Eos Family Console Programming

Level 1: Essentials

Workbook

V3.2C

Table of Contents:

Purpose of the Class

This class will provide an overview of the console and programming for conventional fixtures as well as movers and LED fixtures. If new to the console, then this class is perfect. Whether transitioning to an Eos family console or a new console owner, this class will teach the basics to get the programmer up and running with this versatile console.

LEARNING OBJECTIVES:

After completing the class, one should be able to:

- Patch conventional and multi-parameter fixtures
- Work with channels in Live mode
- Work with basic display navigation
- Record, select, and delete Groups
- Record to, load, and clear Submasters
- Record, play, and delete Cues
- Understand Tracking versus Cue Only as well as Block and Assert
- Control non-intensity parameters at a basic level
- Apply additional cue features such as Delay, Auto-Follow and Loop
- Use Park efficiently
- Evaluate and make changes in Setup
- Create simple step-based Effects

WORKBOOK SYNTAX ANNOTATION

- **Bold**   Syntax and Browser menus
- **[Brackets]**   Face panel buttons
- **{Braces}**   Softkeys or buttons on touchscreen
- **<Angle brackets>**   Optional keys or command line text
- **[Next] & [Last]**   Keys to be pressed & held simultaneously
- **«Direct Select»**   Direct Select button press
- **⌈MS Object⌉**   An Object on a Magic Sheet
- **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 also be used with softkeys and clickable buttons.

THE MANUAL

The manual is available on the console, Tab #100.

Click on Add-a-Tab (the {+} sign) , select Manual

Hold [Tab] & press [100]

Please note that the manual is not available on Windows XP devices but is available as a download from the web site.

Hardware Overview

EXPLORING THE BACK OF THE CONSOLES

- Hard Power Switch with IEC Receptacle – power cable included
- Motherboard – Windows7 embedded, multi-point touchscreens
- Video connections are Display Port connections. (2 or 3)
- USB ports (4 or 6)
- Two individually configurable Ethernet ports
- Four DMX/RDM ports
- Remote trigger/ contact inputs via D-Sub connector
- 3-pin XLRs for desk work lights, dimmer control through software
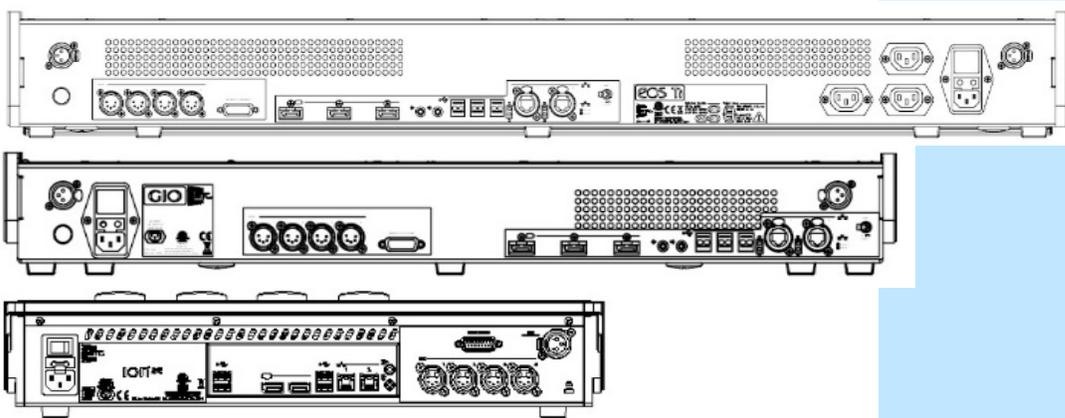
EXPLORING THE FRONT OF THE CONSOLE

- Five, ten, or twenty faders, configurable and pageable
- Master Playback crossfade pair with 100mm faders, ▶ Go, ■ Stop/Back and Master (Load) buttons
- Rate Wheel (also used to page faders) and fader control buttons
- Keypad area – 3 sections: targets, numeric keypad, and level controls
- Display & Navigation keypad – Live and Blind displays, format, paging, and navigation within displays
- Level Wheel
- Encoders – 4 on Ion Xe, Gio, Gio@5 and 6 on the Eos Ti – the center of each encoder is a button
- Soft Power Switch – used to power up the console
- USB Port – primarily to connect any USB storage device (one on Gio/Ion Xe, two on Eos Ti)
- On Eos Ti/Gio – Built-in LCD touchscreens for display, direct select and context sensitive control (Eos Ti/Gio)
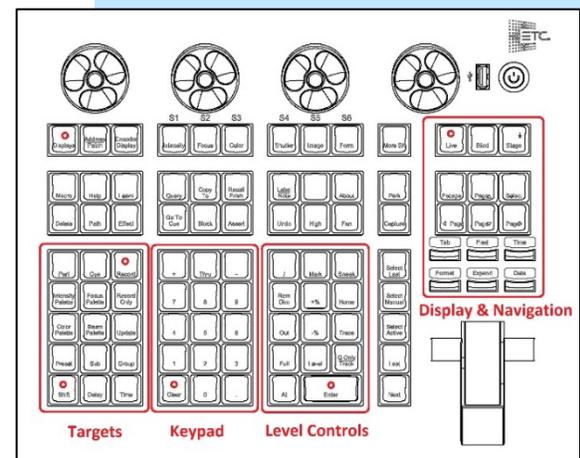
SOFTKEYS

On the Ion Xe face panel, you hold down **[More SK]** and press the Encoder Category button to access the softkey S1 thru S6 functions.

Softkey functions are displayed on the monitor in the lower right hand corner of the monitor with the CIA/Browser. White labels on bottom indicate active and gray labels on top indicate a second page of softkeys.

[More SK] will page between the two pages of softkeys.

EXPLORING THE BACK OF THE APEX DESK
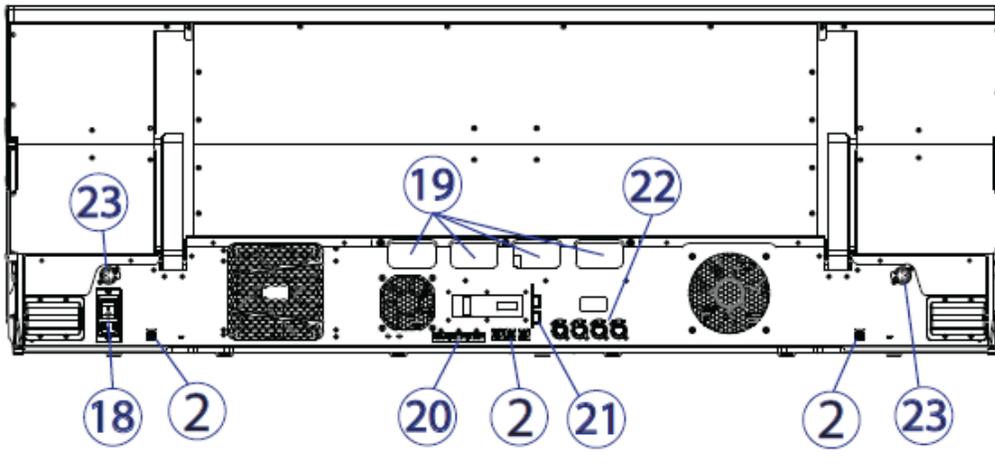
- USB-A & USB-C (data) (2) - ports are provided to connect any USB storage device or connect peripherals such as an alphanumeric keyboard, pointing device, or touchscreen control for external monitors.
- Hard power switch / IEC socket (18)
- IO garage (19) - four input / output bays for custom configuration of the available data ports. Any ETC Gadget II or Response Show Control Gateway can be connected internally via USB for local input / output of DMX, MIDI, SMPTE, and other protocols.
- Display Port (20)
- SFP+ (21) - Enhanced Small Form Factor Pluggable ports are provided for direct-to-core connection, or high-speed links between session devices, and can take a variety of sled options. Sleds are field changeable for easy reconfiguration.
- Ethernet ports (22) for connecting to a network switch, network gateways, and accessory devices. Each port can be run as a separate NIC and can be configured to directly output network-based lighting control protocols such as sACN or Art-Net. All ports provide PoE++, with up to 100W per port, and 120W total across all ports.
- Littlite (23) - you may connect two Littlite XLR 3-Pin task lights
- Two independently controlled work lights are available on the left and right sides of Apex consoles for illumination of nearby work surfaces.

EXPLORING THE FRONT OF THE APEX DESK
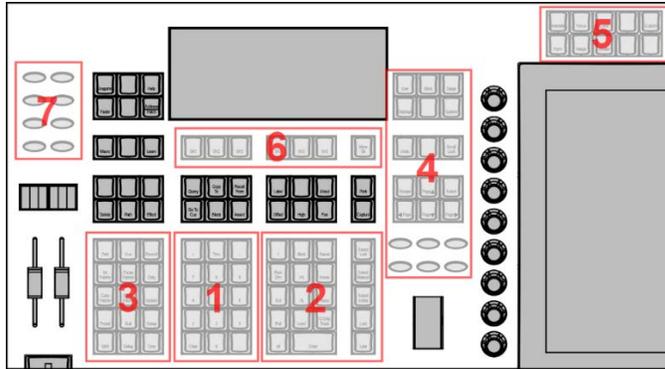
- Numeric Keypad (1) - allows you to type numbers for channel or target selection, along with modifier keys to alter your selection.

- Level Controls (2) - provide options for altering the intensity levels of channels, along with other non-intensity parameters / targets.

- Targets (3) - provide options for altering a variety of record targets, as well as shortcuts to various Blind displays.

- Display & Navigation Keys (4) - provide quick access to common displays, formatting, paging, and navigation within displays.

- Encoder Categories Keys (5) - allow navigation and paging of the encoders.

- Softkeys (6) - allow control of context-based software options that change in response to the active display or command line syntax.

- Fader Control Buttons (7) - provide additional options for easy local control of fader behavior.

OTHER CONTROLS

- Keypad Touchscreen - a haptic touch-enabled screen above the keypad that can be configured to control custom direct selects or magic sheets. Softkeys and a gear icon to access screen settings are docked at the bottom of this display.

- Target Keys - physical buttons with built-in high-resolution displays.
  - Apex 5 - 20 target keys (2 banks of 10)
  - Apex 10 - 40 target keys (4 banks of 10)
  - Apex 20 - 50 target keys (5 banks of 10)
  - All Apex consoles also offer two target keys over the main playback faders for load functionality, as well as local status of playback content.

- Main Playback Fader Pair - a split crossfader pair. The button or buttons located directly above the playbacks load content to the playbacks. The two buttons below control the [Go] and [Stop/Back] functions.

