give you a few seconds to change lighting, for example.

Automatic capture is controlled by the blue arrows in the Camera Control pane:

Auto-capture arrows.

By default, all exposures have auto-capture turned on. Click the arrow to turn auto-capture off.

When choosing between a manual or an automatic capture, keep these points in mind:

- De-selecting auto-capture for the default exposure (here, **x1**) won't change the way single shots work. However, if you deselect auto-capture, you will not be able to shoot a time-lapse sequence or shoot multiple frames with one keystroke.
- If auto-capture is off for additional exposures (here, **x2**), you must press **SHOOT** again to capture the exposure. You may want to do this if you need to animate between exposure 1 and exposure 2. However, if you keep auto-capture off for additional exposures, you will not be able to shoot a time-lapse sequence or shoot multiple frames with one keystroke.

Besides choosing to automate captures, you can also add a capture delay of up to one minute before Dragonframe auto-captures an exposure. To add a capture delay:

1. Right-click on the arrow of the desired exposure. A drop-down list appears.

2. Select a delay. Dragonframe displays it in the Camera Control pane:

Exposure with a delay of five seconds.

Deleting Multiple Exposures from the Cinematography Workspace

To delete an exposure from the Cinematography workspace's Camera Control pane:

1. Select the exposure you want to delete.

2. Click **-** (delete). Dragonframe deletes the selected exposure.

NOTE: The exposure you select cannot have any frames in it. If it has frames in it, you must disable it to stop shooting the exposure.

See also:
"Disabling an Exposure from the Cinematography Workspace" on page 86.

Disabling an Exposure from the Cinematography Workspace

To disable an exposure, de-select the radio buttons in the Camera Control pane:

Both exposures enabled.

NOTE: You can't disable the default exposure for the scene.

Working with Multiple Exposures from the Menu

Adding multiple exposures from the menu gives you more detail about all your exposures.

To add camera settings to exposures made in the menu, use the Cinematography workspace.

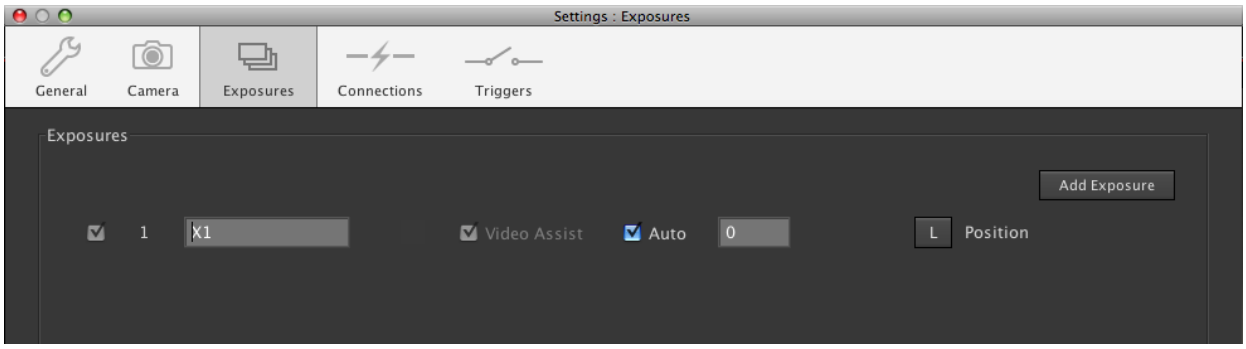
See also:
"Working with Exposures in the Cinematography Workspace" on page 81.

Adding Multiple Exposures from the Menu

To create a new exposure from the menu:

1. Select **SCENE|EXPOSURES...**

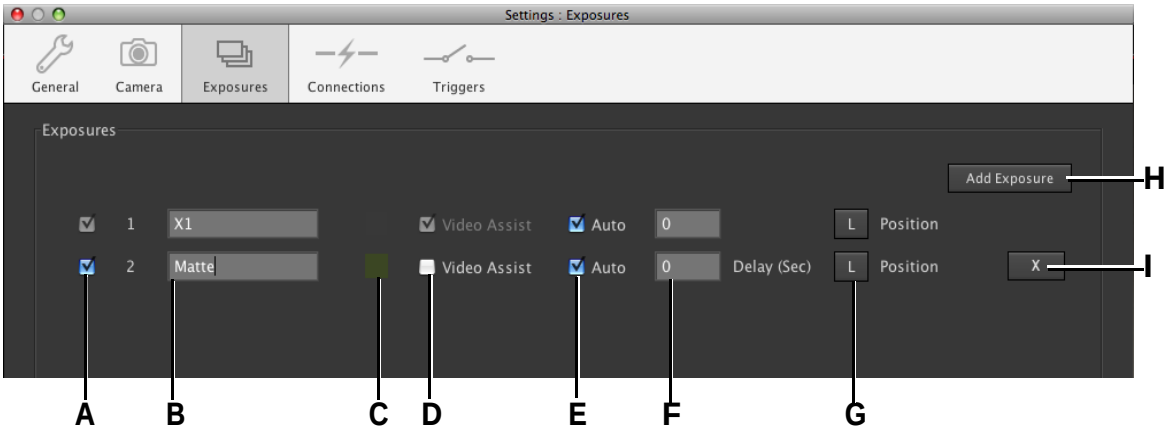
The exposure settings dialog opens.



- The dialog already shows one exposure, **X1**, since every scene uses at least one exposure.
- The **VIDEO ASSIST** box for the exposure is checked by default (and cannot be unchecked) because Dragonframe always saves the video assist frames for each scene's default exposure.
- The **AUTO** check box is checked by default, allowing you to capture time-lapse sequences or multiple shots with one keypress.
- The camera is in the **L** (left) position, enabling you to use a stereo slider.

2. (Optional) Modify the name of the default exposure.

3. Click **ADD EXPOSURE**. The dialog adds a second exposure.



A. *Enable or disable the exposure.*

B. *Change the exposure name.*

C. *Change the cue color associated with the exposure.*

D. *Enable or disable the video assist capture.*

E. *Enable or disable auto-capture.*

F. *Add a delay before Dragonframe captures the exposure.*

G. *Click to toggle through available 3D slider positions.*

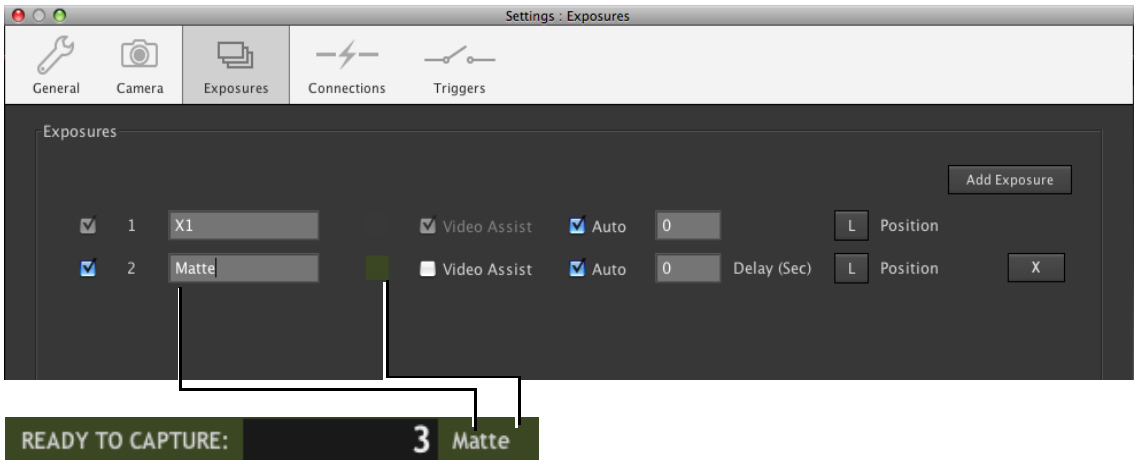
H. *Add an exposure.*

I. *Delete the selected exposure.*

4. (Optional) Check **VIDEO ASSIST** (D.) to have Dragonframe save the video assist frames with those for the default exposure.

5. (Optional) Modify the name for the exposure (B.). Here, it's been changed to **MATTE**.

6. (Optional) Click the color box (C.) to change the color associated with the exposure.
   This color will appear at the top of the Animation workspace when it's time to capture the exposure.



Exposure indicator bar with second exposure's color and name.

7. (Optional) Uncheck the **AUTO** box (E.) to prevent Dragonframe from capturing that exposure automatically.

8. (Optional) Enter a delay (F.) before Dragonframe captures an exposure.

9. (Optional) Click the 3D position (G.) to toggle through available slider positions.

10. Click **OK** once you've made all the changes for the exposures. Dragonframe saves your changes.

See also:
"Finding Your Source Files" on page 270.
"Manual vs. Automatic Captures from the Menu" on page 89.
"Shooting in 3D" on page 251.

Manual vs. Automatic Captures from the Menu

When you create multiple exposures, Dragonframe will capture each one automatically by default. In other words, you'll press **SHOOT** only once to capture both exposures. Dragonframe will capture the first exposure, adjust camera settings, then capture the second exposure without you having to press any more keys.

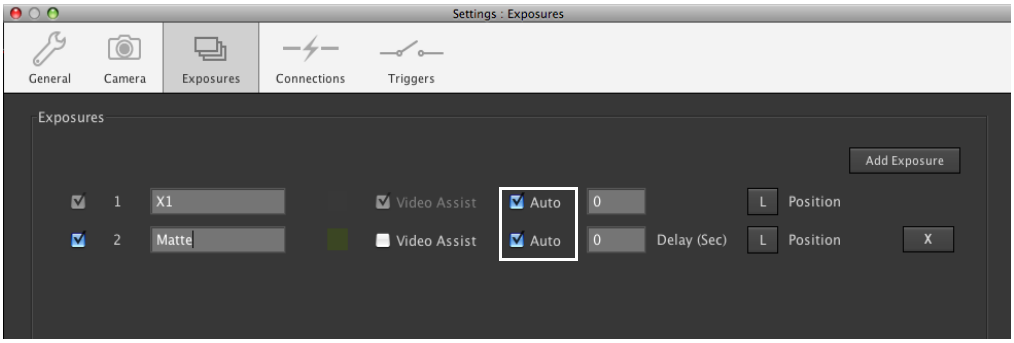
This also makes it possible for you to create multiple exposures for time-lapse, or when shooting left and right views for 3D stereo.

You might choose not to have additional exposures captured automatically. You could:

- Keep the second exposure's capture manual, so that you have time to animate in between exposures.

- Add a capture delay before capturing a second exposure to give you a few seconds to change lighting, for example.

In the exposure dialog, automatic capture is controlled by the **AUTOMATIC** check box:



Automatic check boxes.

By default, every exposure has auto-capture turned on. Click the check box to turn auto-capture on or off.

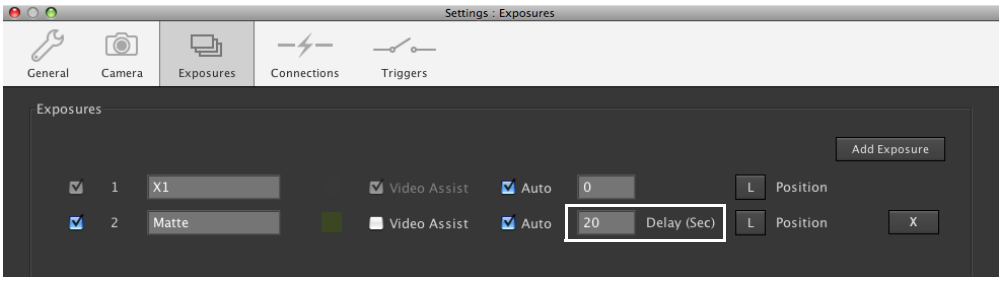
When choosing between a manual or an automatic capture, keep these points in mind:

- De-selecting auto-capture for the default exposure (here, **x1**) won't change the way single shots work. However, if you deselect auto-capture, you will not be able to shoot a time-lapse sequence or shoot multiple frames with one keystroke.

- If auto-capture is off for additional exposures (here, **x2**) you must press **SHOOT** again to capture the exposure. You may want to do this if you need to animate between exposure 1 and exposure 2. However, if you keep auto-capture off for the additional exposure, you will not be able to shoot a time-lapse sequence or shoot multiple frames with one keystroke.

Besides choosing to automate an exposure, you can also add a capture delay before Dragonframe auto-captures an exposure.

To add a capture delay, enter the delay in the **DELAY** field:

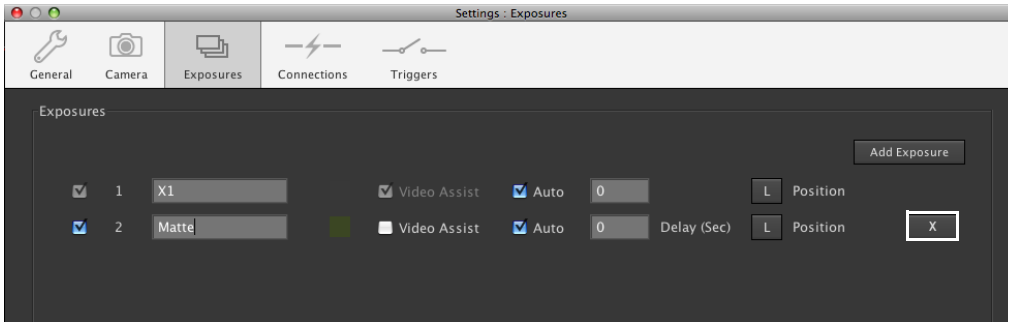


Delay field.

Deleting an Exposure from the Menu

Delete exposures from the Exposure dialog.

1. Select **SCENE|EXPOSURES...** The exposure dialog opens:



Delete button.

2. Click the **X** next to the exposure you want to delete, then click **OK**.

NOTE: Once you start shooting a scene that has multiple exposures set up, you cannot delete any exposures. You can disable them, however.

NOTE: You can't delete the default exposure (**X1**) for a scene, since every scene must have at least one exposure.

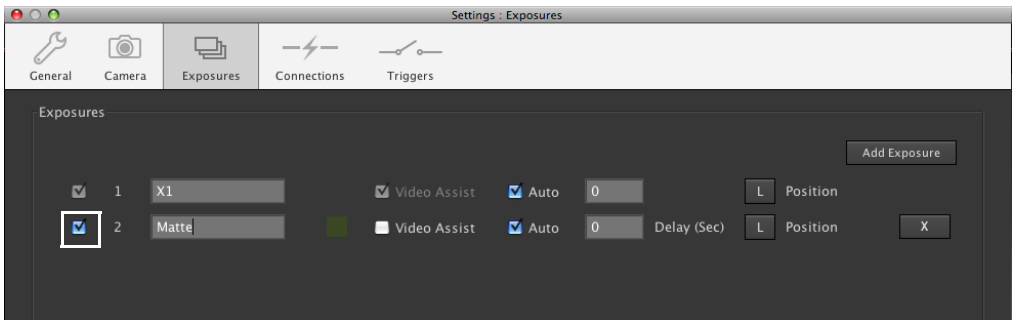
See also:
"Disabling an Exposure from the Menu", below.

Disabling an Exposure from the Menu

You can temporarily disable an exposure while you're shooting a scene.

To disable an exposure:

1. Select **SCENE|EXPOSURES...** The Exposures dialog opens.



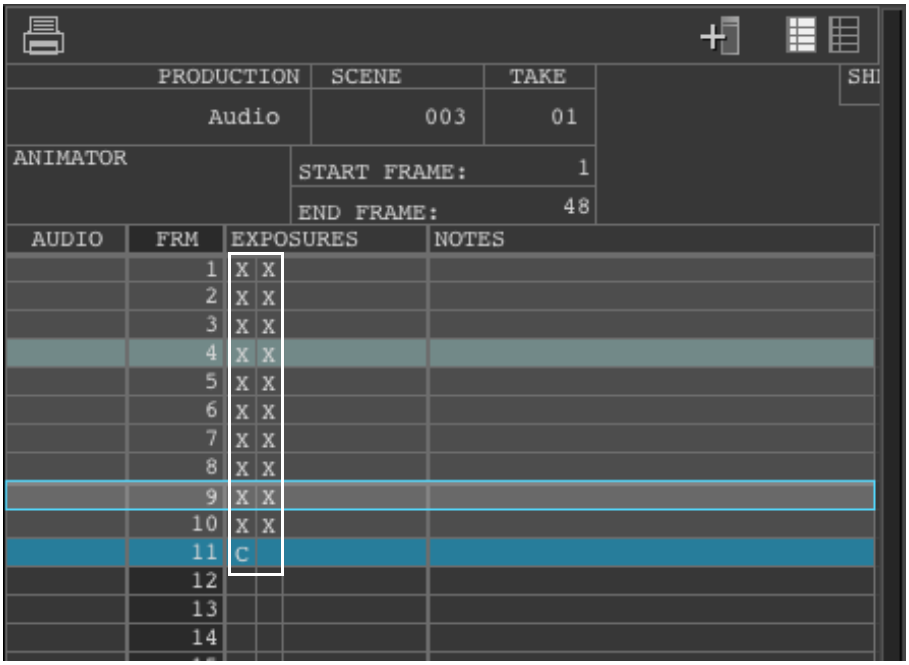
Disable check box.

2. Un-check the box next to the name of the exposure you want to disable, and click **OK**. In this case, you'd un-check the blue box next to **MATTE**.

NOTE: You can't disable the default exposure for the scene.

Viewing Multiple Exposures in the X-Sheet

Any exposures you create, whether from the Cinematography workspace or the Exposure dialog, appear in the X-Sheet, alongside all the information about your scene:



X-Sheet. Each exposure gets its own column. **X** *marks already-captured frames.* **C** *marks the exposure to be captured next.*

Tricks of the Trade

A few tricks can help you light your shot perfectly, while still letting you to use a work light or have your computer screen close to your set.

Adding a Capture Delay

The capture delay gives you time before your shot to turn off a bash light. It adds a delay between the video assist capture and the high-res capture. That way, the work light can illuminate your video assist frame without interfering with the high-res capture.

1. Click **FILE|PREFERENCES** to open Preferences.

2. Click **ADVANCED**.

3. Select the number of seconds you want to delay each high-res shot when you press **ENTER**.

NOTE: Automate a bash light with the DDMX-S2 and a dimmer pack, or using the DDMX-S2's output terminals. See "Automating a Bash Light" on page 199. or "Using an External Relay Switch or a Logic Output to Automate a Bash Light" on page 214.

NOTE: If you want to add a capture delay before *both* the video assist and high-res captures, add a capture delay to your exposure. For example, you might use this if you want to quickly change lighting in between two exposures, but you don't want to press **SHOOT** for each exposure. See "Manual vs. Automatic Captures from the Cinematography Workspace" on page 84.

Black-Out Mode

If the light from your computer screen is affecting the lighting for your shot, you can have Dragonframe black out the screen during a capture. To black out the screen:

1. Press **FILE|PREFERENCES** to open Preferences.

2. Click **CAPTURE**.

3. Check the box labeled **BLACK OUT SCREEN DURING CAPTURE**. When the box is checked, the screen will momentarily go black when you capture a frame.

Special Keys and Contextual Menus for the Cinematography Workspace

Use the keypresses and menus in this section to access all of the workspace's tools.

Cinematography Keypresses

Press:	To	See this section for more information:
F	Toggle the view of the workspace between normal, expanded, and full.	"Cinematography Image Presentation Modes" on page 73.
UP	Move up one exposure.	n/a
DOWN	Move down one exposure.	n/a
Step keys	Step through the frames.	n/a
CTRL STEP	Step back or forward 12 frames.	n/a
'(single quote)	Shoot test shot.	"Working with Test Shots" on page 68.
3	Switch to the Live View in the Cinematography workspace.	"Cinematography Workspace Map" on page 25.

Cinematography View Pane Contextual Menus

Select:	To:	See this section for more information:
EXPORT STILL IMAGE	Export the image you're looking at in the Cinematography workspace.	"Exporting the Cinematography View" on page 71.

Chapter 5: Animation Tools

This chapter includes the following sections:

“Keypad Controls” on page 95.
“Playback Options” on page 99.
“Shoot Multiple” on page 101.
“Shooting on Twos” on page 102.
“Shoot Order” on page 104.
“Using Onionskin” on page 105.
“Using Roto Layers” on page 109.
“Drawing on the View Pane” on page 111.
“Using the Video Assist Tool” on page 116.
“Punch-in with Live View Magnification” on page 116.
“Adjusting Video Assist Levels” on page 117.

See also:

“Animation Workspace Overview” on page 15.
“Animation Tools Map” on page 20.
“Animation Workspace Map” on page 16.
“Animation Nav-Line Map” on page 23.

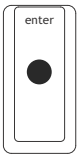
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Keypad Controls

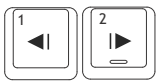
The keypad controls on your included Dragonframe keypad keep the most important animation tools at your fingertips.

Step, Play and Shoot Keys

With only the **STEP**, **PLAY** and **SHOOT** keys, you could animate a scene.



Press **SHOOT** to capture a frame.



Use the **STEP** keys to move through your frames.

Press **PLAY** to play back the frames you've shot.

See also:
"Shoot Multiple" on page 101.

Live Key

Press **LIVE** to go to the Live View frame.

Live Toggle Key

Press **LIVE TOGGLE** to toggle between live and captured frames; release the button to move back.

Auto-Toggle Key

Press **AUTO-TOGGLE** to turn auto-toggle on and off.

To:	Press:
Change the toggling speed,	• **AUTO-TOGGLE**, then the **STEP** keys. • Click **PLAYBACK|TOGGLE [SPEED]**
Auto-toggle between the last frame shot and the Live View,	Press **LIVE**, then **AUTO-TOGGLE.**
Auto-toggle between a frame you choose and the Live View,	Step to the desired frame and press **AUTO-TOGGLE.**

Delete Key

To delete the frame (with all exposures in the frame), double-press **DELETE** on the Dragonframe keypad.

NOTE: To replace just one exposure in a frame, you can reshoot it from the X-Sheet.

See also:
"Deleting Frames from the X-Sheet" on page 177.
"Cut Back Key" on page 97.
"Reshooting a Frame Sequence from the X-Sheet" on page 177.

"Finding Your Source Files" on page 270.

Cut Back Key

Use **CUT BACK** to eliminate a group of recently shot frames. You might cut back to a point before the animation went awry.

To cut back to an earlier frame:

1. Press **CUT BACK**. Dragonframe opens the Cut Back dialog.
2. Enter the number of the frame you want to cut back to.
3. (Optional) Un-check **DELETE INTERMEDIATE FRAMES** if you only want to move back to an earlier point in the sequence.
4. Click **OK**. Dragonframe jumps to the frame you specified, and, if selected, deletes the intermediate frames.

NOTE: Deleted frames go in the backup folder.

See also:

"Delete Key" on page 96.
"Deleting Frames from the Timeline" on page 125.
"Deleting Frames from the X-Sheet" on page 177.
"Restoring Frames from the Delete Bin" on page 127.
"Reshooting a Frame Sequence from the X-Sheet" on page 177.
"Finding Your Source Files" on page 270.

Loop Key/Ping-Pong

Press **LOOP** to loop the entire frame sequence.

Press and hold **LOOP** to turn on ping-pong playback—playing to the end of the sequence, then reversing through it. Press and hold **LOOP** again to return to regular looping.

NOTE: When ping-pong playback is on, all other playback options will continue functioning normally. For example, if you have both ping-pong and short play selected, Dragonframe will ping-pong through the last twelve frames.

NOTE: Add a loop hold, where Dragonframe pauses for a set time on the Live View, from the Playback Preferences.

See also:
"Playback Preferences" on page 283.

Short Play Key

Press **SHORT PLAY** to play back only some of the frames you've shot. By default, Dragonframe will play only the last twelve frames.

NOTE: Set the number of frames to be played with **SHORT PLAY** in Playback Preferences.

See also:
"Playback Preferences" on page 283.

Black (End in Black) Key

Press **BLACK** to add one second of black frames at the end of playback or during looping.

Or, press and hold **BLACK** to add one second of the live frame during looping.

NOTE: Change the timing for the Black key in Playback Preferences.

See also:
"Playback Preferences" on page 283.

High-Res Key

By default, Dragonframe uses video assist frames for playback in the Animation workspace. To play back the final capture frames, press **HIGH-RES**. This will play back proxy frames taken from your full-resolution captures. Switch back and forth between video assist frames and full-res frames at any time.

Onionskin Keys

To overlay frames from the same scene over each other, use the Onion-skin opacity keys.

Press **ONIONSKIN RIGHT** to begin onion-skinning the last frame over the Live View.

Step to any frame, then press **ONIONSKIN LEFT** to begin onion-skinning that frame over the Live View.

See also:
"Using Onionskin" on page 105.

Mute Key

Press **MUTE** to turn off sound.

Playback Options

Adjust the way your sequence plays back in Dragonframe, change the playback speed, or choose a section of your frames to play.

See also:
"Playing Back Stereo Sequences in Dragonframe" on page 267.

Playback Speed

Adjust the playback speed from the Animation tools.

1. Click **24 FPS** to view a drop-down list of speeds.
2. Select a frame speed or create a custom speed.

Play Section

Choose which frames to include in playback with the Nav-Line.

1. Use the in and out points to define which frames you want to include in playback:
   - Step through the frames, then press **I** to set the in point and **O** to set the out point. Or,
   - Move the in and out points on the Nav-Line.

A. *In point.* ***B.*** *Out point.*

2. Press **PLAY** to start playback for the section you chose.

See also:
"Animation Nav-Line Overview" on page 22.
"Using the Timeline for Playback" on page 121.

Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Memory Management

If you're using a camera with a very high resolution or creating a very long scene, your computer may not have enough memory available to keep all of the frames for your scene available in RAM. Only frames available in RAM can be played back in Dragonframe.

However, Dragonframe includes a memory management feature that compensates for your computer's limitations, so you continue to control playback. The Nav-Line in the Animation workspace shows you how much RAM is available to Dragonframe for your scene.

In the following image, all of the frames fit into the available RAM, so Dragonframe isn't using memory management:

If you shoot more frames, RAM will become full, and the Nav-Line will look like this:

A. *The blue area shows how much of your scene cannot be played back because the frames are not stored in RAM.*

B. *The in point marks the beginning of the playable frames. Here, you can begin playback at frame 73. If you adjust the playable area, the in point will always mark the beginning of the playable frames.*

C. *The gray area shows which frames are available for playback. Click and drag the gray area to select different frames to play back.*

D. *The out point marks the end of the playable frames. Here, playback ends at the Live View. If you adjust the playable area, the out point will always mark the end of the playable frames.*

If part of your scene is unavailable for playback, use the gray area of the Nav-Line (C.) to choose which part of the scene to keep in RAM. That way, you can still play back the section that's most important to you.

Using an Auxiliary Monitor

Use the an auxiliary monitor to display a full screen view of the Live View or playback on another monitor. You can:

- Start an auxiliary monitor by clicking **VIEW|AUXILIARY MONITOR>MONITOR #**
  Select **MONITOR 1** to open it on your computer, or **MONITOR 2** to open it on a second monitor.

- Turn the auxiliary monitor off by clicking **VIEW|AUXILIARY MONITOR>OFF**.

- Change the size of the display by clicking **VIEW|AUXILIARY MONITOR>FULL SCREEN**.
  Check the box to display the auxiliary monitor at the largest possible size for your screen. Uncheck it to display it at 100%.

- Show (or hide) any overlays, such as the grid or broadcast-safe overlays by clicking **VIEW|AUXILIARY MONITOR>SHOW OVERLAYS**.

CAUTION: You can play back your scene on a auxiliary monitor, but your computer will need substantial memory to do so.

Shoot Multiple

Shoot multiple frames in a row with the Shoot Multiple Frames dialog.

To shoot multiple frames:

1. Open the Cinematography workspace. Verify that auto-capture is on for all of your exposures, even if you only have one. That means that Dragonframe will capture all frames and exposures automatically, instead of waiting for you to press **SHOOT** for each one. The arrows next to each arrow should be blue:

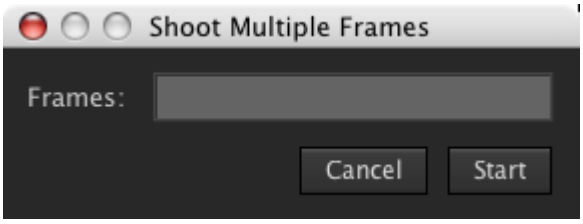
Auto-capture on for both exposures.

CAUTION: If auto-capture is not enabled for all exposures, Shoot Multiple will not work.

2. Choose how many frames to capture at once:

   - To capture two, three, or four frames, press **CTRL 2**, **CTRL 3**, or **CTRL 4**. Dragonframe captures the frames from the Shoot Multiple dialog. Click **X** to stop capture.

- To capture more than four multiple frames:
  Press and hold **SHOOT**. The Shoot Multiple dialog appears.



  Enter the number of frames you want to shoot and click **OK**.
  Dragonframe opens a progress dialog and shoots the number of frames you specified.
  (Optional) Click **X** in the progress dialog to stop shooting.

NOTE: If you have multiple exposures set up, Dragonframe will shoot all of them as one "frame". For example, if you have three exposures, and press **CTRL 4** to capture four "frames", Dragonframe will take a total of twelve shots: three exposures, four times.

See also:
"Manual vs. Automatic Captures from the Cinematography Workspace" on page 84.

Shooting on Twos

Shooting on twos refers to shooting two sequential frames for a single increment of animation.

Occasional Twos

There are times when an animator may want to shift between single frame animation and shooting on twos during the same take. We call this "occasional twos".

Occasional twos can be achieved in three ways:

- Simply shoot the extra frames with the **SHOOT** button.
- Press **CTRL 2** on the keyboard to capture two frames.
- Assign **SHOOT 2** as a hot key on the Dragonframe keypad.

See also:
"Programming Hot Keys" on page 285.
"Shoot Multiple" on page 101.

Consistent Twos

If you plan to shoot on twos only, you have a few different options depending on your editorial needs:

- Assign **SHOOT 2** as a hot key on the Dragonframe keypad and never shoot singles.

- Use half-speed playback. Set your playback FPS rate (for example, 12 FPS, 15 FPS) and shoot single frames only. The playback will be correct for a twos effect.
  If you need to edit your animation in a 24 or 30 FPS time line, double the frames in post.
  If you are just showing work on the web, you can leave your final movie at the lower frame rate. This will save download time and bandwidth.

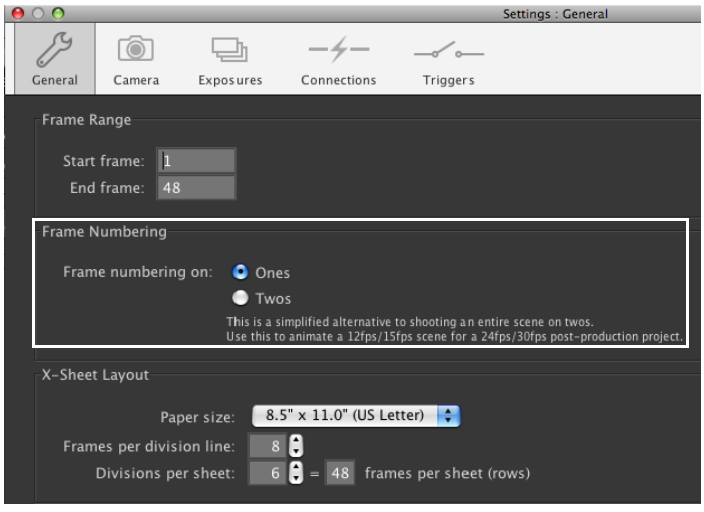
X-Sheet Options for Shooting Consistent Twos

Use the half speed playback method described above.

Use the X-Sheet to number your scene using just odd or even frames if you are syncing dialogue or audio that is running in a single frame time line (for example, 24 or 30 FPS). This way, the frame numbers in your scene will match those in the editing room. In this mode the X-Sheet will display only the odd or even frame numbers depending on your preference.

To number your frames using odd or even numbering:

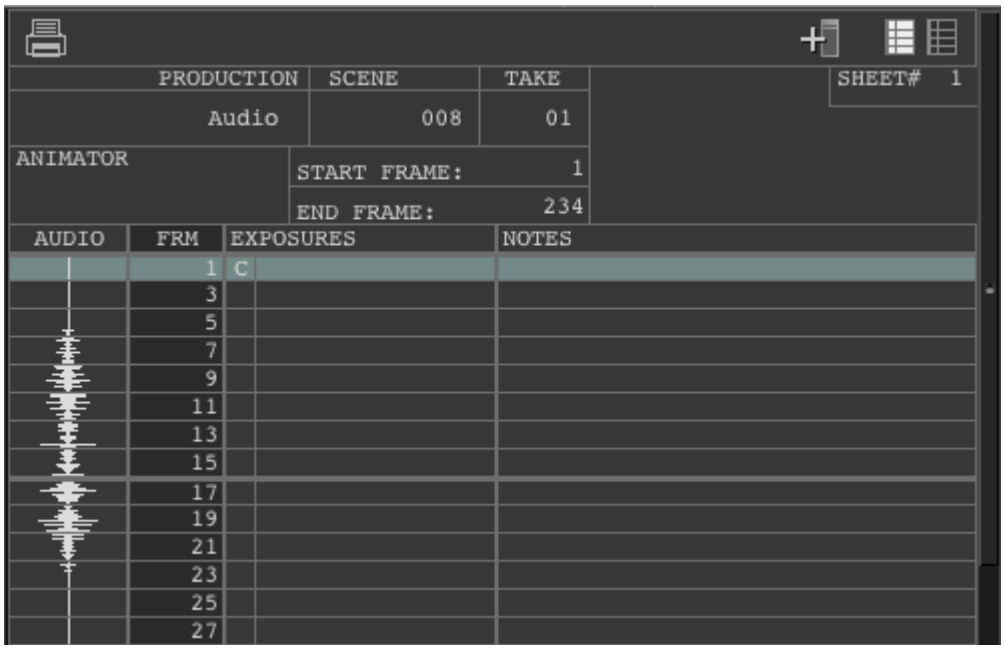
1. Click **SCENE|SETTINGS...** The General Settings dialog appears:



Frame Numbering options in General Settings

2. Select **FRAME NUMBERING ON TWOS** to number the sequence by twos in the X-Sheet.

When you have frame numbering on twos selected, your X-Sheet might look like this:

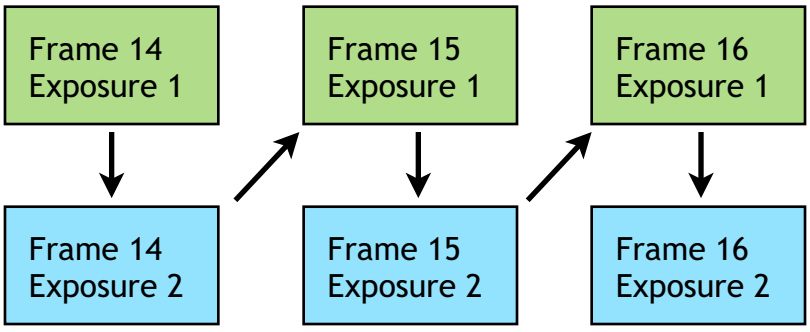


X-Sheet with frame numbering on twos.

Shoot Order

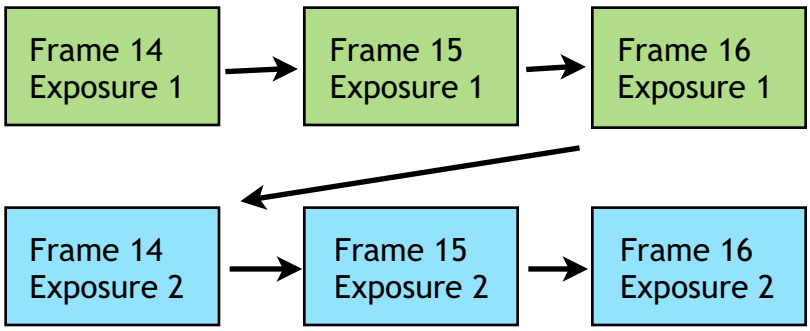
When you have multiple exposures set up, such as for a front light shooting on twos, or shooting multiple frames in a row, you can change the shoot order for the sequence.

The normal shooting order is to capture all exposures for a frame, and then move on to the next frame.



Shoot all exposures in the frame, then move on to the next frame.

You may find situations where you want to change the shoot order. Instead of the default, you would shoot the first exposure for two or more frames, then move on to the second exposure:



Shoot the first exposure for all frames, then move on to the next exposure.

To change the shoot order from its default:

1. Select **FILE|PREFERENCES**, then click **CAPTURE.**
2. Select **SHOOT FIRST EXPOSURE FOR ALL FRAMES, THEN MOVE ON TO NEXT EXPOSURE.**

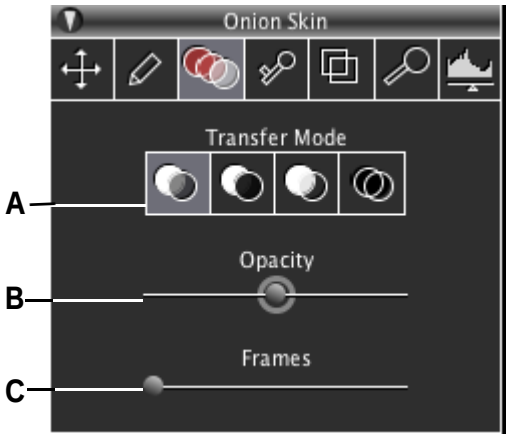
See also:
"Capture Preferences" on page 287.
"Passes, Takes and Exposures Explained" on page 10.
"Multiple Passes and Exposures" on page 80.

Using Onionskin

The Onionskin opacity slider adds an onionskin layer of a previous frame over the Live View. You can adjust how translucent that layer appears, or select which frame you choose to layer, as shown in the following image.

A. *Step to any frame, then move the slider left to onionskin that frame over the Live View.*
B. *Move the slider right to onionskin the last frame over the Live View.*

There's also an Onionskin tool in the Animation palette that gives you additional control over onionskin opacity. Move the mouse over the View pane for access to the palette.



A. *Transfer Mode: Highlight various properties of the onion-skinned layer.* ***B.*** *Opacity Slider: Works in the same way as the opacity slider in the Animation tools. See above.*
C. *Frame Slider: Move the slider right to onionskin more than one frame at once.*

Finally, press **ONIONSKIN LEFT** or **ONIONSKIN RIGHT** on your Dragonframe keypad to adjust opacity by small increments.

See also:
"Onionskin Keys" on page 98.
"Dissolving the Last Frame Over the Live View" on page 106.
"Dissolving the Last Few Frames Over the Live View" on page 107.
"Dissolving the Live View Over Any Other Frame" on page 107.
"Other Modes: Lights Prominent, Darks Prominent, Difference" on page 107.

Dissolving the Last Frame Over the Live View

To view the last frame onion-skinned over the Live View:

1. Press **LIVE** to move to the live shot.

2. Press **ONIONSKIN RIGHT** on your Dragonframe keypad to move the slider in small increments. Or, click and drag the opacity slider to the right from the Animation workspace or Animation palette.

As the slider moves to the right, the previous frame appears in increasing clarity. When the slider is all the way to the right, you will only see the previous frame; the Live View will be obscured.

Dissolving the Last Few Frames Over the Live View

To onionskin multiple frames over the Live View:

1. Press **LIVE** to move to the Live View.
2. Select the Onionskin tool in the Animation palette.
3. Press **ONIONSKIN RIGHT** on your Dragonframe keypad to move the slider in small increments. Or, click and drag the opacity slider to the right from the Animation workspace or Animation palette.
4. Click and drag the frames slider in the Animation palette to the right. When it's all the way to the right, it will layer five frames over the Live View.

Dissolving the Live View Over Any Other Frame

To onionskin any frame over the Live View:

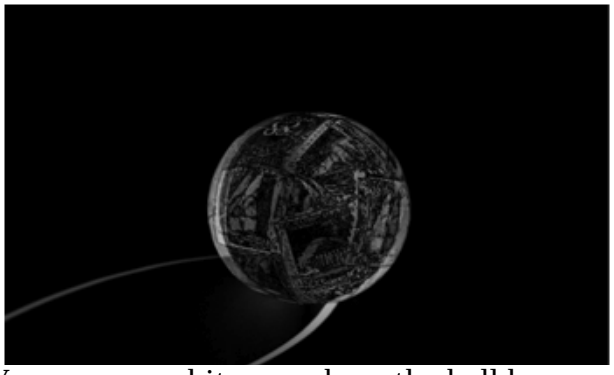
1. Step through the frames until you find the frame you want to layer with the Live View.
2. Press **ONIONSKIN LEFT** on your Dragonframe keypad to move the slider in small increments. Or, click and drag the opacity slider to the left from the Animation workspace or Animation palette.

As the slider moves to the left, the frame you've selected appears with increasing clarity, while the Live View fades. When the slider is all the way to the left, you will only see the frame you've selected; the Live View will be obscured.

Other Modes: Lights Prominent, Darks Prominent, Difference

If you want to make some features in the onionskin layer easier to see, use the Onionskin transfer modes.

This mode:	Highlights this information:
	The dark values in the image. This would be useful if you were animating a black line drawing on a white piece of paper. Instead of seeing the white of the paper equally prominent as the black lines, making **DARKS PROMINENT** would draw more attention to the black lines you were animating.

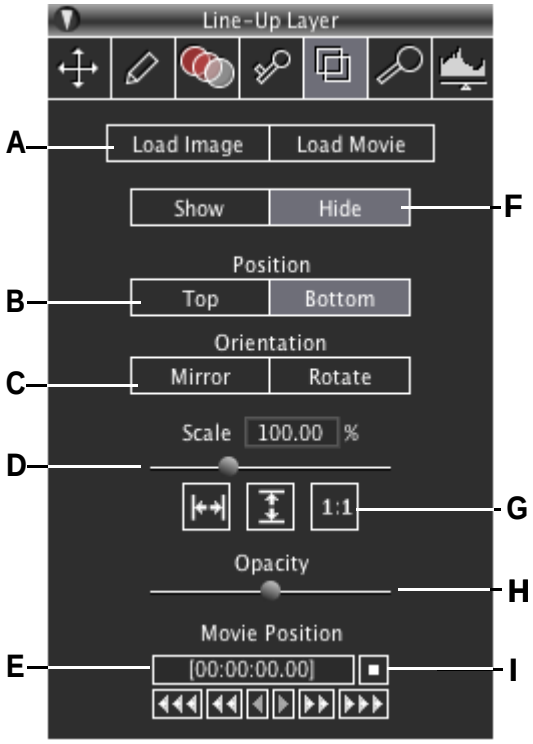
This mode:	Highlights this information:
	The light values in the image. This might be useful if you were animating a bright object on a dark set. Rather than viewing the darks and lights as equally prominent, **LIGHTS PROMINENT** would draw more attention to the light areas you were animating.
	What has changed between the current frame and the Live View. Any changes will appear as white in a black background. For example, imagine your last frame looked like the picture below: If you then moved the ball slightly to the right, you could see how much it had changed using Onionskin. With Onionskin on, layering the last frame over the Live View, and with **DIFFERENCE** selected, you'd see:  You can see white anywhere the ball has moved, giving you greater precision when lining up your next shot.

Using Roto Layers

Adding a Line-Up Layer (Movie or Still)

Use the Line-up Layer tool to load an image, a QuickTime movie, or an entire Dragonframe scene as a layer in your project. For example, to animate one scene's action in several takes, use a line-up layer to make sure each take lines up with the other takes from the scene. The Line-up Layer tool is available from the Animation palette.

The image below points out the key features of the Line-up Layer:



A. *Load Line-up Image/Movie: Load a single image, a series of images, or a QuickTime movie into the current take.*

B. *Position: Send the line-up layer in front of or behind the main image in the View pane.*

C. *Orientation: Rotate or mirror the Line-up Layer's orientation.*

D. *Scale Slider: Incrementally adjust the size of the imported images.*

E. *Movie Position: Choose where the movie will start. Click >> or << to fast-forward or rewind through the clip.*

F. *Show/Hide: Show or hide the imported image. Or, press* **L** *to toggle opacity.*

G. *Scale buttons: Adjust the size of the imported images to fit-to-width, fit-to-height, or to appear at the imported image's actual resolution.*

H. *Opacity Slider: Adjust the opacity of the imported images.*

I. *Timecode toggle: Change the way you position the line-up layer, using the timecode of the scene to the frame number.*

To load a line-up layer:

1. Select the Line-up Layer tool from the Animation palette.
2. Select a file from the Finder:
   - To load a single image, click **LOAD IMAGE** (A.). Dragonframe opens the Open dialog.
     Navigate to the image you want to load, and click **OK**. Dragonframe loads the image into the top layer of every frame in your scene.
   - To load an entire take of a scene into the take you're working on, click **LOAD MOVIE** (A.). Dragonframe opens the Open dialog. Navigate to the Dragonframe scene you want to load, and click **OK**. Then, select the take and exposure to open. Dragonframe loads the frames you selected into the current take as line-up layers.
   - To load a QuickTime movie, click **LOAD MOVIE** (A.). Dragonframe opens the Open dialog.
     Navigate to the QuickTime movie you want to load, and click **OK**. Dragonframe samples the movie according to the frame rate you set up for your scene.
3. (Optional) Select whether you want the line-up layer to float above or below the main image in the View pane (B.). By default, it floats over the main image.
   - To send the line-up layer below the main image, click **BOTTOM**.
   - To send the line-up layer above the main image, click **TOP**.
4. (Optional) Adjust the scale of the images you've imported (D.). By default, Dragonframe loads the image to fit to the current width of the View pane.
   - Use the Scale slider to incrementally adjust the scale of the imported images.
   - Use the Scale buttons to automatically adjust the scale of the imported images.
5. (Optional) Adjust the opacity of the line-up layer with the Opacity slider in the Animation palette (H.) or in the Animation tools.

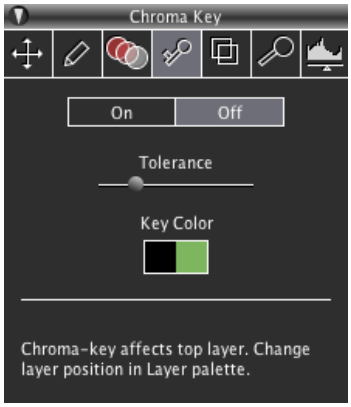
NOTE: The Line-up Layer tool is only designed as an animation tool; it’s not a post-production tool. Line-up Layer only layers images for the video assist. It does not produce composite images or layer images in your

final, full-res capture images. Open your Dragonframe images in post-production software to create composite images.

NOTE: You can move the line-up layer using the Video Assist tool.

See also:
"Passes, Takes and Exposures Explained" on page 10.
"Using Chroma Key" on page 111.
"Using the Video Assist Tool" on page 116.
"Exporting Your Take" on page 269.

Using Chroma Key



Use the Chroma Key tool to pull a rough key from either your loaded line-up layer or your current video assist frames. The Chroma Key will affect whichever layer is on top.

To use Chroma Key:

1. Load a line-up layer.
2. Set the line-up layer position to **TOP.**
3. Select Chroma Key from the Animation palette. Dragonframe changes your cursor to the Chroma Key tool.
4. Click a color on the screen.
5. Drag the Tolerance slider to specify the range of the color to key out.

NOTE: The Chroma Key tool is only designed as an animation tool; it's not a post-production tool. Dragonframe does not export composited sequences.

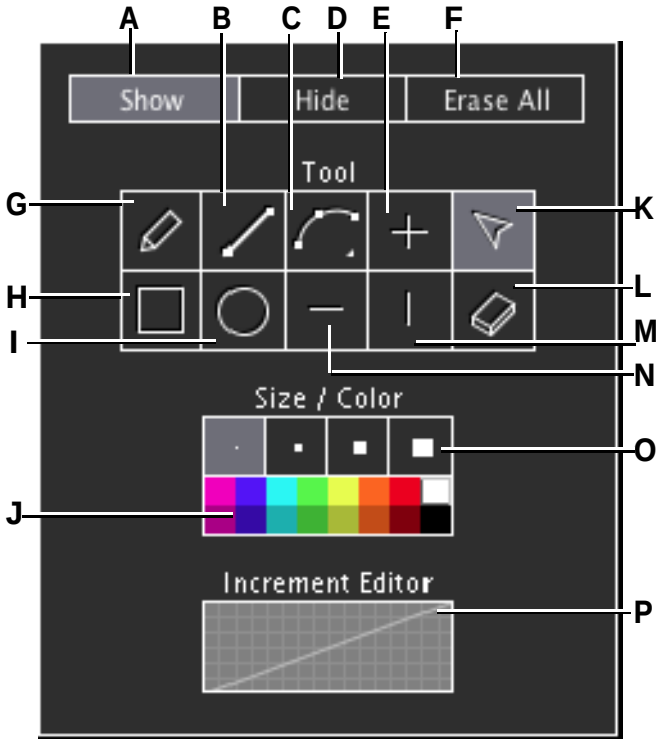
See also:
"Adding a Line-Up Layer (Movie or Still)" on page 109.

Drawing on the View Pane

Move the mouse over the View pane for the access to the Animation palette's Draw tool.

The Draw palette has cursors for drawing freehand, lines, polylines, and shapes. It also features various hash marks, an eraser, and an increment editor that allows you to plot moves along a line.

The image below gives more information about the Draw palette's tools.



A. *Show the drawing.*

B. *Draw a straight line.*

C. *Draw a smooth polyline. Click and hold to draw a straight polyline.*

D. *Hide the drawing.*

E. *Add a cross-hatch mark.*

F. *Erase the drawing.*

G. *Draw freehand.*

H. *Draw a rectangle.*

I. *Draw a circle.*

J. *Select a line color.*

K. *Select an object.*

L. *Use the eraser.*

M. *Draw a vertical hatch mark.*

N. *Draw a horizontal hatch mark.*

O. *Select the line thickness.*

P. *Create increments along a line or curve.*

NOTE: You can import any drawings you make into other scenes.

NOTE: Hide drawings during playback from Playback Preferences.

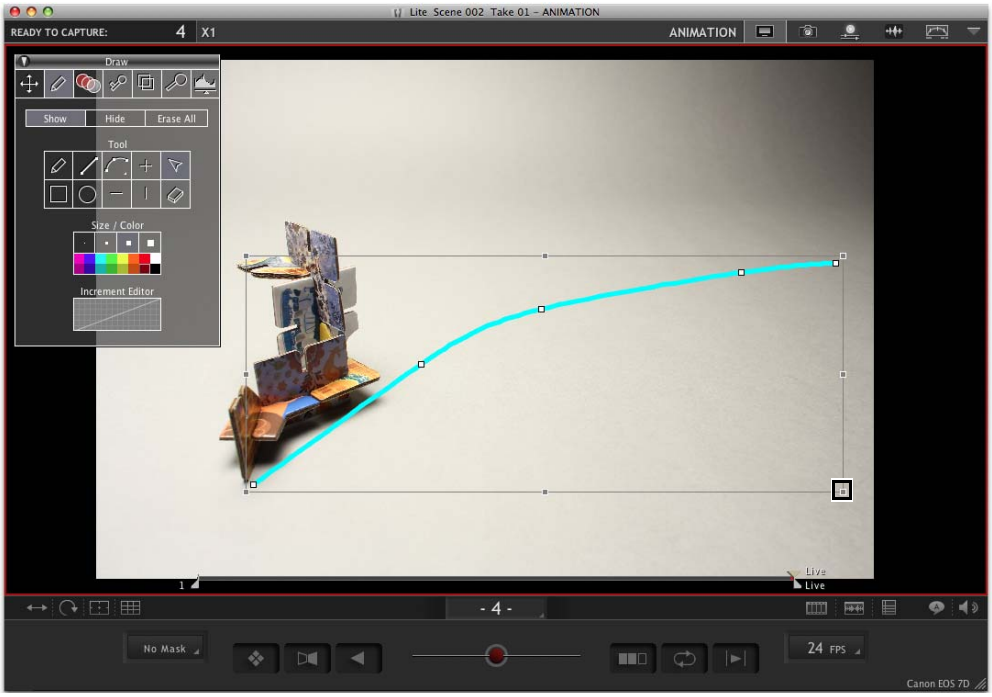
See also:
"Importing Scene Settings" on page 140.
"Playback Preferences" on page 283.

Drawing a Smooth or Straight Polyline

1. Select the polyline tool.
   - Click the tool for the smooth polyline.
   - Click and hold the tool, then select the straight polyline.
2. Click the View pane to start the polyline.
3. Move the cursor and click the View pane to add more points.
4. Double-click on the final point to end the line, or press **ESC** to end the line.

Manipulating Objects

Once you draw a line or polygon on the View pane, you can adjust it with its handles.



Drawing object handle.

- Move the cursor over the handle to resize the shape.
- Move the cursor close to the handle (but outside the drawing object) to rotate the shape.

Duplicating or Deleting Objects

- To duplicate items, select one or more objects and press **CTRL D**.
- To delete objects, select one or more objects and press **DELETE.**

Draw Tool Keyboard Shortcuts

You can draw more precisely by using some standard keyboard shortcuts.

- **ALT** constrains the drawing around a center point. Use it when drawing or resizing. For example, if you click **OPT** while drawing a circle, the circle would expand from a center point, rather than from the side.

