The following information is new for version 1.9.9. This document is supplemental to information in the Eos v1.7 Operations Manual, Ion v1.7 Operations Manual, and Element v1.9.8 User Manual and should be used in conjunction with it.

**CEM3 Integration**

Eos Family consoles can configure dimmers and receive feedback from CEM3 processors about dimmer and rack issues as long as the rack is equipped with Advanced Feature (AF) modules.

**Enabling Feedback**

Sensor feedback and RDM must be enabled to be able to communicate with a CEM3 processor. This is done in the ECU>Network>Advanced Features>Enable Sensor Feedback.

**About System**

When `{About System}` in the [About] display is pressed, the CIA displays a list of all network devices that are connected to the console.

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**Note:** If any errors or warnings are present at the rack, the CEM3 will display in red.
About Rack

Clicking on a CEM3 in the {About System} list will open the About Rack display, which shows the following information about the rack:

- Rack Name (displays as the title)
- Type
- Ambient Temperature
- Phase A, B, C Voltages
- Frequency
- System Number
- IP Address
- Software Version
- Rack Errors

Buttons available in the About Rack screen are {Activ. Preset}, {Deactiv. Preset}, and {Clear Errors}.

Note: Clearing CEM3 errors from the console will be temporary unless the errors have been cleared at the CEM3. Errors displayed on the console will clear on their own once they have been cleared from the CEM3.

Sensor Feedback

The {Sensor Feedback} button appears when the selected address is patched to a dimmer in a Sensor rack.
{Sensor Feedback} displays the following information:

- Name (dimmer name)
- Module Type
- Rack/Position
- Rack Dimmer Level
- Rack Dimmer Source
- Recorded Load
- Actual Load

The following options can be edited from this display:

- Firing Mode
- Control Mode
- Curve
- Threshold
- Scale Minimum
- Scale Maximum
- Preheat Enable
- Preheat Timing
- AF Enable

Eos Family consoles support the following commands from this display:

- Record Load
- Clear Load
- Set Dimmer
- Unset Dimmer
- Clear Errors

**Patch**

When Sensor Feedback and RDM are enabled in the ECU and Device Discovery is enabled in Patch, the CEM3 will modify the patch automatically.

When enabled, the following items will be filled in by the CEM3:

- Type - will be Sensor Dimmer.
- Label - will be the dimmer's name, if assigned.
- Text 1 - will be the CEM3's system number, the rack number, and rack name of the dimmer.
- Text 2 - will be the circuit number.

**Channel Display**

When a channel is patched to an address that is associated with a Sensor dimmer, then the channel will indicate the state of that dimmer in the live and blind displays.

If the associated dimmer has an error or warning, the channel will show an "!".
Scroller Calibration Column

A calibration column, which shows the current calibration information for each frame, has been added to the scroller editor display.

**Note:** Calibration data will only be applied to scroller wheels that are assigned to a channel. Data will not be displayed when viewing a wheel with an empty command line.

The calibration information, that is displayed, is the DMX address that puts the frame into its center position. Information in the calibration column can be manually edited by clicking on it & typing in a new DMX address.

**Note:** Calibration data can be returned to its default by clicking on the data & pressing [Clear]. If you are entering in new data and hit [Clear], the data will return to the default and not any previously calibrated data.

Pressing the softkey {Clear Calib} will clear out the calibration data for the whole scroller wheel, returning it to the default data.

Scroller wheels and their calibration data can be copied to other channels.

[1] {Copy Scroller} [2] [Enter] - copies the scroller and calibration data from channel 1 to channel 2.

Scrollers that have calibrated data will display a “~” after their name.

**{Calibrate} Button**

The **{Calibrate}** button will now only appear on scroller parameters that are currently not at the center of a frame.

**Note:** Switching the encoders between course and fine modes has changed when acceleration is disabled. See “Course and Fine” on page 5.

**Encoders**

**Acceleration**

A toggle button has been added to Eos and Ion to disable/enable acceleration for the encoders. This button can be accessed from **Setup>Desk> Face Panel**. Acceleration is enabled by default in Eos and Ion.
With acceleration disabled, two new options will be available: \{Encoder Degrees Per Revolution\}, which is for the pan & tilt encoders, and \{Encoder Percent Per Revolution\}, which is for the other encoders. When a pan or tilt encoder is moved one revolution, the parameter will change by as many degrees as defined in Setup. The default is 30. When any other encoder is moved one revolution, the parameter will change by the set percentage of its entire range. The default is 35.

The settings for \{Encoder Degrees Per Revolution\} and \{Encoder Percent Per Revolution\} are stored with the showfile. Starting a new file will reset the two settings. Whether or not acceleration is disabled or enabled is not stored with the showfile.

**Course and Fine**

With acceleration disabled, switching the encoders between course and fine modes has also changed. Now instead of pressing the encoder down to switch modes, holding down \[Shift\] while using an encoder will put it in fine mode for as long as \[Shift\] is held down. Once \[Shift\] is released, the encoder will return to course mode.

**Note:** Acceleration is disabled in Gio. There is not an option to enable it.

**Note:** For Ion users, there is also some acceleration in the firmware for Ion’s encoders. If you turn off acceleration and move an encoder quickly, you may see that the movement of the associated parameter is slightly greater than indicated by your encoder settings.
The following information is new for version 1.9.8. This document is supplemental to information in the Eos v1.7 Operations Manual and Ion v1.7 Operations Manual and should be used in conjunction with it. Element users should refer to the Element v1.9.8 User Manual.

**New Keycap Set**

A new keycap set is available for Eos Family consoles. When the version 1.9.8 software is downloaded from [www.etcconnect.com](http://www.etcconnect.com), a prompt about ordering a keycap set will be displayed.

For all consoles, a [Shift] key has been added. See *Addition of a [Shift] key on page 7* for more information.

For Eos users, an [Address/Patch] key has also been added. This key is to the left of the [Help] key. A single press of the key will post address to the command line and a double press will take you to the patch display.

**Dimming Littlites®**

Desk lamps, such as Littlites, can be dimmed from within the Eos Family software application.

Desk lamp controls are found in *Setup>Desk>Brightness Settings*. The (Desk Lamp) slider has a range of 0% (dimmest) to 100% (brightest). The default setting is 0%. The console will set the desk lamp to this setting on startup of the application.

The desk lamps can also be controlled by holding down [Displays] and rolling the level wheel.

**Firmware Update for Eos**

Version 1.9.8 installer includes an update to the Eos firmware to enable dimming of desk lamps. Follow these steps to update your console.

**To update your Eos:**

**Step 1:** With v1.9.8 installed on your console, open the Eos Configuration Utility (ECU - Also known as the Eos Shell) either by exiting the Eos Family software *(Browser>Exit)* or by starting up the console and clicking on the *(Launching in...)* button. The ECU screen will open.

**Step 2:** Click on the *(Settings)* button. The settings window will open.

**Step 3:** Click on the *(Maintenance)* button inside of the settings window. The maintenance settings will appear in the window.

**Step 4:** Scroll down to the Firmware Update window.
Step 5: Click on the Eos Keyboard to select it for updating.
   • Eos Keyboard Rev B must be upgraded to version 1.3.
   • Eos Keyboard Rev C must be upgraded to version 1.1.
   • If you see Eos Keyboard Rev A, please contact your local ETC technical services at the phone number or email address located on page 1 of this document.

