CORTEX Dailies

COPY. COLOR. SYNC. TRANSCODE.

User Guide

This User Guide covers version 1.5 of the following applications

CORTEX Dailies
CORTEX Dailies Enterprise Edition

Contents

Getting Started

Installing CORTEX

Hardware Requirements

- Windows 7 x64 (PC or Mac running bootcamp)
- 12 GB RAM
- Intel Xeon CPU
  2 x 6-core Intel 3.3 GHz recommended for best rendering performance and playback of some CPU-intenstive codecs
- Recommended GPU
  - GeForce GTX 780 Ti
  - NVIDIA Quadro K5000

* We have tested CORTEX with the following GPUs:

- GeForce 580
- GeForce 580M
- GeForce 650M
- GeForce 670
- GeForce 680
- GeForce 690 (Multi-GPU should be disabled)
- GeForce GTX 780 Ti
- GeForce TITAN
- Quadro 4000
- Quadro K5000

Download The Installer

You can access the latest CORTEX installer on MTI::MindShare (http://mindshare.mtifilm.com).

Download the installer .exe file and double-click it to begin installation.

All CORTEX applications share a single installer. Your feature set is enabled by licensing.

Prerequisites

CORTEX requires the following prerequisites are installed on the system before CORTEX can be installed. The CORTEX Installer will scan your system, determine which prerequisites are missing and link you to the download(s)

- Entity Framework 4.1 Update 1
- QuickTime 7.7.1
- Intel IPP v7 Runtime
- Visual C++ 2008 SP1 Redistributable

Installation Wizard

You'll find a video tutorial on Installation & Licensing on MindShare. Text instructions follow in this manual.

The Setup Wizard will guide you through the Installation Process. Simply click **Next** on each screen to install using default settings.

You can change the following settings during installation

Upgrade Older Version
Unless you are just testing a new version, it's generally recommended that you choose 'Yes, replace older version':

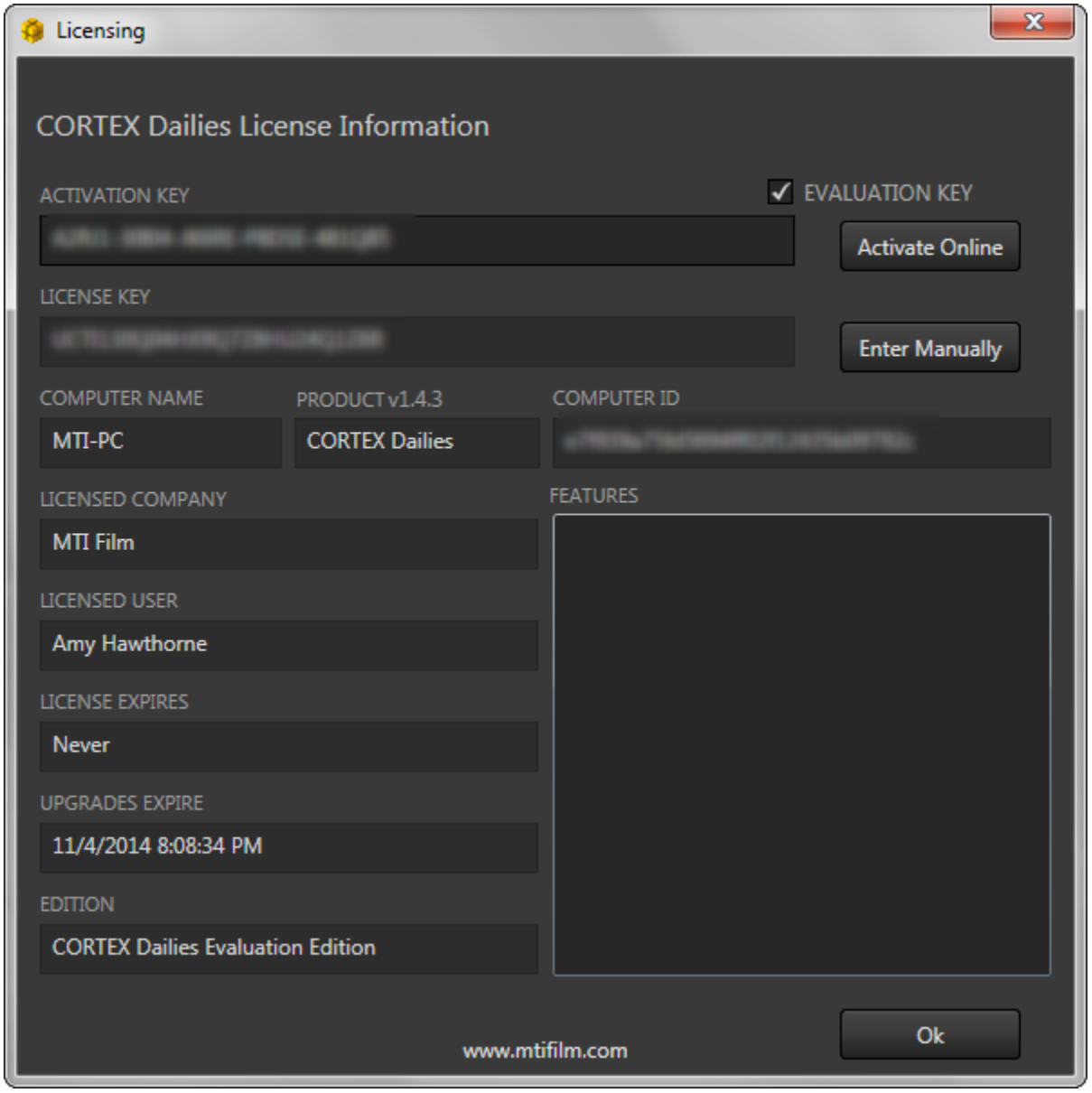
- Yes, replace older version.
  This will upgrade your existing version to this new version. The old version will no longer be accessible
- No, install side by side with other versions.
  This will create a separate directory for the new version, leaving your old version intact. You will be able to run either version using individual menu and Desktop shortcuts.

Select Installation Folder
You can browse for an alternative installation path.

Licensing and Activation

The Licensing window will open automatically the first time you run CORTEX.

You can open this window from the green Licensing button in the upper right of the Project manager.



How To License CORTEX:

1. If you do not already have an Activation Key, contact your Reseller or MTI Film Support. You will receive an email containing your Activation Key as a text string.
2. Copy the entire Activation Key text.
3. If you are running the Demo/Eval version of CORTEX Dailies, be sure to check the **Evaluation Key** checkbox
4. Paste the Activation Key text into the **Activation Key** box in the Licensing module.

5. Click **Activate Online** (Note: you must be connected to the internet to complete this step).
6. After a moment, the Licensing module will populate the rest of the form with the information received from MTI Film's Licensing server.
7. Click **OK**, CORTEX will launch.

You'll find a video tutorial on Installation & Licensing on MindShare.

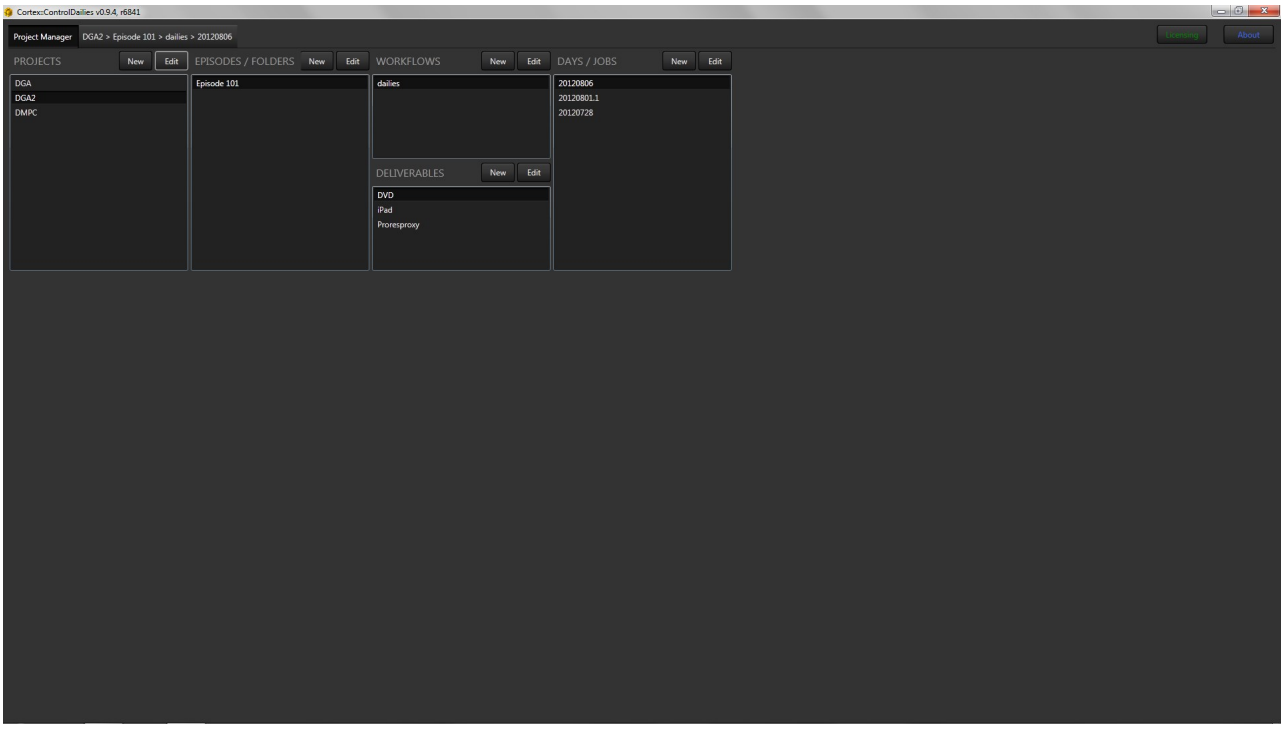
How does this work?

When you enter your Activation Key, the software connects to MTI Film's licensing server to complete activation of your license. Once a license has been activated, it is tied to a single machine and can not be moved or re-used on a different computer.

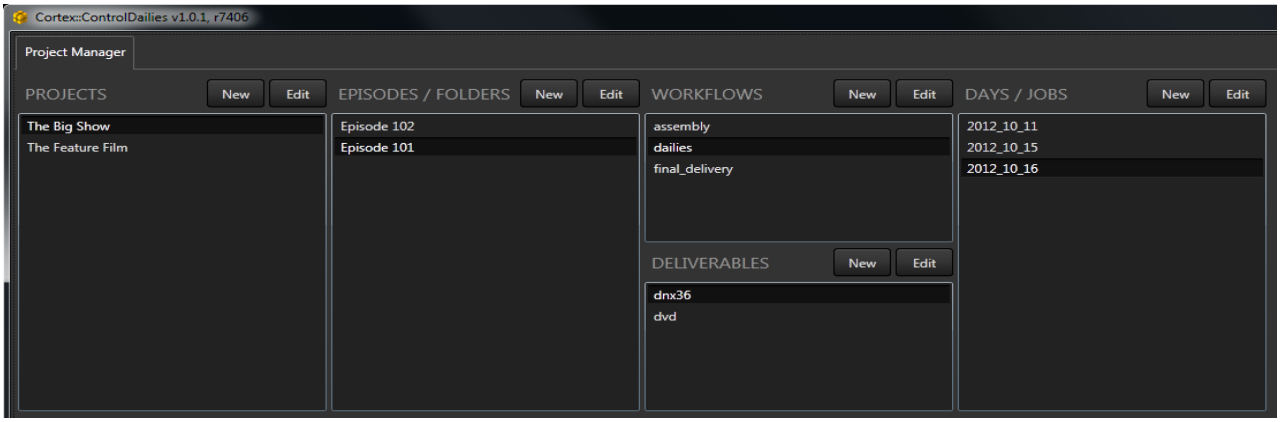
Application Overview

Project Manager

The Project Manager allows you to create and organize projects and workflows.



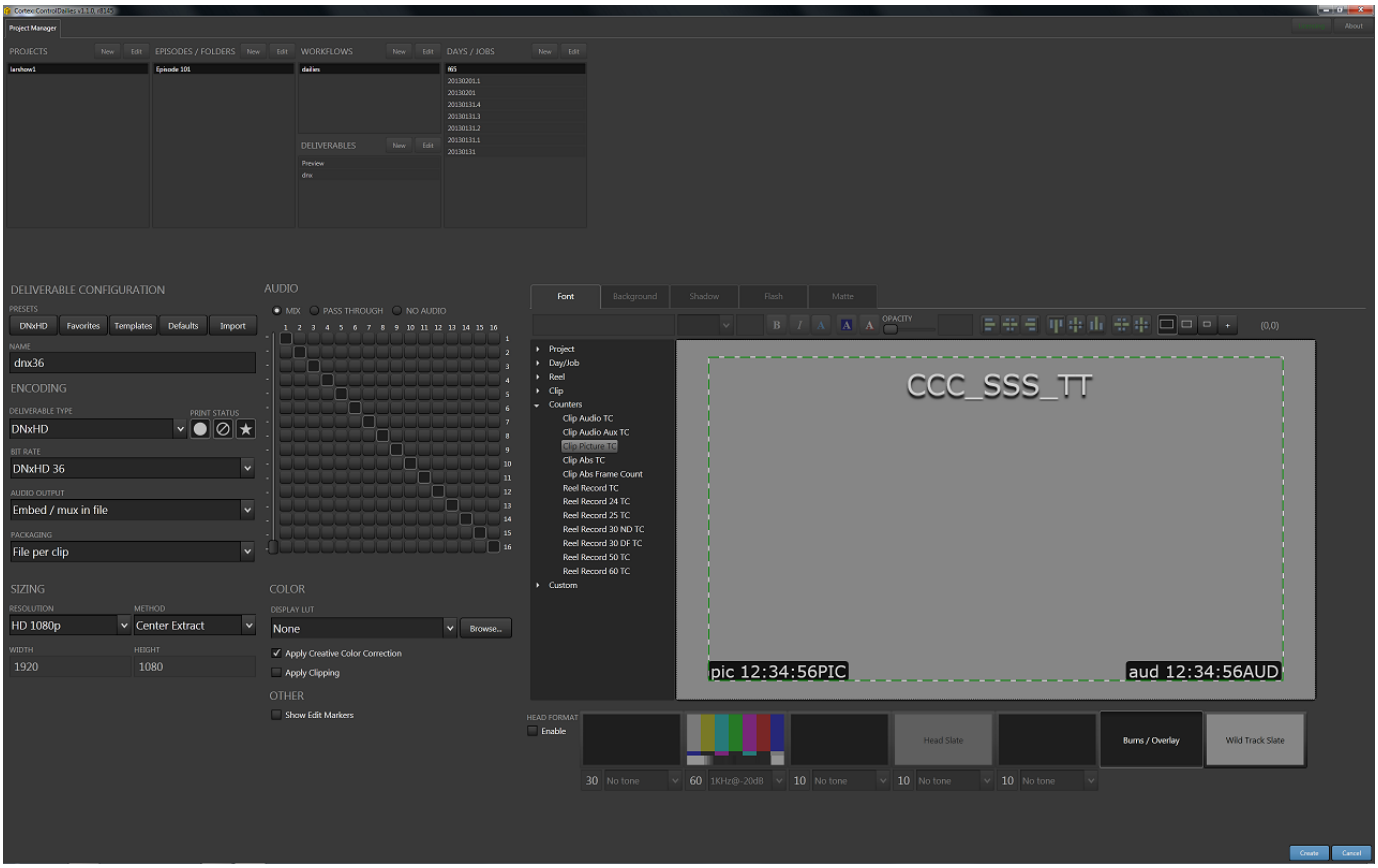
The Project manager is where you create Workflows that contain configurations for Deliverables. Jobs are then created for Workflow processing.


Cortex::ControlDailies v1.0.1, r7406
Project Manager
PROJECTS
New
Edit
The Big Show
The Feature Film
EPISODES / FOLDERS
New
Edit
Episode 102
Episode 101
WORKFLOWS
New
Edit
assembly
dailies
final_delivery
DELIVERABLES
New
Edit
dnx36
dvd
DAYS / JOBS
New
Edit
2012_10_11
2012_10_15
2012_10_16

Deliverable Configuration Editor

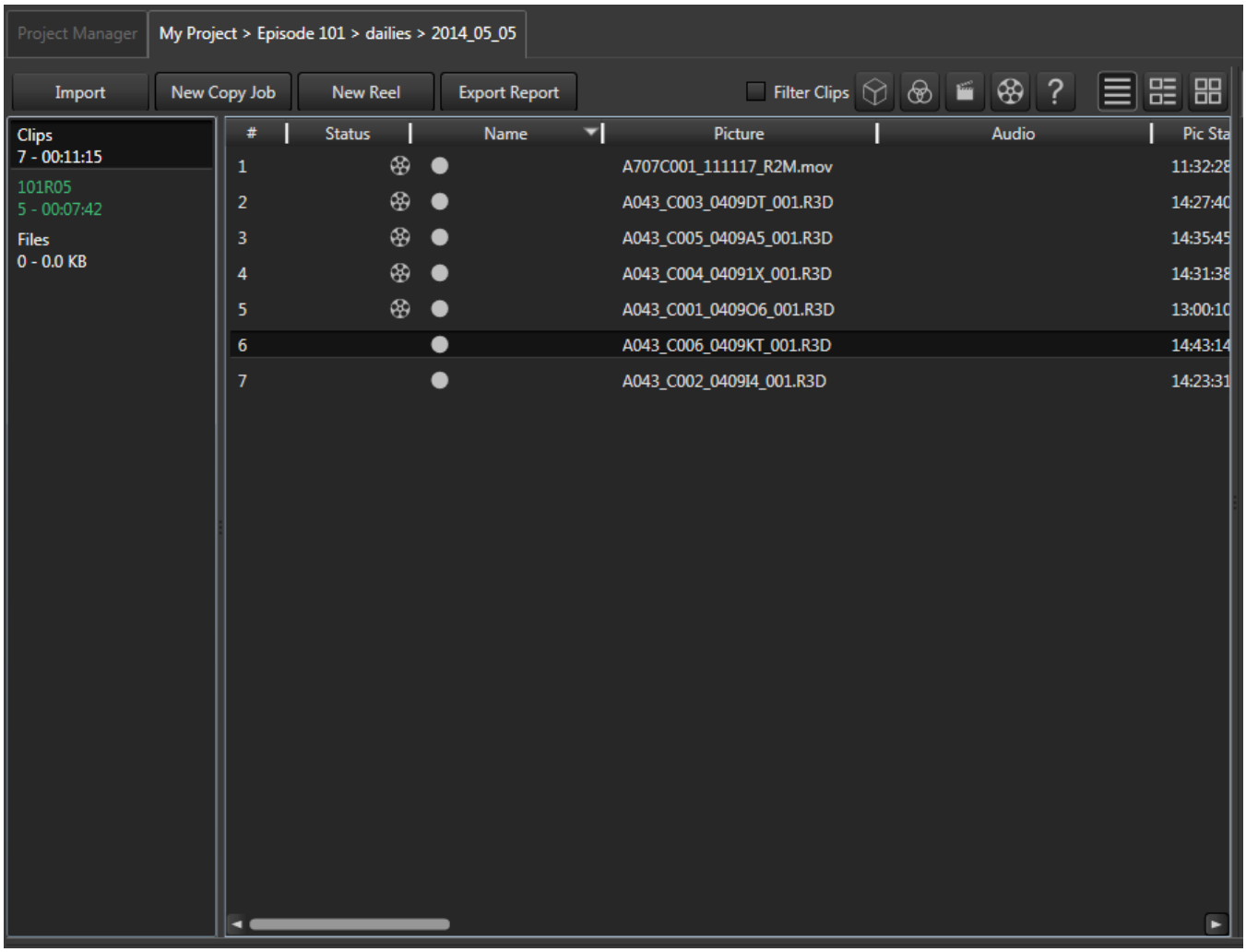
Clicking the New button above the DELIVERABLES list box opens the Deliverable Configuration Editor. This is where you choose the various settings for each deliverable including:

- File format
- Codec
- Bit rate
- Packaging
- Resolution
- Audio mix
- LUT
- Burn Windows
- Head Formatting



Bins & The Player

Clips are available in the Clip Bin.
The currently selected Clip plays in the Player Window and is displayed with one or more Deliverables tabs. Selecting a deliverables tab gives you a preview of what that format's output will look like.

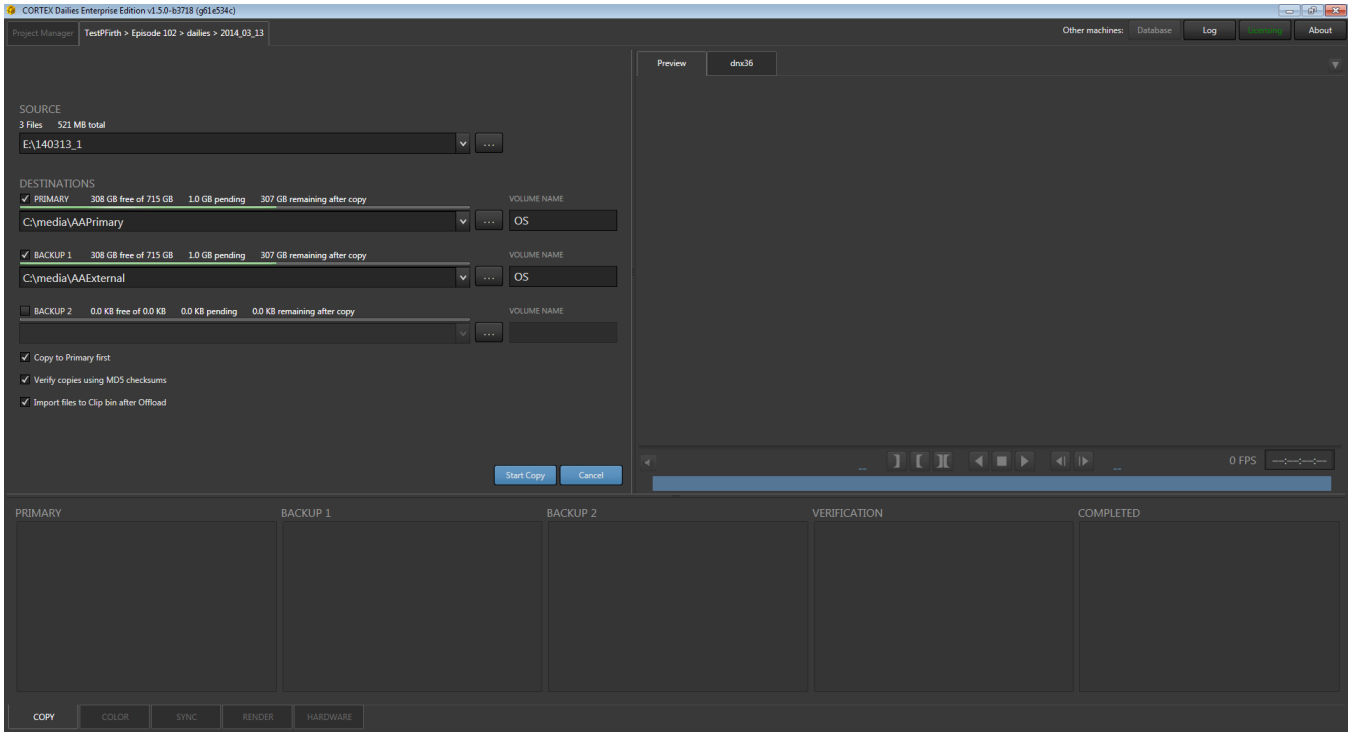



Preview
dnx
h264
A043__
CORTEX
14:43:40:08 A043_C006_0409KT_001.R3D
--:--:--:--
0 FPS
14:43:40:08

The Copy Tool

The Copy Tool is a simple interface to create one or more Copy jobs for offloading/importing media and making backup and archive copies. Each job has a single source (such as a camera card) and up to three target destinations. The target destinations can include a combination of internal storage, shared storage, attached storage, shuttle drives or LTO drives (using LTFS).