- **SHIFT** constrains the drawing to its original proportions, or constrains the drawing to standard angles. Press and hold **SHIFT** when drawing, resizing or rotating the drawing.

Using the Increment Editor

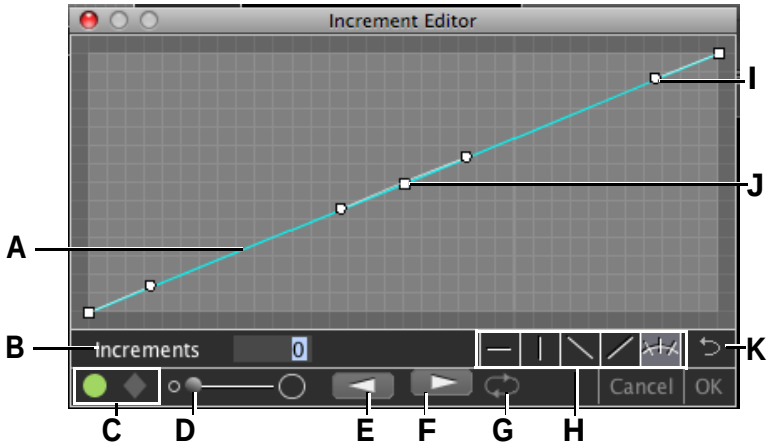
The increment editor shows movement along a path in time. Draw over the View pane, and add increments to the drawing; then adjust how quickly a playhead will move through the increments.

To use the increment editor:

1. Draw a shape on the View pane. You can use the line, multi-part line, square or circle tool.

2. Select the shape.

3. Click **INCREMENT EDITOR**. The increment editor opens:



A. *Position over time graph. Double-click the line to add a handle.*

B. *Increments field: Enter the number of increments.*

C. *Shape selection: Choose a green circle or blue diamond to show movement.*

D. *Shape size.*

E. *Reverse play.*

F. *Play.*

G. *Loop playback.*

H. *Increment mark selection: Choose whether the tick marks will follow the curve (default) or will always be horizontal, vertical, or diagonal.*

I. *Bezier curve handle: Click and drag to change the curve of the graph.*

J. *Handle: Click and drag to move the graph. Double-click to remove a handle.*

K. *Reset: Restore position curve to original position.*

4. Enter the number of one-frame increments and press **ENTER**.

The increments appear along the object.

5. (Optional) Adjust the position graph as needed.

6. (Optional) Change the type of tick mark used for the increment.

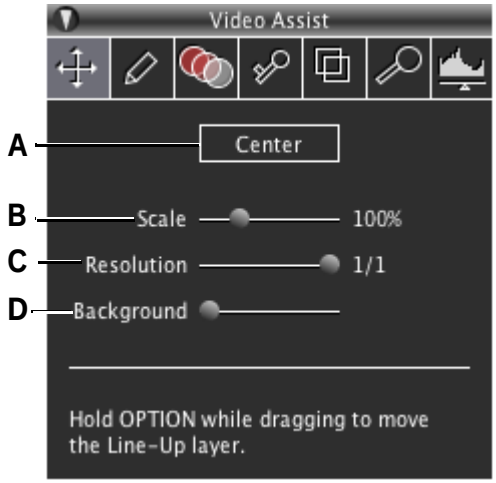
7. (Optional) Adjust the size or shape of the shape.

8. Press < or >. Dragonframe starts moving the shape along the curve.

Click **OK** when you're done viewing the movement along the curve.

Using the Video Assist Tool

Use the Video Assist tool to reposition or customize the image in the View pane.When the Video Assist tool is open in the palette, you can use the cursor to move the View pane image.



A. *Center: Move the image back to the center of the View pane.*

B. *Scale: Change the scale of the image.*

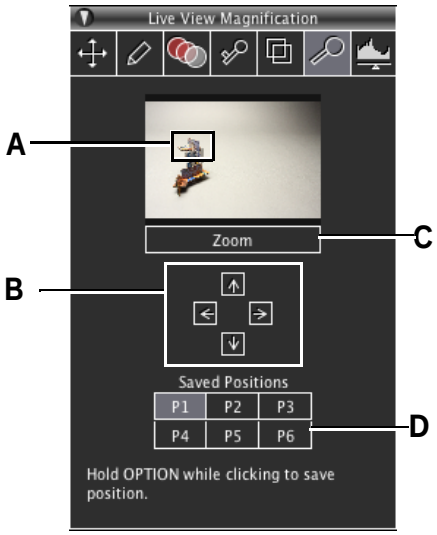
C. *Resolution: Change the image resolution.*

D. *Background: Change the background color from black to white.*

Punch-in with Live View Magnification

If you have a Canon or Nikon DSLR, you can use Dragonframe's Live View Magnification to zoom in on a portion of your Live View.

To use Live View Magnification, move the mouse over the View pane for access to the Animation palette's tool:



A. *Focus area: select where in the Live View you will zoom in.*

B. *Position arrows: Move the focus area.*

C. *Zoom into the Live View.*

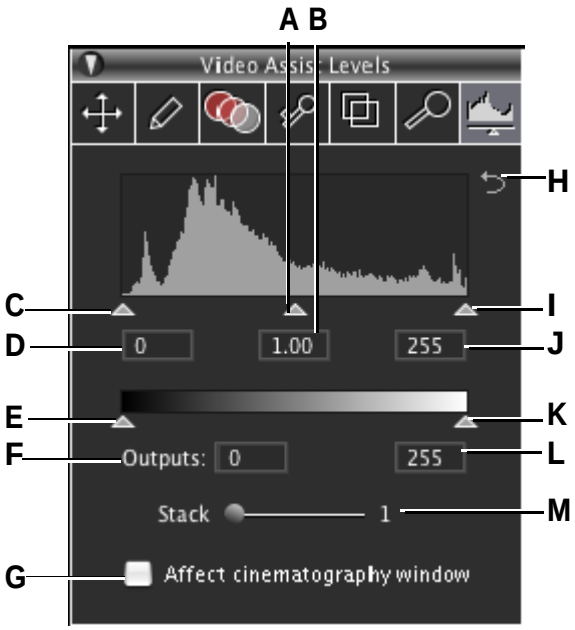
D. *Position numbers: Save a focus area to return to. To save it, move the focus area, then press* **OPT** *as you click the position number (***P1, P2***, etc).*

NOTE: When you use Live View magnification, your preview frames will show the magnification, but your high-res frames will not.

Adjusting Video Assist Levels

Adjust the Live View's brightness, contrast, and gamma levels with the Video Assist Levels tool in the palette. This basically works like the levels adjustment in Adobe Photoshop.

To adjust video levels, move the cursor over the View Pane, then select from the palette.



A. *Mid-tone Level Slider.*

B. *Mid-tone Level Field.*

C. *Low Input Level Slider.*

D. *Low Input Level Field.*

E. *Low Output Level Slider.*

F. *Low Output Level Field.*

G. *Cinematography check box: Apply video level adjustment to the Cinematography workspace.*

H. *Revert: Discard changes and go back to default levels.*

I. *High Input Level Slider.*

J. *High Input Level Field.*

K. *High Output Level Slider.*

L. *High Output Level Field.*

M. *Stack: Combine multiple consecutive video assist images in order to boost brightness. Useful for very low-light situations. (Does not affect final captures).*

- Adjust the levels using the sliders, or enter a level in a field.
- Use the mid-tone slider and field to adjust gamma levels. This adjusts the brightness of mid-tones without losing too much contrast.

NOTE: If you're using a manual aperture lens on a Canon body, first try to adjust Live View exposure using the Exposure Preview Offset feature in the Cinematography workspace.

See also:

"Adjusting Exposure Preview Offset" on page 79.

"Automating a Bash Light" on page 199.

"Adding a Capture Delay" on page 92.

Chapter 6: Using the Timeline

Use the timeline for managing playback of frames, for frame editing, and for viewing frames along with the audio track reading.

The timeline opens in the Animation workspace. Press to open it.

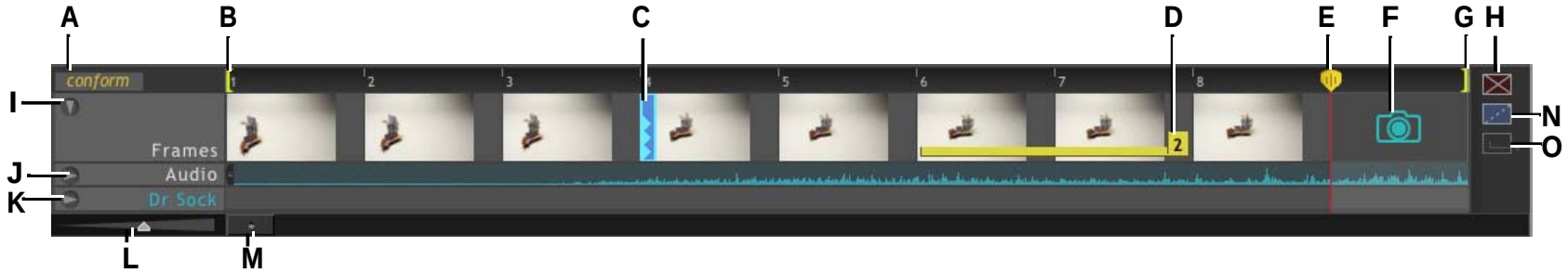
Press the timeline button to open the timeline.

See the next page for an overview of the timeline's features. This chapter contains these sections:

"Using the Timeline for Playback" on page 121.
"Frame Editing with the Timeline" on page 121.
"Contextual Menus and Keystrokes for the Timeline" on page 130.

See also:
"Animation Timeline Overview" on page 21.
"Playback Options" on page 99.
"Reading the X-Sheet" on page 171.
"Frame Editing From the X-Sheet" on page 173.
"Viewing the Track Reading in the X-Sheet or Timeline" on page 164.
"Reading Dialogue Tracks" on page 153.
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Timeline Map



A. *Conform: Render all of the virtual edits in the source files.*

B. *In point: Start playback here.*

C. *Hidden Frames: These frames won't appear in playback, or in the timeline, but they have not been deleted until you conform them.*

D. *Held Frames: Repeat one frame. It's a quick way of copying frames and pasting them.*

E. *Playhead. Move through the timeline.*

F. *Camera: See which frame will be captured next. Move the icon earlier in the sequence to reshoot frames.*

G. *Out Point: End playback here.*

H. *Delete Button: Delete the selected frame and move it to the delete bin.*

I. *Minimize: Minimize or maximize the row.*

J. *Audio: View the waveform, if one is loaded.*

K. *Face Sets: View phonetic information, face set names, or dialogue cues.*

L. *Scale: Adjust the scale of the timeline.*

M. *Scroll bar.*

N. *Hide Button: Hide the selected frame, or reveal the hidden frame.*

O. *Hold Button: Hold the selected frame.*

Using the Timeline for Playback

Use the timeline to select the playback area so you can see exactly which frames will be included.

To set the playback area:

- Step through the frames, then press **I** to set the in point (B.) and **O** to set the out point (G.).
- Or, use the mouse to click and drag the in and out points.

Press **PLAY** to start playback.

See also:
"Playback Options" on page 99.
"Loop Key/Ping-Pong" on page 97.
"Short Play Key" on page 98.
"Black (End in Black) Key" on page 98.
"High-Res Key" on page 98.
"Playback Preferences" on page 283.

Frame Editing with the Timeline

Use the timeline to edit your frame sequence. You can cut, copy, and paste frames, add holds, hide or delete frames, or retrieve frames from the delete bin.

NOTE: The timeline shows a thumbnail for the first exposure of a frame. Selecting one frame (one thumbnail) selects *all* the exposures for the frame. This is true for all frame editing, such as deleting, cutting, or reshooting frames. You can reshoot individual exposures with the X-Sheet.

See also:
"Reshooting a Frame Sequence from the X-Sheet" on page 177.

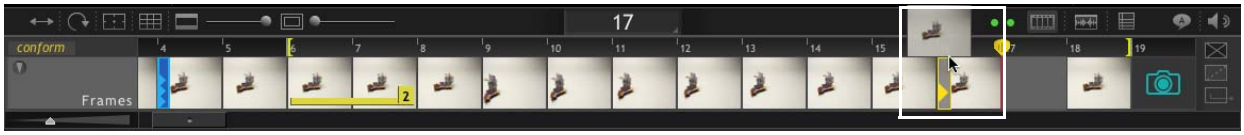
Moving Frames in the Timeline

Click and drag frames to move them to new locations in the frame sequence. This is a quick, visual way to replace frames or insert frames. You can move one frame at a time, or move a section of frames.

There are two ways to move frames. One moves just the frames you selected, the other selects and moves frames from your selection to the end of the sequence.

- Select the frame(s) you want to move, then click and drag them *up*. This will move just the frame(s) you selected.

  If you move them in between two frames, Dragonframe shows a yellow “insert” marker between the frames:

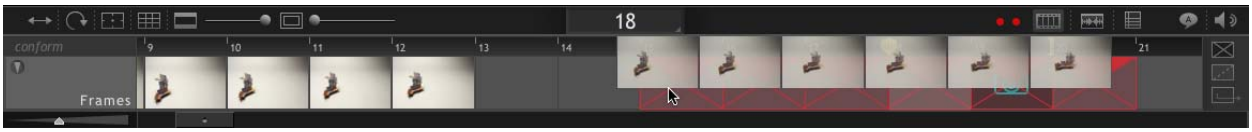


*Dragging **up** moves just the frame(s) you selected. Here you'll insert the frame at yellow insert marker*

  If you move them over another frame, Dragonframe shows a red “delete” marker over the frame(s) you'll replace:

*Dragging **up** moves just the frame(s) you selected. Here you'll overwrite the frame marked with red X.*

- Select a frame, then move it *sideways*, left or right. Dragonframe selects the frames to the end or beginning of the sequence and moves them. It shows where the frames will be inserted or replaced just as before:



*Dragging **to the right** selects all the frames to the end of the sequence. Here, you'll move the end of the sequence over two frames.*

NOTE: To paste frames in reverse order, cut or copy them, then paste them with the keyboard.

See also:
“Cutting, Copying or Pasting Frames with the Timeline” on page 123.

Holding Frames with the Timeline

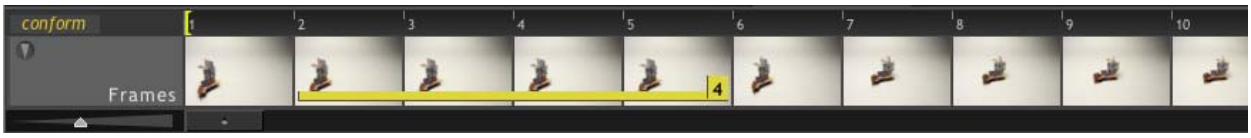
When you hold frames, you repeat them. It’s just as if you copied the frames into the sequence.

To hold a frame:

1. Select the frame you wish to hold.

2. Choose which frames to hold:

   - Click : A dialog appears. Enter how long to hold the frame and click **OK**.
   - Move the mouse to the right edge of the selected frame and click and drag the cursor over for the number of frames you wish to hold.



Frame 2 held for four frames.

To get rid of the held frames:

- Use the mouse:

  a. Move the cursor over the right edge of the last frame held.

  b. Click and drag the cursor to the left. Dragonframe moves the marked area until it reaches the original frame. The hold marker disappears.

- Delete the frames. See "Deleting Frames from the Timeline", below.

- Use :

  a. Select one of the held frames.

  b. Click . A dialog appears. Enter **0** and click **OK**.

See also:
"Holding a Frame in the X-Sheet" on page 174.

Cutting, Copying or Pasting Frames with the Timeline

You can cut, copy and paste selected frames to edit the frame sequence.

- Use standard keyboard commands (such as **CTRL V**) to cut, copy and paste frames.

- Select a frame, then right-click and select edit commands from the contextual menu.

NOTE: When you paste frames, you can choose four paste options:

- Insert frames,

- Overwrite frames,
- Insert frames in reverse order, and
- Overwrite frames in reverse order.

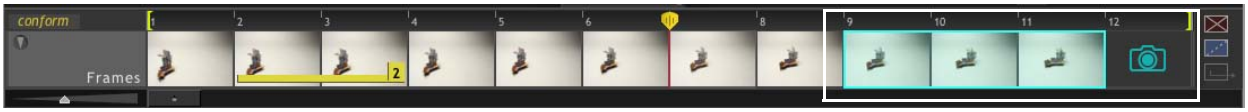
See also:
"Cutting or Copying from the X-Sheet" on page 173.
"Pasting Frames from the X-Sheet" on page 173.

Hiding Frames with the Timeline

Hide a frame to leave it out of the thumbnails and playback without having to completely delete it. Dragonframe leaves a marker where you have hidden frames so you can easily display them again.

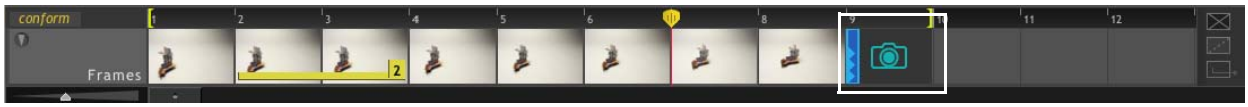
To hide frames:

1. Select the frame(s) you want to hide:



Frames 9-11 selected; camera ready to shoot frame 12.

2. Click . Dragonframe hides the frames, placing a marker where the frames would have gone:



Hide marker representing hidden frames 9-11. Camera is now ready to shoot frame 9 since three frames of the sequence are hidden.

See also:
"Hiding a Frame in the X-Sheet" on page 175.

Restoring Hidden Frames

To re-display frames that you hid:

1. Select the blue marker.

2. Click . Dragonframe restores the hidden frames.

Deleting Frames from the Timeline

To delete frames from the timeline:

1. Select the frames you want to delete. The frame thumbnails you select have a cyan outline.

2. Press , or right-click and select **DELETE**. Dragonframe deletes the selected rows, including all exposures, and places the files in the delete bin.

NOTE: To replace just one exposure in a frame, you can reshoot it from the X-Sheet.

See also:
"Delete Key" on page 96.
"Cut Back Key" on page 97.
"Reshooting a Frame Sequence from the X-Sheet" on page 177.
"Finding Your Source Files" on page 270.
"Deleting Frames from the X-Sheet" on page 177.
"Restoring Frames from the Delete Bin" on page 127.

Reshooting Frames from the Timeline

Reshoot frames in two ways:

- Delete one or more frames, then reshoot them. Dragonframe moves the camera back to the end of the sequence when you've replaced the deleted frames.

- Insert the camera into the frame sequence, then continue shooting from there. You can manually move the camera when you've finished adding frames.

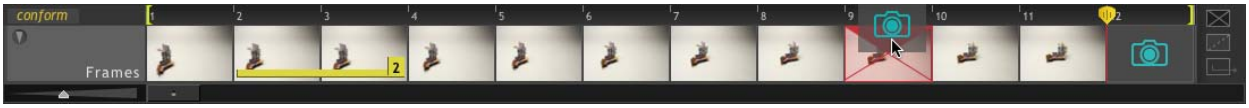
NOTE: Reshooting from the timeline will replace all exposures of each frame. The only way to reshoot a single exposure is from the X-Sheet.

See also:
"Reshooting a Frame Sequence from the X-Sheet" on page 177.

Replacing Frames (Reshooting)

- To reshoot a single frame:

    a. Click and drag the camera to the frame you want to reshoot. Dragonframe places a red delete marker over the frame to be reshot:



    b. Drop the camera on the frame. Dragonframe replaces the frame with the camera.

    c. Press **SHOOT**. Dragonframe shoots the frame, then moves the camera back to the end of the sequence.

- Reshoot a section of frames.

    a. Select the frames you want to replace.

    b. Right-click, and select **RESHOOT FRAMES**. Dragonframe deletes the frames, then moves the camera to the first deleted frame:

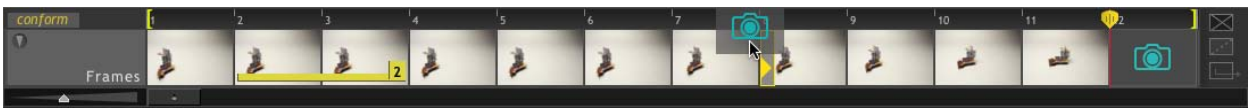
    c. Reshoot the sequence. When you've replaced each deleted frame, Dragonframe moves the camera back to the end of the sequence.

Inserting the Camera

If you want to add frames to the middle of a frame sequence, insert the camera:

- Move the camera with your mouse:

    a. Click and drag the camera in between two frames. Dragonframe places a yellow insert marker in between the frames:



b. Press **SHOOT** to add frames.

c. Click and drag the camera back to the end of the sequence when you're done.

- Right-click to insert the camera:

a. Select a frame.

b. Right-click, then select **INSERT CAMERA**. Dragonframe inserts the camera before the selected frame.

c. Press **SHOOT** to add frames.

d. Right-click, then select **RETURN CAMERA TO END**.

Restoring Frames from the Delete Bin

When you delete frames from the timeline, Dragonframe moves them to the Delete Bin. You can restore them by moving them out of the bin. Using the timeline, you can also choose where the deleted frames will go in the frame sequence.

To restore deleted frames:

1. Select **EDIT|SHOW DELETE BIN** or press **CTRL ALT B.** Dragonframe opens the delete bin:

2. Restore the frames:

   - Click and drag a deleted frame back into the timeline. Just as with moving any frame, Dragonframe shows you whether it will insert or overwrite with the frame using the red and yellow markers.
   - Move the playhead in the timeline to the place you want to insert or overwrite frames.

     Select a deleted frame, then click (insert) or (overwrite). Dragonframe inserts the deleted frame, or overwrites the frame after the playhead.

CAUTION: Dragonframe shows only a thumbnail of the first exposure of a frame in the delete bin. It will not tell you if any exposures for that frame are missing. To see the source files for the frames, right-click, then select **REVEAL IN FINDER**.

See also:
"Moving Frames in the Timeline" on page 121.

Navigating the Delete Bin

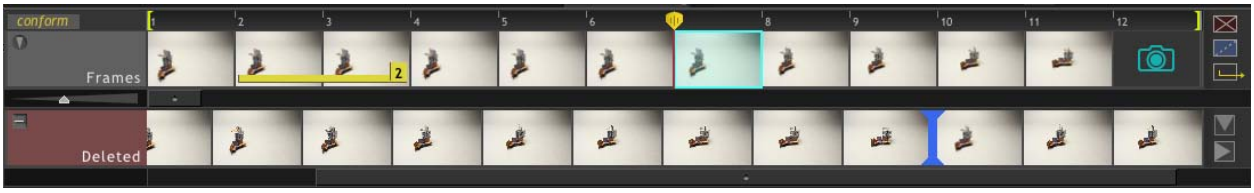
Once you've deleted several frames from the scene, or done a lot of editing in the timeline, it may be hard to figure out where the deleted frames came from originally. Dragonframe uses blue markers on the frames in the timeline and delete bin to help you figure out where the frames came from.

Keep a few principles in mind as you navigate through the frames in the delete bin:

- All of the frames in the delete bin are placed in the order they were shot.
- When you select a frame in the delete bin, Dragonframe will mark two frames in the timeline: the frames shot before and after the selected frame:

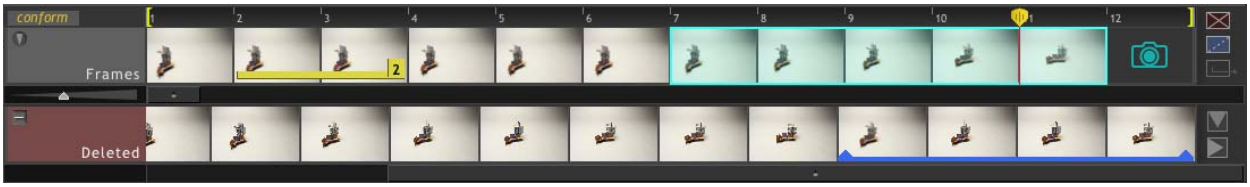
Deleted frame selected; timeline shows two frames marked. Frame 9 was shot before the deleted frame, frame 10 shot after it.

- If you select a single frame in the timeline, Dragonframe will mark the frames in the delete bin that were shot before and after that frame.



One frame in the timeline selected. Dragonframe has marked two deleted frames; the selected frame was shot in between the marked frames.

- If you select multiple frames in the timeline, Dragonframe will mark the frames in the delete bin that were shot within that sequence:



Five frames in the timeline selected. Dragonframe has marked four deleted frames; those frames were originally shot within the sequence of the five selected frames.

- To view the source files for any deleted frame, right-click and select **REVEAL IN FINDER**.

Conforming Timeline Edits

Dragonframe is designed to give you access to the high-res frames at any time without having to perform an export. However, when you use the timeline, many of the edits you perform are “virtual”. For example, if you hide frames, Dragonframe removes them from the timeline without doing anything to your source files.

Any edits you make with the timeline that are not reflected in the source files are not “conformed” to disk. To make the edits in the timeline be reflected in the source files, you must conform them.

CAUTION: Once you conform edits, you cannot undo them.

When you make virtual edits in the timeline, Dragonframe highlights the conform button in the timeline to alert you.

Edited timeline with conform button highlighted.

Press **CONFORM** to render all of the virtual edits in the source files. Dragonframe will:

- Delete any hidden frames.
- Permanently renumber “held” frames. This will remove the hold marker from the frames.
- Renumber the sequence permanently if you’ve moved, deleted, copied, or cut any frames.

- Move all deleted frames to the delete bin.

After you conform your edits, all special markings (like held or hidden frames) will disappear:

Contextual Menus and Keystrokes for the Timeline

Use the following keystrokes and menus to access all the available timeline tools:

Contextual Menu for the Timeline

Right-click over any frame thumbnail to see the timeline's contextual menu:

Menu item:	See this section for more information:
CUT	"Cutting, Copying or Pasting Frames with the Timeline" on page 123.
COPY	"Cutting, Copying or Pasting Frames with the Timeline" on page 123.
PASTE INSERT	"Cutting, Copying or Pasting Frames with the Timeline" on page 123.
PASTE OVERWRITE	"Cutting, Copying or Pasting Frames with the Timeline" on page 123.
PASTE REVERSE OVERWRITE	"Cutting, Copying or Pasting Frames with the Timeline" on page 123.
DELETE	"Deleting Frames from the Timeline" on page 125.
HIDE FRAMES	"Hiding Frames with the Timeline" on page 124.
HOLD FRAMES...	"Holding Frames with the Timeline" on page 122.
RESHOOT FRAMES	"Replacing Frames (Reshooting)" on page 126.
INSERT CAMERA	"Inserting the Camera" on page 126.

Menu item:	See this section for more information:
RETURN CAMERA TO END	“Inserting the Camera” on page 126.
REVEAL IN FINDER	“Restoring Frames from the Delete Bin” on page 127.

Contextual Menu for the Delete Bin

Menu item:	See this section for more information:
INSERT DELETED FRAMES AT PLAYHEAD	“Restoring Frames from the Delete Bin” on page 127.
OVERWRITE DELETED FRAMES AT PLAYHEAD	“Restoring Frames from the Delete Bin” on page 127.
REVEAL IN FINDER	“Navigating the Delete Bin” on page 128.

Chapter 7: Time-lapse

You can use Dragonframe to set up and capture a time-lapse sequence.

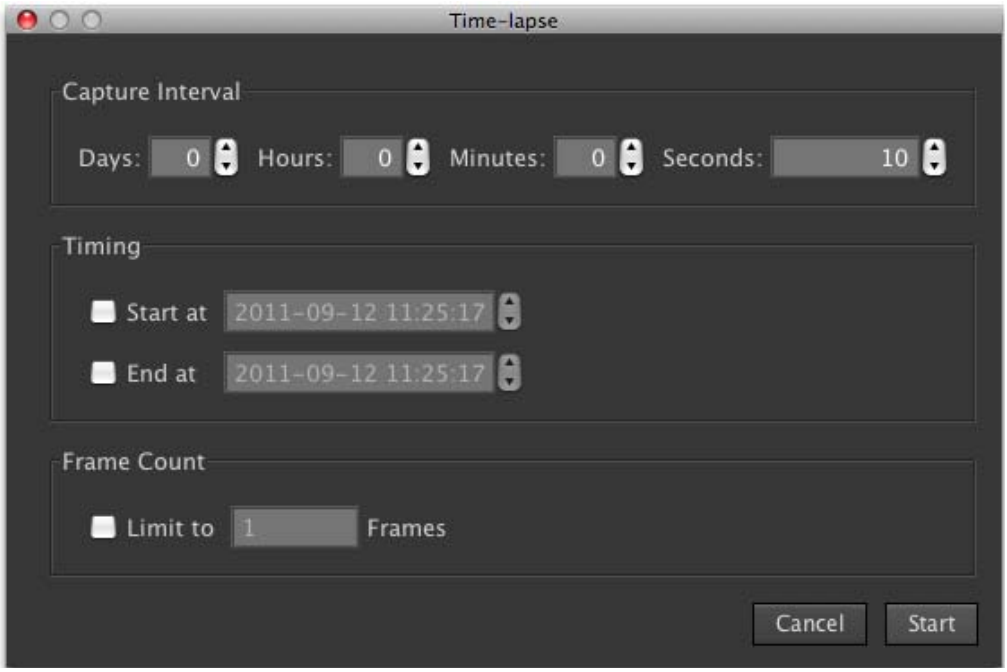
To set up a time-lapse:

1. Open the Cinematography workspace. In the Camera Control pane, verify that auto-capture is on for all of your exposures. That means that Dragonframe will capture all frames and exposures automatically, instead of you having to press **SHOOT** for each one. The arrows next to each arrow should be blue:

Auto-capture on for both exposures.

CAUTION: If auto-capture is not enabled for all exposures, time-lapse will not work.

2. Click **CAPTURE|TIME-LAPSE**. The Time-lapse dialog appears.



3. Enter the capture interval you want to use. The default is 10 seconds. For example, if you want to capture a frame every hour, enter **1** in the **HOURS** field.

NOTE: The time-lapse interval must be greater than the time it takes for Dragonframe to shoot a frame with your camera and download it to your computer. For example, if Dragonframe takes three seconds to download an image from your camera, don't set the interval to one second—Dragonframe can't download the frames quickly enough.

4. (Optional) Set a **START** and **STOP** time.

5. (Optional) Set up a frame number limit:

    a. Check **LIMIT TO ___ FRAMES** to end the time-lapse after Dragonframe captures a certain number of frames.

    b. Enter the number of frames you want the time-lapse limited to. The default is **1**.

6. Click **OK**. The Time-lapse dialog appears. Dragonframe automatically captures the shots you set up, and shows the progress you've made in the dialog. Click **X** if you want to stop the time-lapse sequence.

Chapter 8: Managing Your Projects and Files

The Dragonframe file structure is clear, simple, and easy to navigate. The sections that follow will help you use it effectively.

"Creating a New Scene" on page 135.
"Opening a Previously-Shot Scene" on page 137.
"Duplicating Your Scene" on page 138.
"Creating a New Take" on page 138.
"Switching Takes" on page 139.
"Managing Takes" on page 139.
"Importing Scene Settings" on page 140.
"Using a Scene Template" on page 140.

See also:

"Finding Your Source Files" on page 270.

Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Creating a New Scene

When you open Dragonframe, the splash screen opens. From there, you can create a new scene or open an old scene. To create a new scene:

1. Click **NEW SCENE**. The New Scene dialog appears:

2. Enter a production name or number, up to five characters.
3. Enter a scene name or number, up to three characters.
4. Click **OK**. The New Scene Chooser dialog opens.

5. Navigate to the folder on your hard drive where you'd like to save Dragonframe projects.

6. Click **SAVE**. The Animation workspace opens with the scene you just created.

If you have a supported video source connected, the feed will open in the View pane automatically. If no supported video source is connected, the View pane will read **NO VIDEO SOURCE**.

See also:
"Quick Set-Up Guide for Supported Video and Still Cameras" on page 9.
"Camera Connections" on page 47.
"Finding Your Source Files" on page 270.
The camera page on our website:
http://www.dragonframe.com/camera.php

Simplifying Scene Names

By default, the New Scene dialog prompts you to name both your production and scene. However, you can change the naming convention to be simpler from Naming Preferences. If you change that preference, the New Scene dialog will only include the **SCENE** field.

The file name of your project will depend on which naming convention you chose.

- Generally, your project will be saved with the default file convention **PRODUCTION NAME_SCENE NAME.DGN.** For example, the name could be **TITLE_001.DGN**.

- If you choose the Scene/Take convention from Naming Preferences, the project will be saved with the file convention **SCENE NAME.DGN**. For example, the name could be **TITLE.DGN**.

See also:
"Naming Preferences" on page 284.

Changing Scene Name Length

Change how long your production and scene names can be from Naming Preferences.

See also:
"Naming Preferences" on page 284.

Changing Take Names

When you create a new scene, Dragonframe automatically names the new take **TAKE 001**. Select **FILE|MANAGE TAKES...** to change take names.

See also:
"Managing Takes" on page 139.

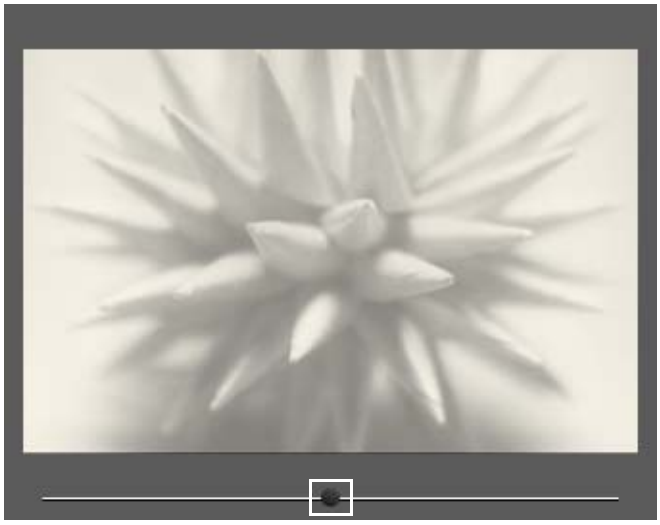
Opening a Previously-Shot Scene

Once you've created a scene, you can always open it back up to continue work.

To open a scene:

1. Click **FILE|OPEN SCENE**. The Open Scene dialog opens.

2. Navigate to the folder where you store your scene files, and select the scene you want to open. Use the slider button below the preview image that appears to scroll through the scene's frames, to help ensure that you're opening the correct scene.



Preview image with slider button

3. Click **OK**. The Open Take dialog opens, along with a preview image of the highlighted take. Use the slider button to scroll through the frames as before.

4. Select a take that you've already created, or create a new take.

Dragonframe opens the Animation workspace with the scene you selected.

NOTE: Change the length of the production, scene and take names from Naming Preferences.

See also:
"Naming Preferences" on page 284.

Duplicating Your Scene

To duplicate your scene:

1. Click **FILE|DUPLICATE SCENE**. The New Scene dialog appears.
2. Enter a name for the duplicated scene, then click **OK**. Dragonframe opens the Save Scene As dialog.
3. Navigate to the place where you want to save the file, then click **OK**.

A progress bar appears. Dragonframe duplicates the scene.

See also:
"Creating a New Scene" on page 135.

Creating a New Take

Create a new take of a scene at any time. A new take keeps all of the important information from your previous take.

To create a new take:

1. Select **FILE|NEW TAKE**. The New Take dialog opens.
2. Enter the take number, or any name you choose.
3. Click **OK**.

Dragonframe creates a new take within the Scene folder and opens the Animation workspace. Since you're starting a new take of the same scene, the Capture and frame counters will indicate that you're ready to capture the first frame.

NOTE: Change the length of the production, scene and take names from Naming Preferences.

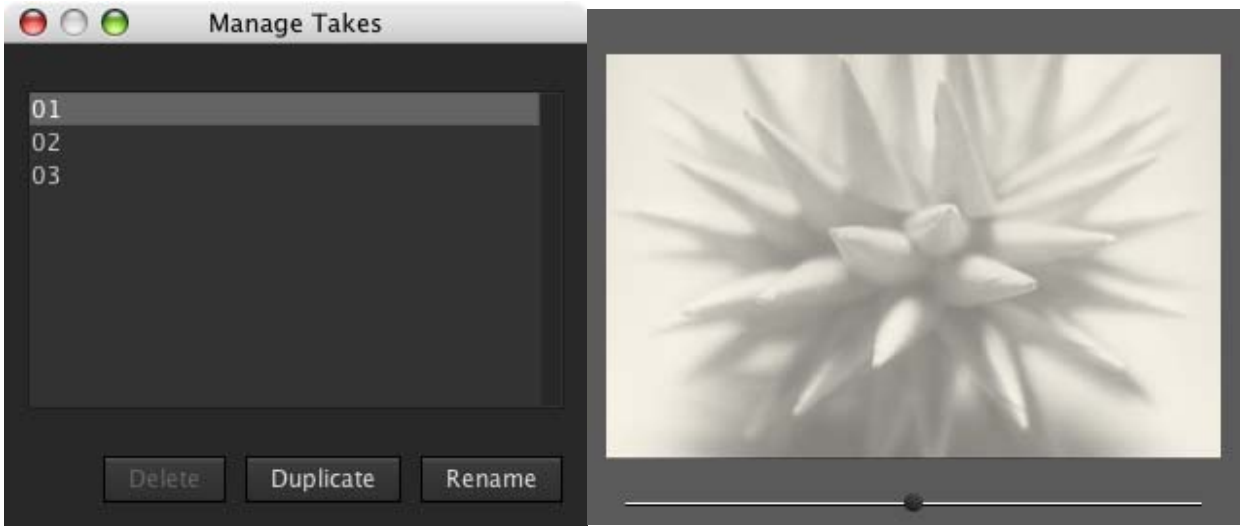
See also:
"Passes, Takes and Exposures Explained" on page 10.
"Finding Your Source Files" on page 270.
"Naming Preferences" on page 284.

Switching Takes

To open a different take of the scene you're shooting, click **FILE|SWITCH TAKES** and select the take. Dragonframe closes the take you were working on and loads the take you selected.

Managing Takes

Copy, rename, and delete your scene's takes from the Manage Takes dialog. The dialog shows you all of the current takes, and also displays a preview alongside that enables you to scroll through the frames in each take:



- To delete a take, select the take and click **DELETE**. You can't delete the first take of any scene.
- To copy a take, select the take and click **DUPLICATE**. Dragonframe creates a new take based on the one you copied.
- To rename a take, select the take and click **RENAME**. Dragonframe opens the Rename Take dialog.
  Rename the take, and click **OK**.

Importing Scene Settings

You can import exposures, camera moves, dialogue cues, or the drawing layer from other scenes into the scene you're working on.

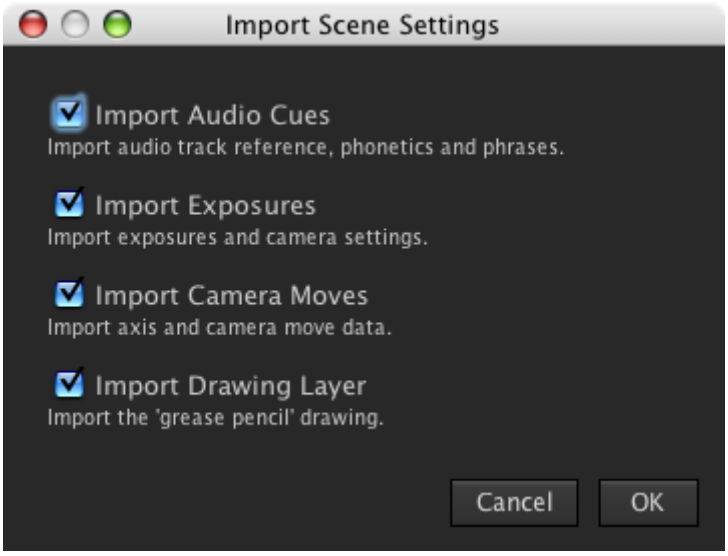
By default, each new take you create has the same settings as the scene it was created within.

To import settings:

1. Click **FILE|IMPORT>|SCENE SETTINGS**. Dragonframe opens the Import Scene dialog.

2. Select the scene you want to import settings from. Click **IMPORT SCENE**. Dragonframe opens the Open Take dialog.

3. Select the take you want to use and click **OPEN TAKE**. Dragonframe opens the Import Scene Settings dialog. By default, all the settings for the scene are selected.



4. (Optional) Un-check any settings you do not want to import.

5. Click **OK** to import the settings.

Using a Scene Template

You can set up a template for your scene that includes elements like composition guides or track reading character setup. When you create a new scene, all of the meta data for the scene will come from the template. This is a more comprehensive alternative to importing scene settings.

The scene's meta data is stored in a file called **TAKE.XML**. You'll use **TAKE.XML** as the template for new scenes.

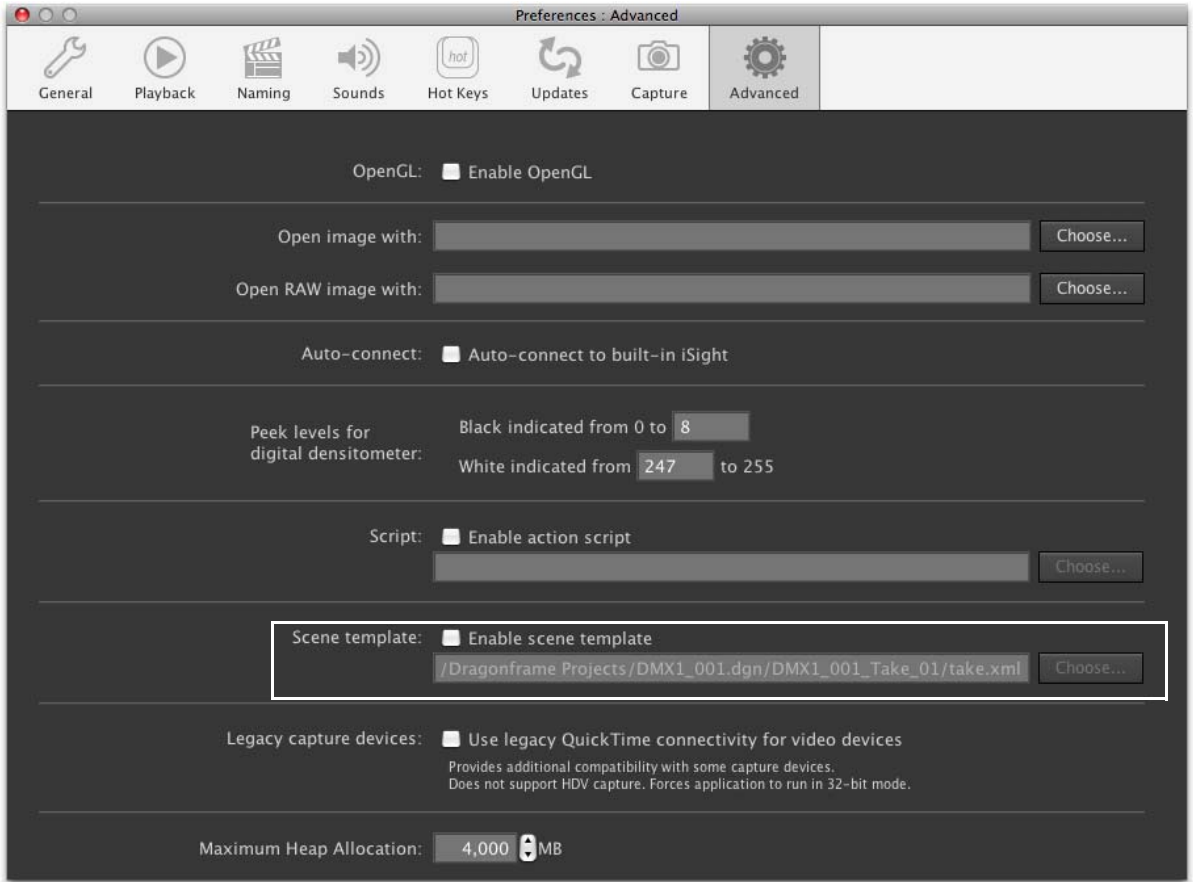
NOTE: If you do not want *all* of the meta data (such as drawings, DMX settings, track readings) from the template to appear in the new scene, import its settings instead.

To set up a template and use it to create new scenes:

1. Set up the skeleton scene in Dragonframe.

2. Find **TAKE.XML** and copy it to a new location. You may also want to rename it to make it easier to find.

3. Open Preferences, then select **ADVANCED**. Advanced Preferences appears:



Scene template preferences.

4. Click **ENABLE SCENE TEMPLATE**, then navigate to the **TAKE.XML** file you saved in step 2. Click **OK**.

Dragonframe loads the template for the new scene. The meta data (such as composition guides, masks, drawings, DMX settings, or track reading mouth sets) appears.

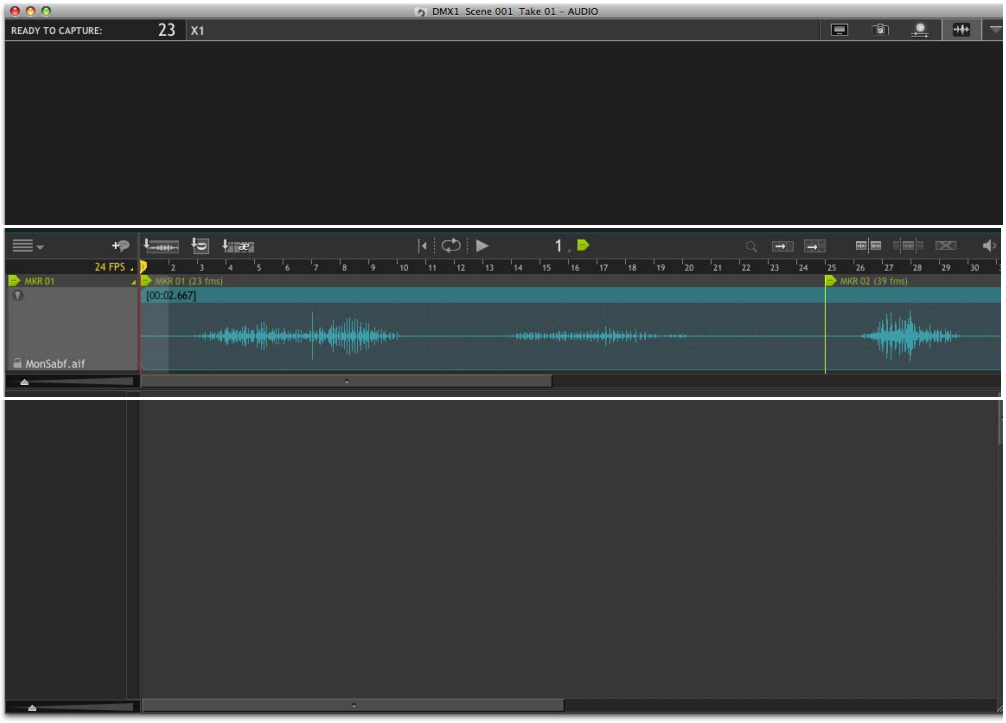
NOTE: To keep from applying the scene template to some scenes, uncheck **ENABLE SCENE TEMPLATE**.

See also:
"Finding Your Source Files" on page 270.
"Advanced Preferences" on page 289.

Chapter 9: Adding and Editing Audio Clips

Dragonframe provides you with an Audio workspace to load audio clips and do basic edits. You can select a portion of an audio clip and discard the parts you don't need, or change where the track starts or ends.

Audio editing takes place in the playback portion of the workspace:



Playback portion of Audio workspace, where you can load, edit, and mark the audio clip.

The audio map on page 145 gives an overview of the playback portion of the workspace, as well as the track reading tools.

This chapter includes the following sections:

"Loading Audio Files" on page 146.
"Scrubbing the Audio Track" on page 146.
"Playing Back the Audio Track" on page 146.
"Editing the Audio Clip" on page 147.
"Exporting an Edited Audio Track" on page 150.

“Contextual Menus and Keystrokes for the Audio Workspace” on page 150.

See also:

“Reading Dialogue Tracks” on page 153.

“Viewing the Track Reading in the X-Sheet or Timeline” on page 164.

“Using the Timeline” on page 119.

“Viewing Audio Information in the X-Sheet” on page 180.

Dragonframe tutorials:

http://www.dragonframe.com/tutorials.php

Audio Workspace Map

A. *Character Preview area: View how the face cues will look during playback.*

B. *Audio tools: Use the drop-down menu to add characters or audio clips. Play back or loop the clip, mark the clip, select a row or all rows, and split or delete sections of the clip.*

C. *Waveform: Select parts of the audio clip, or move the playhead.*

D. *Character: Add face cues, phonetics, or dialogue for the characters.*

E. *View the face set for the currently selected character.*

Loading Audio Files

Add a new audio clip to your scene from the Audio workspace. To import an audio track:

- Click . Navigate to the audio track, and click **OK**.
- Click , then select **IMPORT AUDIO**. Navigate to the audio track, and click **OK.**

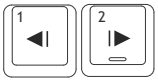
NOTE: Dragonframe only accepts 8 or 16-bit per channel WAV and AIFF files.

Dragonframe loads the audio file. The clip appears in the playback area of the workspace:

See also:
"Setting Scene Length and Starting Frame" on page 172.

Scrubbing the Audio Track

Once the audio clip is loaded, you can to move through it.

- Drag the mouse through the playhead area.
-  Use the step keys to step through the clip frame-by-frame.
- Press **PLAY** or the spacebar to play the audio clip.

See also:
"Contextual Menus and Keystrokes for the Audio Workspace" on page 150.

Playing Back the Audio Track

While scrubbing audio, you may want to play back all of the audio clip you've loaded, a short section of it, or play back one frame at a time to help you add audio cues and prepare to animate to the clip.

NOTE: Press to loop playback.

Playing Back All of the Audio Clip

To play back the entire clip:

- Press
- Press the spacebar.

Playing Back a Section of the Clip

To play back a section of the clip:

- Move the playhead to where you want to start, and press .

  The clip will play back from that point to the end.

- Select a portion of the waveform, and press .

Playing the Clip One Frame at a Time

- Press the **STEP** keys to step through the audio clip one frame at a time.
- Click the frame number above the portion of the clip you want to play. Dragonframe plays that frame's audio. Press and hold to loop the audio.

See also:
"Contextual Menus and Keystrokes for the Audio Workspace" on page 150.

Editing the Audio Clip

Once you've loaded an audio clip, you may want to edit it, either deleting unnecessary sections, marking sections of the clip, or splitting the clip into different pieces.

NOTE: Undo any edits by pressing **CTRL Z**.

Selecting the Audio Clip

You can select all of a clip or part of one:

- Click the dark turquoise bar over the waveform to select the entire clip. The clip turns blue:

Select a portion of the clip:

- Click in the waveform and drag the mouse. Or,
- Step the playhead to the in point, and press **I**. Then move the playhead to the out point, and press **O**.

The selected section turns turquoise:

Click outside of the selection to remove it.

Splitting a Clip into Sections

You may wish to split an audio clip into sections, perhaps to have one portion play for one part of a scene, and then another portion to play later in the scene. To split an audio clip, you can:

- Move the playhead to where you want to split the audio. Press . Dragonframe splits the clip into two parts on either side of the playhead. Or,
- Select the part of the clip you want to split and click . Dragonframe detaches the selected portion from the rest of the clip.

See also:
"Selecting the Audio Clip" on page 148.

Nudging the Audio Clip

By default, Dragonframe aligns the beginning of the audio clip with the first frame. However, you may want the audio clip to start before or after the first frame, or at some other point. Offsetting the audio clip lets you adjust the start time of the clip to the nearest thousandth of a second. If you've already started entering audio cues for the clip you want to offset, you can offset the cues with the clip.

You can offset the clip in a few ways:

- Move the selected clip with the mouse.
- Press **SHIFT**, then move the clip with the mouse. The clip snaps to the nearest frame.
- Press **SHIFT**, then the **STEP** keys to move the clip back or forward without the cues.
- Click to select audio cues and the clip together and move them in tandem.
- Right-click the waveform, then select **NUDGE AUDIO**. From the dialog you can move the audio forward or backward by whatever frames/seconds you need.

See also:
"Selecting the Audio Clip" on page 148.
"Contextual Menus and Keystrokes for the Audio Workspace" on page 150.
"Selecting Cues" on page 161.

Cropping the Audio Clip

To crop the audio clip to a selection:

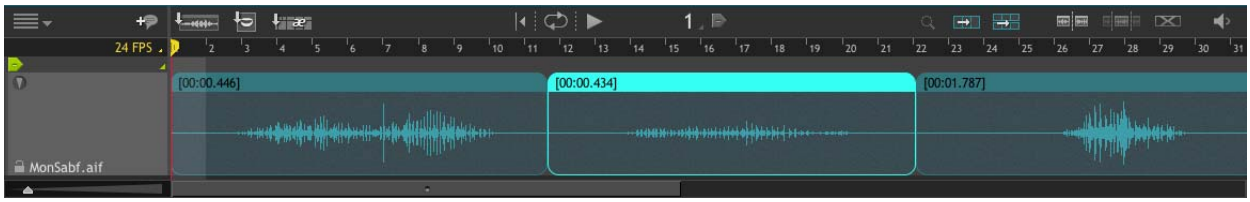
1. Select the portion of the clip you want to keep.
2. Click . Dragonframe deletes the sections before and after the selection. It also moves the edited clip so it starts at frame 1.