Step 6: Click the **Update** button. This will open a window.

Step 7: When the update is finished the window will say “Updated firmware successfully”, click **Ok**.

Step 8: It is recommended that you reboot your console after updating the firmware.

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**Note:**
The touchscreens and/or mouse may stop working briefly at the end of the firmware upgrade process.

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**Favorite CIA Display**

With version 1.9.8, you can now select a favorite default display for the CIA that will show when [Displays] is pressed. The standard default display for the CIA is the Browser.

The favorite display will show a gold star icon at the top of the CIA by the double arrows & lock. Displays that can be selected as a favorite, but are currently not, will show a grey star at the top of the CIA. Click on the grey star to make that display your favorite. That display will now be the new default display for the CIA. Displays that show up in the CIA but can not be the default display will not show the star icon.

The following displays can be set as the favorite CIA default:

   • About
   • Browser (default)
   • Color Picker
   • Direct Selects
   • Virtual Sliders
   • Virtual Keypad
   • ML Controls
   • Encoder Information Screen
   • Effects Status

**Collapsing and Locking the CIA on Eos**

It is possible to collapse the CIA on Eos. To do this, you can click the double arrow icon centered above the CIA. The CIA will collapse from view, exposing a larger viewing area for the display that is visible above the CIA. The double arrows will move to the bottom of the screen.

To expand the CIA into view again, click the double arrow at the bottom of the screen. The CIA will reopen.

You can lock the CIA in place to prevent it from being collapsed.

To lock the CIA, click on the lock above the browser. The double arrow above the CIA will disappear and the lock will “lock”.

To unlock the CIA, click the sunken lock again and the double arrows will reappear.
Browser

The browser title bar now shows the currently selected subfolder.

Some areas of the browser have been reordered, such as Virtual Controls are now located after Clear, and the Show Control and Park displays are now located in the Displays subfolder.

{Reorder}

A {Reorder} softkey has been added to the {Offset} options. When pressed after {Offset}, {Reorder} will reorder the preceding channel range to numeric order.

{Reorder} is also an available softkey in the Group List display. Use {Reorder} to reorder the channels to numeric order in a group.

Displaying Other Users' Manual Levels

Manual data is displayed in bright red on all consoles using the same user ID. For consoles using different user IDs, manual data from other users will display in dark red. Partition 0 consoles will display all manual data in bright red.

[Go to Cue] additions

{Manual} has been added to the [Go to Cue] softkeys. [Go to Cue] [x] [Time] {Manual} [Enter] sets up the selected cue for manual control using a fader.

Using [Go to Cue] [Home] [Enter] plays back the first cue of the selected cue list.

Cue lists other than the currently selected one can be homed as well by using the syntax, [Go to Cue] [x] [/] [Home] [Enter]. For example, [Go to Cue] [2] [/] [Home] [Enter] would execute the first cue of list 2.

[Go to Cue] [x] [/][Out] [Enter] allows you to use the [Go to Cue] [Out] command on a list specific basis. [Go to Cue] [Out] continues to affect all active cue lists.
Note: [Go to Cue] [x] [/][Out] is similar to [Go to Cue] [x] [/] [0] [Out] except that any NPs on the fader will fade to their home level.

[Go to Cue] [5] [Time] [Enter] will go to cue 5 using cue times, and also uses any associated follow/hang times to automatically trigger the subsequent cue. To go to a cue in cue time, but not trigger the follow/hang, enter (Minus Links) prior to [Enter].

Highlight, Lowlight, and Rem Dim

Note: On Ion consoles, Highlight is a softkey.

Lowlight Preset

The (Lowlight Preset), which is set in Setup>Desk>Manual Control>Lowlight Preset, is used to define the behavior of specified but not selected channels while using [Next]/[Last] in highlight mode. When in highlight mode, [channel list] or [Group] [n] [Enter] [Next] will select the channel list or group and isolate the first channel.

For example, [Highlight] [Enter] [6] [Thru] [1][5] [Enter] [Next] specifies channels 6 through 15 but channel 6 is the only channel selected. 6 is at the highlight level and 7 through 15 are at their lowlight levels. Pressing [Next] again will put channel 7 at the highlight level and 6 plus 8 through 15 at their lowlight levels. If there is no lowlight preset, these channels are not affected.

Temporary Highlight Level

When in highlight mode, the highlight preset can be overridden by setting a temporary highlight level. Using [Highlight] [at] [5][0] [Enter] overrides the highlight preset and sets the highlight level to 50. Non-intensity parameters are not affected and will use the default highlight setting or the highlight preset.

The temporary highlight level will remain until [Highlight] is pressed again or the channel is no longer selected.

Rem Dim

Rem Dim is now split into two functions, one specifically for highlight mode and one for live. The setup options (Highlight Rem Dim) and (Live Rem Dim) can have a preset assigned to their rem dim values. Channels not included in the preset will not be impacted by the rem dim command. Any NPs that are stored in the preset assigned to the rem dim option will be ignored. An intensity level for all channels can be assigned to either Rem Dim, as per previous software releases. Press (Highlight Rem Dim) [Enter] and (Live Rem Dim) [Enter] to disable the options.

Cue List and Submaster Background State

Cue lists and submasters can have their background states disabled. Background states are enabled by default. When enabled, the content of the cue list or submaster will act as a background or previous state for other cues and submasters. When a submaster has its background state disabled, a “D” will be displayed in the Submaster List background column. When a cue list has its background state disabled, a “D” will display in the Cue List Index background column.

For example, cue 1 has channel 10 at 25%. Submaster 1 is raised and has channel 10 at 50%. Submaster 2 is then brought up and has channel 10 at Full. When submaster 2 is lowered to zero, control will be returned to submaster 1. If submaster 1 is lowered to zero, control will return to cue 1.

Using the above example, if submaster 1 has its background state disabled, which makes its content unavailable as a background state, then when submaster 2 is lowered to zero, control would return to cue 1 and not to submaster 1.
To disable a submaster’s background state:

- `[Sub] [9] {Background} [Enter]`

To disable a cue list’s background state in the Cue List Index:

- `[Cue] [1] {Background} [Enter]`

Submaster {Restore} Mode

Submasters can be placed into restore modes of minimum or previous, which is the default. When a submaster is in the restore to previous mode, the restore column of the submaster list display will be blank. When in minimum mode, ‘Min’ will display in the restore column.

The restore mode of previous means that when the submaster is returned to zero, control will be restored to the background value, such as another submaster or a cue.

The restore mode of minimum means that when the submaster is faded down, control does not go to the previous background state but to the parameters’ minimum value.

To toggle the restore mode between “Previous” and “Min”:

- `[Sub] [8] {Restore} [Enter]`

Releasing Content From a Playback Fader

The following commands are available for fader control:

- `[Off] + [Load]` - returns control to the background fader, either a cue or a submaster, and stops any effects that are running on that fader. If there is no background value, the intensities will just fade out.

  **Note:** Associated pending and current cues will remain when using `[Off] + [Load]`. Pressing `[Go]` will run the cues in their current sequence.