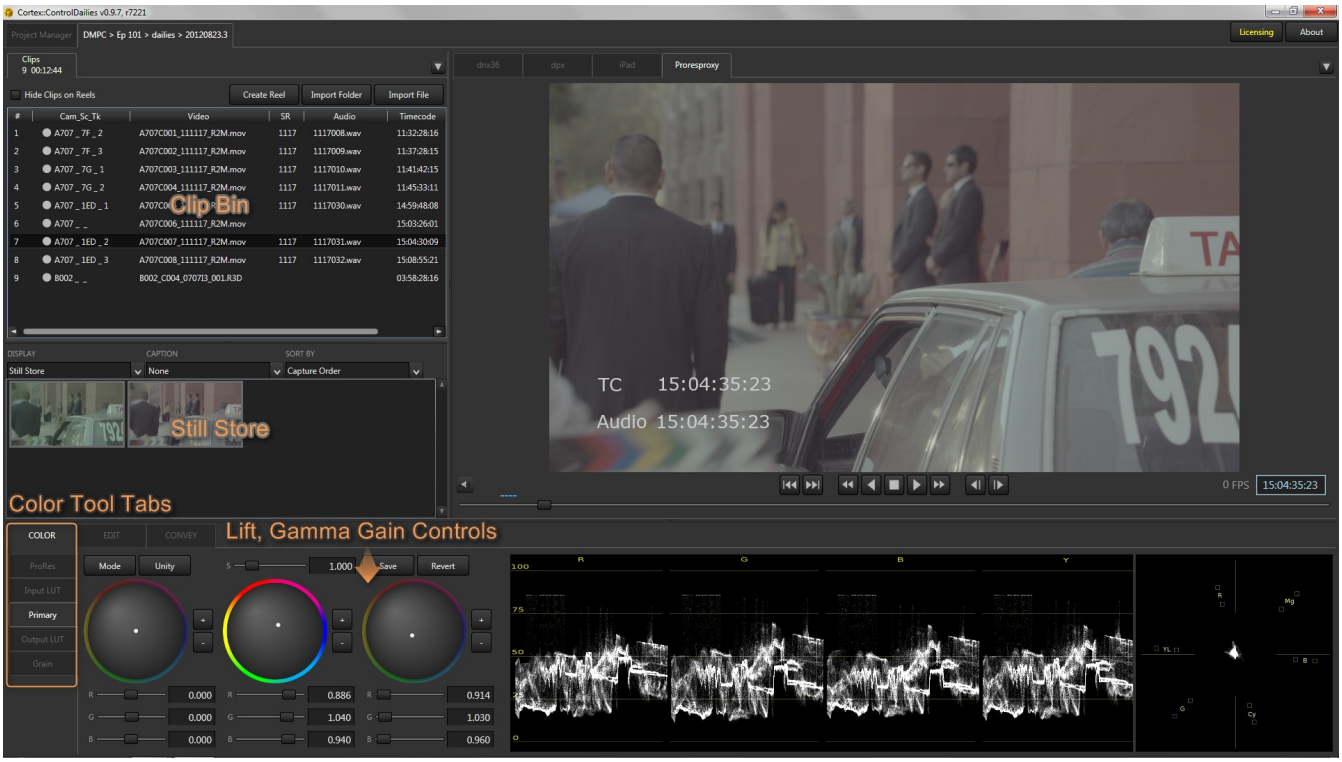
Each copy job can generate optional MD5 Checksums for verification. These checksums will be available in any Manifest file created from the job.



The Color Tool

The Color tool provides tabs for different image processing settings of each clip including:

- Source Decoding Parameters
- Framing
- Input LUT
- Primary Color Correction
- Output LUT
- Grain



The Still Store provides different options for capturing, importing, working with and exporting stills. The default view is auto-populated with stills from each event in the Clip Bin.

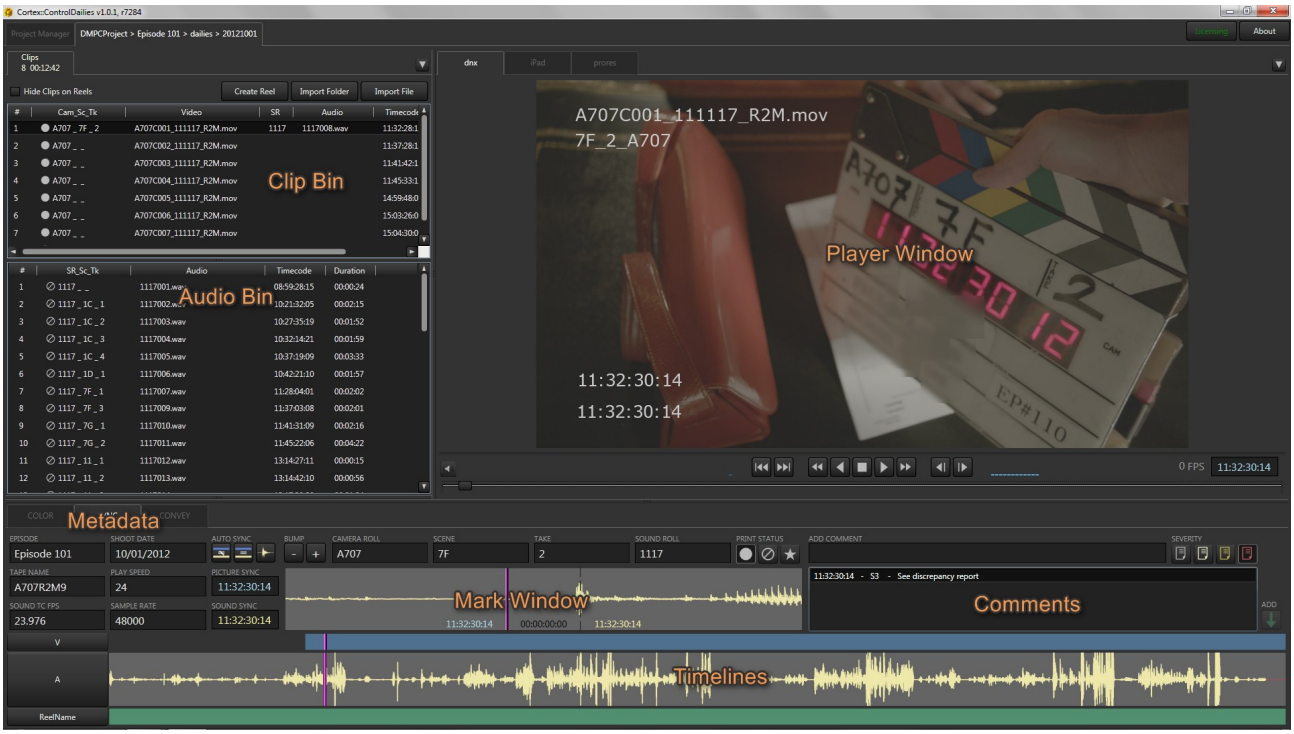
A waveform monitor and vectorscope provide additional feedback for color correction under different viewing conditions.

Primary color correction can be operated in two modes: Lift Gamma Gain or Printer Lights. The parameters can be adjusted using the GUI, keyboard shortcuts or a color panel. Currently the Tangent Wave panel is supported.

All values on the Primary node are converted to the ASC CDL standard SOP / saturation values which is a widely supported industry standard.

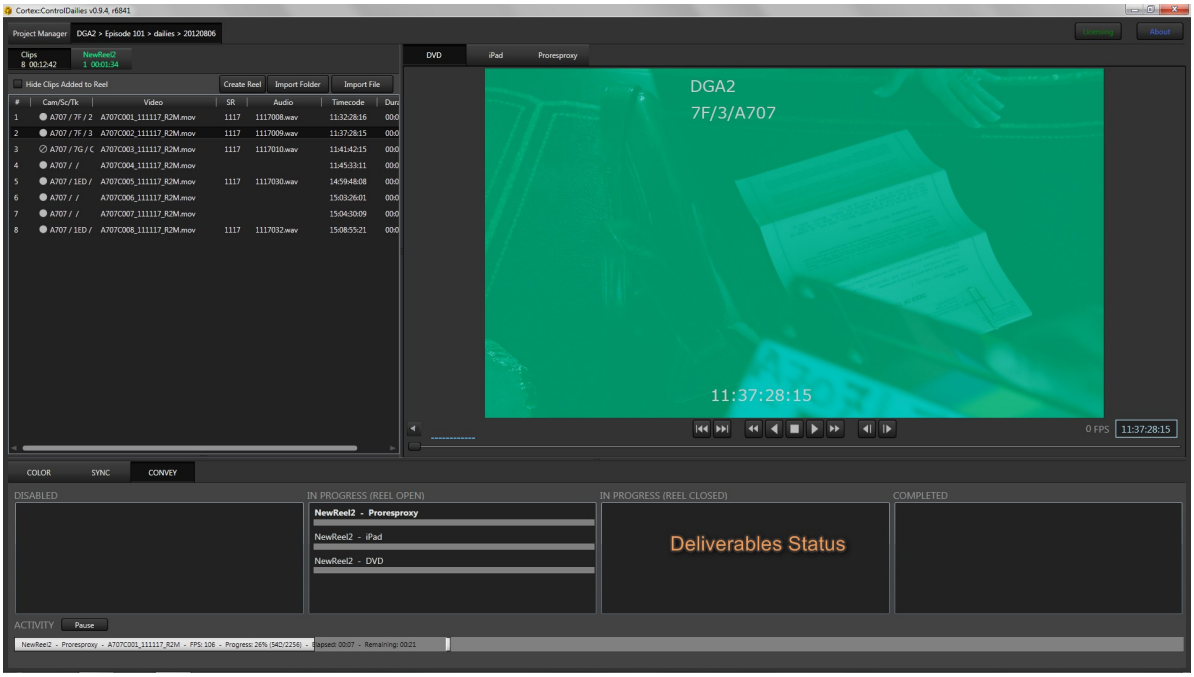
The Sync Tool

The Sync tool provides an interface for synchronizing audio and image clips as well as viewing, updating and adding metadata to each clip.



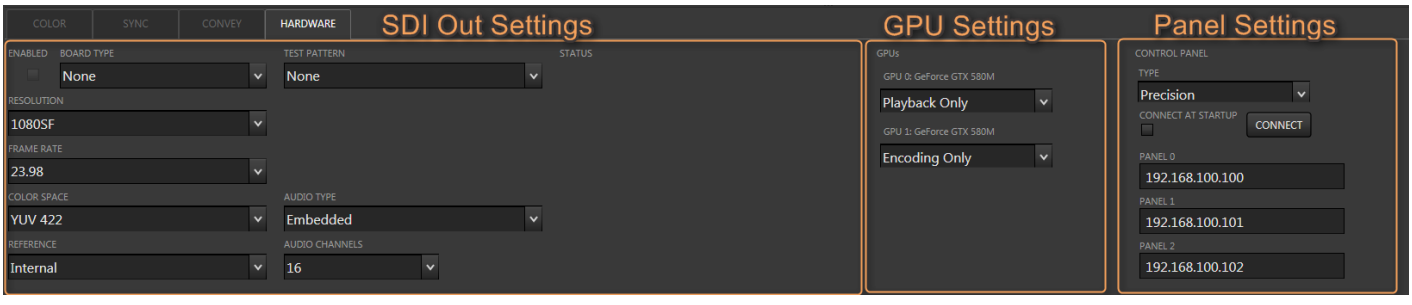
The Render Tab

The Render tab allows you to monitor the progress and manage the priorities of the background encoding of all deliverables.



The Hardware Tab

The Hardware Tab allows you to set up choices for SDI out (via DVS Atomix card), manually map your GPUs and connect to color panels.



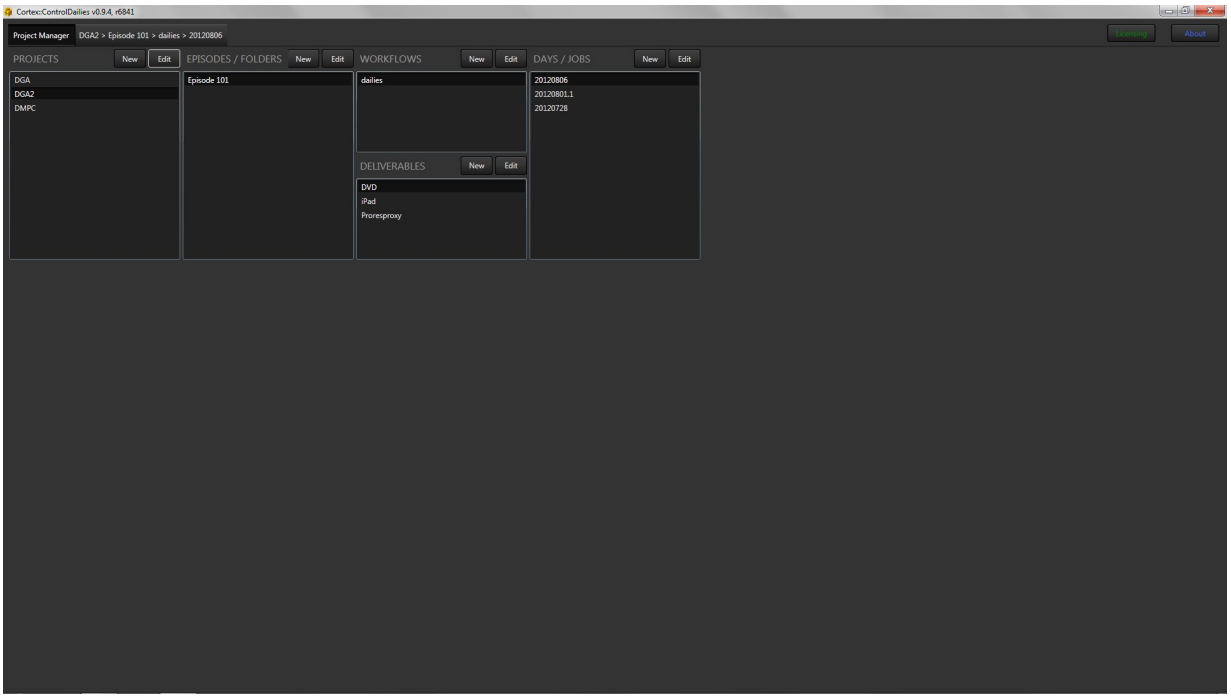
Upgrades and Support

All CORTEX products come with one year of Upgrades & Support included. You can access MTI Film's Support resources at http://mindshare.mtifilm.com including the most up-to-date version of the software.

Managing Projects and Media

Project Manager

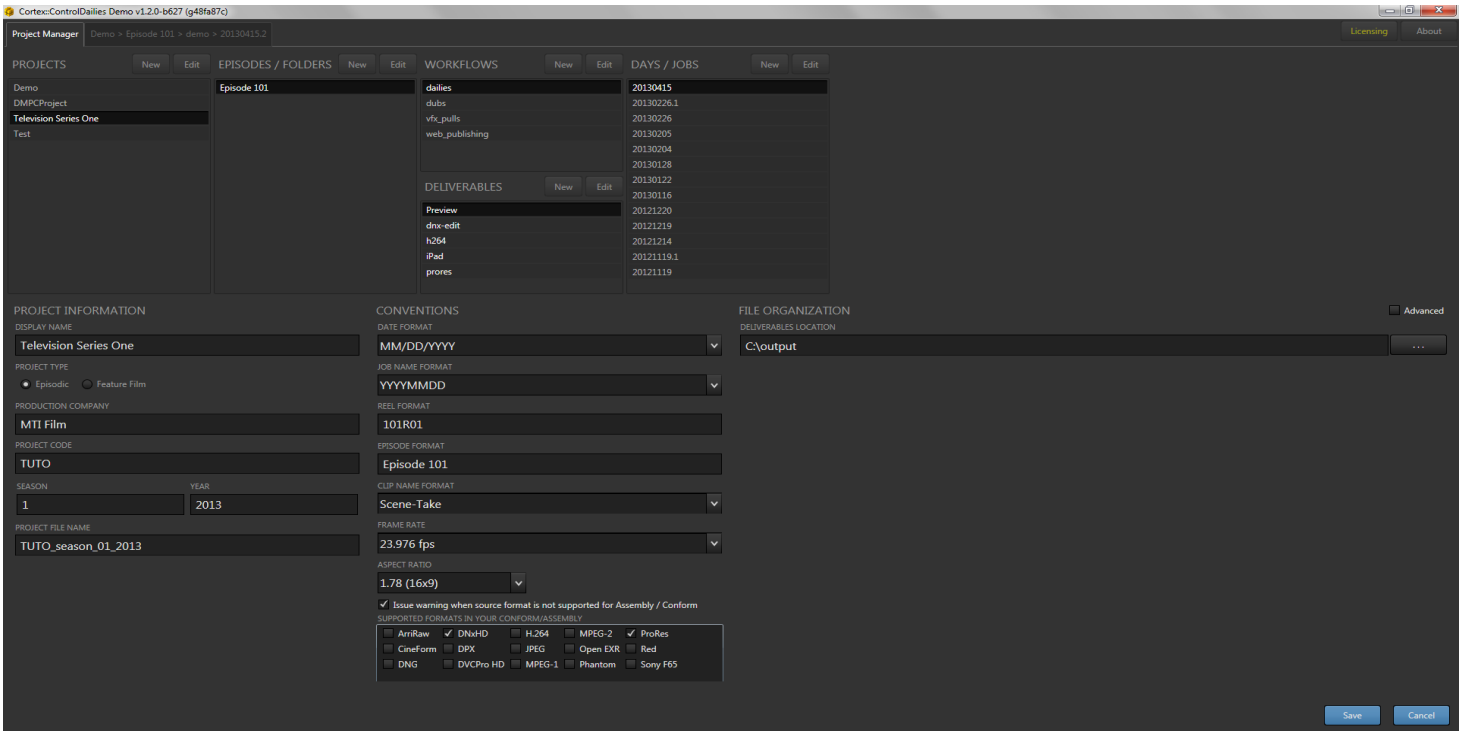
The Project Manager is the starting point for using any of the CORTEX products. The Project Manager allows you to define and organize projects, workflows, workflow deliverables and daily jobs.



A CORTEX Project corresponds to a real world project, such as a TV show or a film. Projects are organized by one or more Folders. In the case of a TV series, it is typical to create one folder per Episode.

Each Project must also have one or more Workflows associated with it. A Workflow is a collection of deliverables, for example: all review & approval deliverables for dailies, all deliverables needed to complete an assembly or a set of outputs to deliver to VFX.

Jobs belong to a Project and Folder and may be associated with one or more Workflows. The workflow that is selected when you create the Job will be the default Workflow and determine automatic settings for folder organization of deliverables.

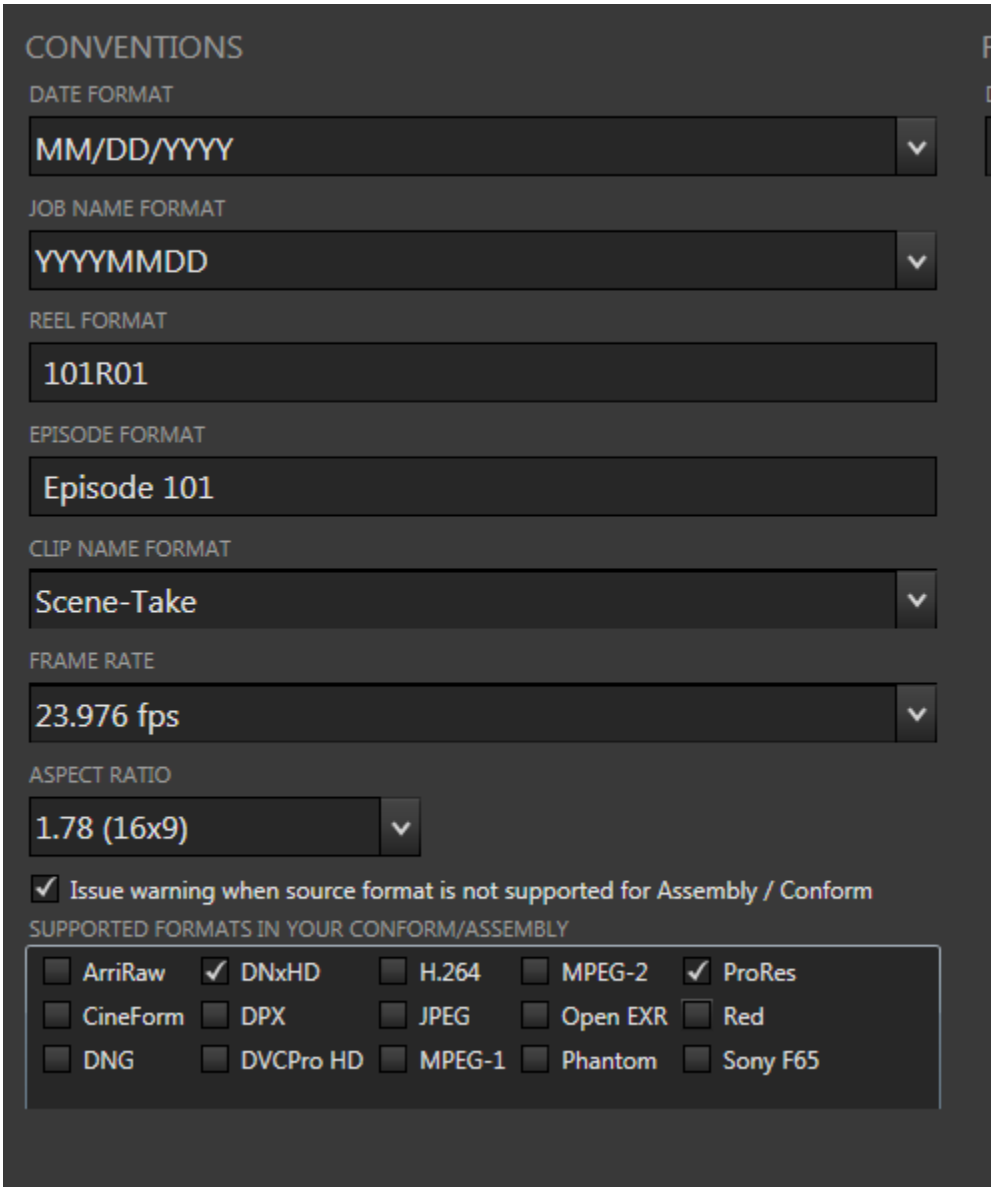


Create a New Project

1. In the Project Manager, click the **New** button in the **PROJECT** section.

2. Define the parameters of the Project:

- **DISPLAY NAME** - The name of the project.
- **PROJECT TYPE** - Episodic or Feature Film. Projects marked Episodic will use certain features and automatic naming conventions.
- **PRODUCTION COMPANY -** The name of the Production Company, this will be available to burn-in to any deliverable.
- **PROJECT CODE -** 4 letter code for the project, used in naming the files
- **SEASON** - Current Season (if Episodic).
- **YEAR -** Current calendar year.
- **PROJECT FILE NAME** - Automatically generated from data already provided, but may be modified.



3. Define Naming Conventions and Project Rules. Naming Conventions allow CORTEX to automatically name Reels, Episodes and Clips to save time. Project Rules help enforce consistency when multiple cameras are used.
    - **DATE FORMAT** - Preferred date formating.
    - **JOB NAME FORMAT** - Automatic naming convention for new jobs, may be overridden when creating a new Job.

- **REEL FORMAT**- Default Reel naming convention, may be overridden when creating Reels. The default `101R01` means the Reel will be named as [Episode Number]R[Reel Number] and the Reel number will auto-increment each time a reel is created.
- **EPISODE FORMAT** - By default, it will auto-increment Episode naming format. Can be overridden when creating a new Episode/Folder.
- **CLIP NAME FORMAT** - Default clip naming based on metadata.
- **FRAME RATE** - The project target frame rate. Clips that were generated at other frame rates will be flagged with a warning.
- **ASPECT RATIO** - The project target aspect ratio. Clips shot with a different aspect ratio will be framed to this aspect ratio in the framing tool by default.
- **Issue warning when source format is not supported for Assembly / Conform** - If checked, CORTEX will issue a warning when adding clips to a Reel that are not one of the selected formats. Check all formats that are supported by your assembly/conform tool.

