# Eos/Gio Console Programming

# Level 3: Advanced Programming

# Workbook

V2.5.0 Rev. A

www.etcconnect.com/education

# Table of Contents

# Purpose of the Class

This class is intended for people who are well versed in Eos Family terminology, already know the layout of the desk, and are experienced conventional and intelligent fixture programmers. This class is intended to build on your knowledge, and make you faster.

### LEARNING OBJECTIVES:

After completing this class, users should be able to:

- Use, store, and recall advanced displays
- Use advanced patch funtions, such as copying and moving show data, editing fixture profiles, and creating keywords
- Use advanced selection and manual control features in controlling channels
- Define and use Highlight, Lowlight, and custom RemDim
- Use the fan function on encoders, the command line, and for references
- Control multiple-intensity fixtures
- Apply and store filters
- Use manual playback functions like Make Null, Make Manual, and Capture
- Use advanced palette and preset modifiers
- Use advanced cues, like Multipart, and multi-list
- Create and use Macros
- Utilize intermediate Magic Sheet skills

### SYNTAX ANNOTATION

| | |
|---|---|
| **Bold** | Browser menus |
| **[Brackets]** | Facepanel buttons |
| **{Braces}** | Softkeys and direct selects |
| **<Angle brackets>** | Optional keys |
| **[Next] & [Last]** | Press & hold simultaneously |
| **Play Icon** | Link to video on ETC's YouTube Channel - |
| | ETCVideoLibrary |

### HELP

Press and hold **[Help]** and press any key to see:

- the name of the key
- a description of what the key enables you to do
- syntax examples for using the key (if applicable)

*As with hard keys, the "press and hold [Help]" action can be also used with softkeys and clickable buttons*

**THIS CLASS USES THE CONTENT FROM THE LEVEL 2 SHOW FILE.**
**BEFORE BEGINNING, PLEASE OPEN THE MOST RECENT VERSION OF THE "MUSIC THE MUSICAL LEVEL 2 – COMPLETE" SHOW FILE.**

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The videos and workbooks were created using a Gio console.

Where possible, where a button is a hard key on the Gio/Eos and a softkey on the Ion, the syntax will be:   **[{Assert}]** – both hard and soft brackets.

If a totally different syntax is required for Ion, it will be written in a note or the syntax will be **[Path]/{ColorPath}.**

# ▶ Advanced Displays

## FLEXI VIEW CHANNELS

It is possible to make a custom Flexi view with a channel selection.

| | |
|---|---|
| **[Group] [8] [+] [Group] [9] Press & Hold [Flexi] {View Chans}** | Auto-completes the command line, makes the channel selection a Flexi State. |

**NOTE:  This will remain the View Channels state until you change the selection. There is not a way to clear the View Channels Flexi at this time.**

## PSD TIME COUNTDOWN

When Playback Status Display(PSD) Time Countdown is enabled, the PSD will show each timing element counting down as a cue executes in real time. When it is disabled, it will show the recorded times, and only the duration will count down.

| | |
|---|---|
| **Right click or tap on the PSD tab,  then on the PSD Menu option** | To see configuration settings |
| **Click or tap on Display PSD Time Countdown** | To enable PSD Time Countdown. |
| **Go to Live, and play back a cue with multiple timing elements.** | Watch the individual timing elements count down. |
| **{PSD Time Countdown} Disabled** | Disables PSD Time Countdown, making the PSD only show recorded values that do not count down. |

**NOTE:  Pressing and holding the [Time] Display button will temporarily show the recorded times on Gio and Eos consoles.**

## ABOUT "ABOUT"

"About" displays detailed information about nearly every target type in the console.

| | |
|---|---|
| **[About]** | On a clear command line, About shows you information about the console |
| **On right hand side, What's new** | Opens the Manual Tab, currently latest software supplement |
| **About System** | Shows Network Devices, status and address |
| **[101] [Enter]** | Shows detailed info about channel attributes, including Lamp Controls. |
| **[Address] [2] [/] [1] [Enter]** | Shows patch info, library data, etc. |
| **[Cue] [4] [Enter]** | Shows timing, flags, status, and moves. |

## ADVANCED DISPLAYS BEST PRACTICES

- You can toggle the PSD Time Countdown setting via a Macro, so it is easier to switch in and out of modes on the fly from the surface.
- Flexi View Channels, PSD Time Countdown, and About are separate by user, so everyone can have their own work environment.

▶ # Snapshots

Snapshots store layouts so that you can recall them quickly. Snapshots are stored in the show file, and can be recalled on any Eos Family or Nomad device on the network. Control areas that may be stored in a snapshot are:

- **Visible Workspaces** – records the layout and configuration of the currently displayed workspaces on all monitors, including frame layout, tab population, and in-tab configuration (such as columns, flexi state, etc.).
- **All Workspaces** – records the layout and configuration of all workspaces on all monitors, as well as which workspaces are active on each monitor.
- **Faders** – captures the current state of all the faders including the contents of all faders including the Master Playback fader pair, on all pages, active page, and pending cues.
- **Encoders** – records the current page and flexi state of the encoder module.
- **Filters** – records the current state of Filters.
- **Direct Selects** – records the configuration, mapping, and current tab/page of any direct selects in use.

## RECORDING SNAPSHOTS

| | |
|---|---|
| **[Record] [{Snapshot}] [1]      [Enter]** | Opens snapshot selection window and records the snapshot. |
| **Rearrange some of the monitor layouts.** | |
| **[Record] [{Snapshot}] [2]** | Opens snapshot selection window. |
| **Touch {All Workspaces}** | Selects all workspaces, regardless if they are currently displayed. |
| **[Enter]** | Records the snapshot. |

## RECALLING SNAPSHOTS

| | |
|---|---|
| **[{Snapshot}] [1] [Enter]** | Recalls the content of snapshot 1. |
| **[{Snapshot}] [{Snapshot}]** | Opens the Snapshot list |

## SNAPSHOTS BEST PRACTICES

- Record Snapshots into background macros so you can change displays without interrupting your channel selection.
- Place your snapshots (like a Direct Select or a Magic Sheet object) in the same location on your displays so they are easy to find.
- Snapshots that include Faders will record the pending cue for any populated cue list, including on the Master Playback. This means when they are recalled, the pending cue will be loaded, potentially interrupting normal playback.
- Snapshots that include Faders do not store fader attribute states, such as Timing Disable, Rate, etc.

# Patch – Copy To & Move To

## COPY CHANNELS IN PATCH

When you copy a channel in Patch, only the patch information get copied to the target channel(s) – type, labels, all attributes, interface, and database information.

**In Patch,  [111] [Copy To] [116] [Enter]**

Takes channel 111 and copies only the patch information (no address) to 116.

To copy the data recorded in the show file for the channel, use softkey modifiers. This includes data in cues, submasters, palettes and presets, effects, and groups.

**[111] [Copy To] [117] {Plus Show} [Enter]**

Takes channel 111 and copies the patch and all show data to channel 117.

**[111] [Copy To] [118] {Only Show} [Enter]**

Takes channel 111 and copies only the show data to channel 118, and does not copy any patch information.

*Notice that nothing shows in the Patch display. Will write over any existing information.*

To copy just the database information for the channel, use softkey modifiers.

**[111] [Copy To] [119] {Only Text} [Enter]**

Takes channel 111 and copies only the patch database information to channel 119.

## MOVE CHANNELS IN PATCH

When you move a channel in patch, you are essentially renaming it from one channel number to another. All show file information and patch information get moved to the target channel, as well as park information for the channel(s).

**[116] [Copy To] [Copy To] [120] [Enter]**

Moves channel 116's show and patch information to channel 120.

**NOTE:**   **Certain show information will not get copied or moved when executed through Patch. This includes channel numbers called in macros, and channel objects in Magic Sheets and Pixel Maps.**

**NOTE:**   **When copying a channel, park information from the origin channel does not copy to the target channel(s). However, when moving a channel, the move will be made in Park as well.**

# ▶ Fixture Profiles

Eos family consoles have an extensive library of fixtures, however sometimes users wish to customize or create their own. The fixture profile manager will allow you to copy and create fixtures. You can name the fixture, assign all necessary parameters, define the address and operational range of those parameters, and set lamp controls.

The fixture editor is accessible from patch. Once a fixture has been edited, it is stored in the show file. It is *not* added to the fixture library stored on the desk. To share profiles, create a new show and merge the fixture profiles.

### TO OPEN THE FIXTURE PROFILE MANAGER:

| | |
|---|---|
| **In {Patch} with a clear command line, {Fixtures}** | Opens the Fixture Editor which shows all the fixture profiles in current show. |

| Number | Type / Label | Number Of Parameters |
|---|---|---|
| 1 | ColorBlast 12 | 7 |
| 2 | D40 Lustr+ Direct Str | 12 |
| 3 | Dimmer | 1 |
| 4 | Mac 700 Profile Ext | 31 |
| 5 | Robin 300 LEDWash M3 | 17 |
| 6 | Scroller | 1 |
| 7 | VL2000 Wash Enhanced 16B | 18 |
| 8 | VL3500 Spot | 43 |

Patch Channel:

New   Copy   Delete   Update Lib   Return

## EDITING AN EXISTING FIXTURE PROFILE

Eos will not allow you to edit Library Profiles. You must first copy the profile, and edit the copy.

| | |
|---|---|
| **Highlight the fixture profile "ColorBlast 12", press {Copy}** | Copies the library profile to an editable profile. |
| **With "ColorBlast 12 Copy(1)" selected, press [Label] [Label]. Label the fixture profile "LED Zoom", press [Enter]** | Rename the fixture profile |
| **With "LED Zoom" selected, press {Edit} – lower left side of screen** | Allows you to edit the profile. Add, remove, or modify parameters. |
| **Press {New}** | Adds a new parameter to the fixture profile – auto-populates |
| **With the new Parameter selected, press {Parameters}** | Opens the Parameters area |
| **Find and press {Zoom}** | Adds the zoom parameter to the fixture profile |
| **When finished editing, press {Return}** | Saves changes, and exits the editor |
| **Press {Return} again to go back to Patch** | |

**NOTE:** **To create a completely new fixture profile, reference Appendix 1 in this workbook.**

## UPDATING FIXTURE PROFILES

Whenever you patch a fixture, the profile for that fixture is saved into the show file. When the show plays back, the desk uses that profile to understand how to send the stored show data to the fixture.

Sometimes, fixture profiles are updated with new software (often included in a console software update). These library changes are not auto-updated to the show file, as it may have a significant impact on how a show plays back.

**BEFORE YOU UPDATE TO THE LATEST FIXTURE PROFILE, THINK ABOUT THESE THINGS:**

- Always test the update in a copy of the show file. Library updates cannot be undone.
- Leave time to test the playback of the fixture. Make sure the fixture plays back as expected through all show targets, including cues and subs.
- Only update if there is a reason – like if you updated the firmware on a fixture. If you see a fixture update and the show is playing back fine, you likely don't need to update anyting. Don't fix what isn't broken.
- Check the Eos Family release notes to assess library changes.

In the Fixture Profile Manager, with a fixture selected:

- If there is no library update available, the **{Update Lib}** softkey will be greyed out.
- If there is a library update available, the **{Update Lib}** softkey will be white. After touching it, and accepting the warning message, the old profile stored in the show file will be replaced with the version in the software on the desk. **This cannot be undone**.

## MERGING CUSTOM FIXTURE PROFILES

The console allows you to Merge in fixture profiles from another show file.   Go to Browser -> Merge and select the show file. Then select "Fixtures."

### CUSTOM FIXTURE PROFILE BEST PRACTICES

- Many programmers will create custom profiles with the same content, but with different names to delineate fixture types. Creating profiles for "S4 19 Degree", "S4 26 Degree", etc. can help identify fixture types with the [Query] function. They may also indicate different scroller loads, gobo loads, or fixture wattages.
- Sometimes, fixture profile documentation is incomplete, misleading, or out of date. If you are going to be creating a custom profile for a fixture, allow yourself ample time with the real fixture to tech it out.
- Bring your custom fixtures with you! Merge your favorite modified or custom profiles before you patch to save doing the same work over and over.