- Motorized Faders - 5, 10, or 20 configurable motorized faders may be configured as playbacks, submasters, grandmasters, timing masters, effects masters, targets, or target lists. 100 virtual pages of 10 faders each are provided.

- Load Buttons - located directly above each fader, are used to load a specified target to the fader, or to place special conditions on that fader.

- Endless Fader Wheels - Apex consoles offer 5, 10, or 20, color-changing fader wheels, adding an endless fader and additional button to each overall fader slot. Each fader wheel and button can be mapped to any function for additional control before needing to expand the overall fader slot to double or triple density.

Patch

START IN THE LEVEL 1 COMPLETE SHOW FILE

Double hit **[Address/Patch]** to get to the Patch display.

Or press **[Displays]**, then **{S3 Patch}**. Can also **Add-a-Tab (the {+} sign)** or hold **[Tab]** and type **[12]**.

By default, patch is displayed in a channel view. You can change the display to sort by address by pressing **[Format].**

PATCH BY CHANNEL

[601] [At] [250] [Enter]	selects channel 601 and patches address 250 to it
[602] [At] [657] [Enter]	selects channel 602 and patches the address 657 to it
[603] [At] [2] [/] [146] [Enter]	selects channel 603 and patches the 2nd universe address 146 to it
Press [Data]	displays channels in **output address** style, note blue text in upper left corner
Press [Data] again	displays channels in **port/offset** style, note blue text in upper left corner
Press [Data] again	returns to how it was originally entered

RANGE PATCHING

[604] [Thru] [610] [At] [101] [Enter]	selects a range of channels and patches addresses sequentially from first one
[611] [At] [108] [Thru] [111] [Enter]	selects channel, patches a range of addresses to it, creating parts
[612] [Thru] [620] [At] [201] {Offset} [3] [Enter]	allows for a three-cell cyclight patch
On Apex consoles, [Offset] is a hard key (button).	

CLEAR VS. UNPATCH VS. DELETE

[601] [At] [Enter] [Enter]	removes the address, leaves type, etc.
[602] {Unpatch} [Enter] [Enter]	restores to default properties – removes address, type, label, etc.
[Delete] [603] [Enter] [Enter]	deletes the whole channel from show
[Live] and look at the Channel View	

UNDO

From an empty command line, **[Undo]** opens a command history display in the CIA. The most recent completed command is highlighted in gold. Use the page arrow keys or a mouse to select multiple commands.

[Undo] , select last three commands, [Enter] [Enter]	to restore channels 601 - 603
Not all commands can be undone including playback actions and manual attributes (in gray) placed on channels or encoder actions.	

PATCH BY ADDRESS

Back in {Patch} and press [Format] to switch to 'By Address'	Addresses are on the left
[481] [At] [625] [Enter]	selects one address and patches it to a channel – note command line
[482] [Thru] [485] [At] [630] [Enter]	selects a range of addresses and patches them to one channel (parts)
Press [Format] to switch to 'By Channel'	Channels are on the left

PATCH A MULTI-PARAMETER DEVICE

[651] [Thru] [656] [Enter]	selects the channels for 6 fixtures
Click on {Type} in the lower right hand corner of display	notice softkeys {Show}, {Manfctr}, {Search} and {Add Show}
Click on {Manfctr}	left columns are manufacturers; right side are their devices
If you are using Search, type SolaFrame and look for SolaFrame Theatre [47].	
Find {High End Systems} in left columns	
Then {SolaFrame Theatre +3D}	notice SolaFrame Theatre in blue – multiple modes available
If a fixture has multiple modes or types, it will display in blue text.	
Select {SolaFrame Theatre [47] +3D} for standard mode	fixture placed on the command line after channels
[At] [7] [/] [1] [Enter]	patches all six fixtures with a starting address in universe 7
[At] [7] [/] [1] {Offset} [50] [Enter] [Enter]	now look at the addresses
On Apex consoles, [Offset] is a hard key (button).	

PATCH A COMPOUND CHANNEL

A compound channel is a channel that controls more than one device – such as a fixture with a color scroller, a gobo rotator, and so on.

[641] [Thru] [645] [At] [41] [Enter]	patches the first part of channels - the dimmer
[Part] [2] [Enter]	creates a part 2 for selected channels
{Type}, {Search} Scroller, click on {Generic}, select Scroller [1]	makes part 2 a generic scroller giving the channel a color parameter
[At] [2] [/] [151] [Enter]	gives a starting address for all the part 2's
[Part] [3] [Enter] {Type}	creates a part 3 for selected channels
{Search} Smart Move and double click Smart Move DMX [3]	makes part 3 a gobo rotator giving the channel a beam parameter
[At] [2] [/] [161] [Enter]	gives a starting address for all the part 3's

Patch Exercise - see Appendix 1

Start a new show, **[Displays]**, **File> New>** and press **[Select].** Or click on **{Continue without saving}**. Are you sure? **[OK]** or press **[Enter]**.

Now, go to Appendix 1 – Channel Hookup in the back of the book and patch the entire hookup (Ignore Notes/labels).

▶ CHANNEL/ADDRESS CHECK

[Live]   Press [Format] to be in Summary View

[1] [Full] {Chan Check} [Enter] then [Next] … [Next] … [Last] …	quickly steps through all patched channels at 100%

Channel check automatically skips unpatched channels.

{Address} [1] [Full] [Enter] then [Next] … [Next] … [Last] …	same as channel check but with output addresses
Press [Clear]	to exit Channel or Address Check mode

▶ CENTRAL INFORMATION AREA (CIA) *MOVED FROM PG13*

The Central Information Area (CIA) is the lower portion of one of the screens. By default, the CIA consists of two primary areas: the parameter tiles, and the browser.

*   **[Displays]** will always draw focus to the CIA area or a display item set as favorite (Gold highlight)

*   Collapse and expand the CIA by pressing **[Displays]** again or using the triangle (△, ▽)

*   Double tap **[Displays]** will always bring up the browser.

*   Use the **Lock** to prevent the CIA from being collapsed or opened

BROWSER

An interface for numerous functions including saving a show, opening a show, changing settings, clearing targets, print functions and viewing record target lists.

*   Can use a mouse, touch or the page arrow buttons to navigate in the browser
*   **[Page▲] [Page▼]** - scrolls thru the menus
*   **[Page►]** opens submenus
*   **[Page◄]** closes submenus or collapses the menu structure
*   **[Select]** or **[Enter]** – opens the item

BROWSER COLOR CODING:	
Save	Green
Save As	Green
Open	Red
Merge	Yellow
New	Red
Clear	Red
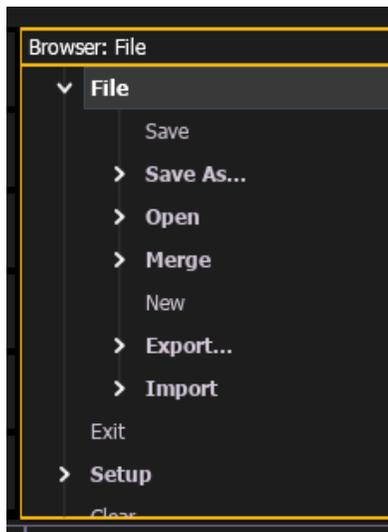
SAVE SHOW

To save the current show data, navigate within the browser to: **File > Save > and press [Select]**. A green "Success" message should appear when the file has finished saving.

SAVE SHOW FILE WARNING

If there is unsaved data in the current show file, a save warning will display when you attempt to open a new or existing show file.

The following options will be available:

− **Save** - saves the current show file and opens a new or existing show file.

− **Save As** - saves the current show file to a different location or with a different name and opens a new or existing show file.

− **Continue without Saving** - opens the new or existing show file without saving any changes to the current show file. Changes will be lost.

− **Cancel** - returns to the current show file without saving changes or opening a different file.

SAVE AS

To save an existing Eos Family show file to a different location or with a different name:

[Displays], {Browser}, File > Save As > Show File Archive > and press [Select] or double-click.	starts the process to store as a new file
Do you really want to save? [Select] or click {OK}.	

You have several formats in which you can save a show file.

- **esf3d** includes your show data and your Augment3d model and is only compatible withEos versions 3.0.0 and higher.

- **esf2** excludes Augment3d model and is only compatible with Eos versions 2.9.0 and higher.

- **esf** is a legacy format for compatibility with Eos versions prior to 2.9.0.

If (untitled), "Enter new show name: Show File" appears above the virtual keyboard.	
Press [Label]	to clear the words "Show File."
Type a show name, then [Enter] on either the console or the keyboard.	
When console saves the show, it makes a new copy of the file. Each show file has a date and time stamp in the show file name. Always have backup copies!	
In Patch, [1] [Label] Front Light [Enter]	to label a channel
[Live]	notice the * at the end of the filename
An asterisk (*) at the end of a filename indicates unsaved data.	

!! DON'T FORGET TO SAVE AND SAVE OFTEN!

[Shift]&[Update]	to do a Quick Save
Quick Save always saves back to the hard drive. To save to a thumb drive, you will need to go back through the Browser to Save As and select the thumb drive.	

Working with Channels

CHANNELS IN LIVE

[Live], if you are not already there	
[1] [At] [Full] [Enter]	
[At] [50] [Enter]	do not have to retype the channel number if changing the same one
[2] [+] [3] [At] [5] [Enter]	sets level of 50% (use [05] for 5%)
Red data means modified, but not yet stored. Notice "Manual Channels" in upper left corner	
[31] [Thru] [50] [-] [34] [-] [35] [At] [65] [Enter]	using minus for individual channels
[59] [Thru] [62] [Full] [Enter]	using Full without [At]
[55] [Thru] [58] [Full] [Full]	another way to get Full
[51] [Thru] [54] [Level] (no Enter req'd.) can also do [At] [At]	user-definable Level – change in Setup
[51] [Thru] [62] <Enter> level wheel	proportional control if selected
[8] [At] [50] [Enter] then [+%], [-%] also [Shift]&[+], [Shift]&[-]	up a point, down a point (10% default)
[5] [At] [50] [Enter] then [At] [+] [3] [Enter], [At] [-] [4] [Enter]	add 30% more, subtracts 40%
[At] [/] [50] [Enter] [At] [/] [400] [Enter]	takes 50% of level, multiplies by 400%
[1] [Thru] [35] [Out]	self-terminating
[301] [Thru] [312] [At] [10] [Thru] [Full] [Enter]	on cyc, called fanning intensity
and roll the level wheel to full and then all the way out	notice proportional control

OFFSET

Offset is a soft key to make custom selections. When pressed, additional options are accessible on the display and on the softkeys.