- `[Release] + [Load]` - behaves like `[Off] + [Load]` except that it sets the pending cue to the first cue in the list and removes the active cue.

- `[Shift] + [Load]` - behaves like `[Release] + [Load]` except that it removes the content entirely from the fader. Pressing `[Shift] + [Load]` on an empty playback fader will unmap the fader.

Releasing Content From a Submaster

The following commands are available for releasing content from a submaster:

- `[Off]` - stops any running effects and fades out according to the {Restore} mode of the submaster.


- `[Shift] + [Load]` - behaves like `[Off]` and `[Release]` except that it will also unmap the fader.

  **Note:** When a submaster on a motorized fader is released or turned off, the fader will home.

{Fade By Rate} for Effects

{Fade By Rate} has been added as an option for an effect’s entry and exit modes.

On entry, {Fade by Rate} increases the rate of the effect as it enters. If an effect submaster has an entry mode of {Fade by Rate}, the submaster will control the rate between 0 to 100.

On exit, {Fade by Rate} decreases the rate of the effect as it exits.
### {Mark Time} in Setup

This field, which is located at **Setup>Show>Show Settings>Mark Time**, allows you to set the time that mark instructions will use. When **Mark Time** is disabled, which is the default, mark instructions will use cue timing unless overridden with discrete timing. When the user enters a mark time in setup, all NPs that mark (either through referenced marking or automark) will use this time.

The only way to override setup mark time is to use discrete timing.

Clearing the **Mark Time** field sets it back to disabled. Select **Mark Time** and hit [Enter] to disable the default mark time.

### Changes to About

**About Channel Background Display**

The About Channel Background screen tells you what value a parameter will assume when the current control source is removed. The background data will be represented by the standard color coding scheme.

The DMX column has moved from the About Channel Background display to the About Channel Current Values display.

**About Channel Usage Display**

Two columns have been added to the usage display. One shows the groups that the selected channel is stored and the other column lists the cues in which the selected channel is active, which means its levels are above zero.

### Additions to [Recall From] and [Copy To]

In live, you can use [Sneak] with [Recall From] or [Copy To] to fade in the change.

For example, **[1][0] [Recall From] [Cue] [2] [Sneak] <Time> 7 [Enter]** would recall the recorded data that cue 2 has for channel 10 and sneak it in 7 seconds.

The **Only Levels** and **Only Active** softkeys can be used with [Recall From] and [Copy To] if no channel selection had been previously made. For example, **[Recall From] [Cue] [1][0] {Only Active} [Enter]** recalls data from only the active channels, which are those channels with intensities above 0.

[Recall From] can be used to recall a channel selection from a record target. For example, **[Recall From] [Cue] [2] [Enter]** would result in a selection of the channels used in that cue. Pressing [At] afterwards would post a numeric list of those channels to the command line.
Select Active and Select Manual

**Note:** To access `{Select Active}` and `{Select Manual}` on Ion, press [Shift] + [Select Last].

On a completed command line, using [At] or [Select Last] after [Select Active] or [Select Manual] will post the numeric channel list to the command line.

For example, cue 1 is active, and has channels 1 through 5 at full. Using the syntax, [Select Active] [Enter] [At] will post channels 1 through 5 onto the command line.

Another example, Channels 10 through 20 have a manual level of 75. Using [Select Manual] [Enter] [Select Last] will put channels 10 through 20 onto the command line.

Creating Scrollers and Wheels

Without having to first patch a device, it is now possible to create scrollers, color wheels, gobo wheels, and effect wheels from the {Attributes} tab in patch.

99,999 Channel Count

The maximum allowable channel count in Setup>Show>Show Settings>Num of Channels is now 99,999. The default is 5,000. Only 10,000 channels can exist in the patch but they can be distributed throughout the entire 99,999 channel count.

**Note:** Every part in a multipart channel will count as an additional channel for the channel count.

Addition of a [Shift] key

Button pushes on an Eos Family console or external keyboard will now register on the down edge of the push, meaning that commands will be processed when the button is pushed down not when it is released. To aid with maintained and combined button pushes, a [Shift] key has been added. [Shift] replaces [Follow/Hang], which is now a softkey, {Follow/Hang}. Follow can also be accessed with [Shift] + [Delay] and hang with [Shift] + [Delay] [Delay].

Shortcuts

The following is a list of button pushes, single, maintained, or combined, that have changed with the addition of the [Shift] key. It is highly recommended that you read and familiarize yourself with this list. Most changes impact all of the Eos Family consoles. If only a specific console or consoles are impacted, their names will appear in parentheses.

**Facepanel and Displays**

- [Shift] + [Escape] - locks and unlocks facepanel.
- [Escape] + [Encoder Page Button] - locks the encoders. Pressing any encoder page button unlocks.
- [Encoder Page Keys] + [Number] - pages to the desired encoder control page.
- [Shift] + [Tab] - closes all tabs except Live/Blind and the Playback Status display.
- [Shift] + [Live/Blind] - advances the displays to the next instance of live or blind.
- [Live] - resyncs the selected cue to the most recently activated cue.
- [Blind] - when already in blind, resyncs to the active cue in live.
- [Params] + [Focus] / [Color] / [Beam] - expands/suppresses categories on displays. (Eos)
- [Data] + [Focus Encoder Page] / [Color Encoder Page], etc - expands/suppresses categories on displays. (Ion)
- [Flexi] + [Time] - invokes flexi time view on displays.
• [Flexi] + [Encoder Paging Keys] - invokes flexi encoder states.
• [Shift] + [Label] (maintained press) - toggles the display between default view of referenced data and alternate view. Keep [Shift] depressed to page.
• [Time] (maintained press) - toggles the display to show discrete timing. (Eos) Keep [Time] depressed to page.
• [Shift] + [Time] - toggles the display to show discrete timing. (Ion) Keep [Shift] depressed to page.
• [Displays] + Level Wheel - dims the littlites.
• [Data] (maintained press) - toggles the display to show data living under referenced data. Keep [Data] depressed to page.
• [Format] + Level Wheel - zooms the display in focus.
• [Fader Page] + Rate Wheel - rolls the selected fader page. (Eos)
• [Fader Page] + [#] - select a fader page on integral faders. (Eos)
• [Shift] + [Load] - removes content from a fader.
• [Fader Controls] + [Bump Button] - select a fader page on wings.
• [Shift] + [Select] - resets display columns.
• [Shift] + [Up], [Shift] + [Down], [Shift] + Level Wheel - resizes columns.
• [Shift] + [Left], [Shift] + [Right] - moves columns.