See also:
"Selecting the Audio Clip" on page 148.

Deleting Some or All of the Audio Clip

To delete a portion of the audio clip:

1. Select the portion of the clip you want to delete.
2. Click . Dragonframe splits the clip.
3. Click above the split clip to select it:



4. Press **DELETE**.

See also:
"Selecting the Audio Clip" on page 148.
"Contextual Menus and Keystrokes for the Audio Workspace" on page 150.

Exporting an Edited Audio Track

You can export an edited track to use in other scenes. This creates a new audio file that incorporates the edits you've made.

To export a clip:

1. Edit the audio as needed.
2. Click , then select **EXPORT AUDIO EDIT.** An export audio edit dialog appears.
3. Navigate to where you want to save the file, and press **SAVE**. Dragonframe saves the file.

Contextual Menus and Keystrokes for the Audio Workspace

Use the keystrokes and contextual menus listed below to quickly access all of the Audio tools.

Keystrokes for the Audio Workspace

Press:	To	See this section for more information:
SPACE	Play or pause the audio track.	"Playing Back the Audio Track" on page 146.
DELETE/BACKSPACE	Delete selected clip or cues.	"Deleting Some or All of the Audio Clip" on page 149.
UP	Navigate up to the next track or character.	"Scrubbing the Audio Track" on page 146.
DOWN	Navigate down to the next track or character.	"Scrubbing the Audio Track" on page 146.
LEFT	Scrub the previous frame.	"Playing Back the Audio Track" on page 146.
RIGHT	Scrub the next frame.	"Playing Back the Audio Track" on page 146.
SHIFT LEFT	Nudge the selected items back one frame.	"Nudging the Audio Clip" on page 149.
SHIFT RIGHT	Nudge the selected items forward one frame.	"Nudging the Audio Clip" on page 149.
CTRL LEFT	Move to previous marker.	"Navigating Through Markers" on page 164.
CTRL RIGHT	Move to next marker.	"Navigating Through Markers" on page 164.
CTRL A	Select all cues and clips.	"Selecting the Audio Clip" on page 148.
HOME	Move to the start of the audio track.	"Scrubbing the Audio Track" on page 146.
END	Move to the end of the audio track.	"Scrubbing the Audio Track" on page 146.

Press:	To	See this section for more information:
PAGE UP	Move backwards in the timeline by one page.	“Scrubbing the Audio Track” on page 146.
PAGE DOWN	Move forward in the timeline by one page.	“Scrubbing the Audio Track” on page 146.

Contextual Menus for the Audio Timeline

Menu Item:	To:	See this section for more information:
NUDGE AUDIO	Move the audio clip over by a few seconds, a frame, or another measurement.	“Nudging the Audio Clip” on page 149.

Chapter 10: Reading Dialogue Tracks

Besides editing audio clips, you can use Dragonframe's Audio workspace to for track reading, adding face sets, phonetic symbols, and dialogue cues. You can mark the track reading into different sections (such as scene 1 or scene 2), export all or part of the track reading to other scenes, and export a preview QuickTime of the characters "talking."

The audio workspace map on page 145 gives an overview of the playback and track reading tools in the Audio workspace.

This chapter includes the following sections:

"Setting Up Face Sets in Photoshop Layers" on page 153.
"Loading Face Sets" on page 156.
"Setting Up Characters" on page 157.
"Marking the Track Reading" on page 164.
"Viewing the Track Reading in the X-Sheet or Timeline" on page 164.
"Exporting the Track Reading" on page 165.
"Importing a Track Reading" on page 166.
"Exporting a Track Reading Preview" on page 166.
"Contextual Menus for the Audio Face Set Area" on page 167.

See also:

"Adding and Editing Audio Clips" on page 143.
"Audio Workspace Map" on page 145.
"Viewing Audio Information in the X-Sheet" on page 180.
"Using the Timeline" on page 119.
"Contextual Menus and Keystrokes for the Audio Workspace" on page 150.

Dragonframe tutorials:

http://www.dragonframe.com/tutorials.php

Setting Up Face Sets in Photoshop Layers

Set up your face sets in Photoshop (PSD) files that follow the conventions for our Audio workspace. When Dragonframe imports the files, it will organize each face cue, and, if you set it up, add things like phonetic cues and hot keys.

Dragonframe uses Photoshop layer groups to organize the shapes.

- Set up each shape with its own layer.
- Size all shapes 200 x 200. Any other size will get cropped and scaled when Dragonframe loads it.

Creating Mouth Shapes

To create a set of mouth shapes:

1. Create a group called **MOUTH**.
2. Add a layer to this group for every mouth shape.

Creating Eye Shapes

1. Create a group called **EYE**.
2. Add a layer to this group for every eye shape.

NOTE: When you create a layer with a name beginning with **EYE**, Dragonframe always layers the **MOUTH** shapes over it.

Creating the Background Layer

You can also have a background layer that provides a common background for all shapes.

- Name the layer **BG** or **BACKGROUND**.
- Create the layer at the top level (not within a group).

If the background layer exists, all other shapes will be composited on top of it.

Mouth and Eye Shape Naming Conventions

Name each layer so Dragonframe can recognize your shapes and display them properly.

CAUTION: Each layer must have a unique name. For example, if you name an eye layer **CLOSED** and a mouth layer **CLOSED**, Dragonframe will not recognize that they are two separate shapes.

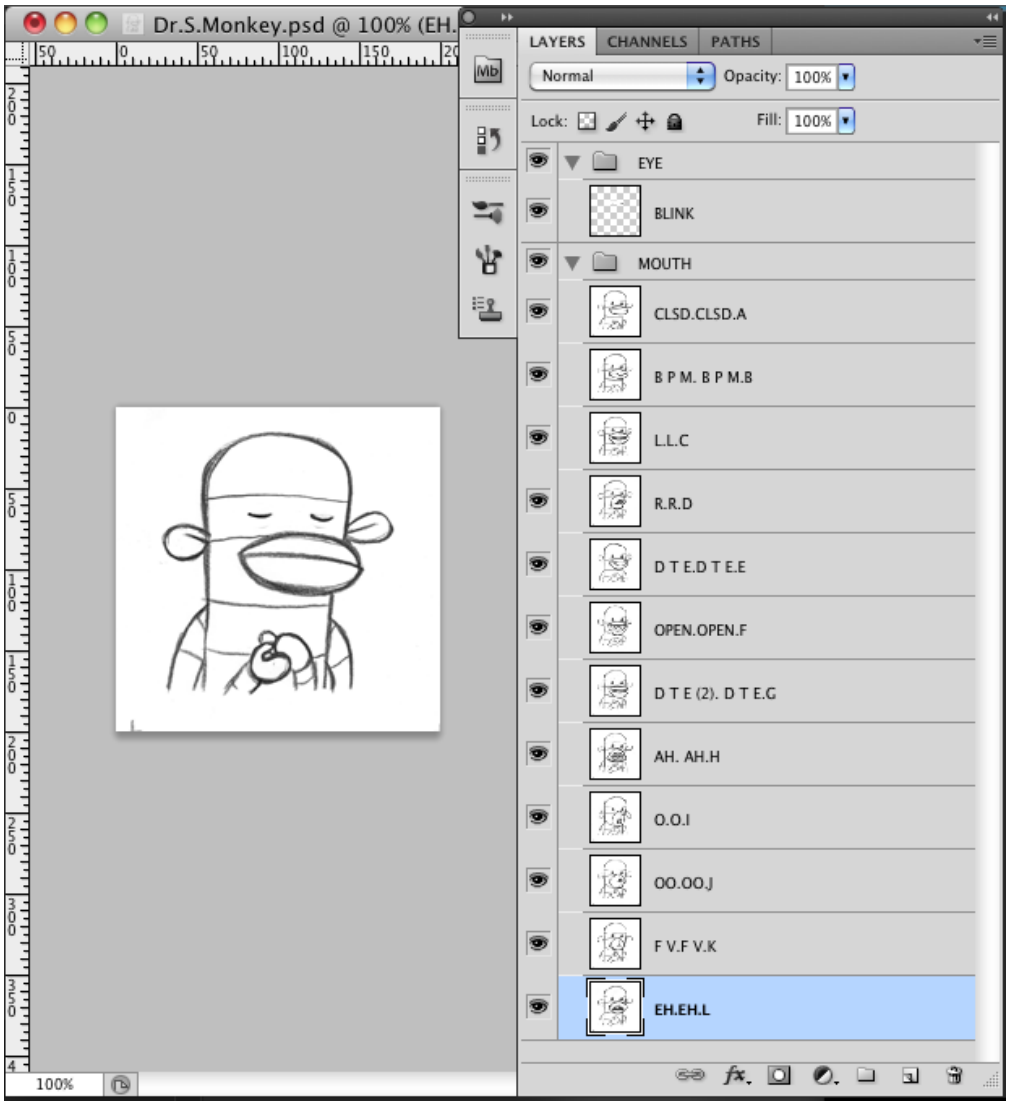
In addition to the shape name, you can specify a shape sound and a hot key within the layer name.

Add a period (.) in between the layer name, the sound name, and the hot key.

The table below gives examples of how you might name your layers:

This Layer Name:	Is named:	Has this Sound:	And this Hot key:
A1	A1.	None.	None.
A1.AH	A1.	Ah	None.
A1.AH.A	A1	Ah	**A**
A1..A	A1	None.	**A**

Here's a Photoshop file set up for a character called Dr. S. Monkey:



NOTE: The face set shown in this manual comes with your copy of Dragonframe. Access it here:
<INSTALLATION FOLDER>/RESOURCES/FACE SETS.

Loading Face Sets

Once you've set up the face sets in Photoshop, you're ready to load them into Dragonframe.

To load face sets:

1. Open Dragonframe and the Audio workspace.
2. Import the face set:
   - Click . Or,
   - Click , then select **IMPORT FACE SET.**
3. The Import Face Set dialog opens. Navigate to the saved .psd file and click **IMPORT FACE SET**. Dragonframe confirms it loaded the face set.

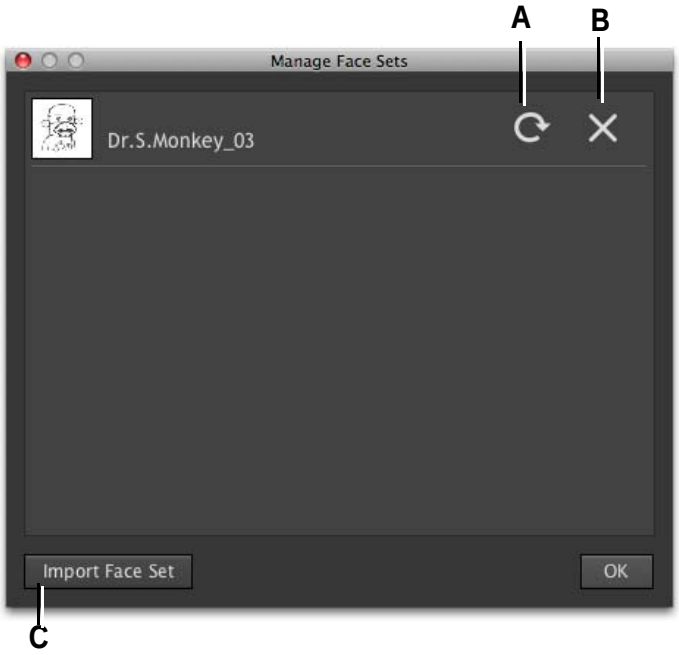
Work with the face sets by setting up your characters. See "Setting Up Characters", below.

Managing Face Sets

You can see which face sets you have loaded, and reload them or delete them from the scene.

To manage face sets:

Click , then select **MANAGE FACE SETS.** The Manage Face Sets dialog appears:



A. *Reload: Reload the face set from disk.* ***B.*** *Remove the face set.* ***C.*** *Import: Import a new face set.*

Setting Up Characters

Create separate track reads for each character in your scene, including face sets, phonetic symbols, and dialogue cues. Export your results to a track reading preview.

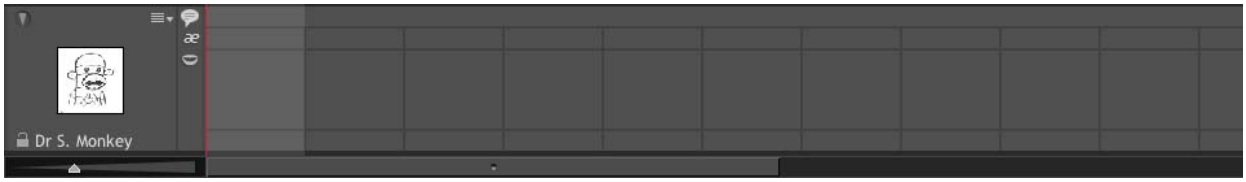
To create a new character:

1. Add the character:

   - Click .
   - Click , then select **ADD CHARACTER.** In this example, we'll create a character named Dr. S. Monkey.

The character dialog opens.

2. Name the character, then press **OK**. Dragonframe creates a new character row. If you have face sets loaded, it automatically loads the first face in the face set:

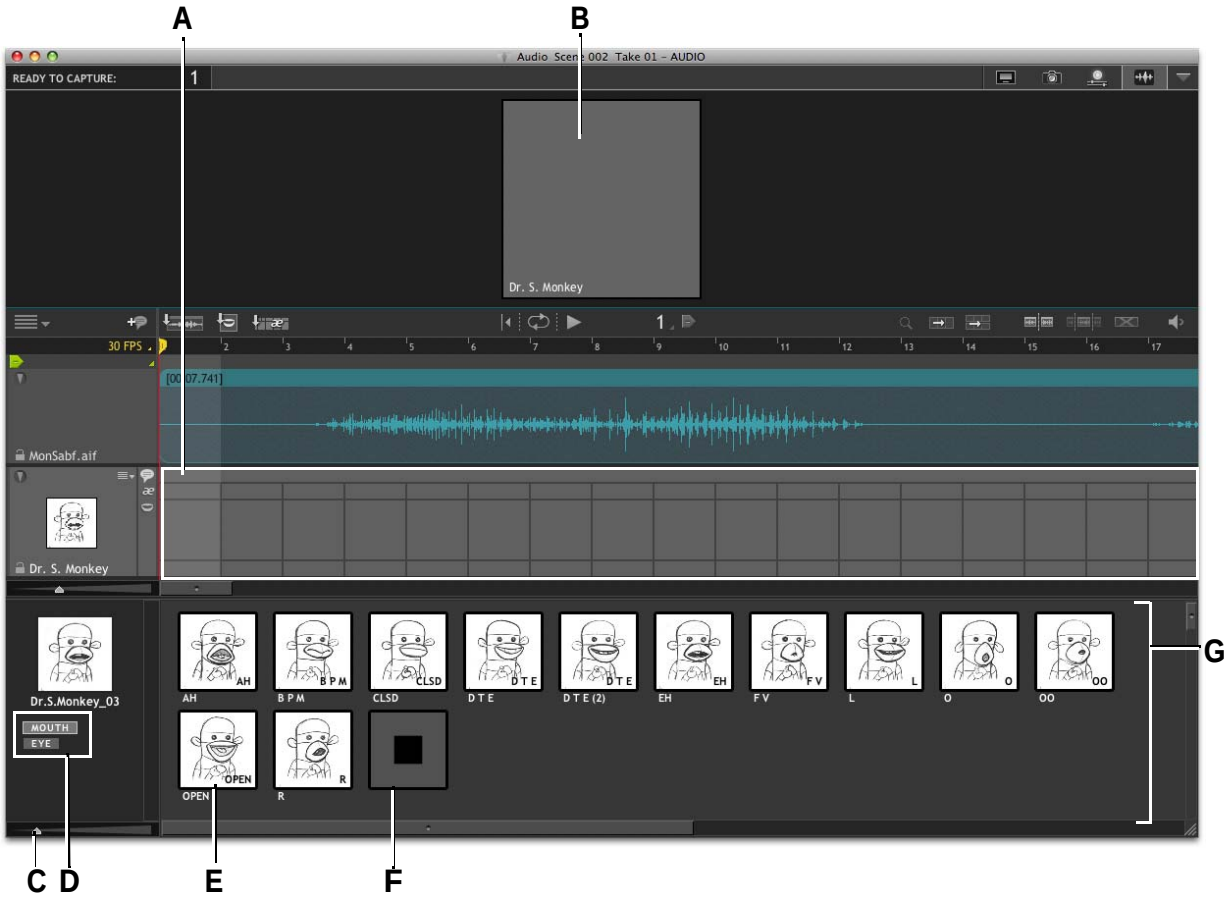


Click the face or in the character row to display the entire face set.

Adding Face Cues to the Track Reading

Once you load face sets and add the characters you need to the scene, you are ready to add the cues to the track reading.

The Audio workspace looks like this when you're ready to start adding face cues:



A. *Character row: The track reading (faces, phonetics, etc) will all appear here.*

B. *Track Reading Preview area: See enlarged face cues while adding them, and during playback.*

C. *Resize: Adjust the size of the face set.*

D. *Sets: Select the group for the face set. Here, there are* **MOUTH** *and* **EYE** *groups, and* **MOUTH** *is displayed.*

E. *Mouth cue: Shows the mouth shape and the shape sound set up in the Photoshop file. Click and drag the mouth shapes to rearrange them. Or, right-click in the mouth shape area and select* **CLEAN UP SHAPES** *to arrange them.*

F. *Stop Cue: Add when the character leaves the scene.*

G. *Face Set Area: View all the face shapes in the set. Move the face shapes around if needed, or right-click in the area to snap shapes back into rows.*

Adding Mouth Cues

To add mouth cues:

1. Step to the frame you'll begin with.

2. Click a mouth shape from the face set. Dragonframe adds the mouth shape to that frame and the frames that follow:

A. *Show/Hide Faces: Display or hide the face cues.*

B. *Menu: Edit the character by showing or hiding phonetics, dialogue, mouths or eyes; removing or renaming the character; or clearing the track.*

C. *Phonetic/Dialogue Rows.*

D. *Lock: Lock the character's track reading for editing.*

E. *Resize: Resize the timeline and the character row.*

F. *Minimize Faces: Expand to show mouth and eye shapes, or only show mouth and eye names.*

3. Step to the frame where the character's face changes next.

4. Select a second face shape from the face set.

Adding Eye Cues

If your Photoshop file has eye and mouth layers (or other additional layers), you can add those as well.

To layer an eye shape on top of the mouth set:

1. In the character row, click (B.), then select **EYES**. Dragonframe shows the eye row.

2. Navigate to the frame you'll edit.

3. Add the mouth shape to the frame as described above.

4. In the face set area, click **EYES**:

A. *Face set with "Eye" group selected.* ***B.*** *Stop cue.*

3. Select the eye cue you need. Dragonframe layers the eye set over the mouth set.

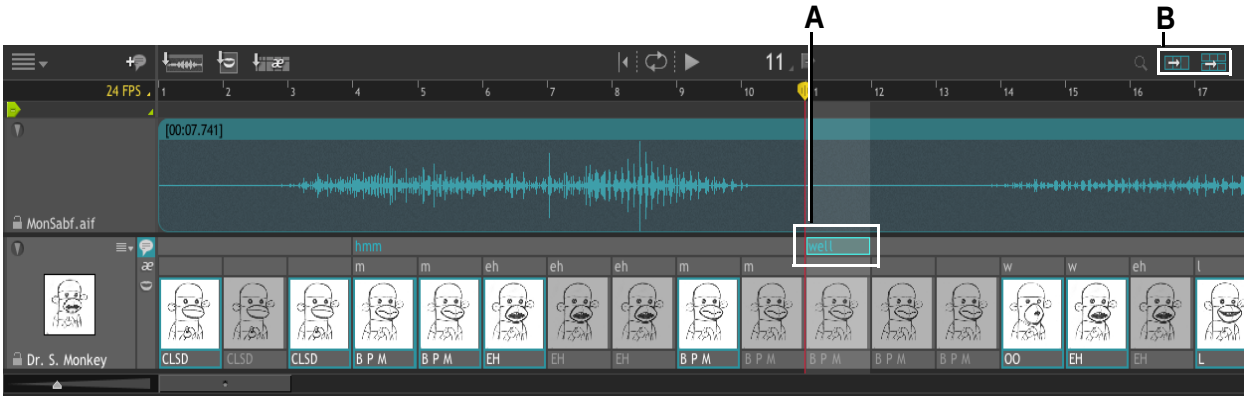
4. (Optional) To remove the eye layer from subsequent frames, click the **STOP** cue.

Selecting Cues

You can select individual rows of cues, or select the audio track and all cues at once. This makes it easy to move cues to the right frame, or to move the audio track and cues together.

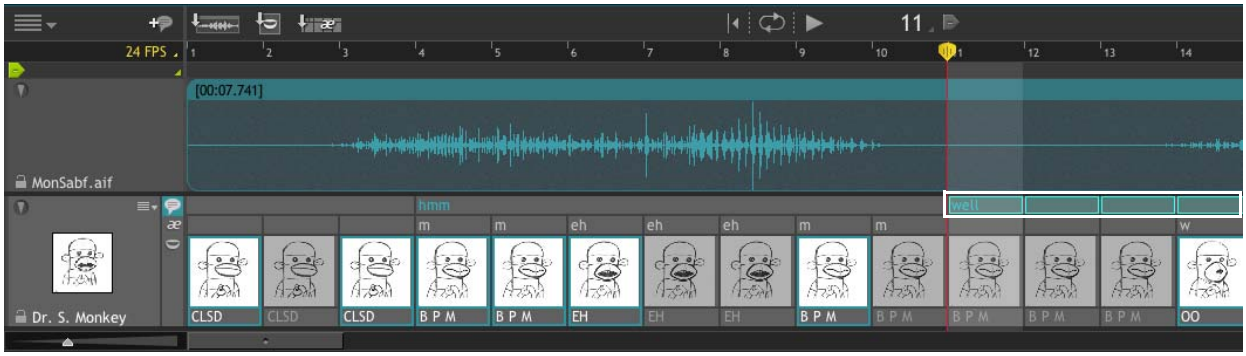
- To select all or part of one row:

  a. Select the cell where you want to begin the selection:



A. *Track reading with one word of dialogue selected.* ***B.*** *Select buttons.*

  b. Click (B.). Dragonframe selects the selected cell, and all of the frames that follow.

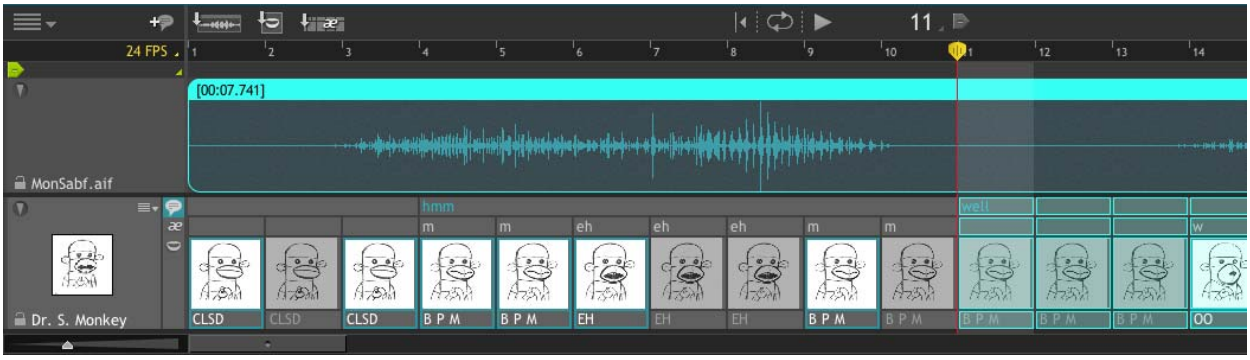


Dialogue row selected from original cell.

- To select all cues:

  a. Select the cell where you want to begin the selection.

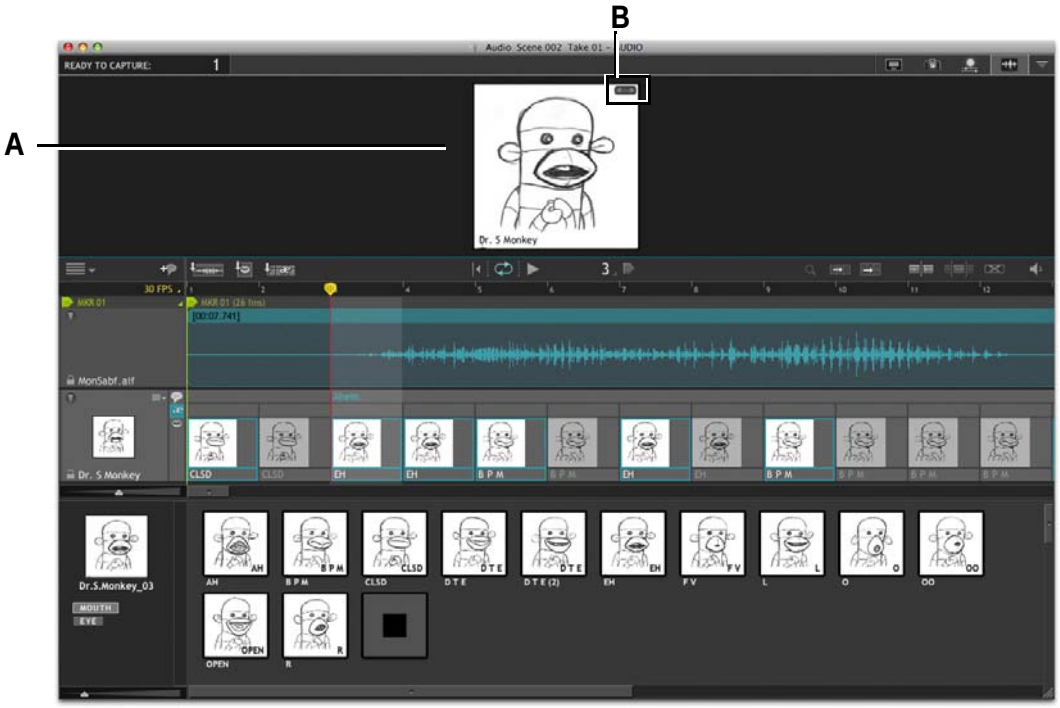
b. Click (B.). Dragonframe selects the selected cell, all of the cues that follow, and the audio clip:



See also:
"Nudging the Audio Clip" on page 149.

Track Reading Preview Area

As you add face cues to the character, they appear above the audio clip, in the preview area:

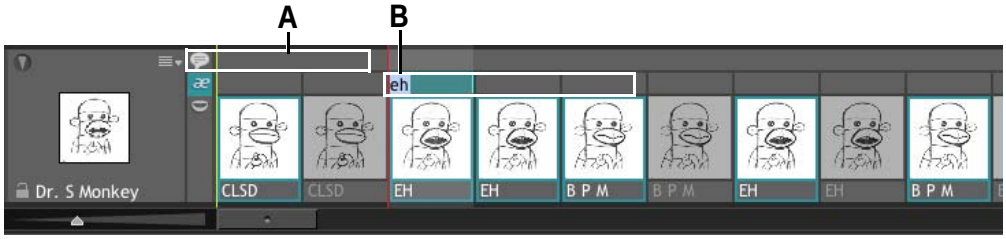


***A.** Preview area. **B.** Flip: Move the mouse over the character's image to display the flip button. Click it to flip the image left to right. If there are two characters, using* **FLIP** *can make them "face" each other.*

See also:
"Exporting a Track Reading Preview" on page 166.

Adding Phonetics and Dialogue Cues

Add phonetics and dialogue above the face set in the character row:



A. *Dialogue row.* ***B.*** *Phonetics Row with one cell selected.*

To add phonetics:

1. Double-click the first cell where you need to add the phonetics.
2. Type the phonetic cue, then use the step key to move to the next cell.
3. Type the phonetic cue, then move the next cell.
4. Continue until you've added all the cues.

Adding Dialogue Cues

To add dialogue cues:

1. Double-click the first cell where you need to add a dialogue cue.
2. Type the dialogue for that character. You can type the entire section of dialogue for the scene with only one cell selected:

3. Click outside of the row. Dragonframe automatically moves each word to a separate cell:

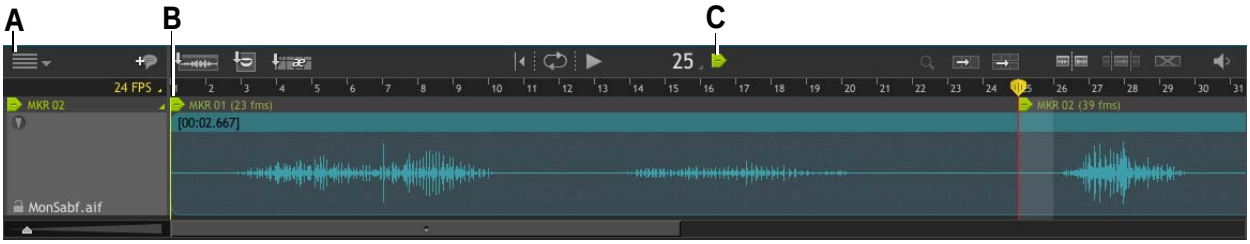
4. Click and drag each word to the appropriate place alongside the audio clip.

NOTE: Adjust the scale of the audio clip and character to make it easier to drag the dialogue cues.

Marking the Track Reading

You can place markers throughout the track reading for easier navigation, or to section the reading into scenes. When you import the reading, you can select which marked sections to import.

Use the marker tools in the workspace to add and manage markers:



A. *Marker menu. Click the icon to see a list of all markers.* ***B.*** *Marker 1 for the scene.* ***C.*** *Add/Remove Marker: Click to add an marker, or click a selected marker to delete it. When the icon is green, the playhead is currently over a marker.*

To place markers on the scene:

1. Move the playhead to the frame you want to mark.

2. Click (C.). Dragonframe adds a marker. Click again to remove the marker.

3. (Optional) Double-click the marker to edit its name.

See also:
"Exporting the Track Reading" on page 165.
"Importing a Track Reading" on page 166.
"Contextual Menus and Keystrokes for the Audio Workspace" on page 150.

Navigating Through Markers

- Press **CTRL** and the step keys to step through the markers one at a time. Or,

- Open the marker menu (A.) to see a list of all markers.

Viewing the Track Reading in the X-Sheet or Timeline

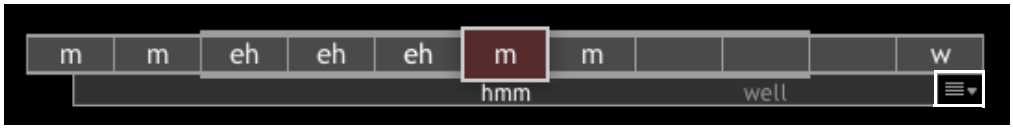
You can view track reading information, including mouth and face shapes, in the timeline. You can view the same information in the X-Sheet as well, without the shapes.

See also:
"Viewing Audio Information in the X-Sheet" on page 180.
"Timeline Map" on page 120.

The Heads-Up Display

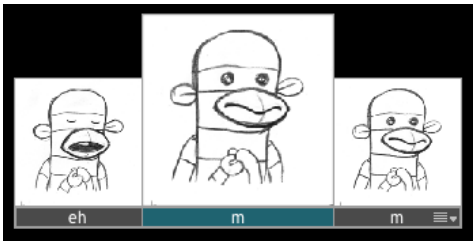
You can view audio cues and mouth shapes in the Heads-Up display within the Animation workspace. To view the display, press in the Animation tools.

The default HUD appears:



HUD with phonetics and dialogue showing. Menu is highlighted on the right.

Use the menu to choose the other two HUD views, which show the face shapes three- or one-at-a-time:



Use the menu to show phonetics or the names of the face shapes.

Exporting the Track Reading

You can export the track reading, including face cues, phonetic cues, and markers.

1. To export the track reading, click , then select **EXPORT TRACK READING.** Dragonframe opens an export dialog.

2. Navigate to where you want to save the reading and click **SAVE.**

Dragonframe exports the track reading.

Importing a Track Reading

Once you've exported a track reading, you can import it into other scenes. If you've marked the track, you can import a single section or the entire track.

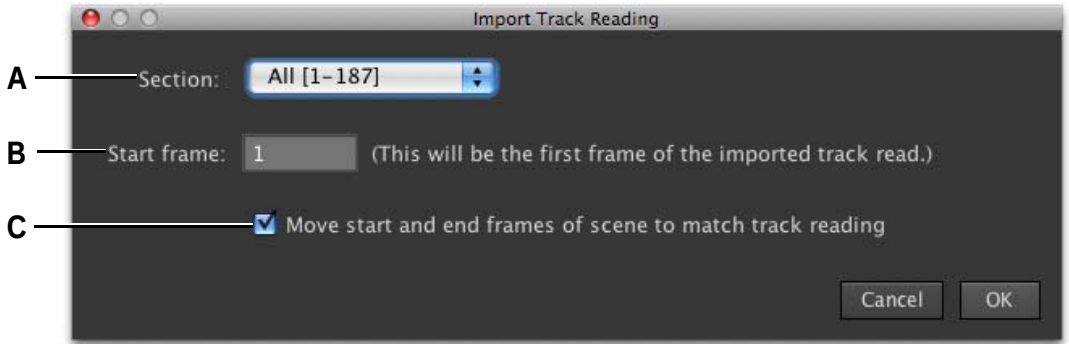
To import the track reading into another scene:

1. Open the scene you want to import the clips to.

2. Click to open the Audio workspace.

3. Click . Navigate to the saved track reading and click **IMPORT TRACK READING**.

The Import Track Reading dialog appears.



A. *Section Drop-down list: Select only one of the marked sections from the track reading, or import all the sections.* ***B.*** *Start Frame: Select which frame number to start the scene with.* ***C.*** *Match the starting and ending frame numbers to the frame numbers in the marked section. For example, if the section starts with frame 48 and ends with 156, the new scene will start on frame 48 and end with 156.*

4. Select the options you need and click **OK**.

Dragonframe imports the selected sections into the new scene.

Exporting a Track Reading Preview

You can create a QuickTime of the face cues from your scene.

To export a track reading preview:

1. Click , then select **EXPORT PREVIEW.**The Export Preview dialog appears**.**

A. *Section: Choose which marked section to export to the preview, or choose* **ALL**.
B. *Character: Choose which character to include.* ***C.*** *Face Shapes: Show face shape names during the QuickTime video.*

2. Adjust the export options as needed, and click **OK**. Dragonframe exports the preview. A dialog appears.

3. Navigate to where you want to save the file, and click **SAVE**.

See also:
"Marking the Track Reading" on page 164.

Contextual Menus for the Audio Face Set Area

Right-click in the audio face set area to access a contextual menu.

Select:	To:	See this section for more information:
CLEAN UP SHAPES	Snap the face shapes into rows and columns.	"Adding Face Cues to the Track Reading" on page 158.

Chapter 11: Using the X-Sheet

The X-Sheet gives an overview of your scene, with exposures, and audio cues, and any reminders you've set for yourself. Draw on the X-Sheet, or customize its layout. As you update your scene, the X-Sheet updates automatically as well. You can also print a hard copy of the sheet for easier reference while you're animating.

A map of the X-Sheet's main features follows on the next page.

This chapter includes the following sections:

"Reading the X-Sheet" on page 171.
"Adding Production Information to the X-Sheet" on page 172.
"Setting Scene Length and Starting Frame" on page 172.
"Frame Editing From the X-Sheet" on page 173.
"Customizing the X-Sheet's Columns" on page 178.
"Leaving Reminder Notes in the X-Sheet" on page 178.
"Drawing on the X-Sheet" on page 180.
"Viewing Audio Information in the X-Sheet" on page 180.
"Printing the X-Sheet" on page 181.
"Exporting the X-Sheet as a CSV" on page 183.
"Special Keys and Contextual Menus for the X-Sheet" on page 184.

See also:

"Using Workspaces" on page 34.
"X-Sheet Overview" on page 27.
"Multiple Passes and Exposures" on page 80.
"Using the Timeline" on page 119.

Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

X-Sheet Map

A. *Print: Print the X-Sheet.*

B. *Production Information. Click editable cells to add info.*

C. *Column Headers: Click and drag to rearrange columns. Columns can include Frame numbers, exposures, dialogue information, notes and custom columns.*

D. *Rows: Keeps track of scene information, including held or hidden frames, exposures, and dialogue information.*

E. *Add Column: Add a preset or custom column.*

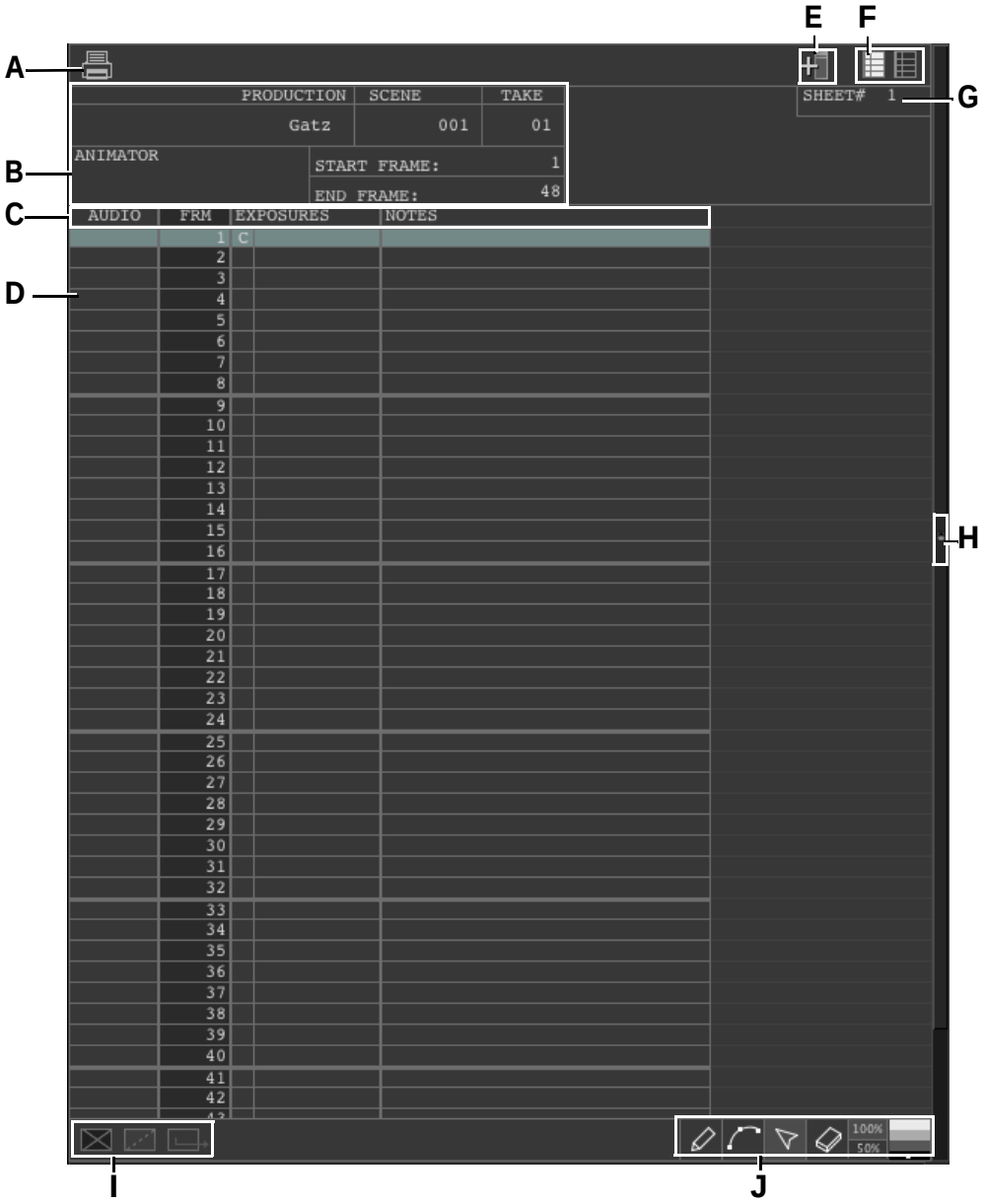
F. *Layout: Change the X-Sheet's on-screen color scheme.*

G. *Sheet #: Shows the page you're currently viewing. When printed, each page contains 48 frames.*

H. *Scroll Bar: Page through the X-Sheet.*

I. *Frame Editing Tools: Delete, hide, and hold frames.*

J. *Drawing Tools: Mark up the X-Sheet.*

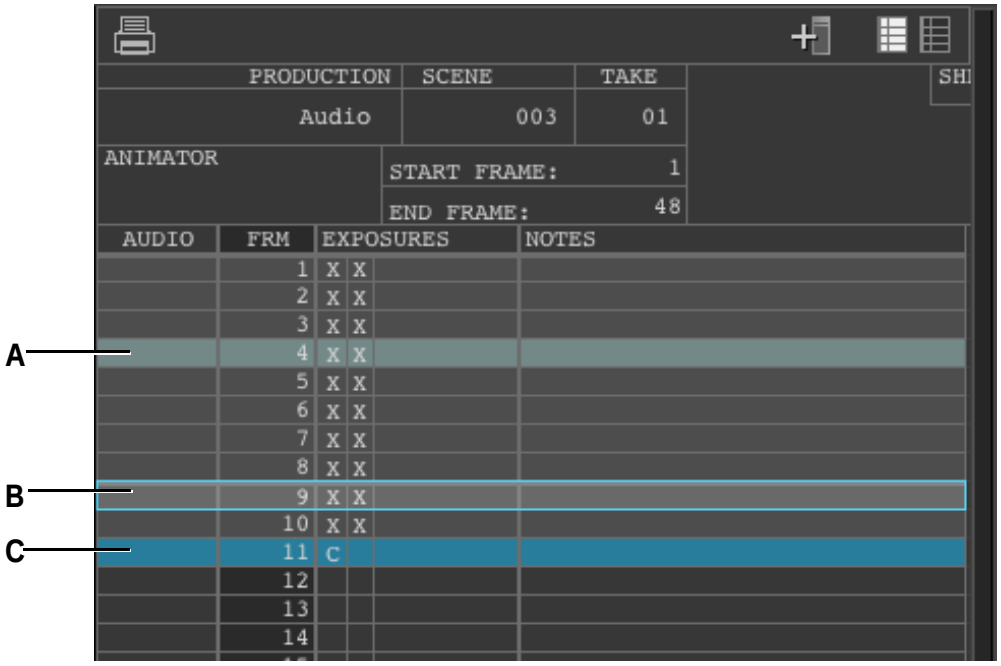


Reading the X-Sheet

When you're shooting your scene, the X-Sheet updates dynamically to help you keep track of the elements of the scene. To open the X-Sheet:

- From the Animation workspace, click (in the bottom right corner). Dragonframe opens it within the Animation workspace.
- Open the X-Sheet as a tab (in the upper-right corner). Dragonframe opens the X-Sheet as its own workspace.

As you capture frames, the X-Sheet gives you another way to keep track of what you've shot and which frame (and exposure) you're about to capture:



A. *Current Frame. This frame is the frame currently showing in the View pane.*

B. *Selected frame. This frame has been selected with the mouse. You could copy, cut, or otherwise edit the frame in the X-Sheet.*

C. *Frame about to be captured. It's highlighted with blue.*
X *marks an already-captured exposure.*
C *marks the* exposure *to be captured.*
In this example, you are about to capture frame 11, exposure 1.

See also:

"X-Sheet Map" on page 170.
"Using the Timeline" on page 119.
"Frame Counters Overview" on page 17.
"Passes, Takes and Exposures Explained" on page 10.

Adding Production Information to the X-Sheet

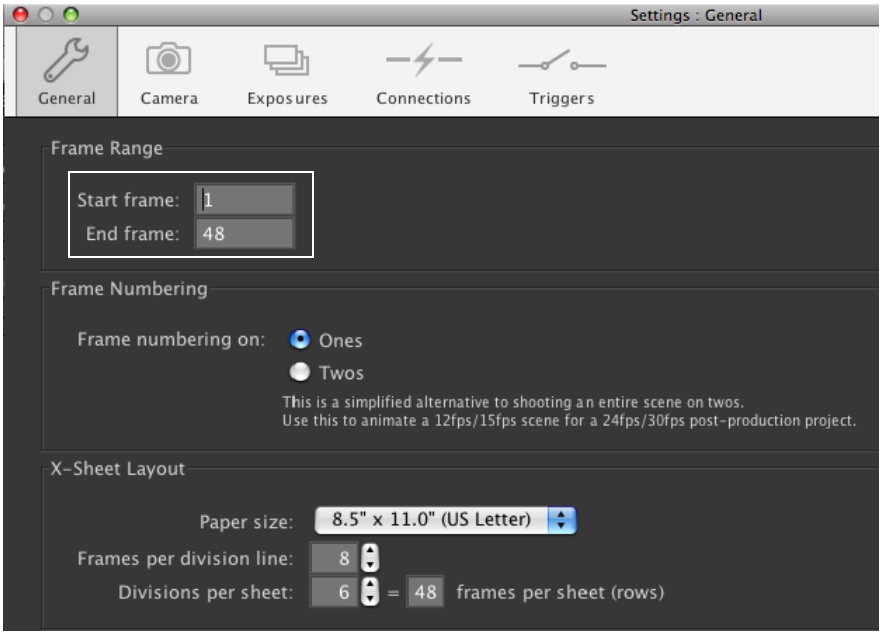
The information for your scene and take appear in the X-Sheet automatically when you create a new scene. Some of the areas in the X-Sheet header are editable. Click inside the header to add your animator's name, a note about the scene, or to edit the scene length.

Setting Scene Length and Starting Frame

The X-Sheet is set at 48 frames long. As you shoot past frame 48, the X-Sheet grows accordingly.

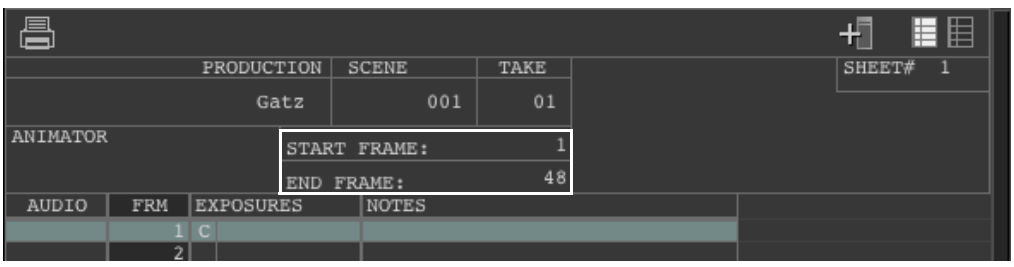
Preset the length of the X-Sheet in two places:

- Click **SCENE|SETTINGS**. The Settings dialog opens:



Start Frame and End Frame fields in General Settings

- Open the X-Sheet (**WINDOW|X-SHEET**) and look for **START FRAME/END FRAME** in the header:



Start Frame and End Frame fields in the X-Sheet

From either the Settings dialog or the X-Sheet, change the length of the scene by entering values in the **START FRAME** or **END FRAME** fields.

The X-Sheet updates automatically to reflect your changes.

NOTE: You can set your scene to start at a frame other than 1.

Frame Editing From the X-Sheet

You can cut, copy and paste frames within the X-Sheet, instead of doing it with the timeline. The X-Sheet gives you a broad overview of the entire scene in a table format.

See also:
"Frame Editing with the Timeline" on page 121.

Cutting or Copying from the X-Sheet

To cut or copy frames from the X-Sheet:

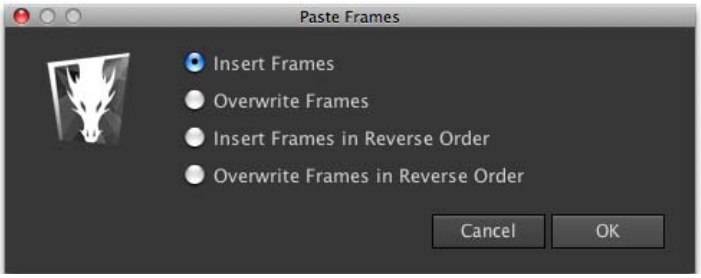
1. Select rows:
   - Click the row of the first frame you want to cut or copy, then drag the cursor over any additional rows to include. The rows you select have a cyan outline. Or,
   - Click the first frame you want to cut or copy, press **SHIFT**, then click the row of the last frame you want to include. The rows you select have a cyan outline.
2. Cut or copy the section:
   - Right-click and select **CUT**, or **COPY**. Or,
   - Press **CTRL X** or **CTRL C**.

Pasting Frames from the X-Sheet

To cut or copy frames from the X-Sheet:

1. Click the row of the frame where you want to paste cut or copied frames. The row has a cyan outline.
2. Paste the frames:
   - Right-click and select one of the four paste options. Or,

- Press **CTRL V**. The paste dialog appears:



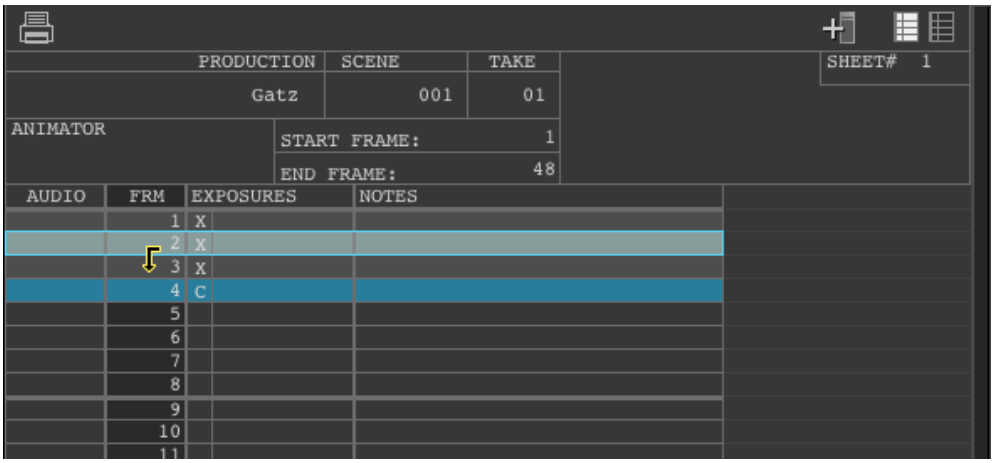
Choose one of the four paste options and click **OK**.

Holding a Frame in the X-Sheet

If you wish to repeat a frame, or hold it, you can do so from the X-Sheet. This is the same thing as copying the frame and pasting it multiple times.

To hold a frame:

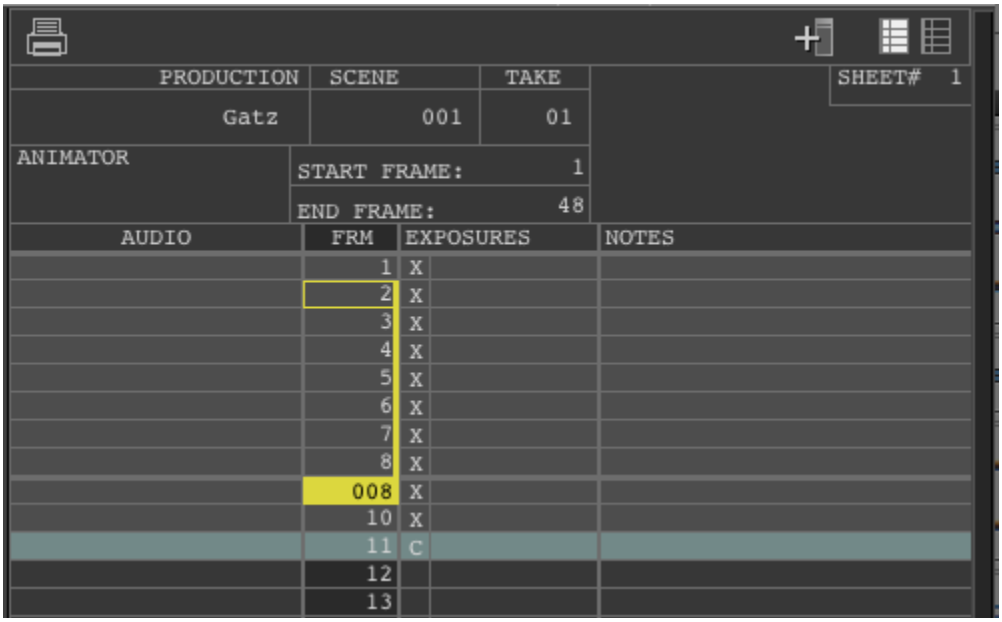
1. Move the mouse to the bottom edge of a frame and click and drag the cursor down for the number of frames you wish to hold.



Frame 2 selected. Cursor hovers over the bottom edge of the cell for frame 2 in the FRM column.

Or, select a frame, then click . A dialog appears. Enter how long to hold the frame and click **OK**.

Dragonframe marks the frames held:



Frame 2 is held (repeated) from frame 2 to frame 9.