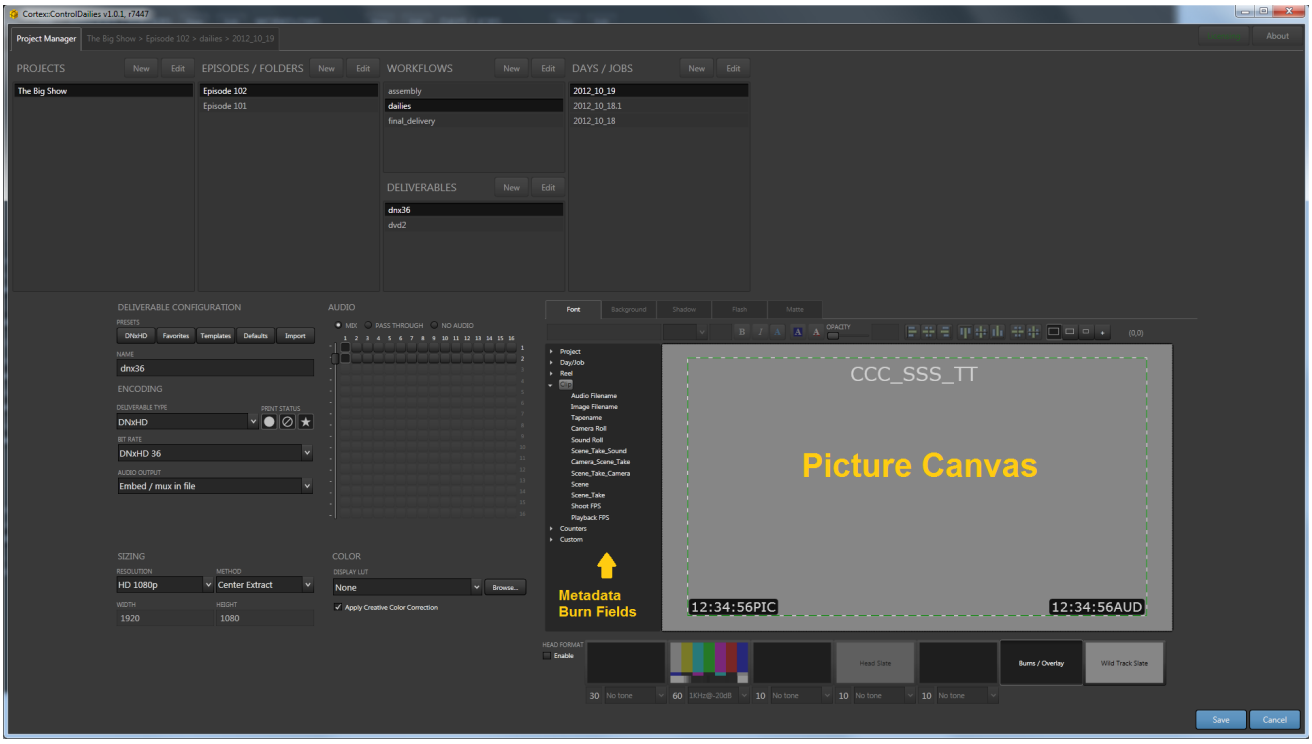
4. Define **FILE ORGANIZATION** - select a top level folder for all project deliverables. CORTEX will take care of organizing the sub-folder structure.
5. Click **Create**

Create a New Episode or Week (for features)

1. Select the Project
2. Click the **New** button in the Episodes/Folders section
3. Define episode parameters
   - **Episode/Folder Name** will be pre-defined from the Project Naming Conventions, but you may change it here
   - **Title or Description** Episode Title, will be available to burn in to any deliverable
   - **Production Number** Production number
   - **Internal Job Number** For internal tracking and billing
   - **File Name** - default name may be changed
4. Click **Create**

Define WORKFLOWS & DELIVERABLES

WORKFLOWS define a collection of deliverables, for example all the review and editorial formats needed in dailies. You will need to define at least one workflow before starting a job and importing media. It is recommended to define all your workflows at the beginning of a project, but you may add or change existing workflows at any time.



1. Select the Project
2. Click **New** in the Workflows section
3. Define a **WORKFLOW NAME** and optional **DESCRIPTION.**
4. Define your first deliverable, Click **New** in the Deliverables section
5. Define DELIVERABLES parameters:
    - **NAME** - The deliverable's name.
    - **DELIVERABLE TYPE** - Select the type of deliverable (e.g. Blu-Ray).
    - **PRINT STATUS** - Define whether circle takes, starred takes and b-neg takes should be included on this deliverable.
    - Format-specific parameters - for each format, there are format-specific parameters such as bitrate, output resolution, etc.
    - **SIZING** - Select between the available output resolutions (depends on the selected DELIVERABLE TYPE). Under **SOURCE**, you can determine whether the deliverable uses the Original Frame or the output of the Framing Tool as the source image for the deliverable.
    - **PACKAGING** - Choose File per clip or File per reel. When creating a Reel, you will have the option to create these clips using the Source timecode or by generating Continuous timecode.
    - **AUDIO** - Select your Audio mix options:
        i. **MIX** - use the graphical audio mixer to map input audio channels to output audio channels.
        ii. **PASS THROUGH** - Pass through the audio as it was recorded.
        iii. **NO AUDIO** - Do not include audio output for this deliverable.
    - **COLOR** - Select color-specific options
        i. **DISPLAY LUT** - optionally select a deliverable-specific LUT.

ii. **Apply Creative Color Correction** - choose whether to apply color correction (if unchecked, the raw image will be encoded to the deliverable, regardless of any color decisions applied within the Color tool).
iii. **Apply Clipping** - Apply clipping if image values go out of bounds.

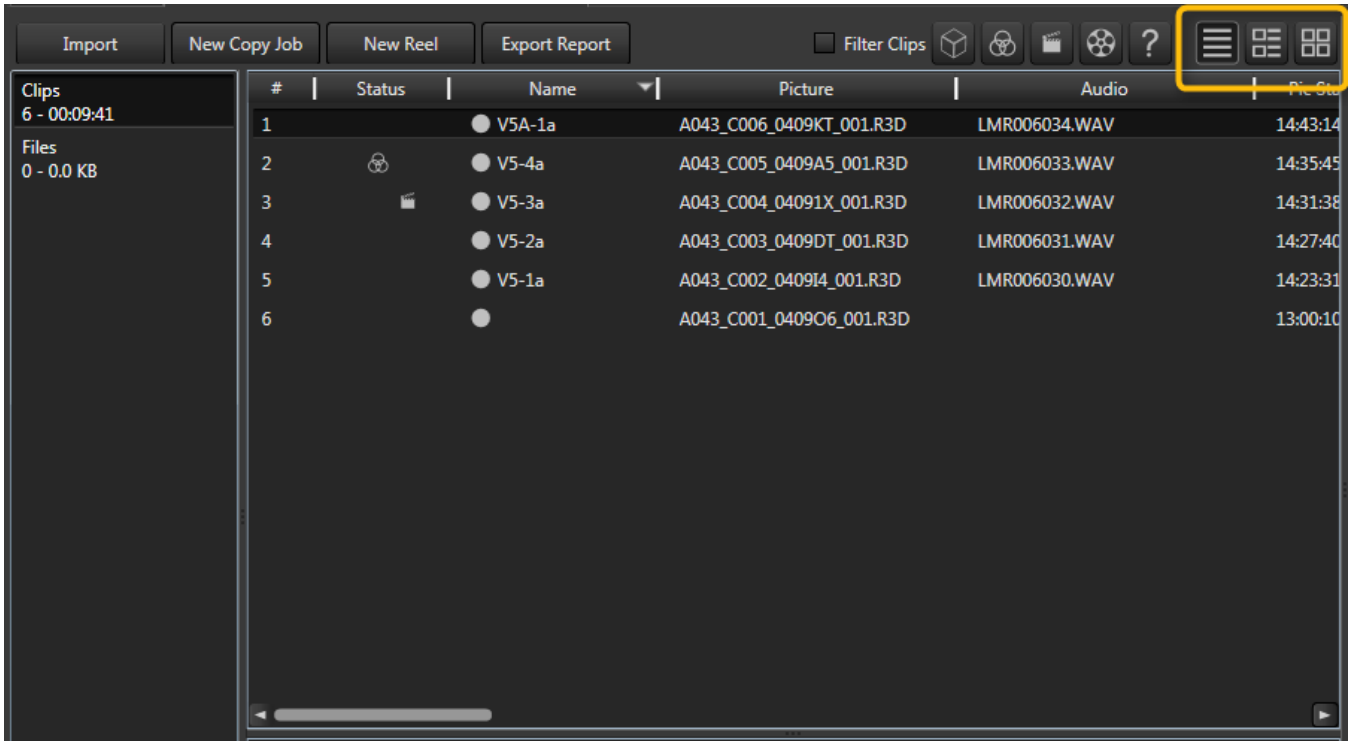
- **OTHER**
  i. **Show Edit Markers** - If checked, edit markers (in point, out point and sync point) will be overlaid in this config's display (they will not be output).
- **Slates & Burn-ins** - Drag and drop metadata burn fields onto the Picture Canvas such as image timecode, audio timecode, episode number or custom text. Custom text will be rendered exactly as entered, all other options act as place holders that will be filled with metadata from the project or the clip itself.

  If you wish to enter a prefix for a metadata field, use the text box located in the upper left corner of the Font tab while the field is selected. For example, you can enter "pic" as a prefix to picture timecode.

6. Click **Save**

The Clip Bin

The Clip Bin displays all loaded video clips.



Import Camera Media

You can use the **Import** button or **New Copy Job** button to bring new media into the system.
Use **Import** to bring in media already loaded on local or shared storage.
Use **New Copy Job** to bring in media from external sources like camera cards or shuttle drives.

Import menu

- **Media File(s)** - Select one or more specific files to bring into the Job
- **Media Folders** - Select an entire folder and all its subfolders to bring into the Job
- **CMX 3600 EDL** - Select an EDL to reconcile imported media.
- **Cortex Manifest** - Select a Cortex Manifest to relink and verify media files from jobs between systems (for example, a Manifest passed from onset to post)

New Copy Job - Create a new copy job
New Reel - Create a new output Reel
Export Report - Export reports, the report options available are contextual based on which item in the sidebar is selected.

Clip Views

The Clip Bin Offers three views of clips:

- **Details** - Full list of clip & file details
- **List & Thumbnail**- Thumbnail view with clip details
- **Thumbnails** - Timeline thumbnail only view

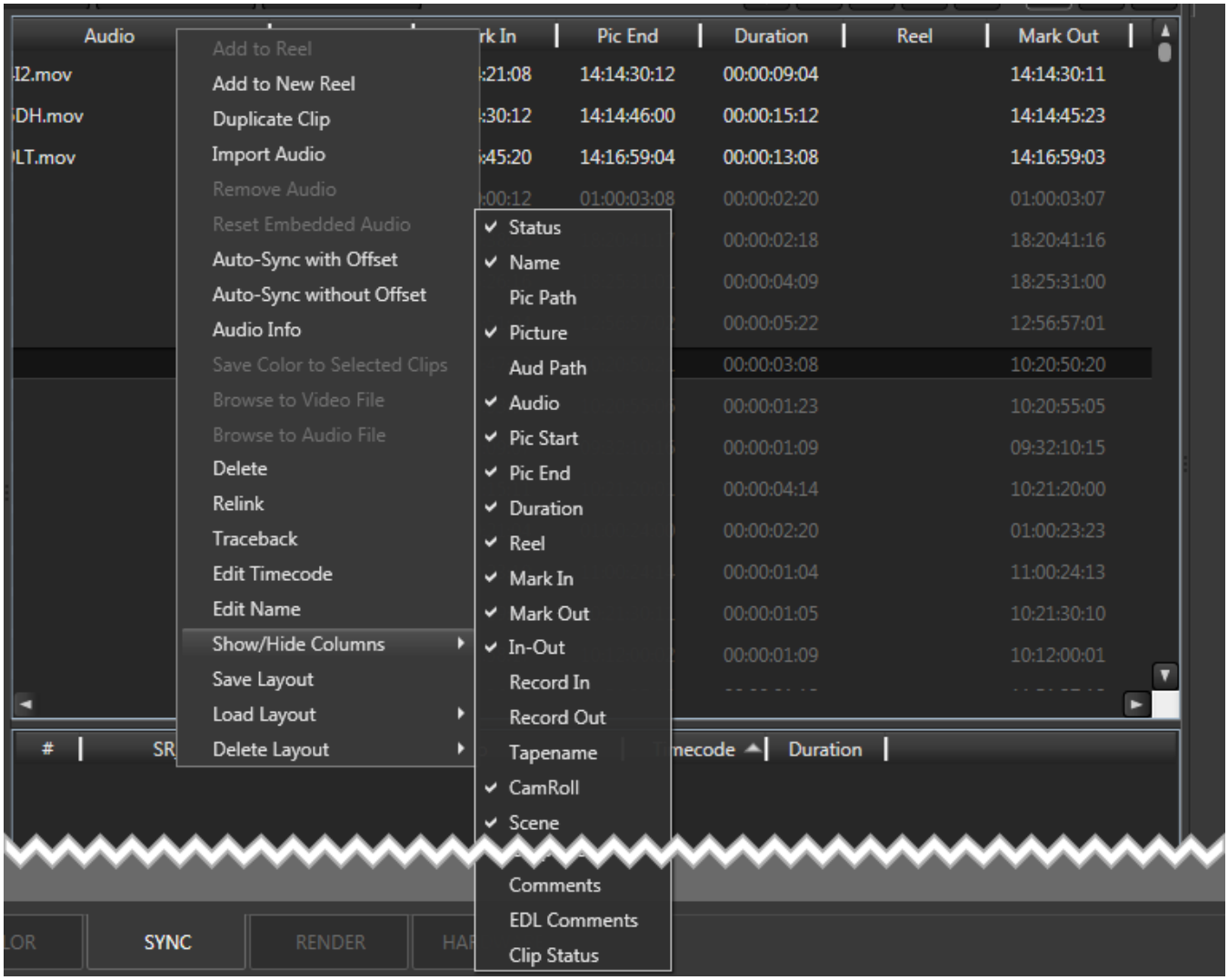
Detail View

Each clip is displayed with the following information:

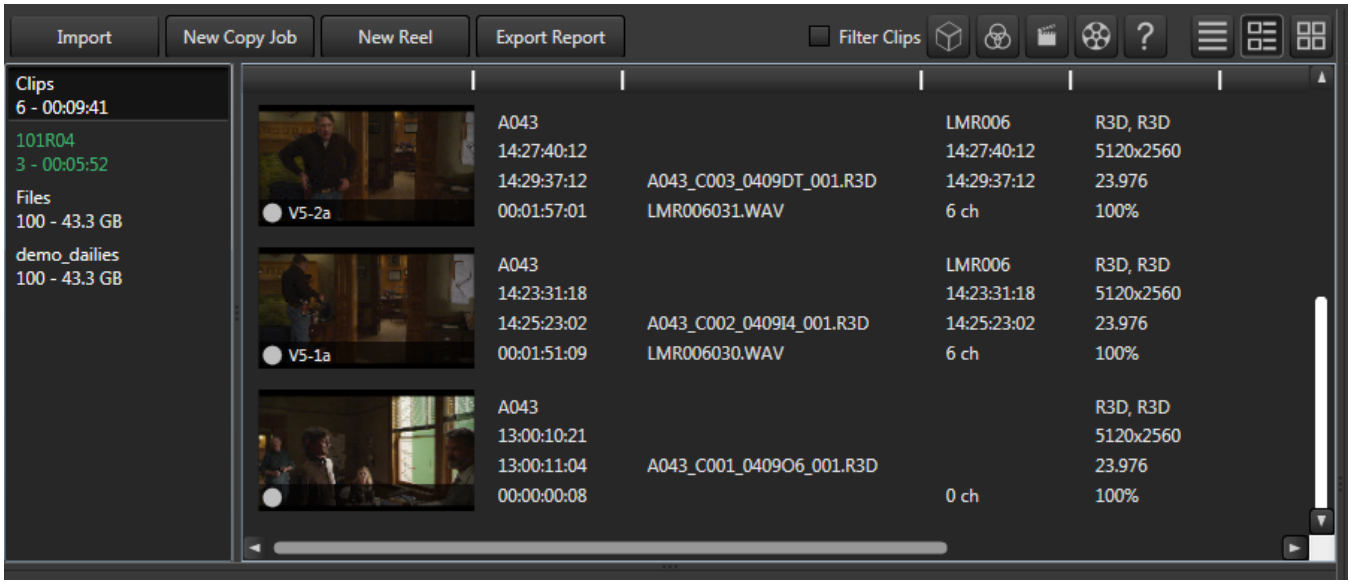
- **#** - Import order
- **Warning** - Consistency warnings (set in Project Rules) appear here, if applicable.
- **Status** - Icons indicate if the clip has had a LUT applied, been color corrected, synced audio and image and/or been added to a Reel.
- **Name** - Clip name and status. The symbol to the left indicates the clip's status - Circled, Excluded or Starred. Clips are Circled by default. The default clip name is set in the project manager.
- **Picture** - Video/Image file name.
- **Audio** - Associated audio file - either embedded or synched.
- **Pic Start** - Start timecode of image file.
- **Pic End** - End timecode of image file.
- **Duration** - Clip duration.
- **Reel** - Associated Reel (Blank if it has not yet been added to a Reel).
- **Mark In** - Mark In timecode (Pic start if no In point has been set).
- **Mark Out** - Mark out timecode (Pic end if no out point has been set).
- **In-Out** - Duration of marked subclip.
- **CamRol** - Camera Roll.
- **Scene**
- **Take**
- **SRoll** - Sound roll.
- **Aud In -** Audio timecode at mark in.
- **Aud Out** - Audio Timecode at mark out.
- **Aud Start -** Audio timecode at start of file (not necessarily start of clip).
- **Aud End** - Audio timecode at end of file.
- **File Type** - Image file type.
- **Codec** - Image file codec.
- **Resolution** - Image file resolution.
- **Audio Channels** - Number of audio channels in the master source file or the sync'd audio file.
- **Frame Rate** - Image file frame rate.

In Detail View, you can create custom column layouts by right-clicking on the bin header and selecting included/excluded columns. Drag and drop column headers to rearrange the order.

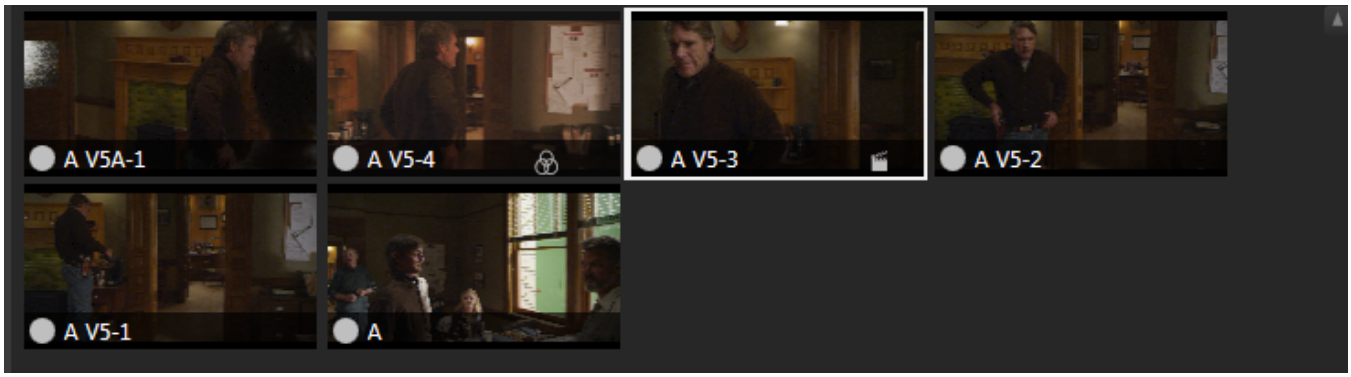
Save and reload saved layouts via the right-click menu.


Audio
Pic End
Duration
Reel
Mark Out
14:14:30:12
00:00:09:04
14:14:30:11
14:14:46:00
00:00:15:12
14:14:45:23
14:16:59:04
00:00:13:08
14:16:59:03
01:00:03:08
00:00:02:20
01:00:03:07
00:00:02:18
18:20:41:16
00:00:04:09
18:25:31:00
00:00:05:22
12:56:57:01
00:00:03:08
10:20:50:20
00:00:01:23
10:20:55:05
00:00:01:09
09:32:10:15
00:00:04:14
10:21:20:00
00:00:02:20
01:00:23:23
00:00:01:04
11:00:24:13
00:00:01:05
10:21:30:10
00:00:01:09
10:12:00:01
Add to Reel
Add to New Reel
Duplicate Clip
Import Audio
Remove Audio
Reset Embedded Audio
Auto-Sync with Offset
Auto-Sync without Offset
Audio Info
Save Color to Selected Clips
Browse to Video File
Browse to Audio File
Delete
Relink
Traceback
Edit Timecode
Edit Name
Show/Hide Columns
Save Layout
Load Layout
Delete Layout
Status
Name
Pic Path
Picture
Aud Path
Audio
Pic Start
Pic End
Duration
Reel
Mark In
Mark Out
In-Out
Record In
Record Out
Tapename
CamRoll
Scene
Comments
EDL Comments
Clip Status
Duration
SYNC
RENDER

List and Thumbnail View



Thumbnail View

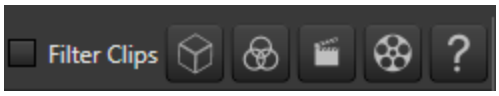


Filtering and Sorting Clips

The Clip list can be filtered to hide clips that have already had a LUT applied, had color correction applied, been synchronized or added to a Reel. This is useful to ensure that no clips within a job are missed and to make viewing long lists of clips easier for the user.

To filter

1. Check the **Filter** checkbox to turn filtering on.
2. By default, all clips are shown. Toggle one or more of the filter buttons to hide the selected type of clip.

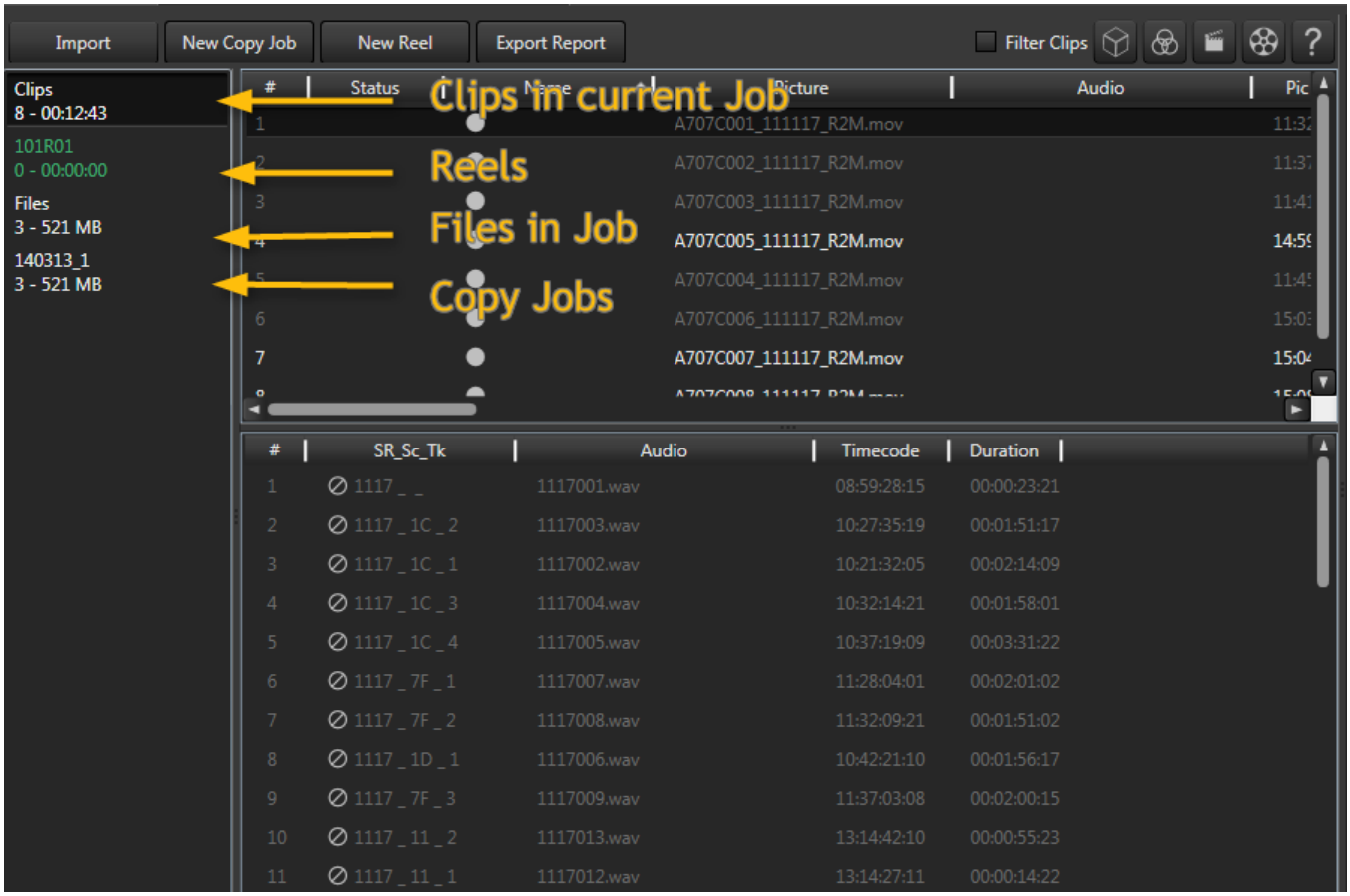


Filter options are:

- LUT applied
- Color Corrected
- Synced
- Added to Reel
- Media Offline

The Bin can be sorted on any column header, either ascending or descending

The Bin Sidebar



The Bin Sidebar changes the Bin view:

- **Clips** - DIsplays the clips in current Job
- **Reels** - All Reels in the current job are listed. Click on any Reel to change to Rell Bin view. The green highlighted Reel is the currently open and active Reel.
- **Files** - A list of files in the Job and their Manifest verification status
- **Copy Jobs** - All Copy Jobs will be listed here. Click on the Job to display a list of files that were copied during the Job.

Working with CORTEX Manifest Files

The CORTEX Manifest is a lightweight sidecar file that contains all the media and metadata information about a CORTEX job. It can be passed between on-set and post installations to ensure complete coherence of media and other metadata.

The Manifest file includes information about:

- Audio and Image files that have been copied or imported
- Checksum for verification
- LUT files applied
- CDL values of primary color correction applied
- Framing settings
- Synchronization points
- Scene/Take/Camera
- Comments & Discrepancies
- Edit markers (trim points)

Manifest files can be loaded into a CORTEX job first and then relinked to the underlying media or the media can be imported first and the traced back with a Manifest.