Operations
• [At] [Enter] - removes move information from selected channel/parameters. If done in live, posts the value from the previous cue (numeric) manually. If done in blind, allows the value from the previous cue to track in.
• [Sneak] [Sneak] - releases NPs of selected channels and self terminates.
• [At] [At] - sets to level as defined in Setup. (Ion)
• [Full] [Full] - sets selected channels intensity to full and self terminates.
• [Thru] [Thru] - The thru command accesses only the channels displayed in the current flexi-state (unless the channel range specified is NOT in the current display). [Thru] [Thru] selects the range regardless of the flexi mode.
• [Undo] - clears an unterminated command line. Otherwise opens the undo controls.
• [Undo] [Undo] - posts last undoable command for undo.
• [Shift] + [Sneak] - makes manual data “unmanual”. It leaves the values as they are, but they are then no longer available for update or record only operations. When executed from an empty command line, this affects all manual data. When done with a channel selection, this affects only those channels.
• [Shift] + [Full] - flash on.
• [Shift] + [Out] - flash out.
• [Shift] + [+] - +%.(Ion)
• [Shift] + [-] - -%.(Ion)
• [Shift] + [Update] - shortcut to save.
• [Timing Disable] + [Go] - cuts the next cue.
• [Timing Disable] + [Back] - cuts the last cue.
• [Recall From] [Recall From] - posts recall from cue to the command line.
• [Select Last] [Select Last] - repeats last command line, unterminated.
• [Select Active] [Select Active] - select active minus submaster contributions.
• [Shift] + [Select Last] - posts additional channel selection options to the softkeys.
• [Update] + [Bump Button] - To update a specific submaster.
• [Label] [Label] - appended to a record target command, clears the current label, this includes show file labels.
• [Shift] + restore manual channel faders - resets faders to zero without asserting control.
• [Shift] + [Delay] - posts follow.
• [Shift] + [Delay] [Delay] - posts hang.
Startup and Shutdown Macros

Your console can run specific macros at startup and shutdown. This is done in Setup>Show>Show Settings>Startup Macro and Setup>Show>Show Settings>Shutdown Macro.

The startup macro will trigger after the console initialization has completed. The shutdown macro will trigger at power off, not when exiting the application.

Note:
Startup and Shutdown macros are a system wide setting and triggered from the Primary. Individual clients can not have different macros for startup and/or shutdown.

Outputting Custom MIDI Strings

A cue or a macro can be used to fire a MIDI raw string using the {Execute} command. When {Execute} is pressed, a softkey for {MIDI Raw} will be available. When {MIDI Raw} is selected, the virtual keyboard will open for typing the string. When strings have already been created, the most recently used string will post to the command line when {MIDI Raw} is selected. The [Next] and [Last] buttons can be used to scroll through previously used strings. {MIDI Raw} [Enter] can be used to clear out the string.

In the ECU>Settings>Local I/O for Ion, make sure {MIDI TX Group ID} is correct, that is used to determine to who the console is outputting MIDI.

This feature is not available for Eos.

Priority Control for Avab/UDP

A priority level setting has been added for Avab/UDP protocol. This setting is found in ECU>Settings>Network>Protocols>Avab/UDP.

The priority levels range from 0-200. The default is 0, which is no priority level. 1 is the lowest priority level and 200 is the highest. When set to no priority level (0), the data will merge according to HTP.

A backup console will receive its Avab/UDP priority level from the primary. The backup will then output at one priority higher than the primary, unless the primary was set to the highest priority of 200.
The following information is new for version 1.9.5. This document is supplemental to information in the Eos v1.7 Operations Manual, Ion v1.7 Operations Manual, and Element v1.6 User Manual and should be used in conjunction with it.

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**Non-Dim Indicator**

When a channel has been patched as a non-dim fixture type, the channel will display in live/blind with a “ND” label.

**Flash On & Flash Off**

Pressing `[High_Low] & [Full]` together will put all the selected channels at full and “Flash On” will be posted to the command line.

Pressing `[High_Low] & [Out]` together will put all the selected channels to out and “Flash Off” will be posted to the command line.

Releasing the keys will return the channels to their previous state.

**Grandmaster Exempt Channels**

Channels can be exempt from grandmaster, blackout, rem dim, and go to cue 0 operations. Channels are set to be `{GM Exempt}` in the `{Attributes}` display in patch.

**Playback Status Display Time Countdown Option**

In the Playback Status Display (PSD), holding down `[Time]`, while a cue is fading, will display the cue category times counting down in the cue list display area. The default action is to show the total time not the countdown. To always show the countdown, a `{PSD Time Countdown}` option has been added to Setup>Desk Settings>Displays. When the `{PSD Time Countdown}` is enabled, the cue category times will countdown as a cue is fading. To see the total time, hold down the `[Time]` key. `{PSD Time Countdown}` is “disabled” by default.

**Additions to Print to .pdf**

A few new options have been added to print to .pdf:

- Channels used in cues but never move above zero.
- Unused patched channels, which are patched channels that never appear in any cues, subs, presets, palettes, or effects.
- Effects usage

**[Time][]{/*}**

The `[]` key can be used with `[Time]` to control the intensity upfade and downfade times, and delays.

- `[Cue] [n] [Time] [] [5] [Enter]` - places a downfade time of 5 on the cue, while splitting the upfade, which preserves its current value.
- `[Cue] [n] [Time] [] [Enter]` - removes the downfade time and makes the downfade match the upfade.
- `[Cue] [n] [Time] [n] [] [Enter]` - sets the upfade time, and splits the downfade without splitting the FCB times.
- `[Cue] [n] [Time] [n] [] [] [Enter]` - changes only the intensity upfade time and splits the downfade and FCB times preserving their current value.

**Dual Set of Direct Selects**

When direct selects are opened on a tab, two sets of direct selects will now be displayed. Century and Millennium buttons will display when direct selects are in expand mode.
Trackball Settings

{Trackball Settings} have been added to Browser>Setup>Desk Settings.

{Trackball Tick Freq.}
This fader adjusts the trackball tick frequency. The default is 200 ticks.

{Trackball Acc. Fctr}
This fader adjusts the trackball acceleration factor. The default is 800 zip.

{Swap Pan/Tilt}
This touchbutton swaps the directions for Pan and Tilt. The default for Pan and Tilt is X and Y, respectively. When this button is enabled, Pan and Tilt will be Y and X.

{Reverse Pan}
This touchbutton reverses the direction of Pan.

{Reverse Tilt}
This touchbutton reverses the direction of Tilt.

{Reset}
This button resets all five trackball settings back to their default.

Encoders in Blind
With 1.9.5, the encoders and level wheel are disabled by default when in the blind display. Pressing an [Encoder Page Keys], for example [Color], will enable the encoders and level wheel. When the encoders are disabled, trackball functionality for pan and tilt will also be disabled.

Note: Encoders can also be locked in live by pressing [Clear] & [Encoder Page Keys]. To unlock, press any of the [Encoder Page Keys].

Flexi Encoders
Holding down [Flexi] and an [Encoder Page Keys], for example [Color], will put the encoders into Flexi mode. In Flexi mode, any empty locations for parameters not applicable for selected channels will be suppressed.
Delaying Effects in Cues and Submasters

A delay can be placed on an effect in a cue or submaster by using the syntax `[Effect] [n] [Delay] [n] [Enter]. [Effect] [n] [Delay] [Enter] removes the delay.

**Note:** If an effect delay is set in Live, the cue or submaster must be recorded to include the delay.

A delay column has been added to the Effect Status display. When an effect is in delay mode, the column will display the countdown for the delay.

When an effect is delayed, a "*" will display by the effect number in the playback status display external links column.

Changes to Update

[Update] [Thru]

Using [Update] [Thru] allows you to update from a current cue to a destination cue without first entering the current cue's number.