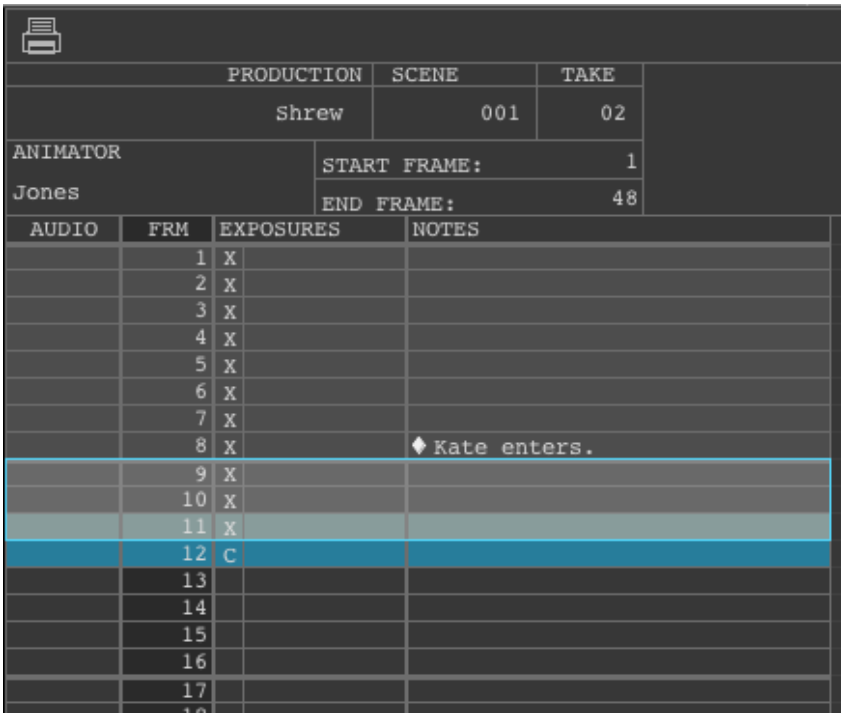
Hiding a Frame in the X-Sheet

Hide a frame to leave it out of the thumbnails and playback without having to completely delete it. Dragonframe leaves a marker where you have hidden frames so you can easily display them again.

NOTE: Dragonframe will only hide entire frames, not individual exposures.

To hide frames:

1. Select the frame(s) you want to hide:



Frames 9-11 selected; camera ready to shoot frame 12.

2. Click . Dragonframe hides the frames, placing a marker where the frames would have gone:

Hide marker representing hidden frames 9-11. Camera is now ready to shoot frame 9 since three frames of the sequence are hidden.

Restoring Hidden Frames

To re-display frames that you hid:

1. Select the blue marker.

2. Click . Dragonframe restores the hidden frames.

See also:
"Hiding Frames with the Timeline" on page 124.

Deleting Frames from the X-Sheet

To delete frames from the X-Sheet:

1. Select the rows you want to delete. The rows you select have a cyan outline.

2. Press , or right-click and select **DELETE**. Dragonframe deletes the selected rows, including all exposures, and places the files in the delete bin.

NOTE: To replace just one exposure in a frame, you can reshoot it from the X-Sheet.

See also:
"Delete Key" on page 96.
"Cut Back Key" on page 97.
"Reshooting a Frame Sequence from the X-Sheet", below.
"Finding Your Source Files" on page 270.
"Deleting Frames from the Timeline" on page 125.
"Restoring Frames from the Delete Bin" on page 127.

Reshooting a Frame Sequence from the X-Sheet

There are three ways to reshoot frames:

- To reshoot one or more frames, select those frames and right-click, then select **RESHOOT FRAMES**. Dragonframe clears the old frames from the X-Sheet, and replaces them with the frames you shoot next. When you're finished, Dragonframe will continue shooting at the end of the frame sequence.

- To insert one or more frames earlier in the sequence, select a frame and right-click, then select **INSERT CAMERA**.

Dragonframe will add frames from that part of the frame sequence until you right-click, then select **RETURN CAMERA TO END**.

- To reshoot a single exposure earlier in the sequence, double-click the cell of the exposure you want to reshoot. The **C** moves to the cell you selected. Press **SHOOT** to overwrite the exposure.

  To reshoot the exposures that follow, continue shooting. Dragonframe will overwrite the rest of the frames.

  Or, right-click, then select **RETURN CAMERA TO END.**

See also:
"Reshooting Frames from the Timeline" on page 125.

Customizing the X-Sheet's Columns

You can add, delete, or customize the X-Sheet's columns.

- Click column headers and drag them to rearrange the columns.
- Click and drag the right edge of a column header to resize the column.
- Right-click a column and click **REMOVE COLUMN** to remove it.
- Add custom or preset columns:

  a. Click (at the top of the X-Sheet). A drop-down menu appears.

  b. Select a preset column, or a custom (**EMPTY**) column. The column appears.

  c. (For a custom column) Right-click the new column's header and select **RENAME COLUMN** to add a header.

  d. (For a custom column) Double-click in rows to add content, just as you would in the **NOTES** column.

See also:
"Printing the X-Sheet" on page 181.
"Leaving Reminder Notes in the X-Sheet", below.

Leaving Reminder Notes in the X-Sheet

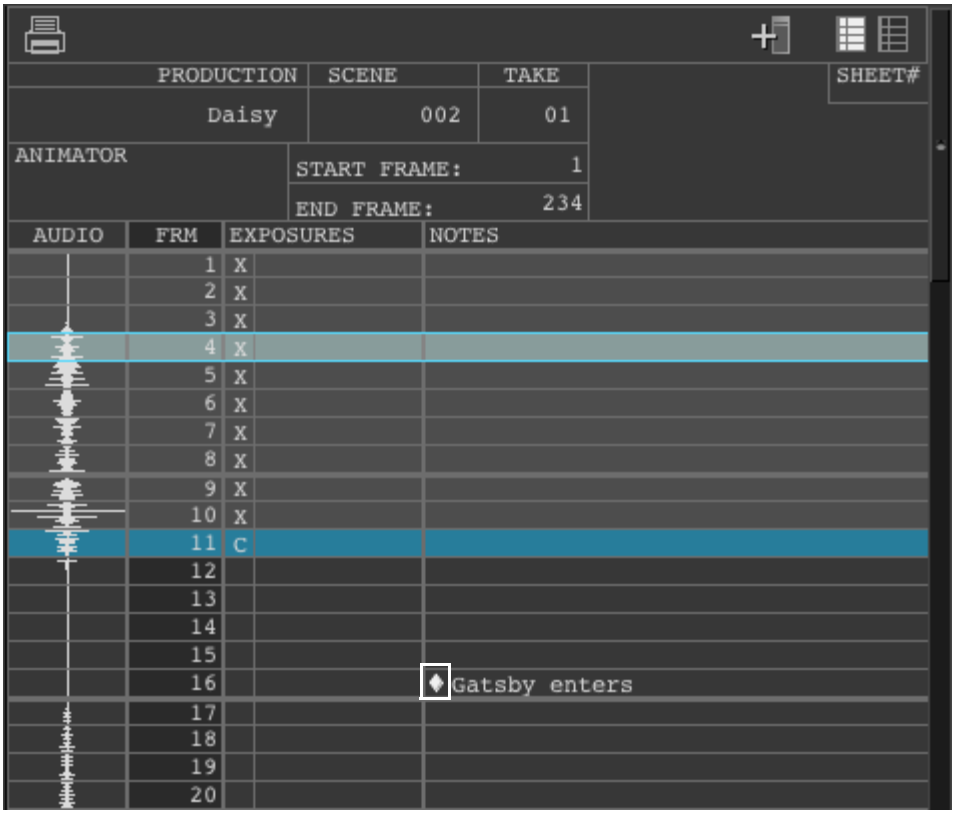
You can add notes to the X-Sheet and set them to pop up before you shoot a frame.

To set a reminder note:

1. Click the **NOTES** column in the X-Sheet, in the row of the relevant frame.

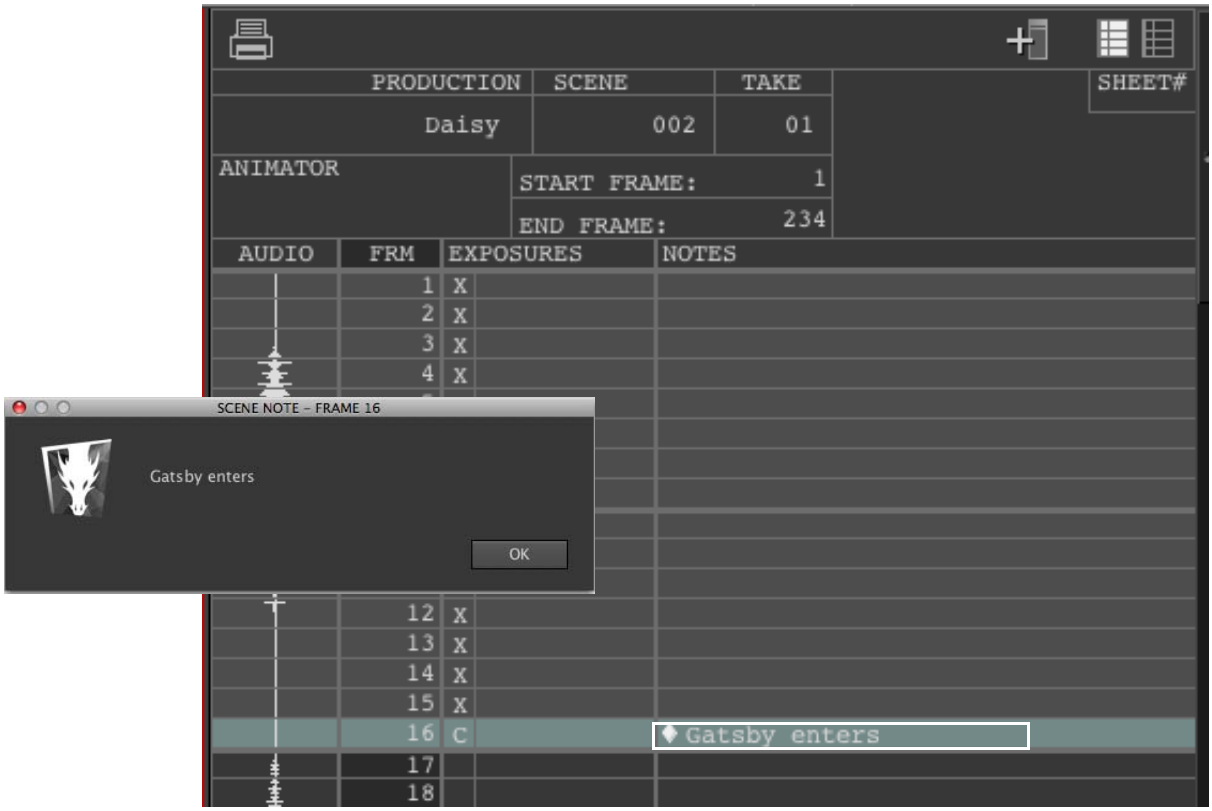
2. Type the note.

3. (Optional) To make the note pop up on that frame, click the diamond that appears next to the note:



Note with diamond selected. The note will pop up on frame 16.

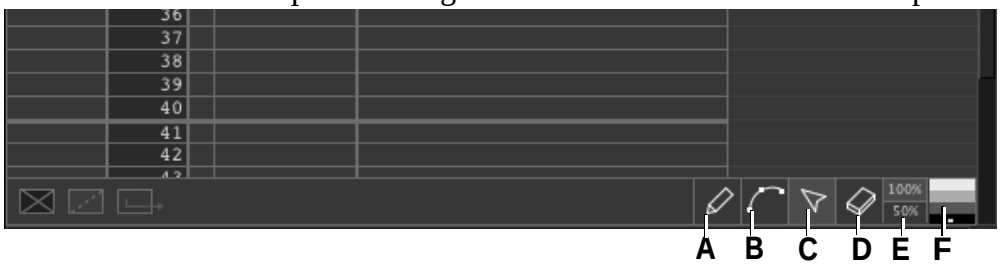
When you're about to shoot a frame where you've added a pop-up note, Dragonframe opens the note:



Note added in Notes column, with corresponding pop-up reminder.

Drawing on the X-Sheet

The X-Sheet has simple drawing tools at the bottom of the workspace:



A. *Freehand drawing tool.*

B. *Curve drawing tool.*

C. *Selection tool.*

D. *Eraser tool. Double-click to erase all drawings.*

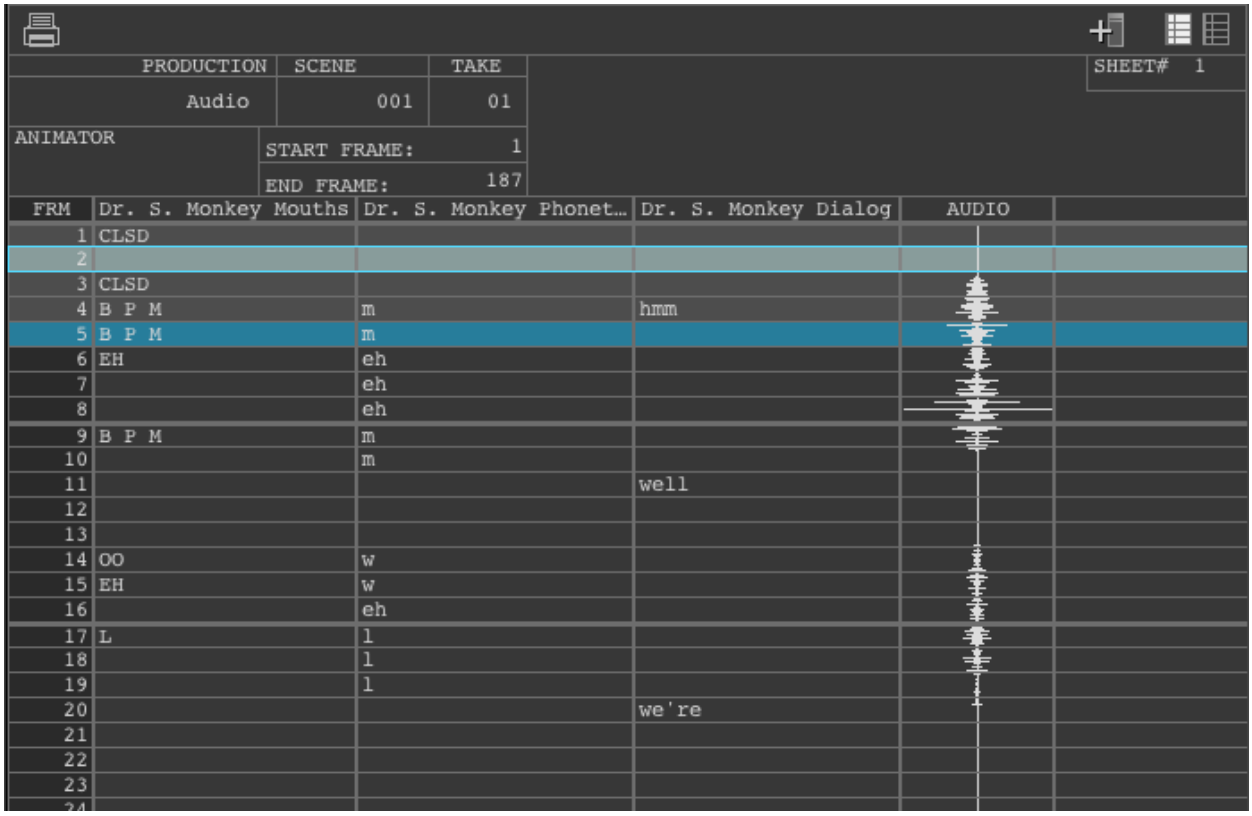
E. *Opacity: Adjust the opacity of the drawing.*

F. *Line Shade: Adjust the shade of the drawing.*

Viewing Audio Information in the X-Sheet

You can view audio information in the X-Sheet, such as the waveform, phonetic cues, or mouth names.

You can add columns for audio cues by pressing . An X-Sheet with all audio information displayed might look like this:



PRODUCTION	SCENE	TAKE	SHEET# 1
Audio	001	01	
ANIMATOR	START FRAME:	1	
	END FRAME:	187	

FRM	Dr. S. Monkey Mouths	Dr. S. Monkey Phonet…	Dr. S. Monkey Dialog	AUDIO
1	CLSD			
2				
3	CLSD			
4	B P M	m	hmm	
5	B P M	m		
6	EH	eh		
7		eh		
8		eh		
9	B P M	m		
10		m		
11			well	
12				
13				
14	OO	w		
15	EH	w		
16		eh		
17	L	l		
18		l		
19		l		
20			we're	
21				
22				
23				

See also:

“Customizing the X-Sheet’s Columns” on page 178.

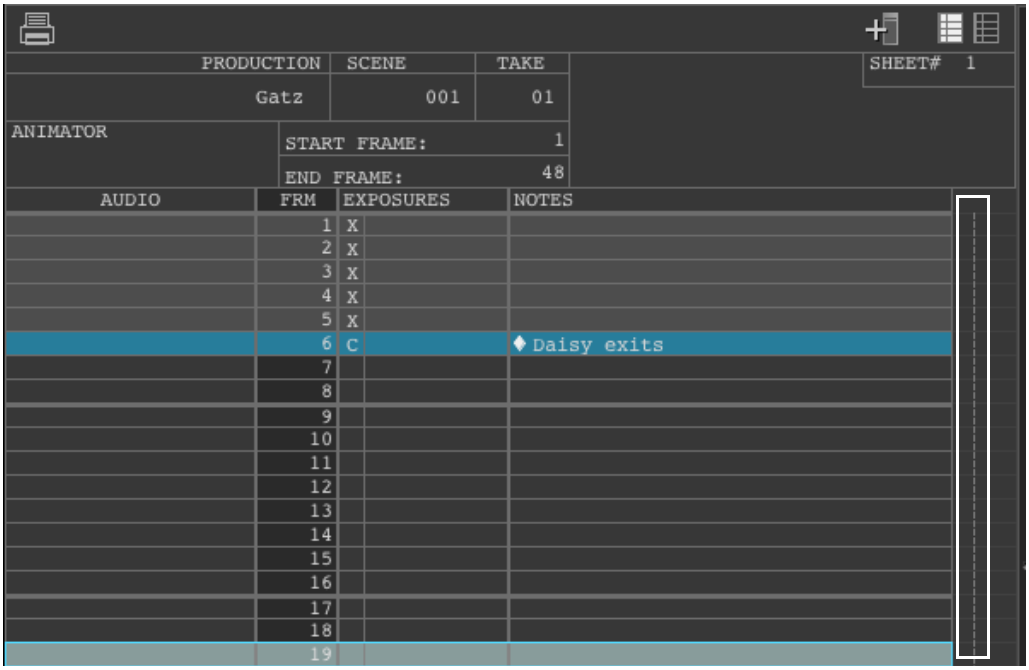
“Adding and Editing Audio Clips” on page 143.

“Reading Dialogue Tracks” on page 153.

Printing the X-Sheet

To print a hard copy of the X-Sheet, click **FILE|PRINT**, or click in the X-Sheet.

NOTE: The X-Sheet shows a dotted line where the page break falls:

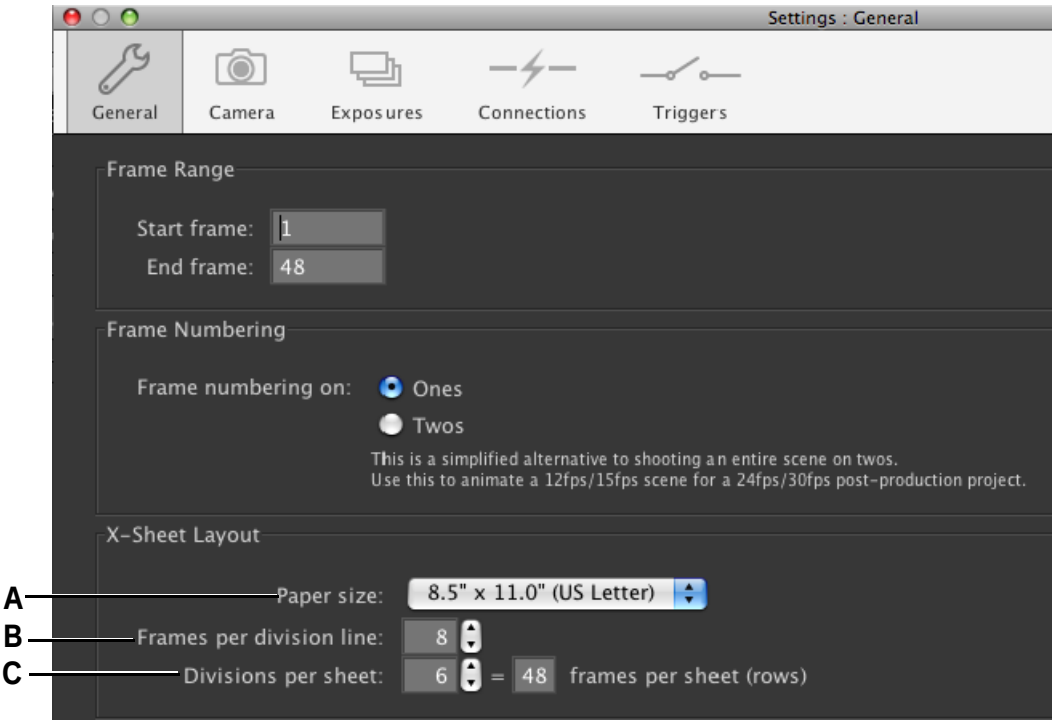


X-Sheet with a page break alongside the Notes column.

Customizing the X-Sheet's Print Layout

By default, the X-Sheet will fit a standard 8 ½ by 11 inch sheet of paper. It will contain 48 frames per sheet. Frames are grouped by thicker, "division" lines. By default, there are eight frames per division, and 6 divisions per page.

Click **SCENE|GENERAL** to adjust the size and layout of the printed X-Sheet. The Scene dialog appears:



A. *Select a new paper size.* ***B.*** *Change how many frames are grouped together between division lines (thicker lines) on the page.* ***C.*** *Change how many divisions will appear on each page.*

You can also add, delete, or resize columns to change the print layout.

See also:
"Customizing the X-Sheet's Columns" on page 178.

Exporting the X-Sheet as a CSV

Export the X-Sheet to give you more control over formatting, or to review the data in another program (such as Excel).

Click **FILE|EXPORT X-SHEET** to export the X-Sheet as a CSV file. It will include all audio track reading information, camera move data and notes.

Special Keys and Contextual Menus for the X-Sheet

X-Sheet Keypresses

Press:	To	See this section for more information:
ESCAPE	Exit the drawing tool.	"Drawing on the X-Sheet" on page 180.
DELETE or **BACK-SPACE**	Delete selected drawing objects.	"Drawing on the X-Sheet" on page 180.
CTRL D	Duplicate selected drawing objects.	"Drawing on the X-Sheet" on page 180.

X-Sheet Contextual Menus

Right-click and select:	To:	See this section for more information:
CUT	Cut the selected frame.	"Cutting or Copying from the X-Sheet" on page 173.
COPY	Copy the selected frame.	"Cutting or Copying from the X-Sheet" on page 173.
PASTE INSERT	Paste the frame in between the existing frames.	"Pasting Frames from the X-Sheet" on page 173.
PASTE OVERWRITE	Paste the frame over existing frames.	"Pasting Frames from the X-Sheet" on page 173.
PASTE REVERSE	Paste the frames in reverse order in between existing frames.	"Pasting Frames from the X-Sheet" on page 173.
PASTE REVERSE OVERWRITE	Paste the frames in reverse order overwriting the existing frames.	"Pasting Frames from the X-Sheet" on page 173.
DELETE	Delete the selected frame.	"Deleting Frames from the X-Sheet" on page 177.

Right-click and select:	To:	See this section for more information:
HIDE FRAMES	Remove frames from the timeline without deleting them.	"Hiding a Frame in the X-Sheet" on page 175.
HOLD FRAME...	Repeat the selected frame (like copying and pasting it).	"Holding a Frame in the X-Sheet" on page 174.
RESHOOT FRAMES	Reshoot the selected frames.	"Reshooting a Frame Sequence from the X-Sheet" on page 177.
INSERT CAMERA	Move the camera earlier in the sequence and insert additional frames	"Reshooting a Frame Sequence from the X-Sheet" on page 177.
RETURN CAMERA TO END	Move camera back to the end of the sequence after you're done inserting new frames.	"Reshooting a Frame Sequence from the X-Sheet" on page 177.
SHOW IN EXPLORER	Show the selected frame's file location.	"Finding Your Source Files" on page 270.

Chapter 12: Automate Lighting with DMX

This chapter covers using DMX to automate lighting. DMX is a protocol to control lights. Connecting DMX-enabled tools to Dragonframe, like the DDMX-S2 or IOTA Controller and a dimmer pack, allows you to automate lighting, or turn off work lights automatically. The DMX interface in Dragonframe also helps you visualize your lighting setup to make it easier to set up and play back your programs. In addition, you can completely customize lighting programs for different exposures.

NOTE: If you want to configure the input/output triggers on the DDMX-S2 or the IOTA Controller, see "Adding Input and Output Triggers" on page 209.

The image on the next page gives an visual overview of the DMX workspace's features.

This chapter includes the following sections:

"Connecting DMX to Dragonframe" on page 189.
"Creating a Lighting Program" on page 190.
"Selecting Keyframes" on page 194.
"Cutting, Copying, Pasting, and Deleting Keyframes" on page 194.
"Clearing a Channel" on page 195.
"Saving and Loading a Channel" on page 195.
"Grouping Channels" on page 195.
"Previewing Your Lighting Program" on page 197.
"Visualizing Your Lights in the Lighting Workspace" on page 198.
"Automating a Bash Light" on page 199.
"Creating Custom Lighting Programs per Exposure" on page 200.
"Special Keys and Contextual Menus for the DMX Workspace" on page 206.

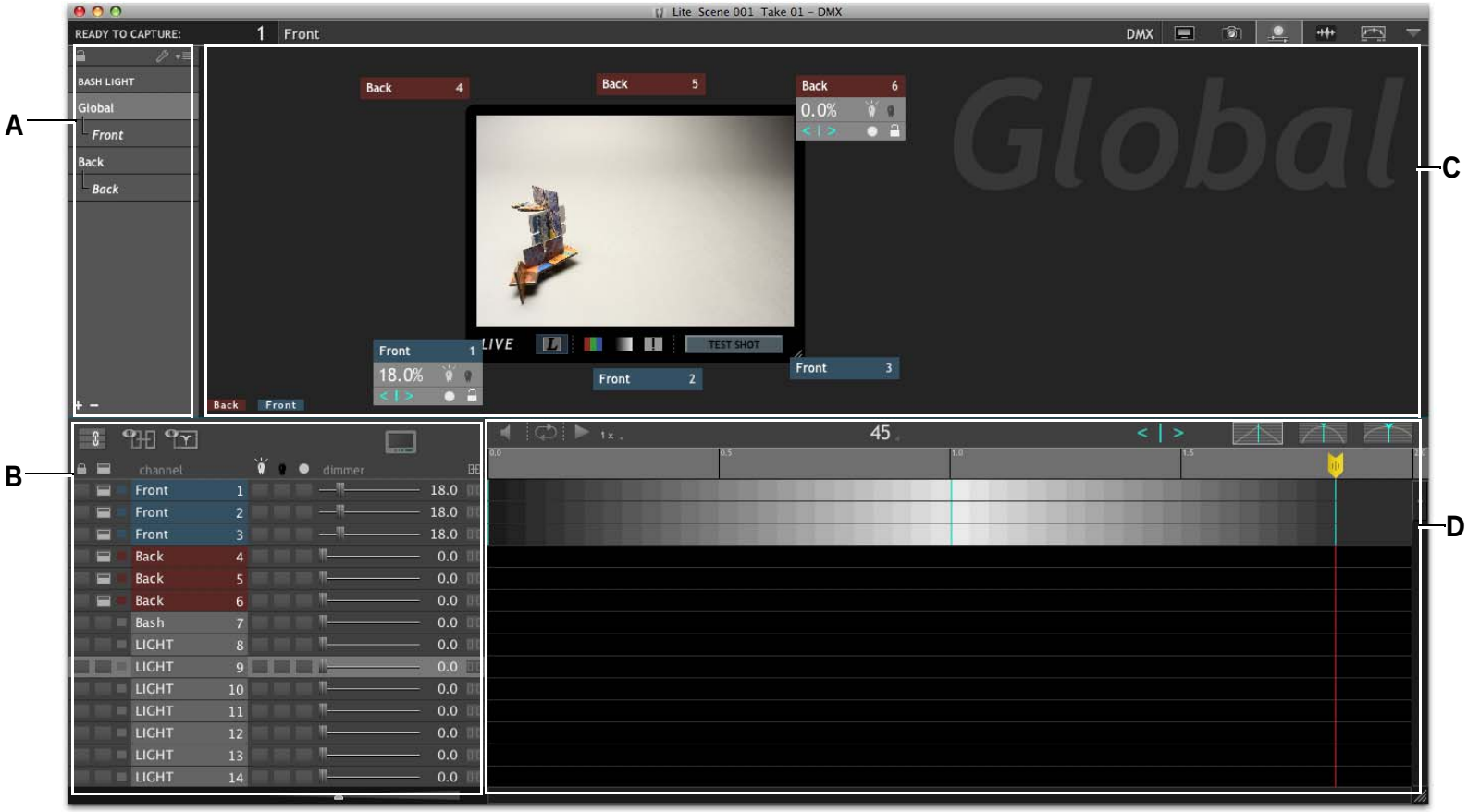
See also:

"Passes, Takes and Exposures Explained" on page 10.
"Multiple Passes and Exposures" on page 80.

Dragonframe tutorials:

http://www.dragonframe.com/tutorials.php

DMX Workspace Map



A. *Lighting Programs: Manage lighting programs. Create custom programs for each exposure, or set up a bash light for your project.*

B. *Keyframe Setup: Adjust levels and settings for each channel's keyframes.*

C. *Virtual Lighting Workspace: Lay out badges representing each light around the Live View. Create and customize keyframes from each badge.*

D. *Key Frame Timeline: View how the lighting will change for each channel over the course of the scene.*

Connecting DMX to Dragonframe

Connect the DDMX-S2 or IOTA Controller to Dragonframe to control the DMX dimmer pack. This is the starting step for automating and animating the lights on your set, or automating a work light.

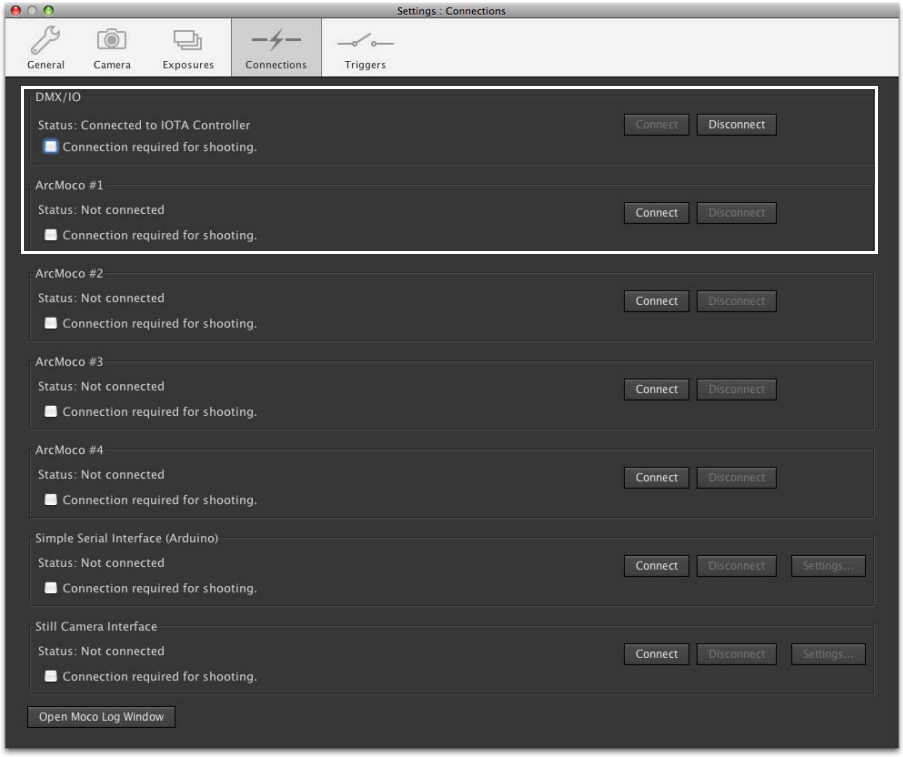
Once you've attached the DDMX-S2 to Dragonframe, you can attach your lights to the channels on the DMX Dimmer Pack.

NOTE: All the instructions about the DDMX-S2 in this chapter apply to the IOTA Controller, since it has the same DMX functionality as the DDMX-S2.

1. Connect the DDMX-S2 to your computer with the USB cable.

2. Connect the DDMX-S2 to the DMX dimmer pack. For instructions, go to http://www.dragonframe.com/dmx.php

3. In Dragonframe, select **SCENE|CONNECTIONS**. The Settings dialog appears, showing the Connections tab:

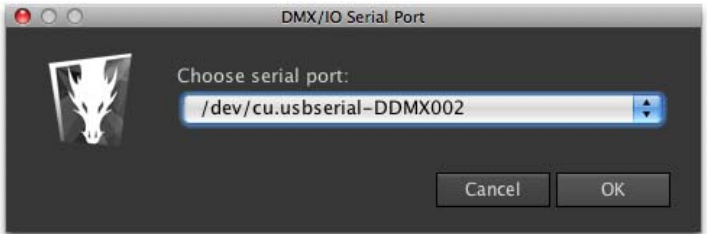


Connections tab with DMX/IO connection and Arc Moco connection.

4. Connect your device:

   - If you're connecting with the DDMX-S2, click **CONNECT** under **DMX/IO**.
   - If you're connecting with the IOTA Controller, click **CONNECT** under **ARC MOCO 1, 2, 3 OR 4.**

   The Stereo Slider Serial Port dialog appears:



5. Choose the serial port, then click **OK**.

NOTE: If the correct serial port doesn't appear in the dialog, look for it in your PC's Device Manager.

Dragonframe connects the device, then automatically checks the **CONNECTION REQUIRED FOR SHOOTING** check box. When this box is checked, you will not be able to capture any frames for the scene until Dragonframe is connected to the hardware.

CAUTION: If you uncheck the **CONNECTION REQUIRED FOR SHOOTING** box, you could shoot all or part of a scene without running the lighting program.

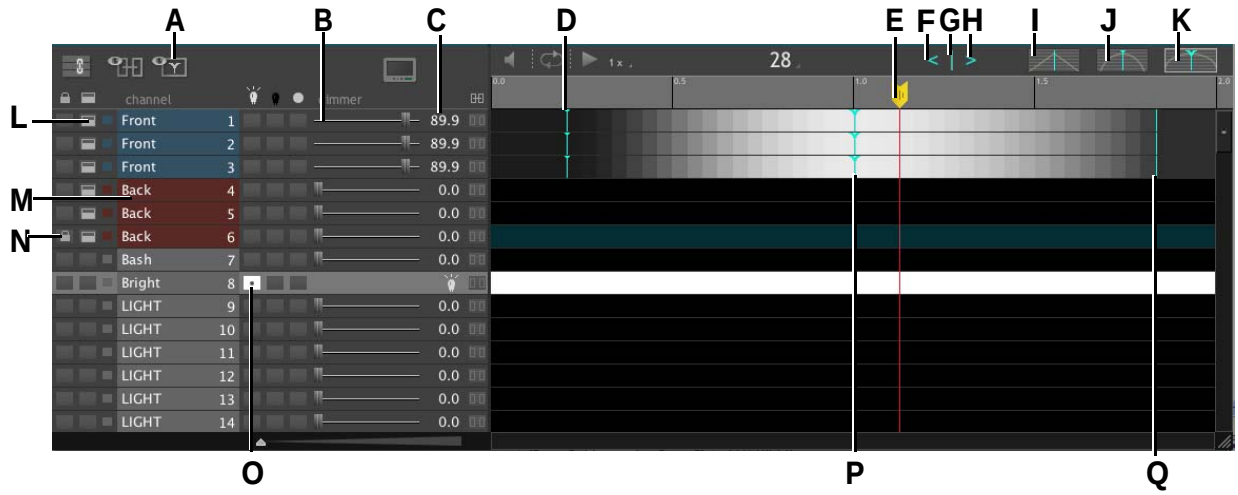
6. Plug the lights you want to use into the dimmer pack. Note the channel each light is plugged into.

Creating a Lighting Program

Create a lighting program for your project by adding keyframes for the lights (channels) on your set.

A keyframe is the setting for a particular channel at a point in time. For example, you might want the light connected to channel 1 to be at 50% at frame 1, then fade to 0% by frame 48. To do so, you'd create a keyframe for frame 1 at 50%, and a keyframe for frame 48 at 0%. Dragonframe would gradually fade the light from frame 1 to 48.

Create keyframes in the timeline and keyframe area, at the bottom of the screen. Here's an example of what a program might look like:



A. *Only Active: Show only channels with keyframes created, or show all channels*

B. *Dimmer: Adjust the level for a channel. Creates a keyframe at the point where the playhead is.*

C. *Level field: Shows level for channel as a percentage.*

D. *Smoothed keyframe: Keyframe created with smoothed lighting.*

E. *Playhead: Marks the progression through the scene's frames.*

F. *Previous: Move to the previous keyframe.*

G. *Keyframe: Add a keyframe at the current location of the playhead for the selected channel.*

H. *Next: Move to the next keyframe.*

I. *Linear fade: Creates a keyframe with a linear lighting adjustment (default).*

J. *Smoothed curve: Creates a keyframe with a smoothed lighting curve.*

K. *Smoothest curve: Creates a keyframe with the smoothest lighting curve.*

L. *Badge: Shows or hides a badge. See page 198.*

M. *Color: Select a color for the channel.*

N. *Lock: Locks the channel for editing. With channel locked, its timeline is grayed out.*

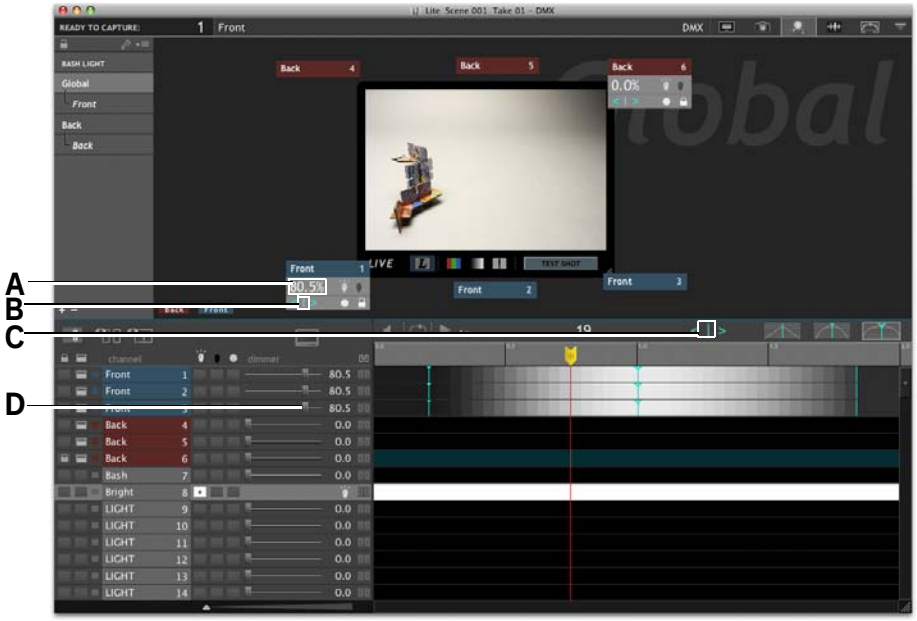
O. *Light on: Set a light on for the scene.*

P. *Smoothest keyframe: Keyframe created with the smoothest lighting curve.*

Q. *Default keyframe: Keyframe created with the linear (default) lighting animation.*

Adding a Keyframe

Add a keyframe from the most convenient place in the workspace:



A. *Percentage value in the channel's badge.* ***B.*** *Badge keyframe button.* ***C.*** *Workspace Keyframe button.* ***D.*** *Channel's dimmer.*

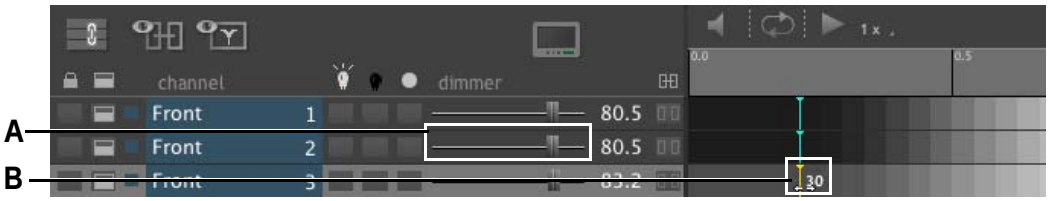
Move the playhead to the frame where you want the keyframe, then:

- Adjust the channel's dimmer.
- Press the keyframe button (C.).
- Press the keyframe button in the channel's badge.
- Click on the percentage value in the channel's badge, and drag to the left or right.

NOTE: For more information about badges, see "Visualizing Your Lights in the Lighting Workspace" on page 198.

Adjusting a Keyframe Level

Adjust keyframe levels from the most convenient place in the workspace:



A. *Channel dimmer.* ***B.*** *Keyframe.*

Move the playhead to the frame you want the keyframe, then:

- Adjust the channel's dimmer (A.).
- Click on the percentage value in the channel's badge, and drag to the left or right. See "Visualizing Your Lights in the Lighting Workspace" on page 198.
- Click on the lower half of the keyframe (B.), then drag the mouse left or right.

Adjusting Multiple Keyframes

Select more than one keyframe to adjust their levels together.

If you adjust a channel's dimmer:

- All other selected channels' faders will move relative to it. This may create or adjust keyframes on those channels.
- If you hold **SHIFT**, all of the selected channels' faders will be set to the same level.
- If you hold **ALT**, only the channel you are touching will adjust.

If you adjust a keyframe level by clicking and dragging on its bottom half:

- All other selected keyframe values will move relative to it.
- If you hold **SHIFT**, all of the selected keyframes will be set to the same level.
- If you hold **ALT**, only the keyframes you are touching will adjust.

See also:
"Visualizing Your Lights in the Lighting Workspace" on page 198.
"Selecting Keyframes" on page 194.

Moving Around the Lighting Program

Use the **STEP** keys to move through your lighting program:

- Step left or right to move the playhead forward or back one frame.
- Press **1** or **2** to move the playhead forward or back one frame.
- Press **CTRL** and step to move to the next keyframe or the previous keyframe.
- Press **HOME** to move to the beginning of a program.
- Press **END** to move to the beginning of a program.

Selecting Keyframes

- Click to select a keyframe.
- **CTRL**-click to toggle selection of keyframes.
- **SHIFT**-click to select a group of keyframes.
- Click and drag the mouse to select a large group of keyframes.

Cutting, Copying, Pasting, and Deleting Keyframes

You can cut or copy keyframes and paste them to other channels. You can also delete them.

To cut, copy, and paste keyframes:

1. Select the keyframes you want to cut or copy.
2. Press **CTRL X** or **CTRL C**.
3. Select the channels where you want to paste the keyframes.
4. Press **CTRL V**. Dragonframe pastes the keyframes into the selected channels.

To delete keyframes:

1. Select keyframes.
2. Click **DELETE** to delete them.

See also:
"Selecting Keyframes" on page 194.

Clearing a Channel

To remove all of the keyframes from a channel, select the channel, **CTRL**-click it, then select **CLEAR CHANNEL**.

Dragonframe clears all the keyframes from the channel.

Saving and Loading a Channel

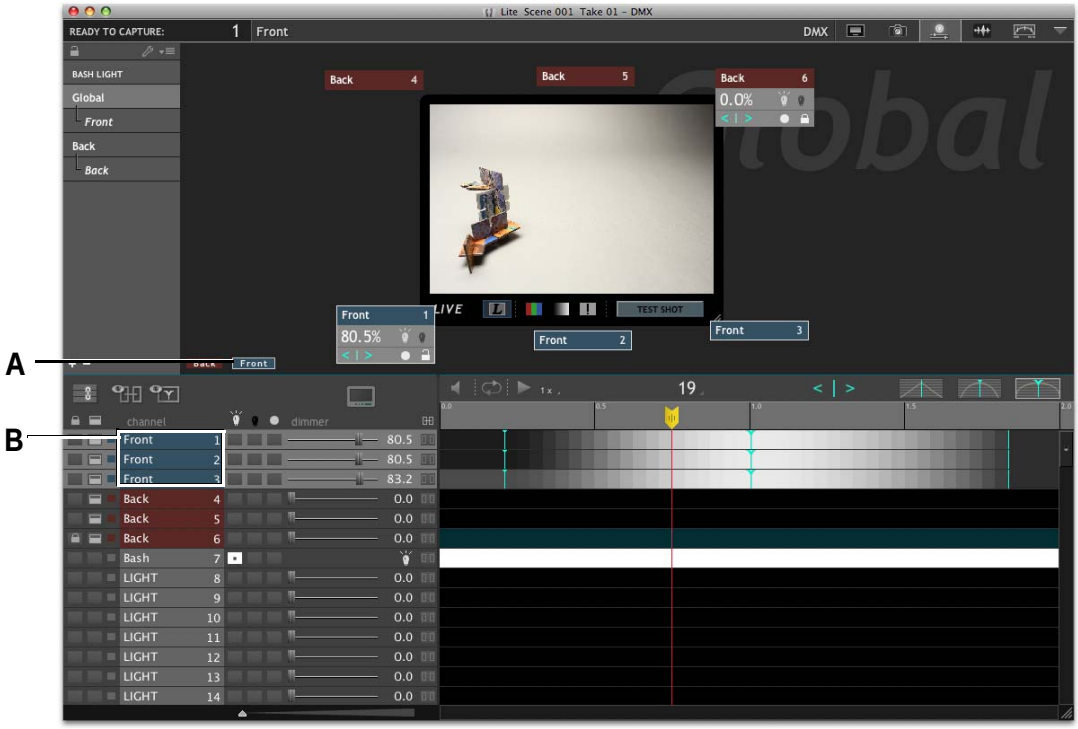
Save a channel's keyframes and levels to load into a lighting program later.

1. Select the channel you want to save.
2. **CTRL**-click the channel and click **SAVE CHANNEL**. The Save Channel dialog appears.
3. Enter a file name and choose where you want to save the file, then click **OK**.
4. When you're ready to load a channel, select the channel you want to overwrite.
5. **CTRL**-click the channel and click **LOAD CHANNEL**. The Load Channel dialog appears.
6. Find the channel file you'll use to overwrite the channel, and click **OK**. Dragonframe overwrites the channel with the saved channel's keyframes and levels.

Grouping Channels

Create a group from a set of channels so you can edit keyframes for all channels in the group at the same time. This way you can quickly switch

between sets of channels. A lighting program with two groups might look like this:



A. *Group* **FRONT***: The group name is highlighted because the group is selected.* ***B.*** **FRONT***'s channels.*

To group channels:

1. Select one or more channels, then

   - Click , or
   - **CTRL**-click and select **GROUP CHANNELS**.

The Group dialog appears:

2. Enter a group name, pick a color for the group, and click **OK**.

Dragonframe applies the colors you chose to the grouped channels, and places the group's name in the corner of the lighting workspace. (A.)

Clicking the group name selects all the channels in the group.

Once you've created a group:

- Clicking on one of the channels in a group selects the entire group.
- Adding or editing a keyframe in one of the channels adds/edits it for all other channels in the group.

NOTE: To modify only one channel in a group, hold **ALT** while dragging the level slider.

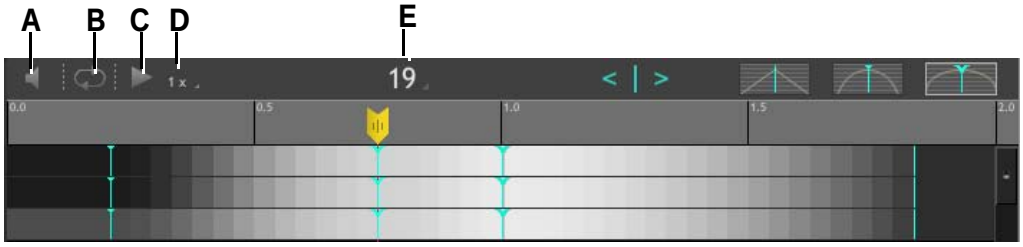
See also:
"Selecting Keyframes" on page 194.

Deleting or Editing a Group

- To remove the grouping from a set of channels, right-click the group name and choose **DELETE GROUP.**
- To change the name or color of a group, double-click the group name and choose **GROUP SETTINGS**. The Group dialog appears. Modify the settings, then click **OK.**

Previewing Your Lighting Program

Use the playback controls at the top of the timeline to preview your lighting program.



A. *Volume.* ***B.*** *Loop.* ***C.*** *Play.* ***D.*** *Playback Speed drop down list.* ***E.*** *Frame number. Click to change the display style.*

Soloing a Channel

You can select one or more channels to "solo". Dragonframe will play back only those programs, while leaving all other channels static.

To solo a channel:

1. Select the solo box for the channels you want to solo:

Channel with the solo box enabled.

2. **PLAY** the program.

Visualizing Your Lights in the Lighting Workspace

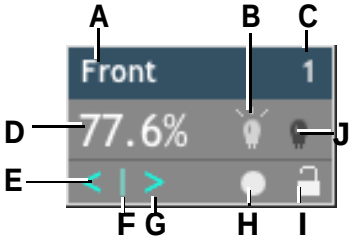
Dragonframe's DMX workspace includes a workspace for laying out your lights on screen. This could help you remember which lights you plugged into which channels in the DMX box. That way, when you start setting up keyframes, you'll have a visual reminder which channels control which lights.

NOTE: Arranging channels in the lighting workspace is optional; it just provides a visual way of working with the channels.

To lay out a channel in the workspace, click the badge icon next to the channel you want to lay out.

A badge appears in the workspace.

Click and drag the badge to move it. Double-click it to open it.



A. *Channel Name.*

B. *Light On: Turn the channel light on for the scene.*

C. *Channel Number.*

D. *Percentage Value: Adjust the dimmer. If the playhead is over a keyframe, you'll adjust the keyframe value. If the playhead is not over a keyframe, you'll add a keyframe.*

E. *Previous keyframe.*

F. *Keyframe button.*

G. *Next keyframe.*

H. *Solo. Solo the channel for playback.*

I. *Lock. Lock the channel for editing.*

J. *Light Off: Turn the channel's light off for the scene.*

Automating a Bash Light

Use DMX to automate a work light. The light will be on when you're not shooting, then turn off after your camera captures the video assist frame.

NOTE: You can automate a work light without a DMX dimmer pack. See "Using an External Relay Switch or a Logic Output to Automate a Bash Light" on page 214.

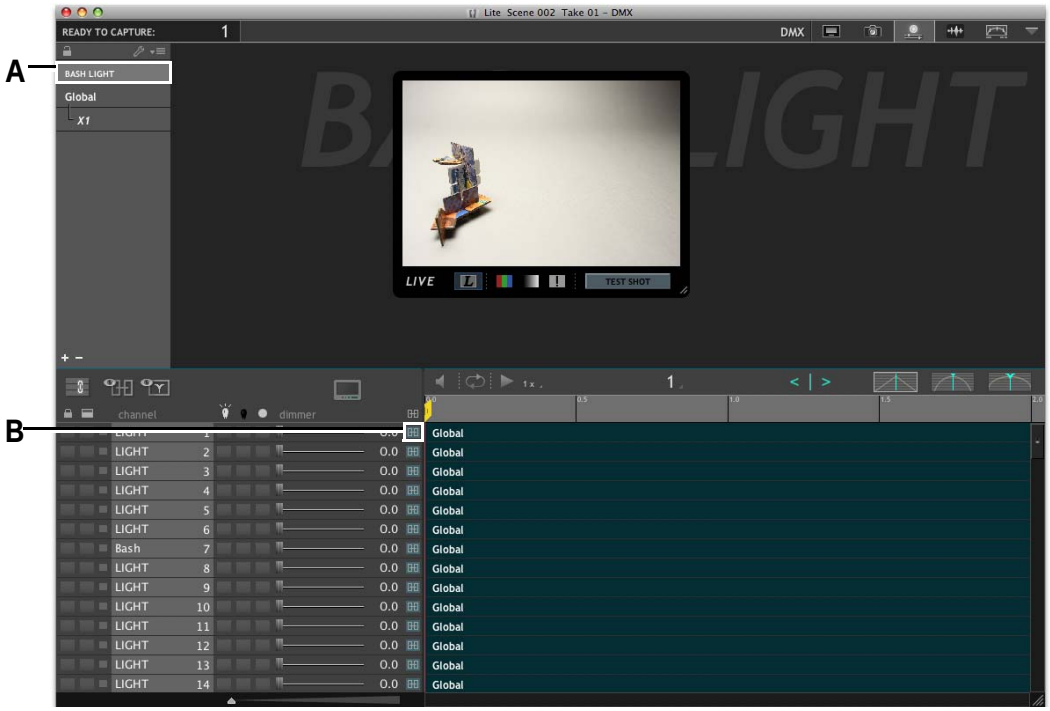
To automate a bash light:

1. Connect the DDMX-S2 and the dimmer pack to your computer as described in "Connecting DMX to Dragonframe" on page 189.

2. Note which channels your work lights are plugged into.

3. Select **WINDOW|DMX**. The DMX workspace opens with the Global lighting program showing.

4. Click bash light to view and edit the program for the work light:



***A.** DMX* **BASH LIGHT** *program. **B.** Link Icon*

All of the channels and settings are blued out (not editable) because they are set to be the same as the **GLOBAL** program (the parent program).