# ▶ Database & Keywords

Each part of each channel can have up to one note and up to ten keywords defined. These can be used to inform operators locally regarding attributes of the fixtures, working notes, or to assist with Query operations. Notes can accept paragraph-form text and are not utilized when using the **[Query]** function. Keywords can be defined in notation-style and can be used with **[Query]**.

| | |
|---|---|
| **In {Patch}, {Database}** | Navigates to the Database area of Patch |

### ADDING A NOTE TO A CHANNEL OR PART

| | |
|---|---|
| **[1] {Note} needs new gel [Enter]** | Selects channel 1 and adds the note |
| **[26] [Part] [2] {Note} calibrate scroller [Enter]** | Selects part 2 of channel 26 and adds the note to it |

### ADDING GEL NOTES

| | |
|---|---|
| **[11] [+] [12] {Gel}  R65 [Enter]** | Selects channels and adds the note |
| **[13] [+] [14] {Gel}  R39 [Enter]** | Selects channels and adds the note |
| **[15] [+] [16] {Gel}  R13 [Enter]** | Selects channels and adds the note |

### ADDING KEYWORDS TO CHANNELS OR PARTS

| | |
|---|---|
| **From a clear command line – [Shift]&[Clear]** | |
| **{Text1} [Label] Lamp [Enter]** | Changes Text1 to Lamp |
| **{Text2} [Label] Position [Enter]** | Changes Text2 to Position |
| **[11] [Thru] [16] {Lamp}** | Selects channels and text field |
| **{New Keyword} {575W} [Enter]** | Adds the new keyword to the database and automatically fills in text field |
| **[11] [+] [13] [+] [15] {Position}** | Selects channels and text field |
| **{New Keyword} {SR Tower} [Enter]** | Adds the new keyword to the database and automatically fills in text field |
| **[12] [+] [14] [+] [16] {Position}** | Selects channels and text field |
| **{New Keyword} {SL Tower} [Enter]** | Adds the new keyword to the database and automatically fills in text field |

## KEYWORD BEST PRACTICES

- Keywords are helpful if they are concise and consistent. Having keywords such as "S4 19deg" is easy to understand, but having another keyword "S4-19" will make it difficult to use **[Query]** to find channels that you want. Re-use keywords that you have already established for similar fixtures.

**NOTE:    Reference Appendix 2 in this workbook for LightWright imports.**

# ▶ Query

**[Query]** is used to find and select channels that meet conditional criteria and keywords – ending in a channel selection.

| | |
|---|---|
| **Back in Live, [Go To Cue] [101] [Enter]** | Best viewed in Live Channel rather than Live Table format. |
| **[Group] [1] [At] [50] [Time] [7] [Enter]**<br>**[Group] [2] [At] [75] [Enter]**<br>**[Group] [7] [At] [10] [Thru] [Full] [Enter]**<br>**[Group] [8] [Full] [Full]    [Color Palette] [1] [Enter]**<br>**[Group] [12] [Full] [Full]   [Color Palette] [4] [Enter]**<br>**[Record] [102] [Enter]** | Set up some channels to use with Query |

## BASIC QUERY

| | |
|---|---|
| **[{Query}] [At] [75] [Enter]** | Selects all channels currently at 75% |
| **[{Query}]  [At] [50] [Enter]      [At] [Full] [Enter]** | Selects all channels currently at 50%, and then places them at Full. |

## QUERY WITH KEYWORDS

| | |
|---|---|
| **[{Query}]  {575W} [Enter]** | Keywords displayed in CIA - selects all channels with a 575w lamp. |
| **[{Query}]  {SL Tower} [Enter]** | Selects all channels in the SL Tower. |
| **[{Query}]  {SR Tower} {R13} [Enter]** | Selects all channels in the SR Tower that are yellow. |

## QUERY SOFTKEYS

### {Is In}

The specified channels or parameters <u>are</u> currently at a specific value:

| | |
|---|---|
| **[{Query}]  {Is In} [Color Palette] [1] [Enter]** | Selects all channels currently in Color Palette 1. |
| **[{Query}]  {Is In} [Color Palette] [2] [At] [Full] [Enter]** | Selects all channels in Focus Palette 2 with an intensity of Full. |
| **[{Query}]  {Is In} {Cyan} [100] [Enter]** | Selects all channels with a Cyan value of 100. |

### {Isn't In}

The specified channels or parameters <u>are not</u> currently at a specific value:

| | |
|---|---|
| **[Group] [8] [{Query}]  {Isn't In} [Color Palette] [1] [Enter]** | Selects any channels in group 8 that is not in Color Palette 1. |
| **[1] [Thru] [20] [{Query}]  {Isn't In} [Time] [7] [Enter]** | Selects channels in range that do not have a time of 7. |

### {Can Be}

Items that have stored in a particular target but not currently in that target:

| | |
|---|---|
| **[{Query}]  {Can Be} [Focus Palette] [1] [Enter]** | Selects channels that have data stored in Focus Palette 1 but are not in FP1 now. |
| **[{Query}]  {Can Be} [Color Palette] [1] {Isn't In} [Color Palette] [1] [Enter]** | Selects channels that have data stored in CP1 but currently is not in CP1. |

### {Can't Be}

Items that do not have data stored in a particular target will be selected:

| | |
|---|---|
| **[{Query}]  {Can't Be} [Preset] [1] [Enter]** | Selects channels that do not have information stored in Preset 1. |

### {Or}

Allows for overlapping arguments and selects channels that are true of either specified condition:

| | |
|---|---|
| **[{Query}]  [At] [Full] {Or} [At] [75] [Enter]** | Selects channels that are at a level of full or at 75%. |
| **[{Query}]  {Is In} [Color Palette] [1] {Or} {Is In} [Preset] [1] [Enter]** | Selects channels that are currently in Color Palette 1, and those that are currently in Preset 1. |

### {Moves Only}

Finds channels that have move instructions stored:

| | |
|---|---|
| **[{Query}]  {Moves Only} [Enter]** | Selects all channels that have move instructions in the current cue |

### {Unpatched}

Finds channels that are not patched:

| | |
|---|---|
| **[{Query}]  {Unpatched} [Enter]** | Selects all channels that are not patched. |
| **[{Query}]  {Unpatched} {Is In} [Cue] [1] [Thru] [Enter]** | Looks for anything that has moved in the show but is unpatched |

## Query Best Practices

- Query results are not altered by Flexi – it will select channels that are true even if they are not in the current flexi view.
- Query works great in Blind Spreadsheet.
- Save frequently used Queries as macros for quick dynamic channel selection.

# Advanced Manual Control

## REMDIM

RemDim can be used to take all active channels that are not in a selection,  and force them to a lower level.

### ABSOLUTE REMDIM

| | |
|---|---|
| **[1] [Thru] [9] [Full] [Full]** | Turns on channels 1 through 9. |
| **[1] [Thru] [3] [At] [50] [RemDim] [Enter]** | Puts 1 through 3 at 50, and forces all other channels to 0. |
| **[4] [Thru] [9] [At] [10] [Thru] [30] [Enter]** | Sets channels at different levels. |
| **[Group] [8] [At] [50] [RemDim] [20] [Enter]** | Puts 51 through 67 at 50, and any channels that are above 20 to 20. All values below 20 stay at their previous value. |
| **[RemDim]** | Toggles RemDim off – only works immediately after a RemDim command is completed. |

### PROPORTIONAL REMDIM

| | |
|---|---|
| **[1] [Thru] [9] [At] [75] [Enter]** | Puts channels 1 through 9 at 75%. |
| **[11] [Thru] [16] [At] [75] [RemDim] [/] [50] [Enter]** | Puts channels 11 through 16 at 75%, and puts all other channels at 50% of their previous level. |

## HIGHLIGHT & LOWLIGHT

Highlight mode allows you to put fixtures into a temporary, pre-defined state. You can use the desk's defaults for Highlight, or define your own Highlight, Lowlight, and Highlight RemDim behaviors.

### DEFINE HIGHLIGHT & LOWLIGHT PRESETS

| | |
|---|---|
| **[Go To Cue] [Out] [Enter]** | |
| **[Group 16] [Full] [Full]** | Selects all of the moving lights. |
| **[Select Last] [-] {Focus}[Record] [Preset] [9997] [Label] Highlight [Enter]** | Records just the color and beam parameters into Preset 9997. |
| **[Group] [16] [At] [50] [Enter], make them all dark blue** | |
| **[Select Last] [-] {Focus} [Record] [Preset] [9998] [Label] Lowlight [Enter]** | Records just the color and beam parameters into Preset 9998. |

## Highlight, Lowlight and Highlight RemDim Levels

When in Highlight mode, there are three levels or looks that can be defined with presets or hard values.

| | |
|---|---|
| **[Displays] {Setup} {Desk} {Manual Control}** | |
| **{Highlight Preset} [9997] [Enter]** | Defines Preset 9997 as the location for Highlight data. |
| **{Lowlight Preset} [9998] [Enter]** | Defines Preset 9998 as the location for Lowlight data. |
| **{Highlight RemDim} [20] [Enter]** | Puts in a value for Highlight RemDim. |

NOTE:    **You can set Highlight RemDim as a hard percentage value (like the example above), a [/] value (percentage) or as a preset.**

**To define a preset, type {Highlight RemDim} [Preset] [XX] [Enter]. You can disable Highlight RemDim by typing {Highlight RemDim} [Enter].**

## Using Highlight Mode

| | |
|---|---|
| **[Live]    [Go To Cue] [102] [Enter]** | Go back to Live and into a cue. |
| **[High]/{Highlight} [Enter]** | Puts the desk into Highlight mode. All levels drop to Highlight RemDim value. |
| **[Group] [16] [Enter] … [Next], [Next], [Next]** | Puts selected channel in Highlight look, puts half-selected channels in Lowlight look, and puts all unselected channels at Highlight RemDim level. |

*Notice that 110 is in Highlight Preset Value, rest of Group 16 is using Lowlight Preset, and all channels outside of the selection are using the Highlight RemDim level. HL and LL on channels.*

| | |
|---|---|
| **Place all channels in Group 16 downstage center** | |
| **[Select Last] [Record] [Focus Palette] [11] [Enter]** | Selects all the channels, putting them all in Highlight look and records all into focus palette, can then start on next position. |
| **[High]/{Highlight}** | Exits Highlight mode. All channels that were not touched in highlight mode return to their previous values. |

# Highlight & Lowlight Best Practices

- Highlight is a great way to quickly build up focus palettes for a group of fixtures.
- Highlight can be helpful to see lights in a rig when there is ambient light you cannot control, like work lights, or while programming outdoors.
- With Highlight RemDim disabled, all channels not in the selected group will remain at their previous values. So you'll have light on stage.

# CUSTOM DEFAULT PRESETS

## LIVE REMDIM PRESET

Assign a level or Preset for a Live RemDim action to utilize.

| | |
|---|---|
| **[1] [Thru] [9] [At] [25] [Thru] [80] [Enter]** | |
| **[Select Last] [Record] [Preset] [9996] [Label] Live RemDim [Enter]** | Create the look for the Live RemDim Preset. |
| **Go to Setup – [Displays] {Setup} {Desk} {Manual Control}** | |
| **{Live RemDim Level} [Preset] [9996] [Enter]** | Define the Live RemDim Preset in Setup. |
| **[Live] [Sneak] [0] [Enter]** | Remove the manual preset values on stage. |
| **[1] [Thru] [9] [+] [11] [Thru] [16] [Full] [Full]** | Bring up channels to full, some in the Live RemDim Preset, some not. |
| **[Group] [6] [At] [Full] [RemDim] [Enter]** | Selected channels go to full, channels with values stored in the Live RemDim Preset go to those values, and channels without data stored in the Live RemDim Preset are left untouched. |
| **[RemDim]** | While channels are still selected, RemDim again will undo the RemDim action. |

## HOME PRESET

Home Presets are a quick way to redefine home values for <u>non-intensity</u> parameters.

| | |
|---|---|
| **[Go To Cue] [Out] [Enter]** | |
| **[Group] [12] [Full] [Full], tilt up on stage** | Move the fixtures to a place where you want them to be at their home position |
| **[Select Last] {Focus} [Record] [Preset] [9999] [Label] Home [Enter]** | Create a preset for the home value |
| **[Sneak] [0] [Enter]** | Clear the manual values |
| **[Displays] {Setup} {Show} {Show Settings}** | Go into setup |
| **{Home Preset} [9999] [Enter]** | Define the home preset that you created |
| **[Live],   [Group] [12] [Full] [Full]** | Bring the channels to full. |
| **Pan & Tilt the units, drop in some color** | Change the fixtures |
| **[Select Last] [Home] [ Enter]** | Channels go back to the new home. |

# CUSTOM DEFAULT PRESETS BEST PRACTICES

- A Home command will use data stored in the home preset. If there is no data stored for a parameter or channel, it will use the console's default home values for that parameter.