[31] [Thru] [50] {Offset}	
{Even}	watch preview in the CIA
[At] [80] [Enter]	puts all the even channels at a level
[31] [Thru] [50] [Out]	
[301] [Thru] [312] {Offset} [3] [At] [75] [Enter]	selects an offset of every third channel

SNEAK

Sneak removes manual data and allows the channels to sneak back to their background states, if any. A default Sneak Time can be set.

[34] [Sneak] [Enter]	restores selected channel to background state using default sneak fade time
[Clear] [Sneak] [Enter]	restores all manual levels to background states
[1] [Thru] [5] [At] [5] [Sneak] [Enter]	brings channels to level in default time
[6] [At] [75] [Sneak] [3] [Enter]	brings channel to level in 3 secs
[7] [At] [75] [Sneak] [3] [Delay] [2] [Enter]	waits 2 seconds then fades to level in 3 secs
[8] [+] [9] [Full] [Sneak] [Enter]	brings channels to full
[8] [Out]	brings channel out – notice red data
[9] [Sneak] [0] [Enter]	brings channels to background state in 0 secs – removes red (manual) data

LIVE AND BLIND CHANNEL DISPLAY

PRIMARY LIVE SCREEN (CHANNEL DISPLAY)

- Channel icon
- Selected cue detail line
- Tab area – currently Tab 1 and Tab 2
- Command line
- **[Format]** for summary or table view in Live
- Hold **[Format]** and move wheel to zoom in and out
- Left button on mouse and use mouse wheel
- **[Page▲]** or **[Page ▼]** - scrolls full page at a time, does wrap
- **[Shift]&[Stage]** – when on, scrolls one line at a time
  Red "Scroll On" appears next to Favorite Star in CIA

  [1] [Thru] [10] [Enter] and scroll the level wheel

- Hold **[Data]** and roll levels up to expose real values with decimals

BLIND CHANNEL DISPLAY

Blind allows us to look at what is recorded without affecting what is currently in Live. When in Blind, you can edit any data (cues, presets, palettes, and so on), and changes will not automatically be output to your rig.

- Note the background color and command line color change!
- Note the change at the top of the display
- **[Next]** and **[Last]** navigates through targets like cues, groups…
- **[Format]** for summary, table view or spreadsheet in Blind

‼   When in Blind, **Record is not required** – changes are stored when you hit **[Enter]** and the command line is terminated.

Note: In Live and Blind Table views the columns can be resized and reset. These settings can be stored in snapshots.

Channel Number
Intensity data (I)
Effect data

4
0
E 2

No other parameter categories

Channel Number
Intensity data (I)
Focus data (F)
Color data (C)
Beam data (B)

101
80 +
UC Lead
Red
+
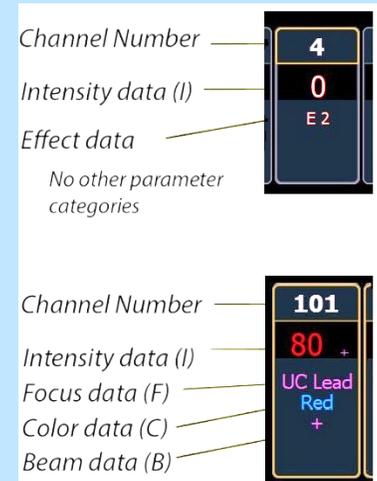
TAB NAVIGATION

Tabs are broken down into two categories: **Display tabs** show information, such as Live, Blind, and the Playback Status Display (PSD) and **Control tabs** are the virtual control options, such as the color picker, and ML Controls.

TAB NAVIGATION

Be aware of where *focus* is on the displays (tab highlighted in gold).

Live/Blind display is Tab 1. Playback Status display is Tab 2. Neither can be closed and you can have multiple instances of either (Tab 1.2 or Tab 2.2).

TO OPEN DISPLAYS

Press [Sub] [Sub] … [Group] [Group] … [Effect] [Effect]	to either open the associated display or select it if it is already open
Press Add-a-Tab (the {+} sign) to the right of the tabs	opens the home screen or display and control options
Press X in upper right corner of display (under console time)	to exit Add-a-Tab display

TO MOVE DISPLAYS

Hold [Tab] and use [Page▶] and [Page◀] keys	to move the active display from one monitor to another
Click/press on the tab and drag	to reposition tabs **within a frame**

TO CLOSE DISPLAYS

Press [Tab] until desired display is highlighted, then [Escape]	to close any tab display

TO SELECT OPEN DISPLAYS

Press [Tab] … [Tab] … [Tab]	to change focus from open display to the next open display (in order)
Hold [Tab] & press [#] of specific display, [12] for Patch	to select/highlight a specific display by number
Press [Live] or [Blind]	to instantly bring Live/Blind into focus

ADDITIONAL TAB TOOLS

Right click or double tap on the Live tab	to see configuration settings

You can also click on the Gear tab for the same options. These options vary depending on the tab in focus.

- **{Close Tab}**
- **{Replace Tab}** – replace tab with a different tab
- **{Close All Tabs but This}**
- **{Close All Tabs}**
- **{Reset Columns}**
- **{Lock Frame}** – prevents other tabs from being moved to the current frame
- **{Open New Tabs in this Frame}**
- **{Zoom Out}** and **{Zoom In}**

Click or touch off the menu	to close the configuration settings
[Live]	to put all in the same display
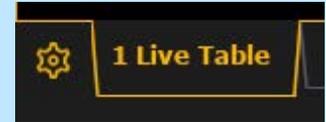
Groups

Groups are a channel selection tool used for fast recall of specific channels. Up to 1000 groups can be recorded.

Note that groups are only a selection and do not contain any intensity or non-intensity information.

When recording groups, channels are stored in the original selection order.

RECORDING GROUPS IN LIVE

[Clear] [Sneak] [Enter]	
[1] [Thru] [10] [Record] [Group] [1] [Enter]	records channels to the target group
[31] [+] [33] [+] [35] [+] [37] [Record] [Group] [2] [Enter]	records the selected channels to group 2
[31] [Thru] [38] {Offset} {Even} [Record] [Group] [3] [Enter]	using offset to achieve the opposite
[34] [+] [31] [+] [33] [+] [35] [+] [32] [Record] [Group] [30] [Label] Effect 1 [Enter]	records the channels in a specific order and gives the group a label

After you press [Label], you can press [Effect] or any target button to put that target word on the command line.

WORKING WITH A GROUP

[Group] [1] [Full] [Enter]	brings group 1's channels to Full
[Group] [1] [At] [20] [Thru] [Full] [Enter]	fanned intensity but in order this time
[Group] [30] [Enter] then press [Next], [Next], [Last], [Last]	accesses the group and then the first ordered channel in that group
[Select Last] [At] [10] [Thru] [Full] [Enter]	reselects the whole group and fans intensity across the range

Notice the console displays the group order above the CIA display, on the left side.

GROUP LIST DISPLAY (BLIND)

The group list allows viewing and editing of groups. Use **[Next]** and **[Last]** to navigate within the list or or type **[Group]** followed by the number then [Enter] to jump to a specific group..

[Group] [Group] or Add-a-Tab (the {+} sign)	opens a list of all groups recorded

CREATE OR EDIT A GROUP

[Group] [4] [Enter], [71] [Thru] [82] [Enter], [Label] High Sides – Right [Enter]	creates group 4 in the Group List
[Group] [2] [Enter] [+] [39] [Enter] [-] [39] [Enter]	adds or deletes channel to a group
[Group] [1] [Enter] [11] {Insert Before} [7] [Enter]	watch softkeys for additional options
[Clear] {Reorder} [Enter]	puts the channels back in numeric order

DELETING GROUPS

    [Delete] [Group] [1] [Enter] [Enter]   deletes group 1 (2nd enter to confirm)

    [Delete] [Group] [2] [Thru] [3] [Enter] [Enter]   deletes groups 2 and 3

Will still have 4 & 30 for later use

Group Exercise - Create the following new groups:

Please label them as well.

Group #	Label	Channels
1	Frontlight	1 thru 10
2	Downlight	31 thru 50
3	High Sides – Left	51 thru 62
4	High Sides – Right	71 thru 82
5	FOH Movers	101 thru 105
7	OS Movers – Wash	121 thru 128
9	Side – Mids	141 thru 148
10	Side – Scrollers	151 thru 158
20	Cyc Top	301 thru 312
21	Cyc Bottom	351 thru 362
22	All Cyc	+ G20 + G21
30	Effect 1	34, 31, 33, 35, 32

Group 4 and 30 will already exist.

▶ Submasters

Submasters are a type of playback data that can be mapped to a fader. Subs can store any parameter from any channel. Current stage content can also be recorded directly to a Submaster.

RECORD SUBMASTER IN LIVE

[Live] [Clear] [Sneak] [Enter]	
[1] [Thru] [9] [At] [Full] [Enter]	set levels
[Record] [Sub] [1] [Enter] Press [Load] button above fader 1 **On Ion Xe, press both buttons (▶ & ■) to load a fader**	records the current stage state to sub 1
[Sub] [1] [Label] Front [Enter]	displayed on LCD
[Clear] [Sneak] [Enter]	
[51] [Thru] [53] [At] [40] [Enter], **[54] [Thru] [56] [At] [70] [Enter],** **[57] [Thru] [59] [At] [Full] [Enter]**	
[Record], then [Load] the next fader, [Enter] **Can also press [Record] and double hit [Load]**	loads the fader with the submaster; note that we did not specify Sub
[Clear] [Sneak] [Enter]	to remove the manual data
Submasters may be loaded to any fader if it is blank or clear.	
Run each fader up and down.	look at proportional values of Sub 2

RECORD SUBMASTER IN BLIND

Edits done in Blind happen Live if the Sub is on.

[Blind] [Sub] [31] [Enter]	creates sub 31 – in Blind
[71] [Thru] [79] [Full] [Enter], [At] [75] [Enter]	records values to sub 31 – in Blind; no need to re-specify channels; remember that all changes are immediately saved

COMMAND LINE CONTROL OF SUBMASTERS

[Live] [Sub] [31] [At] [50] [Enter]	brings contents of sub to 50% of their recorded values
[Sub] [31] [At] [85] [Sneak] [Enter]	will sneak sub up in default sneak time
[Sub] [31] [Out] [Enter]	takes sub out regardless of fader position

CHANGE FADER PAGES

The 100 pages of Faders are set up in increments of 10. The page number is visible below the Cue list on the left side under the word "Master".