3. Click ⊞ (B.) next to the channel(s) you noted in step (2.). This detaches that channel from the global program.

Dragonframe makes the channel(s) editable. However, the timeline is blacked out, because a work light will not use keyframes.

4. Change the settings for the channel as needed.

Bash light set up at 50%.

See also:

"Creating Custom Lighting Programs per Exposure", below.

"Using an External Relay Switch or a Logic Output to Automate a Bash Light" on page 214.

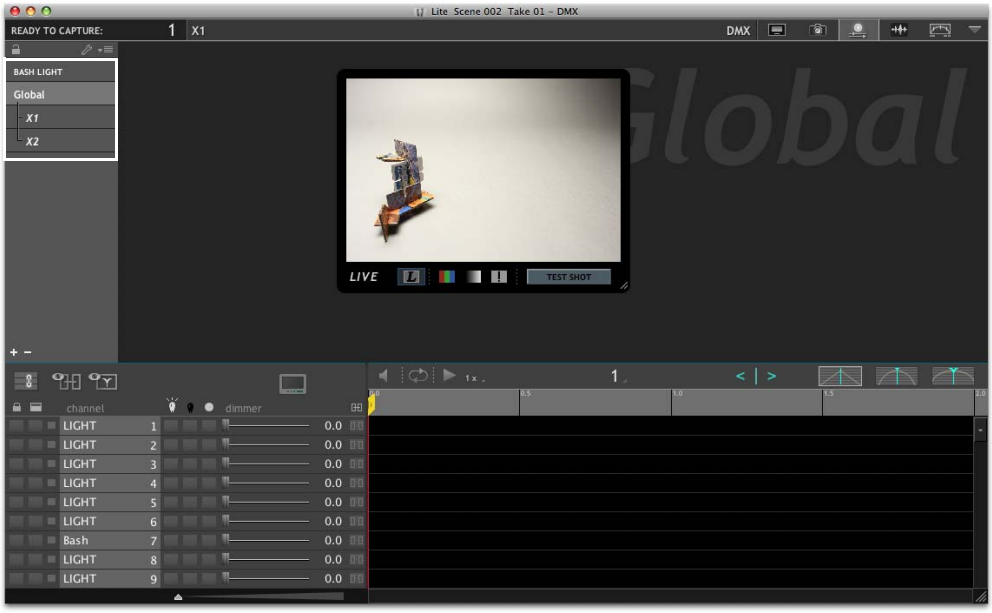
"Creating a Lighting Program" on page 190.

"Adding a Capture Delay" on page 92.

Creating Custom Lighting Programs per Exposure

If your project has multiple exposures (a front light/backlight, for example), you can set up separate lighting programs for each exposure. You can set up each lighting program to be completely different, or quickly change one or two channels for each exposure. Dragonframe manages the programs for you, and automates the lighting for each exposure seamlessly.

When you work in the DMX workspace, you'll see your default programs on the left side of the workspace.



DMX window with the default **BASH LIGHT** *program, the default parent program named* **GLOBAL**, *and two child programs,* **X1** *and* **X2**, *created by default when you set up two exposures named* **X1** *and* **X2** *in the Cinematography window.*

You will always have the following programs:

- **GLOBAL:** This is the default program. If you don't need any lighting variations (for exposures or bash lighting), you will only work with the **GLOBAL** program.

- **BASH LIGHT:** If you want to configure certain lights as bash/work lights, you customize those lights' channels in the **BASH LIGHT** program.

- One child program for each exposure you've created (**X1**, **X2**, etc). By default, the exposure programs inherit all of their settings from their parent program, **GLOBAL**. But you can choose to customize individual channels in any of the exposure programs. You can also detach it from the parent if you want to start from scratch.

Whenever you set up lighting program, you can choose to create a parent program, or a child program.

- A parent program is an independent program. You set up all of its attributes from scratch.

- A child program inherits all of its attributes from its parent. You can customize a few attributes without having to set up everything from scratch.

The previous sections all explained how to modify the **GLOBAL** lighting program. The ones that follow will show how to set up work lights, and add or modify lighting programs.

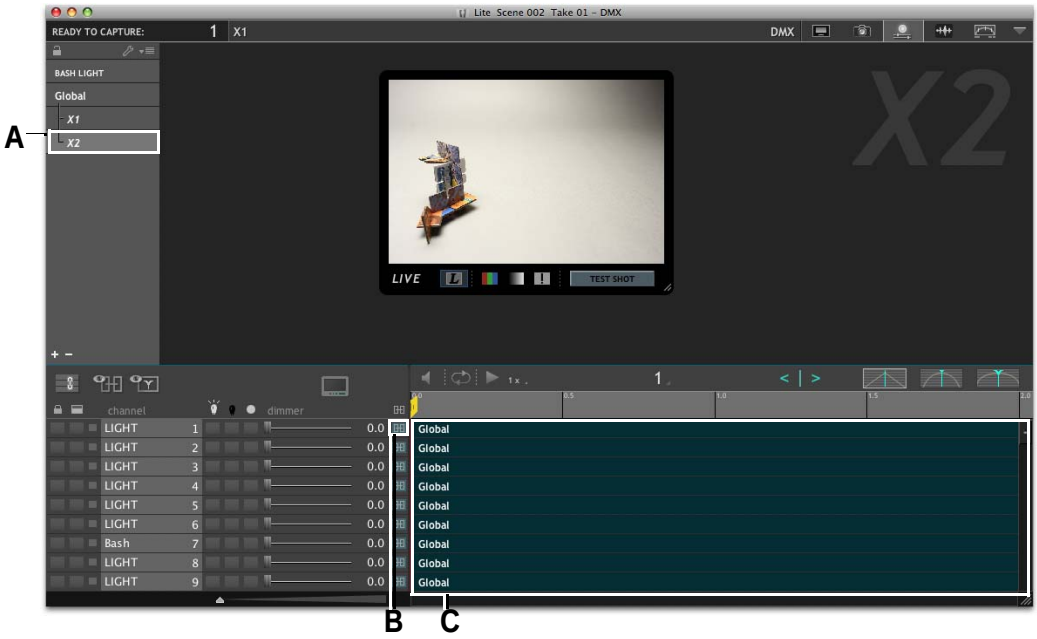
See also:
"Passes, Takes and Exposures Explained" on page 10.
"Automating a Bash Light" on page 199.

Modifying the Default Exposure Lighting Programs

The simplest way to customize lighting per exposure is to change one or two channels on the default exposure programs (**x1**, **x2**, etc). All of the rest of the settings for the exposures will remain the same as the parent program, **GLOBAL**.

To customize a few attributes of an exposure:

1. Select the program in the program list. Below, **x2** is selected:



A. **x2** *(child) program selected.* ***B.*** *Link icon.* ***C.*** *Keyframe timeline is blued out (not editable), and labeled* **GLOBAL***, because currently all of its settings come from the* **GLOBAL** *program.*

2. Click the link icon (B.) next to the channels you want to customize.

3. Edit the channels as needed.

See also:
"Creating a Lighting Program" on page 190.
"Passes, Takes and Exposures Explained" on page 10.

Setting Up an Exposure from Scratch

If you want the lighting for an exposure to be completely different from the lighting for the global program, detatch it completely. That way, you'll create its lighting from scratch.

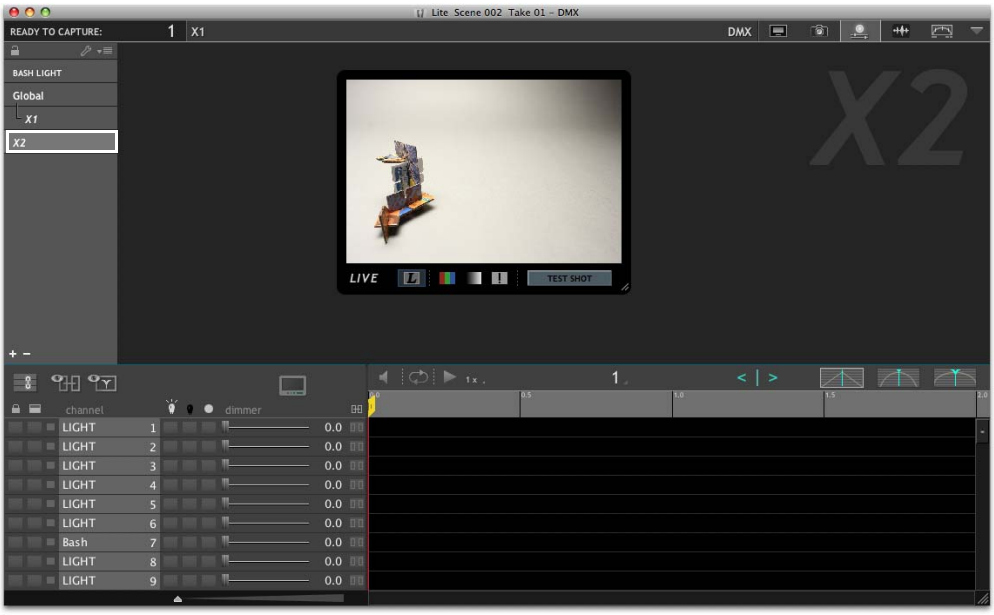
To detatch an exposure from its parent:

1. Create any exposures you need in the Cinematography window.

2. Open the DMX workspace. Any exposures you created appear in the program list.

3. In the lighting program list, click and drag the exposure you're going to edit until it detatches from its parent.

All of the settings inherited from the parent disappear. Now you can create the lighting program from scratch.



X2 *is now detatched from the* **GLOBAL** *parent program, and is now a parent program itself.*

4. Set up the new lighting program for the exposure.

NOTE: A parent program must have an exposures associated with it to run when you're shooting. For example, if you create a new program called **BACKLIGHT**, but don't link any exposures to it as children, the program

will not run. Or, if you set up the **GLOBAL** program, but detatch all default exposures from it, the **GLOBAL** program will not run.

NOTE: You can change your mind and reattach an exposure to its original parent, **GLOBAL,** without completely losing customizations. When an exposure is reattached, any custom settings will seem to disappear, since all the channels will be inherited from **GLOBAL**. However, if you click the link icon for a channel that you had previously edited, Dragonframe will restore the customized settings.

See also:
"Passes, Takes and Exposures Explained" on page 10.
"Multiple Passes and Exposures" on page 80.
"Creating a Lighting Program" on page 190.

Creating a New Parent Program for Exposures

If you want more than one exposure to share the same attributes, you can create a new parent program, then attach each of the exposures to it.

To create a parent program and attach exposures to it:

1. Create any of the exposures you need in the Cinematography workspace.
2. Click + in the bottom of the program list. A new program appears in the program list.

3. Name the program. Here, we'll call it **BACKLIGHT**:
4. Set up the lighting program as needed.
5. Drag and drop the exposures you're linking onto the program name. Dragonframe links them to the parent program, and shows them in the hierarchy:

Now any settings you created in the parent program, **BACKLIGHT**, will apply to the exposures you linked to it.

See also:
"Passes, Takes and Exposures Explained" on page 10.
"Multiple Passes and Exposures" on page 80.

"Creating a Lighting Program" on page 190.

Deleting a Lighting Program

You can delete any lighting program that you've created. In other words, you *cannot* delete default programs like **GLOBAL**, **BASH LIGHT** or the default exposure programs.

To delete a lighting program:

1. Select the program in the program list.

2. Click **-** (minus) at the bottom of the program list. Dragonframe deletes the lighting program. Any of its children will appear as parents in the program list.

See also:
"Deleting Multiple Exposures from the Cinematography Workspace" on page 86.

Saving, then Loading a Lighting Program

You can upload a lighting program and apply it to another scene. When you load a program, you can overwrite a current program's settings, or add the saved program as a new program.

To save a program:

1. In the program list, **CTRL**-click and select **SAVE PROGRAM**. The save program dialog appears.

2. Choose where to save the program and click **OK**.

To load a program:

1. Select **FILE|OPEN SCENE...**, then select the scene you want to use the saved program in. Click **OK**.

2. Open the DMX workspace.

3. Load the saved program:

   - To overwrite the settings of another program:
     Select the program you want to overwrite.
     CTRL-click, and select **LOAD PROGRAM...**
     Navigate to the saved program, and press **ENTER**. Dragonframe overwrites the old program with the saved one.

- To add the saved program:
  CTRL-click in the open area below all of the program names, and select **LOAD PROGRAM...**
  Navigate to the saved program, and press **ENTER**. Dragonframe adds the saved program to the list.

Special Keys and Contextual Menus for the DMX Workspace

Use the keypresses and menus in this section to access all of the workspace's tools.

DMX Keypresses

Press:	To	See this section for more information:
SPACE or **0**	Play the DMX Program.	"Previewing Your Lighting Program" on page 197.
LEFT or **1**	Step back one frame.	"Moving Around the Lighting Program" on page 194.
RIGHT or **2**	Step forward one frame.	"Moving Around the Lighting Program" on page 194.
DELETE or **BACKSPACE** or *****	Delete selected keyframes.	"Cutting, Copying, Pasting, and Deleting Keyframes" on page 194.
CTRL LEFT	Move to previous keyframe.	"Moving Around the Lighting Program" on page 194.
CTRL RIGHT	Move to next keyframe.	"Moving Around the Lighting Program" on page 194.
HOME	Move to the start of the DMX timeline.	"Moving Around the Lighting Program" on page 194.
END	Move to the end of the DMX timeline.	"Moving Around the Lighting Program" on page 194.

DMX Contextual Menus: Programs

And select:	To:	See this section for more information:
ADD PROGRAM	Add a new lighting program.	"Creating Custom Lighting Programs per Exposure" on page 200.
RENAME PROGRAM	Rename an existing program.	"Creating Custom Lighting Programs per Exposure" on page 200.
DUPLICATE PROGRAM	Copy an existing program.	"Creating Custom Lighting Programs per Exposure" on page 200.
SAVE PROGRAM	Save the current lighting program.	"Saving, then Loading a Lighting Program" on page 205.
LOAD PROGRAM	Load a saved program.	"Saving, then Loading a Lighting Program" on page 205.

DMX Contextual Menus: Lighting Workspace

EXPAND BADGES	Expand all minimized light badges.	"Visualizing Your Lights in the Lighting Workspace" on page 198.
COLLAPSE BADGES	Minimize all badges.	"Visualizing Your Lights in the Lighting Workspace" on page 198.
CLEAN UP BADGES	Snap badges into rows.	"Visualizing Your Lights in the Lighting Workspace" on page 198.
GATHER BADGES	Move badges that are off screen back into the lighting workspace.	"Visualizing Your Lights in the Lighting Workspace" on page 198.
HIDE BADGES	Remove the badges from the lighting workspace.	"Visualizing Your Lights in the Lighting Workspace" on page 198.

DMX Contextual Menus: Channels

NEW GROUP	Create a new group of channels.	“Grouping Channels” on page 195.
REMOVE FROM GROUP	Remove the selected channel from the group.	“Grouping Channels” on page 195.
CLEAR CHANNEL	Clear all the keyframes from the channel.	“Clearing a Channel” on page 195.
SAVE CHANNEL	Save the channel for use in another lighting program.	“Saving and Loading a Channel” on page 195.
LOAD CHANNEL	Load a saved channel.	“Saving and Loading a Channel” on page 195.

Chapter 13: Adding Input and Output Triggers

You can use Dragonframe to trigger external devices, or use external devices to tell Dragonframe to shoot. To do so, you must first connect Dragonframe to the DDMX-S2, or to the IOTA Controller.

This chapter contains the following sections:

"Adding an Input Trigger" on page 209.
"Adding a Switch/Relay Output Trigger" on page 210.
"Adding a Logic Output Trigger" on page 212.
"Using an External Relay Switch or a Logic Output to Automate a Bash Light" on page 214.
"Using Go-Motion" on page 214.

See also:
"Connecting DMX to Dragonframe" on page 189.
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Adding an Input Trigger

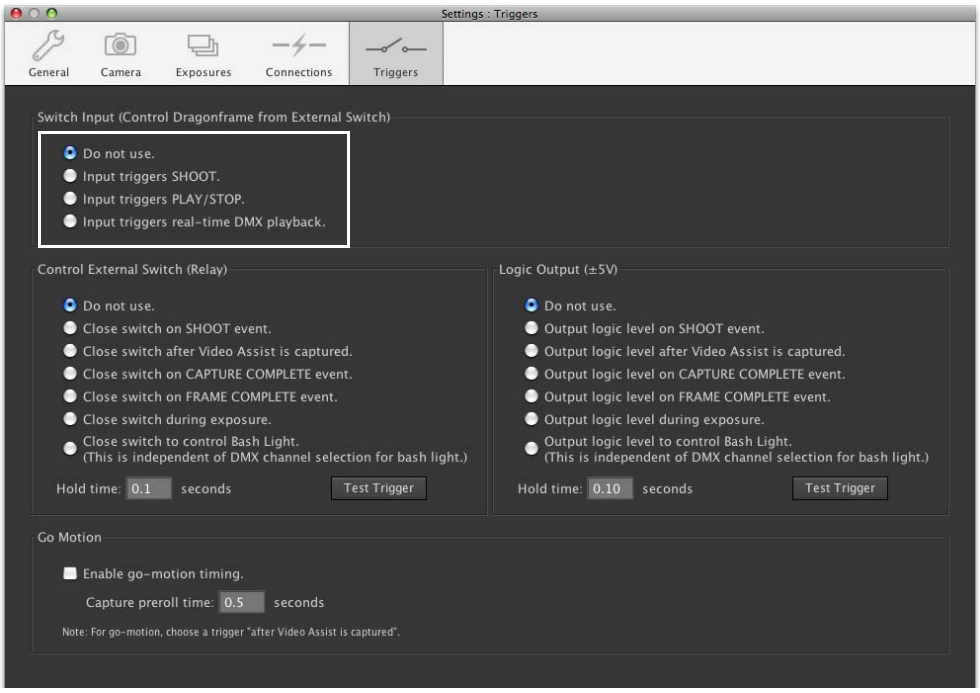
Use the DMX Logic Input to have an external device (such as a push button or a MoCo system) trigger an event in Dragonframe. For example, you might connect a push button to Dragonframe with the DDMX-S2, and set a trigger for **SHOOT**. When you press the push button, Dragonframe will shoot a frame.

To trigger a Dragonframe event with an external device:

1. Connect the DDMX-S2 to your computer as described in "Connecting DMX to Dragonframe" on page 189.

2. Connect the external device you're using to the input terminal and ground (labeled **IN** and **GND**) on the DDMX-S2. For information about the DDMX-S2's terminals, see the DDMX-S2 Brochure and Technical Specifications at
http://www.dragonframe.com/dmx.php

3. Select **SCENE|TRIGGERS**. The triggers setup dialog appears:



Triggers dialog with Switch Input settings

4. Select which event you want your external device to trigger in Dragonframe:

   - **SHOOT**: Dragonframe will shoot a frame,
   - **PLAY/STOP**: Dragonframe will begin or stop playback of your frames, or
   - **REAL-TIME DMX PLAYBACK**: Dragonframe will play your DMX lighting program.

See also:
DDMX-S2 Brochure and Technical Specifications at
http://www.dragonframe.com/dmx.php

Adding a Switch/Relay Output Trigger

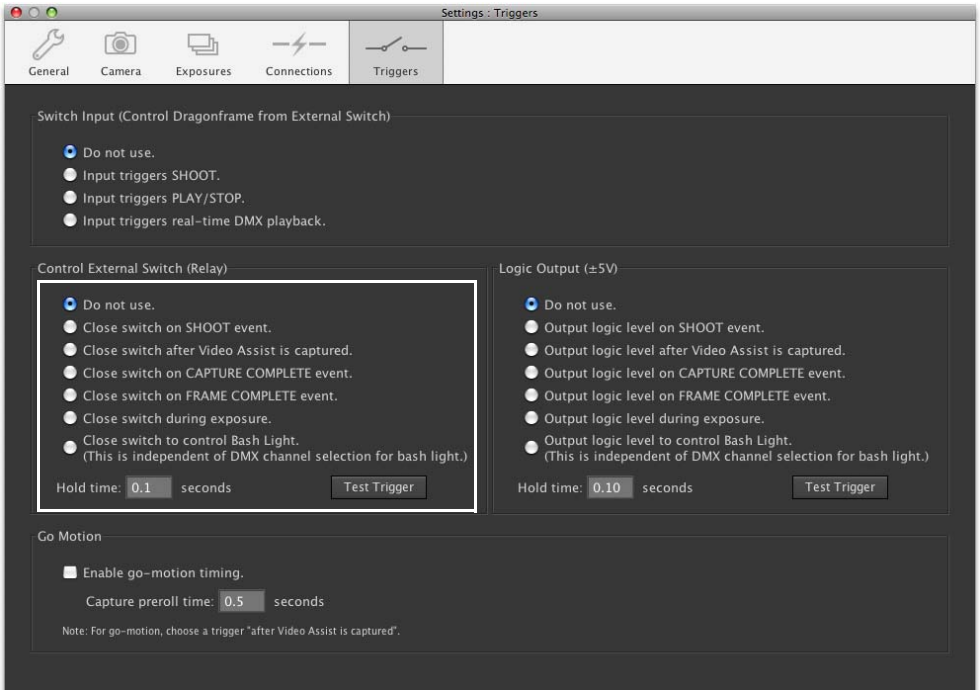
You can use Dragonframe to trigger external devices with a switch. For example, you might connect an unsupported camera to Dragonframe via an external switch. When you press **SHOOT** in Dragonframe, Dragonframe would close the switch, and your camera would capture a frame.

To trigger an external device with Dragonframe using a switch/relay:

1. Connect the DDMX-S2 to your computer as described in “Connecting DMX to Dragonframe” on page 189.

2. Connect the external device you’re using to the switch/relay output terminal (labeled **RELAY**) on the DDMX-S2. For information about the DDMX-S2’s terminals, see the DDMX-S2 Brochure and Technical Specifications at http://www.dragonframe.com/dmx.php

3. Select **SCENE|TRIGGERS**. The triggers setup dialog appears:



Triggers dialog with External Switch (Relay) settings

4. Select which Dragonframe event will trigger (close) the external switch:

    - When you press **SHOOT** in Dragonframe,
    - When Dragonframe is finished capturing a video assist,
    - When Dragonframe has completed capturing the high-res frame,
    - When Dragonframe has completed capturing all exposures for a frame,
    - When Dragonframe is capturing a frame,

- When a work light should be on. The switch will be closed during video assist, and open for the high-res capture.

5. (Optional) Adjust the hold time for the trigger. This is the amount of time Dragonframe will hold the switch closed.

See also:
"Using an External Relay Switch or a Logic Output to Automate a Bash Light" on page 214.

"Adding a Logic Output Trigger" on page 212.

DDMX-S2 Brochure and Technical Specifications at http://www.dragonframe.com/dmx.php

"Using DDMX-S2 to Trigger Motion Control" on page 240.

"Connecting an Unsupported Camera to Dragonframe" on page 55.

Adding a Logic Output Trigger

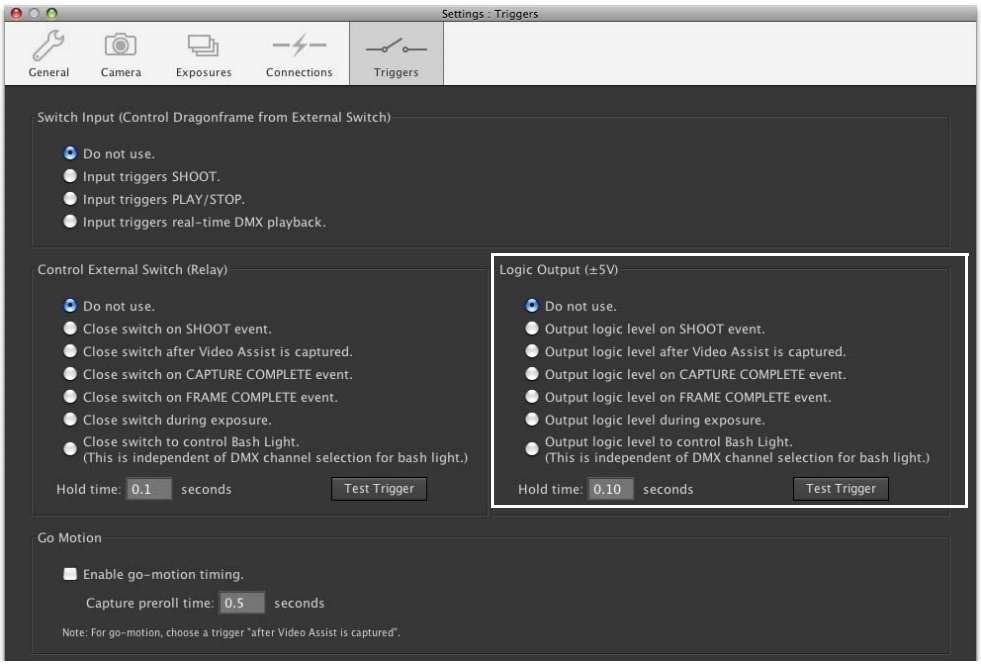
You can use Dragonframe to trigger external devices with a logic output trigger of plus or minus five volts.

To trigger an external device with Dragonframe using a logic output:

1. Connect the DDMX-S2 to your computer as described in "Connecting DMX to Dragonframe" on page 189.

2. Connect the external device you're using to the logic output terminal (labelled **LO** or **HI** and **GND**) on the DDMX-S2.
   For information about the DDMX-S2's terminals, see the DDMX-S2 Brochure and Technical Specifications at http://www.dragonframe.com/dmx.php

3. Select **SCENE|TRIGGERS**. The triggers setup dialog appears:



Trigger dialog with Logic Output settings

4. Select which Dragonframe event will trigger a logic level (HI or LO):

   - When you press **SHOOT** in Dragonframe,
   - When Dragonframe is finished capturing a video assist,
   - When Dragonframe has completed capturing the high-res frame,
   - When Dragonframe has completed capturing all exposures for a frame,
   - While Dragonframe is capturing a frame,
   - When a work light should be on. The level will be active during video assist, and inactive (grounded) for the high-res capture.

5. (Optional) Adjust the hold time for the trigger. This is the amount of time Dragonframe will hold the switch closed.

See also:

"Using an External Relay Switch or a Logic Output to Automate a Bash Light" on page 214.

DDMX-S2 Brochure and Technical Specifications at http://www.dragonframe.com/dmx.php

"Using DDMX-S2 to Trigger Motion Control" on page 240.

Using an External Relay Switch or a Logic Output to Automate a Bash Light

If you want to automate a bash light without having to purchase a DMX dimmer pack, you can connect a bash light to an external switch, then to the Output or Logic terminals on the DDMX-S2. Dragonframe will close the switch (or set your logic level HI/LO) when the bash light should be on, and open the switch (or set your logic level to ground) when the bash light should be off. To set up a work light with the DDMX-S2:

1. Connect the DDMX-S2 to your computer as described in "Connecting DMX to Dragonframe" on page 189.
2. Connect the external device you're using to:
   - The switch/relay output terminal (labeled **RELAY**) on the DDMX-S2, or
   - The logic output lo or hi terminal (labelled **LO** or **HI** and **GND**) on the DDMX-S2.
     For information about the DDMX-S2's terminals, see the DDMX-S2 Brochure and Technical Specifications at http://www.dragonframe.com/dmx.php
3. Select **SCENE|TRIGGERS**. The triggers setup dialog appears.
4. Set up the work light:
   - If you connected to the switch/relay output terminal, select **CLOSE SWITCH TO CONTROL BASH LIGHT** in the **CONTROL EXTERNAL SWITCH (RELAY)** section of the dialog.
   - If you connected to the logic output lo or hi terminal, **SELECT OUTPUT LOGIC LEVEL TO CONTROL BASH LIGHT** in the **LOGIC OUTPUT SECTION** of the dialog.
5. (Optional) Adjust the hold time for the trigger. This is the amount of time Dragonframe will hold the switch closed.

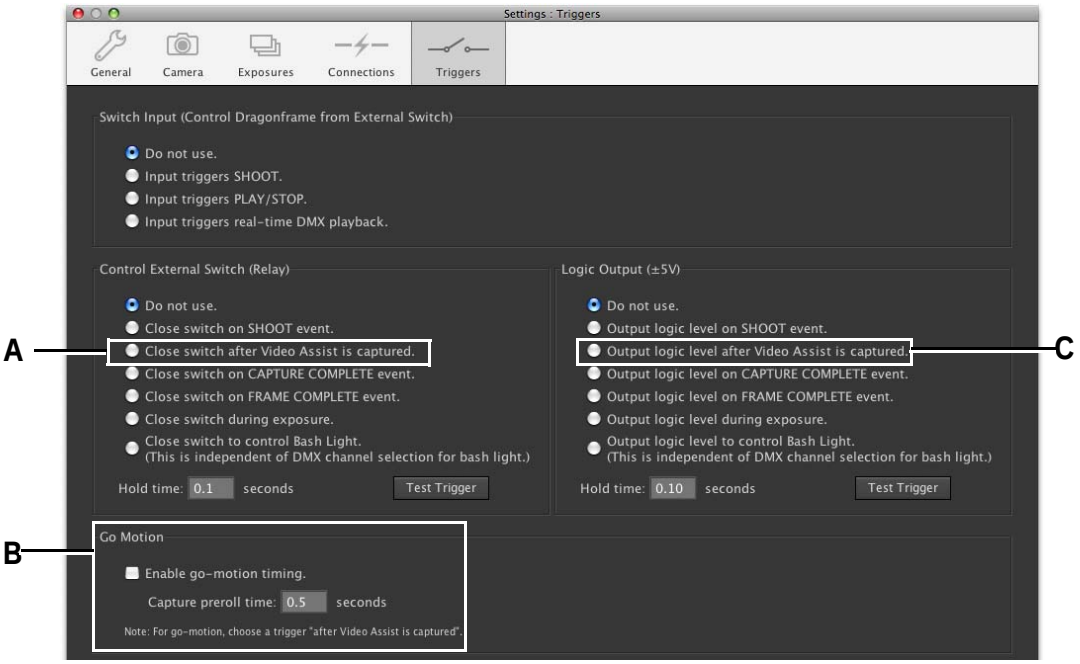
Using Go-Motion

To enable go-motion timing:

1. Connect the DDMX-S2 to your computer as described in "Connecting DMX to Dragonframe" on page 189.
2. Connect the external device you're using to:

- The switch/relay output terminal (labeled **RELAY**) on the DDMX-S2, or
- The logic output lo or hi terminal (labelled **LO** or **HI** and **GND**) on the DDMX-S2.
  For information about the DDMX-S2's terminals, see the DDMX-S2 Brochure and Technical Specifications at http://www.dragonframe.com/dmx.php

3. Select **SCENE|TRIGGERS**. The triggers setup dialog appears:



A. *Click this option if you connected to the switch/relay output terminal.* ***B.*** *Trigger dialog with go-motion settings.* ***C.*** *Click this option if you connected to the logic output lo or hi terminal.*

4. Choose a trigger depending on what you connected to in step 2.
   - If you connected to the switch/relay output terminal, click **CLOSE SWITCH AFTER VIDEO ASSIST IS CAPTURED**.
   - If you connected to the logic output lo or hi terminal, click **OUTPUT LOGIC LEVEL AFTER VIDEO ASSIST IS CAPTURED.**
5. Check **ENABLE GO-MOTION TIMING**.
6. (Optional) Adjust the **PREROLL TIME**. Dragonframe enables go-motion timing.

With go-motion enabled, every time you capture a frame, Dragonframe will:

1. Capture the video assist frame.

2. Get the camera ready to shoot high-res.
3. Fire the **AFTER VIDEO ASSIST**.
4. Wait for the **PRE-ROLL** time.
5. Capture the high-res frame.

Calculating the Go-Motion Pre-Roll Time

In our testing with a Kuper motion control system, we achieved repeatable blur at different shutter speeds by using the following formula:

Pre-Roll = (ExposureTime / 2) + 0.15 seconds

Set the exposure time in Kuper to twice the exposure time of the camera set in Dragonframe. This is because Kuper was originally designed for film cameras, where the film is exposed for half of the exposure time.

Here are some examples:

Shutter Speed	Kuper Exposure Time	Pre-Roll Time
0.5	1.0	0.40
1.0	2.0	0.65
2.0	4.0	1.15
4.0	8.0	2.15

Chapter 14: Motion Control

This chapter covers integrating Dragonframe with motion control systems, including Arc, the MoCo interface within Dragonframe. You can also create action scripts to automate some of Dragonframe's features, and use Dragonframe to calculate camera moves for a hand-cranked camera rig through Arc.

It includes the following sections:

"Using the Arc Motion Control Workspace" on page 217.

"Using the Jogpad Window with the Dragonframe Keypad" on page 235.

"Using External Motion Control Systems with Dragonframe" on page 240.

"Creating Action Scripts" on page 245.

"Adding Hand-Cranked Camera Moves" on page 246.

See also:

"Shooting in 3D" on page 251.

Dragonframe tutorials:

http://www.dragonframe.com/tutorials.php

Using the Arc Motion Control Workspace

The Arc motion control workspace provides an interface for programming complex, multi-axis camera moves, directly within Dragonframe. You can control stepper motors using our IOTA Controller box (two channels per box) or the Arduino. The Arduino can interface with any standard stepper motor drivers, and control up to eight channels at once (8 for the Mega/Mega 2560, 4 for the Uno, Duemilanove).

WARNING: All motion control has inherent risks. Make sure that you are clear of moving rigs at all times. Set your motor speeds low at first to make sure the speed is safe.

The sections that follow describe how to connect hardware to Dragonframe, gives an overview of the entire Arc workspace, and then detail how to set up axes and moves in the workspace.

Understanding Stepper Motors

Stepper motors are very common for motion control, because they can be easily and accurately controlled, and are relatively low-cost. Inter-

nally they have four magnets that can be activated in sequence to move the motor by steps.

There are usually three components to a stepper motor system:

- A signal generator. This generates step and direction signals, which are logic-level signals (3.3-5V).
- A stepper motor driver. This turns step and direction signals into high-powered signals that control the stepper motor magnets.
- A stepper motor: This takes the powered signals from the driver and rotates in order to move your axis.

For example, a Kuper card is a step/direction signal generator. Typically this feeds into one or more high-powered driver boxes (such as Gecko Drivers). Each stepper motor on a motion control rig is then plugged into the driver boxes.

Using the IOTA Controller for Motion Control

The IOTA Controller is a signal generator and stepper motor driver, combined. It is a two-channel, 24V, 0.8A, 2 phase micro-stepped motor drive (1600 steps internally / 2000 externally). You can control two standard, four coil stepper motors with one box, as long as the stepper motors do not require more power than the box can provide.

You can directly connect our IOTA 3D Slider and our focus motor to the IOTA Controller.

The IOTA Controller uses a CPC-11 connector (from Amp / TE Connectivity). Here are the pin-outs:

Pin #	Out
pin 1	Case/Shield Gnd
pin 2	n/c
pin 3	Phase A+
pin 4	Phase A-
pin 5	n/c
pin 6	Phase B+
pin 7	Phase B-

Pin #	Out
pin 8	n/c

Connector on box:

- Female Flanged Panel Mount w/ Threads
- Amp P/N 206433-1 Size 11-8 “Reverse Sex” Socket
- 5 each Socket Contacts AMP P/N 665693

Mating connector on motor:

- Male Cable Mount w/ Locking Ring
- Amp P/N 206434-1 Size 11-8 “Reverse Sex” Plug
- 5 each Pin Contacts AMP P/N 665703
- Backshell, Size 11, AMP P/N 206062-1

Using the Arduino for Motion Control

We have written a sketch (program) for the Arduino that turns it into a stepper motor signal generator for 4-8 axes. The sketch is called **DFMOCO** and is installed with Dragonframe at:
<Dragonframe Installation Folder>**/RESOURCES/ARC MOTION CONTROL/DFMOCO**.

You can load the sketch onto an Arduino Uno, Duemilanove, Mega, or Mega 2560 (others may work, but these are the ones we have tested). The step and direction pins for each axis are described in the introductory comments of the DFMoco sketch.

If you already have stepper motor drivers, you could easily wire up the step and direction signals into a connector for your motor drivers.

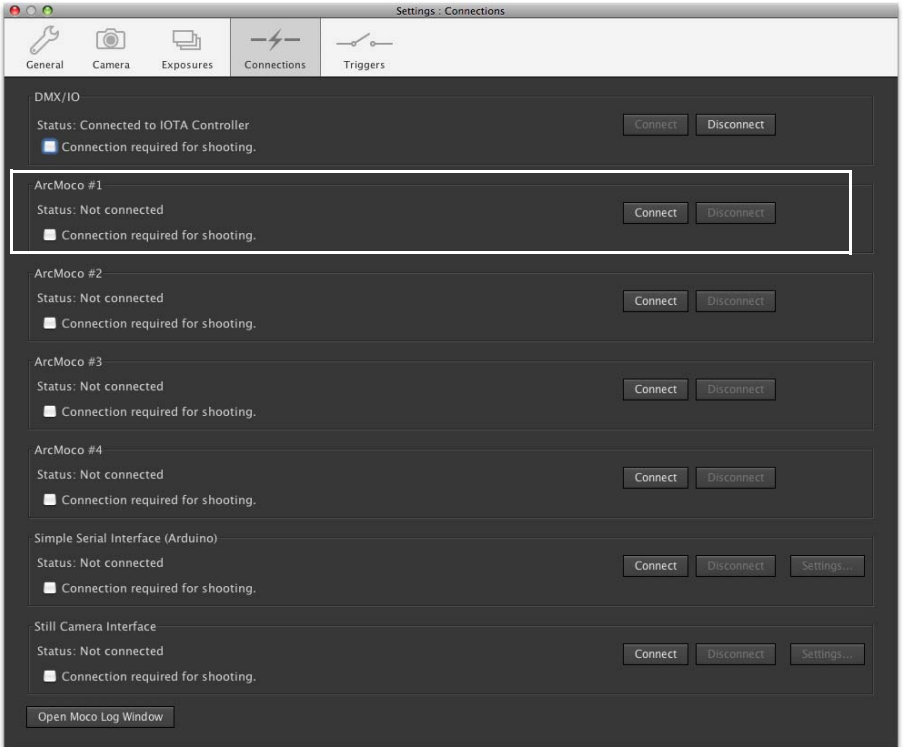
Alternatively, you could wire up the step and direction signals to a small stepper motor driver, such as the EasyDriver. Find the EasyDriver at: http://www.sparkfun.com/products/10267

The EasyDriver has power output comparable to the IOTA Controller. This is suitable for smaller motors but not full-scale rigs.

Connecting Dragonframe to MoCo Hardware

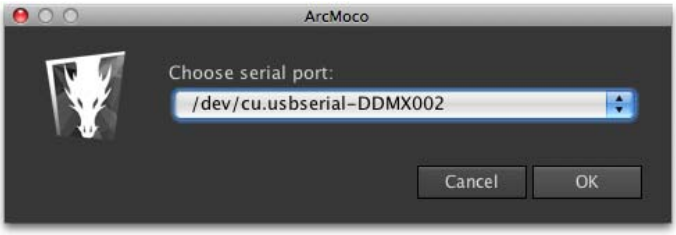
Once you've connected your hardware, connect Dragonframe to it.

1. In Dragonframe, select **SCENE|CONNECTIONS**. The Settings dialog appears, showing the Connections tab:



Settings dialog, Connections tab, ArcMoco#1 settings.

2. Under **ARCMOCO 1, 2, 3** or **4**, click **CONNECT**. An ArcMoco dialog appears:



3. Choose the serial port, then click **OK**.

NOTE: If the correct serial port doesn't appear in the dialog, look for it in your PC's Device Manager.

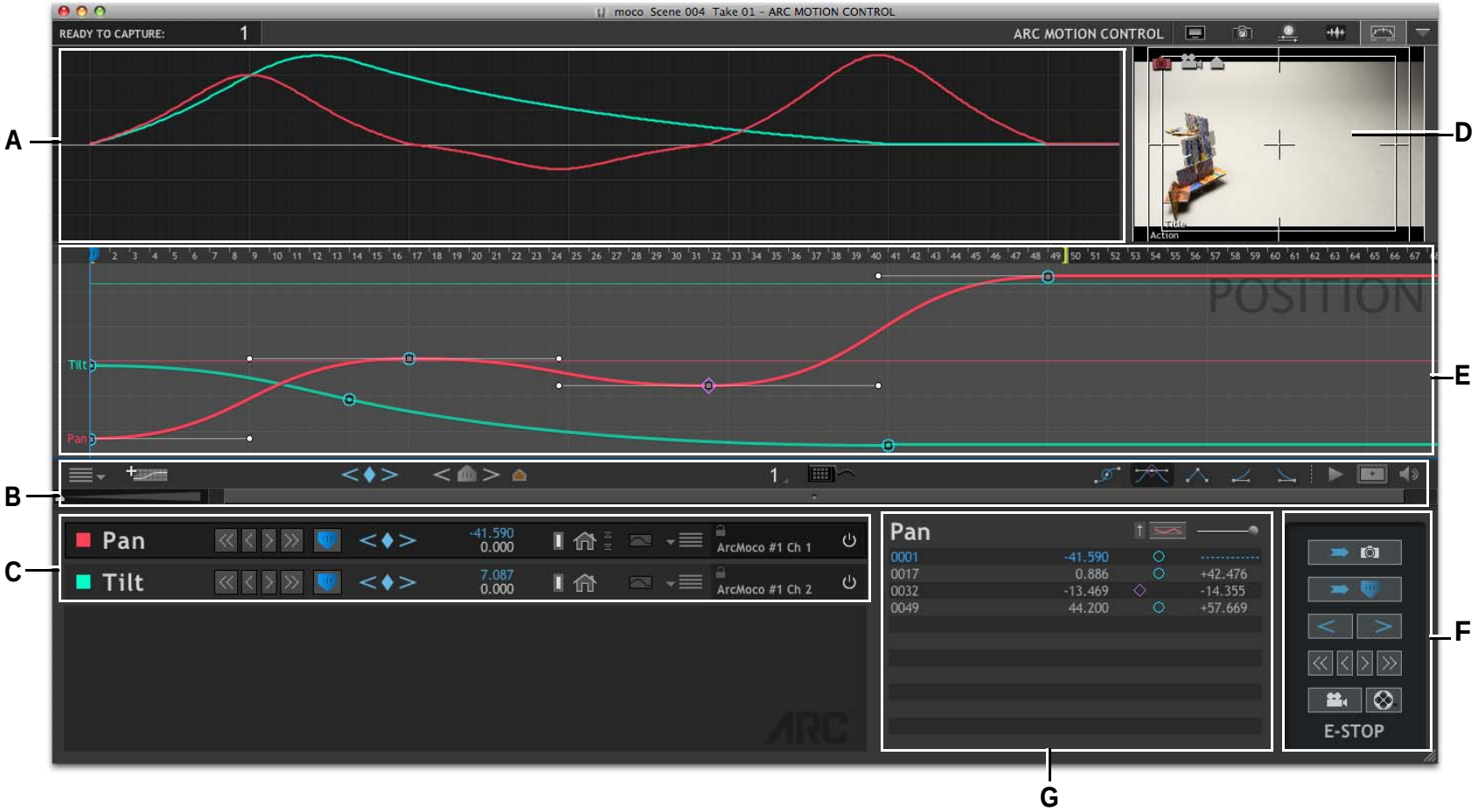
Dragonframe connects the device, then automatically checks the **CONNECTION REQUIRED FOR SHOOTING** check box. When this box is

checked, you will not be able to capture any frames for the scene until Dragonframe is connected to the hardware.

CAUTION: If you uncheck the **CONNECTION REQUIRED FOR SHOOTING** box, you could accidentally shoot all or part of a scene without your motion control setup working.

4. Open the Arc Motion Control workspace. The map that follows gives an overview of the workspace.

Arc Motion Control Workspace Map



A. *Velocity Graph: See the velocity of each axis over time. This helps you create a smooth move.*

B. *Workspace Tools: Open the main menu for the window, add axes or keyframes, mark up the axis, view the jog box window, adjust the axis style, or open the Live View.*

C. *Axis Controls: Work with a axis, jogging the motor, setting keyframes, setting limits.*

D. *Live View: Preview the move test.*

E. *Position Graph: See each axis over time. You can adjust the move directly in this window by manipulating keyframe handles.*

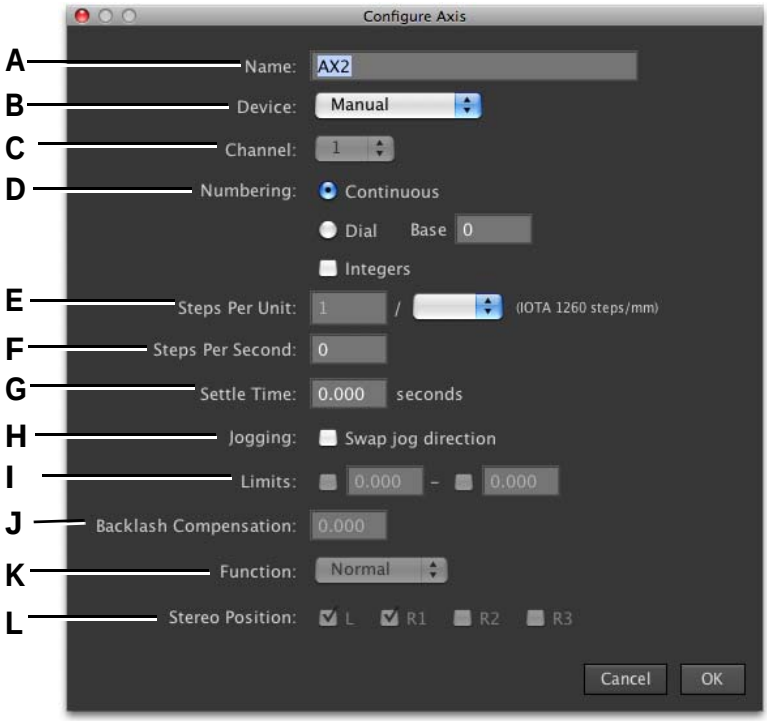
F. *Keyframe List: See the keyframes for the selected axis in an editable table. You can add, edit and delete keyframes from this list.*

G. *Motor Controls: Move all of the motors together, run a move test, or engage the system for shooting.*

Adding an Axis

1. Open the Arc workspace.

2. Click (in the workspace tools). Dragonframe opens the Configure Axis dialogue:



A. *Name: Name the axis.*

B. *Device: Choose whether to use a hand-cranked rig (manual), a compatible device for Arc (DF Moco 1-4), or a digital focus motor.*

C. *Channel: Select the channel you're using for the axis. You would have noted this in "Connecting Dragonframe to MoCo Hardware" on page 220.*

D. *Numbering: Set up numbering for hand-cranked rigs.*

E. *Steps Per Unit: Enter the number of steps per mm/cm/m/ft/in/degrees. The IOTA has 1260 steps/mm.*

F. *Steps Per Second: Enter the maximum speed of the device, specific to the motor you're using.* ***Start the speed slowly at first for safety.***

G. *Settle Time: Enter the amount of time to wait after the axis moves before shooting a frame.*

H. *Jogging: Swap jog directions to have the orientation of the jogging match your frame of reference.*

I. *Limits: Set how far the device can move in either direction.*

J. *Backlash Compensation: Enter the compensation amount. Dragonframe will factor it out.*

K. *Function: Choose whether you're creating regular moco moves, setting up a 3D slider, or a focus move.*

L. *Stereo Position: Set up 3D stereo positions.*

3. Select the kind of device you're using. (B.)

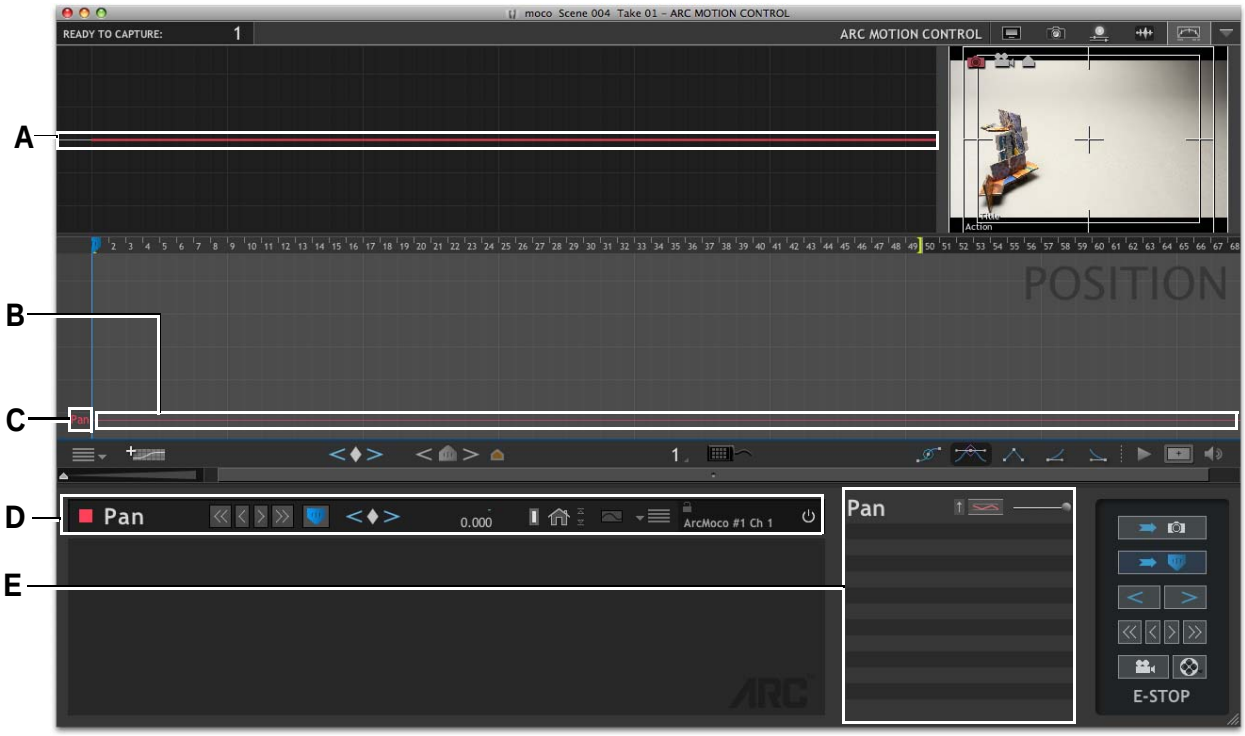
4. Choose which channel you connected your rig to. (C.)

5. Choose which moco function (K.) to use:

   - **NORMAL**: Regular moves, such as pan and tilt.
   - **3D**: Configure a 3D stepper such as the IOTA Controller.
   - **FOCUS**: Set up an axis to control a focus motor.
     If you configure an axis for focus, you can use the focus controls in the Cinematography window to jog the focus motors.

6. (Optional) Fill out the rest of the dialog with the settings that apply to your rig and project.

7. Click **OK**. Dragonframe adds an axis to the position graph, the axis list, and the keyframe list. In the example below, the new axis is named **PAN**, and its assigned color is red.



A. *Velocity graph: View the axis' speed over time.*

B. *Motor: View the current position of the motor assigned to* **PAN**.

C. **PAN:** *View* **PAN***'s position graph here once you add keyframes.*

D. *Axis list. Use the axis-specific tools, such as jog and inch.*

E. *Keyframe list. View keyframes in a table format Double-click a row to add or edit them.*

See also:

"Connecting Dragonframe to MoCo Hardware" on page 220.

"Focus Magnification During Live View" on page 73.

"Configuring the Slider" on page 253.

"Adding Hand-Cranked Camera Moves" on page 246.

Controlling an Axis

Once you've added an axis, you can jog the motors on the position graph, set the zero and home points for the axis, and follow your motor's progress along the axis. You can also disable an axis if you're not using it.

Jogging and Inching your Motors

Jog and inch the motors from the Axis list (D.).

- Click < or > to inch the motors.
- Click << or >> to jog them.
- Click and hold the buttons to move more quickly.

NOTE: If you've set up a move to control focus, you can also use the focus check buttons in the Cinematography workspace to jog your focus motor.

See also:
"Focus Magnification During Live View" on page 73.

Setting the Zero Point and Going to the Zero Point

To set a zero point:

1. Jog the motor to the zero position of the axis.
2. Choose **SET ZERO** from the axis menu. Dragonframe sets the zero point at the current position and lights up the zero icon.

To return to the zero point:

Click . Dragonframe sends the motor to zero.

NOTE: Anytime your motor returns to the zero point, the zero icon will light up.

Setting a Home Point and Going to Home

To set a home point:

1. Jog the motor to the position you want to be home.
2. Choose **SET HOME** from the axis menu. Dragonframe sets the home point at the current position and lights up the home icon.