Creating a Manifest from a Job

A Manifest file can be created at any phase of a job. For example, a Manifest can be generated after Copy & Color or later after synching.

To create a Manifest file

1. Go to the Project Manager
2. Right-click on the Job name
3. Select **Export Manifest**
4. Choose a location and Save the file.

The file can now be emailed, shared via networked storage, sent via thumb drive or added to a shuttle drive.

Importing a Manifest and Relinking to Media

To Import a Manifest

1. Create or Open a Job
2. Click the **Import** button and select **Cortex Manifest** from the dropdown
3. Browse to the file location and click **Open**

To Relink to media files

Note: If you import a Manifest into the same system on which it was created or another system sharing the same storage, the media will be relinked automatically

This method will relink all media and metadata but will not reconcile the media files for Discrepancy Reporting

1. Click the **Import** button and select **Media Folder** (or **Media File(s)**)

2. Browse to the media location and click **Open**

CORTEX will automatically match the media files on your system to those reported in the Manifest and apply all settings from the original session.

To Relink to media files with Discrepancy Reporting

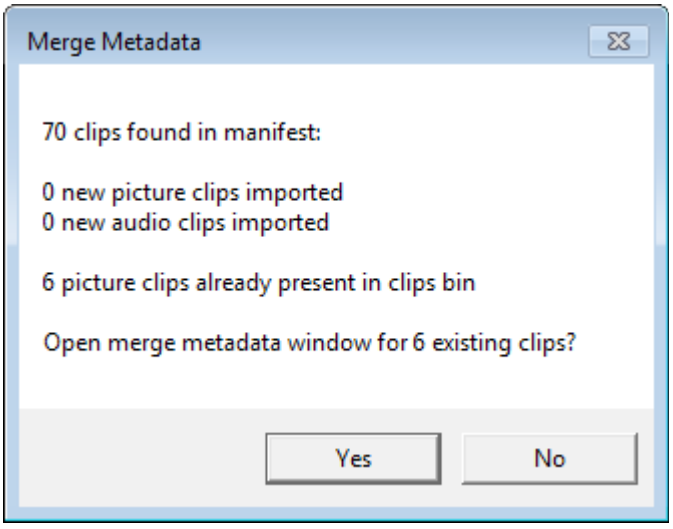
This method will relink all media and metadata and will reconcile the underlying files for Discrepancy Reporting

1. Go to the **Copy** tab
2. In **Source** browse to your media folder
3. Clear all **Destinations**, including **Primary**
4. Click **Start Copy**

By running a Copy Job with no destinations, CORTEX will read, index and verify the checksums of the files in the **Source** directory, then create Clips that are automatically Relinked to the metadata in the Manifest.

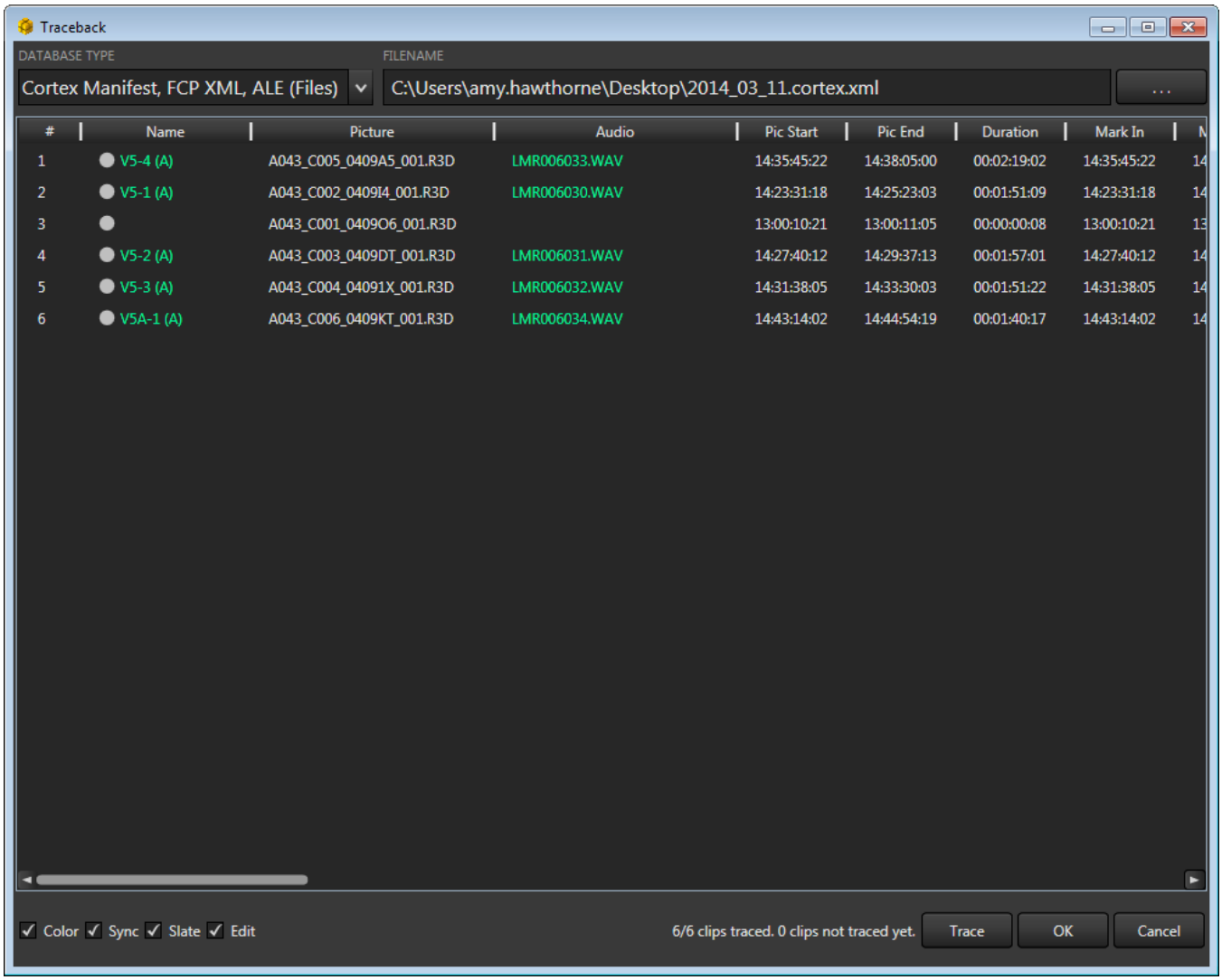
Importing Media and Tracing Back to a Manifest File

1. Create a new Job
2. Click the **Import** button and select **Media Folder** (or **Media File(s)**)
3. Browse to the media location and click **Open**
4. Click the **Import** button and select **Cortex Manifest** from the dropdown
5. Browse to the file location and click **Open**
6. The **Merge Metadata** dialog will open with an overview of clips matched between the media and the Manifest. Click **Yes** to open the **Media Traceback Window**



7. The **Media Traceback Window** will display a summary of matched clips. New metadata will be highlighted in green

8. You can check or uncheck **Color**, **Sync**, **Slate** and **Edit** to selectively apply metadata
9. Click **OK**



Data Discrepancy Reporting

Data Discrepancy Reports are available to track files that have been copied & verified and matched against a Manifest file.

To view the state of files within a Job in CORTEX, click on **Files** in the sidebar

This will show you all files:

- referenced in the Manifest
- Imported via Copy Job
- Imported via a Verify Job

Each file will display one of the following statuses:

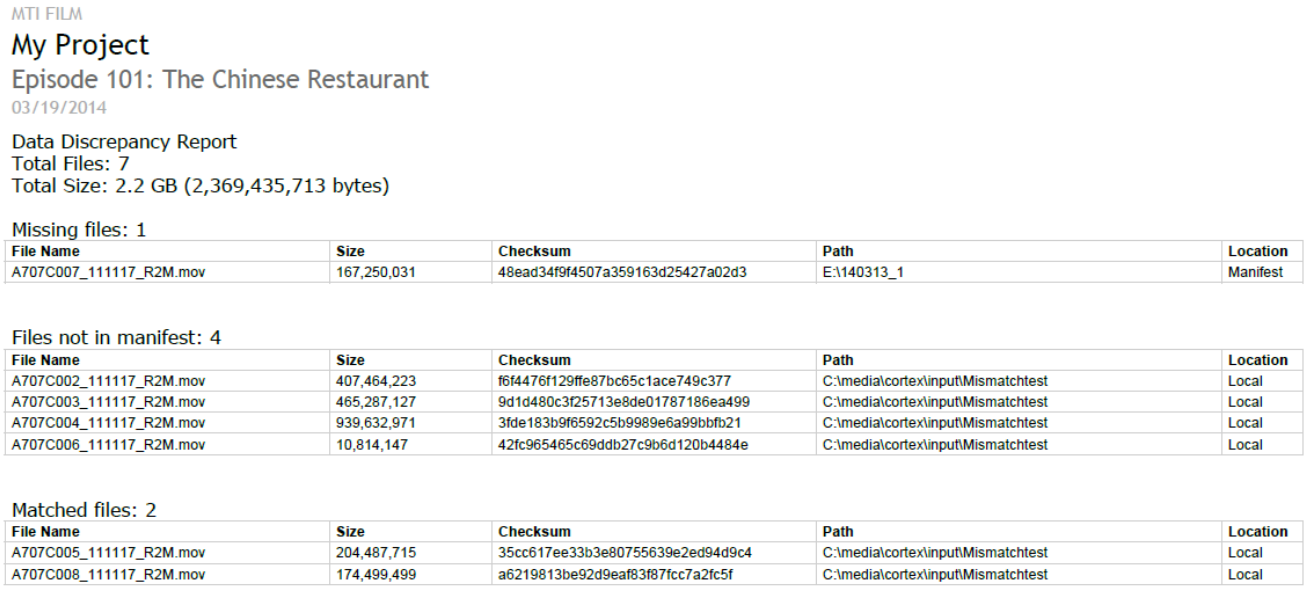
- **Matched** - The file is referenced in the Manifest and was matched and verified by a Copy Job

- **Mismatch** - The file is referenced in the Manifest and is present in the Copy Job, but the file size or checksum does not match
- **Missing** - The file is referenced in the Manifest but no such local files exists in the Copy Job
- **Unlisted** - The file was imported via Copy Job, but is not referenced in the Manifest

.

To generate a PDF Report:

1. Select **Files** in the left sidebar
2. Click **Export Report**
3. Select a File Path by clicking the **…** (browse) button
4. The default file name will be *jobname*.files.pdf, you can edit this if you wish
5. Choose **Include Matched Files** if you'd like a full report of all files in the Job
6. Click **OK**



MTI FILM

My Project

Episode 101: The Chinese Restaurant

03/19/2014

Data Discrepancy Report
Total Files: 7
Total Size: 2.2 GB (2,369,435,713 bytes)

Missing files: 1

File Name	Size	Checksum	Path	Location
A707C007_111117_R2M.mov	167,250,031	48ead34f9f4507a359163d25427a02d3	E:\140313_1	Manifest

Files not in manifest: 4

File Name	Size	Checksum	Path	Location
A707C002_111117_R2M.mov	407,464,223	f6f4476f129ffe87bc65c1ace749c377	C:\media\cortex\input\Mismatchtest	Local
A707C003_111117_R2M.mov	465,287,127	9d1d480c3f25713e8de01787186ea499	C:\media\cortex\input\Mismatchtest	Local
A707C004_111117_R2M.mov	939,632,971	3fde183b9f6592c5b9989e6a99bbfb21	C:\media\cortex\input\Mismatchtest	Local
A707C006_111117_R2M.mov	10,814,147	42fc965465c69ddb27c9b6d120b4484e	C:\media\cortex\input\Mismatchtest	Local

Matched files: 2

File Name	Size	Checksum	Path	Location
A707C005_111117_R2M.mov	204,487,715	35cc617ee33b3e80755639e2ed94d9c4	C:\media\cortex\input\Mismatchtest	Local
A707C008_111117_R2M.mov	174,499,499	a6219813be92d9eaf83f87fcc7a2fc5f	C:\media\cortex\input\Mismatchtest	Local

The Player Window

The Player window displays the currently selected clip along with transport controls, timecode buffer, and Deliverables tabs.

Deliverables Tabs

The Deliverables tabs are arranged across the top of the Player Window and correspond to the deliverables defined in the current workflow.

Select any tab to change the Player Window to display the current clip with the selected deliverables options, including aspect ratio and burn-ins.

Transport Controls

There are standard transport controls and a timecode display located below the Player Window.

Timecode Buffer

The Timecode Buffer displays the current timecode position of the active clip. You can directly enter a timecode into the buffer by inputting a value on the number pad. Press Enter to cue to the value. Press **+** then enter a numerical value on the number pad to jump forward that number of frames, use **-** to jump back..

Go To Clip

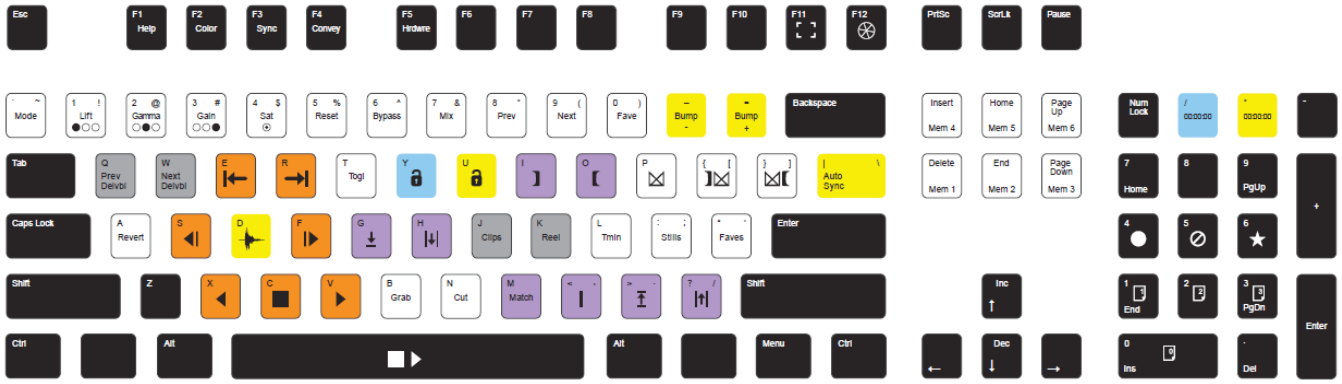
When you manually enter a timecode into the Timecode Buffer, if the timecode is outside of the currently loaded clip, CORTEX will search and find the clip that contains the selected TC and load it.

Keyboard shortcuts for transport controls

You can also navigate the clip using keyboard shortcuts.

Shortcut Key	Function
V	Play forward
C	Stop
X	Play backward
VV	Fast forward
XX	Play backward 2x
F	Jog forward
S	Jog backward
Shift+F	Jog forward faster (+8 frames)
Shift+S	Jog backward faster (-8 frames)
Shift+V	Play from middle of clip
SPACE	Play/stop
E	Go to previous clip start
R	Go to next clip start
Shift+E	Go to previous clip’s sync mark
Shift+R	Go to next clip’s sync mark
Shift+D	Go to current clip’s sync mark
F11	Toggle Full Screen

Keyboard and Keyboard Shortcuts



Key	Function	Color	Sync	RENDER	Full Screen
Esc					
F1	Select Copy Tool	Y	Y	Y	Y
F2	Select Color Tool	Y	Y	Y	N
F3	Select Sync Tool	Y	Y	Y	N
F4	Select RENDER Tool	Y	Y	Y	N
F5	Select Hardware Tool	Y	Y	Y	N
F6					
F7					
F8					
F9					
F10					
F11	Toggle Full Screen On/Off	Y	Y	Y	Y
F12	Toggle scopes On/Off	Y	Y	Y	Y
Shift+F12	Toggle scopes Off during Play	Y	Y	Y	Y
~	Toggle color modes - Lift Gamma Gain / Printer Lites	Y	N	N	Y

1	Modal - Select Lift / Red Channel	Y	N	N	Y
Ctrl+1	Modal - Reset Lift / Red Channel	Y	N	N	Y
Hold 1	Adjust Lift (R,G,B) with mouse on color wheel or use arrow keys	Y	N	N	Y
2	Modal - Select Gamma / Green Channel	Y	N	N	Y
3	Modal - Select Gain / Blue Channel	Y	N	N	Y
4	Select Saturation in LGG mode	Y	N	N	Y
5	Reset color channels to Unity - Leave LUTs in place	Y	Y	Y	Y
Shift+5	Reset all nodes to default	Y	Y	Y	Y
Hold 6	Bypass color correction except LUTs	Y	Y	Y	Y
Hold Shift+6	Bypass all for view of Raw	Y	Y	Y	Y
7	Mix	Y	N	N	Y
8	Load Previous Clip's correction	Y	Y	Y	Y
9	Load Next Clip's correction	Y	Y	Y	Y
0	Toggle Favorite	Y	N	N	Y
-	Bump audio 1 frame back	N	Y	N	Y
Ctrl + -	Bump audio 1/4 frame back	N	Y	N	Y
=	Bump audio 1 frame forward	N	Y	N	Y
Ctrl + =	Bump audio 1/4 frame forward	N	Y	N	Y
Backspace	Edit text				
Up Arrow	Adjust (Y) up (Shift for greater increments, Ctrl for smaller increments)	Y	N	N	Y
Dn Arrow	Adjust (Y) down (Shift for greater increments, Ctrl for smaller increments)	Y	N	N	Y
Tab	Tab forward to metadata text fields	N	Y	N	Y
Shift+Tab	Tab backward to metadata text fields	N	Y	N	Y
Q	Select Previous Deliverable Tab	Y	Y	Y	Y
W	Select Next Deliverable Tab	Y	Y	Y	Y
E	Go to first frame of previous clip	Y	Y	Y	Y

Shift+E	Go to sync point of previous clip	Y	Y	Y	Y
R	Go to first frame of next clip	Y	Y	Y	Y
Shift+R	Got to sync point fo next clip	Y	Y	Y	Y
T	Toggle saved and pending color corrections	Y	Y	Y	Y
Y	Unlock Video Track	N	Y	N	Y
U	Unlock Audio Track	N	Y	N	Y
I	Mark In	Y	Y	Y	Y
Shift+I	Go to Mark In	Y	Y	Y	Y
Ctrl+I	Clear Mark In	Y	Y	Y	Y
O	Mark Out	Y	Y	Y	Y
Shift+O	Go to Mark Out	Y	Y	Y	Y
Ctrl+O	Clear Mark Out	Y	Y	Y	Y
P	Add Dissolve	Y	Y	Y	Y
Ctrl+P	Remove Dissolve				
[	Mark Dissolve In	Y	Y	Y	Y
Shift+[	Go to previous dissolve mark(s)	Y	Y	Y	Y
]	Mark Dissolve Out	Y	Y	Y	Y
Shift+]	Got to next dissolve mark(s)	Y	Y	Y	Y
\	Auto Sync with offset	N	Y	N	Y
Shift+\	Auto Sync without offset	N	Y	N	Y
A	Revert pending color correction	Y	N	N	Y
S	Jog back 1 frame	Y	Y	Y	Y
Shift+S	Jog back 8 frames	Y	Y	Y	Y
Ctrl+S	Save color correction	Y	Y	Y	Y
D	Auto-detect peak waveform in Mark Window for sync point	N	Y	N	Y
Shift+D	Go to sync point of current clip	Y	Y	Y	Y
F	Jog forward 1 frame	Y	Y	Y	Y

Shift+F	Jog forward 8 frames	Y	Y	Y	Y
G	Add clip to reel	Y	Y	Y	Y
H	Insert current source clip to Mark In of reel	Y	Y	Y	Y
J	Select Clip List	Y	Y	Y	Y
K	Select Active Reel	Y	Y	Y	Y
L	Display Timeline stills	Y	N	N	Y
;	Display Still Store stills	Y	N	N	Y
'	Display Faves stills	Y	N	N	Y
Shift+’	Display Imports stills	Y	N	N	Y
Ctrl+’	Display LUTs still	Y	N	N	Y
Enter	Cue to entered timecode or, when in text fields, dialog completion	Y	Y	Y	Y
X	Play reverse	Y	Y	Y	Y
Shift+X	Go to middle of clip	Y	Y	Y	Y
C	Stop	Y	Y	Y	Y
V	Play forward	Y	Y	Y	Y
Shift+V	Play from middle of clip	Y	Y	Y	Y
Ctrl+V	Switch Play Mode (Clip, Playlist)	Y	Y	Y	Y
B	Grab Still	Y	N	N	N
N	Cut to selected still	Y	N	N	Y
Shift+N	Load all color settings of selected still	Y	N	N	Y
Ctrl+Shift+N	Go to the clip of the selected still	Y	N	N	N
Delete	When in text field, edit text				
Ctrl+Shift+Del	Save MEM 1	Y	Y	Y	Y
Shift+Delete	Recall MEM 1	Y	Y	Y	Y
End	Go to last frame of clip or, when text field, end of text	Y	Y	Y	Y
Ctrl+End	Go to last clip in list				
Ctrl+Shift+End	Save MEM 2	Y	Y	Y	Y

Shift+End	Recall MEM 2	Y	Y	Y	Y
Page Down	Pages down to end of list	Y	Y	Y	Y
Ctrl+Shift+PgDn	Save MEM 3	Y	Y	Y	Y
Shift+PgDn	Recall MEM 3	Y	Y	Y	Y
Insert	When in text field, edit text	Y	Y	Y	Y
Ctrl+Shift+Insert	Save MEM 4	Y	Y	Y	Y
Shift+Insert	Recall MEM 4	Y	Y	Y	Y
Home	Go to first frame of clip or, when text field, begin of text	Y	Y	Y	Y
Ctrl+Home	Go to first clip in list				
Ctrl+Shift+Home	Save MEM 5	Y	Y	Y	Y
Shift+Home	Recall MEM 5	Y	Y	Y	Y
Page Up	Pages up to beginning of list	Y	Y	Y	Y
Ctrl+Shift+PgUp	Save MEM 6	Y	Y	Y	Y
Shift+PgUp	Recall MEM 6	Y	Y	Y	Y
Number Pad	**The following keys are Number Pad functions**				
0 - 9	Timecode entry	Y	Y	Y	Y
.	Set 00	Y	Y	Y	Y
Ctrl+0	Set Comment Severity to 0	N	Y	N	Y
Ctrl+1	Set Comment Severity to 1	N	Y	N	Y
Ctrl+2	Set Comment Severity to 2	N	Y	N	Y
Ctrl+3	Set Comment Severity to 3	N	Y	N	Y
Ctrl+4	Set Print Status to Circled	Y	Y	Y	Y
Ctrl+5	Set Print Status to Excluded	Y	Y	Y	Y
Ctrl+6	Set Print Status to Starred	Y	Y	Y	Y
/	Input picture sync timecode or trim value	N	Y	N	Y

*	Input sound sync timecode or trim value	N	Y	N	Y
-	Set minus trim value	Y	Y	Y	Y
+	Set plus trim value	Y	Y	Y	Y
Enter	Cue to entered timecode or, when in text fields, dialog completion	Y	Y	Y	Y

The Copy Tool

The Copy Tool is a simple interface to create one or more Copy jobs for offloading/importing media and making backup and archive copies. Each job has a single source (such as a camera card) and up to three target destinations. The target destinations can include a combination of internal storage, shared storage, attached storage, shuttle drives or LTO drives (using LTFS).