Note: **[Fader Page]** jumps to the next page **with content**.

Hold [Fader Page] & press [3]* and then release [Fader Page]	advances to page 3 - the only way to get to a blank page
* This is the only way to get to a blank fader page.*	
[Sub] [31] [Load] to the first fader on page 3 and bring up the fader	loads sub 31 on a fader on page 3
Press and hold [Shift] and tap [Fader Page]	reverses one page at a time
Press and hold [Fader Page] and press [17]	jumps to a specific page*
Press and hold [Fader Page] and scroll the rate wheel	increases or decreases pages with content only

UNLOAD FADERS

If a submaster (or a cue list) already occupies the fader, that fader must be cleared before another submaster or cue can be loaded.

Press and hold [Fader Page] and scroll to page 3 (sub 31)	
Press and hold [Shift] and press [Load] of the fader	to clear a sub of contents, does not delete the sub

DELETE SUBMASTERS

[Delete] [Sub] [31] [Enter] [Enter]	deletes sub 31
[Delete] [Sub] [1] [Thru] [Enter] Do not hit [Enter] again.	deletes all subs
[Shift]&[Clear]	will clear the command line
[Shift]&[Fader Page]	to go back to page 1

If you delete the subs, you will need to recreate subs for the next exercises. Or use **[Undo] [Enter]**.

APEX

On the Apex consoles, 5, 10, or 20 motorized faders are provided.

You will use the [+] [-] buttons to the left of the Master Fader Pair to change fader pages:
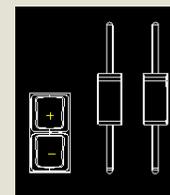
Hold [+] & press [3] and then release [+]	advances to page 3 - the only way to get to a blank page
Hold [-] & press [1] and then release [+]	reverts to page 1

Remember the faders are motorized so they will move automatically as you change pages.

▶ Cues

Cues are single lighting looks that are stored in a list and often played back in order. There are various timing and transition options that affect how cues are played back.

RECORD A CUE

[Clear] [Sneak] [Enter] and bring any subs/faders down	
[Group] [2] [At] [30] [Enter], [8] [At] [35] [Enter]	set levels for specials
[Record] [Cue] [1] [Enter]	stores cue 1 – note channels turn blue
[2] [+] [5] [+] [6] [At] [35] [Enter]	adds additional lights to look
[Record] [2] [Enter]	stores cue 2 – note channels colors; note we did not specify cue
[2] [+] [6] [Out], [Group] [2] [At] [60] [Enter] **[31] [+] [32] [+] [36] [+] [37] [+] [41] [+] [42] [+] [46] [+] [47] [Out]**	levels going up and down in cue
[Record] [3] [Enter]	all content will be recorded
Run the first fader (with sub 1) up to 75%	
[Record] [Next] [Enter] *	stores next cue (4) – note channels colors adds the sub values into the cue, sub values cannot be removed with fader
Bring the first fader back down	
[1] [Thru] [9] [Out], [8] [At] [50] [Enter]	
[Record] [Next] [Enter]	stores next cue (5)

> *   When you use **[Record] [Next]**, remember what cue number your command line is on.
>   If Cue 1, then Next = 2. If Cue 2.7, then Next = 2.8. If Cue 2.11, then 2.12.

▶ RECORD CUES WITH TIME

[Select Last] [Out], **[Group] [2] [At] [80] [Enter], [Group] [10] [At] [30] [Enter]**	selects channels that had been used
Pressing **[Select Last]** multiple times will loop through the last five selections.	
[Record] [6] [Time] [3] [Enter]	stores cue 6 with 3 second up/down time
[151] [Thru] [154] [Full] [Rem Dim] [Enter]	set levels using [Remainder Dim]
[Record] [Next] [Time] [2] [Time] [7] [Enter]	specifies split up and down times (7)
[36] [Thru] [50] [At] [50] [Rem Dim] [Enter]	set levels
[Record] [8] [Time] [6] [/] [2] [Enter]	specifies split up/down time with slash (8)

RECORD WITH TIME AND LABEL

[32] [Thru] [34] [At] [50] [Enter], [33] [+%] [+%] [+%] [41] [Thru] [50] [At] [25] [Enter], [3] [Full] [Full]	set levels
[Record] [Next] [Time] [3] [/] [5] [Label] Speech [Enter]	stores cue, timing, and label (9)
[Select Active] [Out]	takes all active channels' intensities out
[Record] [10] [Time] [0] [Label] Blackout [Enter]	stores cue, timing, and label (10)
[1] [+] [3] [+] [6] [Full] [Enter], [Group] [2] [At] [25] [Enter]	sets levels for new cue after blackout
[Record] [11] [Time] [2] [Label] Entrance [Enter]	stores cue, timing, and label (11)
[10] [Full] [Enter]	sets levels for new cue
[Record] [11] [.] [5] [Label] Follow up [Enter]	stores a point cue

DELETE CUES

[Delete] [Cue] [11] [.] [5] [Enter] [Enter]	deletes a cue, does not renumber
Notice Cue 11.5 is still on stage although it was just deleted. The console is still outputting the last DMX levels.	
[Go To Cue] [Enter]	to refresh current state of the cue list
Refreshes the DMX output of the console.	

Playback

PLAYBACK STATUS DISPLAY (PSD OR CUE LIST)

PSD is a tab that displays a list of the cues, their timing and additional information associated with the cues.

Use the triangle (∇) far right	to collapse the CIA for more room
Touch/click the screen or press [Tab] until it is selected.	to make sure the PSD Tab is highlighted.

- **[Format]** – for selecting display options:
  - Two cue lists
  - A preview of the first 10 pages of 10 faders
  - Back to default single cue list with a fader ribbon
- **[Page▲]** or **[Page▼]** – scrolls the cue list up and down a full page
- If in another tab, **[Shift]&[Page▲]** or **[Page▼]** will page up and down in the PSD without needing to focus on that tab
- **[Next]** or **[Last]** – moves up and down through the cue list
- In Blind, **[Next]** and **[Last]** navigate through the cues on the PSD. The PSD indicates the current selected cue. This has no effect on live output.

▶ BASIC CUE PLAYBACK

[Live], [Go To Cue] [Out] [Enter]	resets the cue list to the top, clears stage, and puts Cue 1 in pending
Press [▶] (Go) on the Master Playback Fader pair	executes the pending cue (1)

While a cue is running, both the cue line and the current cue display is red; when it is complete, both turn gold.

Press [▶] (Go) again to go into cue 2...	executes the next cue (2)
Then press [■] (Stop/Back) while the cue is running	fader activity is instantly paused mid-transition
Press [▶] (Go) to continue into cue 2	resumes the current cue
Press [▶] (Go) again to go into cue 3...	executes the next cue (3)
Then press [■] (Stop/Back) while the cue is running	fader activity is instantly paused mid-transition
Press [■] (Stop/Back) again to back up into cue 2	if cue paused or already complete, will play the previous cue

[■] (Back) uses default Back time established in Setup. It does not use the timing of the cue.

When in a completed cue, (Cue 2), press [■] (Stop/Back)	goes back to cue 1 in the Back time

QUICK TIME/TIMING DISABLED

Hold [Shift] and press [▶] (Go), [▶] (Go), [▶] (Go)	QuickTime - easily cue to cue with no timing
Hold [Shift] and press [■] (Stop/Back), [■] (Stop/Back)...	reverse cue to cue with no timing

CONTROLLING PLAYBACK MANUALLY

To manually take control of the intensity fade from the beginning of the cue, set the main sliders at the bottom of the run before you press **[▶] (Go)**.

Notice a red 'Man' in the Duration column of the PSD and in the Master Playback status bar.

Raise the faders in the timing you desire.

The main slider are a split crossfader pair. The left fader controls the intensity upfade, while the right fader controls all intensity downfade actions.

AS A GENERAL RULE, IT IS GOOD TO MAKE SURE THAT YOUR MAIN FADER PAIR IS UP AT THE BEGINNING OF A SHOW.
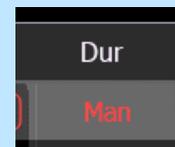
GO TO CUE

[Go To Cue] uses Go-To-Cue timing established in Setup.

[Go To Cue] [Out] [Enter]	sets <u>all values</u> to home and resets <u>all cue lists</u> active on faders to top of the list
[Go To Cue] [0] [Enter]	sets all current <u>intensity</u> values to zero and resets the current cue list to the top of the list, without affecting non-intensity parameters

OTHER GO TO CUE FUNCTIONS

[Go To Cue] [Enter]	refreshes current cue
[Go To Cue] [Next] or [Last] [Enter]	takes you to the next or previous cue in the active list (like Back)
[Go To Cue] [5] [Enter]	all parameters with values in cue 5 faded to those values, even if they are tracked in the Go To Cue time
[Go To Cue] [6] [Time] [Enter]	fades to cue in the timing of the cue
[Go To Cue] [1] [Time] [2] [Enter]	fades to cue in 2 seconds

LOAD A CUE ON THE MASTER PLAYBACK FADER

[Cue] [7] [Master] *(Load)* * and then press [▶] (Go)**	loads a specific cue to the main faders and then runs in that cue's time

* Look at the Pending Cue in the PSD.

CHANNEL DISPLAY COLOR CONVENTIONS

[Format] to be in Live Summary View

[Go To Cue] [9] [Enter]	Go to a cue
[1] [Thru] [5] [Full] [Full], [39] [Thru] [42] [At] [80] [Enter]	Adds manual values

CHANNEL OR PARAMETER LEVELS

- **Red**   Manual Data – has been changed but has not been saved yet
- **Blue**   Movement – channel values are higher than in the previous cue. Non-intensity parameters (NPs) are blue when any move instruction has occurred.
- **Green**   Movement – channel values have gone down from their previous level. Also used in reference marking to indicate a channel is marked.
- **Magenta** Tracking – value is unchanged from the previous cue (tracked) – not given a new move instruction.

Bring up Sub 1

- **Yellow**   Values are set from a submaster.
- **White**   Values are blocked.

> "GREEN, GRASS…BLUE, SKY!"

CHANNEL NUMBERS/CHANNEL HEADERS	CHANNEL OR PARAMETER LEVELS
White number – regular channel patched Bright White number – parked channel (small p) Gray number – unpatched channel Gray number with no outline – deleted channel Gold number – channel is captured Gold outline – Selected channel	Red – Manual Data Blue – Level is increasing from previous cue Magenta – Level is tracked from previous cue Green – Level is decreasing from previous cue. Orange – Level is owned by live playback White – Level is blocked Yellow – Level is set by Submaster Pink – Override Data

FLEXICHANNEL MODES   (EASIER TO SEE IN LIVE – SUMMARY)

In Live, Flexi allows you to view only channels meeting a certain criteria, therefore removing unwanted data from view.