To return to the home point:

Click . Dragonframe sends the motor to the home point.

NOTE: Anytime your motor is at the home point, the home icon will light up.

Setting the Limits for the Axis

If you didn't set limits for your device when you configured an axis, you can set them using the jog buttons. To set limits:

1. Jog the motors until you reach the limit for your device.
2. See if the position for the values are positive or negative.
3. Select the menu in the Axis list, then set either a lower limit or upper limit, depending on the motor's position information.

NOTE: When you move away from the limits of the devices, the icons go dark. When you arrive at a limit, Dragonframe lights the icon.

See also:
"Adding an Axis" on page 223.

Reading the Position Counters

As you jog the axis motor or reposition the playhead, you can keep track of where you are.

The Arc workspace displays both motor and playhead positions at all times in the Axis list:

Two axes set up, playhead (blue) and motor (white) positions for each.

Disable an Axis

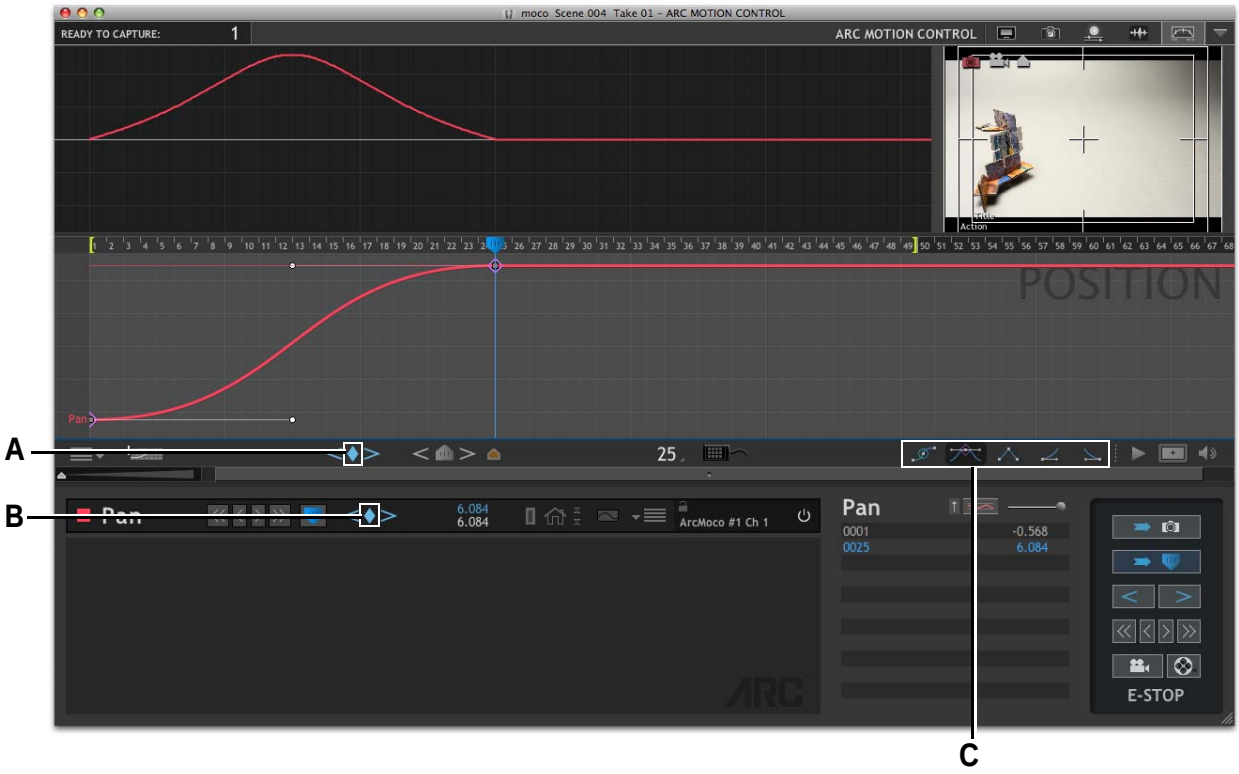
You can disable one or more axes without deleting them.

To disable an axis, click . Dragonframe removes the axis from the position graph.

Adding Keyframes

Once you've added an axis to the graph, add keyframes.

1. Jog the motors to the desired position.
2. Move the playhead to the frame you want.
3. Press the keyframe button on each axis you want to keyframe. If you want to keyframe all axes, press the keyframe button in the main control bar:

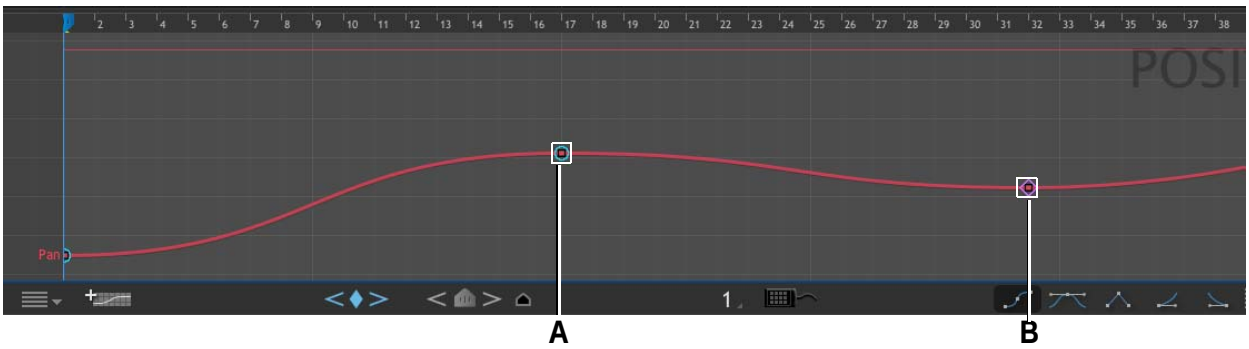


A. *Press the keyframe icon in the main control bar to add keyframes for all axes.* ***B.*** *Press the keyframe icon in the Axis list to add a keyframe only for* **PAN**. ***C.*** *Select a keyframe style.*

4. Select a keyframe style:

- Auto-smooth the curve.
- Ease in and out.
- Ease into the keyframe.
- Ease out of the keyframe.
- Make the keyframe linear.

If you have applied auto-smooth or auto-ease to a keyframe, a colored shape appears around it:



A. *Blue circle around keyframe: Auto-smoothing applied.* ***B.*** *Purple diamond around keyframe: Auto-ease applied.*

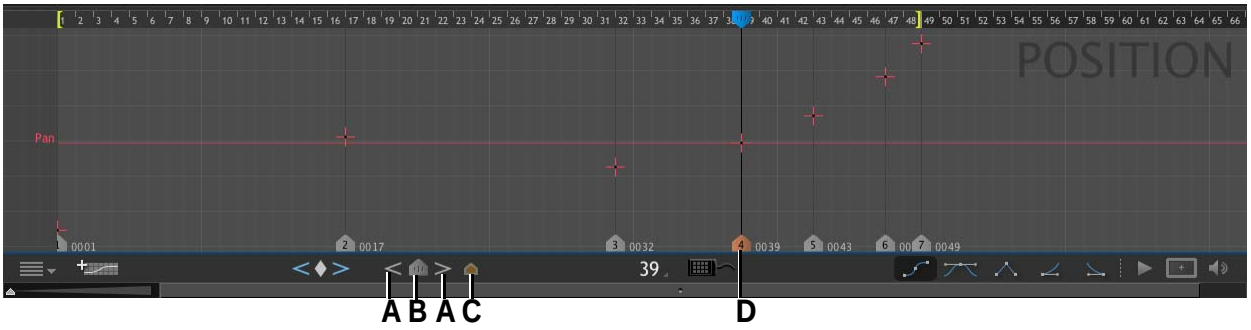
At any time you may:

- Click the keyframe in the axis to select it.
- Move the bezier handles of selected keyframes.
- Click an axis to select it.

Using Targets to Plot a Path

Often the best moves have the fewest keyframes. Targets are a way of marking your desired path without keyframes. To add targets:

1. Jog the motors to the desired position.
2. Move the playhead to the desired frame.
3. Click (B.).
4. Dragonframe adds a target to the location you chose:



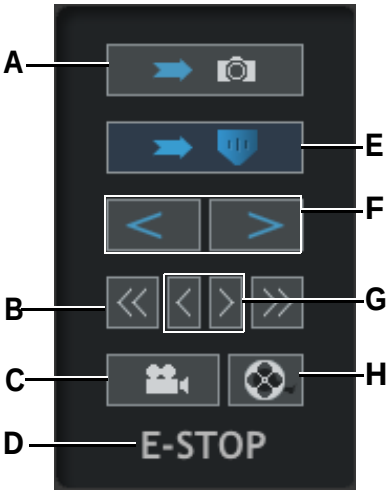
A. *Target navigation buttons.* ***B.*** *Target button.* ***C.*** *Hide targets.* ***D.*** *Target added.*

When you've added multiple targets:

- Click < and > to move through them one by one.
- Click to hide all targets.

Stepping Through a Move

Use the motor controls to move the motors along your axis frame by frame.



A. *To Camera Position: Move the motors to the frame that is ready to be captured, and prepare to shoot.*

B. *Jog: Jog the motors forward or backward eight frames.*

C. *Run Move Test: Run a test of the move with video assist frames.*

D. *E-Stop (**ESC**): Stop all motors.*

E. *To Playhead: Move the motors to the playhead. When you're on the playhead, this button turns blue.*

F. *To Frame: Move the motors keyframe by key-frame.*

G. *Inch: Inch the motors forward or backward one frame.*

H. *Create QuickTime: Create a QuickTime of the move test.*

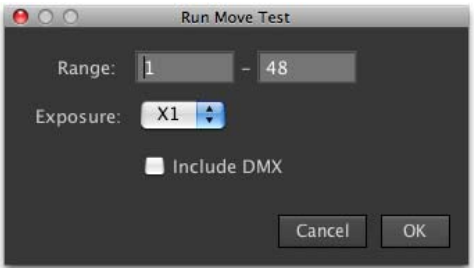
See also:
"Running a Move Test", below.
"Creating a QuickTime of the Test" on page 231.
"Preparing to Shoot" on page 232.

Running a Move Test

Once you have created a move, you can run a test of it. Once you run the test, you can play the test back, adjust the move and re-shoot sections of the test, or create a QuickTime of the test.

To run a move test:

1. Click in the motor controls on the bottom right of the screen. The Run Move Test dialog appears:

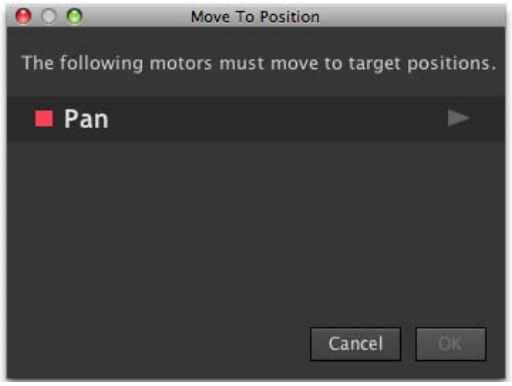


2. (Optional) Enter a range for the test. If you have in and out points set for playback, those frames will automatically appear in the dialog.

3. (Optional) Choose which exposure to use for the test.

4. Check the box to include the lighting from your DMX program in the test.

5. Click **OK**. Dragonframe opens the Move to Position dialog:



6. Click for each axis. Dragonframe moves the motor for the axis to the starting position. When all the motors are in place, click **OK**.

Dragonframe runs the move test.

NOTE: When it runs the test, Dragonframe captures only video assist frames for speed. If you need to test high-quality stills, run the move.

See also:
"Preparing to Shoot" on page 232.

Playing Back the Move Test

Once you've shot a move test, play it back, or play back just part of it.

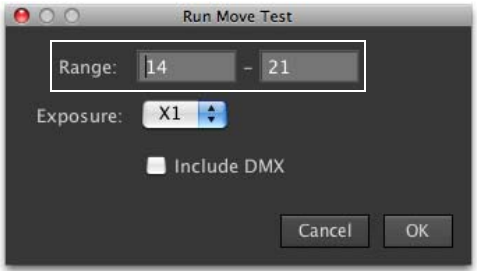
- Press **PLAY** to play back the test.
- Set in and out points to play back only a section of the test. Move the playhead, then press **I** for in or **O** for out. When you press **PLAY**, only that section will play back.

Reshooting Part of a Move Test

You can reshoot part of a test and Dragonframe will automatically replace the frames in the original test.

To reshoot a section of a test:

1. Adjust the move as needed.
2. Set in and out points around the section you adjusted. In this example, you'd set the in point for frame 14, and the out point to frame 21.
3. Click . The Run Move Test dialog appears:



Run Move Test dialog. The range matches the in and out points set in the Arc workspace.

4. Click **OK**, and run the rest of the test as you normally would. Dragonframe runs the test. It replaces the frames from your original test with the new frames.
5. Press **PLAY** to play back the modified test.

Creating a QuickTime of the Test

You can export a QuickTime of the completed test.

1. Click . Dragonframe displays a message: **EXPORT MOVE TEST TO QUICKTIME.** The Save Movie dialog appears.
2. Choose a location for the movie and click **OK**. The Movie Settings dialog appears.

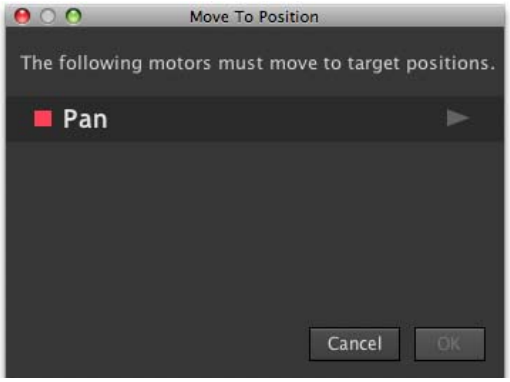
3. Adjust the settings as needed and click **OK**. Dragonframe exports the movie, then opens QuickTime so you can play back the movie.

Preparing to Shoot

Once you are done programming your move, you must engage the motion control system for shooting.

1. Press . Arc goes into shooting mode, and the button turns blue.

The Move To Position dialog appears:



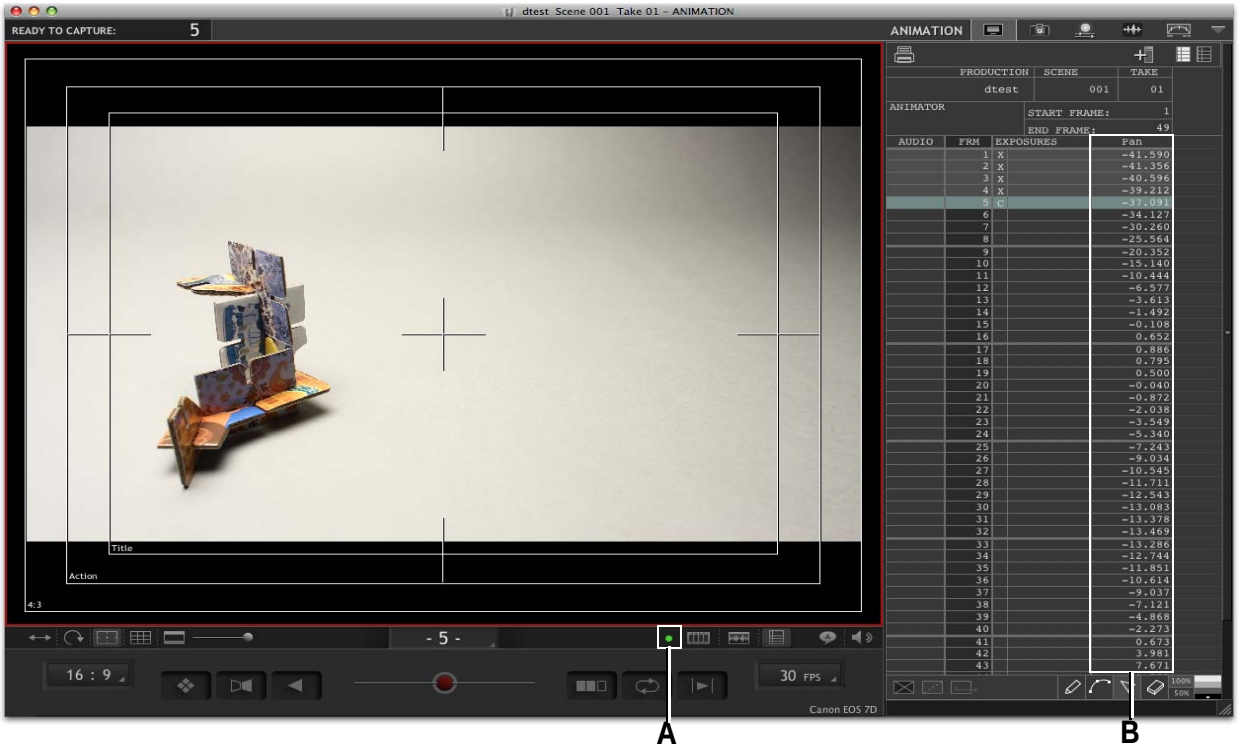
2. Click for each axis. Dragonframe moves the motor for the axis to the ready to capture position. When all the motors are in place, click **OK**.

3. Open the Animation workspace and begin shooting. Dragonframe moves the motors to the correct position as you shoot frames.

NOTE: You can't edit your move while in shooting mode. To exit shooting mode, press .

Viewing Your Move in the X-Sheet

Once you're in the Animation window, you can see the positions for each frame in the X-Sheet:



A. *Green dot: The Moco device is connected and you are ready to shoot. A red dot means the Moco system is not connected properly, and you are not ready to shoot.* ***B.*** *Pan column: Position information for the move named* **PAN** *in the X-Sheet.*

See also:
"Connecting Dragonframe to MoCo Hardware" on page 220.

Importing or Exporting Your Axis Setup

Once you have axes set up, you can export them to other projects. This will export the configuration information (limits, channel, etc) without exporting keyframe information. For example, if you always work with a particular rig, exporting an axis setup would allow you to quickly start a new project without having to re-configure each axis on your rig.

Exporting an Axis Setup

To export an axis:

1. Click the main menu for the workspace (in the workspace tools), then select **EXPORT AXIS SETUP**. Dragonframe opens the Export Axis Setup dialog.

2. Choose where you want to save the setup, and click **OK**. Dragonframe exports the setup.

Importing an Axis Setup

To import an axis setup into another scene:

1. Click the main menu for the workspace (in the workspace tools), then select **IMPORT AXIS SETUP**. Dragonframe opens the Import Axis Setup dialog.

2. Navigate to the saved axis setup file (.arcx), and click **OK**. Dragonframe imports the axis setup information. You can now add keyframes for the axis.

NOTE: Once you import axis setup information, you can disable any axes you aren't using. For example, if your rig has four axes, but you're only using two for a particular project, click ⏻ in the Axis list to disable the axes you're not using.

Importing and Exporting Camera Moves

You can export an entire move (axis information and keyframe information) to other Dragonframe projects.

Exporting a Move

To export a move:

1. Click the main menu for the workspace (in the workspace tools), then select **EXPORT MOVE**. Dragonframe opens the Export Move dialog.

2. Choose where you want to save the move, and click **OK**. Dragonframe exports the move.

Importing a Move

To import a move into another scene:

1. Click the main menu for the workspace (in the workspace tools), then select **IMPORT MOVE**. Dragonframe opens the Import Move dialog.

2. Navigate to the saved move file (.arcm), and click **OK**. Dragonframe imports the move and shows it in the Arc workspace. You can now edit the move, or begin shooting.

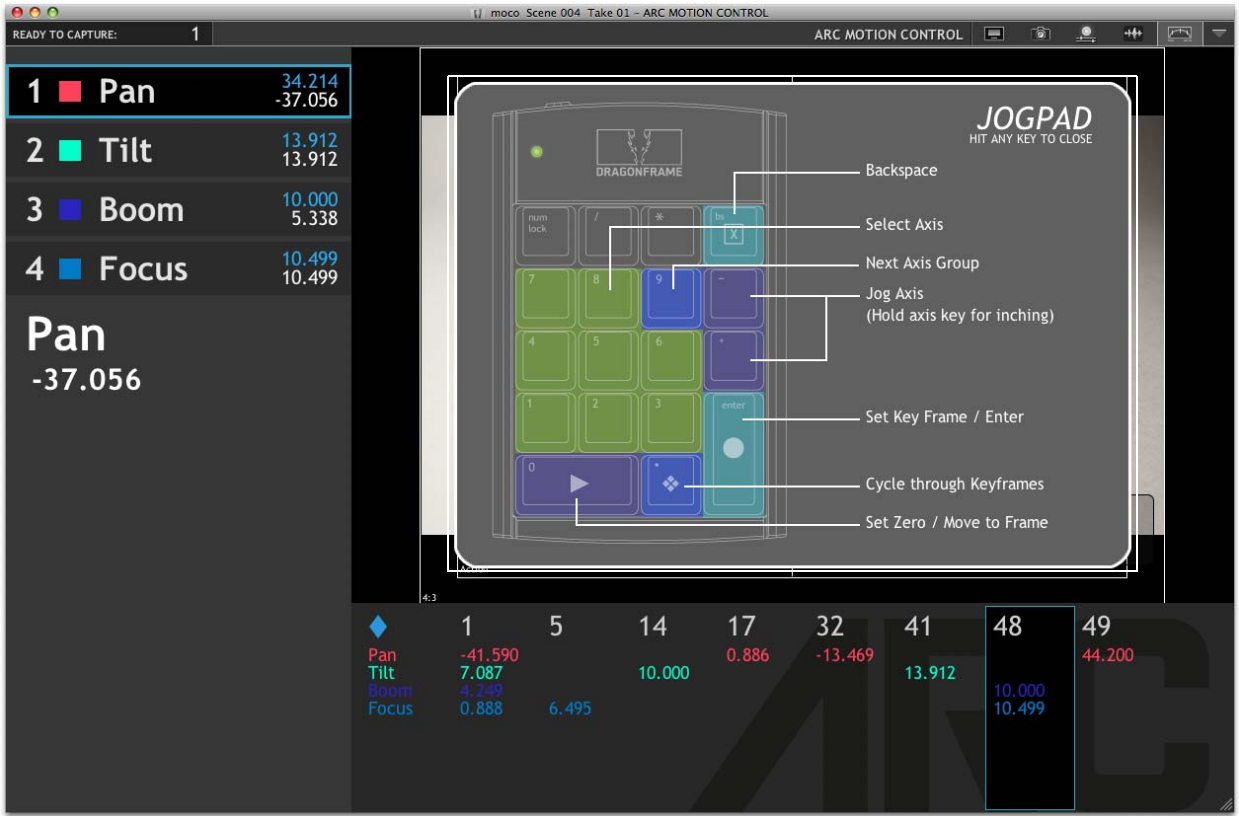
NOTE: Once you import a move, you can disable any axes you aren't using. For example, if your rig has four axes, but you're only using two for a particular project, click ⏻ in the Axis list to disable the axes you're not using.

Using the Jogpad Window with the Dragonframe Keypad

While using Arc, you can convert the Dragonframe keypad into a jog box (the Jogpad), allowing you to move around your rig and control it without touching the computer.

Opening the Jogpad Window

To open the Jogpad window, click . The jogpad window appears:

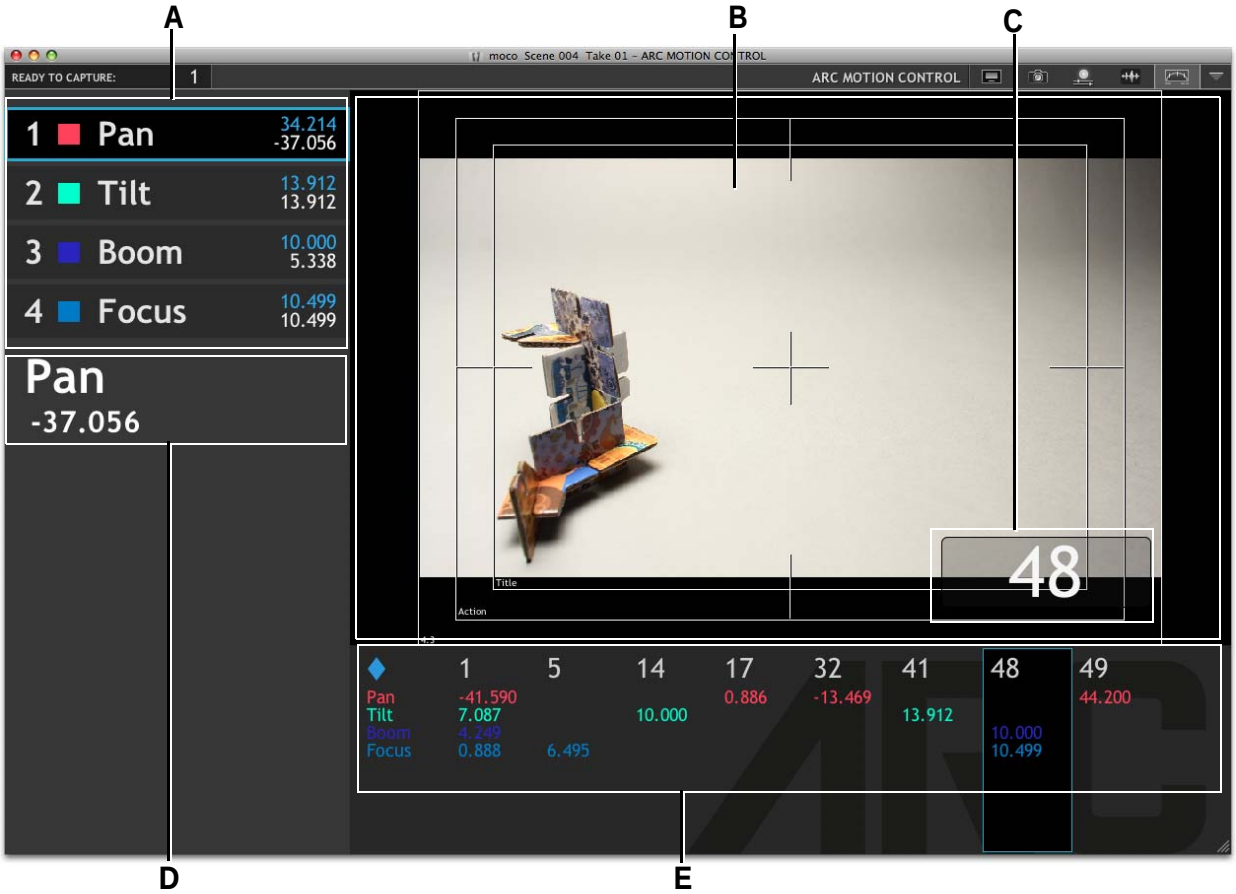


Jogpad guide within the Jogpad window

Anytime this window is open, you can use the keypad as the Jogpad.

The Jogpad guide appears when you first open the window, showing the layout of the Jogpad.

Click the guide to close it and see the Live View:



A. *Axis list. The list of axes. If there are more than eight, Arc displays axes in groups of eight. Press the number of the axis to select it. Press* **9** *for the next axis group.*

B. *Live View. See how jogging the motors affects the shot.*

C. *Frame number: The frame number of the currently selected keyframe.*

D. *Axis: The currently selected axis and its motor position.*

E. *Keyframe list: All of the keyframes for the current axis group. Press . (period) to cycle through keyframes.*

- Press the number of the axis to select it in the axis list. For example, to view **BOOM**, click **3**. Dragonframe displays the current position of that axis' motor below the axis list.
- Press to move through the axis' current keyframes in the keyframe list.
- Press **9** to display the next eight axes, if there are more than eight.
- Click anywhere in the window to return to the Arc workspace.

Jogging an Axis with the Jogpad

Use the Jogpad to move the axis motors.

1. Press the number of the axis to select it.

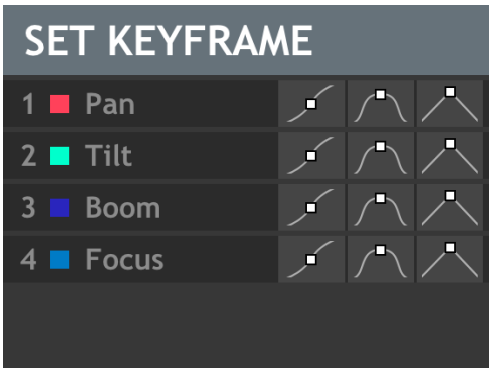
2. Press and to jog the motor for the selected axis. Press and hold to move more quickly.

Setting a Keyframe with the Jogpad

1. Press **ENTER** to set a keyframe. The Frame Number dialog appears.

2. Press **ENTER** to set a keyframe at the current frame number.

   Or, enter a new frame number. Then press **ENTER**. The Set Keyframe dialog appears:



3. Enter the axis number to select an axis. Dragonframe highlights the smooth keyframe style for that axis.

4. (Optional) Keep pressing the axis number to toggle through the keyframe styles for that axis, and then to unselect the axis.

5. (Optional) Press the axis numbers for any other axes to add keyframes for them.

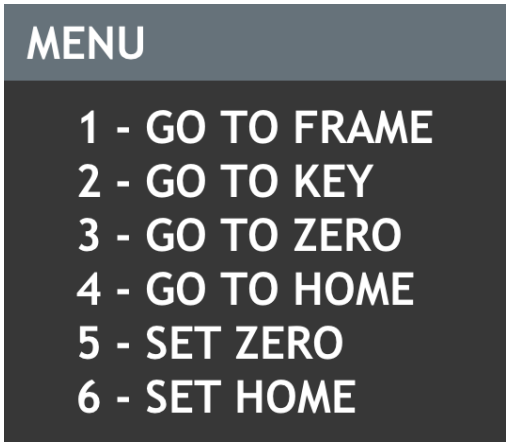
6. (Optional) Press **9** to view the next axis group.

7. Press **ENTER** when you've added all the keyframes you need for that frame. Dragonframe adds the keyframes you selected and displays them in the keyframe list.

Setting Zero or Home with the Jogpad

Use the Jogpad's menu button to set a zero or home point.

1. Move the motors to the point you want to set for zero or home.
2. Press **PLAY** to open the jogpad's menu. The menu appears:

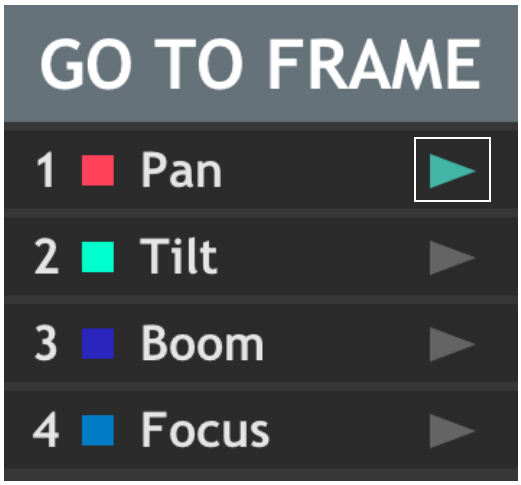


3. Press **5** to set the zero point; press **6** to set the home point.

NOTE: Press **ENTER** to close the menu without selecting anything.

Going to a Frame with the Jogpad

1. Press **PLAY** to open the Jogpad menu.
2. Press **1** to go to a frame number. The frame dialog opens.
3. Enter the frame number you want to go to and press **ENTER**.
4. Dragonframe opens the Go to Frame dialog:



The Go to Frame dialog. Here Dragonframe has already moved the motor for the **PAN** *axis to the correct position.*

5. Enter the frame number for the axis you want to move. You can enter more than one.

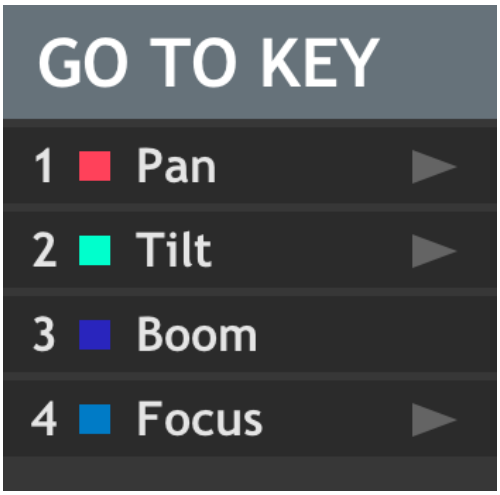
6. Dragonframe moves the motors for the axes you chose to the frame number you selected. When Dragonframe has moved the axis, the arrow next to the axis turns green, as shown above for **PAN**.

Going to a Keyframe with the Jogpad

1. Press **.** (period) to move to the keyframe you want to select.

2. Press **PLAY** to open the Jogpad menu.

3. Press **2** to move the motor to the keyframe you selected. Dragonframe opens the Go to Key dialog:



4. Press the number of the axis you want to move. You can enter more than one. Here, the **BOOM** axis does not have an arrow next to it because the axis is already at the keyframe's position.

Dragonframe moves the motors for the axes you selected.

5. Press **ENTER** when you're finished moving the motors.

Go to the Home Point or Zero Point with the Jogpad

1. Press **PLAY** to open the Jogpad menu.

2. Press **3** to go to the zero point, OR

   Press **4** to go to the home point.

Dragonframe moves the motors to the point you selected.

Stopping the Motors with the Jogpad

Press **/** (slash) , ***** (asterisk) or **BS** (backspace) to stop the motors.

Using External Motion Control Systems with Dragonframe

If you do not want to use the Arc motion control interface within Dragonframe, you can use external motion control systems instead. Choose an option that fits your equipment and your needs.

Two-Way Control with Arduino

Arduino (http://arduino.cc/) is a hobby electronics board with open-source software and hardware specifications. With some simple wiring and pre-made software, you can wire the Arduino to control Dragonframe, or to control an external system based on events from Dragonframe.

Find a Dragonframe library for Arduino, sample code, and instructions: http://www.dragonframe.com/arduino

3D (Stereo) Shooting

You can configure the Arduino to trigger a stereo camera head mover, such as the Mark Roberts S3 Stereoscopic 3D Stepper: http://www.mrmoco.com/Newsletter/motioncontrolnews190609.htm

See also:
"Shooting in 3D" on page 251.

Using DDMX-S2 to Trigger Motion Control

If you have a motion control system that controls the camera position, but want Dragonframe to take care of shooting, use the DDMX-S2 box to coordinate both events. You will shoot a frame in Dragonframe, and then have Dragonframe trigger the motion control system to move to the next position.

To set up shoot-move-shoot with the DDMX-S2, connect the DDMX-S2 and use the relay or logic output to trigger the motion control system after **CAPTURE COMPLETE**.

Dragonframe controls the camera, but the motion control system controls the position of the camera.

NOTE: With this mode, you cannot do go-motion (blur) effects. For go-motion with an external motion control system, you can have Kuper control Dragon, or you can set up triggers with the DDMX-S2.

See also:
"Connecting DMX to Dragonframe" on page 189.
"Adding a Switch/Relay Output Trigger" on page 210.
"Adding a Logic Output Trigger" on page 212.
"Kuper Controls Dragonframe", below.
"Using Go-Motion" on page 214.

Kuper Controls Dragonframe

Kuper is an industry-standard motion control system. Typically, it controls a film camera, but you can use the Dragonframe Electronic Shutter Control (DESC) to trigger a digital still camera.

The DESC is a piece of hardware that you can purchase directly from our site:
https://www.dragonframe.com/store/Dragon-Electronic-Shutter-Control.html

There are three different reasons you might use this integration:

- You prefer to control the shooting from Kuper.
- You need exact timing of the motion control move and the camera shutter release. For example, perhaps you are doing go-motion.
- You need exact timing of both the open and close of the shutter. For example, you may be doing special effects sequences at different speeds.

To have Kuper control Dragonframe you will need:

1. A Kuper motion control system.
2. The DESC or some other way of externally controlling the shutter.
3. A serial port connector to connect your computer to the DESC.
    - If your computer does not have a serial port, you will need a USB serial port adapter.
4. A wired remote trigger for your camera, which you will have to disassemble.

Configuring Kuper, DESC, and Dragonframe involves several steps, described in the sections that follow:

1. Make the connections between the hardware and your computer. See “Making Hardware Connections for Motion Control” on page 242.

2. Set up Dragonframe’s Capture Preferences. See “Setting Up Dragonframe’s Capture Preferences for Motion Control” on page 242.

3. Set up camera settings in Dragonframe’s Cinematography workspace. See “Configuring Camera Settings for Motion Control” on page 243.

4. Open Dragonframe’s Motion Control workspace to begin working with Kuper and the DESC. See “Connecting to the DESC through Dragonframe’s Connections Tab” on page 244.

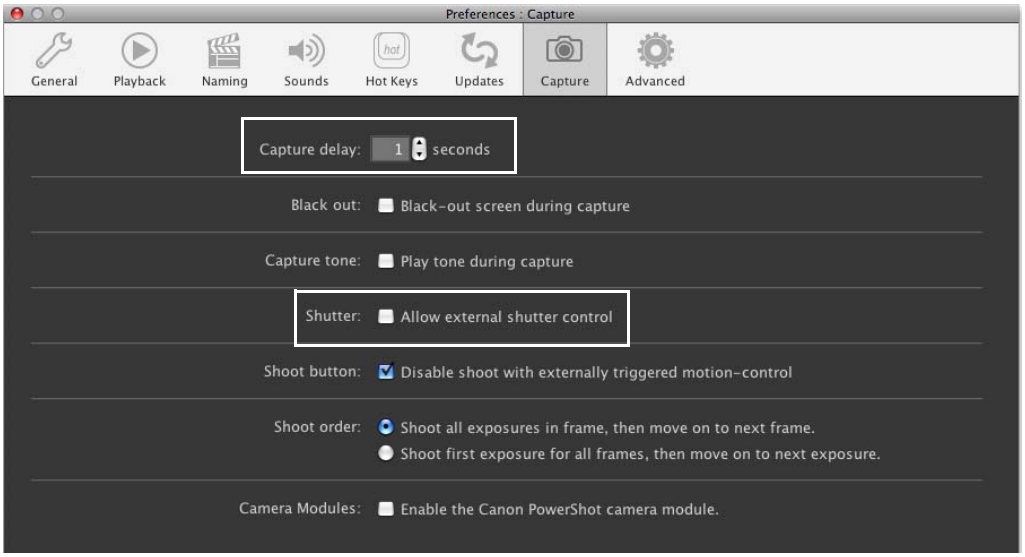
Making Hardware Connections for Motion Control

1. Connect the computer running Dragonframe to the DESC box via a serial port adapter.

2. If you are using an **EXTERNAL** or **EXTERNAL BULB** trigger method, connect your remote camera trigger to the DESC.

Setting Up Dragonframe’s Capture Preferences for Motion Control

1. In Dragonframe, click **FILE|PREFERENCES** and click **CAPTURE**.



Capture Preferences, with **CAPTURE DELAY** *and* **SHUTTER** *settings.*

2. Set **CAPTURE DELAY** to **0** seconds.

3. Check **ALLOW EXTERNAL SHUTTER CONTROL**. If you are already connected to your camera, press **CTRL R** to reset connections.

Configuring Camera Settings for Motion Control

1. Open Dragonframe's Cinematography workspace. You'll adjust settings in the Camera Control pane:

Dragonframe's Camera Control pane with **SHUTTER** *setting*

2. Set the shutter to **INTERNAL**, **EXTERNAL** or **EXTERNAL BULB**.

    - Use **INTERNAL** if you want the DESC to tell Dragonframe to **SHOOT** a frame, but not trigger the camera directly.
    - Use **EXTERNAL** if you want the DESC to only control when the shutter is released, but use the camera's pre-set shutter speed.
    - Use **EXTERNAL BULB** if you want the DESC to control the open and close of the shutter.

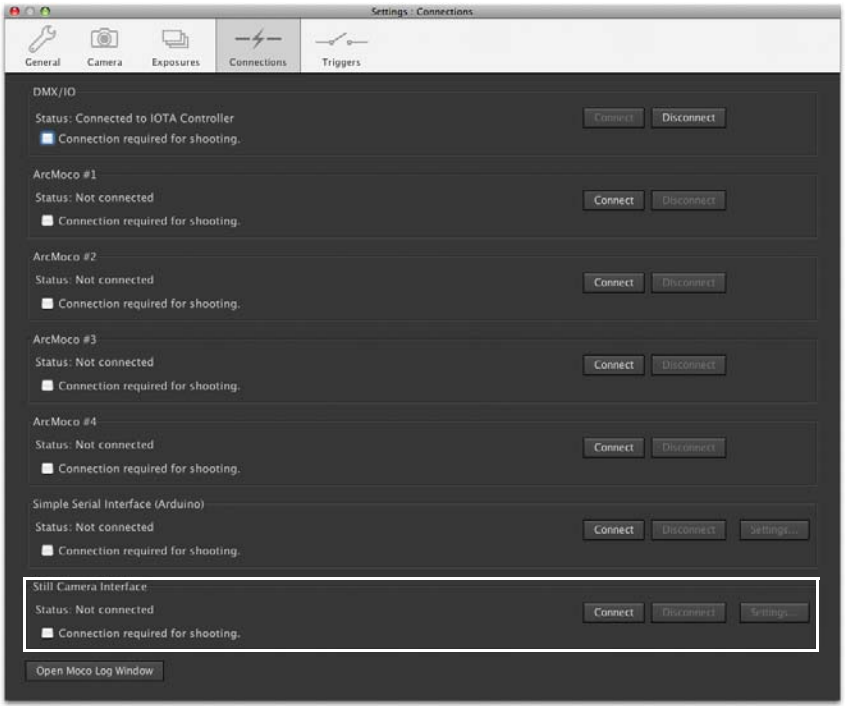
If you're going to shoot in **EXTERNAL BULB** mode, the setup is slightly different, depending on your camera.

- For the *Canon 5D Mark II*, set the Mode Dial to **<B>**, and ignore Dragonframe's warning.
- For the *Canon 1D Mark III*, set the camera to **BULB** mode by holding the Mode button while turning the main dial, until you see **BULB** in the top LCD.
- For *other Canon cameras without an explicit bulb mode*, Dragonframe will set the shutter speed to **BULB** automatically.

- For *Nikon cameras*, Dragonframe will set the shutter speed to **BULB** automatically.

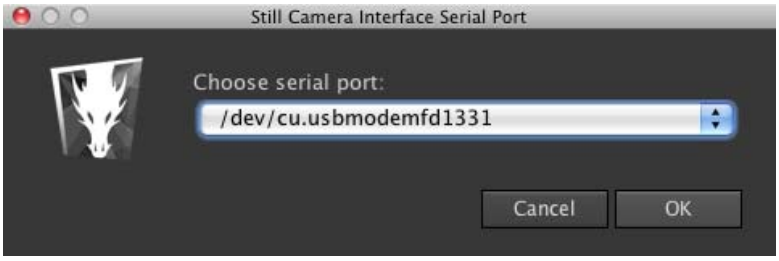
Connecting to the DESC through Dragonframe's Connections Tab

1. Click **SCENE|CONNECTIONS**. The Connections tab opens.



Settings dialog, Connections tab, Still Camera Interface settings.

2. Click **CONNECT** for the Still Camera Interface. The Still Camera Serial Port dialog appears.



3. Choose the serial port that is connected to the DESC box.

Dragonframe connects the device, then automatically checks the **CONNECTION REQUIRED FOR SHOOTING** check box. When this box is checked, you will not be able to capture any frames for the scene until Dragonframe is connected to the hardware.

CAUTION: If you uncheck the **CONNECTION REQUIRED FOR SHOOTING** box, you could accidentally shoot all or part of a scene without Kuper working.

The DESC box will send a pre-trigger **P1** message to Dragonframe, and Dragonframe will do the pre-capture: capturing the Live View and disconnecting from the camera.

If the setup described above doesn't work, it's probably because the DESC box isn't set up properly. See the DESC setup manual for setup instructions.

See also:
"Adding an Input Trigger" on page 209.

Creating Action Scripts

Dragonframe can call a local script file whenever certain events occur. This is a straightforward integration with many possibilities. For example, you could:

- Back up your high-resolution images whenever Dragonframe downloads a new image.
- Color-process your RAW files whenever Dragonframe downloads a new image.
- Notify a content management system whenever Dragonframe captures a frame.
- Instruct a motion control application to advance its position whenever Dragonframe moves to a new frame.

Dragonframe calls your script file for the following events:

- **SHOOT**: As soon as the user triggers a frame capture.
- **DELETE**: As soon as the user deletes an image.
- **POSITION FRAME**: When Dragonframe is ready to capture another frame or exposure.
- **CAPTURE COMPLETE**: When Dragonframe has downloaded a high-resolution image from your camera.
- **FRAME COMPLETE**: When an entire frame has been shot.

- **TEST**: When a test shot has been captured.
- **EDIT**: When the user has edited frames.
- **CONFORM**: When the user has conformed the take.

Your script file is a batch file (**.BAT**).

Find script examples at our website:
http://www.dragonframe.com/scripting.php

Adding Hand-Cranked Camera Moves

Dragonframe works with hand-cranked camera rigs to help you plan and execute camera moves. When you set up a camera move, Dragonframe gives you position information for each frame. You can export moves to other scenes.

See also:
"Importing Scene Settings" on page 140.

What Gear Do I Need to Use the Hand-Cranked Move Feature?

You can use one of three types of manually controlled rigs:

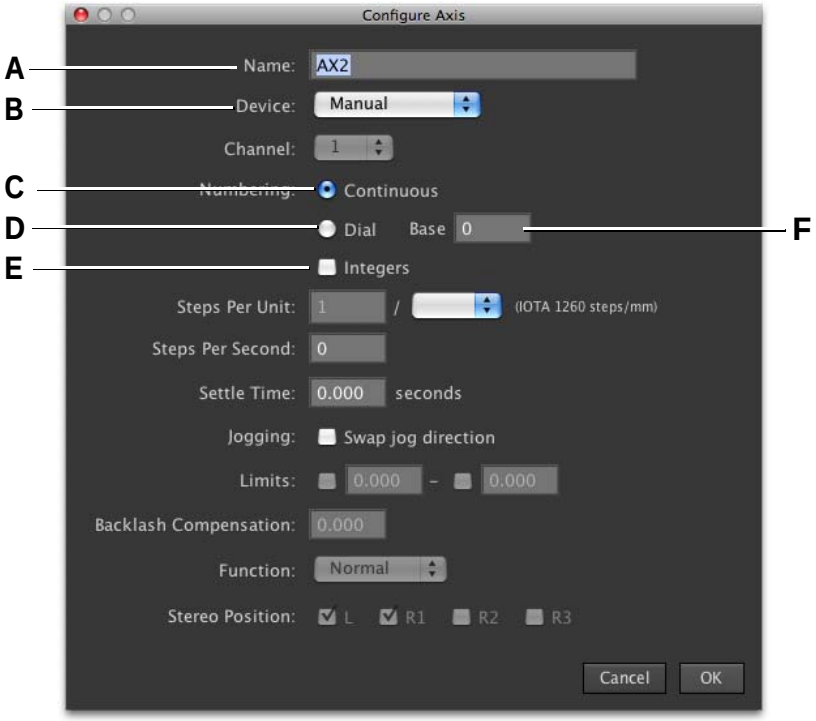
- A rig using a dial. Print a tape showing evenly spaced increments and tape it on the dial. Your dial must start on 1 (not 0) to work with Dragonframe.
- A rig using a counter that keeps track of increments.
- A millimeter ruler. Your camera should have a pointer on it that can align with the millimeters.

Programming a Basic Hand-Cranked Move

1. On your rig, note your start and end position, and the positions of any keyframes you'll use in-between.
    - For a rig with a dial, note the numbers on the dial, and the number of rotations you use to get to each position.
    - For a rig with a counter, note the counter positions.
    - For a ruler, note the millimeter measurement you'll use.
2. For a rig with a dial, note the total number of increments on the dial tape.

3. From Dragonframe, open the Arc Motion Control workspace.

4. Click (in the workspace tools). Dragonframe opens the Configure Axis dialogue:



A. *Name: Name the axis.*

B. *Device: Choose* **MANUAL** *for a hand-cranked rig.*

C. *Continuous: Use a counter or a millimeter ruler.*

D. *Dial: Use a dial.*

E. *Integers: Round move information to the nearest integer.*

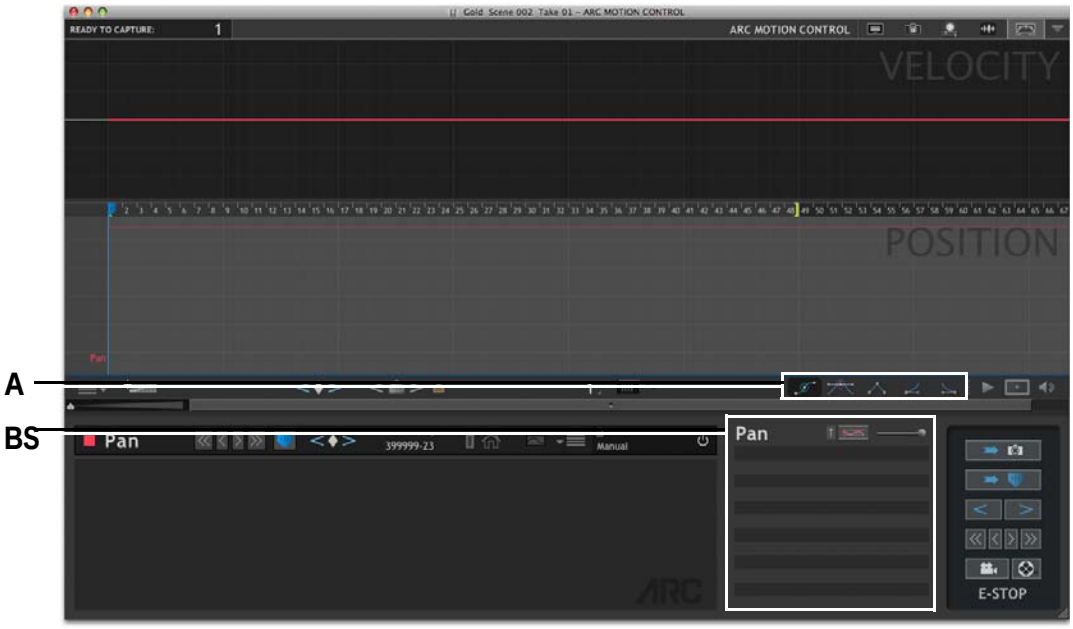
F. *Base: Enter the total number of increments.*

5. (Optional) Enter a name for the axis. For example, **PAN**.

6. Choose the type of numbering your rig uses:

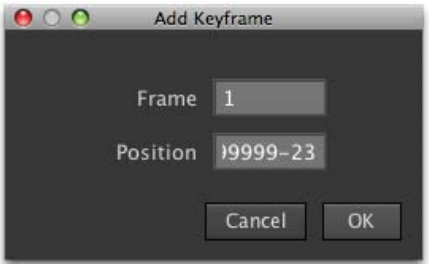
   - Select **CONTINUOUS** if you're using a counter or a millimeter ruler.
   - Select **DIAL** if you're using a dial. Then enter the total number of increments in the **BASE** field using the information that you found in step 2.
   - (Optional) Check **INTEGERS** to round all move information to the nearest integer. This makes it easier to decipher the position information.

7. Click **OK**. Dragonframe creates the axis for your move:



A. *Keyframe styles.* ***B.*** *Keyframe list.*

3. In the keyframe list, double click a row to add a keyframe. The keyframe dialog opens:



4. Enter the frame number for the first keyframe.

5. Enter the position for the first keyframe. For example, if you're using a dial and you want the first keyframe to start on 1, you'd enter **0-1**. If you wanted a keyframe to start on the third rotation of the dial, number 8, you'd enter **3-8**.

Dragonframe adds the keyframes to the axis as you create them.

6. (Optional) Select keyframes and use the bezier handles to adjust the ease-in or ease-out of the move. You can also change the keyframe style.

See also:
"Adding Keyframes" on page 226.

"X-Sheet Overview" on page 27.
"Using the X-Sheet" on page 169.

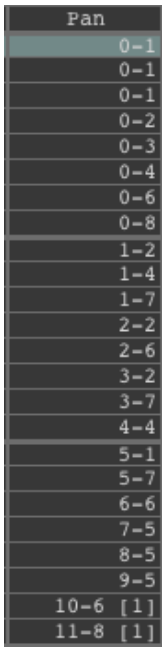
Understanding the Position Information for a Dial

In Dragonframe, a dial position is listed as a rotation count plus a dial increment in the format **ROTATION COUNT-INCREMENT**. When you add keyframes in Dragonframe, you enter those two values for each keyframe. In the image on the right, the first value (**0-1**) is a typical way a dial rig starts: the dial reads 1 and you have not rotated yet.

The second keyframe has a value of 11-8, meaning you've turned the dial eleven times, and ended with the dial reading eight.

In the final keyframe, you've rotated the dial 31 times, and ended on position five.

Once you set up the move, Dragonframe displays the move information for each frame in the X-Sheet. For example, a position of 1-5 would mean that you move the dial 1 revolution and rest it at increment 5. If the dial will move more than one full revolution from one move to the next, Dragonframe puts the number of revolutions inside brackets next to the position information.