*For Example:*

If you are currently in cue 5 and you want to update through cue 10, you would use the following syntax:

• `[Update] [Thru] <Cue> [10] <CueOnly/Track> [Enter]`

[Update] [+]

[+] can be used to specify a range of cues for updating. [+] can also be used with [Record] and [Record Only].

**Note:** If no cue number is entered before the [+], the current active cue will be used.

*For Example:*

To update only cues 5, 10, and 15:

• `[Update] <Cue> [5] [+ <Cue> [10] [+ <Cue> [15] <CueOnly/Track> [Enter]`

To update the current cue and cue 7:

• `[Update] [+ <Cue> [7] <CueOnly/Track> [Enter]`

Macro Modes

In the Macro Editor display, macros can now be assigned different modes to run in. A new softkey {Macro Mode} has been added, and the three modes are {Background}, {Foreground}, and {Default}.

{Default}

When a macro in default mode is run manually, it runs in the foreground (i.e., the command line) on the device that fired it. When a macro in default mode is executed by a cue or via show control, it runs in the background on the master device.

Running a macro on a master device only matters when the macro changes the displays of the device it runs on such as snapshot and flexichannel macros.
{Background}

When a macro in background mode is run manually, it runs on the device that fired it but will not affect its command line.

A macro in background mode that is run from a cue or via show control will run on the master device but will not affect the master's command line.

When a background macro is running and includes a link to another macro, or is currently waiting, pressing the [Macro] button will stop it.

{Foreground}

When a macro in foreground mode is run manually, it runs on the device that fired it and affects its command line.

If a foreground mode macro is fired via show control, it runs on the master device and will affect its command line.

If a cue fires the macro, it will run on the device whose user last pressed [Go] on that playback. If a foreground macro is fired from a cue that is executed from another cue list, the macro will run on the device that last pressed [Go] on the cue’s playback but not the playback that triggered the executed cue.

{Enable} / {Disable} for Macros

Macros for options with enable and disable, such as Auto-Mark in setup, have a toggle action between enable and disable. There are now {Enable} and {Disable} softkeys in the Macro Editor for creating absolute actions instead of toggles for those macros.

Manual Master Cue Lists

Manual master is a new condition for cue playback. In this mode, cues are triggered manually by faders without using the [Go] button. With a cue list on a fader set to manual master, a cue will fire in manual time when the fader is moved from 0% or from Full. This is all done without hitting [Go]. Any cues in a manual master list not fired by moving a fader, but triggered via [Go] instead, will fade according to cue’s timings.

Note: Follow and hang times will be ignored when firing a cue with a manual master fader.

To set a cue list to manual master, use the {Fader} softkey in the Cue List Index. To access the cue list index, press [Cue] [Cue]. {Fader} will toggle between Proportional Master, Intensity Master, and Manual Master. The default is Proportional Master.

When manual master has been selected as the fader mode for a cue list, the initials ‘MM’ will appear above the cue list label field. Initials ‘IM’ will display when set to intensity master mode.

Timing is scaled. So, if color has a 5 count delay, and the duration of the cue is 10, the color transition will not begin until the faders manually reach 50%.)
**Shielded Submasters**

Submasters can now be shielded. The content of a shielded submaster is automatically made exclusive and can't be controlled by anything other than that submaster, including by manual control.

To set a submaster to shielded, press the `{Priority}` softkey. `{Priority}` toggles through three options, Independent, Shield, and No Priority. No Priority is the default.

Channels stored to shielded submasters will display in yellow with a superscript 's' beside it.

If channel parameters stored to shielded submasters were previously stored to cues or other submasters, those instructions will be ignored on playback.

---

**Dual Scroller Fixtures**

For better control of dual scroller fixtures, the scrollers are now addressed as 0-100% instead of by frame numbers.

**Changes to Mark**

Automarks now display in blind in the same way that they are displayed in live.

Marked cues that are played out of sequence will fade to their marks immediately. When firing a cue that has a linked cue, the cue will mark like the linked cue is the next cue. The marks will fade using the active cue’s timing.

 `{Earliest M}` is a softkey that will mark to the earliest cue that already has a mark flag. If a mark cue doesn't exist, `{Earliest M}` will behave like `{Earliest}` and will mark to the earliest possible cue.

When bringing up the intensity of a fixture that is in a marked state, all the parameters of that fixture will be made manual and the current NPs settings will display. This is done so you won't need to use `{Make Manual}` when storing to a cue.

---

**Note:** Since Element only has one cue list, Manual Master is a setup option and can be found at Setup > Show > Show Settings > Fader Mode.

**Note:** Inhibitive submasters cannot be shielded.
Snap Parameters

Certain parameters may not want to be subjected to cue timing. Those parameters can be set to snap. By default, Eos family consoles will snap the parameters listed in the following table:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Address</th>
<th>Home</th>
<th>Park</th>
<th>Snap</th>
<th>DMX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Media</td>
<td>105</td>
<td>0</td>
<td></td>
<td>enabled</td>
<td>0</td>
</tr>
<tr>
<td>Edge</td>
<td>106</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Zoom</td>
<td>107</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Position MSpeed</td>
<td>108</td>
<td>0</td>
<td></td>
<td>enabled</td>
<td>0</td>
</tr>
<tr>
<td>Scroller MSpeed</td>
<td>109</td>
<td>0</td>
<td></td>
<td>enabled</td>
<td>0</td>
</tr>
<tr>
<td>Beam MSpeed</td>
<td>110</td>
<td>0</td>
<td></td>
<td>enabled</td>
<td>0</td>
</tr>
</tbody>
</table>

In the [About] channel patch screen, a snap column has been added to show which parameters for that channel are currently set to snap.

If you wish to disable any of the default snap parameters or enable snap for parameters that are not by default enabled, you will need to first create a copy of the fixture profile. In the fixture editor for the copied profile, change the parameter settings via the Snap Enable/Disable column.
**Eos Family v1.9.5 Operations Manual Supplement**

**Color and Gel Pickers for ‘Non-standard’ LED Fixtures**

The color and gel pickers can now be used with non-standard LED fixtures, such as fixtures that use RGBA, RGBW, and RGBAW.

**Note:**

The Amber output will live halfway between red and green. White output will not be driven by hue/saturation directly.

**Cue Release to Last Active Source**

In previous versions of the Eos Family software, pressing the [Release] (on Eos), {Release} (on Ion) key and a fader’s [Load] button would cause the playback fader to fade back to the master playback’s current cue, or fade out the intensity if the master playback’s cue had no levels for that parameter. This would also release the cue list from that playback fader.

With version 1.9.5, pressing the [Release] / {Release} key and a fader’s [Load] button will fade to the most recent playback that was controlling that same parameter. [Release] / {Release} will use the assert time assigned in the Setup display. Any follows or effects running will stop.

**Note:**

The last active effect will not be played back.

**For Example:**

Cues 1/1, 2/1, 3/1, and 4/1 have been fired and each cue had a level for channel 1. Pressing the [Release] / {Release} key and a fader’s [Load] button will fade cue 4/1 to 3/1, pressing again will fade 3/1 to 2/1, and so on.

When there is an active cue and release is used, the cue list will reset to the first cue. If there is no active cue when release is used, the playback will be cleared making it available for another cue list.