Press [Flexi], [Flexi], [Flexi]	to change to the next state

- All channels
- **Patched channels** – channels with an address patched to them
- **Manual channels** – selected channels and any channels with manual data (red data)
- **Show channels** – any channels currently active and channels with data stored in a record target (cue, groups, subs, palettes…)
- **Active channels** – any channels with intensity above 0 or fading to 0, running effects, or with non-intensity moves
- **In Use channels** – exactly like Flexi Active, but also includes dark channels that are marking for a future cue
- **Selected channels** – the channels selected on the command line

Hold [Flexi] and use the softkeys and options in the CIA	8 states and 2 modes appear in the CIA

Keep in mind that you can have multiple Live tabs opened (Tab 1.2, 1.3,…) each in a different Flexi mode.

When editing in Flexi, use **[Thru] [Thru]** to include channels not in the current flexi mode.

In Flexi Patched Channels: [6] [Thru] [35] [Enter]	see only patched channels in range
[6] [Thru] [Thru] [35] [Enter]	overrides flexi state and shows all channels in range

Don't forget to bring Sub 1 down…	

▶ # Track/Cue Only

Eos is a move-fade console, meaning that only changes to channel levels are recorded. Another way to say this is that channels will stay at a given level until they are given another move instruction. Unchanged levels will be tracked through cues until given a new level. When playing cues out of sequence, Eos will play back moves and tracked levels guaranteeing the correct stage look.

It is important to learn the rules of tracking when editing cues and recording cues out of sequence. When editing cues with tracking, changes to a level will propagate forward through a cue list until a move instruction or a block is encountered. When editing cues with cue only, only the level changes in the specific cue will change. The console may add move instructions into the next cue to preserve the intended look.

Check out the Bobblehead Fred video that helps to explain the difference in style of operation between tracking and preset consoles and their origins.

Go to [Blind], and press [Format]

to go into Spreadsheet view

TRACK

[Cue] [1] [Enter]   [11] [At] [80] [Enter]

adds channel to cue 1 and tracks it through the entire cue list, including the blackout cue

CUE ONLY

[12] [At] [40] [Q Only/Track] [Enter]

adds channel to cue and inserts a move to restore it to zero in next cue

[Cue] [1] [Thru] [5] [Enter]   [12] [At] [40] [Q Only/Track] [Enter]

creates a move in first cue, tracks through and adds a move to zero after last cue selected

[Cue] [11] [.] [5] [Enter]   [Enter]

creates a new cue, all channels track through, note chan. 11 tracks through

▶ ### BLOCK

A block is an editing tool that prevents changes from tracking into or beyond a block. Blocks can be applied at a cue level, a channel level or a parameter level. It will not affect the contents of the cue.

[Cue] [10] [Block] [Enter]   Channel 11 is white (channel blocked)

applies a block to the blackout cue

[Cue] [1] [Enter]   [13] [At] [80] [Enter]

adds channel to cue 1 and tracks it till it reaches the block in cue 10

[Cue] [10] [Enter]   [Select Active] [Out]

assures any lights on are set to zero as this is our blackout cue – this change will track forward

"B" is displayed in the flags field of the PSD, indicating a cue level block.

AUTOBLOCK

Autoblock protects your cue data in the case of a redundant level change.

Notice in Cue 2 that channel 2 is at 35

[Cue] [1] [Enter] [2] [At] [35] [Enter]	Autoblock created in cue 2

Now in Cue 2, the intensity level for channel 2 is displayed in white, with an underscore. This is the Autoblock, where the console is preserving the idea that this channel already has a move instruction.

[2] [At] [55] [Enter]	Autoblock turns back into a move instruction
[2] [At] [35] [Enter]	puts the Autoblock back

Autoblocks are displayed in the PSD by a "<u>b</u>".

CLEAR AN AUTOBLOCK

If you want to remove the underlying move instruction:

[Cue] [2] [Enter] {AutoBlock Clean} [Enter] [Enter]	clears an autoblock
{Autoblock Clean} removes all auto-blocks from a single cue, cue range or cue list.	

ASSERT

Assert is a playback condition that collects unfinished fades and puts the entire look of the cue on stage. Assert is a way to regain ownership of a channel, or to force a new move command using the timing of that cue.

Asserts can be placed at a cue level, channel or parameter level.

[Live] [Go To Cue] [9] [Enter]	
[41] [Full] [RemDim] [Enter]	set levels
[Record] [9.5] [Time] [20] [Enter]	stores cue with long fade time
[Go To Cue] [9] [Enter] [▶] (Go) to run Cue 9.5	
[▶] (Go) on cue 10 before cue 9.5 has completed...	discuss what happens
[Cue] [10] [Assert] [Enter]	applies an Assert on the cue
Notice an "A" in the PSD flag field for Cue 10.	
[Go To Cue] [9] [Enter] [▶] (Go) on cue 9.5	
then [▶] (Go) on cue 10	discuss what happens

Assert plays back all values as move instructions. It collects unfinished fades and executes them in the time of the cue.

IT IS GOOD PRACTICE TO HAVE BLOCK AND ASSERT ON ALL BLACKOUTS, FADE TO BLACKS AND CRITICAL CUES

▶ Non-Intensity Parameter Control

Non-Intensity Parameter Control (IFCB)

Four major parameter categories (IFCB):

- **I = Intensity** . . . Intensity
- **F = Focus** . . . Pan and Tilt, changes to the position (X, Y or Z)
- **C = Color.** . . All color parameters (Scrollers, RGB, CMY, CTO, CTB…)
- **B = Beam** . . . All other parameters, divided into sub-categories:
  - Form - includes parameters that affect the quality or size of the light output, such as edge, zoom, iris, frost, etc.
  - Image - includes anything that drops into the gate and interrupts the beam of light, such as gobos, effects wheels, prisms, etc.
  - Shutter - includes all the framing parameters

▶ Lamp Controls

Lamp controls allow you to execute control functions of selected fixtures such as calibrate, douse lamp, strike lamp, and reset. Each fixture type has its own set of lamp control options which are available to you when you select the fixture from Live.

[Clear] [Sneak] [Enter] [Group] [5] [Enter] [About]	channel selection on command line
{Lamp Controls} on the left side of the About screen	
[Group] [7] [Enter]	note different lamp controls
[About] again	will clear the About display

▶ Color Controls

Color Control with Scrollers

[Encoder Display]
[Group] [10] [Full] [Full]

- Push the **[Color]** page button and use the encoder to dial to the frame desired
- By default, the scroller is expanded to see the individual frames
- Tap the word **'Scroller'** in the encoder display or use **{Scroller}** in the CIA parameter tiles – puts it on the command line – then press **[8]** for frame 8 and **[Enter]**
- Hold **[Shift]** and dial the encoder – see the '+' and '−' for half frames
- Press **{Home ⌂}** to take the scroller back to its starting frame

Color Control with LEDs

Press [Encoder Display] if not open already	
[Clear] [Sneak] [Enter] [Group] [3] [+] [Group] [4] [Full] [Enter]	notice all colors at 100%

Notice the miniature color picker. Use the double arrow to make it bigger or collapse it.

Dial the encoders	easy to use two hands for color mixing
In Red, press {Min}; Lime {Min}, Green {Min}, Blue, press {Max}	leaves just blue
Press [Displays], then tap 'Red' tile in CIA, [50] [Enter]	now magenta wash

The Parameter tiles in the CIA remap are based on the channel or fixture type selected.

Tap the 'Red' label on the touchscreen, then [Full] [Enter]	adds 100% of red
Press the button in the center of 'Red' encoder, [75] [Enter]	back to 75% red

Keep in mind if you have the flatter encoders, the entire encoder is the button.

COLOR PICKER

Click on Add-a-Tab (the {+} sign) , select Color Picker Control

When first opened, the color picker breaks down into three areas: the CIE XY color space, the gel library, and then, when you select a gel library, it shows all of the gel swatches.

- The console will put fixture in the color as close as possible.
- A 'G' will appear in the channel display that means gel match
- Gel matches can be set from the command line also

[Group] [3] [+] [Group] [4] [Home] [Enter]	notice all colors at 100%
Tap {3 Lee}, then find {L116} - a green	watch change color
Tap {5 Legacy Common Color}, then find {CC021} – an orange	watch change color
[Select Last] {Color} [5] [/] [381] [Enter] – a blue	first # being the Gel library and second # being the gel number
[At] [3] [/] [345] [Enter] – magenta	use "At" instead of "Color" – works anywhere in Live
Tap {Standard Colors}, then find {Red}	
Tap {Purple 75%}	
Tap {3500K}*	

* K stands for Kelvin – measurement of Color Temperature – low Kelvin values are warmer whites, higher Kelvin values are cooler whites

CONTROLLING A MOVER

FOCUS

[Clear] [Sneak] [Enter]	
[Group] [5] [Full] [Enter] , then [Focus] and play with encoders	notice all five fixtures move as a group
Hold [Shift] while using the encoders	puts the encoder in Fine mode
Press [Next], Tilt, [Next], Tilt, [Next], Tilt, aiming on Singer CS	able to work with each light individually
[Select Last] to reselect group and then Pan	now back as a group

FLIP

To access **{Flip}**, press on the **3 vertical dots**. Flip is used to spin the unit into its exact same position, but from the other orientation (long path versus short path).

[103] [Full] [RemDim] [Enter]	selects one fixture
Press {Flip} on Pan encoder	and watch the fixture reset
Press {Flip} again	and watch the fixture reset back

Flip results in a manual value. Do not forget to update if in a cue!