For example, if you're using a dial with base eight, the move column for your X-Sheet might look like the image to the left:

The table below gives a further explanation of what those positions mean.

This position:	Means:
0-1	Set the dial to the first increment on the tape.
2-2	You've moved the dial two full revolutions since the beginning of the scene. Set the dial to the second increment.
7-5	You've moved the dial seven full rotations since the beginning of the scene. Set the dial to the fifth increment.

This position:	Means:
10-6 [1]	You've moved the dial ten full rotations since the beginning of the scene. Set the dial to the sixth increment. The last move was **9-5**, so in brackets, Dragonframe notes that you must turn the dial more than one full revolution to reach position **10-6**.
11-8 [1]	You've moved the dial eleven full revolutions since the beginning of the scene. Set the dial to the eighth increment. The last move was **10-6**, so in brackets, Dragonframe notes that you must turn the dial more than one full revolution to reach position **11-8**.

NOTE: The more increments your dial is broken into, the more flexibility you will have for short moves or longer eases.

Printing a Hard Copy of the Move

To print the move, click **FILE|PRINT**. This prints a copy of your scene's X-Sheet, with the moves for each frame.

See also:
"X-Sheet Overview" on page 27.
"Using the X-Sheet" on page 169.

Chapter 15: Shooting in 3D

The most common technique for 3D stereoscopic shooting of stop motion animation is to use one camera on a special left/right slider. For every frame of animation, the camera shoots an image for the left eye, moves into the right eye position, and shoots an image in that position.

Connect Dragonframe to a stereo slider, such as the IOTA, to seamlessly automate 3D shooting. This chapter describes how to connect and configure a slider, how multiple exposures allow you to capture left and right frames automatically, and how to review stereo images in the Cinematography workspace. It includes the following sections:

"Connecting to a 3D Slider" on page 251.
"Setting Up the 3D Slider" on page 253.
"Setting Up Exposures for 3D Shooting" on page 258.
"Using a Push-In Mask for 3D" on page 259.
"Reviewing 3D Images" on page 260.

See also:
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

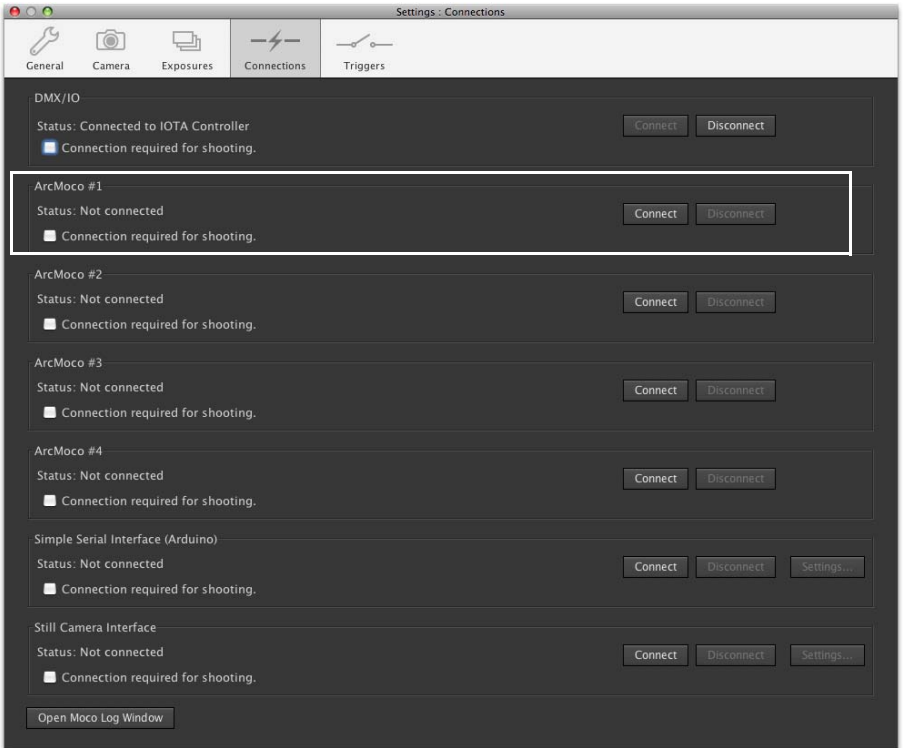
Connecting to a 3D Slider

Dragonframe has built-in support for connecting to the IOTA 3D Stereoscopic Slider or other stepper-controlled sliders via the IOTA Controller. Dragonframe also has built-in support for the Mark Roberts S3 Stereoscopic Stepper. This section and the one that follows describe this built-in support. For other 3D sliders, look at our Arduino integration (http://www.dragonframe.com/arduino) or our DDMX-S2 (http://www.dragonframe.com/dmx.php) for integration options.

To connect the IOTA:

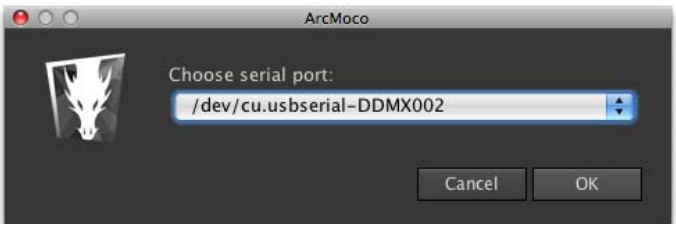
1. Connect the IOTA Controller to your computer with the USB cable.

2. In Dragonframe, select **SCENE|CONNECTIONS**. The Settings dialog appears, showing the Connections tab:



Settings dialog, Connections tab, Arc Moco #1 settings.

3. Under **ARCMOCO 1, 2, 3** or **4**, click **CONNECT**. An ArcMoco dialog appears:



4. Choose the serial port, then click **OK**.

NOTE: If the correct serial port doesn't appear in the dialog, look for it in your PC's Device Manager.

Dragonframe connects the device, then automatically checks the **CONNECTION REQUIRED FOR SHOOTING** check box. When this box is checked, you will not be able to capture frames for the scene until Dragonframe is connected to the hardware.

CAUTION: If you uncheck the **CONNECTION REQUIRED FOR SHOOTING** box, you could accidentally shoot all or part of a scene without your 3D slider working.

See also:
Arduino integration at http://www.dragonframe.com/arduino

Setting Up the 3D Slider

Once you have connected to the slider, you will configure the slider, and set interocular distances from the Arc Motion Control workspace. You can also use Arc to animate the interocular distances.

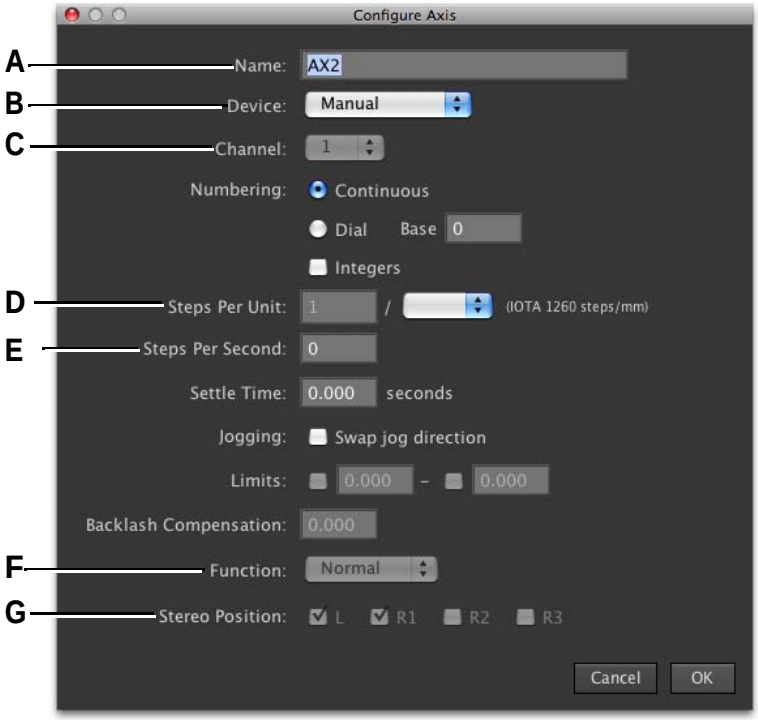
See also:
"Arc Motion Control Workspace Map" on page 222.
"Using the Arc Motion Control Workspace" on page 217.

Configuring the Slider

To configure the slider:

1. Click to open the Arc Motion Control workspace.

2. Click to add an axis. The configure axis dialog appears. Many of the options in the dialog are specific only to motion control, so only the options for 3D are described below:



A. *Name: Name the axis.*

B. *Device: Choose the device you're using. For a slider, it would be Arc Moco 1-4. You would have selected it in "Connecting to a 3D Slider" on page 251.*

C. *Channel: Select the channel you're using for the axis. You would have noted this in "Connecting to a 3D Slider" on page 251.*

D. *Steps Per Unit: Enter the number of steps per mm/cm/m/ft/in/degrees. The IOTA has 1260 steps/mm.*

E. *Steps Per Second: The maximum speed of the device, specific to the motor you're using.* ***Start the speed slowly at first for safety.*** *Set the IOTA's between 6000-8000.*

F. *Function: Choose whether you're creating regular moco moves, setting up a 3D slider, or a focus move.*

G. *Stereo Position: Add an* **R2** *and* **R3** *to create a bracketed IO or a center frame.*

3. Name the axis (A.).

4. Select the device (B.) and channel (C.) you set up in "Connecting to a 3D Slider" on page 251.

5. Set the steps per unit (D.). The IOTA takes 1260 steps per mm.

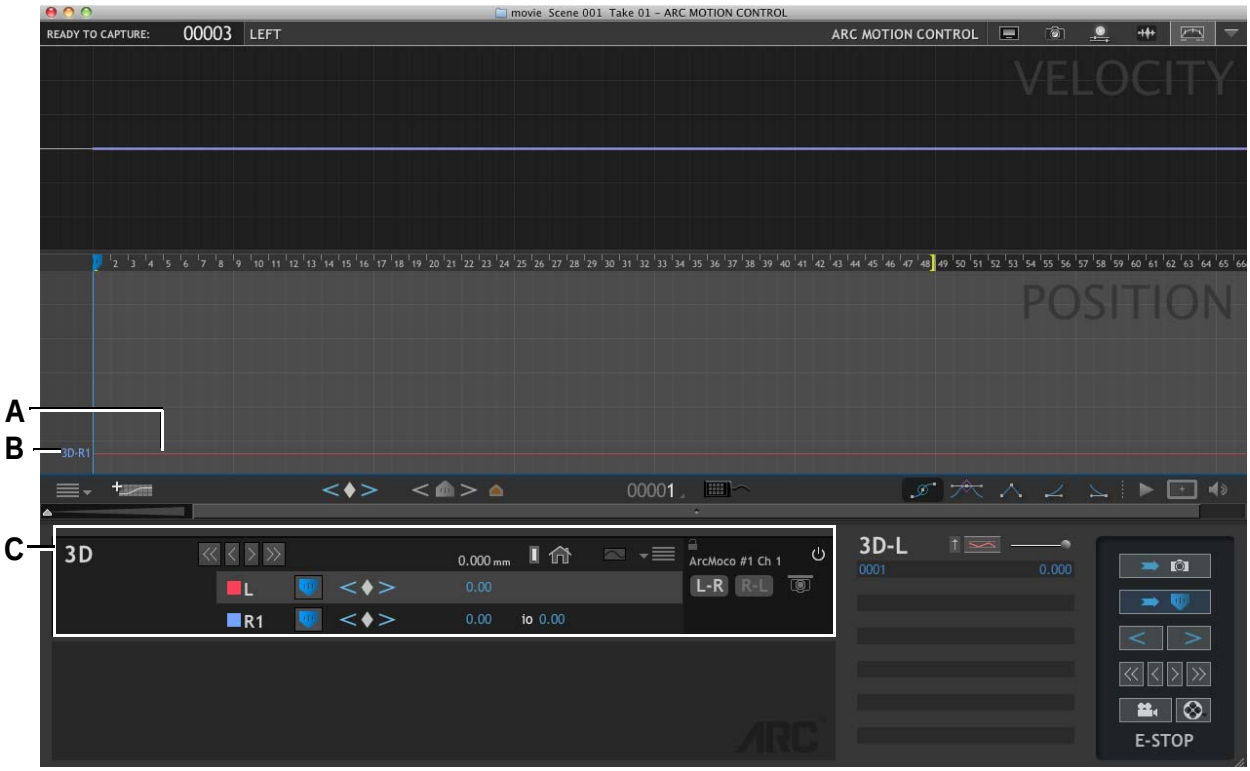
6. Set the steps per second (E.) Set the IOTA between 6000-8000.

WARNING: Start the steps per second slowly at first to make sure the rig moves safely.

7. Set the function to **3D**.

8. (Optional) Check **R2** and **R3** to add up to two additional IOs for a bracketed IO or a center frame. You can assign any of these positions to separate exposures.

9. Click **OK**. Dragonframe adds your axis to the Arc workspace:



A. *Motor's current position (red line).* ***B.*** *Right position (blue) in the position graph. The left position is directly under it because no keyframes have been added yet.* ***C.*** *Axis list with tools for 3D setup.*

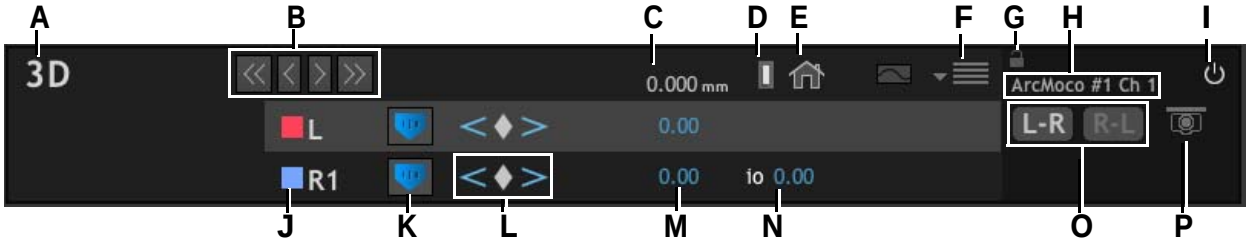
See also:

"Setting Up Exposures for 3D Shooting" on page 258.

"Adding an Axis" on page 223.

Setting the Slider's Interocular Distances

Once you've added your axis, you can set up the slider's interocular distances. The axis you configured appears in the axis list, with both of the eye positions listed:



A. *Axis Name: Click to configure the axis.*

B. *Jog/Inch buttons. Move the slider.*

C. *Motor Position: Click to go to a position.*

D. *Zero: Send the axis to zero.*

E. *Home: Send the axis to the home position.*

F. *Menu: Set zero, home, and limits, or clear the axis.*

G. *Lock: Lock the axis for editing.*

H. *Device and channel name.*

I. *Disable: Disable the axis without deleting it.*

J. *Graph Color: Change the color of axis on the graphs.*

K. *Playhead: Click to send the axis to the playhead.*

L. *Keyframe buttons: Click the diamond to define the left and right positions (keyframes). Click < or > to move through keyframes.*

M. *R1 position: Shows the current R1 position.*

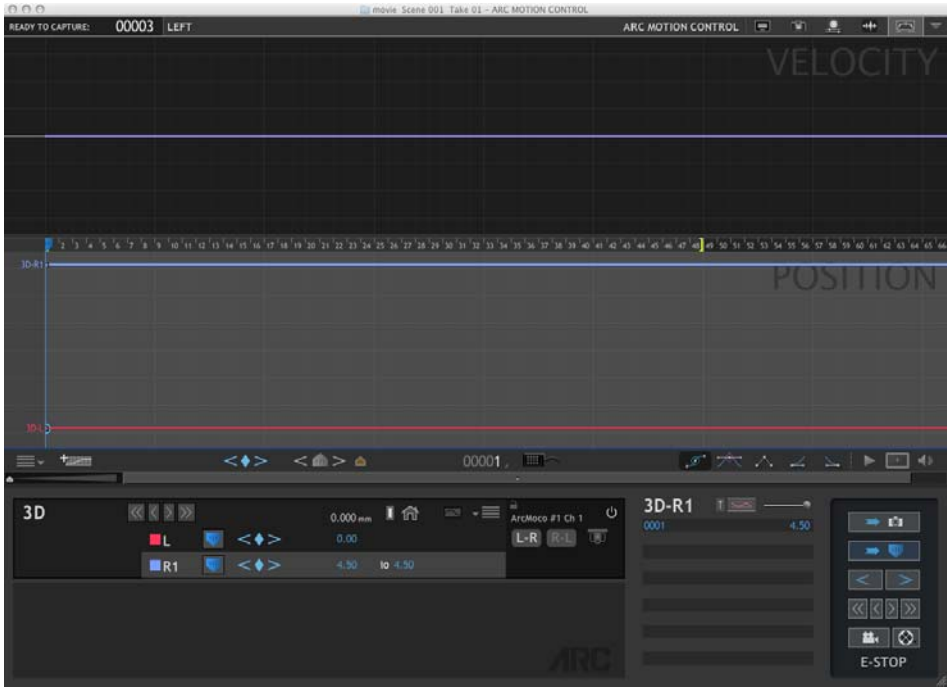
N. *IO distance: Shows the current IO. Click to edit.*

O. *L-R/R-L: Choose whether to be left-dominant or right-dominant. Left-dominant is the default.*

P. *Underslung: Click to indicate that your camera is underslung.*

1. (Optional) Click to indicate the camera is underslung.
2. (Optional) Click to turn on Live View so you can see how moving the slider affects the shot.
3. Press the jog buttons (B.) to move to the zero point for your device.
4. From the menu (F.) click **SET ZERO**.
5. Press the jog buttons (B.) to move to the primary eye position.
6. Click the diamond keyframe button (L.) to set the primary eye position.
7. Click the IO for the secondary eye position (N.), and enter the interocular distance. Click **OK**.
8. (Optional) Repeat step 7. to create IOs for any additional eye positions you enabled when you configured the slider.

Once you're done setting up the positions, the workspace will look something like this:



NOTE: You can also set up and refine eye positions from the Cinematography window.

See also:

"Refining 3D Settings from the Cinematography Workspace" on page 261.

"Configuring the Slider" on page 253.

"Setting the Zero Point and Going to the Zero Point" on page 225.

"Jogging and Inching your Motors" on page 225.

"Setting the Limits for the Axis" on page 226.

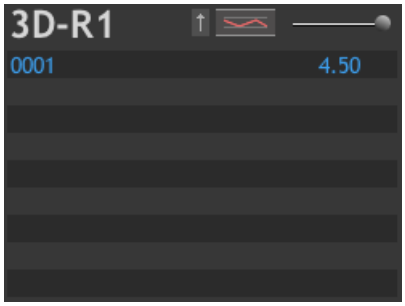
"Adding Keyframes" on page 226.

Creating an Animated IO

Your primary and secondary positions can be static or they can be animated throughout the scene. Generally, you will leave your primary eye at one position, and animate just the secondary eye.

To animate the secondary eye (in this example, **R1**):

1. Click **R1** to select that sub-axis in the axis list:



Keyframe list for **R1**.

2. In the keyframe list, double-click an open area.

3. Enter a frame number and IO position for a second keyframe and click **OK**.

4. In the position graph, adjust the keyframe handles to shape the move.

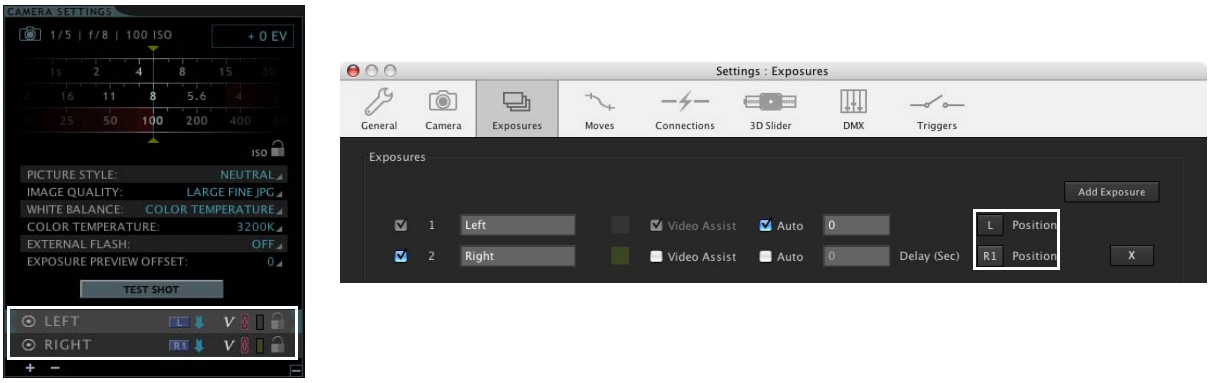
See also:
"Adding Keyframes" on page 226.

Setting Up Exposures for 3D Shooting

Now that you've configured your stereo positions, you can assign them to exposures, enabling Dragonframe to move your slider automatically. Use Dragonframe's multiple exposure feature to set up left and right "sub-frames". This way, Dragonframe will shoot multiple images per frame. In addition, you can name the exposures to identify if they are left or right eye images, making it easy to work with the files in post-production.

Set up multiple exposures from the menu (**SETTINGS|EXPOSURES**), or the Camera Control pane in the Cinematography workspace. From each

location, you can indicate whether the exposure will capture the frame for the dominant eye, or one of the interocular distances:



Exposure dialog and the Cinematography workspace's Camera Control pane with stereo positions set.

NOTE: Setting up exposures from the Cinematography workspace gives you the ability to link the stereo pairs together. Linking exposures makes their settings the same. Anytime you update the settings for the L exposure, for example, the R exposure would update as well.

NOTE: When you set up exposures for 3D shooting, make sure to set each exposure to capture automatically. For more information, see "Manual vs. Automatic Captures from the Cinematography Workspace" on page 84. and "Manual vs. Automatic Captures from the Menu" on page 89.

See also:
3D Stereo Shooting on our website:
http://www.dragonframe.com/stereo.php
"Multiple Passes and Exposures" on page 80.
"Linking Exposures in the Cinematography Workspace" on page 83.
"Passes, Takes and Exposures Explained" on page 10.

Using a Push-In Mask for 3D

We highly recommend shooting 3D with a push-in mask. By composing your scenes with space on the left and right of the image, you will have room to slide the stereo layers in post. Sliding the stereo layers will give you more control of your 3D depth.

See also:
"Pushing In the Broadcast-Safe Overlay and Aspect Ratio Mask" on page 66.

Reviewing 3D Images

There are a few ways to review 3D images.

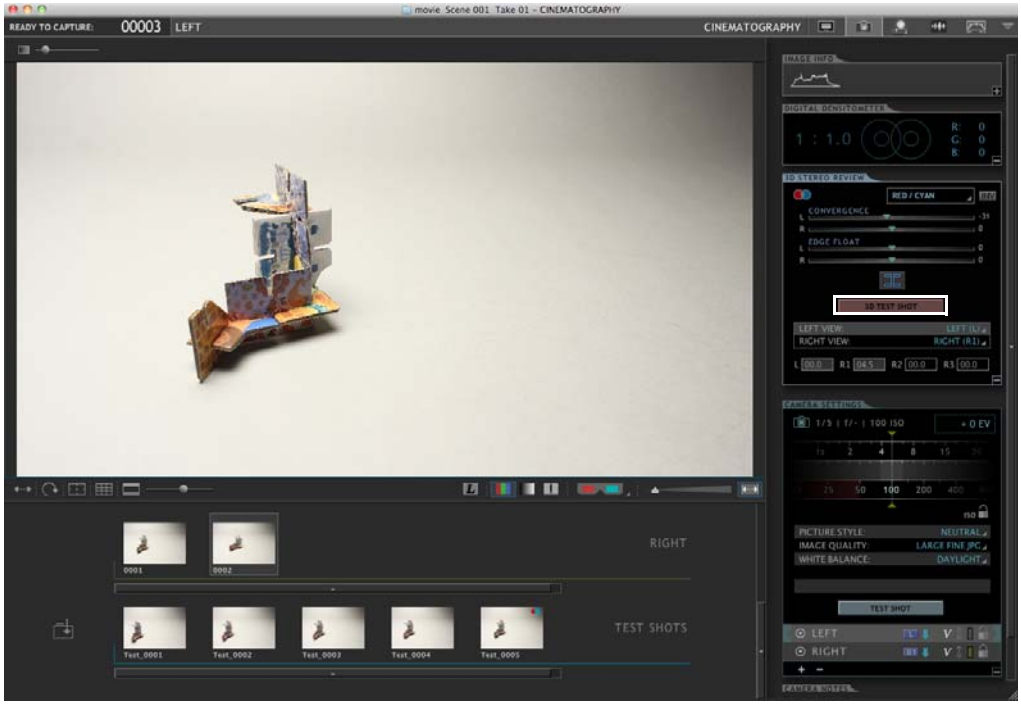
- Review 3D test shots in the Cinematography workspace,
- View anaglyph or transparency stills in the Cinematography workspace,
- Play back 3D sequences in the Animation workspace, and
- Export 3D sequences to QuickTime.

As you use these methods to review your work, Dragonframe also provides a variety of tools to help you refine 3D settings.

Taking 3D Test Shots and 3D Images

Once you have set up a stereo slider, created left and right exposures, and assigned stereo positions to them, you can take 3D test shots or 3D images.

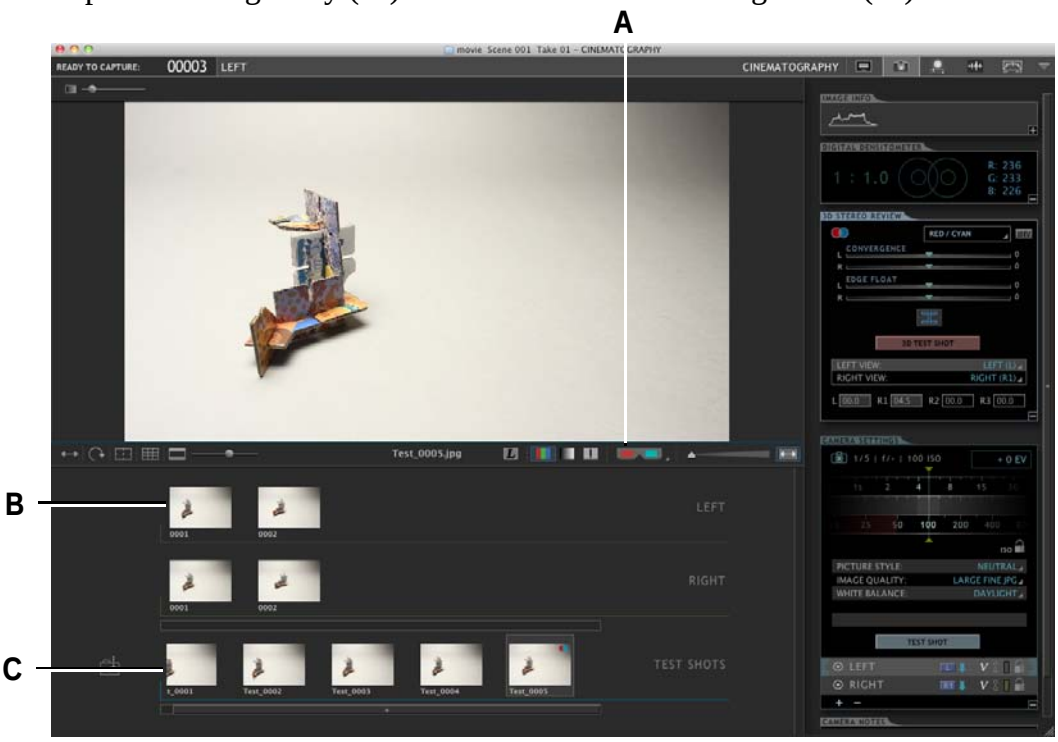
- To take a 3D image, press **SHOOT** as you normally would.
- To take a test shot, maximize the 3D Stereo Review pane, and click the **3D TEST SHOT** button.



3D Test Shot button.

Reviewing 3D Images and Test Shots

To review 3D images, select an image from the Test Shot tray (C.) or the Exposure Image tray (B.). Then select a 3D viewing mode (A.)



A. *3D Viewing Modes. Click to activate the current viewing modes Click the arrow to select a viewing mode, including* **COLOR ANAGLYPH**, **BLACK AND WHITE ANAGLYPH, COLOR TRANSPARENCY,** *or* **BLACK AND WHITE TRANSPARENCY**.

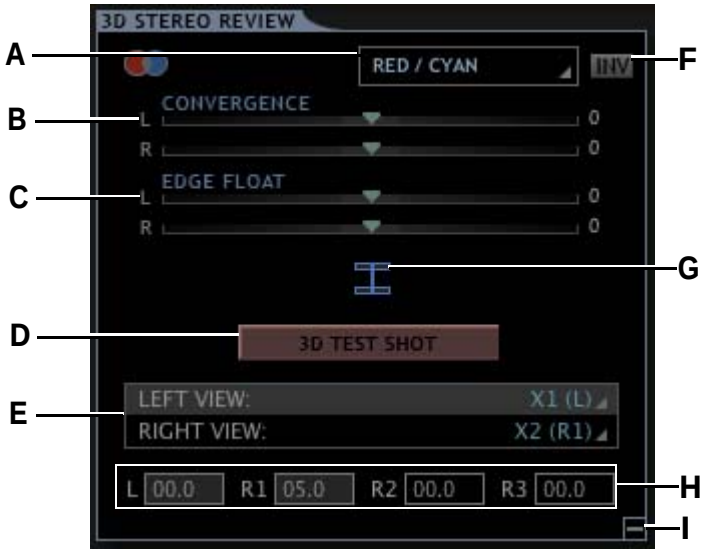
B. *Click an exposure to view it. Left and right pairs appear in the corresponding exposure tray—here, they're labeled* **LEFT** *and* **RIGHT**.

C. *Click a test shot to view it. Stereo pairs appear with a stereo icon on them.*

Refining 3D Settings from the Cinematography Workspace

You can adjust 3D settings, such as anaglyph colors, convergence, screen edge, right and left exposures, and interocular values from the

3D Stereo Review pane. To view the pane, maximize it in on the left side of the Cinematography workspace:



A. *Anaglyph color: Change the colors used to make anaglyphs from Red/Cyan to Green/Magenta.*

B. *Convergence: Adjust convergence for horizontal alignment of your left and right views.*

C. *Edge float: Adjust the left and right screen edges in 3D space.*

D. *3D Test Shot: Take a 3D test shot.*

E. *Exposures: Change which exposures are used for the left and right views.*

F. *Inv: Invert the colors used for the anaglyph, for example, if you mirror the image.*

G. *Calipers: Click to open measurement calipers over the View pane.*

H. *IO Values: Change the interocular values for the left and right positions.*

I. *Minimize the 3D Stereo Review pane.*

NOTE: With the exception of the IO adjustments, (H.) the settings in the 3D stereo review pane are for preview only. They do not effect your saved image sequences.

Using an Edge Float

New to recent 3D movies is a technique called a “dynamic floating window.” In this technique, the screen edges (window) are treated as 3D elements along with the movie within. By floating the screen edges in front or behind the actual projection plane, you can solve some 3D issues like edge violations.

Dragonframe includes a basic edge floating system as a 3D previewing tool (C.). The edge float sliders can be set to either make the screen edges float above or behind your projection plane or computer screen.

Stereo Calipers

Use the stereo calipers to measure stereo offset.

The stereo calipers can be used to measure pixel offset in stereo pairs. They can help you determine proper interocular settings.

In addition, the calipers can help you make quick decisions about lensing and staging without the need to preview every shot on the big screen in full 3D.

You can set the calipers to measure pixel distances based on your final export size, projection size or post-production size, such as 4K, 2K and HD. This way, even if you are shooting 5000 pixel raw files, you can still communicate clearly with your post production team about intended stereo offsets.

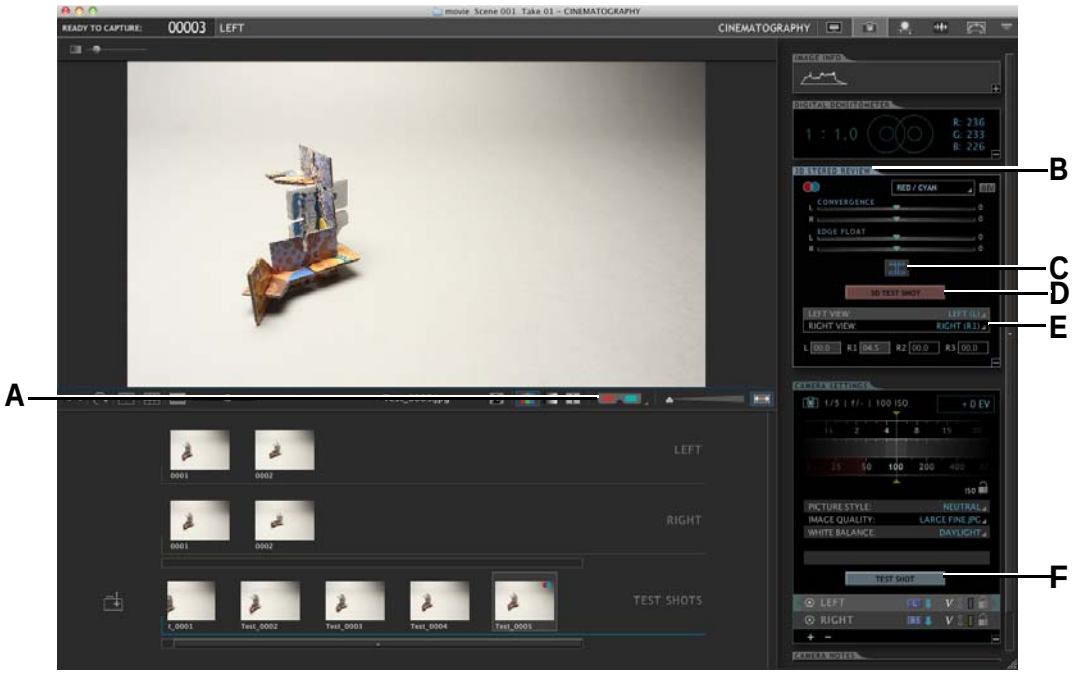
To use the calipers:

1. Shoot a stereo frame, test shot or scene in Dragonframe.

2. (Optional) Set a push-in mask.

NOTE: We highly recommend shooting 3D with a push-in mask. By composing your scenes with space on the left and right of the image, you will have room to slide the stereo layers in post. Sliding the stereo layers will give you more control of your 3D depth.

3. Open the Cinematography workspace and maximize the 3D Stereo Review pane if it's minimized:



A. *Stereo viewing modes. Click to turn on the current mode. Click the arrow to select a mode: anaglyph or transparency in color or black and white.*

B. *3D Stereo Review pane. Refine stereo settings.*

C. *Calipers button. Click to view the calipers.*

D. *3D Test shot. Take a 3D test shot.*

E. *3D Exposure. Select which exposures to use for the left and right views.*

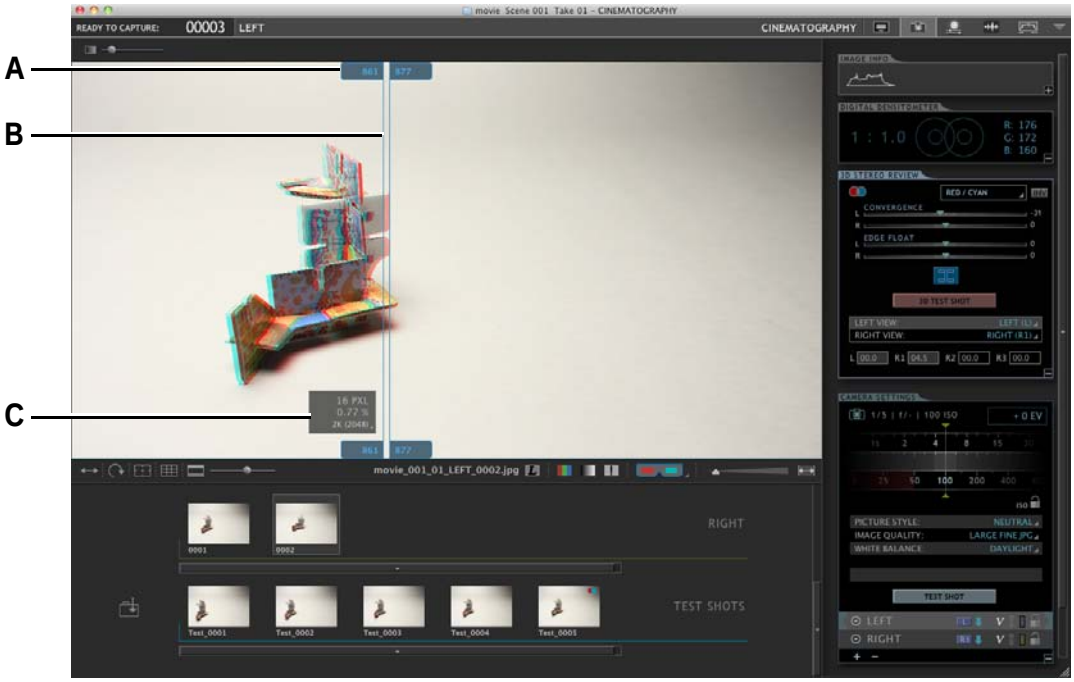
F. *Test shot. Take a test shot.*

4. Set the left and right exposure you wish to preview in the 3D Stereo Review pane (E.).

5. Select a stereo viewing mode (A.). The anaglyph or transparency appears in the View pane.

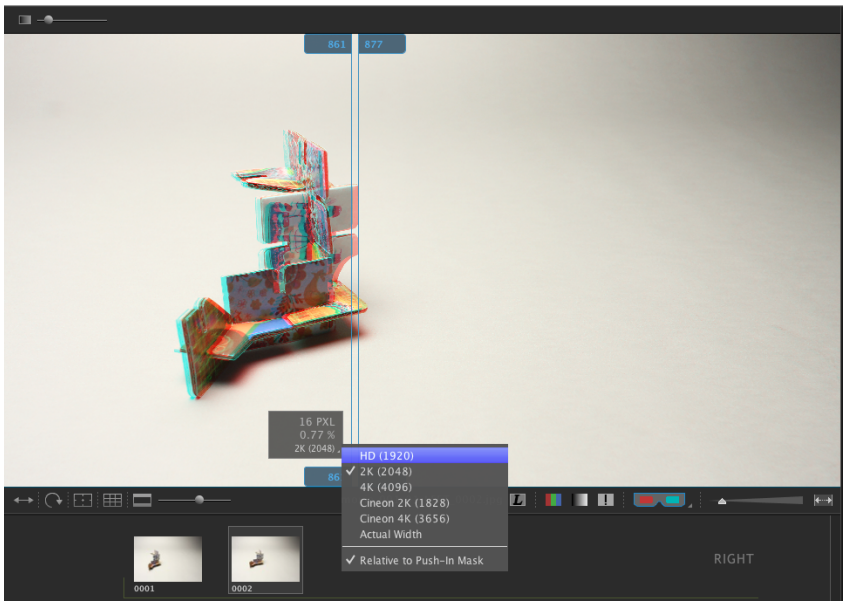
6. Click the calipers button (C.).

The calipers appear in the View pane.



A. *Caliper handles.* ***B.*** *Calipers.* ***C.*** *Calipers info box.*

4. Click the arrow in the calipers info box to select the intended final width of your image:



5. Grab the handles (A.) at the top or bottom of the calipers to take a measurement.

See also:
"Working with Test Shots" on page 68.
"Multiple Passes and Exposures" on page 80.
"Passes, Takes and Exposures Explained" on page 10.
"Pushing In the Broadcast-Safe Overlay and Aspect Ratio Mask" on page 66.

Basic Stereo Caliper Theory

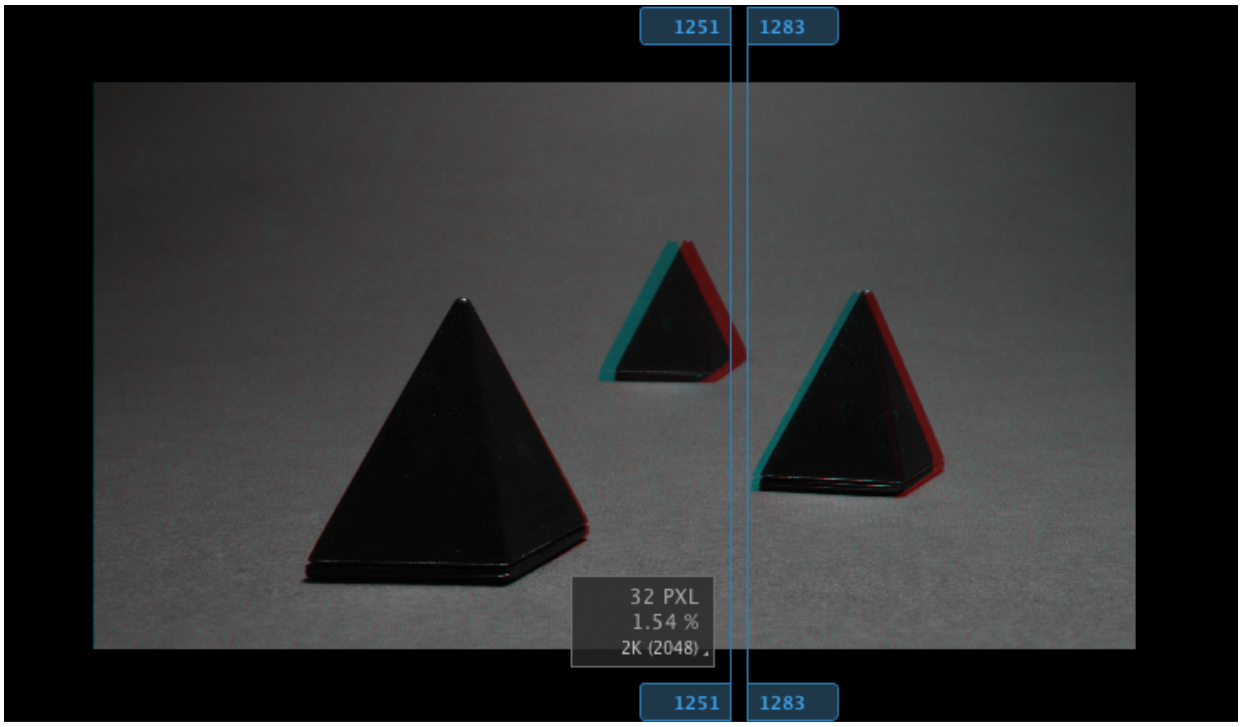
A 3D image will often have elements of the image that appear at the screen level, behind the screen and in front of the screen in 3D space.

Elements that appear at the screen plane in 3D will be aligned horizontally. The left and right image will appear to match up or align. You can use Dragonframe's convergence sliders to visually align what you want appear at screen level in 3D space.

The elements in front or behind the screen plane will appear to be offset from their left or right counterpart. It is this offset that causes the illusion of 3D.

Based on the intended viewing size of your final work, you will find there is a limit to the amount of 3D offset you want to produce. There are physical and creative considerations. Through experience, you will want to understand the effect of the overall stereo offset: from the clos-

est to the farthest object in 3D space. You will also want to judge how much offset is acceptable behind and in front off the screen plane.



Calipers measuring stereo offset for object in 3D space.

Using the stereo calipers can help you and your team keep track of your stereo offset and reduce the amount of big-screen testing and review you need.

By setting an intended compositing size or projection size in the 3D Stereo Review pane, the camera team, post-production team and 3D supervisor can all talk in the same increments, saving time and confusion.

Playing Back Stereo Sequences in Dragonframe

To play back footage in 3D:

1. In the Cinematography workspace, choose which exposures are used for the left and right eye using the 3D Stereo Review pane.
2. Refine any other 3D settings needed in the 3D Stereo Review pane.
3. Open the Animation workspace.
4. Click **PLAYBACK**, and then select a 3D playback mode.

Now Dragonframe will play both exposures in the Animation workspace using the normal playback controls. Any adjustments you make in the 3D Stereo Review pane will be reflected in the Animation workspace's playback.

See also:
"Passes, Takes and Exposures Explained" on page 10.
"Multiple Passes and Exposures" on page 80.
"Setting Up Exposures for 3D Shooting" on page 258.
"Refining 3D Settings from the Cinematography Workspace" on page 261.

Exporting Stereo Sequences to QuickTime

Export your 3D sequence to QuickTime to preview your frames, or as a simple way to produce your project. To export your image sequence, select **FILE|EXPORT STEREO (3D) QUICKTIME**.

See also:
"Creating a QuickTime Movie from a Stereo Image Sequence" on page 276.

Chapter 16: Exporting Your Take

There are a variety of ways to access your Dragonframe project. We designed Dragonframe to give you direct access to your images.

CAUTION: All frame editing is virtual. That is, once you make any edits, including deletes and cutbacks, you will need to conform your take if you want the files on disk to have frame order numbering on them.

To export your take, you can do one of the following after conforming your edits:

- Access your files directly. Dragonframe always saves images directly from your camera (for still cameras). *Conform your edits before you access image files.*
- Import Dragonframe source files as an image sequence into another program, such as AfterEffects. *Conform your edits before you import an image sequence from Dragonframe.*
- Export a QuickTime movie or QuickTime reference movie for import into another program, such as Final Cut Pro. You do not need to conform edits before exporting a QuickTime.
- Or, export a frame sequence, including DNG files. You do not need to conform edits before export a frame sequence.

This chapter contains the following sections:

"Finding Your Source Files" on page 270.
"Creating a QuickTime Movie of Your Take" on page 274.
"Creating a QuickTime Movie from a Stereo Image Sequence" on page 276.
"Exporting Image Sequences" on page 279.

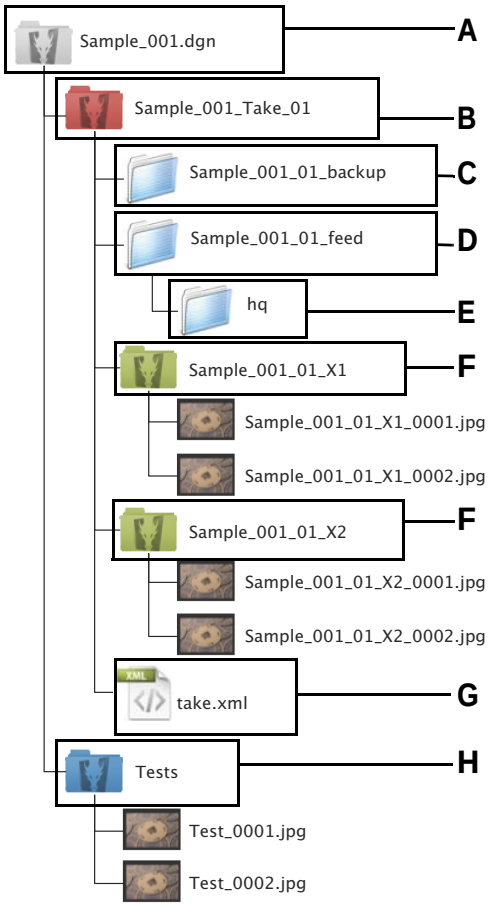
See also:
"Conforming Timeline Edits" on page 129.
"Exporting a Track Reading Preview" on page 166.
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Finding Your Source Files

With Dragonframe, you can always directly access your source files. Import those files within post-production software, such as AfterEffects.

CAUTION: All frame editing is virtual. That is, once you make any edits, including deletes and cutbacks, you will need to conform your take if you want the files on disk to have frame order numbering on them.

To keep your files organized, Dragonframe creates a file hierarchy automatically as you create new scenes and takes. The capture files and the video assist files are always stored in the same place within the hierarchy. Learning Dragonframe's organizational system will help you to get access to those files anytime.



A. *The Scene folder.*

B. *The Take folder.*

C. *The Backup folder contains any capture or feed frames you've deleted.*

D. *The Feed folder contains video assist frames, stored as JPEGs. Multiple exposures are stored together.*

E. *The HQ folder contains proxies of the high-res images for playback.*

F. *The Exposure folders. These are your high-res images.*

G. **TAKE.XML** *contains the meta data for the take. (You can use this file to set up a "template" for new scenes.) This is all the information about your take besides media files (images and audio).*

H. *The Test Shots folder contains any test shots you took in the Cinematography workspace.*

See also:

"Conforming Timeline Edits" on page 129.

"Delete Key" on page 96.

"Passes, Takes and Exposures Explained" on page 10.

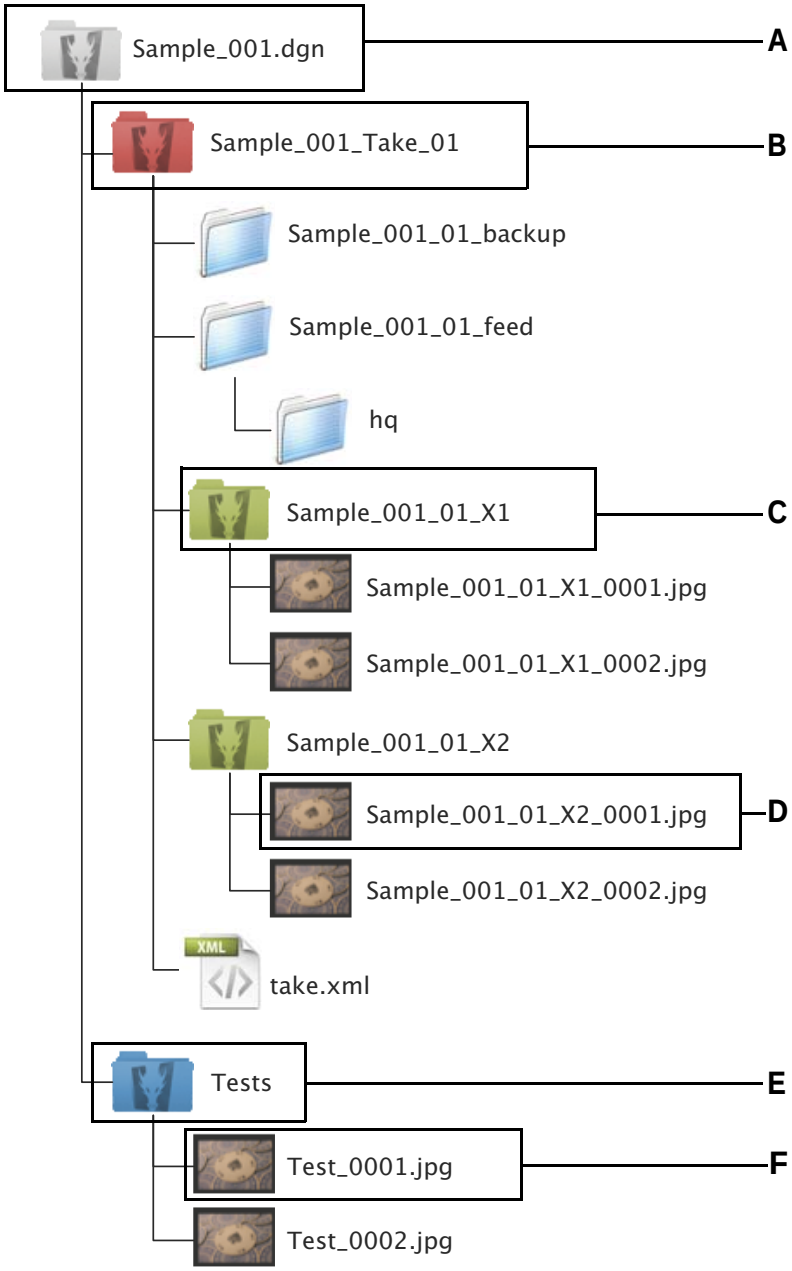
"Using a Scene Template" on page 140.

"Advanced Preferences" on page 289.

"Working with Test Shots" on page 68.

The next pages show a file hierarchy, depending whether you choose the default file names (Production + Scene) or the shorter file names (Scene only). Choose the naming convention from Naming Preferences.