**String I/O**

In 1.9.5, Eos Family consoles have the ability to send strings, which can be used to send commands to other devices, such as Paradigm®, Crestron®, and other media servers.

The ability to send and receive strings can be done via RS232 ports (if equipped), ACN String EPI, and UDP messages.

**Configuration**

The following new settings for string I/O are available in Settings>Show>Show Control:

- **{String RX}** - This setting will enable receiving strings on all Serial RX formats.
- **{String TX}** - This setting will enable sending strings on all Serial TX formats.
- **{String RX Group Ids}** - This button is for setting up which serial groups the console will listen to. Group Ids are from 1-32. It can be set to listen to multiple group ids by using [Thru] and [+].
- **{String TX Group Ids}** - This button is for setting up which serial groups the console will send to. Group Ids are from 1-32. It can be set to send to multiple group ids by using [Thru] and [+].
- **{String RX Port}** - Setting for the UDP port that the console will receive strings.

---

*Note:* You will need to patch your fixtures to their new fixture type if you change which parameters are to snap or not.

*Note:* Discrete timing for parameters with snap enabled will override the snap function.

*Note:* The last active effect will not be played back.
Sending Strings

There are three ways that Eos family consoles can send strings, from cues, macros, or user events.

From Cues

To send a string via a cue, it must be part of the external links. When the cue is executed, the string will be sent to all enabled string interfaces. When the {Execute} softkey is used, a {String} softkey will be displayed. When {String} is pressed, the alphanumeric keyboard will display and text entered will be displayed in the External Links field of the Playback Status Display.

If there is already a string linked to the selected cue, the string will be displayed for editing.

When [Cue] [n] {Execute} {String} is on the command line, pressing [Next] / [Last] will step through all the strings used in that show file. You can then modify the displayed string to simplify the process of entering similar strings.

From Macros

A {Send String} softkey is available in the Macro Editor display. Any text entered after the string command in the macro will be sent to all string interfaces when that macro is fired.

From User Events

The {String MIDI TX} has been added to Setup>Show>Show Control. When enabled, this will cause the console to send serial strings when certain actions happen. Those actions are:

- A cue is fired.
- A cue is stopped.
- A cue is resumed.
- A sub is bumped up.
- A sub is bumped down.
- A macro is fired.

Virtual Media Server

Virtual Media Server is a feature for Eos and Ion consoles. Please see the attached chapter on Virtual Media Server.

Note:

To use the Virtual Media Server feature on Eos and Ion, additional software must be installed. The Eos Family Pixel Mapping Installer software and the Eos Family Pixel Mapping Installer v1.0.0 Release Note are available for download on the ETC website, www.etcconnect.com.
External Monitor Arrangement

The External Monitor Arrangement display in the Eos Configuration Utility has been changed.

Buttons available in the External Monitor Arrangement display are:

- **{Identify}** - displays the video port numbers that your monitors are connected to on the physical monitors to confirm where you have placed them.
- **{Enabled}** - When checked, the monitor is available for use. The console will display the {Enabled} box checked for any monitors it recognizes.
- **{Primary}** - selects which monitor will display the Eos Configuration Utility and Central Information Area (CIA). On Eos, the primary is locked to the right touchscreen on the console.
- **{Resolution}** - sets how many pixels the monitor will display.
- **{Color Depth}** - sets how many colors will be displayed.
- **{Refresh Rate}** - sets the number of times in a second the monitor refreshes.
- **{Orientation}** - sets the monitor layout.
- **{Apply}** - will save and use your settings. A window will open asking if you want to **{Keep Changes}** or **{Revert}** back to the defaults. **{Revert}** will be selected within 15 seconds if nothing else has been selected first.

Note: The selected monitor will display in yellow. Monitors can be dragged to any of the surrounding black boxes to mimic actual monitor layout.
Changes to Radio Focus Remote
A channel check mode has been added to the Radio Focus Remote (RFR). This is the default screen on the RFR. Access to macros has been added to live mode. Order of some softkeys in live and playback modes has changed.

Channel Check Mode
This mode allows you to perform channel and address checks. The default is Channel. Check will automatically be placed at the end of every command while in this mode.

The right thumbwheel acts as next/last buttons. The left thumbwheel doesn’t have a function in this mode.

The following softkeys are available for Channel Check mode:
- Address
- Last
- Full
- Next

Live Mode
The following softkeys are available on page one of live mode:
- Group
- Rem Dim
- Sneak
- Full
- Out
- Macro

The following softkeys are available on page two of live mode:
- Rec
- Update
- Time
- QOnly/Track
- Address

Playback Mode
The following softkeys are available for playback mode:
- Sub
- Load Q
- Stop/Back
- Out
- Go to Q
- Go

Note: Only supported options will display. Monitor options may vary.
Chapter 26
Virtual Media Server

This chapter contains the following sections:

- About Virtual Media Server. .................. 306
- Pixel Mapping in a Multi-Console System. ........... 318
About Virtual Media Server

The virtual media server feature of Eos and Ion is comprised of two areas, the virtual media server and its virtual layers, and pixel maps. These areas are completely dependent on each other.

The virtual media server is a feature used to create layouts of fixtures, known as pixel maps, which then applies media content (images, movies, text, and procedurally generated effects) by way of virtual media layers to the pixel map.

A pixel map is a layout of fixtures onto a grid, which determines order of playback and how the data will be interpreted and outputted to create the desired image or effect. A pixel map creates relationships among the channels in an X-Y grid so that the channels and their parameters can be associated with pixels in an image.

A virtual media layer contains one piece of media content. A pixel map can contain up to 12 virtual media layers, which can be stacked on top of each other or used separately.

Media Content

Images, movies, text, and html files can be applied to a pixel map. A stock library of media is provided when the Eos Family Pixel Mapping Installer is installed. Please see the Eos Family Pixel Mapping Installer v1.0.0 Release Note for installation instructions.

Additional media content can be installed. Supported media file formats are:

- Images - .png, .jpg, .gif, .tiff, and .svg
- Movies - any format that QuickTime® supports, (.3gp .3gpp .3gpp2 .3gp2 .3g2 .3p2 .flc .h264 .hdmov .m4a .m4b .m4p .moov .mov .movie .mp4 .mpg4 .mpg4 .mqv .mv4 .pic .pict .qif .qt .qti .qtif .tvod .vid)
- Text - .txt
- HTML - .htm, .html

Importing Media Content

There are three ways to import media. Those methods are:

- Import All Pixel Map Media - An automatic method for importing media.
- File Manager - A manual method for importing media.
- Import Show Pixel Map Media - An automatic method of importing all media needed for the current show file. Used by backup and clients. For more information on synchronizing media content, See “Synchronizing Media Archives” on page 319.

File names for media content need to follow the naming convention of file number_filename. For example, 002_Volcano.mov is a file name that would be recognized. When importing by using the file manager, you need to number the files prior to importing. However using Import All Pixel Map Media allows you to specify the library and file numbers, and the console will autonumber the file names as needed during the import process.