Copy Job Setup

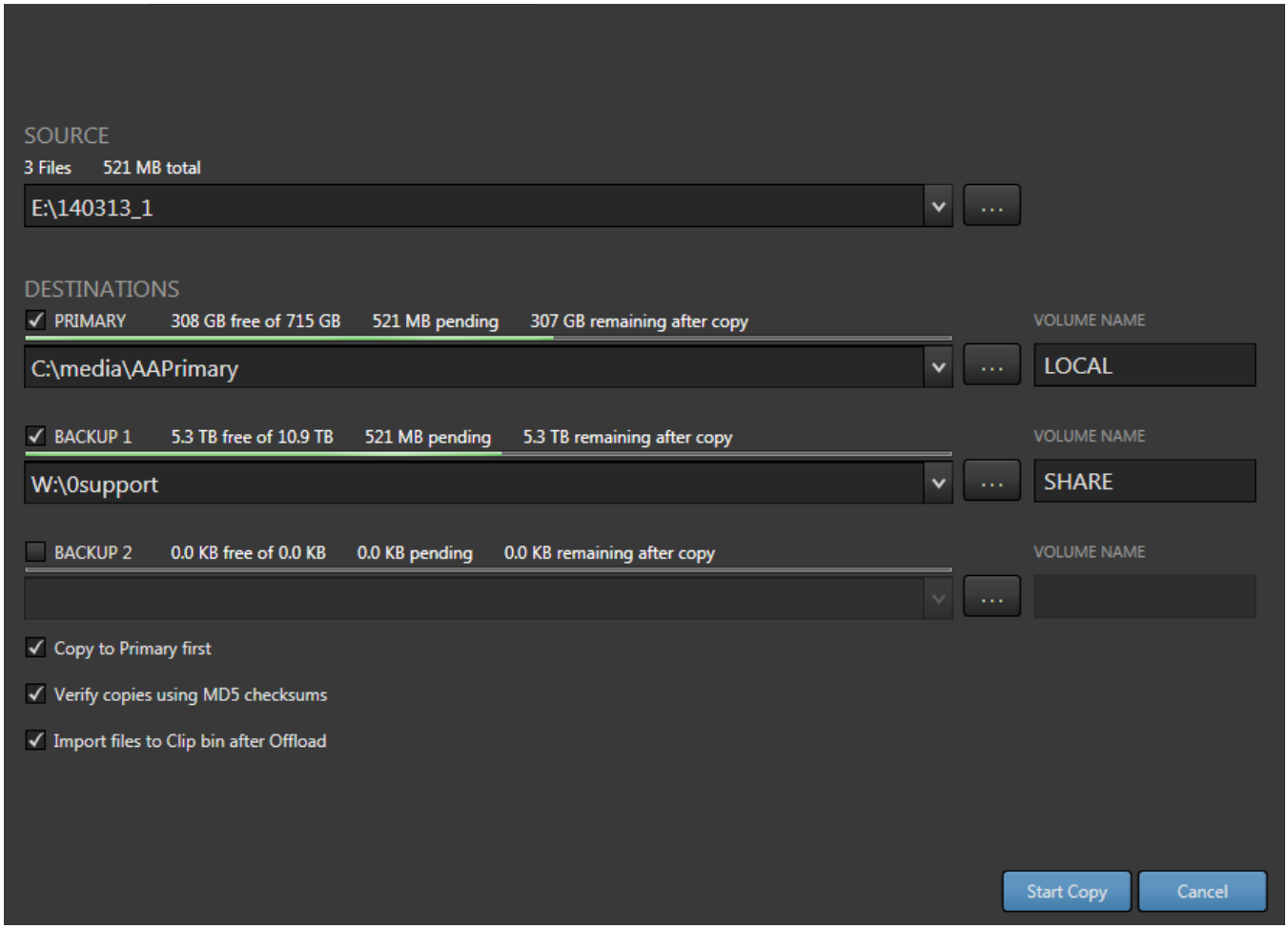
The Copy Job setup screen allows you to specify all the parameters of a copy job.

You can set up more than one copy job at a time.

Source - The file path to the source media, can be updated using the **…** (browse) button
Destinations - List of media copy/archive destinations

- **Primary** - Typically the internal storage of a CORTEX CarryOn or main storage of a CORTEX workstation
- **Backup 1 and Backup 2** - Additional copy/archive destinations
- **Volume Name** - Unique identifier for external drives, can be used to identify media storage for later pulls

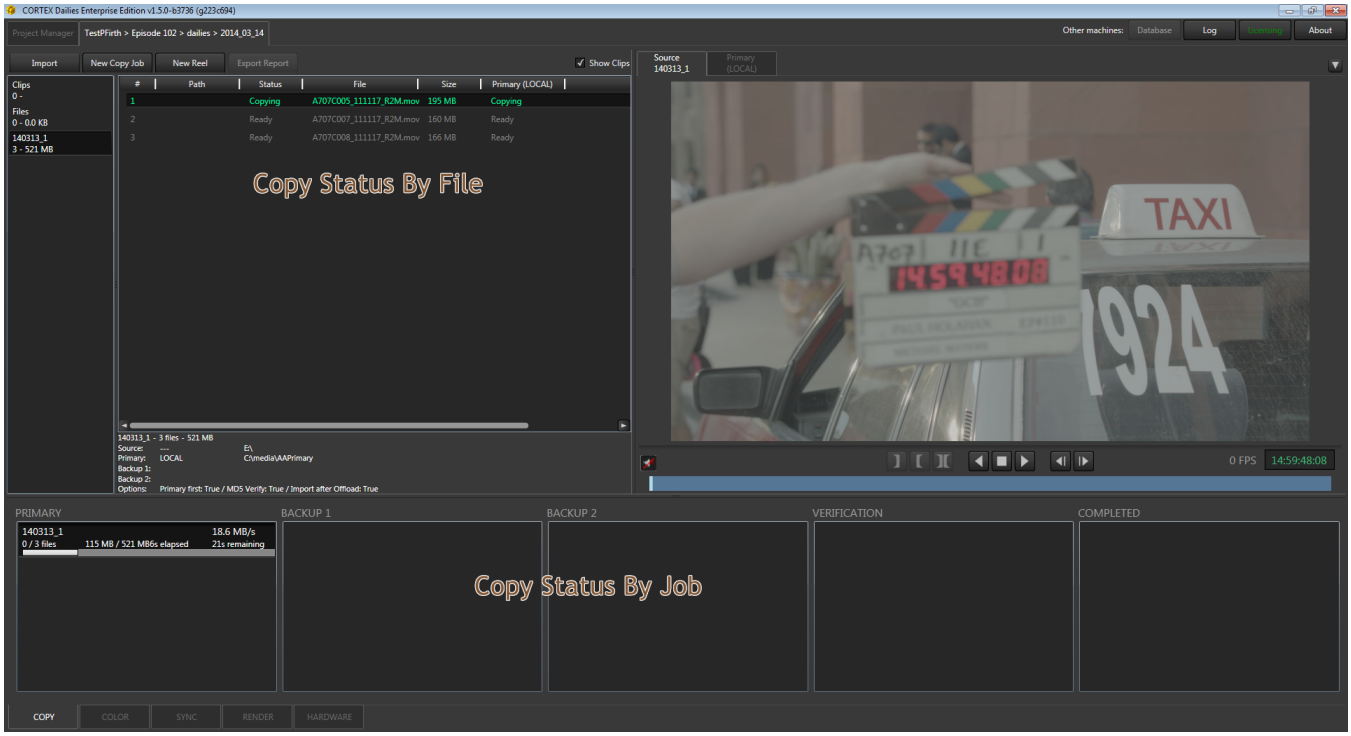
Copy to Primary first - When selected, CORTEX will copy media from to Source to Primary first, then create the remaining backup copies using Primary as the source. Recommended for use on-set to free up card slots for additional copy jobs.
Verify copies using MD5 checksums - (recommended) verify copies with MD5 checksums
Import files to Clip bin after Offload - When selected, loads copied files into the Clip bin for the current job



Copy Job Status

Once a copy job has been created, it will appear in the list in the left hand column. When selected, the copy & verify status of each individual file will be displayed.

The overall status of each copy job is displayed in the columns at the bottom.



Using The Copy Tool

1. Create a new Job within the Project Manager
2. Click the **New Copy Job** button
3. Choose your options in **Copy Job Setup** (see above)
4. Click **Start Copy**
5. If **Import files to Clip bin after Offload** is selected, you can switch to the Color tool as soon as the files are loaded

Verify Jobs

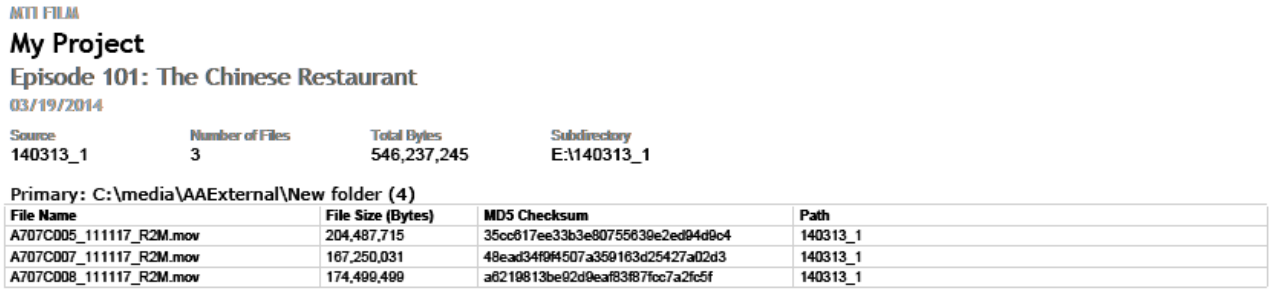
You can create a Verify Job to reconcile media that already exists locally (and so does not need to be copied) against a CORTEX Manifest file.

To create a Verify Job, set up a Copy Job as usual, but leave all Destinations blank.

Copy Job Reports

You can generate a full accounting of copy job results in PDF format:

1. Select the Copy Job from the left sidebar
2. Click **Export Reports**
3. Select a File Path by clicking the **…** (browse) button
4. The default file name will be *jobname*.data.pdf, you can edit this if you wish
5. Click **OK**



MTI FILM

My Project

Episode 101: The Chinese Restaurant

03/19/2014

Source	Number of Files	Total Bytes	Subdirectory
140313_1	3	546,237,245	E:\140313_1

Primary: C:\media\AAExternal\New folder (4)

File Name	File Size (Bytes)	MD5 Checksum	Path
A707C005_111117_R2M.mov	204,487,715	35cc617ee33b3e80755639e2ed94d9c4	140313_1
A707C007_111117_R2M.mov	167,250,031	48ead34f9f4507a359163d25427a02d3	140313_1
A707C008_111117_R2M.mov	174,499,499	a6219813be92d9eaf83f87fcc7a2fc5f	140313_1

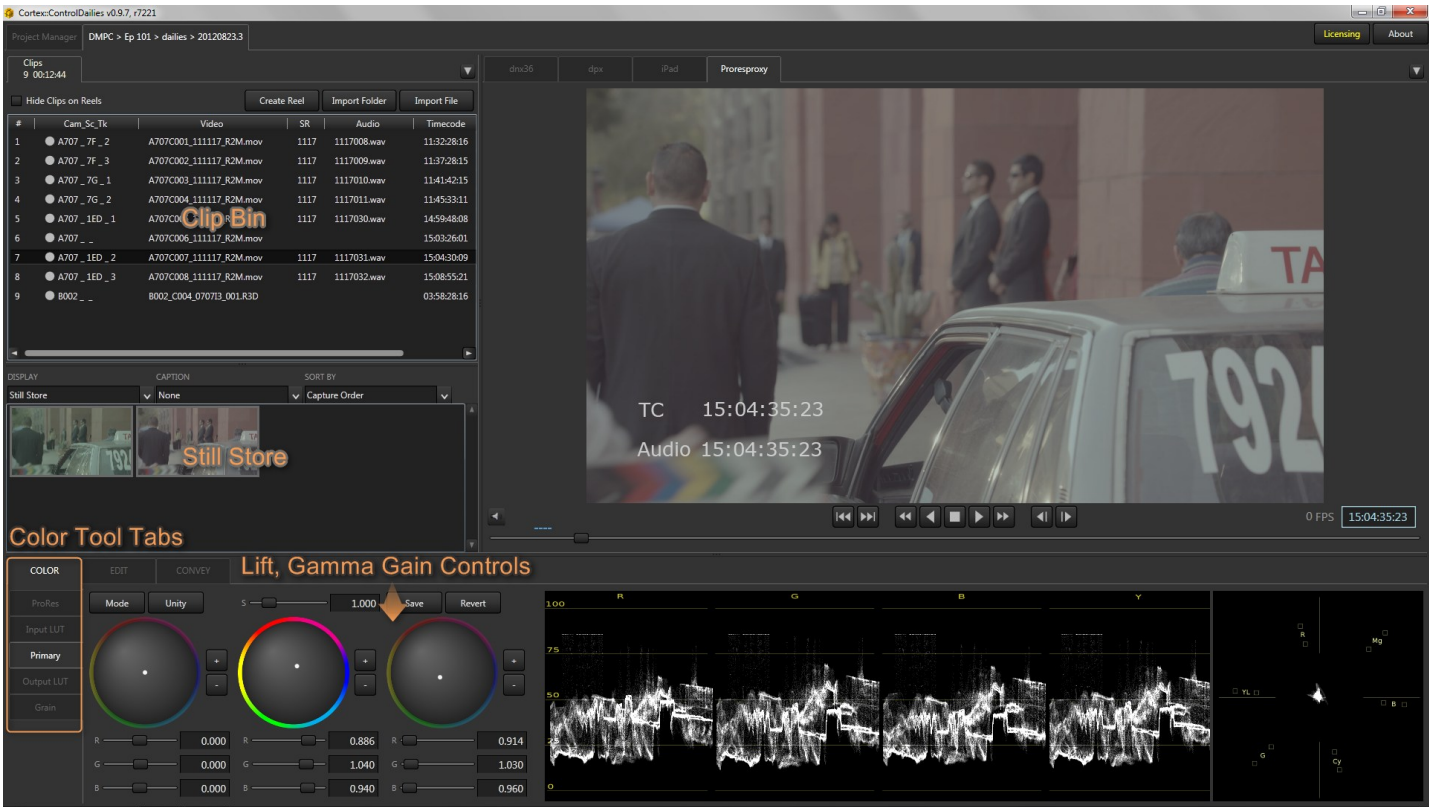
The Color Tool

The Color Tool provides an interface for importing LUTs, setting or adjusting primary color correction, managing looks via a still store, and exporting color decisions via LUT, ASC CDL and/or stills.

NOTE: Each project may demand a different configuration for monitoring color correction. Be sure to familiarize yourself with the Project Manager/Deliverables Chapter*.*

NOTE: Clips added to Closed reels cannot be modified unless the reel is reopened or the clip duplicated.

To access the Color tool, click the **Color** tab.



Tool Tabs

When the Color Tool is selected Tool Tabs will appear below the Color Tab

- **Camera** - Camera-specific settings
- **Framing** - Adjust image framing
- **Input LUT** - Select Input LUT
- **Primary** - Primary Color Correction tools
- **Output LUT** - Select clip-specific Output LUT
- **Effects** - Add Grain or Aperture Correction effects

Camera Tab

The Camera tab caption will change depending on the clip's camera source. Selecting this panel will provide the user with all options relevant to the particular camera.

Framing

The Framing tool includes the ability to zoom and reposition a clip to better fit the target aspect ratio.

Input LUT

Select an Input LUT from a file (or previously imported LUT) to apply to the clip before Primary color correction.

Primary Tab

The Primary panel includes:

- A view of color parameters as they've been adjusted through use of the trackballs.
- GUI interface to adjust color parameters.
- Waveform and vectorscope displays.

Output LUT

Apply an Output LUT from a file (or previously imported LUT) to apply after Primary color correction.

Effects

Grain or Aperture Correction can be applied to the output by the user.

Keyboard and Panel Shortcuts for Color Tool

For all Color shortcuts use top row keyboard numbers unless otherwise indicated.

Cycle through Color Tool tabs	F2 (Shift to reverse direction)
Toggle Full Screen On/Off	F11
Toggle Waveform and Vectorscope	F12 - when in full screen
Toggle Lift Gamma Gain & Printer Lites	~ (toggle mode)
MEM 1	Save - Ctrl+Shift+Delete Recall - Shift+Delete
MEM 2	Save - Ctrl+Shift+End Recall - Shift+End
MEM 3	Save - Ctrl+Shift+PgDn Recall - Shift+PgDn
MEM 4	Save - Ctrl+Shift+Insert Recall - Shift+Insert
MEM 5	Save - Ctrl+Shift+Home Recall - Shift+Home
MEM 6	Save - Ctrl+Shift+PgUp Recall - Shift+PgUp
Lift Gamma Gain Mode	~ Toggle mode from Printer Lites
Adjust Lift (R,G,B)	Click and drag in Left color wheel, or press and hold 1 and use arrow keys.
Adjust Lift (Y)	After releasing 1, use mouse wheel or arrow keys In Full Screen use arrow keys only
Reset Lift	CTRL+1
Adjust Gamma (R,G,B)	Click and drag in Center color wheel, or press and hold 2 and use arrow keys.
Adjust Gamma (Y)	After releasing 2, use mouse wheel or arrow keys In Full Screen use arrow keys only
Reset Gamma	CTRL+2
Adjust Gain (R,G,B)	Click and drag in Right color wheel, or press and hold 2 and

	use arrow keys.
Adjust Gain (Y)	After releasing 3, use mouse wheel or arrow keys In Full Screen use arrow keys only
Reset Gain	CTRL+3
Adjust Saturation	After pressing 4, use mouse wheel or arrow keys In Full Screen use arrow keys only
Reset Saturation	CTRL+4
Printer Lites Mode	~ Toggle mode from Lift Gamma Gain
Select Red channel	1 (keyboard)
Select Green channel	2 (keyboard)
Select Blue channel	3 (keyboard)
Reset Red channel	CTRL+1
Reset Green channel	CTRL+2
Reset Blue channel	CTRL+3
Increase value of selected color control	Up arrow (Use Shift and Ctrl for greater/lesser increments)
Decrease value of selected color control	Down arrow (Use Shift and Ctrl for greater/lesser increments)
Reset all color to unity	5
Reset all color to unity and clear LUTs	SHIFT+5
Bypass color correction except LUTs	6 (Press and hold for momentary view of LUTs only)
Bypass all	Shift+6 (Press and hold for momentary view of Raw)
Load Previous Clip's correction	8
Load Next Clip's correction	9
Grab a still	B
Cut to still (toggle)	N
Load color from still	Shift+N
Go to clip of selected still	Ctrl+Shift+N
Select Timeline stills	L
Select Still Store stills	;
Select Faves stills	‘
Select Imports stills	Shift+‘

Selet LUTs stills	Ctrl+’
Revert to save correction and reject pending	A
Save Correction	Ctrl+S (auto save when another clip is selected)
Toggle saved and pending corrections	T
Add dissolve	P
Remove dissolve	Ctrl+P
Mark dissolve in	[
Mark dissolve out	]

Using the Framing Tool

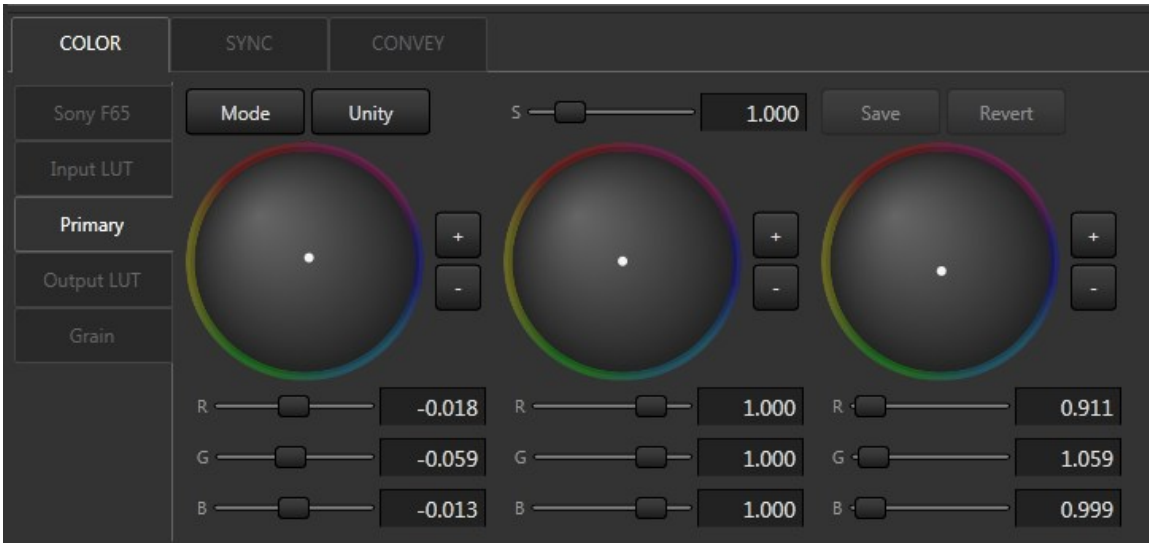
The **Aspect Ratio** setting will default to **Project** - the Project level aspect ratio defined in the Project Manager. Select from the dropdown to adjust this setting.

Use the **ZOOM**, **H POSITION**, **V POSITION** and **ASPECT** sliders to adjust zoom and positioning.
Fit Width and **Fit Height** will apply the minimum zoom necessary to fill the width or height of the specified aspect ratio.
H Center, **V Center** and **Aspect Unity** will reset each of these parameters.
FLIP V and **FLIP H** will respectively flip the image vertically and horizontally.

GUI Color Correction

In addition to using panels or keyboard shortcuts, you can use the GUI controls to adjust color.

Lift Gamma Gain GUI Controls



The **Mode** button switches between Lift Gamma Gain and Printer Lites modes.
The **Unity** button reverts the LGG correction settings to Unity.
The **Saturation** slider can be used to adjust the saturation value.
Save will apply the current color settings to the current clip.
Revert reverts to the last saved color decision, undoing any changes made since the last save.
Color Wheels/Sliders - click and drag the mouse within any color wheel or use the mouse to adjust the sliders to change the values.

Dissolves

Dissolve Timeline

The Dissolve Timeline is displayed beneath the player window and displays the location and duration of a dissolve.

Working With Dissolves

CORTEX supports adding a dissolve from one color to a second color within the same clip. The duration of the dissolve between the two colors can be set by the user.
You can set multiple dissolves within the same clip.

To create a dissolve:

1. Set color for the beginning part of the clip.
2. Navigate to the frame where you wish to begin the dissolve area.
3. Right-click the Timeline and select **Add Dissolve** or use the shortcut key **P**.
4. Right-click the Timeline and select **Mark Dissolve In** or use the shortcut key **]**.
5. Right-click the Timeline and select **Mark Dissolve Out** or use the shortcut key **]**.
6. Navigate to the area after the dissolve and set the color for the next part of the clip.
7. Preview the dissolve results and adjust Mark In and Mark Out as needed.
8. Repeat steps 2-6 to add additional dissolves.

To adjust the dissolve area:

Use **Mark Dissolve In** and **Mark Dissolve Out** to adjust an existing dissolve area.

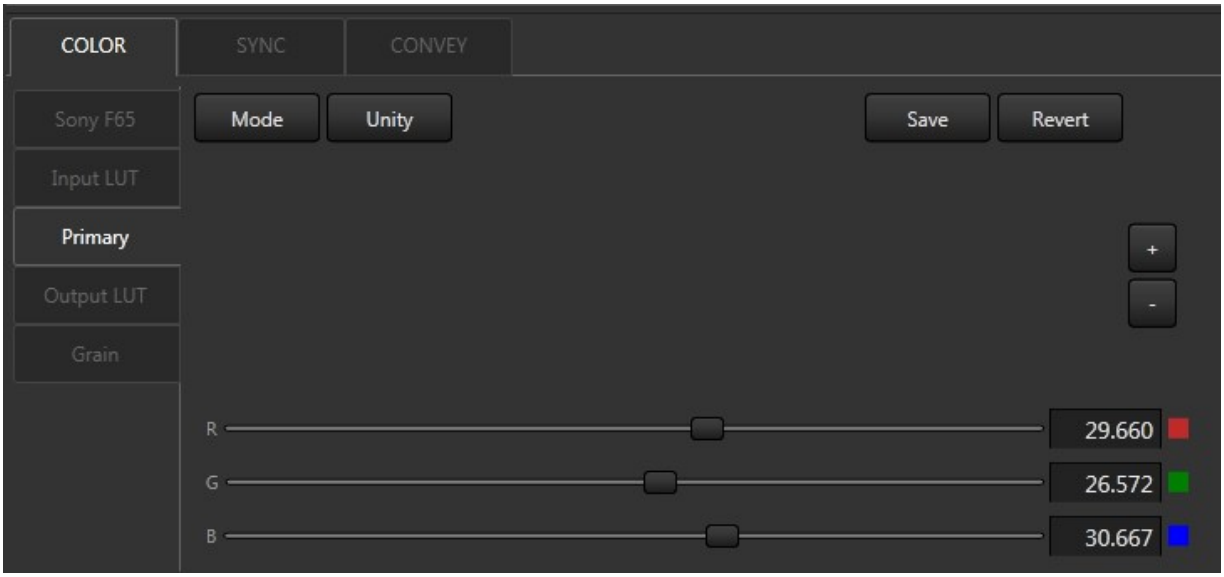
- If you **Mark Dissolve In** on a frame before or within a dissolve area, it will adjust the mark in for that dissolve
- If you **Mark Dissolve In** on a frame after a dissolve area, it will adjust the next dissolve. It will make no change if there are no later dissolves

- If you **Mark Dissolve Out** on a frame within or after a dissolve area, it will adjust the mark out for that dissolve.
- If you **Mark Dissolve Out** on a frame before a dissolve area, it will adjust the previous dissolve. It will make no change if there are no earlier dissolves.
- **Remove Dissolve** to remove the dissolve (**CTRL+P**)

Notes

- If you copy color from a clip with a dissolve, it will copy the first color correction only
- ALEs will export only the CDL values for the first color correction
- When you grab a still from a clip with a dissolve, it will grab the color correction for the frame you are on

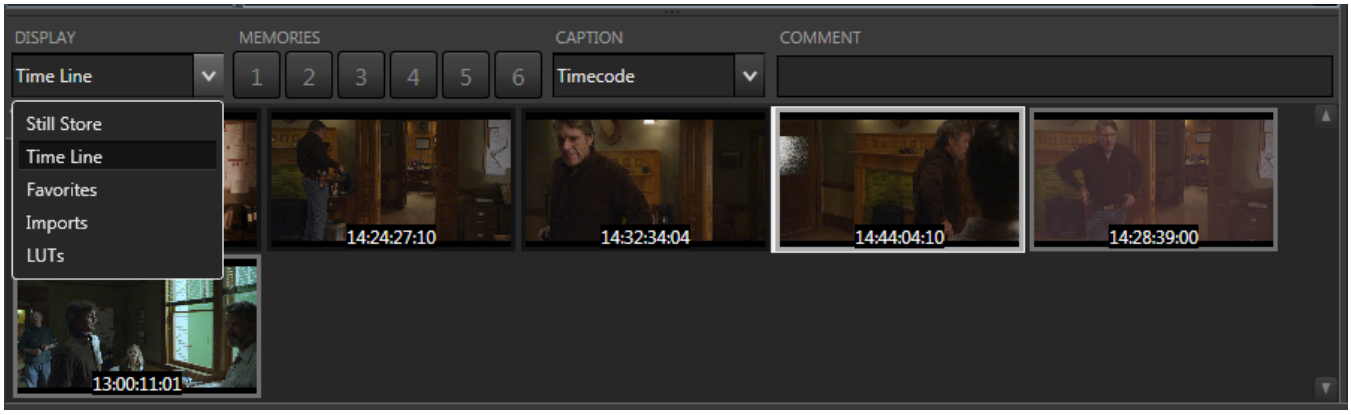
Printer Lights GUI Controls



The **Mode** button toggles between Printer Lights and Lift Gamma Gain modes.
The **Unity** button reverts the LGG correction settings to Unity.
Save will apply the current color settings to the current clip.
Revert reverts to the last saved color decision, undoing any changes made since the last save.
The **RGB Sliders** adjust the Red, Green and Blue levels. A color-coded box indicates the active slider(s) which can be adjusted with the mouse wheel.
The **+/-** buttons will gang the controls

Still Store

The Still Store holds stills that have been saved within CORTEX or imported, as well as a Timeline view featuring thumbnails from each clip in the Job.