File Hierarchy Map, long



A. *Scene Folder: Production_Scene.dgn*

B. *Take Folder: Prod_Scene_Take*

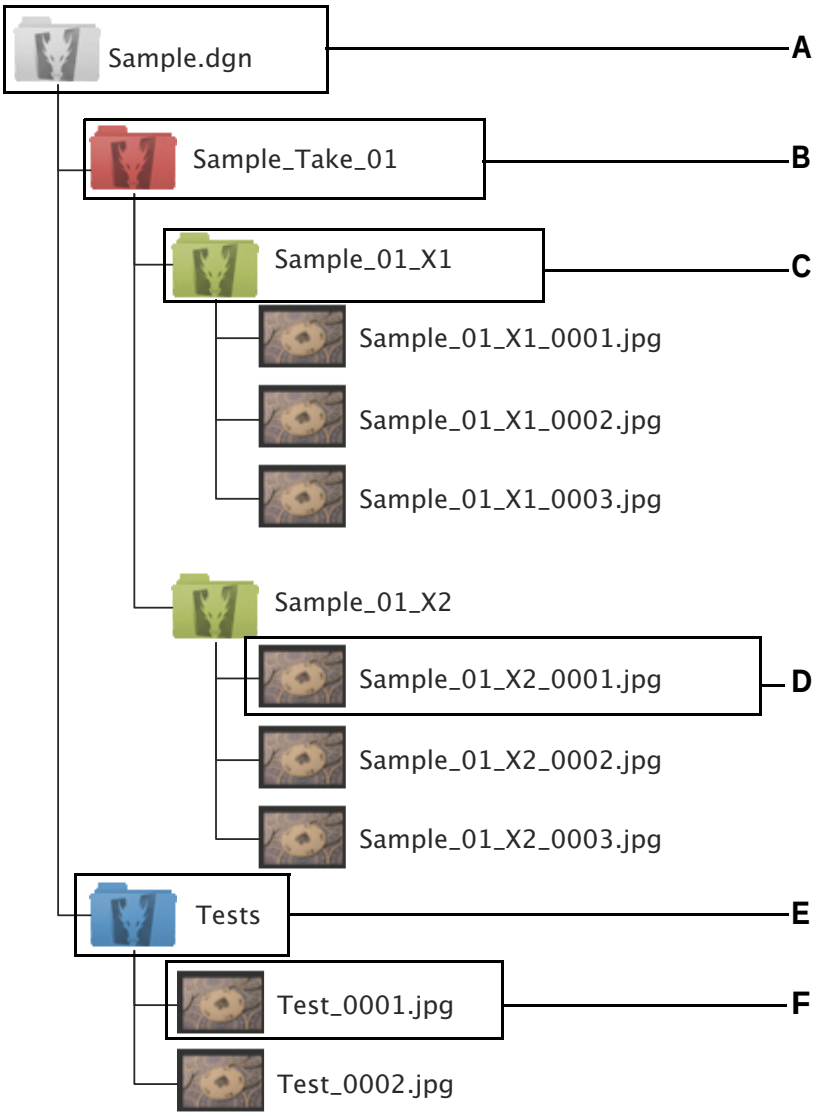
C. *Exposure Folder: Prod_Sc_Tk_Exposure#*

D. *Capture Images: Prod_Sc_Tk_Ex_Frame#.jpg (Or other file extension)*

E. *Tests Folder*

F. *Test Images: Test.0001.jpg*

File Hierarchy Map, short



A. *Scene Folder: Scene.dgn*

B. *Take Folder: Scene_Take_##*

C. *Exposure Folder: Sc_Tk#_Exposure*

D. *Capture Images: Sc_Tk#_Ex_Frame#.jpg (Or other file extension)*

E. *Tests Folder*

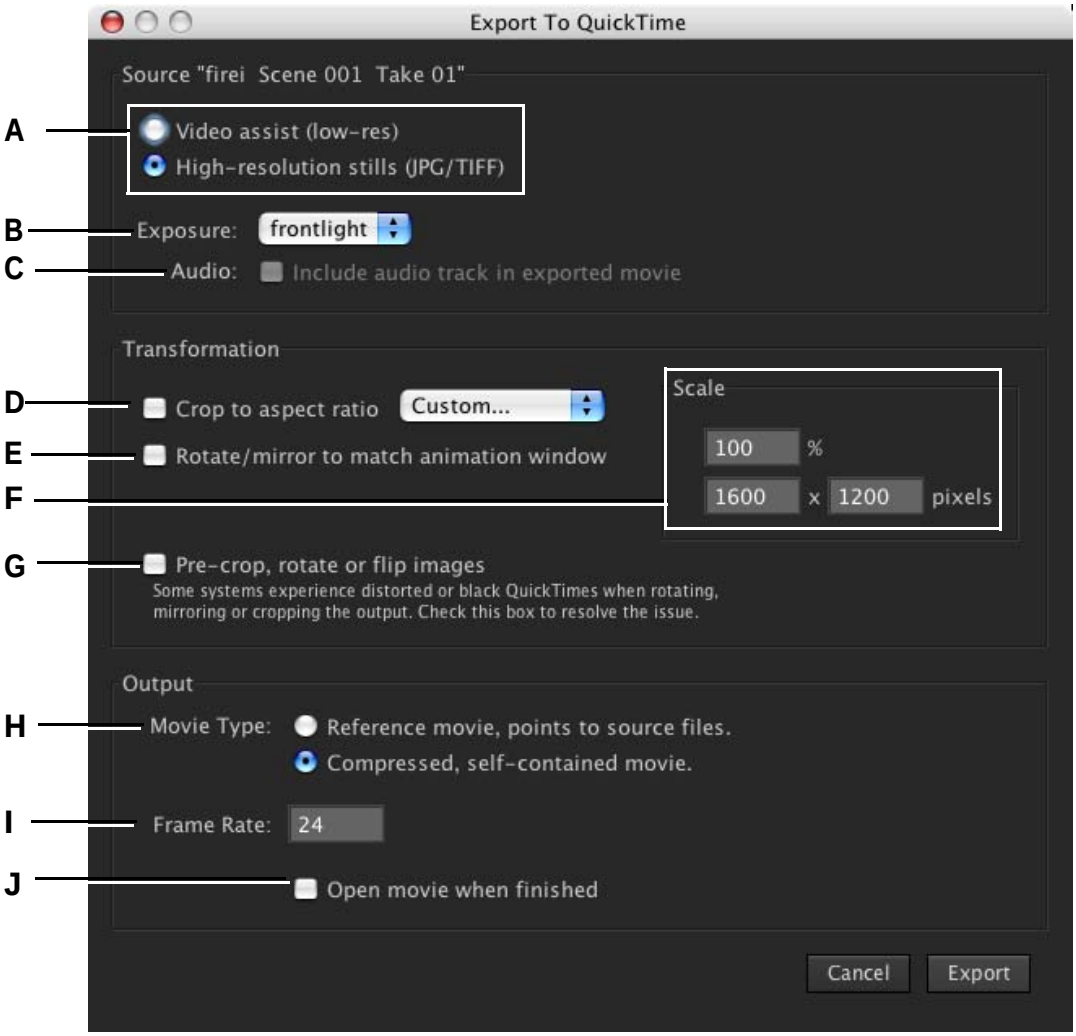
F. *Test Images: Test.0001.jpg*

Creating a QuickTime Movie of Your Take

You can export the frames in the take you're working on as a QuickTime movie. That way, you can get a quick preview of your take, or have a simple way of producing your project.

To export a QuickTime movie:

1. Click **FILE|EXPORT TO QUICKTIME**. The Export to QuickTime dialog appears.



A. *Select whether to use low-res video assist frames or high-res capture frames to create the movie.*

B. *Select which exposure to used in the QuickTime movie if your scene has more than one exposure.*

C. *Include the imported audio track in the movie.*

D. *Crop the movie using the Aspect Ratio mask as a guide, or keep the frames un-cropped.*

E. *Match the movie's screen orientation to that of the Animation workspace, or ignore orientation settings.*

F. *Set the size of the movie as a percentage of the source file's image size, or using a pixel count.*

G. *Process images in Dragonframe before sending them to QuickTime, avoiding distorted or black images.*

H. *Select whether the movie will be made using references of your frames or by creating a movie that includes all the data needed for playback.*

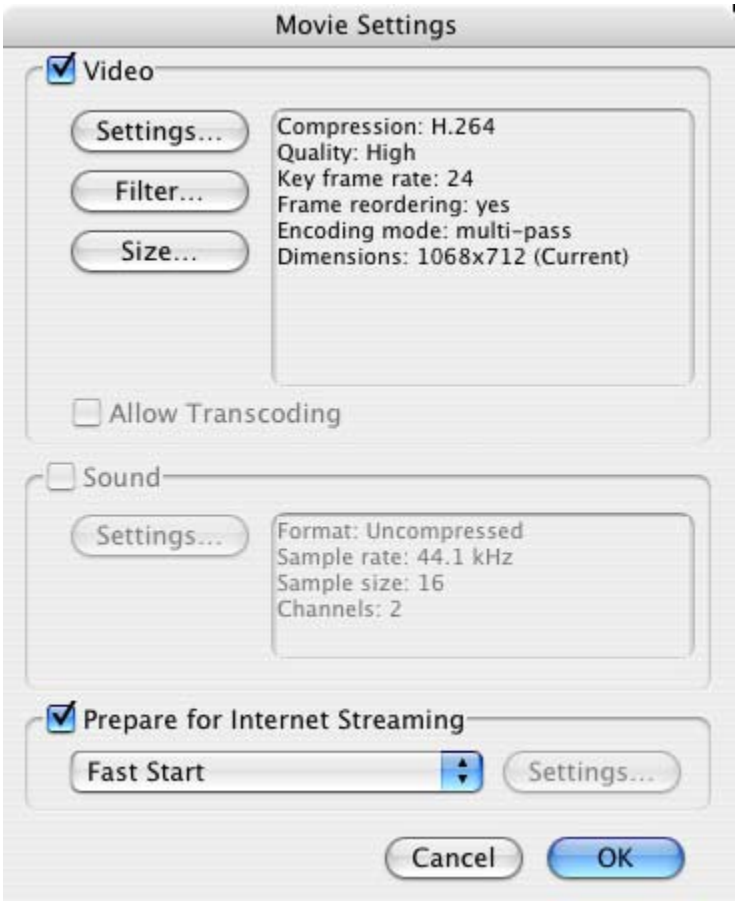
I. *Select the frame rate for the movie.*

J. *Open the movie once Dragonframe finishes exporting it.*

2. (Optional) Change any settings necessary, then click **OK**. Dragonframe opens the Save Movie dialog.

3. Navigate to where you want to save the movie and click **SAVE**.

If you are exporting a self-contained movie, Dragonframe opens the Movie Settings dialog:



4. Adjust any settings necessary. Go to QuickTime support for more information about these settings:
http://www.apple.com/support/quicktime/

5. Click **OK**.

Dragonframe exports the movie. If you've selected to open the movie after the export is complete, it will appear in its own QuickTime window.

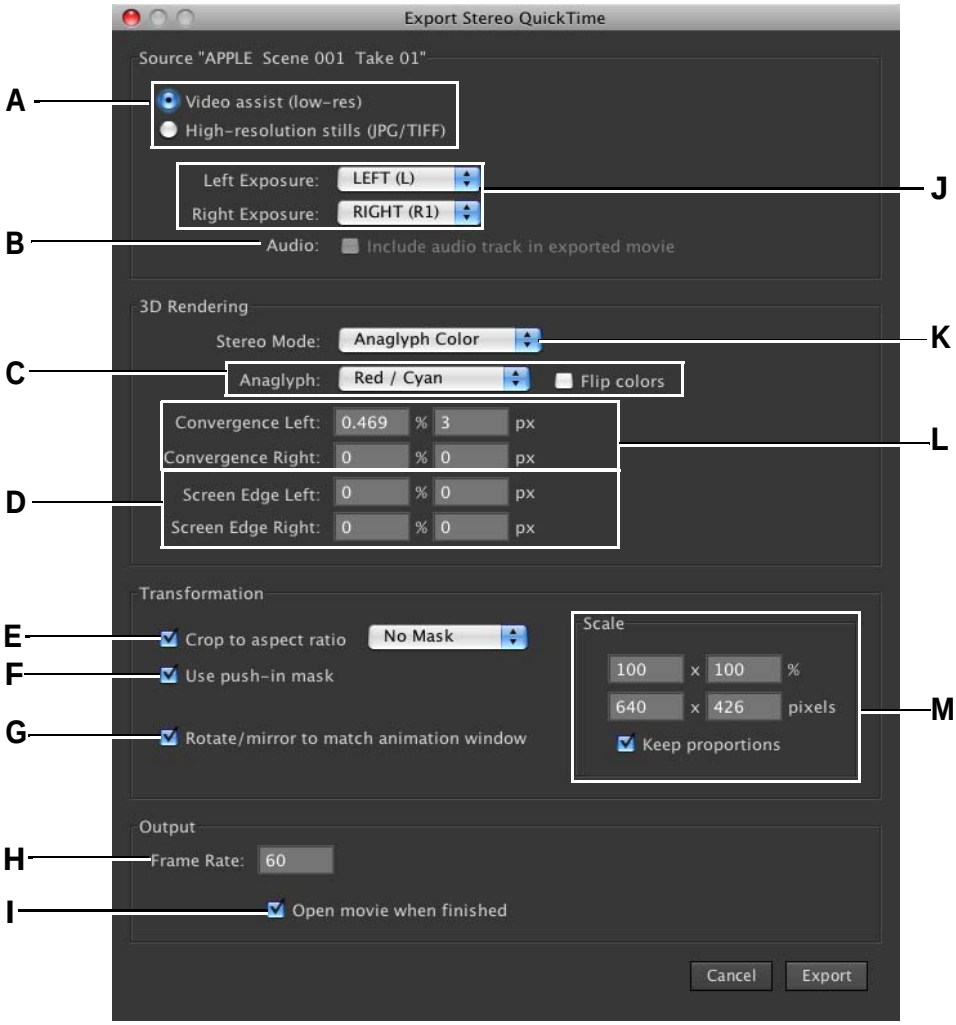
Creating a QuickTime Movie from a Stereo Image Sequence

Export your 3D sequence to QuickTime to preview your frames, or as a simple way to produce your project.

CAUTION: All frame editing is virtual. That is, once you make any edits, including deletes and cutbacks, you will need to conform your take if you want the files on disk to have frame order numbering on them.

To export your image sequence, select **FILE|EXPORT STEREO (3D) QUICKTIME**.

The Export Stereo QuickTime dialog appears:



A. *Select whether to use low-res video assist frames or high-res capture frames to create the movie.*

B. *Include the audio track in the QuickTime movie.*

C. *Choose which colors to use for the anaglyph. Click* **FLIP COLORS** *to invert the colors.*

D. *Set screen edge values for the left or right image as a percentage, or by specifying the number of pixels.*

E. *Crop the movie using the aspect ratio mask as a guide, or keep the frames un-cropped.*

F. *Keep the push-in mask in the exported frames.*

G. *Match the movie's screen orientation to that of the Animation workspace. Or, ignore orientation settings.*

H. *Select the frame rate for the movie.*

I. *Open the movie once Dragonframe finishes exporting it.*

J. *Choose the left-eye and right-eye exposures.*

K. *Select the stereo mode to use for the QuickTime: anaglyph or transparency in black/white or color.*

L. *Set convergence values for the left or right image as a percentage, or by specifying the number of pixels.*

M. *Size the movie as a percentage of the source file's image size, or using a pixel count.*

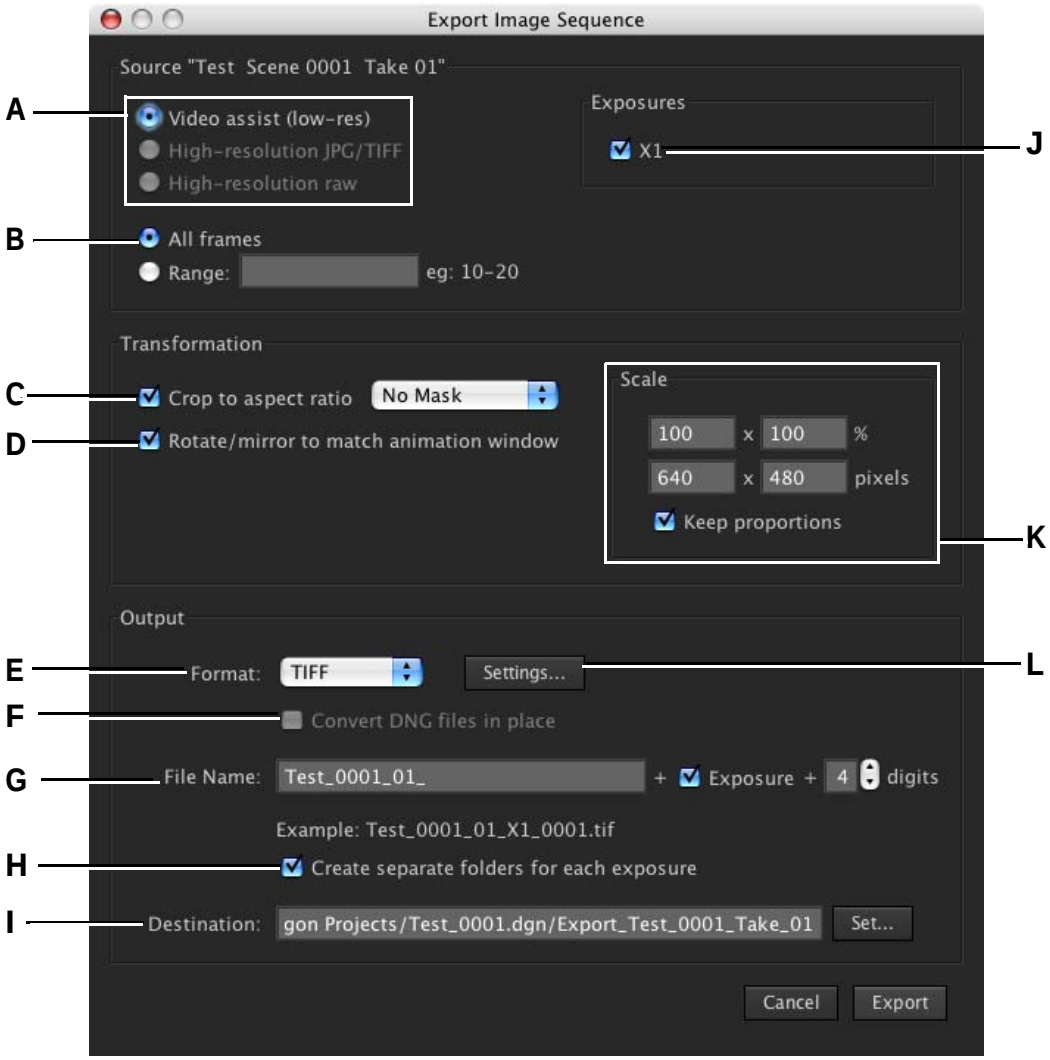
See also:
"Shooting in 3D" on page 251.
"Reviewing 3D Images" on page 260.

Exporting Image Sequences

You always have access to your files in Dragonframe. However, you may want to export your images from Dragonframe instead of using the original files. Export files to convert image formats, scale down files, or change the naming convention.

To export a frame sequence:

1. Select **FILE|EXPORT IMAGE SEQUENCE**. The export image sequence dialog appears:



A. *Choose which image source to use for the export: video assist, high-res TIFFs/JPGs, or raw files.*

B. *Choose which frames to include: all of the frames in the scene, or a range of frames.*

C. *Crop the frames to the aspect ratio you choose. Or, do not crop the frames.*

D. *Rotate or mirror the images to match the settings you've chosen in the Animation workspace.*

E. *Choose which image format your exported images will use.*

F. *Create the DNG files in the Dragonframe folder where the original RAW files are.*

G. *Specify the file names for the sequence.*

H. *Select whether multiple exposures will be exported to one folder, or separate folders per exposure.*

I. *Choose where to export the files. This option is disabled if you choose to convert DNG files in place.*

J. *Select which exposures to include in the export.*

K. *Choose the image size.*

L. *Specify settings for the image formats you chose.*

2. Click **EXPORT**. Dragonframe exports the frame sequence with the settings you chose.

Chapter 17: Preferences

Dragonframe contains a number of ways to customize your user experience. Preferences gives you control over settings for your whole project, while the Settings dialog lets you adjust settings for a particular scene.

This section includes the following sections:

"Configuring Preferences" on page 281.
"Configuring Scene Settings" on page 290.

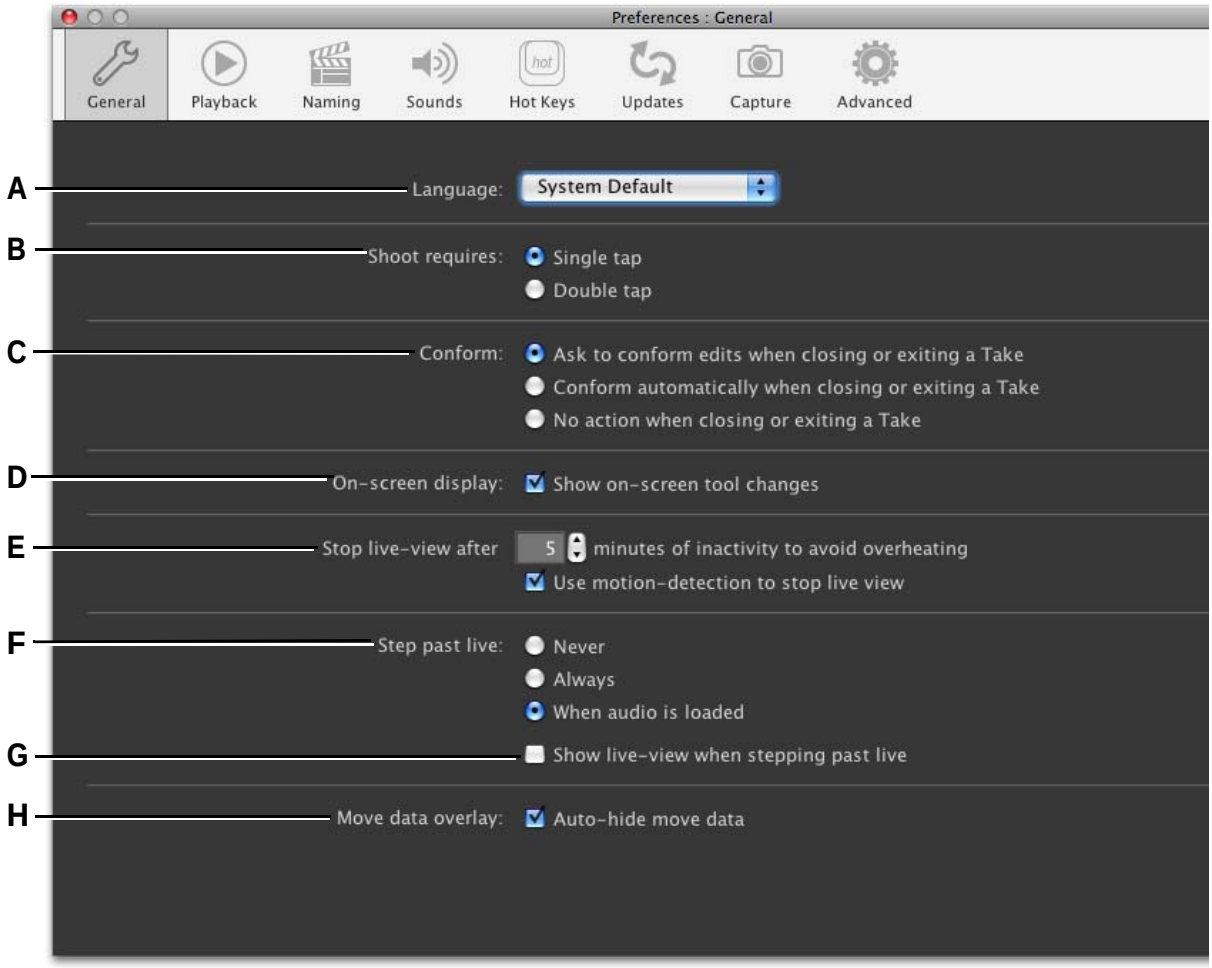
See also:
Dragonframe tutorials:
http://www.dragonframe.com/tutorials.php

Configuring Preferences

Change Preferences by selecting **FILE|PREFERENCES**, then click the tab you need. Changes made in Preferences will affect settings for your whole project.

General Preferences

Use General Preferences to modify a variety of Dragonframe's functions. Any changes you make will apply to your whole project. Select **FILE|PREFERENCES** to open General Preferences.



A. *Language: Choose which language to use in the interface.*

B. *Shoot requires: Adjust whether to press* **SHOOT** *once or twice to capture frames.*

C. *Conform: Change whether Dragonframe prompts you to conform edits when you exit a take.*

D. *On-screen display: Show or hide notes that flash in the View pane when selecting Dragonframe Animation tools.*

E. *Stop live-view after: DSLRs with Live View can overheat. Configure how long auto-shutoff takes, and whether Dragonframe will use its built-in motion detection feature to determine inactivity.*

F. *Step past live: Adjust whether you can step past the Live View into black to-be-shot frames.*

G. *Show live view...: Check* **SHOW LIVE VIEW WHEN STEPPING PAST LIVE** *to see the Live View when you step into to-be-shot frames.*

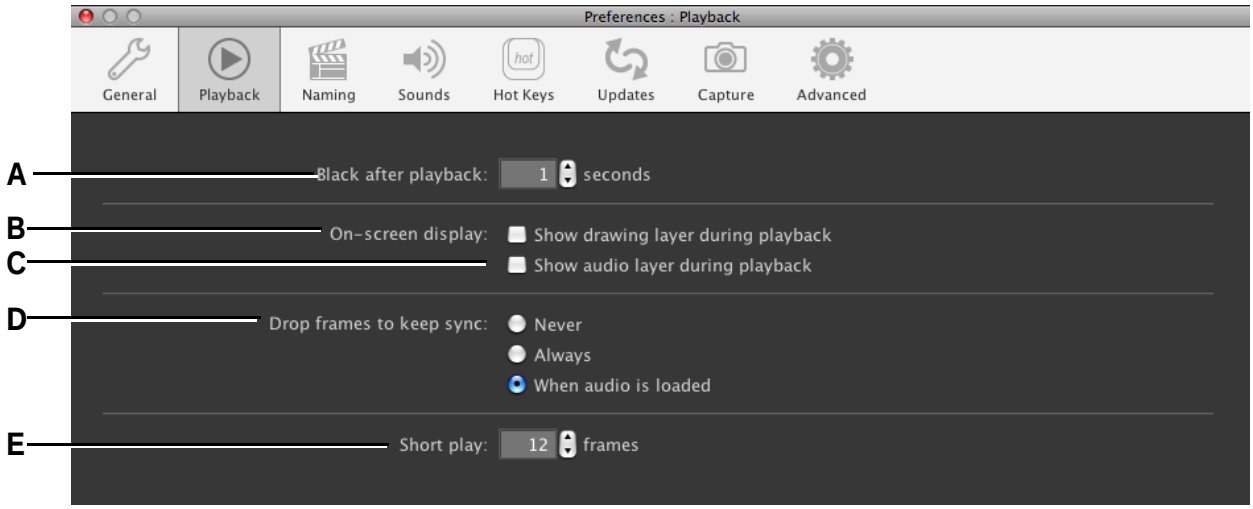
H. *Move data overlay: By default, Dragonframe displays hand-cranked camera moves in the Animation workspace. Here, make move data disappear when stepping though scenes.*

Any preferences you change will be saved when you close the window.

See also:
"Conforming Timeline Edits" on page 129.

Playback Preferences

Modify Dragonframe's playback features using Playback Preferences. Any changes you make will apply to your whole project. Click **FILE|PREFERENCES** to open Preferences, then click **PLAYBACK**.



A. *Black after playback: Adjust the number of seconds the black feature adds to playback. Use this timing for a live frame during looping as well.*

B. *On-screen display: Show or hide marks made with the Draw Tool.*

C. *Show audio layer...: Show or hide audio tools in the Animation workspace.*

D. *Drop frames to keep sync: Select when Dragonframe will drop frames to keep up with the frame rate. For example, if you check* **WHEN AUDIO IS LOADED**, *Dragonframe will drop frames to keep playback in sync with the audio.*

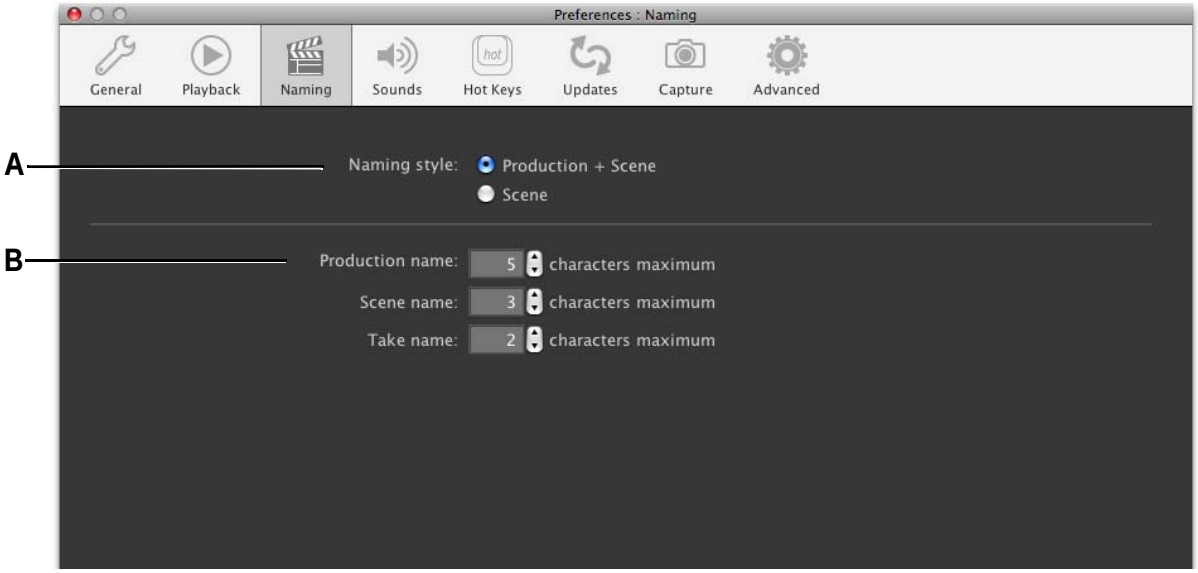
E. *Short play: Adjust how many frames are included for short play.*

Any preferences you change will be saved when you close the window.

See also:
"Black (End in Black) Key" on page 98.
"The Heads-Up Display" on page 165.
"Drawing on the View Pane" on page 111.
"Short Play Key" on page 98.

Naming Preferences

Change the way Dragonframe names files in its hierarchy from Naming Preferences. Any changes you make will apply to your whole project. Select **FILE|PREFERENCES** to open Preferences, then click **NAMING**.



A. *Naming Style: Change whether file names include both production and scene names, or just scene names.* ***B.*** *Production, Scene, Take Names: Change how long the production, scene and take names can be.*

Choosing Naming Conventions

In Dragonframe, you save every scene with one of two naming conventions. Dragonframe's naming conventions are based on the classic Hollywood clapboard: production, scene, and take. You can choose which naming convention to use in Naming Preferences:

- *Production, Scene.* This is the default preference for Dragonframe. Using all three levels of organization makes it possible to work on more than one project at once without confusing scene names.
- *Scene.* This is a simpler, shorter option, but may be harder to use if you work on multiple projects that overlap.

See also:

"Creating a New Scene" on page 135.

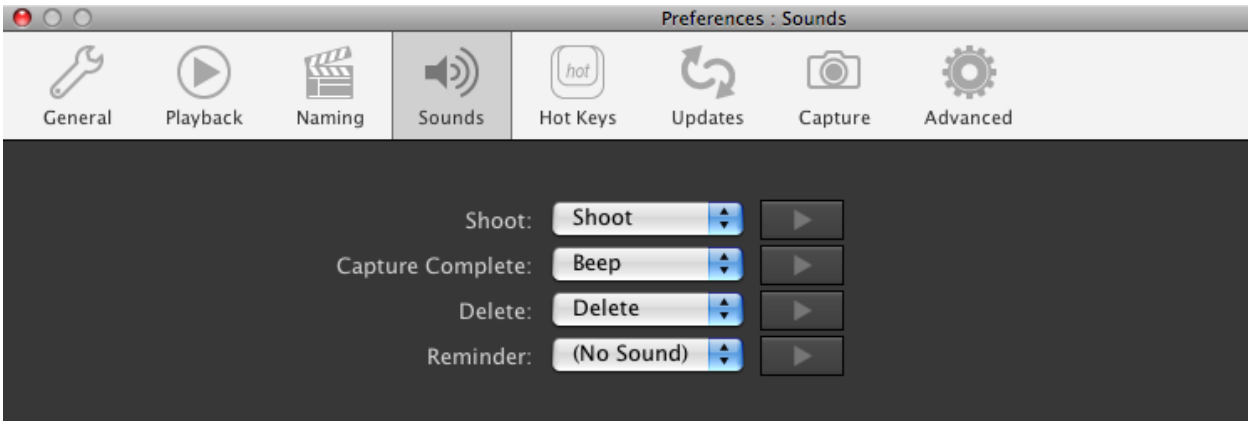
"Simplifying Scene Names" on page 136.

"Finding Your Source Files" on page 270.

Dragonframe's Sounds

Select which sounds Dragonframe uses to alert you when certain operations take place. Any changes you make will apply to your whole project.

To change sounds, click **FILE|PREFERENCES** to open Preferences, then click **SOUNDS**.



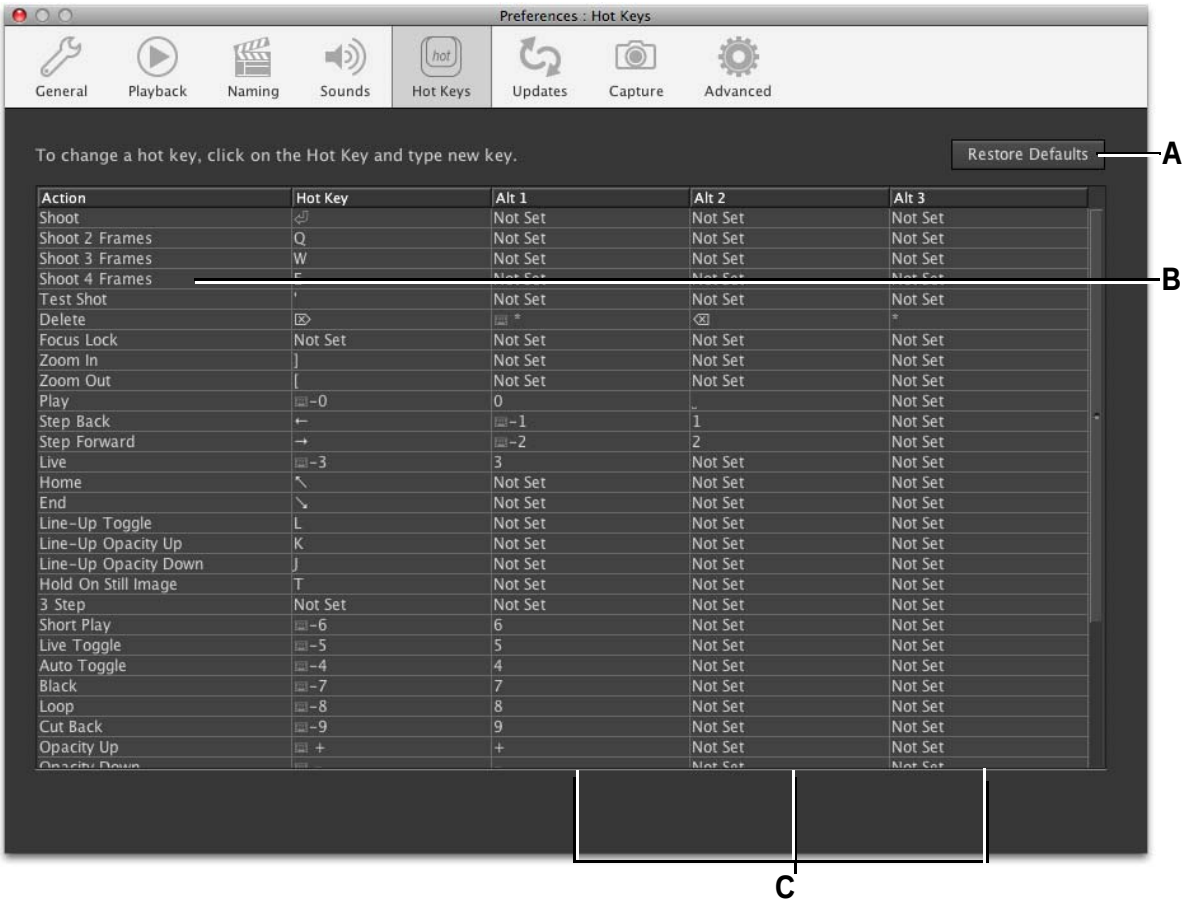
Select sounds to associate with shooting a frame, completing a capture, deleting a frame, and a pop-up reminder note. Click > to play the sound.

Any preferences you change will be saved when you close the window.

Programming Hot Keys

Dragonframe comes with a variety of pre-programmed keyboard controls. Change the default keypresses from Hot Key Preferences. Any changes you make will apply to your whole project. To program custom

Hot Keys, click **FILE|PREFERENCES** to open Preferences, then select **HOT KEYS**:



A. *Restore Defaults: Revert to Dragonframe's default Hot Keys, discarding changes.*

B. *Hot Key Column: Click the column next to the action to reprogram it. Then press the keys you want to use. For example, to re-program* **SHOOT** *to use* **S** *as its Hot Key:*
1. Click next to the current Hot Key (Here, **ENTER***.)*
2. Press **S***. Dragonframe notes the new Hot Key in the dialog.*

C. *Alt 1, Alt 2, Alt 3: Set three alternative Hot Keys for any action. To set alternative hot keys, click in the cell for that action, then type the new Hot Key.*

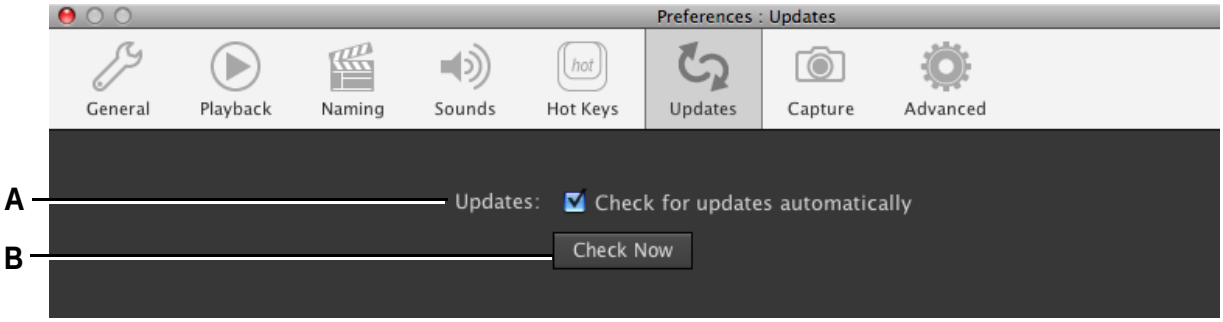
Any preferences you change will be saved when you close the window.

See also:
"Keypad Controls" on page 95.

Update Preferences

Dragonframe automatically looks for software updates to make sure you're using the most recent version. Use Update Preferences to change the settings for the updates.

To change update preferences, click **FILE|PREFERENCES** to open Preferences, then select **UPDATE**:



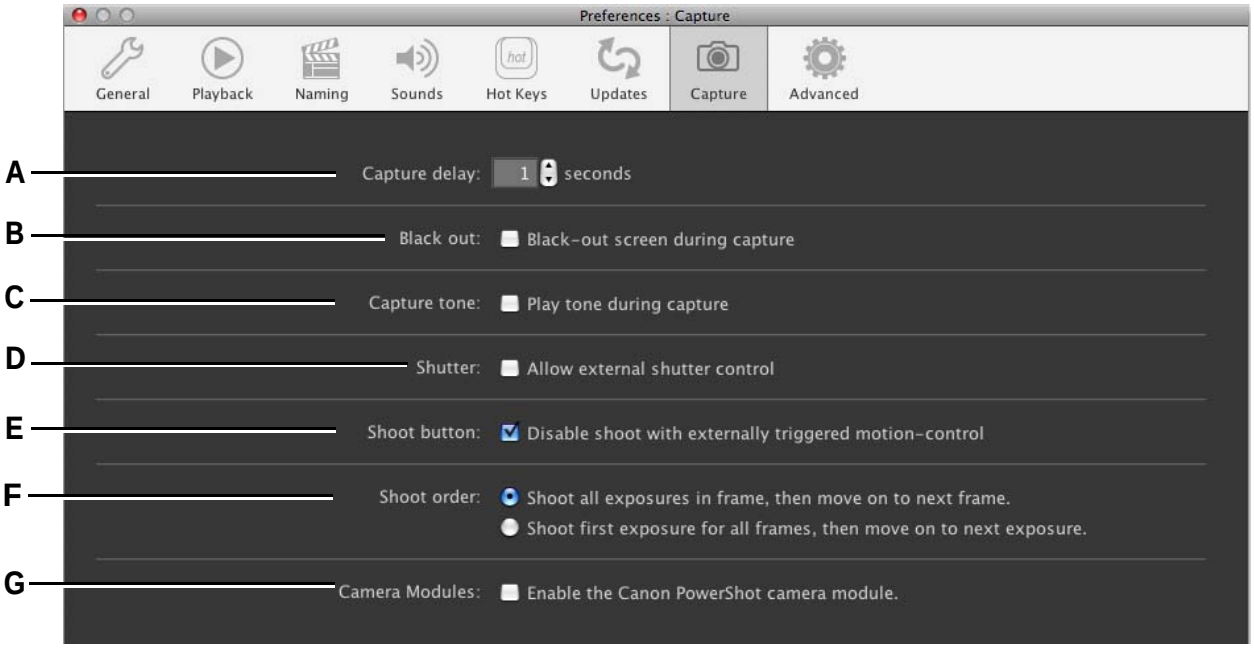
A. *Updates: Check to have Dragonframe automatically look for updates and notify you when they're available.* ***B.*** *Check Now: Click to immediately check for updates to Dragonframe.*

Any preferences you change will be saved when you close the window.

Capture Preferences

Capture Preferences control how Dragonframe works during captures.

To change Capture Preferences, click **FILE|PREFERENCES** to open Preferences, then select **CAPTURE**:



A. *Capture Delay: Add a delay between the video assist and high-res captures.*

B. *Black Out: Make your screen black during captures.*

C. *Capture Tone: Enable or disable the sound that plays during a capture.*

D. *Shutter: Enable a supported camera to use an external shutter control, such as the DESC, for motion control. When enabled, the shutter control setting will appear in the Cinematography workspace's Camera Settings.*

E. *Shoot Button: When this box is checked, and you have the Dragonframe External Shutter Control connected, pressing* **SHOOT** *will not trigger Dragonframe's shoot command. This allows you to control Dragonframe with the DESC.*

F. *Shoot Order: Change the order that Dragonframe shoots frames for shooting on twos, or shooting holds.*

G. *Camera Modules: By default, the Canon PowerShot and Olympus camera modules are not loaded into the program. If you need to use a Canon PowerShot or Olympus camera, you must enable the module.*

CAUTION: Canon PowerShot and Olympus DSLR camera support is deprecated as of Dragonframe 3. The next major version of the software (Dragonframe 4) may not include support for these cameras.

See also:

"Adding a Capture Delay" on page 92.

"Black-Out Mode" on page 93.

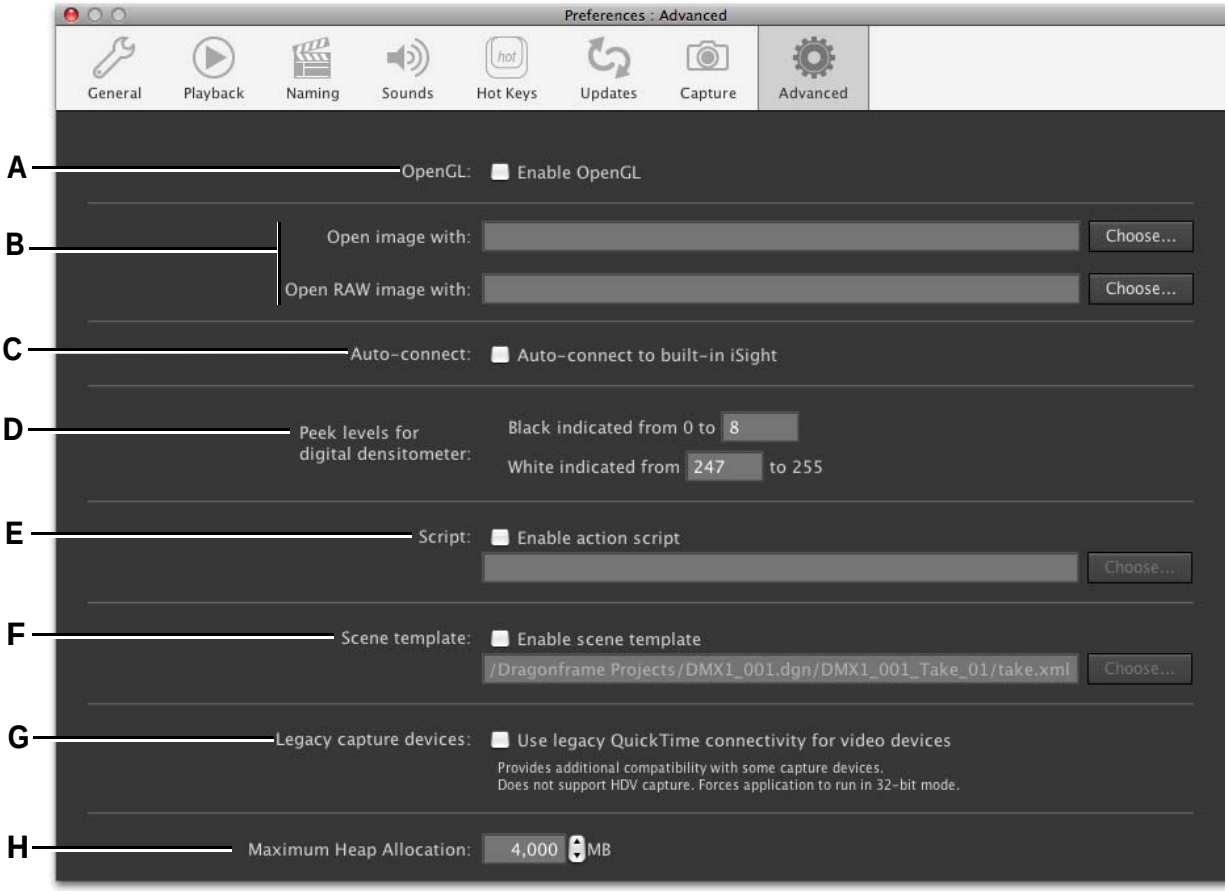
"Kuper Controls Dragonframe" on page 241.

"Shoot Order" on page 104.

"Adjusting Focus and Zoom with the Canon PowerShot Camera" on page 79.

Advanced Preferences

To modify Advanced Preferences, click **FILE|PREFERENCES** to open Preferences, then select **ADVANCED**.



A. *Mac Only. OpenGL: Dragonframe achieves better rendering playback performance on many systems by using OpenGL. If, however, you are having rendering issues, you can choose to disable this.*

B. *Open image with...: Select which photo editing software to use when opening image files or RAW image files.*

C. *Mac Only. Auto-connect: Un-check the box to prevent a Mac from auto-connecting to its iSight camera.*

D. *Peek levels: Adjust how Dragonframe defines peek values for the digital densitometer.*

E. *Script: Check this box to have Dragonframe use a script to automate actions.*

F. *Scene template: Check the box and load an already-configured* **TAKE.XML**. *Dragonframe will use this file as a template for every new scene.*

G. *Legacy capture devices: For 64-Bit Mac systems only. Selecting this button starts the software in 32-bit mode so that it has better access to older 32-bit QT device drivers.*

H. *Maximum Heap Allocation: For machines with very large amounts of memory, you may want to limit the maximum amount Dragonframe will use. Set that amount here.*

Any preferences you change will be saved when you close the window.

See also:
"Opening Test Shot Files in Another Application" on page 70.

"Reading Pixel Values with the Digital Densitometer" on page 75.
"Creating Action Scripts" on page 245.
"Using a Scene Template" on page 140.
"Finding Your Source Files" on page 270.

Configuring Scene Settings

Use scene settings to control settings for your scene, including scene length, camera settings, and settings for exposures, X-Sheet layout and triggers.

For information about General settings and Camera settings, see the sections that follow.

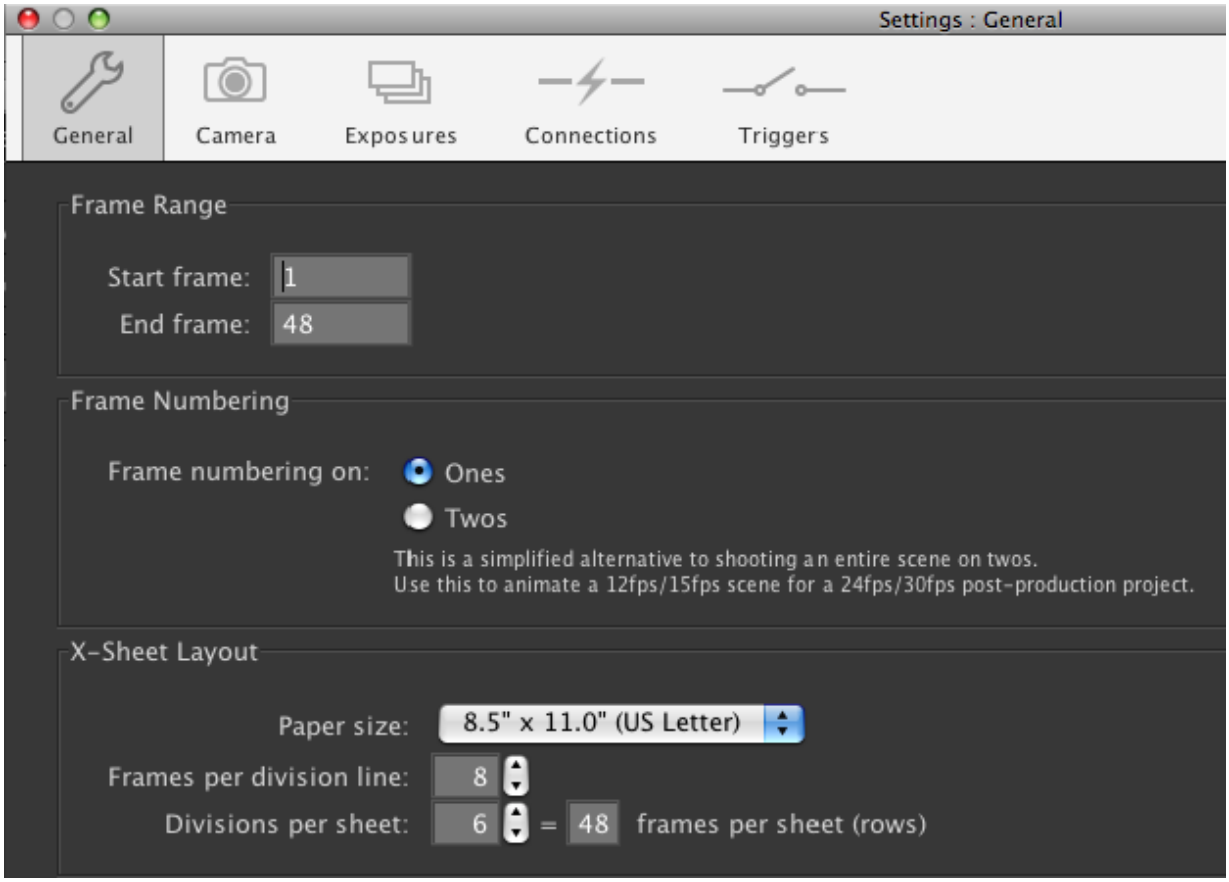
For information about exposures and hardware connections, see:

"Working with Multiple Exposures from the Menu" on page 86.
"Connecting DMX to Dragonframe" on page 189.
"Connecting to the DESC through Dragonframe's Connections Tab" on page 244.
"Connecting to a 3D Slider" on page 251.

General Settings

The General Settings tab gives you access to three aspects of your scene: shooting on twos, scene length, and the X-Sheet's page layout. When you adjust those setting, you change the way Dragonframe configures your scene's X-Sheet.

When you select **SCENE|SETTINGS...**, the General settings window opens:



See also:

"Setting Scene Length and Starting Frame" on page 172.

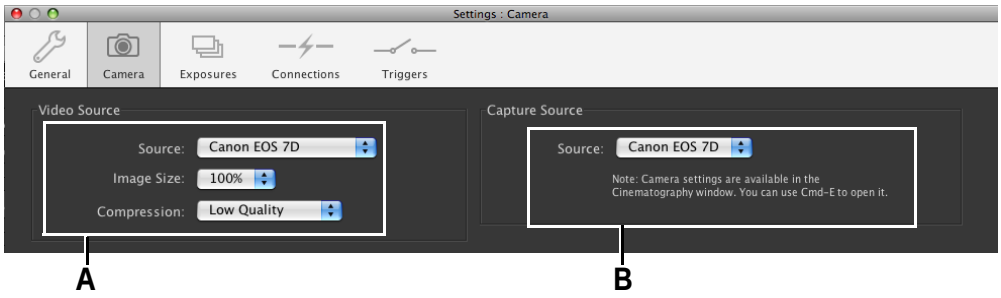
"Shooting on Twos" on page 102.

"Customizing the X-Sheet's Print Layout" on page 182.

Camera Settings

Use the Camera Settings dialog to select a video and capture source. It's especially useful when you need to switch a video or capture source in the middle of a scene.

Click **SCENE|CAMERA** to open Camera Settings.



A. *Video source: Select the video assist source, the size of the image, and the amount of compression to use.* ***B.*** *Capture Source: Select the capture (high-res image) source.*

Any settings you change will be saved when you close the window.

See also:

"Quick Set-Up Guide for Supported Video and Still Cameras" on page 9.

"Camera Connections" on page 47.

"Adjusting and Locking Camera Settings" on page 78.