# ▶ FAN

## FAN PARAMETERS

In Eos Family software, Fan is a mode. When enabled, any parameter that is moved will spread evenly across the selection based on the styles below.

| | |
|---|---|
| **[Group] [12] [Full] [Full] [Focus Palette] [2] [Enter]** | |
| **[{Fan}] [Enter]** | Enables Fan mode |
| **Move the Pan encoder** | First channel is anchor (stationary), and others fan relative to the first channel. |
| **Move the Cyan encoder** | Look at beams – white to Cyan across the fixtures |
| **Move the Level Wheel** | Again look at beams - watch intensity |
| **[111] [Thru] [115] [Focus Palette] [2] [Enter]** | Sets the fixtures back to focus palette 2. |
| **[{Fan}]{Center} [Enter]** | |
| **Move the Pan encoder** | Center channel is anchor, and channels fan around it. |
| **[Group] [9] [Full] [Full]** | Bring up the cyc fixtures. |
| **[{Fan}] {Mirror Out} {Repeat} [3] [Enter]** | |
| **Roll Red out and then Blue out** | Watch how the fixtures respond now. |

When **[{Fan}]**is pressed, the following fan styles softkeys appear:

- **{Center}** – The middle channel in the order is set as the start and will remain unchanged, and the first and last channels will change in different directions.
- **{Reverse}** – The selected channel order is reversed before applying the fan.
- **{Mirror Out}** – The middle channel in the selected order is used as the starting channel and the first and last channels in the order are the end channels.
- **{Random}** – The selected channels are put in a random order before fan is applied.
- **{Repeat}** – The number of channels that are fanned before the pattern is repeated. **[1] [Thru] [12] [At] [50] [Thru] [70] [Fan] {Repeat} [3] [Enter]** - sets channels 1,4,7, and 10 at 50%, 2,5,8, and 11 at 60%, and 3,6,9, and 12 at 70%.
- **{Cluster}** –The channels are put into collections, which contains channels with all of the same value. **[1] [Thru] [12] [At] [50] [Thru] [80] [Fan] {Cluster} [4] [Enter]** - sets channels 1 through 3 at 50%, 4 through 6 at 60%, 7 through 9 at 70%, 10 through 12 at 80%.

## COMMAND LINE FAN

It is possible to take a range of channels, and quickly fan a range of values over them – such as intensity.

| | |
|---|---|
| **[Go To Cue] [Out] [Enter]** | Takes us to a clean stage |
| **[Group] [8] [At] [10] [Thru] [Full] [Enter]** | Fans the intensities across the channel selection and defined intensity range. |
| **[Group] [20] [At] [10] [Thru] [Full] [Enter]** | Channel selection matters when using command line fanning. |
| **[Group] [8] [At] [10] [Thru] [Full] [{Fan}]{Mirror Out} [Enter]** | Use Fan on the command line to access modifier softkeys. |
| *removed a line* | |

## FAN REFERENCES

Like fanning absolute values on the command line, it is possible to fan references over a range of channels.

| | |
|---|---|
| **[Group] [8] [Full] [Full]** | Resets to full intensity |
| **[Select Last] [Color Palette] [1] [Thru] [7] [Enter]** | Fans the color palettes across the channels, and repeats after all palettes are used. |
| **[Select Last] [Color Palette] [1] [Thru] [7] [{Fan}] {Mirror Out} [Enter]** | Starts at the center channel, and mirrors the color palettes out, repeating after all palettes are used. |
| **[Select Last] [Color Palette] [1] [Thru] [7] [{Fan}]{Mirror Out} {Cluster} [4] [Enter]** | Starts at the center channel, and mirrors the color palettes in groups of 4. Only the first 3 palettes are used before running out of channels. |

## FAN DISCRETE TIMING

Similarly to command line fanning, ranges can be used to fan discrete time and delays.

| | |
|---|---|
| **[1] [Thru] [9] [Time] [1] [Thru] [5] [Enter]  Look at Discrete Timing** | Time can be fanned - calculates timing across the selection for the times given. |
| **Note:    To view discrete timing, hold the Time Display button or [Shift]&[Time]** | |
| **[Group] [2] [Delay] [8] [Thru] [3] [Enter]** | Fanning a delay. Lower channels have longer delays. |
| **[Group] [9] [Time] [1] [Thru] [5] {Mirror Out} [Enter]** | Fan softkeys appear when a discrete time range is on the command line. |

## ▶ MULTIPLE INTENSITY FIXTURES

When a profile with multiple intensity parameters is patched, Eos automatically creates a master intensity parameter. This masters all of the other intensity parameters on the fixture. By default, the home of each intensity parameter is 100.

### PATCHING MULTIPLE INTENSITY FIXTURES

In Patch, add the following fixtures:

| Channel | Universe | Address | Manufacturer | Type |
|---------|----------|---------|--------------|------|
| 151 | 3 | 201 | SGM | SP 6 – 6ch |
| 152 | 3 | 207 | SGM | SP 6 – 6ch |

### MASTERING ALL INTENSITY PARAMETERS

| | |
|---|---|
| **[Live]** | Best viewed in Live Table view |
| **[151] [+] [152] [Full] [Full]** | Sets all lamps in the fixture to full. |
| **Roll Level Wheel** | Masters all lamps together under the virtual intensity parameter. |

### SETTING INDIVIDUAL INTENSITY PARAMETERS

| | |
|---|---|
| **[151] {Intens 3} [50] [Enter]** | Sets intensity 3 of channel 151 to 50%. |
| **[152] [Enter]    [Intensity] or [Custom] encoder navigation button Roll {Intens 6} encoder out** | Rolls the intensity for lamp 6 out. |
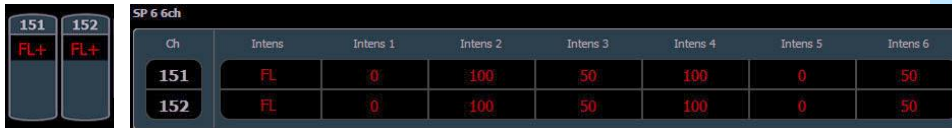


## MULITPLE INTENSITY FIXTURE BEST PRACTICES

• Intensity Palettes are quick ways to get to known lamp intensity configurations. If you only want 3 lamps on, for example, make sure to record the off lamps into the Intensity Palette as well.

• Individual intensity parameters are treated like all other non-intensity parameters. This means that you can mark the lamps like other fixtures, and a fixture will not be seen as Active if there is no output on the virtual intensity parameter.

# ▶ CAPTURE

Normally, manual values will be overcome by incoming move instructions from cues. Capture allows several ways to preserve the manual state of channels and parameters through playback.

## TEMPORARY (SELECTION) CAPTURE

Anytime a channel is held on the command line as a selection, its manual values will be preserved in a temporary Capture.

| | |
|---|---|
| **[Go To Cue] [5] [Enter]    [Format], [Scroll Lock] and scroll** | To see the following channels |
| **[51] [Thru] [55] [+] [111] [+] [112] [At] [50] [Enter]** | Place manual changes on several fixtures. |
| **[Clear], clear the command line, [Go] on Cue 7** | 111 and 112's incoming values override  manual values but 51 thru 55 remain, because there are no new instructions |
| **[Go To Cue] [5] [Enter]** | |
| **[51] [Thru] [55] [+] [111] [+] [112] [At] [50] [Enter]** | Place manual changes on several fixtures |
| **Don't clear the channel selection!!    [Go] on Cue 7** | Manual values of selection remain as channels are temporarily captured by the command line. |

## COMMAND LINE CAPTURE

You can select specific channels or parameters to stay Captured. These devices will remain captured until you release them, allowing you to do other tasks that a temporary capture will not allow.

| | |
|---|---|
| **[Go To Cue] [5] [Enter]** | |
| **[111] [+] [112] [At] [5] [Capture] [Enter]** | Place manual changes on channels and captures them. Notice the yellow "C" |
| **[Clear], clear the command line, and [Go]** | 111 and 112's manual values stay, even though there is an incoming move instruction. |
| **[Go To Cue] [5] [Enter]** | The captured values remain. |
| **[111] [+] [112] [At] [75] [Sneak] [5] [Enter]** | Captured channels can still have values manually changed, and with sneak, it can be over time. |
| **[111] [+] [112] [Capture] [Enter]** | Removes the capture |
| **[Clear], clear the command line, [Go]** | Incoming levels will now override the manual data |

## Latch Capture

By latching Capture on, any manual values that are up, as well as changes that you make will automatically be captured. Turning off Latch Capture will release all captured values, but will leave them manual.

| | |
|---|---|
| **[Group] [1] [+] [111] [+] [112] [At] [50] [Enter]** | Bring up some manual values. |
| **[Clear]** | To clear the command line |
| **[Capture] [Capture] [Enter]** | Capture Enabled on command line. LED on Capture key lit. All manual values become captured. |
| **[11] [Thru] [16] [Full] [Full]** | Channels automatically become captured. |
| **[31] [Thru] [36] [At] [50] [Enter]** | More channels are captured. |
| **[Capture] [Capture] [Enter]** | Disables Latch Capture. All manual values get uncaptured. |

## Capture Best Practices

- Capture is great for locking in temporary manual overrides. For example, adding area light for a full scene with internal cueing, or putting in key and fill lights over a base look. Once uncaptured, levels will smoothly transition back into the cue list on the next move instruction.

# ▶ Filters

Filters are most effective to execute repetitive record commands that have similar content requirements. Filters will affect recording ANY target including palettes, presets, cues, and submasters. Updates ignore Filter states. Filters are applied in the CIA.

## APPLYING FILTERS

| | | |
|---|---|---|
| **Press & Hold [Filter]** | **(Ion: Filter tile in CIA)** | to enter filter mode |
| **Touch {Gobo Select}** | | select the categories using parameter tiles – notice the gray 'N's |
| **[111] [Enter]** | | in table view, can see selected parameter |

Filters will remain active until cleared. FILTERS ON will appear below category names where parameters are active and being recorded. All parameters and categories that will not be recorded are grayed out on the Live display, and the Null "N" will appear. **Any item that is nulled WILL NOT be recorded.** Live output and manual editing will not be affected by filters.

## RECORDING WITH FILTERS ACTIVE

| | |
|---|---|
| **[Group] [12] [Enter]** | |
| **[Record] [Beam Palette] [11] [Label] OPEN [Enter]** | records filtered BP – all channels have null value or 'n' except Gobo Select |
| **[Select Last], put Gobo 1 into the gate.** | |
| **[Record] [Beam Palette] [12] [Label] Alpha Rays [Enter]** | records filtered BP – all channels have null value or 'n' except Gobo Select |
| **[Blind] [Beam Palette] [11] [Enter]** | view filtered BP |

## STORING FILTER STATES

Filter states can be stored in Snapshots to be easily recalled later.

| | |
|---|---|
| **[Record] [{Snapshot}] [11] {Filters} [Label] Filter – Gobo [Enter]** | stores state of the filters into Snapshot 11 |

## CLEARING FILTERS

| | |
|---|---|
| **Press & Hold [Filter],    touch {Clear Filters}**<br>**(Ion: Clear Filter tile in CIA and will need to hit Filter again)** | removes any filters – no more null values |

## FILTERS BEST PRACTICES

- Record all of your Filter states to Snapshots. Don't forget to record a "No Filters" Snapshot to easily turn them off.

# ▶ Make Null

## USING MAKE NULL IN LIVE

In Live, **{Make Null}** is a mask for recording, just like Filters. However, instead of filtering across a parameter type, you can filter individual channels, categories, or parameters. When channel data is nulled, the values for that data in the live display turn grey and an "N" appears next to the data field.

| | |
|---|---|
| **[Group] [12] {Make Null} [Enter]** | makes all parameters of channels Null, preventing them from being recorded |
| **[Group] [12] {Make Null} [Enter]** | Make Null is a toggle state, selecting it again removes the Null state |
| **[111] [{Color}]* {Make Null} [Enter]** | makes only color parameters Null, and prevents them from being recorded |
| **[111] {Make Null} [Enter]** | removes the Null state |
| **[Group] [12] {Position MSpeed} {Color MSpeed} {Beam MSpeed} {Make Null} [Enter]** | nulls all of the fixture's motor speed parameters, so they don't get stored |
| **[Select Last] {Make Null} [Enter]** | removes the Null state |

*    On Ion, hold [Shift] and press [Color] or select the Color tile in the CIA

**NOTE:    Any [Go To Cue] command will remove all Make Null states.**

## USING MAKE NULL IN BLIND

In Blind, **{Make Null}** is a playback filter. It can be used to mask instructions in a cue after it has already been stored. When applied to channels/parameters in cues, it doesn't remove the data from the cue; it simply makes it unavailable for playback. It has the same effect on move instructions that it has on tracked values.

| | |
|---|---|
| **[Blind] [Cue] [5] [Enter]** | previews the cue |
| **[51] [Thru] [55] {Make Null} [Enter]** | makes move instructions null, and prevents track from being played back |
| **[Live] [Go To Cue] [3] [Enter]** | |
| **[Go] on Cue 4** | notice channels are not marking, because no data is available to be play backed in the next cue |
| **[Go] on Cue 5** | channels are filtered out of the cue |
| **[Blind] [51] [Thru] [55] {Make Null} [Enter]** | removes the Null state |

**NOTE:    If you null a channel or parameter's first move in a cue list, it performs the same action as an "At Enter" and removes it. If you do it later in the cue list, it will null it.**

# ▶ Make Manual & Record Only

## MAKE MANUAL

Make Manual can be used to convert recorded values back to manual values, for the purposes of easy channel collection. Select Manual, Record Only, and Flexi Manual all rely on this state to grab, view, and store data.

| | |
|---|---|
| **[Go To Cue] [102] [Enter]** | |
| **[Group] [8] [Color Palette] [6] [Enter]     [Update] [Enter]** | make the top cyc fixtures dark blue, update them into the cue |
| **[Select Last] {Make Man} [Enter]** | converts the values from stored to manual, without changing the data |
| **Clear Command Line and [Select Manual] [Enter]** | selects all channels with manual data, allowing you to continue command line |

## RECORD ONLY

Record Only takes only Manual values, and allows you to create new targets, such as Presets.

| | |
|---|---|
| **[Group] [9] [Full] [Full], put blue at 0, put green at 50** | make the bottom cyc fixtures orange |
| **[Record Only] [Color Palette] [11] [Label] Sunset [Enter]** | grabs only manual channels (Group 8 & 9), and stores those into a new target |
| **[Update] [Enter]** | saves the new reference into the cue |
| **[Group] [12] [Color] [{Beam}]* {Make Man} [Enter]** | |
| **[Record Only] [Preset] [51] [Enter]** | records only manual parameters into the preset |
| **[Blind] [Preset] [51] [Enter]** | look at the data stored for the preset-115 |

\*    On Ion, hold [Shift] and press [Image][Image] or select the Beam tile in the CIA

## MAKE MANUAL & RECORD ONLY BEST PRACTICES

- At any given time, data is always either Manual or Stored, and it is always either Absolute or Referenced. The desk offers different tools to collect and handle these different data types, and to convert data between them.