The Still Store is only visible when the Color tool is open and has multiple display modes .

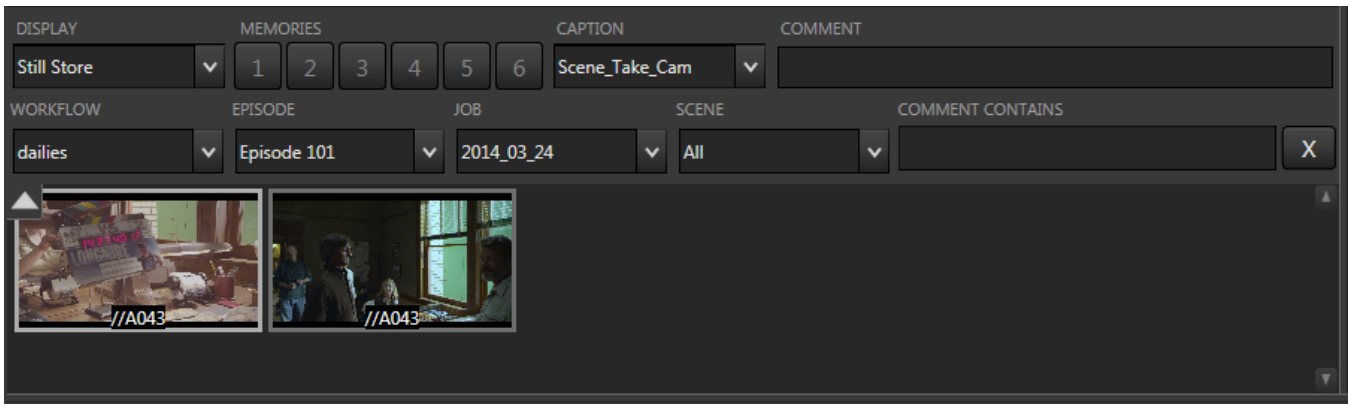
- The default view is the traditional **Still Store**. This displays stills explicitly saved by the user within CORTEX.
- **Timeline** mode displays a thumbnail for each clip in the bin with the currently applied color decisions.
- **Favorites** displays stills saved to the Favorites list
- **Imports** - displays thumbnails of color decisions that have been imported from CORTEX stills, CDLs or ALEs.
- **LUTs** displays thumbnails of currently used LUTs

Stills can be displayed with a Caption for identification. Caption options are:

- None
- Cam_Scene_Take
- Scene_Take_Cam
- Timecode
- Comment
- Filename

Stills are automatically sorted in clip order with the same sort chosen for the clip bin.

Still Store Search and Filter



You can access stills saved in other jobs using the search/filter feature.

To toggle the search bar, click the arrow button on the left side of the still store

You can filter by **Workflow**, **Episode**, **Job**, **Scene** or search comments.

Saving and Recalling Stills

To save the current clip's color decision to a Still, click the **B** key. The Still will appear in the Store.

To recall and load an existing still's color values to another clip

1. Select the clip to be colored.
2. Click the **N** key to toggle into the Still Store.
3. Use the arrow keys to select the desired Still (Note: while cycling through Stills, you will see them in the player window. Your selected clip is still active and will be the target for loading the color decision).
4. Once you've found the desired Still, click **SHIFT+N** to load the color decision to the target clip.
5. Click **CTRL+S** to save the color decision to the clip.

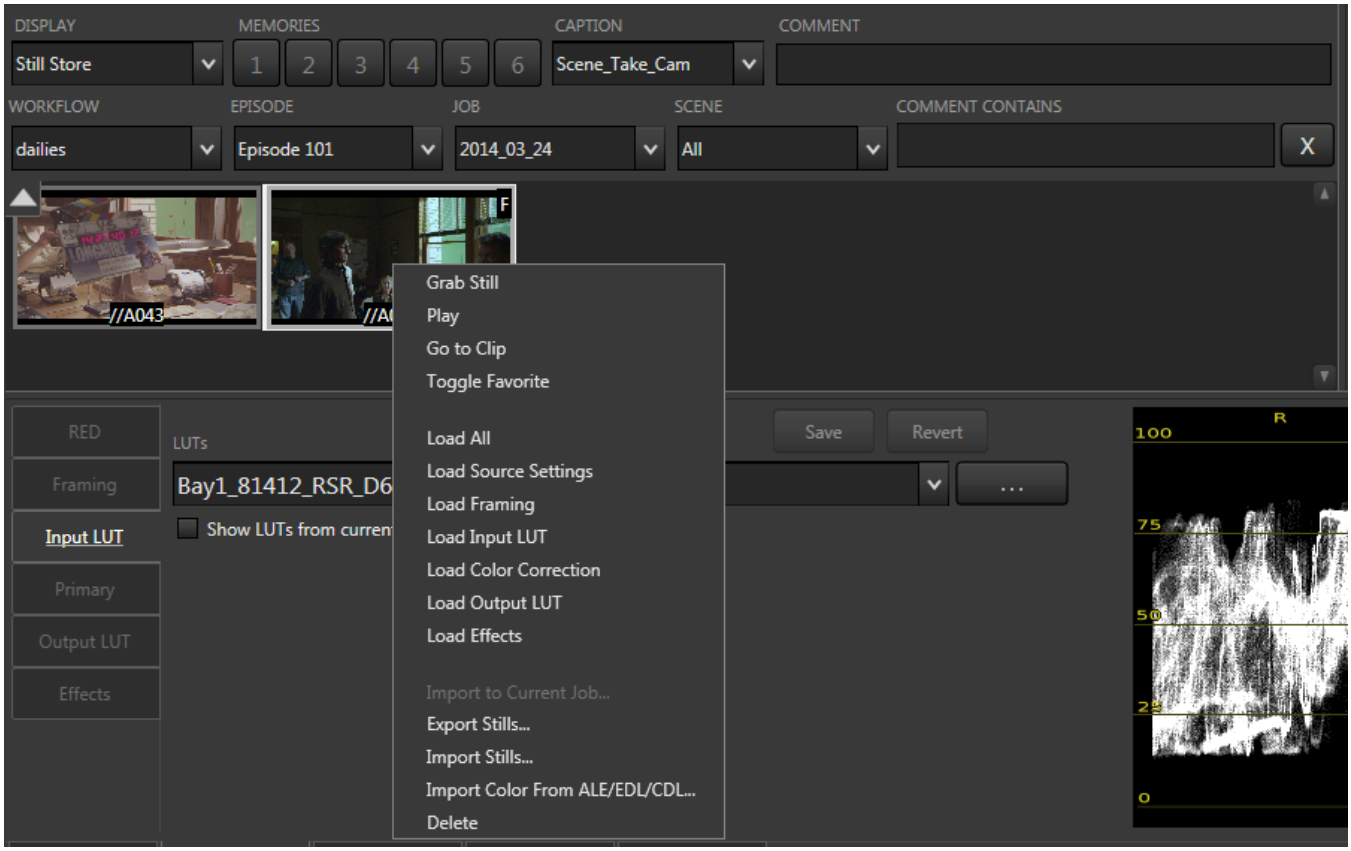
To add a comment to a still:

1. Select the still in the Store.
2. Type the comment in the comment box and hit ENTER.

To go to the clip of the selected still:

1. Select the still in the Store
2. Right click on the still and select "Go to Clip"
   or press ALT+Left click on the still.
   or press Ctrl+Shift+N

Still Recall Options



There are a number of options for working with Stills:

- **Double-click -** load still in current clip

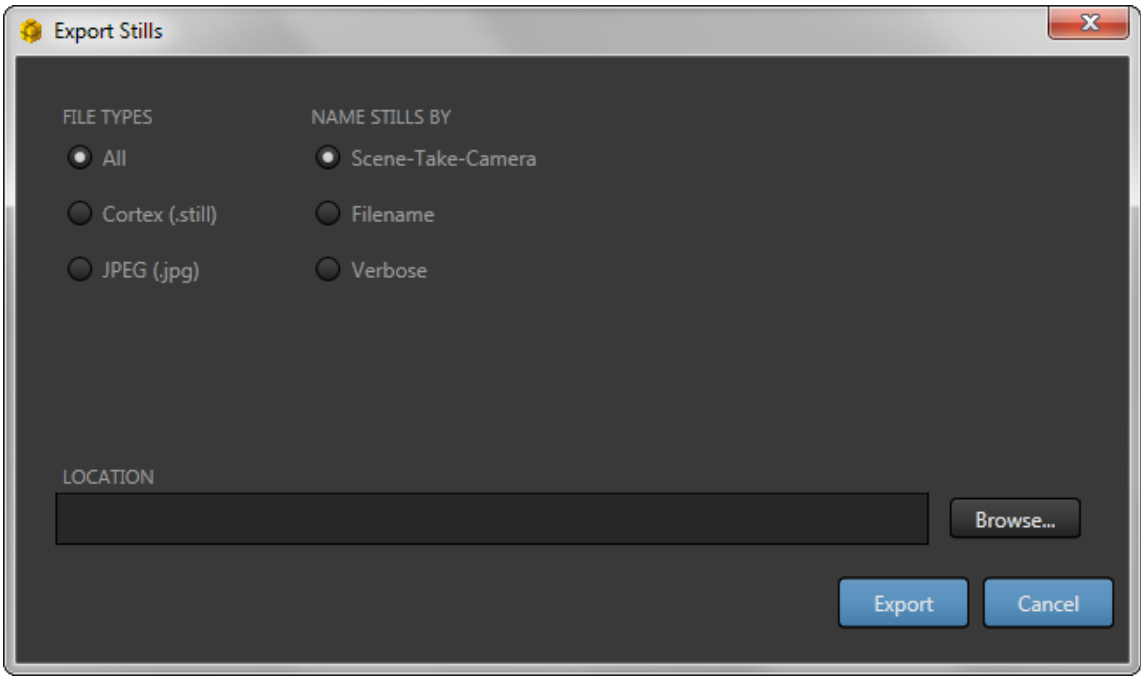
Right click for a context menu with the following options:

- **Grab Still** - grab a still of the color correction options on the current clip
- **Play** - Toggle between loading the Still itself into the player window and viewing the current clip
- **Go To Clip** - load the original clip the still was grabbed from
- **Toggle Favorite** - Add or remove from Favorites
- **Load All** - Load all color parameters related to this still. You can choose to selectively:
    - **Load Source Settings**
    - **Load Framing**
    - **Load Input LUT**
    - **Load Color Correction**
    - **Load Output LUT**
    - **Load Effects**
- **Import to Current Job** - Enabled when viewing stills from other Jobs via search/filter
- **Export Stills**
- **Import Stills**
- **Import Color from ALE/EDL/CDL**
- **Delete**

Exporting Stills

Stills can be exported from the Still Store or the Project Manager

In the Still Store, select the Still(s) you want to export, right-click and select **Export Stils**
In the Project manager, right-click on the Job and select **Export Stills**



When exporting stills from the Still Store, CORTEX provides the following options:

FILE TYPES - Which kind of Stills to export

- All - Export both types of stills
- CORTEX (.still) - Export stills in a format readable by other CORTEX systems
- JPEG (.jpg) - Export stills as standard JPEG files

Name Stills By - Select the file naming convention

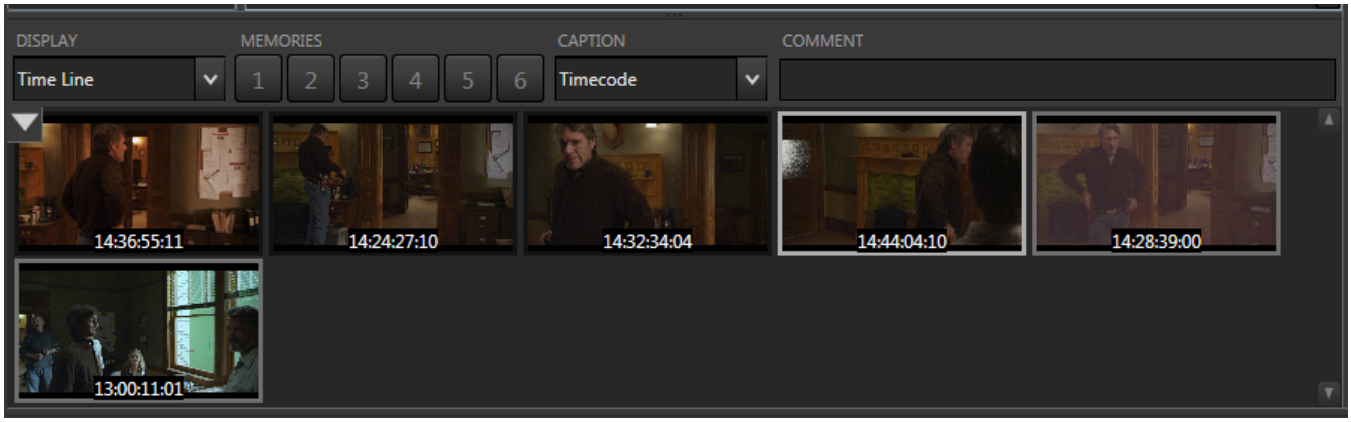
- Scene-Take-Camera
- Filename
- Verbose (includes S/T/C and filename info)

When exporting from the Project Manager, CORTEX will also offer the option to export stills from

- Only the Still Store
- Only the Timeline
- Both

Specify an output file location using the **Browse** button, then click **Export.**

Timeline Still Store



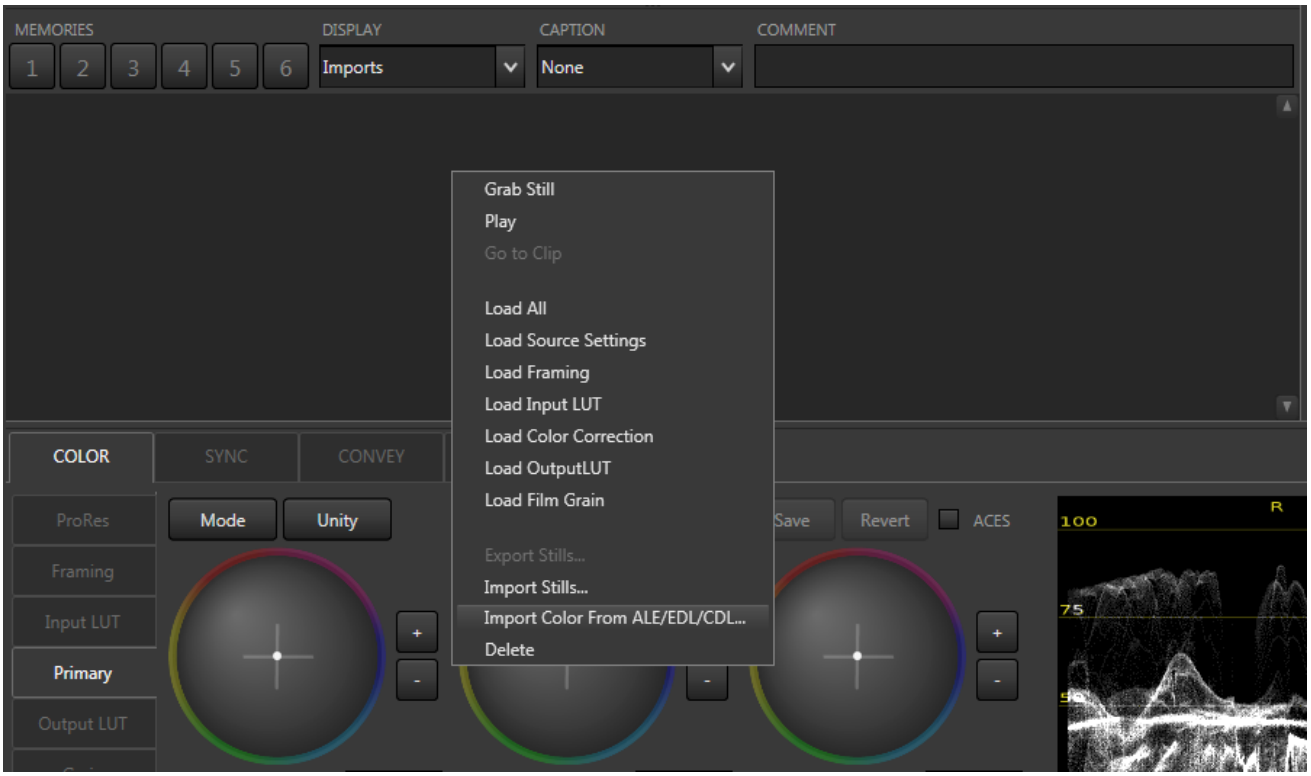
Favorites Still Store

You can add stills to the Favorites list for faster access by clicking **0**

In the Favorites Still Store, you can filter by Job = All to see all Favorites saved within the entire Project

Imports Still Store

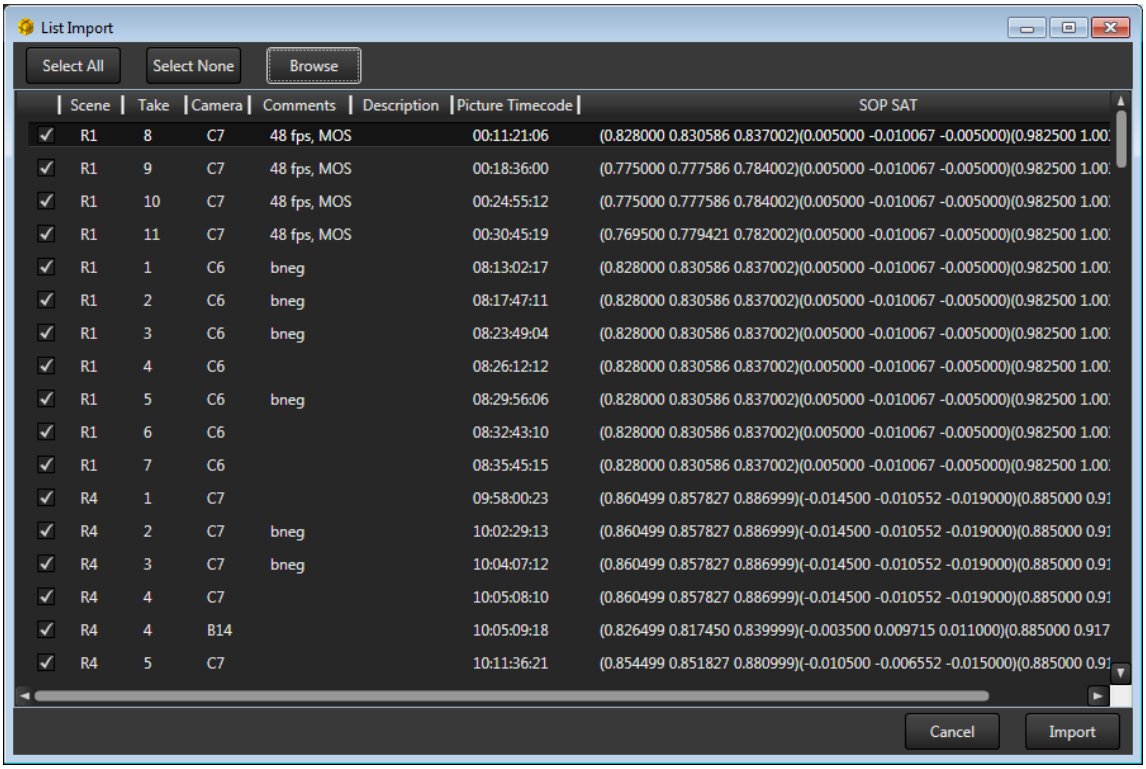
The Imports Still Store allows you to import color data from other tools and other CORTEX systems and apply them to the current job. CORTEX supports imports of CORTEX stills, CDL (XML), ALE, EDL, and DP Lights TXT.



Access the Imports Still Store by selecting **Imports** from the **Display** menu or use the shortcut key **‘**

Importing Stills and CDL Values

1. Right-click anywhere in the Still Store
2. Select **Import Stills...** to import CORTEX Still XML files or select **Import Color From ALE/EDL/CDL...** to import CDL values from the formats listed above.
3. the **List Import** window will open**.** Click **Browse** and select your color files
4. Use the checkboxes to select/deselect which items to import
5. Click **Import**
6. The imported stills will be visible when **Imports** is selected as the Display category.



LUTs Still Store

The LUT Still Store lets you access LUT files that have been loaded in the Job and work with them using LUT keyboard shortcuts.

MEMs

You can save up to 6 color corrections by storing them in the Memories buffers.

Above the Still Stores are 6 buttons for saving user defined color corrections.

The Keyboard shortcuts are as follows:

MEM 1	Save 1 - Ctrl+Shift+Delete Recall 1 - Shift+Delete
MEM 2	Save 2 - Ctrl+Shift+End Recall 2 - Shift+End
MEM 3	Save 3 - Ctrl+Shift+PgDn Recall 3 - Shift+PgDn

MEM 4	Save 4 - Ctrl+Shift+Insert Recall 4 - Shift+Insert
MEM 5	Save 5 - Ctrl+Shift+Home Recall 5 - Shift+Home
MEM 6	Save 6 - Ctrl+Shift+PgUp Recall 6 - Shift+PgUp

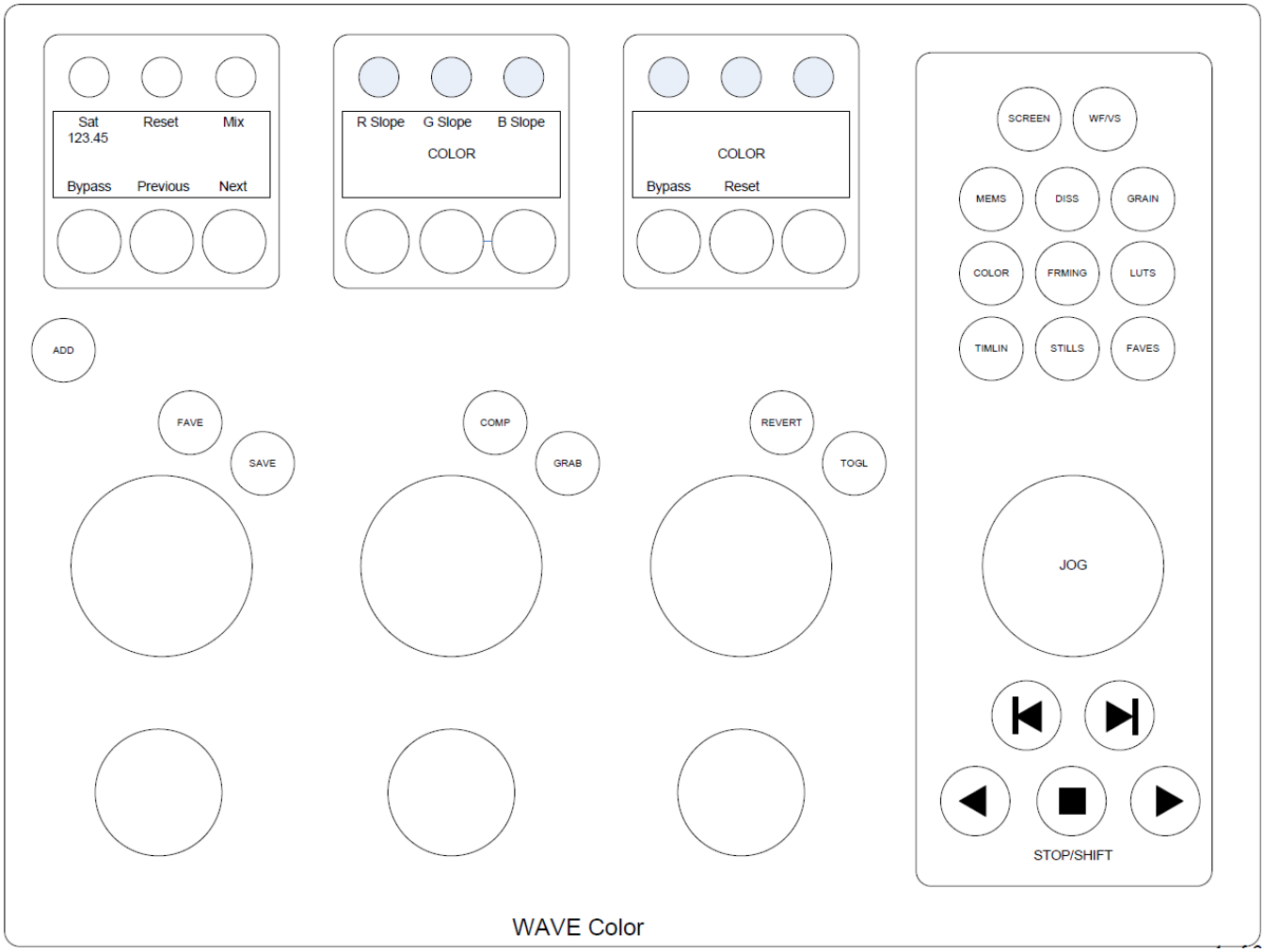
To use the mouse, replace the keys with the corresponding buttons.