HOME

Under Tilt, press {Home}	returns parameter to 50/50 or Home position

ALWAYS ANOTHER WAY TO DO THINGS

Tap the encoder label on the touchscreen, {Tilt} [-50] [Enter]	places the Tilt parameter at -50°
[Displays], press the {Tilt} parameter tile, [Home] [Enter]	… or homes the tilt parameter

BEAM

Remember: Beam divided into sub-categories: **Form**, **Image**, and **Shutter**

[Clear] [Sneak] [Enter]
[Group] [5] [Full] [Full]   and tilt up on stage
Make sure that [Encoder Display] is enabled

[FORM] - ZOOM

− Use the Zoom encoder
− Use the touchscreen buttons: {**Min}, {Max}**
− Tap the Zoom label on the touchscreen, **[35] [Enter]**
  Note Zoom is in degrees. Look at the display.
− Notice Shutter Strobe – frames and modes are displayed above

[IMAGE] - GOBO SELECT

− Press the **3 vertical dots** to see the thumbnail images of the gobos (gold is expanded, white is not)
− Use the Gobo Select encoder, default is indexed mode
− Tap the Gobo Select label on the touchscreen, use the encoder button or press the CIA Parameter tile, **{Gobo Select} [3] [Enter]** (Fracture)

[FORM] - EDGE

− Use the Edge encoder to make the gobo sharp

[IMAGE] – GOBO INDEX/SPEED

− Default is in Index Mode – statically rotate the gobo

− Press the **3 vertical dots** to see the mode option or press **{Mode}** to step through the modes for the parameter such as index, rotate +/-- or special effects.

− Encoder controls the speed of the gobo based on the mode selected

[Select Last] [Shift]&[Image] [Image] [Home] [Enter]   removes the beam attributes

To put Beam on the command line, hold [Shift] and double hit any Beam sub-category (Form, Image, or Shutter).

[SHUTTER]

− Use the shutter encoders for Thrust and Angle   Shutters are mapped based on Shutter Order in Patch Attributes, first page: A & C opposite pairs, second page: B & D

  o   Roll Thrust A in a bit

  o   Tap the label and specify specific angle, **{Angle} [30] [Enter]**

  o   Use the touchscreen buttons: **{Home}, {Min}, {Max}**

− Touch the shutter graphic to open a tool to use touchscreen controls

  o   **Angle Home** – sets the angle of all shutters to their home position

  o   **Thrust Home** – sets the thrust of all shutters to their home position

  o   **Pair AC** – pairs the A and C shutters together so they move together*

  o   **Pair BD** – pairs the B and D shutters together so they move together*   *   These pairings work with the encoders, not with graphic controls on the display

  o   **Pair All** – pairs all the shutters together so they move together*

  o   **Inverse AC** – pairs A and C so they move in opposite directions

  o   **Exceed Limits** – ignores the limits angle and thrust place on each other, prioritizing the selected, regardless of the impact on the other

  o   **Inverse BD** – pairs B and D so they move in opposite directions

  o   **A>D** – switches to custom encoder pages - thrust all on one page, angle on one page

− **Frame Assembly** (3rd page) allows for rotation of the whole shutter assembly

PAGING ENCODERS

[Shutter], [Shutter], [Shutter]   or   [Shutter] & [3]   takes you to third page of shutter category – see Frame Assembly Encoder

Page number is displayed using dots in the category on the left side of the display

HOME ⌂

[Home] or {Home} returns the selected target or its individual parameters to their default position.
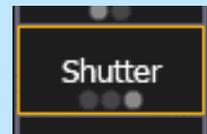
[Clear] [Sneak] [Enter]	
[Group] [5] [Full] [Enter], tilt up on cyc, in orange, with gobo, zoom out, and make it sharp	set levels
[101] [Home] [Enter]	homes all non-intensity data for channel
[102] [Shift]&[Focus] [Home] [Enter]	homes just the focus data for channel
[103] [Shift]&[Form] [Home] [Enter]	homes just the sub-category form (zoom)
[104] {Gobo Select} [Home] [Enter]	homes just the gobo for channel

APEX MAIN ENCODERS

On Apex consoles there is an expanded encoder area with four main encoders and two dedicated pan and tilt encoders – and those are all haptic as before.

You'll also notice that we have new navigation buttons above the screen and that includes a Custom key that is actually a hard key instead of just being a soft key on the touchscreen.

MINI ENCODERS

Apex consoles also offer nine RGB-backlit mini encoders to the left of the encoder touchscreen. Eight of the mini encoders can be fully configured for expanded control of the large encoder parameters or can have custom independent mapping. The bottom encoder is dedicated to mini encoder paging and configuration.

Push down on bottom mini encoder	see 2 options in the bottom center of screen
Select {Extended}	
Push down on same mini encoder	to exit configuration mode

Extended mode - an extension of the main encoders. If the main encoders are on Page 1 of a parameter, then the mini encoders show page 2 and page 3 of the same parameter.

Navigate between different categories, and see the mini encoders track with the main encoders.

Independent mode - ability to change the mini encoder category separately from the main encoders. Main encoders can be in Color and Mini Encoders can be in Image.

Push mini encoder, select {Independent}	
Turn or rotate the bottom mini encoder	to page through the mini encoder categories
Push down on same mini encoder	to exit configuration mode
[101] [Enter] [Color]	
Press on {Expand} (three vertical dots) next to Yellow	to see Min, Max, and Home
[Image], press on {Expand} next to Gobo Select	to see gobo frames and modes
Press on {Expand} again	to collapse the parameter

`

▶ ML CONTROLS

There is always another way of doing things!

[Clear] [Sneak] [Enter]

Click on Add-a-Tab (the {+} sign) , select ML Controls

Navigation and Operation Features

- Category shortcut keys on the left side to quickly access those controls
- Category and Parameter buttons will post to the command line
- Buttons to collapse or expand categories for yet more flexibility
- Home buttons allow you to reset a specific parameter or attribute of a parameter to its default setting.
- Virtual encoders - Click and hold close to the center line for slow movement, further away for faster movement or hover cursor over the encoder and use the mouse scroll wheel.
- Color picker and gel picker
- Scroll bar – multiple rows of parameters will now display, and you can scroll either horizontally or vertically depending on the frame

The parameters displayed will change based on the device(s) selected.

[1] [Enter]	shows just the intensity wheel
[151] [Enter]	shows intensity and color – note scroller, gel picker
[51] [Enter]	shows intensity and color – note RGB&L wheels
[101] [Enter]	shows intensity, focus, color, and beam

ML CONTROL POPUP

Click on the shortcut in the upper right hand side of the monitor.

to open the ML popup window

Scroll bar along the bottom or use the category shortcut keys.

To close, simply touch or click anywhere off of the popup.

Additional Cue Features

CUE DELAY

Delay is a timing modifier that can be placed on cues which causes them to wait a specified time before beginning the fade.

[Go To Cue] [6] [Enter]	
[2] [+] [4] [+] [10] [Full] [Full] **[Group] [20] [Full] [Enter], make them pink**	set levels
[Record] [21] [Label] Pink Cyc [Enter]	records the cue (21)
[Group] [1] [-] [4] [Out], [Group] [10] [Out]	set levels
[Record] [Next] [Delay] [3] [Enter]	records cue with a delay (22)
In the PSD, on cue 22, notice the small 3 in front of the cue time. Also notice the duration is 8 - the total of the delay and the cue time.	
[Go To Cue] [21] [Enter] and press [▶] (Go)	watch for delay countdown and then the 5 second cue countdown
[Group] [10] [At] [50] [Enter] [Group] [1] [Out]	set levels
[Record] [22] [.] [5] [Time] [2] [Delay] [3] [/] [5] [Enter]	records cue with a delay on both the up and down times (22.5)
Again, notice in the PSD, the small 3 and 5 in front of the cue up and down times. Also notice the duration is 7.	
[Group] [10] [Out], [8] [At] [50] [Enter], [Group] [2] [At] [8] [Enter]	set levels
[Group] [20] [Enter], make them blue	select the cyc and make them blue
[Record] [23] [Time] [3] [/] [1] {Color} [Delay] [4] [Enter]	records cue with an overall time and a color delay (23)
Again, the small 4 in front of the color time.	
[Go To Cue] [22] [Enter] and press [▶] (Go) on 22.5	watch the delays on both the up and down fades
Press [▶] (Go) to go into Cue 23	watch the delay on just the color

CUE FOLLOW/HANG (AUTO-FOLLOWS)

An Autofollow is when one cue automatically activates the next cue. This can be achieved by assigning a Follow or a Hang to the cue that will initiate the trigger of the next cue in a specified time.

Follow time begins the moment the cue is executed (when the go button is pressed.) **Hang** is similar but doesn't start till the cue is complete.

{Fw/Hg} is a soft key; can also press **[Shift]&[Delay]** to access Follow and **[Shift]&[Delay][Delay]** to access Hang
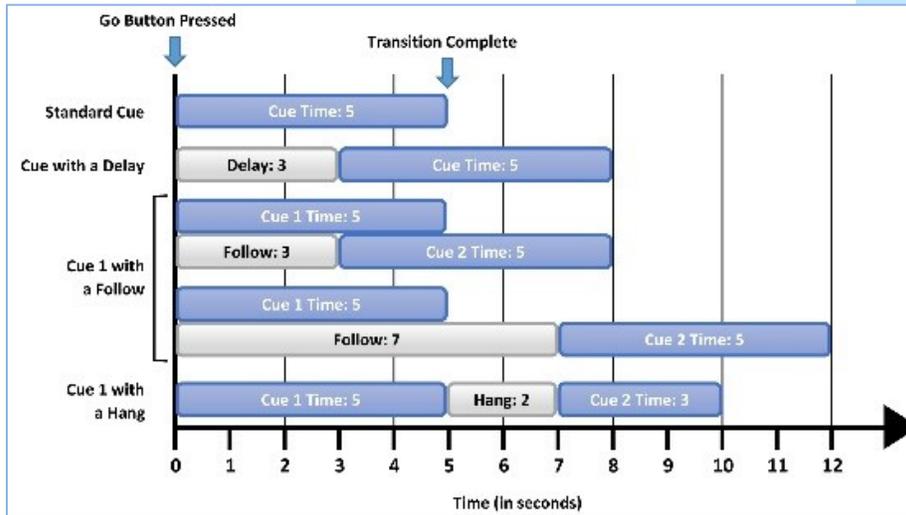
[Cue] [4] [Thru] [6] [Time] [2] [Enter]	changes timing for faster playback
[Cue] [4] {Follow/Hang} [3] [Enter]	records cue with a follow time of 3 seconds
Notice the F3 in the PSD to show you follow/hang cues, as well as the > in front of cue 5.	
[Go To Cue] [3] [Enter] and press [▶] (Go)	watch the cue
[Cue] [5] [Shift]&[Delay] [5] [Enter]	records cue with a follow time of 5 seconds
[Cue] [6] [Shift]&[Delay] [Delay] [3] [Enter]	records cue with a hang time of 3 seconds
[Go To Cue] [3] [Enter] and press [▶] (Go)	watch the cues play

To remove follow and hang times, simply type **[Cue] [#] {Fw/Hg} [Enter]**

CUE LINK

Link allows cues to be run out-of-sequence.