# Palette & Preset Modifiers

## ▶ ABSOLUTE PALETTES

When a Palette or Preset is made absolute, the values can no longer be referenced. It can not be recorded into a cue or nested as a reference – it will always post absolute data when recalled.

| Command | Description |
|---|---|
| **[Intensity Palette] [Intensity Palette] or Add-a-tab {+}** | to open the Intensity Palette List |
| **[Intensity Palette] [2] {Absolute} [Enter]** | makes Intensity Palette 2 Absolute |
| **[Live] [Group] [20] [Intensity Palette] [2] [Enter]** | applies the absolute data/values from Intensity Palette 2 to the channels |
| **[Clear]       [Intensity Palette] [2] {Absolute} [Enter]** | clear the command line and turns off Absolute |

### ABSOLUTE PALETTE BEST PRACTICES

- A great way to use Absolute Palettes is to emulate groups from some of our legacy products.

## ▶ LOCKED PALETTES

Once a Palette or Preset is locked, data can not be accidentally modified. It cannot be updated through an Update All command.

To update a locked target from Live, you have to use channel selection and the target in the command line.

| Command | Description |
|---|---|
| **[Focus Palette] [1] {Lock} [Enter]** | makes Focus Palette 1 Locked |
| **[Go To Cue] [102] [Enter]** | |
| **[Group] [12] [Full] [Full]    [Focus Palette] [1] [Enter]** | turns on channels and places them in Focus Palette 1 |
| **[Record] [103] [Enter]** | records the references for the channels in a cue |
| **[Select Last] , Move Pan & Tilt** | change the focus of the lights |
| **[Update] {All}   Look at the Update Dialogue Box        [Enter]** | updates the changes to the cue, but forces absolute values into the cue |
| **[Select Last] [Focus Palette] [1] [Enter]        [Update] [Enter]** | places fixtures back in Focus Palette 1 and updates the cue |
| **[Select Last] , Move Pan & Tilt** | change the focus of the lights |
| **[Select Last] [Update] [Focus Palette] [1] [Enter]** | saves changes back to Focus Palette 1 – still manual till update the cue |
| **[Clear]    [Focus Palette] [1] {Lock} [Enter]** | unlocks Focus Palette 1, allowing it to be updated through a cue Update All |

### LOCKED PALETTE BEST PRACTICES

- Common use of locked palettes is locking them so that when they are stored or nested in a preset, they are not accidently recorded over when you update or record to that preset.

## ▶ BY TYPE PALETTES

By Type palettes are created with "leader" channels, and "follower" channels. The leader contains the data, and all like-fixtures can follow that data to accomplish the same task, like mix to a color.

If **{By Type}** is used when recording a palette, the lowest number channel of each fixture type will default to the leader channel. Generally, when storing By Type palettes, you will want only one channel of each fixture type selected. Any additional channels in that fixture type will be recorded with discrete data.

| | |
|---|---|
| **[Go To Cue] [Out] [Enter]** | |
| **[Group] [7] [Full] [Full], make them pink** | adds pink down-lights on stage |
| **[31] [Record] [Color Palette] [21] {By Type} [Enter]** | records the color data into a "By Type" color palette |
| **[Blind] [Color Palette] [21] [Enter]** | notice blue leader channel and magenta follower channels |
| **[Live]　[Group] [12] [Full] [Full], move color chip wheel to orange** | |
| **[Select Last] [Record Only] [Color Palette] [22] {By Type} [Enter]** | records only the manual color data of the channels into the color palette |
| **[Blind] [Color Palette] [22] [Enter]** | notice the blue leader channel and the white channels that have discrete data |
| **[Live] [Group] [7] [Record] [Color Palette] [23] {By Type} [Enter]** | records color palette with one channel as a leader channel, and the rest with discrete data |

## EDITING BY TYPE PALETTES IN BLIND

In Blind, leader channels are blue, follower channels are magenta, and discrete channels are white.

| | |
|---|---|
| **[Blind] [Color Palette] [23] [Enter]** | |
| **{Cleanup} [Enter]** | Removes discrete data that is the same as the leader channel, lets channels follow. It will leave discrete data that is different from the leader channel. |
| **[39] {By Type} [Enter]** | Makes channel 39 the new leader channel for that fixture type. The old leader will become discrete. |
| **[36] {Amber} [50] [Enter]** | When data is not the same as the leader, the channel becomes discrete. |
| **[44] [+] [45] {Discrete} [Enter]** | Changes the levels for the channels to discrete. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 39 | 100 | 23 | 0 | 0 | 0 | 44 | 0 | 313 | 77 |
| 40 | 100 | 23 | 0 | 0 | 0 | 44 | 0 | 313 | 77 |
| 41 | 100 | 23 | 0 | 0 | 0 | 44 | 0 | 313 | 77 |
| 42 | 100 | 23 | 0 | 0 | 0 | 44 | 0 | 313 | 77 |
| 43 | 100 | 23 | 0 | 0 | 0 | 44 | 0 | 313 | 77 |
| 44 | 100 | 23 | 0 | 0 | 0 | 44 | 0 | 313 | 77 |
| 45 | 100 | 23 | 0 | 0 | 0 | 44 | 0 | 313 | 77 |

## UPDATING BY TYPE PALETTES

When updating a By Type palette, it is not necessary to know the leader channel. Select any of the channels and append the **{By Type}** to the command line. The command will not work if the channel selected has discrete timing already associated with it.

| | |
|---|---|
| **[Live] [Group] [7], make them green** | |
| **[Select Last] [Update] [Color Palette] [21] [Enter]** | |
| **[Blind] [Color Palette] [21] [Enter]** | Leader gets updated, but because all channels were selected, all other channels become discrete. |
| **{Cleanup} [Enter]** | Cleans up the discrete channels. |

## PALETTE MODIFIER BEST PRACTICES

- By Type Palettes can save you time by allowing you to create content before your full rig is installed. Also when adding new fixtures to your rig, content is already creating

# Multipart Cues

Multipart cues can be used to organize multiple channels, and affect their playback attributes as a group. Up to 20 parts in a cue.

## MAKE A MULTIPART CUE FROM AN EXISTING CUE IN BLIND

| | |
|---|---|
| **[Live]     [Go To Cue] [Out] [Enter]** | |
| **[11] [Thru] [14] [Full] [Full]** | Put channels at full. |
| **[Record] [111] [Enter]** | Creates cue 111. |
| **[Blind], [Format] to Spreadsheet view** | Switch to Spreadsheet View |
| **[12] [Part] [2] [Enter] [Enter]** | Moves channel 12 into Part 2 – Enter to confirm the break into parts. |
| **[13] [Part] [3] [Enter]** | Moves channel into a part of that cue. |
| **[14] [Part] [4] [Enter]** | Moves channel into a part of that cue. |

## MAKE A MULTIPART CUE FROM AN EXISTING CUE IN LIVE

| | |
|---|---|
| **[Live] [Go To Cue] [5] [Enter]** | |
| **[56] [Thru] [60] [Record] [Part] [2] [Enter] [Enter]** | Will move channels to part 2. All data that was in the cue that has not moved will be placed into part 1. |
| **[Group] [8] {Color} [Record] [Part] [3] [Label] Cyc Move [Enter] [Enter]** | Takes only the color parameters of the channels and moves them from their current part and moves them into part 3 of that cue. |

## CHANGE ATTRIBUTES OF A MULTIPART CUE

| | |
|---|---|
| **[Cue] [111] [Part] [3] [Time] [3] [Enter]** | Changes the fade time for the channels in Part 3 to a time of 3. |
| **[Cue] [111] [Part] [1] [Delay] [2] [Enter]** | Places a delay on the channels moving in part 1. |
| **[Cue] [111] [Part] [4] [Label] Piano [Enter]** | Labels only part 4, to help identify what is happening in that part. |
| **[Go To Cue] [103] [Enter]     [Go] on cue 111** | Run cue, watch the fade times. |

## MULTIPART CUES BEST PRACTICES

- Unlike discrete timing, Multipart cues show all of their timing information on the surface, and can have labels. This makes complex timing changes easier to identify and track.
- Use parts to group like-types of data together – all channels that are marking, for example.
- Display Cue Parts is an option now in the PSD Configuration menu.

# ▶ Multiple Cue Lists

Eos allows up to 999 cue lists in each show file and up to 200 lists active at the same time. Each cue list can have cue numbers from 0.01 to 9999.99. Multiple cue lists can be used to compartmentalize tracked data and play it back concurrently – such as in a multiple programmer situation, or to play back linearly – such as a multiple designer situation.

## RECORD A NEW CUE LIST

| | |
|---|---|
| **[Go To Cue] [Out] [Enter]** | |
| **[Group] [8] [+] [Group] [9] [Full] [Full], set to red** | |
| **[Record] [2] [/] [1] [Enter]** | Creates list 2 and records the data to cue 1 in that cue list. |

**Note:    New cue lists will automatically load to the first empty fader.**

| | |
|---|---|
| **[Cue] [2] [/] [Label] Cyc Chase [Enter]** | Label a full list – not just cue 1 on list. |
| **[Select Last], set to green** | |
| **[Record] [2] [Enter]** | Records cue 2/2. |

**Note:    Look at the command line – it is still pointed to Cue List 2, so simply recording Cue 2 will add it to List 2. If you want it to appear in another list, you need to add the list to the command.**

| | |
|---|---|
| **[Select Last], set to blue** | |
| **[Record] [Next]  [Enter]** | Records cue 2/3. |

## CUE LIST PLAYBACK

**Note:    Fader needs to be at Full position to run the cues.**

| | |
|---|---|
| **[Go] (bottom button of fader)** | Loads cue 2/1 on stage (additive to other cue list's contributions). |
| **[Stop/Back] (top button of fader)** | Goes back to previous cue (Cue 0 in this case). |
| **[Go To Cue] [2] [/] [2] [Enter]** | Loads cue 2/2 on stage. |
| **[Go To Cue] [2] [/] [0] [Enter]** | Sends cue list 2 to Cue 0. |

## VIEWING MULTIPLE CUE LISTS

| | |
|---|---|
| **[Cue] [1] [/] [Enter]** | PSD displays cue list 1 |
| **With the PSD in focus, hit [Format]    removed text** | Shows two cue lists in the PSD window |
| **Right click or tap on the PSD tab,  then on the PSD Menu option** | To see configuration settings |
| **Click or tap on Target Grid pull down menu, select Top** | |
| **Click or tap on Lock Status pull down menu, select List 1 Main List** | Locks the top cue list on list 1 |
| **Click or tap on Target Grid pull down menu, select Bottom** | |
| **Click or tap on Lock Status pull down menu, select List 2 Cyc Chase** | Locks the bottom cue list on list 2 |
| **Tap outside the Configuration Tools to view the PSD again** | Notice the padlocks on each cue list |

**Note:    It is possible to view more than 2 cue lists – simply open another PSD.**

## EFFECT CUE LIST

Lists can be triggered in the middle of a main cue list to run an effect.