Using Import All Pixel Map Media

To import go to Browser>Import>Import Pixel Map Media>Import All Pixel Map Media and select the device with the media on it.
Options in this display include:

- **{Library(1-255)}** - selects the library to import media.
- **{File(0-255)}** - selects the file number.
- **{Reorder Libraries}** - specify whether or not the library on the source device will be renumbered. If the source device's library is not numbered, it will be assigned the specified library number.
- **{Reorder Files}** - specify whether or not the file(s) on the source device will be renumbered. If the source device's file(s) is not numbered, it will be assigned the specified file number.
- **{Overwrite}** - overwrite the existing media files.
- **{Start Import}** - begins the import process. A progress bar will appear to indicate the status of the import process. When finished, click **{Done}**.
- **{Cancel}** - stops the import, and exits the display.

**Importing with the File Manager**

To import go to ECU>Settings>Maintenance>File Manager.

---

**Note:** Make sure your files follow the naming convention of file number_filename. If the files do not, they will not be recognized as media files. You can always import using Import All Pixel Map Media instead.

Select the device with the media on it in one window and in the other window select the MediaArchive folder. Inside the MediaArchive folder, you will see numbered folders. Those folders correspond to libraries. You can copy or move files.
Exporting Media Content

There are two ways to export media. Those methods are:

- Export Pixel Map Media - An automatic method for exporting media.
- File Manager - A manual method for exporting media.

**Using Export Pixel Map Media**

This is an automatic method of exporting all the media used in the current show file. This includes any pixel map media stored in cues, presets, submasters, etc.

To export, go to Browser>Export>Export Pixel Map Media. Select the device you want to export the media content to.

There are only two options available in this display:

- **{Start Export}** - begins the export process. A progress bar will appear to indicate the status of the import process. When finished, click **{Done}**.
- **{Cancel}** - stops the export and exits the display.

**Using File Manager**

Exporting with the file manager is very similar to importing with it. You select the files in the MediaArchive folder that you wish to export, and you can either copy or move them to your device.

**Patching the Virtual Media Server and Layers**

To get started using this feature, you must first patch a channel as the Virtual Media Server and additional channels as layers.

You will need to be in the patch by channel display.

In the patch display, enter the channel number that will be your virtual media server. Press **{Type}** then **{Manufctr}** to display the fixture library. Select **{ETC}** and then **{Virtual_Server_Ver_1.0}**.

Enter the channel numbers that will be your virtual media layers. Press **{Type}** then **{Manufctr}** to display the fixture library. Select **{ETC}** and then **{Virtual_Layer_Ver_1.0}**.

For information about **{Virtual Effect Layer}**, See “Effect Layers” on page 316.

---

**Note:** No addresses need to be assigned in patch for the virtual media server and layers.
Creating a Pixel Map

A pixel map is a layout of fixtures onto a grid, which determines order of playback and how the media content will be interpreted and outputted to create the desired image or effect.

A pixel map creates relationships among the fixtures in an X-Y grid so that the channels and their parameters can be associated with pixels in an image.

Limitations of pixel maps include:
- 10 pixel maps per show file
- 12 layers per pixel map
- 16,384 pixels per pixel map grid

Open up the Pixel Map display, Displays>More SK> Pixel Maps

Note: Hovering your cursor above the pixel map will display the column and row location for the pixel.
In the Pixel Map display, any numeric entry is assumed to be a Pixel Map. Each pixel map must have a unique number.

To create a pixel map, type in the number you want to assign to it and hit [Enter].

The virtual media server and layer(s) need to be assigned to the pixel map. Using the softkeys, select {Server Channel} and the channel you patched as the Virtual Media Server.

Then select {Layer Channels} and the channels you patched as Virtual Media Layers.

In this display you can also label the pixel map, assign the interfaces it will use, and adjust the width and height.

Column and row guides can be created numerically in either the Pixel Map or in the Edit displays. The guides can aid in viewing a pixel map.

When that basic information has been assigned to the pixel map, press the {Edit} softkey to select the fixtures.

In the edit screen, you will be able to define the array and types of fixtures. To do this, you can select pixels from the map by using a touchscreen or by holding down the left button on a mouse and dragging across the pixels you wish to select.

Once the pixels have been selected, you need to select their fixture type and then assign the starting address. By default, the addresses will be organized in rows starting from the left to the right and top to bottom. The edit screen shows a representation of the current mapping.

Note: Any pixel can have its size adjusted for better representation of the actual fixtures. This is done by selecting the pixel and then dragging the vertical and/or horizontal borders.

Note: A pixel map can be moved within the edit display by holding down the right mouse button. The map can be zoomed either by using a mouse wheel or by holding down [Format] and moving the level wheel.

Options available for changing the mapping:

- {Horizontal Order} - toggle state from left to right to right to left
- {Vertical Order} - toggle state from top to bottom to bottom to top
- {Direction} - toggle state from rows to columns
- Click the {Apply} button to see the changes made while still in the edit display.

In the edit display, the softkeys will repaint to the following mapping options:

Note: To see the changes made by using the softkey mapping options, you don't need to press {Apply}.

- {Rotate 90}
- {Flip V}
- {Flip H}
- {Invert}

The {Flash} button can be used to check the address output while still in the edit display.

When editing is finished, press the {Done} softkey to exit the edit display.
Working with the Virtual Media Server

Before you begin working with the Virtual Media Server, you will want to open the Pixel Map Preview display, Displays>Virtual Controls>Pixel Map Preview. For manipulating the pixel maps, you can use either the encoders or the ML Controls (Displays>Virtual Controls>ML Controls).

**Note:** For any output, the Server Channel must be set to a level along with any layers you are using.

Server Channel Controls

When working with the Server Channel, the following controls will be available:

- {Intensity}
- {Pan} and {Tilt} - used to adjust layers within the frame.
- {Color}
- {FoView} - perspective
- {Crossfade} - used to adjust the priority when devices in the pixel map are also used as desk channels. -100 gives the pixel map priority, and +100 give the desk channel priority. At 0 (the default) the output is calculated HTP for intensity and LTP for NPs.
- {Scale}
- {Aspect Ratio}
- {XYZ Rotation Controls}

Layer Channel Controls

When working with the Layer Channels, the following controls will be available:

- {Intensity}
- {Pan} and {Tilt} - used to adjust the image of the individual layer within the frame.
- {Color}
- {Negative On/Off}
- {Image Brightness} - this varies from intensity. The following images illustrates the differences between image brightness and intensity.

![Pixel Map 1 100%](image1)

0% Brightness, Full Intensity

![Pixel Map 1 100%](image2)

50% Brightness, Full Intensity
• {Playback Mode 1}:
  • {Display Centered}
  • {Display In Frame}
  • {Display Out Frame}
  • {Play Loop Forward}
  • {Play Loop Reverse}
  • {Play Once Forward}
  • {Play Once Reverse}
  • {Stop}

• {Playback Speed}

• {In Point} - determines where in the clip (frame number) you want to enter in.

• {Out Point} - determines where in the clip (frame number) you want to exit.