[Cue] [3] {Link/Loop} [7] [Enter]	links to cue 7 from cue 3
[Go To Cue] [1] [Enter] and press [▶] (Go)	go into Cue 2
Press [▶] (Go)	go into Cue 3
Press [▶] (Go)	go into Cue 7 (the link causes the cue list to skip over 4, 5, and 6)
[Cue] [3] {Link/Loop} [Enter]	to remove link

▶ Update

Update is a 'save changes' tool. It only pertains to values that are red or modified – values that have been changed. Update saves manual changes back to targets such as cues, palettes, presets and submasters.

UPDATE DEFAULT

[Live] [Go To Cue] [2] [Enter]	
[10] [At] [50] [Enter]	makes a change to an existing cue
[Group] [2] [Full] [Enter], make light blue	
[Update] Notice default Make Absolute style [Enter]	change is now stored in cue
[Blind] Spreadsheet view	
[10] [Enter]	to clearly see channel 10
See how channel 10 turns on in cue 2 and is tracked till the block	
[Group] [2] [Enter]	notice color values track just like intensities
To see Color Information, hold [Data] and press [{Color}] – a toggle.	

UPDATE CUE ONLY

[Live] [51] [At] [75] [Enter]	makes another change in the cue
[Update] [Cue Only] [Enter]	records without tracking
[Blind] Spreadsheet view	note changes for channel
[51] [Enter]	
See how channel 51 turns on in cue 2 and turns off in cue 3.	

MOVE INSTRUCTIONS

Other move instructions will stop values from tracking through.

See how channels 3 and 4 turn on to 75% in cue 4	note the move instruction in cue 4
[Live], still in Cue 2, [3] [+] [4] [At] [40] [Enter]	makes another change in the cue
[Update] [Enter]	records allowing tracking
[Blind]	note changes for channels 3 and 4
See how 3 & 4 turn on in cue 2 and move to 75% in cue 4	where 75 is still a move instruction

In Blind, remember that changes are stored immediately. In Live, Update is the tool that we use to store information into existing targets such as cues.

▶ Park

Park locks the value of a channel or address.

- It cannot be changed by any console operation, including subs, playbacks, Grandmaster or Blackout key.

- Parked values will not be recorded.

- You can park channels, addresses, categories, and parameters

PARK IN LIVE

[Live]	
[4] [+] [6] [At] [50] [Park] [Enter]	parks channel at 50%

Any parked channel has a small "P" visible on the channel icon.

Notice in the upper right corner of the display "Parked Channels."

[Go To Cue] [9] [Enter]	still shows cue values even though the park value is being output
[127] [Park] [Enter]	parks all parameters at current levels
[121] [Shift]&[Color] [Park] [Enter]	parks the color of the channel at its current level
[Address] [5] [At] [75] [Park] [Enter]	parks address at 75%

Notice the top of the display now say "Parked Channels/Addresses."

TO CLEAR PARKED VALUES IN LIVE:

[4] [Park] [Enter] …[Enter]	unparks channel
[Clear] [Park] [Enter] …[Enter]	unparks all parked channels
[Address/Patch] [Park] [Enter] …[Enter]	unparks all parked addresses

PARK DISPLAY (BLIND)

[Park] [Park] or Add-a-Tab (the {+} sign)	opens the Park display
[2] [At] [85] [Enter]	parks channel at 85%
[Address/Patch] [34] [At] [75] [Enter]	parks address at 75% - shows chan and parameter

Notice the Park key is not necessary for parking in Blind.

[Format] will change to Table view in Park to see parameters.

TO CLEAR PARKED VALUES IN BLIND:

[2] [At] [Enter]	unparks channel
[Clear]	removes the channel icon
{Address} [34] [At] [Enter]	unparks an address

▶ Setup

[Displays] {Setup} or click in Browser > Setup. The three areas are:

- **System** – effects all users and devices and how the show functions

- **User** – specific to a user

- **Device** – specific to a device or piece of hardware

SYSTEM – ALL DEVICES IN SYSTEM – STORED IN SHOW FILE

These settings are shared on all consoles and users on the network.

• **System**	Number of Channels, Dimmer Doubler Offset, Create Virtual HSB, Display Colors in D65, Zones, Home Preset, Preheat Preset, Metric/Imperial, Startup, Shutdown and Disconnect Macros
• **Session**	Backup Auto Take Control, FDX Settings
• **Cue Settings**	Auto-Mark Enable, Mark Time, Preheat Time, Cue Default Times
• **Show Control**	Tabs for SMPTE, MIDI, OSC, UDP Strings, and Contacts
• **Mobile Apps**	Allow App Connections and Visible to Mobile Apps
• **Partitions**	Partitioned Control Enable, Channel Partitions for multi-user setups
• **Users**	User Settings: User ID, Add, Delete, Copy User, Augment3d Enable/Disable Per User

USER – SPECIFIC TO THE USER – STORED IN SHOW FILE

• **Record Defaults**	Record Defaults: Track Mode, Record/Delete Confirm, Auto Playback, Record Effects in Presets, Update Defaults, Emergency Mark
• **Manual Timing**	Manual Timing, Default Times: Sneak, Go To Cue, Back, Assert, Off, Release and Timing Disable Times
• **Manual Control**	Encoders: Percent or Degrees Per Revolution, Mini Percent Per Rev, Scroll Percent Per Rev, Button Values: Level, Plus/Minus %, Live RemDim Enable and Level, Highlight: Highlight/Lowlight Presets, Highlight RemDim Enable and Level, Default Encoder Map
• **Displays**	Preserve Blind Cue, Blind Next/Last Affects Target, Popup Magic Sheet and Popup Navigation Lock, Augment3d Display Behavior

DEVICE – SPECIFIC TO HARDWARE – BUT STORED IN SHOW FILE

- **Config**   Device Name
- **Network**   Network Connections Status and Configuration
- **Local Output**   Local DMX Outputs (restart required if change) and System Dimmer Dbl offset.
- **Show Control**   Tabs for USB MIDI/SMPTE, Contacts, USB Serial and OSC USB
- **Face Panel**   Input Devices: Trackball settings, Spacebar [▶] (Go) Enable, Use Shift as Eos Shift, Hide Mouse, Auto Repeat settings, Sounds Enable
- **Fader Wing Layout**   Layout and Identify
- **Wing Paging Groups** ID, Type and Group Numbers
- **Brightness Settings** Show All, Presets 1-3, Extinguish, Brightness for Main, Monitors - External and Internal, Face Panel, Task Lights, USB Wing Displays, and Ion Face Panel. Also Enable Control of External Monitors

  RECORD A PRESET

  > **Set Brightness levels for all sliders (components)**

  > **Press and hold {Preset #} to record**

  EXTINGUISH

  Extinguish sets all brightness settings to 0% and darkens all console screens and buttons.

  > **Press [Displays] to exit Extinguish mode**

  ACCESS IN LIVE

  > **In Live, hold [Displays] to access Brightness Settings popup**

  > **Hold [Displays] and run level wheel to control Main brightness level**

- **Augment3d**   Device Enable A3D, Device Status
- **Displays**   Show Ref Labels, In-Cell Editing and Direct Select Double Click, Default Display Sort Order, Force Hide Encoder Ribbon, Record Target Color Brightness
- **Device Profiles**   Bind to, Copy From, or Delete Device Profile
- **PDF Settings**   Orientation and Paper Type settings

CLOCK FUNCTIONS

> **Click on the Time in the upper right corner of either monitor**   can reset time without going out to shell

▶ Introduction to Effects

CREATING A STEP-BASED EFFECT

[Live] [Go to Cue] [Out] [Enter]	start with a clear stage
[Effect] [Effect] or Add-a-Tab (the {+} sign)	opens the effects list
[Effect] [1] [Enter]	creates a new effect number
<Type> {Step-based}	assigns the effect as a step effect
{Step} [1] [Thru] [5] [Enter] [Enter]	defines the number of steps
[Page▶] to the Channels column	
[Group] [30] [Enter]	specifies the channels or group to be used in the order of the group

Intensity is assumed unless another parameter is specified.

RUN THE EFFECT

[Live] [Group] [30] [Effect] [1] [Enter]	runs the effect created on group 30
If in Live Summary, press and hold [Data]	to view levels as effect is running

EFFECT ATTRIBUTES

Play with various attributes of the effect to see how they alter your effect.

[Effect] [Effect]	opens the effects list
{Cycle Time} [2] [Enter] or dial the encoder to adjust cycle time	resets overall effect time/speed
Click on {Attributes}	opens table of various attributes

The basic behavior of the effect can include **Forward, Reverse, Bounce, Build, Positive, Negative,** and **Random Group** or **Random Rate**.

{Random Rate} [100] [Thru] [200] [Enter]	each cycle plays at a different rate within the range, slower or faster
{Random Rate} [Enter]	to clear the random rate attribute
{Negative}	lights are on and turn off on a step-by-step basis
{Positive}	sets effect back to a positive effect
[Clear]	to return to the effects editor

STEP EDITING

Remember you can edit steps individually. Just select the steps that you wish to change then press **[Page▶]** to access **Step Time, In Time, Dwell Time, Decay Time,** as well as the **On State** and **Off State** columns.
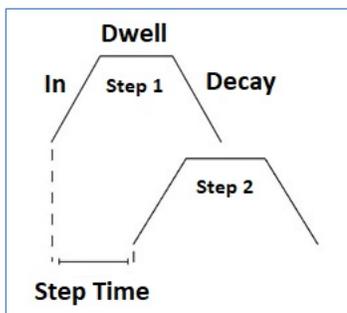
RECORDING AN EFFECT TO A CUE

[Live], [Go To Cue] [23] [Enter], [Group] [30] [Effect] [1] [Enter]	reapply the effect
[Record] [Cue] [24] [Enter]	records the effect into the cue

Notice the FX column on the Playback Status Display now shows Effect 1 in cue 24.

[Group] [30] [Effect] [Enter]	stops the effect
[Record] [Cue] [25] [Enter]	
[Go to Cue] [23] [Enter] and press [▶] (Go)… and [▶] (Go) again	watch how the effect starts and stops

Remember, this effect does not work on other channels, just Group 30.

▶ ## A SIMPLE COLOR EFFECT

Effects 901 through 918 are preprogrammed effects

USING A PRE-PROGRAMMED COLOR EFFECT

[Go To Cue] [Out] [Enter]	
[Group] [20] [Full] [Enter]	sets starting levels
[Select Last] [Effect] [917] [Enter]	applies existing effect to selected channels
In the Encoder Display, take Amber to 0	see the more saturated colors

Effect 917 is a Rainbow Chase for RGB fixtures. It is a **Relative effect** – executes in relation to where the lights are when the effect begins

FUN WITH THE COLOR PICKER

Visually see the effect running in the blue area.