| | |
|---|---|
| **[Cue] [2] [/] [1] [Thru] [3] {Follow/Hang} {Follow/Hang} [2] [Enter]** | Places auto-follows on cues 2/1 – 2/3. |
| **[Cue] [3] {Link/Loop} [1] [Enter]            {Go from Last wrap}** | Links cue 2/3 back to cue 2/1. |
| **[Cue] [1] [/] [101] {Execute} [Cue] [2] [/] [1] [Enter]** | When cue 1/101 is played, it starts cue 2/1, which then follows into 2/2, 2/3, and then loops indefinitely. |
| **[Cue] [1] [/] [111] {Execute} [Cue] [2] [/] [0] [Enter]** | When cue 1/111 is played, it plays cue 2/0, stopping the loop. |
| **[Go To Cue] [100] [Enter]            [Go] on Cue 101** | Executes the start of the secondary list. |
| **[Go] on Cue 102** | |
| **[Go] on Cue 103** | |
| **[Go] on Cue 111** | Also runs the exit of the secondary list. |

**Note:    If values are stored for a channel in multiple cue lists, by default the channel goes to the levels recorded in the list with the most recently executed move instruction.**

## LINEAR LIST PLAYBACK

Lists can be played back linearly, like one cue list. They don't have to be played in order, making them great for out-of-order or multiple designer events.

| | |
|---|---|
| **[Cue] [2] [/] [1] [Thru] [3] {Follow/Hang} {Link/Loop} [Enter]** | Remove the hangs/links from List 2 cues. |
| **[Cue] [1] [/] [111] {Execute} [Enter]** | Removes external link from Cue 111 |
| **[Cue] [1] [/] [111] {Link} [2] [/] [1] [Enter]** | Links cue 2/1 to cue 1/111 |
| **[Go To Cue] [1] [/] [111] [Enter]** | Cue 2/1 is pending |
| **[Go]** | Cue 2/1 is now on the master playback fader with cue 2/2 pending. |

## UNLOAD A CUE LIST

| | |
|---|---|
| **Press & Hold [Shift], Press the fader's [Load] button** | Unloads the cue list from the fader, but does not delete the contents of the list. |

## LOAD A CUE LIST

| | |
|---|---|
| **[Cue][2] [/] [Load]** | Puts list 2 back on the selected fader. |

Note:    **On a Fader Wing, pressing both top and bottom buttons together achieves the [Load] function.**

| | |
|---|---|
| **[Cue][1] [/] [5] [Load]** | Puts 1/5 as the pending cue on the main fader pair. |

## OFF AND RELEASE

**[Off] &[Load]** - returns cue list information to previous owner/state, either a cue or a submaster, and stops any effects that are running on that fader. If there is no previous owner, the intensities will just fade out and non-intensity parameters stay where they are.

| | |
|---|---|
| **[Off]&[Load]** | Intensities fade out |
| **[Go]** | Fades from a blackout back into where the console was in the cue list |

**[Release]&[Load]** - behaves like **[Off]** except that it sets the pending cue to the first cue in the list and removes the active cue. (Cue 0 on stage and cue 1 pending)

| | |
|---|---|
| **[Release]&[Load]** | Intensities fade out |
| **[Go]** | Fades back to the top of the cue list |

## MULTIPLE CUE LIST PLAYBACK BEST PRACTICES

- **[Go To Cue] [0]** and **[Go To Cue] [Out]** are on a list-by-list basis. To reset all cue lists back to cue 0 and send all fixtures home, use **[Go To Cue] [Out]** on a clear command line.
- There are lots of rules for a multi-list environment. For more information, see the Eos Family Multi-Programmer workbook.

# ▶ Cue List Index

The Cue List Index allows you to view and manage all of the Cue Lists in a show file, and change their behaviors.

| | |
|---|---|
| **[Cue] [Cue]** | Opens the Cue List Index and opens the CIA with , a set of configuration tools |

Top section is the currently selected cue list; the bottom section is the list of all cue lists.

## MASTER

### INTENSITY MASTER

Like a Submaster, Cue lists set to Intensity Master will master just the intensities of the channels on stage.

| | |
|---|---|
| **With Cue list 1 on the command line, just tap {Intensity Master}** | |
| **[Live], [Go To Cue] [1] [/] [5] [Time] [0] [Enter]** | |
| **Move the Master Fader pair up and down, watch the levels.** | Only intensities are changed. Non-intensity parameters stay as they are. |

### MANUAL MASTER

Cue lists set to Manual Master will execute a new cue just by moving the faders in either direction.

| | |
|---|---|
| **[Cue] [Cue]** | Opens the Cue List Index |
| **Click/Tap {Manual Master}** | |
| **[Live], [Go To Cue] [1] [Enter]** | |
| **Move the Master Fader pair down to run cue 2 and then up to run cue 3, watch the cues play back.** | Cues run at the top and bottom of the fader pair. Timing is controlled based on how fast you move the faders. |

### PROPORTIONAL

Proportional is the default fader type. Faders do not affect the playback unless they are at 0%, and a Go is hit, then the faders are in manual mode.

| | |
|---|---|
| **[Cue] [Cue] to go back into the Cue List Index** | |
| **Click/Tap {Proportional}** | |
| **[Live], [Go To Cue] [5] [Enter]** | |
| **Move the Master Fader pair up and down** | Nothing happens |
| **Bring faders all the way to bottom and then hit [Go]** | Run the cue manually |
| **Move the Master Fader pair back down to 0% and hit [Go]** | To manually take control of another cue |

## OTHER CUE LIST SETTINGS

| | |
|---|---|
| **[Cue] [Cue]** | Opens the Cue List Index |

### LABEL

A Cue List can take a label. If it is unlabeled, it will take the first cue's label by default.

| | |
|---|---|
| **[Cue] [1] [/] [Label] Main List [Enter]** | Labels the cue list. |

### CUES

Simply displays the number of cues recorded in a list.

### ASSERT

Just like an individual cue, a full cue list can be asserted. It will assert all channels owned by the cue list.

| | |
|---|---|
| **With cue list 1 selected,  under Assert, click/tap {On}** | asserts all channels owned by cue list 1 upon playback |

### PHANTOM MODE

If Phantom mode is on, anytime Go is hit on that list, it will not affect an unlocked PSD and it won't change the selected cue on the command line.

### BACK FROM FIRST AND GO FROM LAST:

- Back from First options – what happens when the Back button is hit while in the first cue of the list.
- Go from Last options – what happens when the Go button is hit while in the last cue of the list

### EXTERNAL LINKS

Cue lists can trigger like-numbered cues in other cue lists.

| | |
|---|---|
| **[Cue] [1] [/] {Execute} [Cue] [2] [/] [Enter]** | Links list 2 to follow list 1's playback |
| *When Go is hit in cue list 1, it will fire the like-numbered cue in list 2.* | |
| **[Cue] [1] [/] {Execute} [Enter]** | Removes the external link |

## AUTOBLOCK CLEANUP

Autoblocks can be cleaned out of an entire cue list, making data management easier. You can also Autoblock Cleanup in a range of cues.

| | |
|---|---|
| **[Cue] [1] [/] {AutoBlk Clean} [Enter]    [Enter]** | Removes all autoblocks from cue list. |

**Note:    Other settings in the Cue List Index such as HTP, Priority, Background information and Stomp mode which all have to do with arbitration. They relate to who wins when multiple sources are competing for control of the same fixture. For more information, reference the Ownership and Arbitration documentation.**

# ► Additional Cue Functions

## CURVES ON CUES & PARTS

Curves control how a fade executes over time. Curves can not only be pinned to specific channels in Patch, they can also be used to control the fade behavior of a whole cue, or parts of a cue.

### APPLYING CURVES TO CUES & PARTS

| | |
|---|---|
| **[Live]    [Cue] [101] {Curve} [901] [Enter]** | All moves in Cue 101 will use Curve 901 for their fade profile. |
| **[Cue] [111] [Part] [3] {Curve} [903] [Enter]** | Just the channels and parameters in Part 3 of Cue 111 will use Curve 903 for their fade profile. |
| **[Cue] [101] {Curve} [Enter]** | Removes the Curve |

**NOTE:   To get non-intensity parameters to use a curve, they must be stored in a part, with a curve assigned to it. A standard cue with a curve will apply the curve only to the intensity parameters.**

## CUE EXECUTE

### MACROS

When you trigger a cue, you can also have a macro execute to perform other functions with that **[Go]**.

| | |
|---|---|
| **[Cue] [7] {Execute} [Macro] [101] [Enter]** | When Cue 7 is triggered, it will also run Macro 101. |
| **[Cue] [7] {Execute} [Enter]** | Removes Macros being triggered from a cue. |

### SNAPSHOTS

When you trigger a cue, you can also have a Snapshot execute to change the console displays with that **[Go]**.

| | |
|---|---|
| **[Cue] [5] {Execute} [{Snapshot}] [1] [Enter]** | When Cue 5 is triggered, it will also run Snapshot 1. |
| **[Cue] [5] {Execute}  [Enter]** | Removes Snapshots being triggered from a cue. |

**NOTE:   You can have a Cue send UDP strings, trigger show control relays, or run automatically on a timestamp from external time code. Please see the show control workbook for more information.**

## ADDITIONAL CUE FUNCTIONS BEST PRACTICES

- Having a cue trigger a particular snapshot, like one with a magic sheet or flexi state recorded, can help an operator keep an eye on certain information in critical parts of playback.
- Executing macros can be helpful for things at the top of show – like channel check, lamp strikes, enabling remotes, and setting a standard console snapshot.

# ▶ Blind Navigation and Editing

## NAVIGATION

Navigation in Blind works similarly to other areas of the desk. You have access to Format, Flexi, and paging tools, as well as Data and Time Display options. **[Blind]** is a hard key.

### VIEWING OTHER TARGETS IN BLIND

When you enter Blind, you always enter into Cue Blind. Blind is also used to view and edit other target data.

| | |
|---|---|
| **[Blind], [Format] to Table view** | |
| **[Color Palette] [2] [Enter]** | Displays the data stored in color palette 2. You are able to edit this data. |
| **Flexi to Active Channels** | Shows only active channels in palette |
| **[Live]     [Color Palette] [Color Palette]** | Opens the color palette list. 1 will be automatically selected. |
| **{Edit}** | From a target list, Edit drops you into the blind view of that target |
| **[Cue] [1] [Enter]** | |
| **[Next], [Last]** | Scroll through targets including parts |

### NON-INTENSITY PARAMETERS IN SPREADSHEET

By default, only intensity parameters are shown in Spreadsheet to save space.

| | |
|---|---|
| **[Format] to Spreadsheet view** | |
| **[36] [Enter]** | |
| **Press & Hold [Params]/[Data], Touch {Color}** | Opens all color information columns |
| **Press & Hold [Params] /[Data], deselect {Green} {Cyan}** | Hides the Green and Cyan parameters |
| **Press & Hold [Params] /[Data], deselect {Color}** | Hides the color parameters for all channels. |

NOTE:    **By default, encoders are disabled in Blind. To enable use of the encoders, press any of the Encoder Page navigation buttons.**

# EDITING DATA

Data that is changed in Blind is automatically stored, without the need for a Record or Update command. This makes it extremely fast, but be sure to use caution.

## AT ENTER – PALETTES, PRESETS, AND SUBS

**[At] [Enter]** behind a channel and parameter selection will remove the data that is stored in a target, leaving those parameters as null.

**[Blind], [Format] to Table View, [Flexi] to Active**

| | |
|---|---|
| **[Color Palette] [1] [Enter]** | Displays only the channels with data stored in Color Palette 1 |
| **[111] [Thru] [134] [Enter]** | These channels have data for all color parameters, not just CMY. |
| **[Select Last] [-] {Cyan} [-] {Magenta} [-] {Yellow} [At] [Enter]** | Grabs all parameters except Cyan, Magenta, and Yellow, and removes the data from those parameters. |
| **Scrolling up and down** | Shows none of other color parameters affected except 111 - 134. |

## AT ENTER – CUES

**[At] [Enter]** in a cue will remove the data stored, but unlike other targets, there are tracking implications when removing data.