If a Memory button position is unused, it will be dim.

If a color correction has been saved to a button position it will be bright white.

The last recalled Memory will be green.

Wave Panel Button Functions



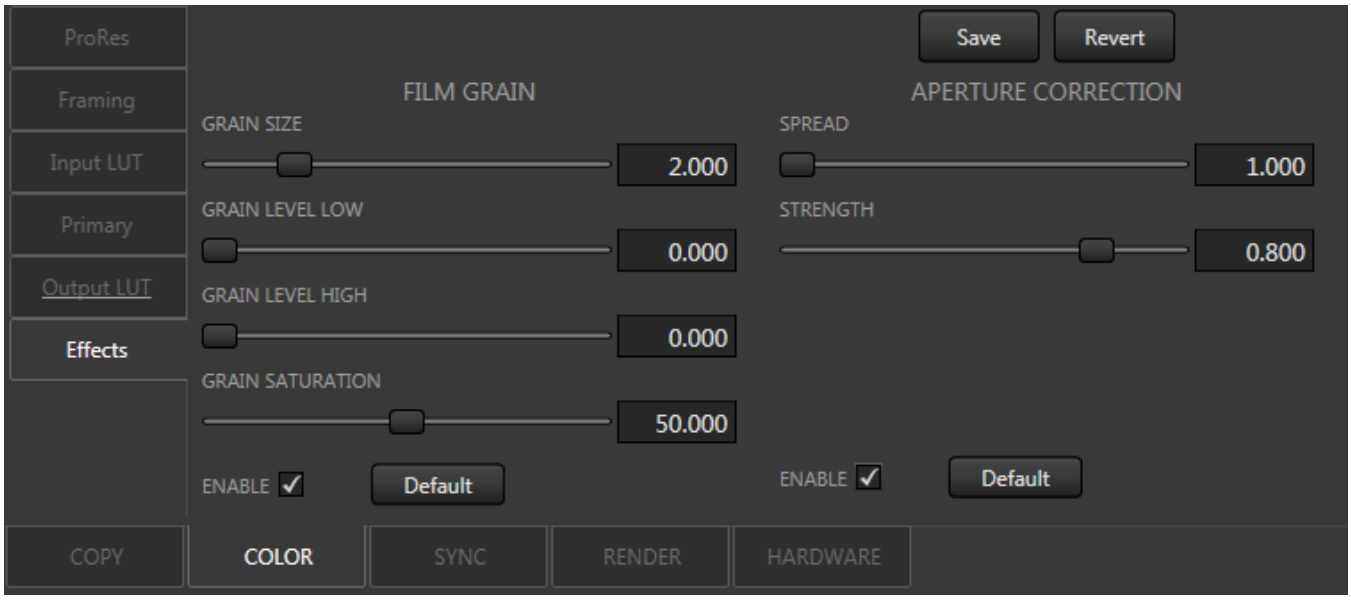
WAVE Color

Wave Button Function	Keyboard Equivalent
ADD	G - Add event to reel
SAVE	Ctrl+S - Save current color correction
MEMS	Please see Keyboard shortcuts
COMP	N - compare with current still
MODE	~ - Toggle Lift Gamma Gain/Printer Lights
GRAB	B - grab picture to Still Store
REVERT	A - Revert to saved color correction
TOGL	T - Toggle last two viewed color corrections

SCREEN	F11 - Toggle Full Screen/GUI
WFVS	F12 - Toggle Waveform and Vectorscope in Full Screen
MEMS	Show Mems menu
DISS	P - Add dissolve
GRAIN	F2 - Repeat to cycle to Grain Tool tab
COLOR	F2 - Repeat to cycle to Primary Tool tab
FRAMING	F2 - Repeat to cycle to Framing Tool tab
LUTS	CTRL+' Go to LUTs still store
TIMLIN	L - Go to Timeline Still Store
STILLS	; - Go to Still Store
FAVES	' Go to Faves Still Store

Adding Effects

The Effects tab allows users to add grain or aperture correction to their output.
Note: Grain and Aperture Correction settings are "baked in" to deliverables and do not carry as metadata in CDL files.
Effects WILL be passed on as metadata in CORTEX Manifest Files



Grain Settings

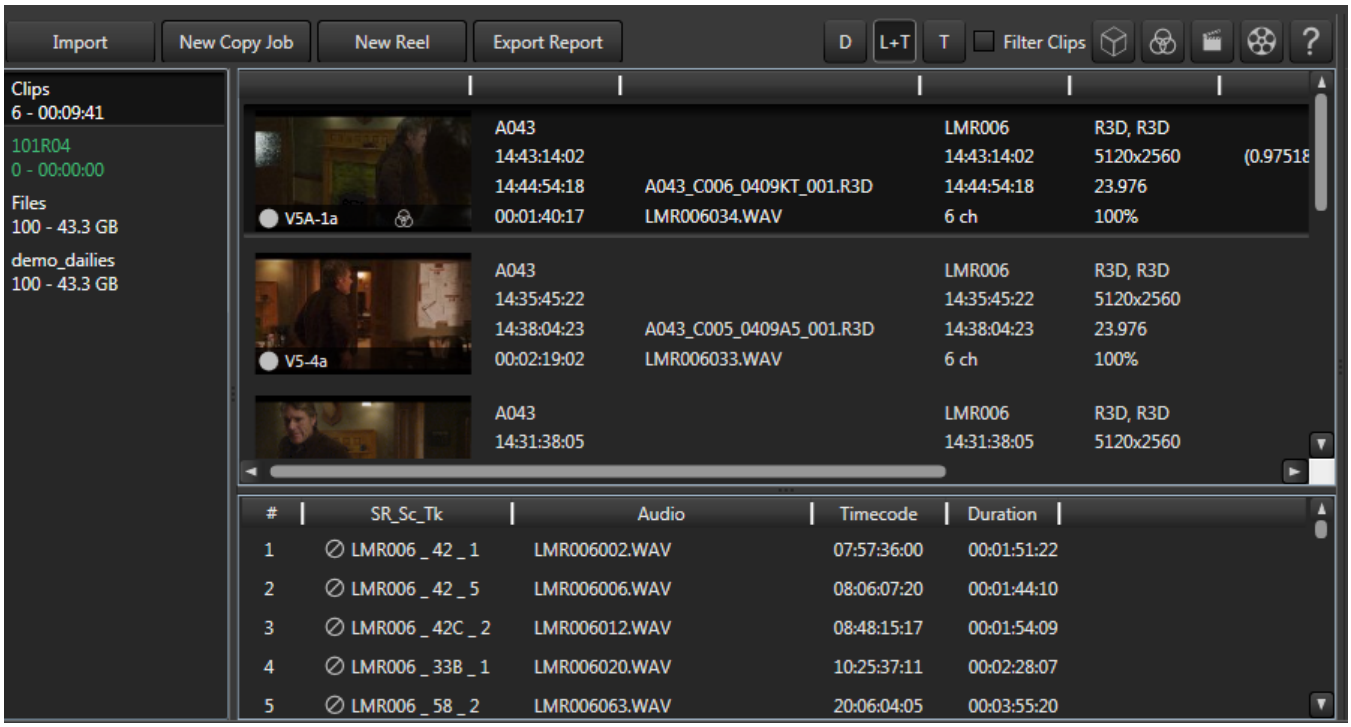
Grain Size - Create larger or smaller Grain
Grain Level Low - Make the grain more or less apparent in dark regions of the frame
Grain Level High - Make the grain more or less apparent in light regions of the frame
Grain Saturation - Color saturation of the grain
ENABLE - must be checked to change Grain settings
Default - Click the **Default** button to return to default settings

Aperture Correction Settings

Spread - determines the amount of noise suppression
Strength - determines the strength of edge detection
ENABLE - must be checked to change Aperture Correction
Default - click the **Default** button to return to default settings

The Sync Tool

The Clip Bin



You can take the following actions by right-clicking on a clip:

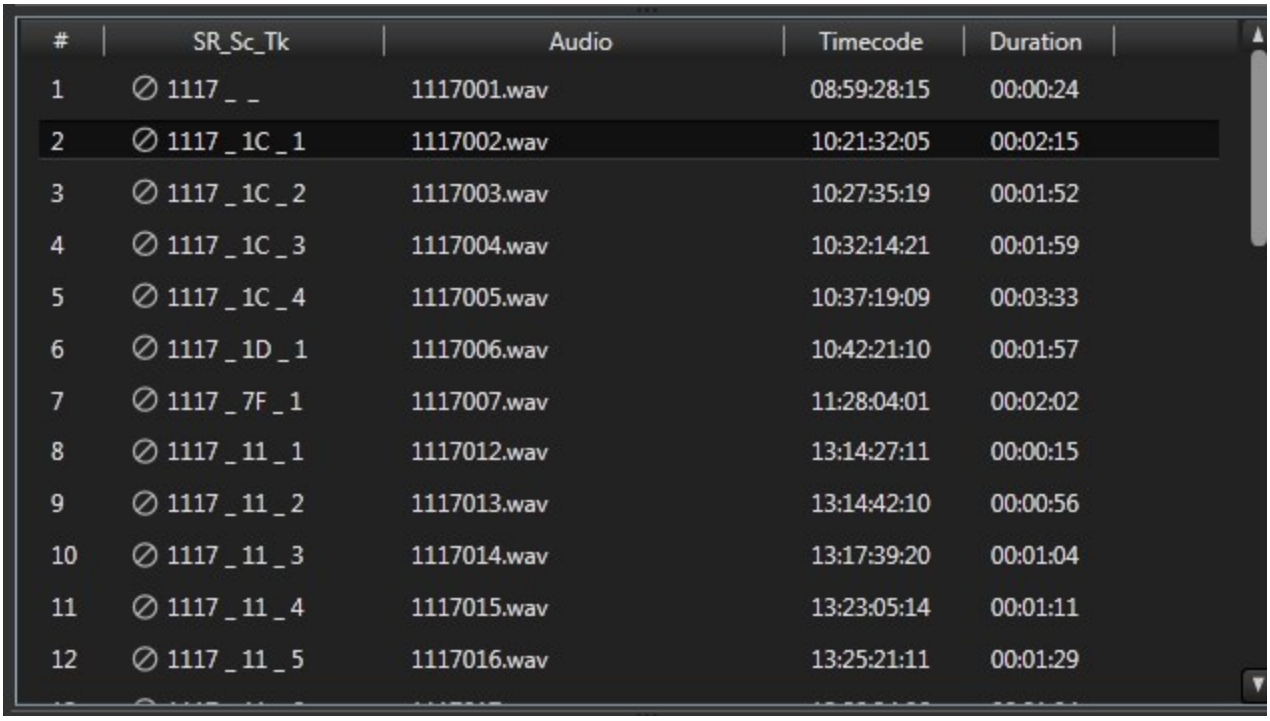
- **Add to Reel** - Add clip to the active Reel to be rendered.
- **Add to New Reel** - Add clip to newly created Reel to be rendered.
- **Duplicate Clip** - Create a duplicate of the clip for alternate versioning.
- **Import Audio** - Import a specific audio file to synchronize with the selected video clip.

- **Remove Audio** - Remove the associated audio file from this video clip.
- **Auto-sync with Offset** - Auto-sync the video clip with audio from the audio bin using the pre-established offset (if any).
- **Auto-sync without offset** - Auto-sync the video clip with audio from the audio bin, ignoring any pre-established offset.
- **Audio info** - Display audio file properties.
- **Save Color to Selected Clip** Apply the current color decision to one or more selected clips.
- **Browse to Video file** - Open the folder with the source video file.
- **Browse to Audio file** - Open the folder with the source audio file.
- **Delete** - Delete the selected clip(s).
- **Edit Timecode** - Manually edit timecode and frame rate.
- **Edit Name -** Manually edit clip name (default is Scene-Take).
- **Show/Hide Columns** - Determine which columns of metadata appear in the Clip Bin.

NOTE: Clips added to Closed reels cannot be modified unless the reel is reopened or the clip duplicated.

The Audio Bin

The audio bin displays all imported audio files that have not yet been synchronized.



#	SR_Sc_Tk	Audio	Timecode	Duration
1	1117 _ _	1117001.wav	08:59:28:15	00:00:24
2	1117 _ 1C _ 1	1117002.wav	10:21:32:05	00:02:15
3	1117 _ 1C _ 2	1117003.wav	10:27:35:19	00:01:52
4	1117 _ 1C _ 3	1117004.wav	10:32:14:21	00:01:59
5	1117 _ 1C _ 4	1117005.wav	10:37:19:09	00:03:33
6	1117 _ 1D _ 1	1117006.wav	10:42:21:10	00:01:57
7	1117 _ 7F _ 1	1117007.wav	11:28:04:01	00:02:02
8	1117 _ 11 _ 1	1117012.wav	13:14:27:11	00:00:15
9	1117 _ 11 _ 2	1117013.wav	13:14:42:10	00:00:56
10	1117 _ 11 _ 3	1117014.wav	13:17:39:20	00:01:04
11	1117 _ 11 _ 4	1117015.wav	13:23:05:14	00:01:11
12	1117 _ 11 _ 5	1117016.wav	13:25:21:11	00:01:29

Audio files are automatically added to the audio bin if they are located in an associated folder to the imported video media.

The user can also add a sound file directly to a picture file by right clicking on the picture clip and selecting **Import Audio**. A browser will open allowing the user to navigate to the sound file to be

associated with the picture clip. If the two media's timecodes are identical, synchronization will be automatic. In the event the timecodes are not identical, the user can use the Sync Tool toolset.

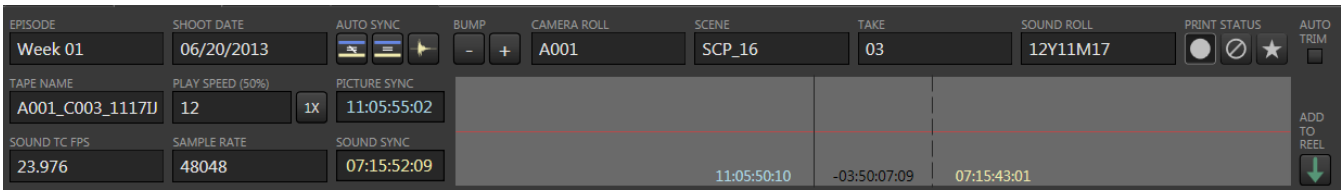
The audio clip will be displayed with the following information

- **#** - Import order
- **Cam/Sc/Tk** - Camera/Scene/Take info & status. The symbol to the left indicates the clip's status - Circled, Excluded or Starred. Clips are Circled by default.
- **Audio**- Audio file name
- **Timecode** - Clip start timecode
- **Duration** - Clip duration

You can right-click each audio clip and select from the following options:

- **Audio Info** - Display audio file properties
- **Delete** - Remove the audio clip from the bin

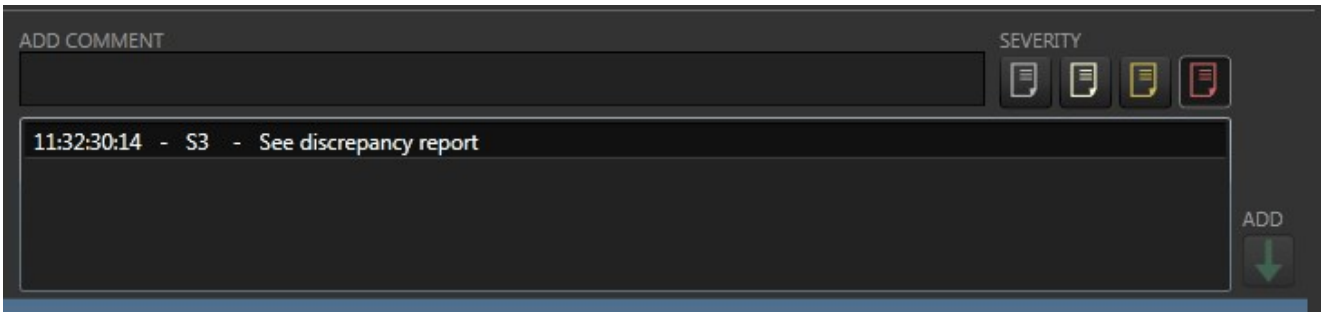
Metadata



Metadata will be automatically read from the video and audio files where available and can be modified by the user.

- **Camera Roll** (video file)
- **Scene** (audio file)
- **Take** (audio file)
- **Sound Roll** (audio file)
- **Episode** (project manager)
- **Play Speed** (video file)
- **Shoot Date** (project manager)
- **Tape Name** (video file)
- **Sound TC FPS** (audio file)
- **Sample Rate** (audio file)

Additional metadata entry



Users can also add additional metadata about clip status

- **Print Status** - Indicates whether clip is Circled, Not-Circled (B-Neg) or Starred.
- **Comment** - Add comment at current timecode with specified severity (0-3).

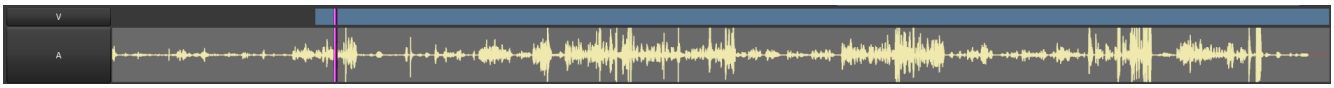
Modifying Multiple Clips

To modify multiple clips, hold the Shift key while clicking to select a span of clips, or hold the Ctrl key while clicking to individually add or remove clips from the selection. You can then modify the Camera Roll, Scene, Sound Roll, Print Status, and Comments fields. The Take field cannot be modified.

Synchronization Tools

Timeline

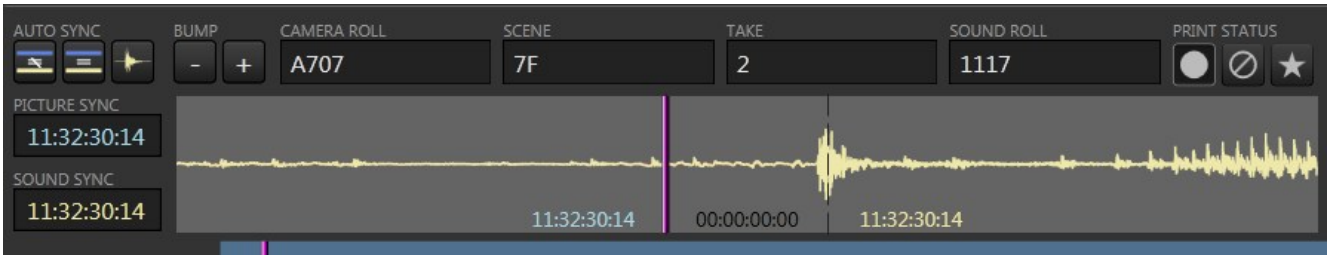
The selected clip timeline consists of both Video and Audio tracks. The timeline spans the length of the Video clip and expands to include the full length of the synchronized audio.



Once audio and video are synchronized, the tracks will be locked together during navigation.

Unlock the Video track by clicking the V button at the head of the timeline or pressing the **Y** key.
Unlock the Audio track by clicking the A button at the head of the timeline or pressing the **U** key.

Mark Window



The Mark Window provides a magnified view of 7 frames of the active area of the sound track where the user can mark the exact timecode position of the sync point to within a quarter frame.

The video timecode is displayed in blue on the left and the audio timecode is displayed in yellow on the right.

The Auto Sync buttons allow for sync with offset, sync without offset and find clap within mark window.

The Bump **-** and **+** buttons allow you to bump the audio one frame at a time. Modify by holding down the CTRL key to bump a quarter frame.

Synchronizing Audio and Video

Auto-syncing a single clip

Auto-syncing a single clip uses a “best guess” method that analyzes the audio files for a characteristic clap spike near the corresponding timecode.

1. Select the video clip to be synchronized.
2. Navigate to the slate close (clap) point.
3. Select an auto-sync option via the right-click context menu or keyboard shortcut
    - Auto-sync with offset (\ key)
    - Auto-sync without offset (**SHIFT+**\)
4. If the clap sound is visible in the Mark Window but off by a frames or more, press the **D** key to auto-refine the sync.
5. If the sync is correct, you may add the clip to the reel with the **G** key, or jump to the next clip with the **R** key (synced but not added to reel).

Auto-syncing multiple clips

Auto-syncing multiple clips uses timecodes and any established offset to define sync.

1. Select multiple clips using the CTRL or SHIFT modifiers.
2. Select an auto-sync option via the right-click context menu or keyboard shortcut
    - Auto-sync with offset (\ key)
    - Auto-sync without offset (**SHIFT+**\)
3. If the sync is correct, add the clips to the Reel via the right-click context menu or with the **G** key.

Using Timecode to search for Audio Sync Points

1. Navigate to the desired picture sync frame.
2. Press the * key on the number pad.
3. Input the audio timecode value
    - Or place a **+** or **-** before the timecode entry to trim the current position by the input value
4. Press Enter.

Using Timecode to search for Picture Sync Points

2. Navigate to the desired audio sync frame.
3. Press the **/** key on the number pad.
4. Input the picture timecode value
    - Or place a **+** or **-** before the timecode entry to trim the current position by the input value
5. Press Enter.

Adjusting Clip Synchronization

There are several methods to adjust the synchronization relationship of the picture and audio.

To adjust the audio sync against the current picture frame

1. Navigate to the desired picture frame.
2. Unlock the audio track timeline (**U**). The picture will remain frozen while the audio clip(s) will be free to navigate.
3. Navigate through the audio until you find the desired sync point (probably a clap).
    - While in U mode, you can also enter an audio timecode value directly into the Player timecode buffer using the number pad.
4. To re-lock the audio, click in the magnified waveform where desired,or press the **D** key to resync to the detected clap sound within the Mark Window.

To cancel and return to the original sync relationship, press the U key again or press Esc.

To adjust the picture sync against the current audio frame

1. Navigate to the desired audio frame.
2. Unlock the picture track timeline (**Y**). The audio will remain frozen while the picture clip(s) will be free to navigate.
3. Navigate through the picture until you find the desired sync point.
    - While in Y mode, you can also enter a picture timecode value directly into the Player timecode buffer using the number pad.
4. Press the **** key to resync the picture at the current picture frame.

Changing Clip Play Speed

A clip's play speed can be altered by editing the FPS in the **PLAY SPEED** box. This will adjust playback in the player window and all deliverables.

To return to a clip's original play speed, click the **1X** button.

Note: Play speed only affects the image, not the audio. Audio will play at its native speed.

Editing a Clip

You can edit the in and out points of a clip by using the Mark In and Out functions.

Note: Edit functions can only be performed on clips in the Clip Bin prior to being added to a Reel.

To edit the head of a clip manually, navigate to the in point and press the I key, or click the In button.
To jump to the Mark In, press Shift+I.
To clear the Mark In, press Ctrl+I.

To jump to the Mark Out, press Shift+O.
To clear the Mark Out, press Ctrl+O.
To edit the tail of a clip, navigate to the out point and press the O key, or click the Out button.

To Mark the entire clip, press P or click the Mark In/Out button.