[Displays] {S2 -Color Picker} or [Tab] [27]	opens the color picker
Click on various colors in the color picker	watch cyc change colors
In Standard Colors, {White}	centers the effect to a white
[Record] [Cue] [26] [Enter]	records the effect into a cue (26)

STOPPING AN EFFECT

[Select Last] [Stop Effect] [Enter]	stops effect from running on specified channels

On Apex consoles, [**Shift**]&[**Effect**] is the Stop Effect Command. Also **[Effect] [#] [At]** will post Stop Effect on the command line.

[Record] [Cue] [Next] [Enter]	records the stop into a cue (27)

MULTIPLE WAYS TO STOP AN EFFECT

[1] [Thru] [5] [Effect] [Enter]	stops the effect running on channels
[Stop Effect] [1] [Enter]	will stop the specified running effect
[Stop Effect] [Enter]	will stop all running effects
[Sneak] [Enter]	stops effect if manual data – not recorded

Additional Cue Writing Exercise

RECORD CUES WITH COLOR

[Go To Cue] [Out] [Enter] [Cue] [21] [Block] [Enter]	start with a clean stage
[Group] [2] [Full] [Full], make them pink	set levels
[Record] [12] [Label] Pink [Enter]	stores cue (12)
[Select Last], make them cyan	choose colors
[Group] [3] [Full] [Full], make them blue	choose colors
[Group] [4] [Full] [Full], make them green	choose colors
[Group] [9] [Full] [Enter], make them green also	choose colors
[Record] [Next] [Label] Cool Look [Enter]	records cue 13
[Group] [4] [Out]	set levels
[Group] [2] [Enter], make them orange	set levels
[Record] [Next] [Time] [2] [Label] Color Change [Enter]	records cue with a 2 second fade (14)
[Select Active] [Out]	takes lights out
[Record] [15] [Time] [7] [Label] Fade to Black [Enter] [Block] [Assert] [Enter]	records a fade to black with a 7 second fade (15)

RECORD CUES WITH FOCUS & FORM

[121] [Thru] [128] {Offset} {Odd} [Full] [Enter]	set levels, focus fixtures, set zoom level, select color
[Next] to select Ch. 121	
Use encoders to pan/tilt fixture onto lead singer on box	
[Next] to select Ch. 123 focus onto lead singer on box	
[Next] to select Ch. 125 focus onto drummer	
[Next] to select Ch. 127 focus onto drummer	
[Select Last] {Zoom} [19] [Enter],	
Make them yellow using Standard Colors	
[Record] [16] [Time] [1] [Shift]&[Color] [Time] [5] [Label] Yellow [Enter]	stores cue 16 with a 1 second intensity time and a 5 second color time
[Group] [2] [At] [50] [Rem Dim] [Enter]	set levels
Using Standard Colors, set to 3500K	set as a warm white color
[Record] [17] [Enter]	stores cue 17

RECORD CUES WITH FOCUS, FORM, AND IMAGE

[Group] [5] [Full] [Full],	set levels,
[Focus], use encoder to tilt them on stage	pan just off proscenium
{Zoom} [26] [Enter]	
[Image], use Gobo Select encoder to select Fracture (gobo 3)	
[Form], use Edge encoder to make gobo sharp	
[Image], use Gobo Index/Speed Mode encoder to select {Rot+}	watch the command line
and use the encoder to make them rotate	
[Select Last] {Offset} {Even} set Gobo Index/Speed Mode to {Rot-}	
[Select Last] [Select Last] [Enter], make yellow using Std Colors	cycles through the last 5 command lines
[Record] [Next] [Enter]	records cue 18
[Go To Cue] [11.5] [Enter]	reset to top of cue list and home all non-intensity properties
[▶] (Go), [Shift]&[▶] (Go) to Cue 15	use Timing Disable function to step through cues
[▶] (Go) to play through the new cues	
[Go To Cue] [Out] [Enter]	

AND DON'T FORGET TO SAVE YOUR SHOW FILE!

Appendix 1 – Channel Hookup

Chan	Univ / Address		Manufacturer	Fixture	Mode	Label
1	1	1	Generic	Dimmer	Dimmer [1]	Frontlight - A
2	1	2	Generic	Dimmer	Dimmer [1]	Frontlight - B
3	1	3	Generic	Dimmer	Dimmer [1]	Frontlight - C
4	1	4	Generic	Dimmer	Dimmer [1]	Frontlight - D
5	1	5	Generic	Dimmer	Dimmer [1]	Frontlight - E
6	1	33	Generic	Dimmer	Dimmer [1]	Frontlight - A
7	1	31	Generic	Dimmer	Dimmer [1]	Frontlight - B
8	1	32	Generic	Dimmer	Dimmer [1]	Frontlight - C
9	1	35	Generic	Dimmer	Dimmer [1]	Frontlight - D
10	1	34	Generic	Dimmer	Dimmer [1]	Frontlight - E
31	1	301	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - A
32	1	310	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - B
33	1	319	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - C
34	1	328	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - D
35	1	337	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - E
36	1	346	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - F
37	1	355	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - G
38	1	364	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - H
39	1	373	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - I (eye)
40	1	382	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - J
41	1	391	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - K
42	1	400	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - L (ell)
43	1	409	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - M
44	1	418	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - N
45	1	427	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - O (oh)
46	1	436	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - P
47	1	445	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - Q
48	1	454	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight – R
49	1	463	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight – S
50	1	472	ETC Fixtures	D60 Lustr+ +3D	Direct Str [9] +3D	Downlight - T
51	2	1	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 1 → Left
52	2	7	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 1 → Mid
53	2	13	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 1 → Right
54	2	19	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 2 → Left
55	2	25	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 2 → Mid
56	2	31	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 2 → Right
57	2	37	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 3 → Left
58	2	43	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 3 → Mid
59	2	49	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 3 → Right
60	2	55	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 4 → Left
61	2	61	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 4 → Mid
62	2	67	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 4 → Right

+ End of range +

Chan	Univ / Address		Manufacturer	Fixture	Mode	Label
71	2	73	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 1 ← Right
72	2	79	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 1 ← Mid
73	2	85	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 1 ← Left
74	2	91	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 2 ← Right
75	2	97	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 2 ← Mid
76	2	103	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 2 ← Left
77	2	109	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 3 ← Right
78	2	115	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 3 ← Mid
79	2	121	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 3 ← Left
80	2	127	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 4 ← Right
81	2	133	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 4 ← Mid
82	2	139	ETC Fixtures	ColorSource SPOT +3D	Direct [6] +3D	Hi Side Tx - Ln 4 ← Left
101	2	201*	High End Systems	SolaFrame Theatre +3D	SolaFrame Theatre [47]	FOH Mover - Spot
102	2	251	High End Systems	SolaFrame Theatre +3D	SolaFrame Theatre [47]	FOH Mover - Spot
103	2	301	High End Systems	SolaFrame Theatre +3D	SolaFrame Theatre [47]	FOH Mover - Spot
104	2	351	High End Systems	SolaFrame Theatre +3D	SolaFrame Theatre [47]	FOH Mover - Spot
105	2	401	High End Systems	SolaFrame Theatre +3D	SolaFrame Theatre [47]	FOH Mover - Spot
		* Think Offset!				
121	4	1	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
122	4	37	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
123	4	73	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
124	4	109	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
125	4	145	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
126	4	181	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
127	4	217	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
128	4	253	High End Systems	SolaWash 2000 {36} +3D	--	Overstage Mover - Wash
141	5	73	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid
142	5	82	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid
143	5	91	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid
144	5	100	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid
145	5	109	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid
146	5	118	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid
147	5	127	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid
148	5	136	ETC Fixtures	S4 LED S2 Lustr +3D	Direct Str [9] +3D	Side - Mid

+ End of range +

Chan	Univ / Address		Manufacturer	Fixture	Mode	Label
151	1	281	Generic	Dimmer	Dimmer [1]	Side - Scroller
151 P2	1	291	Generic	Scroller [1]	--	Side - Scroller
152	1	282	Generic	Dimmer	Dimmer [1]	Side - Scroller
152 P2	1	292	Generic	Scroller [1]	--	Side - Scroller
153	1	283	Generic	Dimmer	Dimmer [1]	Side - Scroller
153 P2	1	293	Generic	Scroller [1]	--	Side - Scroller
154	1	284	Generic	Dimmer	Dimmer [1]	Side - Scroller
154 P2	1	294	Generic	Scroller [1]	--	Side - Scroller
155	1	285	Generic	Dimmer	Dimmer [1]	Side - Scroller
155 P2	1	295	Generic	Scroller [1]	--	Side - Scroller
156	1	286	Generic	Dimmer	Dimmer [1]	Side - Scroller
156 P2	1	296	Generic	Scroller [1]	--	Side - Scroller
157	1	287	Generic	Dimmer	Dimmer [1]	Side - Scroller
157 P2	1	297	Generic	Scroller [1]	--	Side - Scroller
158	1	288	Generic	Dimmer	Dimmer [1]	Side - Scroller
158 P2	1	298	Generic	Scroller [1]	--	Side - Scroller
301	8	1	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
302	8	25	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
303	8	49	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
304	8	73	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
305	8	97	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
306	8	121	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
307	8	145	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
308	8	169	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
309	8	193	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
310	8	217	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
311	8	241	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
312	8	265	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Top
351	9	1	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
352	9	25	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
353	9	49	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
354	9	73	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
355	9	97	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
356	9	121	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
357	9	145	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
358	9	169	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
359	9	193	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
360	9	217	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
361	9	241	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom
362	9	265	Chroma Q	Color Force II 72	RGBA x4 Off [24]	Cyc Bottom

Helpful Support and Training Links

ETC Support https://www.etcconnect.com/Support/		Contact ETC Technical Support https://www.etcconnect.com/Contact/Technical-Support.aspx	
Community – EOS Consoles https://community.etcconnect.com/control_consoles/eos-family-consoles/		Support Knowledge Base Articles: https://support.etcconnect.com/ETC	
Video Tutorials – EOS Family https://www.etcconnect.com/Support/Tutorials/Eos-Family-Videos/Overview.aspx		ETC Training https://www.etcconnect.com/Training/	
ETC Search Manuals https://www.etcconnect.com/Search-Documentation.aspx?DocType=137		ETC LearningStage https://learningstage.etcconnect.com/	