**[Blind], [Format] to Spreadsheet View, [Flexi] to Active**

| | |
|---|---|
| **[Cue] [10] [Enter]** | This will display all the cues in spreadsheet, with cue 10 selected. |
| **[51] [Thru] [55]      [At] [Enter]** | Removes the move instructions for these channels, and allows the previous data to track forward. |
| **[Undo] [Enter]** | Put the data back. |
| **[Cue] [12] [Block] [Enter]** | Blocks cue 12, ensuring that data changes will not track through. |
| **[Cue] [10] [Enter]** | |
| **[51] [Thru] [55] [At] [Enter]** | Removes the move instructions for the channels, and allows the data to track – until encountering the block on cue 12. |

**NOTE:**  **[At] [Enter] in Live will give you that channel or parameter's value from the previous cue, in a manual state. Updating the cue will result in a tracked value from the previous cue – the same as removing the move instruction in blind.**

## RANGE EDITING

You can edit over a range of cues, including overwriting cues with move instructions. Just like any edit, there are tracking implications when changing data.

| | |
|---|---|
| **Still in Blind Spreadsheet, [Cue] [3] [Thru] [7] [Enter]** | Selects a range of cues. |
| **[51] [Thru] [55] [At] [75] [Enter]** | Puts a move instruction in the first cue, tracks that value through the range, and continues the track until the next move instruction outside of the range. |
| **[Undo] [Enter]** | Put the data back. |
| **[51] [Thru] [55] [At] [75] [Cue Only] [Enter]** | Puts a move instruction in the first cue, tracks that value through the range, but stops the track outside of the selected cue range. |

## MOVING CUES

Just like any edit, there are tracking implications when moving cues.

| | |
|---|---|
| **[Cue] [8] [Copy To] [Copy To] [0] [.] [5] [Enter] [Enter]** | Look at channels 51 thru 67 – they tracked into cues 1 and 2. |
| **[Undo] [Enter]** | Put the data back. |
| **[Cue] [8] [Copy To] [Copy To] [0] [.] [5] [Cue Only] [Enter] [Enter]** | Look at channels 51 thru 67 – they do not track past the new cue 0.5. |

**NOTE:**    **You can move ranges of cues, with the same tracking or cue only behavior as moving a single cue.**

## REPLACE WITH

You can find values across ranges of cues and replace them with new values.

| | |
|---|---|
| **[Cue] [1] [Thru] [14] [Enter]** | Selects the cue range. |
| **[1] [Thru] [67] [At] [75] {Replace With} [80] [Enter]** | Finds all values that are 75, and replaces them with values of 80. |

**NOTE:**    **Replace With works with palettes and presets as well. You can also command line filter to specific parameters for more control.**

# BLIND BEST PRACTICES

• If a cue on stage is edited in Blind (either through cue changes or referenced data changes), the cue must be reloaded on stage. Sub edits in Blind are immediately changed in Live.

# ▶ Macros

A Macro is an automated series of console actions. Macros are a way to automate complex or hard-to-reach commands in the desk.

## LEARN A MACRO

| | |
|---|---|
| **[Live]**        **[Learn] [1] [Enter]** | Places console in Learn mode, button flashes green, "Learning Macro 1" flashes above CIA command line. |
| **[Stop Effect] [Enter]    then hit [Learn]** | records macro 1 with the 'Stop Effect' command |

## CALLING A MACRO

| | |
|---|---|
| **[Clear]        [Macro] [1] [Enter]** | Plays back Macro 1. |

**NOTE:   In addition to calling a macro on the command line, they can be called by a macro direct select or magic sheet button, a cue execute, an system command, or a connected show control system.**

## MACRO EDITOR DISPLAY

The Macro editor display allows you to edit macros, and access softkeys that aren't available from all areas of the desk.

| | |
|---|---|
| **[Macro] [Macro]** | Opens macro editor |
| **[1] [Label] Stop FX [Enter]** | Label the macro |
| **With Macro 1 selected, press {Edit} or [Learn]** | Enters Edit mode for the macro. |

**NOTE:   Cursor can be moved using page left and right keys.**

**NOTE:   In Edit mode, only your page arrow keys, Escape, Select, and softkeys will not post to the Macro. All hard keys and CIA softkeys will post into the macro, and play back each time the macro is called.**

| | |
|---|---|
| **{Done} or [Learn]** | Exits Edit mode for the macro. |

## MACRO MODES

Macros can be called to run on or off the command line.

- **{Foreground}** – Macro commands post to the command line. Because devices with the same user share a command line, it will run on all devices with the same user.
- **{Background}** – Macro commands run, but do not post to the command line. Only runs on the device where it is called.
- **{Default}** – If called manually (by a programmer calling the macro), it will post as Foreground. If called by an execute or by the system (like a cue or via show control), it runs as Background.

### CHANGING A MACRO MODE

| | |
|---|---|
| **[1] {Macro Mode} * [Enter]** | *Keep pressing {Macro Mode} until the desired mode is on the command line. |

## Macro exercise – Enable/Disable Remotes

Let's create macros that allow the remotes connected to the desk to be enabled or disabled easily and predictably.

| | |
|---|---|
| **Go to Setup -> Desk Settings -> RFR Settings** | |
| **[Learn] [51] [Enter]** | Starts learning Macro 51. |
| **Touch {Allow RFR Connections}, [Learn]** | Learns toggling RFR Connections setting, stops learning the Macro. |
| **[Macro] [51] [Enter]** | Run the macro and see the toggle |

This macro will toggle the remote connection setting – making it unclear what state the remotes may be in. Let's make this macro always enable the remotes, regardless of the setting's state.

| | |
|---|---|
| **[Macro] [Macro] [51] [Enter]** | Go into the macro editor, with macro 51 selected. |
| **{Edit}** | Enters Edit mode. |
| **With "Clear_CmdLine" highlighted, press {Delete} softkey** | Removes command, cleans up macro. |

**NOTE:   In Edit mode, the [Delete] hard key will post into the macro. Always use the softkey.**

| | |
|---|---|
| **Arrow right until "◆" (Enter command) is highlighted** | |
| **In CIA softkeys, find and touch {Enable}** | The macro should read "RFR Enable ◆" |
| **Press {Done}** | Exits Edit mode. |
| **[Label] Remotes On [Enter]** | Label the macro. |
| **{Macro Mode} {Background} [Enter]** | Force the macro to fire without interrupting the command line. |

The macro to enable the remotes is complete. Let's make the disable macro.

| | |
|---|---|
| **[51] [Copy To] [52] [Enter]** | Copies the macro. |
| **{Learn}** | Enters Edit mode. |
| **Arrow right until "Enable" is highlighted, press {Delete}** | Removes the Enable command. |
| **In CIA softkeys, find and touch {Disable}** | The macro should read "RFR Disable ◆" |
| **Press {Done}** | Exits Edit mode. |
| **[Label] Remotes Off [Enter]** | Label the macro. |

GO TEST THE MACRO!

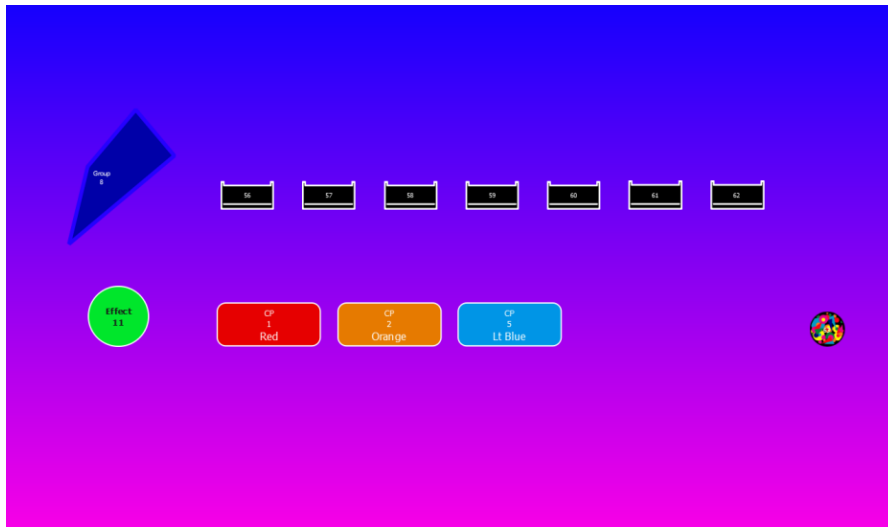| | |
|---|---|
| **Go to Setup -> Desk Settings -> RFR Settings** | To watch the macros |
| **[Macro] [51] [Enter]      [Macro] [51] [Enter]** | Run the macro and no toggle |
| **[Macro] [52] [Enter]** | Run the macro and remote is disabled |

# Intermediate Magic Sheets

Open the Magic Sheet tab by either using the **{+}** Add-A-Tab button, or by pressing **[Displays] {Magic Sheet} [Enter]**.

Before you begin, your Magic Sheet should look something like this:



## ARRAYS

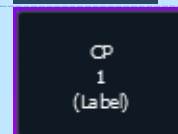You can create multiple of the same type of object quickly, using the Array tool.

| | |
|---|---|
| **Open the Editor by clicking the Chevron on the right of the Magic Sheet tab** |  |
| **In the object library, select the Color Palette object, and drop it below the existing Red Color Palette button** |  |
| **With the Color Palette object still selected, change Field 3 to Label.** |  |
| **With the Color Palette object still selected, Click on the Alignment tool, and then Create Array.** |  |
| **In the Array Settings window, change the amount of rows to 5. Click OK.** |  |

Your Magic Sheet should look something like this:
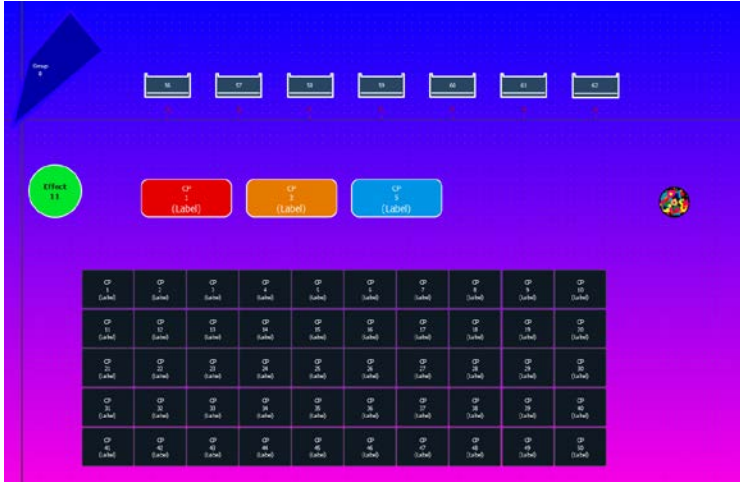


# ADDITIONAL OBJECT EDITING TOOLS

### PALETTE/PRESET OBJECT COLOR AUTO-FILL

Objects that are set as Palettes or Presets can have their fill color automatically populated. When the object's fill color is linked to channel color, the object's fill will take on the color data of the LAST channel stored in the target.

**With all the Color Palette objects selected, open the Fill Color, and click Link to Channel Color**

**Close the editor, and look at the Color Palette objects**
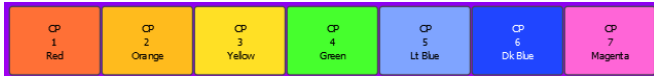


**NOTE:    You can do the same trick with the object's line color.**

### OBJECT GROUPS

Objects can be grouped for easier handling.

**In the Magic Sheet Editor, Select all of the Color Palette objects**

**Click on the Ordering tool, and click Group**
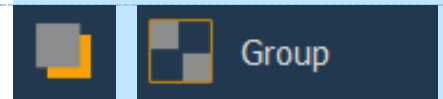
**Move the Color Palette objects around – they move together**

**To Ungroup, click on the Ordering tool, and click Ungroup**
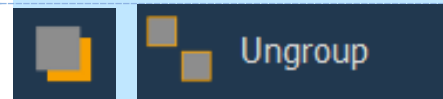
**NOTE:    Objects cannot be edited when they are in a group. To edit, ungroup the object, and re-group when finished.**

## CONSOLE BUTTON OBJECTS

Objects can be assigned to console button functions, so you don't need to have a keypad.