AutoTrim

You can automatically trim the head of a clip based upon the sync point by enabling **AUTO TRIM**.

Navigate to your sync point (usually a slate close) press the **D** key to refine sync to this point. The head of the clip will be trimmed automatically to 1 second prior to the sync point.

For Tail Sticks, press Ctrl+I immediately to clear the **AUTO TRIM** edit if enabled.

Keyboard and Panel Shortcuts for Sync Tool

Shortcut Key	Function	Description
F5	Create Reel	
SHIFT+F5	Close Reel	
I	Mark In	Shift+I - Go to Mark In, Ctrl+I to clear
O	Mark Out	Shift+O - Go to Mark Out, Ctrl+O to clear
Y	Unlock Video Track	While unlocked, navigation keys move picture only
U	Unlock Audio Track	While unlocked, navigation keys move audio only
\	Auto-sync with Offset	1. When picture and sound are locked: Auto-sync with Offset (picture/sound TC difference) 2. When either picture or sound is unlocked: Use current frame for sync point
SHIFT+\	Auto-sync with no Offset	Functions only when picture and sound are locked.
D	Auto-detect peak waveform in Mark Window for sync point	1. When picture and sound are locked: Auto-detect peak waveform in Mark Window and sync to current picture frame. 2. When sound is unlocked: Auto-detect peak waveform in Mark Window, sync to current picture frame and relock.
SHIFT+D	Jump to sync point of clip	
Num Pad	Input clip timecode value	Press Enter to search all clips for picture timecode entry and cue to player
/+Num Pad	Input picture sync timecode	Press Enter to search all clips for picture timecode entry, cue to player, and use as sync point
*+Num Pad	Input sound sync timecode	Press Enter to search all clips for sound timecode entry, cue to Mark Window, and use as sync point
Enter	Cue to entered TC	
Arrow Keys	Increment/Decrement	When not blank, Increment values in currently selected metadata field (e.g. Take 1 to 2)
CTRL+0	Set Comment Severity to 0	

CTRL+1	Set Comment Severity to 1	
CTRL+2	Set Comment Severity to 2	
CTRL+3	Set Comment Servrity to 3	
CTRL+4	Set Print Status to Circled	
CTRL+5	Set Print Status to Excluded	(Not Circled)
CTRL+6	Set Print Status to Starred	

Transcoding

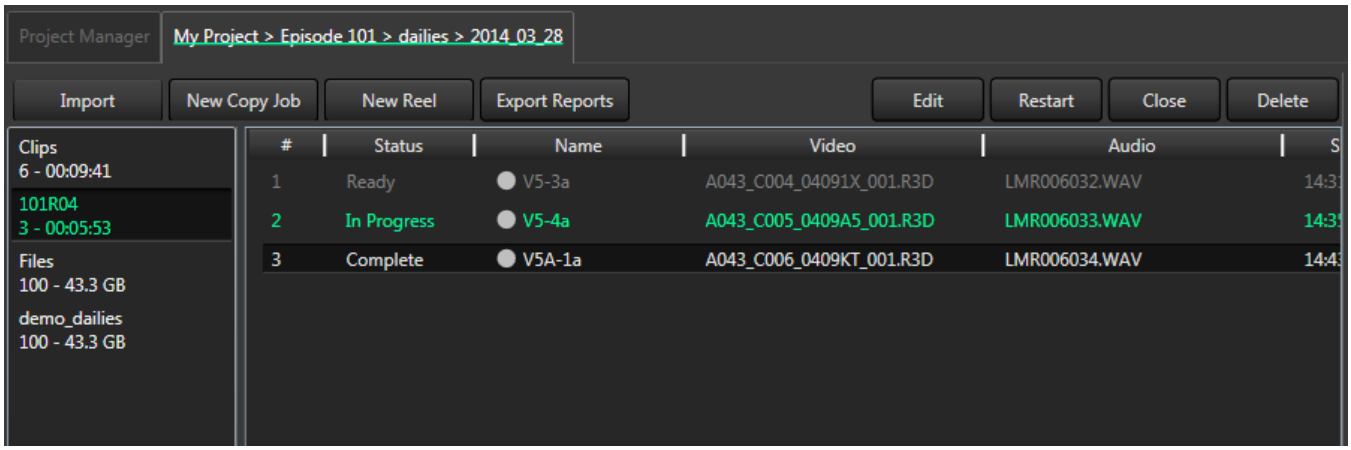
Reels

A Reel is a collection of clips that are to be rendered together. Adding a clip to a Reel tells CORTEX that it's ready to be transcoded.

Creating a Reel

1. In the Clips Bin, click **Create Reel** or press **F5**
2. Define Reel parameters
    - **REEL NAME** - will default to naming convention defined in the Project Configuration, can be overridden.
    - **TIMECODE**
        - Continuous - Ignore the existing timecode and create a reel with a continuous timecode. If selected, you will have the additional options:
            1. Start At - specific the start TC
            2. Sync Drop Frame At - Specify where the drop frame falls
        - Source – This option forces all encoded clips to have the same timecode as the source clip.
    - **TAPENAME IN ALE**
        - Record Reel Name – enters the Reel Name
        - Source Tape Name – enters the Tape Name found in the source file
        - Source File Name – enters the file name of the source file
    - **FRAME RATE** – the rate at which the clips are intended to be played back.
    - **DELIVERABLES** - Specifies the deliverables set (workflow) to be encoded. By default, the workflow selected at Job creation is checked. Additional or different workflows can be specified at Reel creation.
        - If you wish to omit a deliverable contained in the workflow, uncheck its corresponding checkbox. The deliverable will be permanently disabled for the current and all future reels. To re-enable it for use, click the reel Edit button and check the checkbox. The deliverable will always be visible when focused on the Clip Bin and can be used for viewing purposes, however, when a reel tab is selected, it will not be visible.

The Reel Bin



The Reel Bin displays all clips added to the Reel with audio and video information and encoding status.

To switch to the the active Reel Bin, press the **K** key or click the tab.
To switch to the Clip Bin, press the **J** key or click the tab.
To switch to an inactive Reel, click that Reel's tab.

Each clip is displayed with the following information:

- **#** - Clip order, as added to the Reel
- **Status**
  - **Ready** – the clip has all required metadata and is queued for encoding
  - **In Progress** – RENDER is currently encoding all required deliverables for the clip
  - **Complete** – RENDER has completed all required deliverables encoding for the clip
- **Video** - The video file name
- **Audio** - The audio file name
- **Start** - Timecode of the clip's start point.
- **End** - Timecode of the clip's end point.
- **Duration** - The duration of the clip using the timebase of the reel.
- **Play Speed** - The play speed of the clip
- **Pic Start** - The timecode of the source picture at the clip's start point
- **Pic End** - The timecode of the source picture at the clip's end point.
- **Aud Start** - The timecode of the source audio at the clip's start point
- **Aud End** - The timecode of the source audio at the clip's start point
- **Tapename** - The tapename of the source clip

The Reel Bin includes action buttons at the top

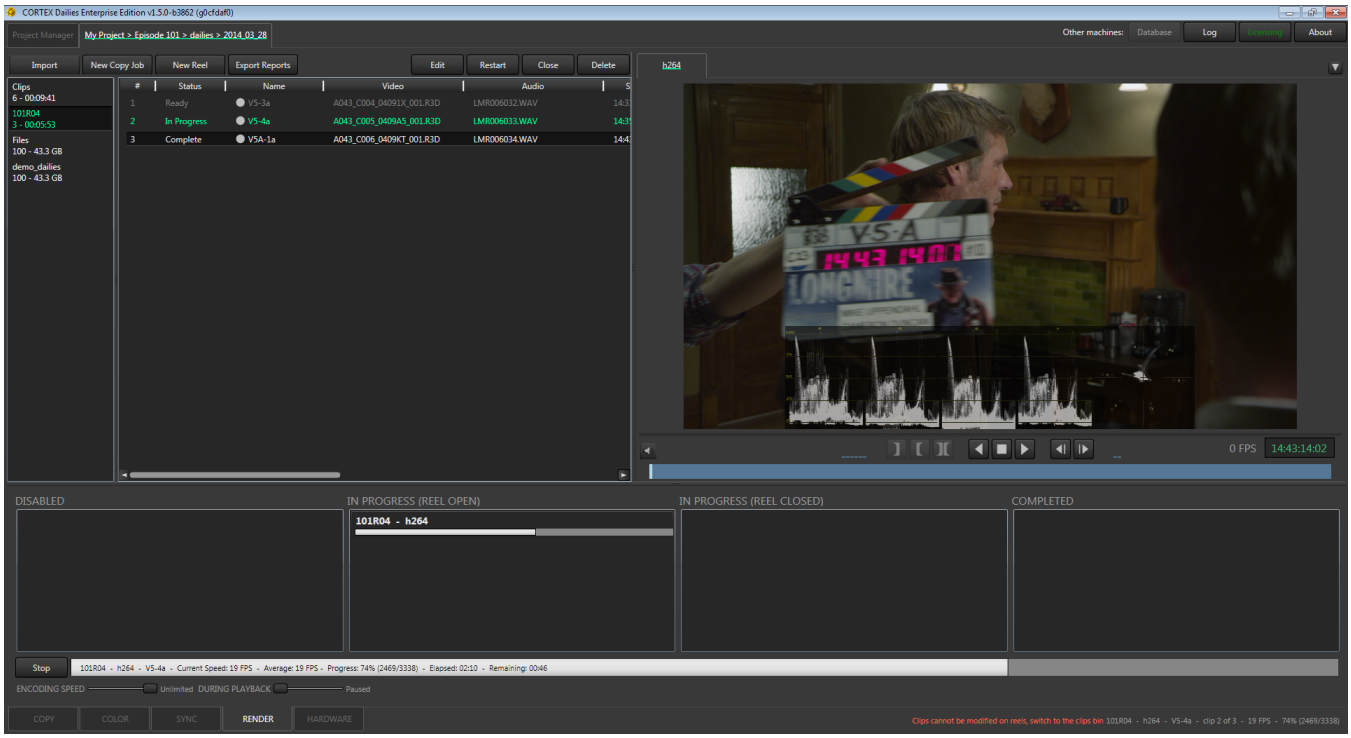
- **Edit** - Update information specified during Reel creation
- **Restart** - Restart encoding of all clips in the reel in all formats
- **Open/Close** - Close a reel or re-open a closed reel
- **Delete** - Delete the Reel
- **Export Reports** - Export the Reel's reports in the following available format: ALE, Log, QC Report, Final Cut XML and Cortex XML.

Rendering Deliverables

As soon as a clip is added to a Reel, CORTEX will begin rendering each of the deliverables specified in the current workflow.

The status of each clip will be displayed in the Reel Bin

The overall status of deliverables rendering will be displayed in the lower panel.



Deliverables Status Panel

The Deliverables Status Panel displays all the status of deliverables rendering for the current job. Deliverables are grouped by Reel and format. So, for example, if you have 10 clips in a Reel 101R2 to be rendered out to DVD and h.264, you'll see two items listed, displaying the overall progress of all 10 clips for each format. You can check the status of each individual clip in the Reel Bin.

The current transcoding action is displayed in the ribbon on the bottom with its progress.

Deliverables can have one of four statuses:

- **Disabled** - The format has been manually disabled by the user for this job. No further clips will be rendered in this format.

- **In Progress (Reel Open)** - The encoding of these deliverables is still in progress, but the reel remains open to adding new events.
- **In Progress (Reel Closed)** - The encoding of these deliverables is still in progress, but the Reel has been closed. Events cannot be added to closed reels, but reels must be closed in order to be marked completed and for any finalization steps to take place (eg: quicktime chaptering, dvd authoring).
- **Completed** - The Reel has been closed and the encoding has finished.

While a deliverables set is In Progress, you can right-click the item and select any of the following actions:

- **Show in Bin View** - Selects the corresponding reel tab and deliverable tab.
- **Open Containing Folder** - Opens the folder where the output files are located.
- **Disable** - Disable this format from rendering any further deliverables.
- **Highest Priority** - Move this deliverable to the top of the priority queue.
- **Lowest Priority -** Move this deliverable to the bottom of the priority queue..
- **Raise Priority** - Move this deliverables up by one in the priority queue.
- **Lower Priority** - Move this deliverable down by one in the priority queue.
- **Re-encode Failed** - Re-encode only the clips that have failed.
- **Re-encode All Clips** - Re encode all the clips for this deliverable.
- **Delete** - Deletes this deliverable and all of the output files associated with it.

Once a deliverables set is completed, you can right-click the item and select any of the following actions:

- **Open Containing Folder** - Open the Windows folder where the deliverables are located
- **Re-encode All Clips** - Re-encode all deliverables for this format

Transcoding Workflow

The following describes the process of encoding deliverables with CORTEX::CONTROL DAILIES

1. Create today's job in the Project Manager.
2. Open the job to the Clip Bin.
3. Import media using **Import Folder** or **Import File.**
4. Create a new Reel.
5. The first clip will automatically be selected.
6. Sync audio, add metadata and apply color correction as desired.
7. Right-click the clip and select **Add to Reel** (or use shortcut key **G**).
8. Move to the next clip and repeat.
9. When you've added all the selected clips, go to the Reel Bin and click the **Close** button.
10. Once the deliverables have completed, right-click the Completed item and select **Open Containing Folder**. The files are now available for delivery.

Configuring Hardware

The Hardware tab allows you to configure SDI output, manually configure GPUs and connect to an optional color panel.

SDI Output

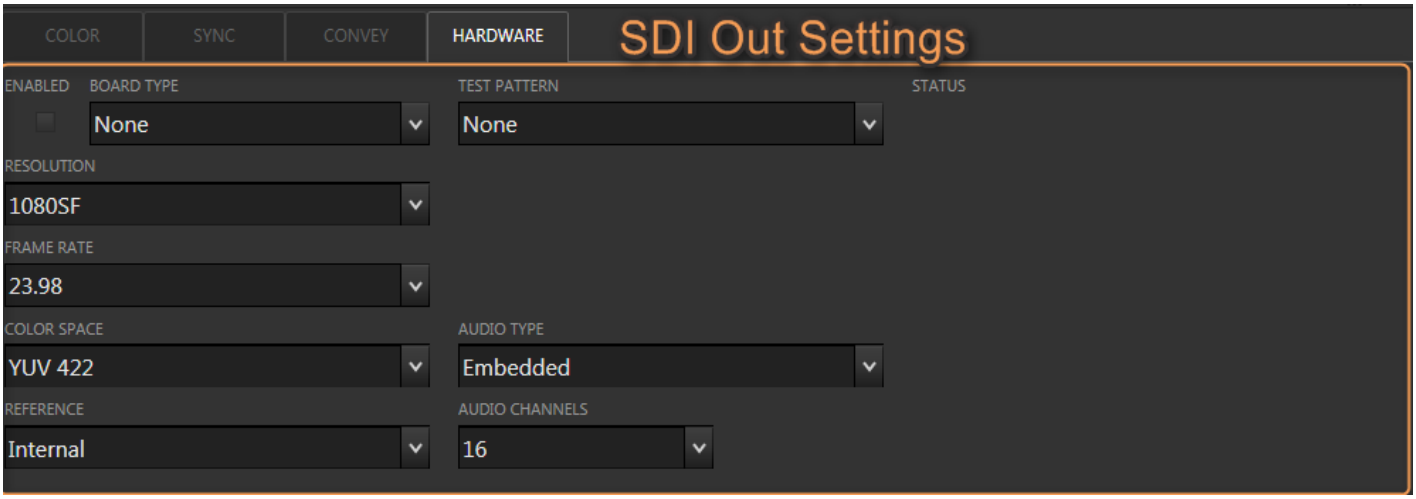
To enable SDI output, you must have a DVS Atomix card and be licensed for the SDI Output feature.

Install Your DVS Card

1. Download the DVS Drivers & Utility package from: http://filedrawer.mtifilm.com/supplementary/dvs-driver-4.3.5.10.zip
2. Unzip and copy the DVS folder to your root (usually C:\) drive.
3. Physically install the DVS card - ***Do not allow Windows Found New Hardware to Automatically Install the Board For You.***
4. From the C:\DVS Folder, run dvsconf.exe.
5. In Driver Location, Browse to C:\DVS\Driver\dvs.inf and select this file.
6. Click **Install.**

Configure SDI Output

1. Open a job and click on the **HARDWARE** tab**.**



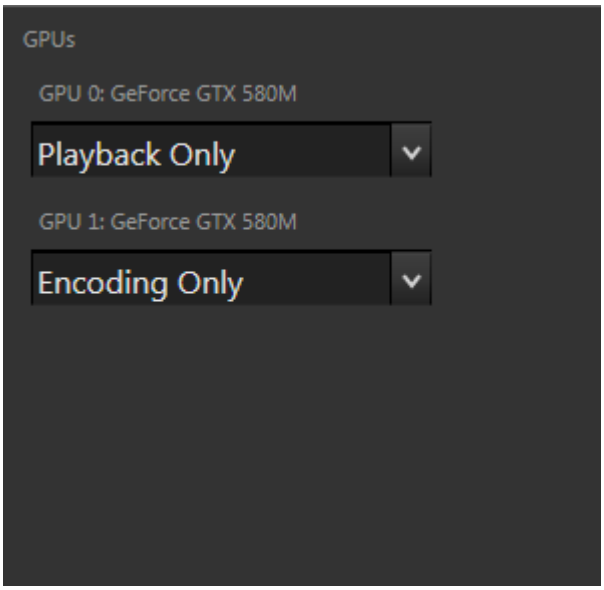
2. In the **BOARD TYPE** dropdown, select your installed card (usually listed as DVS 0).
3. Click the **ENABLED** checkbox.
4. The default settings should work in most installations, adjust these parameters as needed.
    a. **RESOLUTION**
    b. **FRAME RATE**

c. **COLOR SPACE** - YUV422 or RGB444
d. **REFERENCE** - Internal, Input Reference, External Sync
e. **AUDIO TYPE** - Embedded or AES
f. **AUDIO CHANNELS** - None, 2, 4, 8, 16

5. Additionally, you can change the **TEST PATTERN** from None to **Black** (with silence) or **Bars** (with tone) to test the output or to calibrate a monitor.

GPU Configuration

CORTEX will automatically configure and use one (or two if present) GPU cards. You can manually override these settings here if you wish to specify one card for encoding and one for playback or if you wish to disable an unsupported card.



CORTEX will automatically detect your available GPUs. For each video card, select from:

- Do Not Use
- Playback Only
- Encoding Only
- Playback and Encoding

This determines which cards will be used for the CUDA Image Processing during each of these functions.

If you have a smaller card like a Quadro 600 installed in your system for ‘display only’ that does not have a lot of CUDA power, select ‘Do Not Use’ for that card and choose ‘Playback and Encoding’ for the higher powered card.

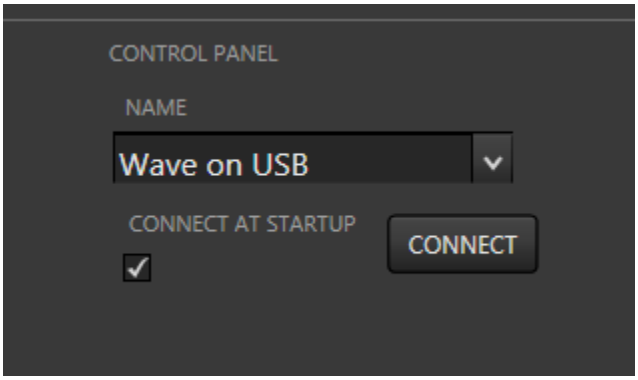
Note: As of v 1.2.0 CORTEX will take advantage of up to two GPUs

Color Panel Configuration

As of version 1.2, CORTEX supports the Tangent Wave, Tangent Element and Nucoda Precision Panels.

Tangent Wave or Tangent Element

1. Install Tangent Hub software from http://www.tangentdevices.co.uk/support.asp
2. In the Hardware Tab, select panel type
3. Click **Connect**
4. Optionally enable **Connect At Startup**



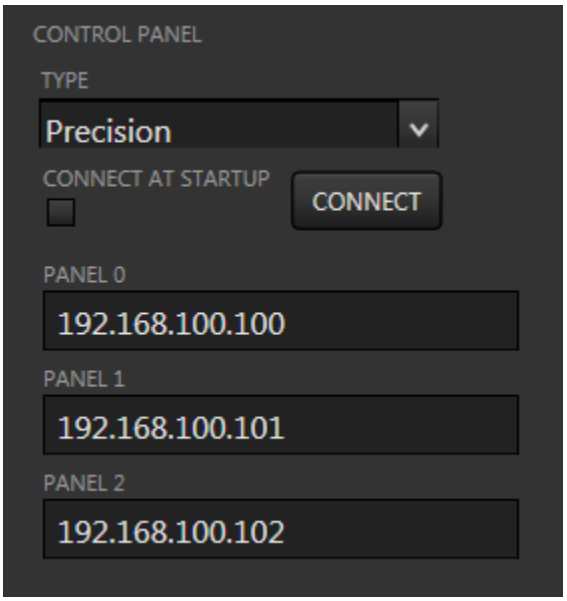
Nucoda Precision

You will need to know the IP addresses for your Nucoda Precision Panel. Contact your facility engineer if you do not know these values.

1. Select Precision
2. Enter the IP addresses of each panel
3. Click **Connect**
4. Optionally check **Connect at Startup**

Add/Remove control panels

Each available control panel is listed as an XML file at the location C:\Program Files\MTI Film\cortex.config.xml. You can directly edit those files to accommodate your needs (make sure to make a backup before hand).



Linking Shared Systems

If you have an Enterprise Edition license, you can link multiple CORTEX Dailies systems together. This allows different users to color and sync on different workstations at the same time. It also distributes the rendering process across all linked machines for faster throughput.

To enable shared systems, you need to create a shared database and link all systems to it.

Configuring a Shared Database

The MySQL backend support was designed to allow multiple instances of Cortex to operate together in a shared environment. Cortex creates a new database for each project, so it is not possible to restrict access to certain databases.

To use Cortex with a MySQL backend, each machine running Cortex must be able to log into the MySQL server directly with a user that has all privileges.

It was not designed to leverage existing infrastructure with specific security requirements beyond what a normal shared file system provides, so if that is a concern, it is recommended that a dedicated machine or virtual machine is used for Cortex.

Please also note that the password used to access the MySQL database is stored in plaintext on the client machine in the application configuration file, so it should not be considered secure and you should not use a password that you use for other secure systems.

Creating a new user

The basic syntax for creating a new user is as follows:
CREATE user 'username'@'hostname' IDENTIFIED BY 'password';

For example to create a cortex user that can connect from any machine:
CREATE user 'cortexuser'@'%' IDENTIFIED BY 'mypassword';

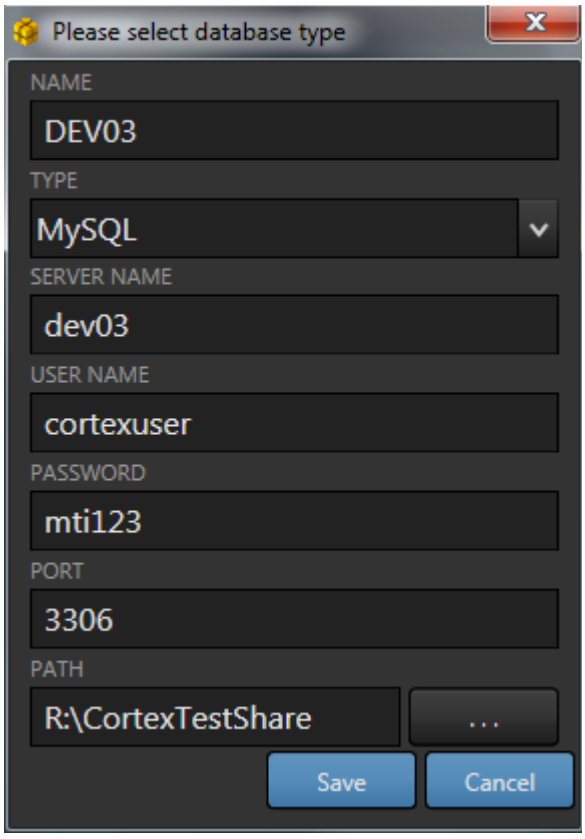
Then, to grant all privileges (except the grant option):
GRANT ALL PRIVILEGES ON *.* TO 'cortexuser'@'%';

If you wish to restrict access to the database from certain hosts, the wild card '%' for the host name above can be replaced with an IP address or a partial IP address or a host name with wild cards.

Please reference this page of the MySQL documentation for more information:
http://dev.mysql.com/doc/refman/5.5/en/account-names.html

Linking CORTEX Systems to a Shared Database

Launch CORTEX and click the **Database** button in the top right.
Click the **New** button
Enter your server and user information.
Click **Save**



Using StreamViewer for streaming iPad dailies

To use StreamViewer, you must purchase a license for the StreamViewer option within CORTEX and download the free StreamViewer app for your iPad from the app store here: https://itunes.apple.com/us/app/streamviewer/id654737027?mt=8

Please contact MTI Film Support for instructions on configuring your server & projects.