**Add a Square object above the fixtures and make it a rectangle.**

**Change the Object target type to Console Button.**

**Choose Full from the dropdown menu.**
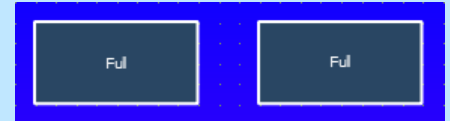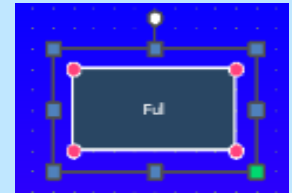
**Change Field 1 to be Target Name.**

**Change Font to 25.**

**With the Full button still selected, press Ctrl & C, then Ctrl & V, to copy and paste the button, then move it next to the Full button.**

**Paste two buttons, for a total of 3.**

**Change the second button to be Out.**

**Change the third button to be Clear Cmd.**

## MACRO OBJECTS

Macros can be assigned to objects, to make complex functions easily accessible.
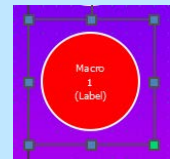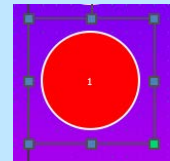
**Place a Circle object below the Effect circle.**

**Make the fill red.**

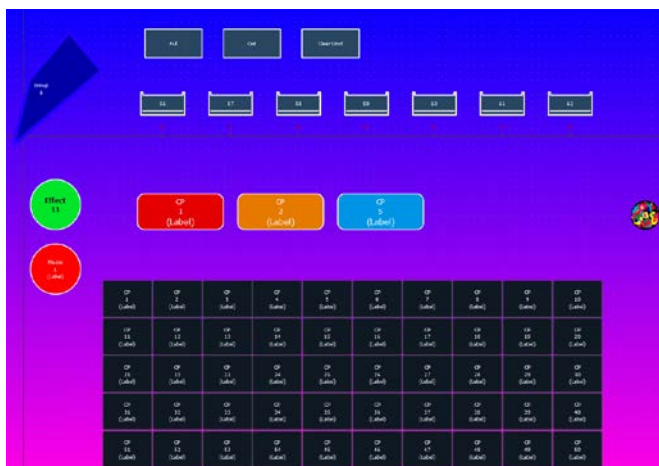**Change the object target type to Macro, Target 1.**

**Change Field 1 to Target Name.**

**Change Field 2 to Target ID.**

**Change Field 3 to Label.**

Your Magic Sheet should look something like this:

Close the Editor, **[Go To Cue] [Out] [Enter],** and play!

## MAGIC SHEET NAVIGATION OBJECTS

Objects can be assigned to Magic Sheet navigation functions, so you can easily change views, or nagivate between Magic Sheets.

### NAVIGATE BETWEEN VIEWS

| | |
|---|---|
| **Close the Editor, open the Magic Sheet tool bar, and Zoom To All** | |
| **[Record] [Displays] {Magic Sheet} [1] [/] [1] [Enter]** | Records Magic Sheet 1 View 1 |
| **Zoom in until the Direct Selects fill the screen.** | |
| **[Record] [Displays] {Magic Sheet} [1] [/] [2] [Enter]** | Records Magic Sheet 1 View 2 |

**In the Magic Sheet tool bar, scroll through views.**

**Open the Editor.**

**Insert a Square object next to the direct selects,**

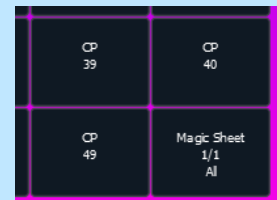**Change the target type to Magic Sheet.**

**Make the Target ID is 1/2.**

**Select Target Name for Field 1, and Target ID for Field 2.**

**Change the bottom-right color palette to target type of Magic Sheet, and Target ID 1/1.**

**Close the Editor.**

**Use the Magic Sheet button.**

### NAVIGATE BETWEEN MAGIC SHEETS

**Start a new Magic Sheet – open the Magic Sheet Browser, or type [Displays] {Magic Sheet} [2] [Enter]**
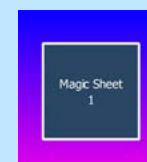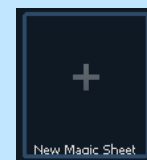
**Insert a Square Object, change the target type to Magic Sheet.**

**Make sure the Target ID is 1.**

**Select Target Name for Field 1.**

**Select Target ID for Field 2.**

**Close the editor. Click on the Magic Sheet button.**

## INTERMEDIATE MAGIC SHEETS BEST PRACTICES

• You can create a "Navigation Pane" in one magic sheet, and then copy it between magic sheets or views, so you don't have to re-create it.

# Important Concepts

Having gone through all three workbooks and training videos, you should have a solid understanding of the basics of the Eos family of control. These materials are only a starting place. There are more topics covered in the operations manual and special topics workbooks. This is a recap of some of the concepts you've now covered.

It is worth nothing that while these workbooks and accompanying videos cover basic operation – there are more advanced functions of the desk not addressed in these materials. Please see the operations manuals for more detail on these topics. Special topics videos and workbooks are also available or are in development.

## CONSOLE PHILOSOPHY

Eos is a Tracking/Move Fade desk. Tracking is a description of how the system handles data modifications. Move Fade describes how playback ownership is arbitrated. Working quickly and efficiently requires an in-depth understanding of how these concepts are applied.

## TRACKING VERSUS Q ONLY

Eos family consoles, by default, are tracking desks. This means that any new or modified data automatically tracks forward through a cue list until a change or a block is encountered. This behavior can be modified via record/record only/update with the Q Only/Track button. Additionally, a setup option let's you default the behavior to Q Only. In that case, the Q Only/Track button will force a track. The easiest way to get a full grasp of tracking is to go to blind spreadsheet and start modifying cue data, watching the behavior in subsequent cues.

## MOVE FADE

Eos family consoles are move fade desks.  This means that when running cues sequentially, only move instructions are recalled. Cue list ownership is changed via move instructions.  Assert (see below) is a way to override that behavior. Out of sequence cues (go to cue, linked cues, loading new

## RECORD/RECORD ONLY/UPDATE

Record stores all parameter data for any channels that are in use. In use means any channel data that is not at it's home position in grey.

Record Only stores only manual parameters. It is the equivalent of storing from the programmer on other desks.  If referenced data has been applied and manually modified, record only also breaks references.

Update is similar to record only, in that only manual changes are stored. It differs from Record Only in that you can only update to existing record targets. Update also automatically stores data back to the cue list its data is owned by. Updating to a single cue list leave channels owned by other cue lists manual. New content (no owner) is

always updated to the selected cue list.  Multiple update options for controlling reference modifications are provided.

Range record and updates can be done. Do you know about the trace key? If not, go read about it.

## BLOCK VERSUS ASSERT

Both Block and Assert are functions that manage tracked data. Block is a way to take a tracked value and have it treated as a move instruction in terms of editing data. A change upstream will not track into a blocked bit of data.  If you change the value upstream, Eos will convert the block into a move instruction.  Blocks can be applied at a cue, cue part, channel and parameter level.  Cue level blocks can be full blocks (apply to all tracked data) or just Intensity Blocks, which are applied only to tracked intensity values.

Assert is the playback equivalent of block – in that it treats a tracked value like a move instruction.  Example:

> Cue 1 – channel 1 at full. It tracks at full to cue 10, where you change it to 50.
>
> Cue 2/1 – channel 1 at 25. It tracks at 25 until 2/10, where you change it to 75.
>
> Hit Go to execute Cue 1. Channel 1 is at full.
>
> Hit Go to execute Cue 2. Channel 1 remains at full.
>
> Hit Go to execute Cue 2/1. Channel 1 fades to 25.
>
> Hit Go to execute Cue 3. Channel 1 remains at full. Cue 3 has a track for this channel. As such, it will not regain ownership.
>
> Now, Apply an assert to cue 3. (Cue 3 Assert Enter)
>
> Run the sequence again.
>
> Now, when you hit go to run cue 3, the channel will fade back to full.

Asserts can be applied at a cue, cue part, channel or parameter level. A assert can also be placed on the entire cue list.

A word about auto-blocks. Sometimes you may see a block (data displayed in white) with an underscore. This means Eos has applied an auto-block – which is automatically done whenever a move instruction is later matched with a level upstream. Example:

> Cue 1 – channel 1 at full. Tracks to cue 10. In cue 11, set channel 1 to 50, which is displayed in green as a down move on intensity. At some point, in cue 5, change channel 1 to 50 and allow that change to track forward. You will know see, in cue 11, channel 1 in white (at 50) with an underscore. That is an auto-block. You had a move instruction there and the auto-block is a way Eos protects the idea of that move instruction.  An auto-block clean up function is provided.

Blocks, partial blocks and auto-blocks are all indicated in the PSD.

## MARK

Eos provides two ways to mark (preset) non-intensity data. You can always do it the old-fashioned way – of coping data back to an earlier cue. But that is painful to maintain.

Auto-mark. By default, this is disabled. When auto-mark is enabled, Eos will automatically preset any non-intensity parameters in the immediately preceding cue, provided the light is not active (has intensity).  Auto-mark can be disabled on a cue or cue part basis, allowing a live move.

Referenced mark. This allows the programmer full control over when the NPs preset.  When you make a light active, adjust its NPs, all you have to do is enter [Mark] [x] [Enter] on the command line and store the cue.  This presets the NPs for the channels selected to the required cue. The actual move instruction is still stored in the source cue (as indicated in the PSD by an "R" in the mark field) – so you can still do all of your edits in the cue the light is made active.  A number of mark earliest commands are available. If you add discrete timing in the source cue, that is the timing the lights will use to mark. Otherwise, they will cue the time of the cue they are marking in (the M cue) or the mark time established in setup if there is one.

If you use a light in a marked state (break the mark) Eos will still try to mark it if possible. That is what the X indicates.

In the PSD – keep an eye out for Ls and D in the MV field. L means you have a live move – light is coming active and moving NPs. Did you forget to mark it or is that what you want?  D means you have a dark move – that is probably an unneeded move, which you want to avoid if possible (why create noise when you don't need to?). About tells you what lights have live and dark moves to facilitate clean up if desired.

## HTP VERSUS LTP

HTP and LTP describe how a channel parameter behaves if getting more than one instruction. HTP is highest takes precedence and LTP is latest takes precedence. Non-intensity parameters are always LTP. Intensity can be either. Cue lists default to LTP for intensity and subs to HTP, but those properties can be changed.

## PLAYBACK OWNERSHIP

Ownership defines what playback – cues or subs – is providing the current instruction to a channel parameter. Ownership is determined by a combination of LTP/HTP, move instructions, assert flags and priority.  Manual instructions override playback, but will be released to a playback on the next move instruction provided unless captured.

## REFERENCED DATA

This refers primarily to IFCB Palettes and Presets.  A number of tools are provided for controlling what is stored to them, how they are edited, breaking references to them and so forth.  Display options for viewing references by label or by number are provided, with a live mode toggle state for the alternate view.  Data can be used to see absolute values – which are also exposed in about.

## SELECTIVE STORING

Selective Storing refers to the ability to control what is stored to what record targets.  At the most macro level, this starts with Record and Record Only.  Additionally, filters can be applied to withhold entire categories or parameters. Selective storing from the command line can also be used.  This includes additive (channels 1 thru 5 Intensity Record x enter or Color Record x enter) as well as subtractive (-zoom record x enter).

## TIMING, DELAY, BLOCK AND ASSERT HIERARCHY

| Location | | Time | Delay | Assert | Block | |
|---|---|:---:|:---:|:---:|:---:|---|
| | **Default** | ● | | | | **VAGUE** |
| | **Cue List** | | | ● | | |
| **Cue Level:** does not need record or update | **Cue** | ● | ● | ● | ● | |
| | **Cue Category (IFCB)** | ● | ● | | | |
| | **Cue Part** | ● | ● | ● | ● | |
| | **Cue Part Category (IFCB)** | ● | ● | | | |

| Location | | Time | Delay | Assert | Block | |
|---|---|:---:|:---:|:---:|:---:|---|
| **Discrete Level:** does need record or update | **Channel** | ● | ● | ● | ● | |
| | **Channel Category (IFCB)** | ● | ● | ● | ● | |
| | **Parameter** | ● | ● | ● | ● | **SPECIFIC** |

# ▶ Appendix 1 – Custom Fixture Profiles

NOTE:   **This exercise matches fixtures in the Eos Family Learning Series visualizer. Upon successful completion of this exercise, you should be able to fully control the fixtures.**

## CREATING A NEW FIXTURE PROFILE:

You can create a new fixture profile for use with a fixture that is not in the library.

| | |
|---|---|
| **In Patch, and press Fixtures** | |
| **In the Fixture Profile Manager, press {New}** | Creates a new Fixture Profile called "New Fixture (1). |
| **[Label] [Label] "Custom Mover", press [Enter]** | Rename the fixture profile. |
| **With "Custom Mover" selected, press {Edit}** | Takes you into the profile editor. |

The Fixture Profile Editor has several columns:

- **Number** – The parameter number (always in order)
- **Parameter** – allows you to define which parameter is in that profile slot. Defaults will appear as you add parameters, but you can change them at any time.
- **Size** – define the parameter as 8-bit (using 1 DMX address, or 256 steps) or 16-bit (using 2 DMX addresses, or 65,536 steps)
- **DMX** – allows you to set the DMX value for the parameter. This is not the DMX address, but rather an offset to the start address of the fixture. In 16-bit parameters, this is the Coarse DMX value. For virtual parameters, this will remain empty.
- **LDMX** – stands for "Low-DMX," and is the Fine DMX value for 16-bit parameters. For 8-bit parameters and virtual parameters, this will remain empty.
- **Home** – This is the home value of the parameter, in DMX step values. For 8-bit parameters, the range is 0-255 with 128 as center. For 16-bit parameters the range is 0-65,535 with 32,768 as center.
- **Snap** – if snap is enabled on a parameter, it will always snap to a new position, and not use fade timing. This is to prevent scrolling through unwanted parts of the parameter, like on a gobo wheel.
- **Ranges** – much like a custom scroller load, you can define the operational ranges for specific slots within a parameter. For example, if the fixture includes a four-slot gobo wheel, you can use ranges to determine the minimum/maximum values for each of those slots. You can also label the slots and define the minimum/maximum values that will appear in the channel display.

## ADDING PARAMETERS TO THE FIXTURE PROFILE:

| | |
|---|---|
| **Keep Intensity as Parameter #1.** | Intensity was auto-added at the creation of a new fixture profile. |
| **Press {New}. Keep Pan as Parameter #2.** | Adds a second parameter |
| **Press {Size} to make the Parameter 16-bit. Check that DMX is 2, and LDMX is 3.** | Changes Pan to a 16-bit Parameter. The console helps with auto-addressing the DMX and LDMX. |
| **Click in the "Home" cell of Pan, or use the arrows to move to the home column and set the value at 32,768.** | Sets the home value for Pan at 50%. |
| **Press {New}. Keep Tilt as Parameter #3.** | Adds a third parameter |
| **Press {Size} to make the Parameter 16-bit. Check that DMX is 4, and LDMX is 5.** | Changes Tilt to a 16-bit Parameter. The console helps with auto-addressing the DMX and LDMX. |
| **Set the home value of Tilt at 32,768.** | Sets the home value for Tilt at 50%. |
| **Press {New}.    Width is incorrect.** | The console has assumed the wrong parameter for the new fixture. |
| **Press {Parameters}** | The list of all available parameters appears. The buttons on the left allow you to filter them by category. |
| **Find and click "Edge". Check that DMX is set to 6.** | Sets the parameter to Edge, and returns you to the profile editor. |
| **Press {New}** | |
| **Press {Parameters}** | To see the list of available parameters. |
| **Find and click "Zoom". Check that DMX is set to 7.** | Sets the parameter to Zoom |
| **Press {New}** | |
| **Press {Parameters}** | To see the list of available parameters. |
| **Find and click "Diffusion". Check that DMX is set to 8.** | Sets the parameter to Diffusion |

### ADDING COLOR PARAMETERS TO THE FIXTURE PROFILE:

| | |
|---|---|
| **Press {New}** | |
| **Press {Parameters}** | To see the list of available parameters. |
| **Find and click "Cyan". Check that DMX is set to 9.** | Sets the parameter to Cyan |
| **Press {New}** | |
| **Press {Parameters}** | To see the list of available parameters. |
| **Find and click "Yellow". Check that DMX is set to 10.** | Sets the parameter to Yellow |
| **Press {New}** | |
| **Press {Parameters}** | To see the list of available parameters. |
| **Find and click "Magenta". Check that DMX is set to 11.** | Sets the parameter to Magenta |

Notice that parameter numbers 10- 12 are automatically added as Hue, Saturation, and Brightness. Because we added all the parameters of a complete color system (CMY in this case), the board adds virtual color control parameters. These do not need any DMX values as they are not in the fixture.

### ADDING RANGES TO A PARAMETER:

| | |
|---|---|
| **Press {New}** | The console has assumed the wrong parameter for the new fixture. |
| **Press {Parameters}** | To see the list of available parameters. |
| **Find and click "Gobo Select". Check that DMX is set to 12 and that Snap is enabled.** | Sets the parameter to Gobo Select, and returns you to the profile editor. The default for Snap is Enabled. |
| **Press {Ranges}** | Takes you into the range editing table. |

**Min** and **Max** are DMX values, while **User Min** and **User Max** are the values displayed. **Label** is displayed on the encoders or in displays. Use the arrow keys to move through the table faster.

Complete the Ranges table.

| Number | Min | Max | User Min | User Max | Label |
|--------|-----|-----|----------|----------|--------|
| 1 | 0 | 9 | 0 | 1 | Open |
| 2 | 10 | 29 | 1 | 2 | Gobo 1 |
| 3 | 30 | 52 | 2 | 3 | Gobo 2 |
| 4 | 53 | 74 | 3 | 4 | Gobo 3 |
| 5 | 75 | 97 | 4 | 5 | Gobo 4 |
| 6 | 98 | 117 | 5 | 6 | Gobo 5 |
| 7 | 118 | 127 | 6 | 7 | Open |

When finished, click **{Return}**.

## VIRTUAL PARAMETER MODES:

Many parameters have modes, which is to say the parameter's behavior is different from one DMX range to another. The console allows you to define these in a virtual parameter.

| | |
|---|---|
| **In the Profile Editor, Press {New}** | The console adds has assumed the wrong parameter for the new fixture. |
| **Press {Parameters}** | To see the list of available parameters. |
| **Find and click "Gobo Mode."       Set DMX to 0** | As a virtual parameter, there should be no DMX value going to the fixture. |
| **Press {Ranges}** | Takes you into the range editing table. |

Complete the Range table below. When finished, click **{Return}**.

| Number | Min | Max | User Min | User Max | Label |
|--------|-----|-----|----------|----------|-------|
| 1 | 0 | 126 | 0 | 1 | Index |
| 2 | 127 | 255 | 1 | 2 | Rotate |

\*   *If you have a message that ranges can not overlap, press {Cancel} and the range will be accepted.*

## COMPLETE THE FIXTURE PROFILE:

Fill in the rest of the parameters as detailed in the table. When finished with the fixture, click **{Return}.**

| # | Parameter | Size | DMX | LDMX | Home | Snap | Ranges |
|---|-----------|------|-----|------|------|------|--------|
| 15 | Gobo Index/Speed | 16BITS | 13 | 14 | 0 | | 1 |
| 16 | Iris | 8BITS | 15 | | 255 | | 1 |
| 17 | Position MSpeed | 8BITS | 16 | | 255 | Enabled | 1 |
| 18 | Color MSpeed | 8BITS | 17 | | 255 | Enabled | 1 |
| 19 | Beam MSpeed | 8BITS | 18 | | 255 | Enabled | 1 |
| 20 | Lamp Control* | 8BITS | 19 | | 0 | | 1 |

**NOTE:   Lamp Control is found under the Control category.  A warning appears to remind us that control parameters like lamp control can not be viewed or edited in Live or Blind, but are accessed thru the Control options in About. Press {OK}.**

**NOTE:   For fixtures that use a Lamp Control parameter, custom Lamp Control Macros can be created in the {Lamp Control} area, once a Lamp Control parameter has been added.**

## PATCH THE CUSTOM FIXTURE:

Don't forget to patch the fixture once you've created the profile. Custom fixture profiles appear under the manufacturer "Custom." For the training visualizer, patch the following fixtures:

| Channel | Universe | Address | Manufacturer | Type |
|---------|----------|---------|--------------|------|
| 141 | 2 | 451 | Custom | Custom Mover |
| 142 | 2 | 470 | Custom | Custom Mover |

NOTE:   **With any custom fixture profile, be sure to leave yourself time to run through each parameter with the actual fixture, to make sure things are operating as expected before you start programming.**

## CHECK THE FIXTURE IN LIVE:

**[Live]          [141] [+] [142] [Full] [Full] and test the fixtures**          May need to swap pan and tilt

# FULL FIXTURE PROFILE TABLE

| Number | Parameter | Size | DMX | LDMX | Home | Snap | Ranges |
|---|---|---|---|---|---|---|---|
| 1 | Intensity | 8BITS | 1 | | 0 | | 1 |
| 2 | Pan | 16BITS | 2 | 3 | 32768 | | 1 |
| 3 | Tilt | 16BITS | 4 | 5 | 32768 | | 1 |
| 4 | Edge | 8BITS | 6 | | 0 | | 1 |
| 5 | Zoom | 8BITS | 7 | | 0 | | 1 |
| 6 | Diffusion | 8BITS | 8 | | 0 | | 1 |
| 7 | Cyan | 8BITS | 9 | | 0 | | 1 |
| 8 | Yellow | 8BITS | 10 | | 0 | | 1 |
| 9 | Magenta | 8BITS | 11 | | 0 | | 1 |
| 10 | Hue | | | | 0 | | 1 |
| 11 | Saturation | | | | 0 | | 1 |
| 12 | Brightness | | | | 255 | | 1 |
| 13 | Gobo Select | 8BITS | 12 | | | Enabled | 7 |

| | Number | Min | Max | User Min | User Max | Label | |
|---|---|---|---|---|---|---|---|
| Range Table | 1 | 0 | 9 | 0 | 1 | Open | |
| | 2 | 10 | 29 | 1 | 2 | Gobo 1 | |
| | 3 | 30 | 52 | 2 | 3 | Gobo 2 | |
| | 4 | 53 | 74 | 3 | 4 | Gobo 3 | |
| | 5 | 75 | 97 | 4 | 5 | Gobo 4 | |
| | 6 | 98 | 117 | 5 | 6 | Gobo 5 | |
| | 7 | 118 | 127 | 6 | 7 | Open | |

| Number | Parameter | Size | DMX | LDMX | Home | Snap | Ranges |
|---|---|---|---|---|---|---|---|
| 14 | Gobo Mode | 8BITS | | | 0 | Enabled | 2 |

| | Number | Min | Max | User Min | User Max | Label | |
|---|---|---|---|---|---|---|---|
| Range Table | 1 | 0 | 126 | 0 | 1 | Index | |
| | 2 | 127 | 255 | 1 | 2 | Rotate | |

| Number | Parameter | Size | DMX | LDMX | Home | Snap | Ranges |
|---|---|---|---|---|---|---|---|
| 15 | Gobo Index/Speed | 16BITS | 13 | 14 | 0 | | 1 |
| 16 | Iris | 8BITS | 15 | | 255 | | 1 |
| 17 | Position MSpeed | 8BITS | 16 | | 255 | Enabled | 1 |
| 18 | Color MSpeed | 8BITS | 17 | | 255 | Enabled | 1 |
| 19 | Beam MSpeed | 8BITS | 18 | | 255 | Enabled | 1 |
| 20 | Lamp Control | 8BITS | 19 | | 0 | | 1 |

# Appendix 2 - Lightwright Import

Lightwright files can be imported into Eos using the **{Displays} {File} {Import} {Lightwright}**.

Once a file has been selected for import, you will now have options for importing.



## MERGE AND OVERWRITE

You can select to either merge the data with the current show file, or to overwrite the data in the current file.

To do this, check the **{Overwrite}** box. Leaving this box unchecked will merge the data.

## STARTING AND ENDING CHANNEL

You can select starting and ending channels for the import.

## MAPPING

You can map Eos patch fields to fields in the Lightwright file. Channel and Address must be mapped for the file import to work. Any other field can be set to ignore if desired. Once a Lightwright field has been mapped, it will display in grey in the dropdown menu. However, greyed out options can be selected again for placement in multiple fields.
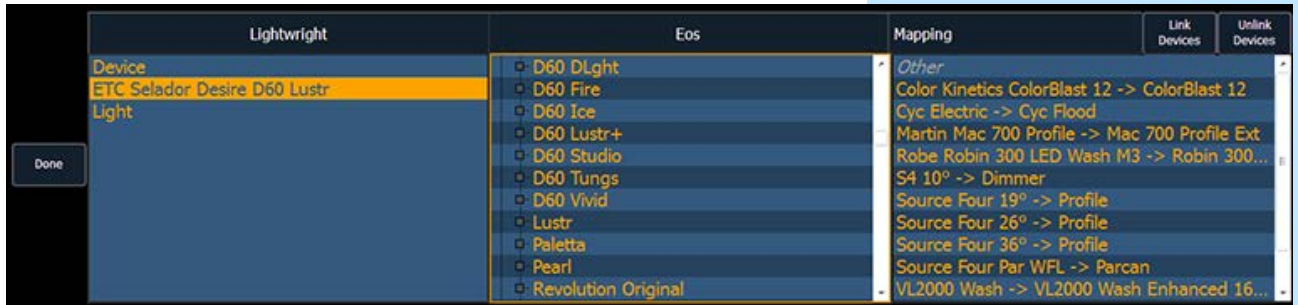


### ADDRESS FORMATS

Eos will accept mulitple address formats for importing. Examples of those formats are 2/3, 2.3, 2,3, 2-3. Eos will convert all formats to n/n.

## DEVICE MAPPING

Devices can also be mapped. Click **{Map Devices}** to open the following display.



The text fields in the Patch display and database will rename based off of the Lightwright imported fields. The link will appear in the Mapping column. To unlink a device, select it from the Mapping column, and then press **{Unlink Device}**.

Device mapping and import fields are saved with the show file.

**NOTE:**    **Multiple Lightwright devices can be selected at a time.**

**NOTE:**    **Eos software does not currently support multiple gels per fixture from Lightwright.**

**NOTE:**    **If using Lightwright 3, you have to add the ".txt" extension to the exported file's name.**