• {Mix Modes} - sets how the layers will interact. The following table shows the various mixer modes available. To illustrate the modes, the following layers were used:

![Top Layer](image1.png)

![Bottom Layer](image2.png)
<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>{Over} (Default)</td>
<td>Top layer blended with bottom layer</td>
<td></td>
</tr>
<tr>
<td>{In}</td>
<td>Top layer with opacity reduced by opacity of bottom layer</td>
<td></td>
</tr>
<tr>
<td>{Out}</td>
<td>Top layer with opacity reduced by inverse opacity of bottom layer</td>
<td></td>
</tr>
<tr>
<td>{Atop}</td>
<td>Top layer with opacity reduced by opacity of bottom layer and then blended with bottom layer</td>
<td></td>
</tr>
<tr>
<td>{Add}</td>
<td>Top and bottom layers color and opacity added together</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>Description</td>
<td>Result</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>{Subtract}</td>
<td>Top and bottom layers color and opacity subtracted from each other</td>
<td></td>
</tr>
<tr>
<td>{Multiply}</td>
<td>Top and bottom layers color and opacity multiplied together</td>
<td></td>
</tr>
<tr>
<td>{Screen}</td>
<td>Top and bottom layers colors inverted and then multiplied together</td>
<td></td>
</tr>
<tr>
<td>{Overlay}</td>
<td>Does a multiply or screen effect based on the lightness or darkness of the bottom layer</td>
<td></td>
</tr>
<tr>
<td>{Lighten}</td>
<td>Top layer’s color merges with bottom layer’s color, with the lighter color winning</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>Description</td>
<td>Result</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>{Darken}</td>
<td>Top layer’s color merges with the bottom layer’s color, with the darker color winning</td>
<td></td>
</tr>
<tr>
<td>{Dodge}</td>
<td>Bottom layer’s color brightened to reflect top layer’s color</td>
<td></td>
</tr>
<tr>
<td>{Burn}</td>
<td>Bottom layer’s color darkened to reflect the top layer’s color</td>
<td></td>
</tr>
<tr>
<td>{Hard Light}</td>
<td>Does a multiply or screen effect on the lightness or darkness of the top layer</td>
<td></td>
</tr>
<tr>
<td>{Soft Light}</td>
<td>Darkens or lightens colors depending on the top layer</td>
<td></td>
</tr>
</tbody>
</table>
Effect Layers
The Virtual Media Server allows you to use procedurally generated content. This is content that is created algorithmically in real time, instead of rendering file based media.

In order to use procedurally generated content, you must patch the pixel map layer as a virtual effect layer instead of a virtual media layer. Setting up the pixel map is the same as for using virtual media layers.

Types of Effects
There are three main effect types:

- Two color gradients - adjustable gradients with start and end colors
- Rainbow gradients - fixed gradient, full hue spectrum
- Perlin noise - good for animating random color effects, adjustable gradients

The effects are stored in file 1. File 1:0 is a home position of no effect. 1 - 3 are perlin noise effects, 4 is a perlin noise/rainbow gradient, 5-9 are rainbow gradients, and 10-19 are two color gradients.

Effects have various options of additional control.

Using Two Color Gradients
For the effects that use two color gradients (two color and perlin noise), there are several options for control of the gradients. The two colors are known as the start and end colors. Those options include:

- \{Intensity\} and \{Intensity 2\} - specifies the opacity of the start and end colors respectively.
- \{Red\}, \{Green\}, \{Blue\} or \{Hue\} and \{Saturation\} - specifies the start color.
• {Red 2}, {Blue 2}, and {Green 2} - specifies the end color.

• {In Point 1} and {Out Point 1} - changes the distribution of the two colors in the gradient. In Point 1 moves the start color position closer to the end color. Out Point 1 moves the end color position closer to the start color.

• {Playback Mode 1} - basic animation, forward or reverse.

• {Playback Speed 1} - speed of animation.

• {Layer Effect} - adjusts the number of repeats in the gradient. Layer Effect has a range of -100% to 100%. At the home value of 0%, one full gradient is shown. Moving toward 0%, you will see less of the gradient and moving toward 100%, you will see up to four repetitions of the gradient.

**Note:** The button {Layer Effect 2} is for use with perlin noise effects.

**Using Rainbow Gradients**
For Rainbow Gradients, the colors cannot be adjusted. But the number of repeats can be adjusted by using {Layer Effect}. {Playback Mode 1} and {Playback Speed 1} work in the same way as for two color gradients.

**Using Perlin Noise**
For perlin noise effects, there are different options for control:

• {Playback Mode 1} - basic animation of noise, forward or reverse.

• {Playback Speed 1} - speed of animation.

• {Layer Effect} - adjusts the amount of noise. -100% equals very little noise, and 100% equals a lot of noise.

• {Layer Effect 2} - adjusts the horizontal scrolling speed. -100% equals a fast left scroll, 0% equals no scrolling, and 100% equals a fast right scroll.
Pixel Mapping in a Multi-Console System

When using file based media in a multi-console environment, the primary console should be used as the ‘base’ media archive.

Media can be imported to the primary, and the backup console and/or any other clients can then synchronize their own, local media archives with the primary. The backup must synchronize media with the primary in the event that the backup must take control as the master. For clients, synchronizing the media is optional but useful if you wish to see the media playing back in the Pixel Map Preview display.

Steps for Configuring a Multi-Console System

Once the Eos Family Pixel Mapping Installer has been installed on all consoles, follow these steps to configure your multi-console system:

Setting up the Primary

Step 1: On the primary console, exit to the Eos Configuration Utility (ECU).
Step 2: Press the {Settings} button.
Step 3: Press {General} if needed.
Step 4: Make sure that the {Share Media Archive} box is checked. This will allow for sharing of the primary’s media archive. Copy the path name, you will need it to setup the backup and/or client.

Setting up the Backup and Clients

Step 5: On the backup or client, exit to the Eos Configuration Utility (ECU).
Step 6: Press the {Settings} button.
Step 7: Press {Maintenance}.
Step 8: Press {Network Drives}.
Step 9: In the Network Drives display, click the {Add} button.

Step 10: In the Add Network Drive display, choose a drive letter for {Local Drive}.

Step 11: Enter in the {Network Path}. The path name is listed next to the primary's {Share Media Archive} checkbox.

Step 12: Select the appropriate console type for the {Network Path Type}.

Step 13: Click {Ok}. You will now be able to access the primary's media archive from the backup or client. This new drive will appear in the browser like a USB drive.

Step 14: Click {Done} and launch the Eos application.

**Synchronizing Media Archives**

To view media playback in the Pixel Map Preview display, you will need to first import the required media into your backup and/or client’s local media archive. This is done from the browser. There are two options for importing media:

- Import Show Pixel Map Media - This import function should be used by the backups and clients. It is the easiest way to ensure that your console will have all of the media required by
the current show file.

- Import All Pixel Map Media - This import function should be used by the primary to load the base media content and later to load media on the fly as required. This import function provides more complex options, like targeting which Library and File the media data will be imported into. See “Importing Media Content” on page 306.

**Steps for Synchronizing Show Pixel Map Media**

1. On the backup or client, navigate to the browser.
2. Expand **File>Import>Import Pixel Map Media>Import Show Pixel Map Media**.
3. Select the appropriate network drive.
4. The Import Show Media display will open. Press the **Start Import** button.
5. A progress bar will appear to indicate the status of the import process. When finished, click **Done**. You will now be able to see the media playing in the Pixel Map Preview display on the backup and/or clients.
The following information is new for version 1.9. This document is supplemental to information in the Eos v1.7 Operations Manual, Ion v1.7 Operations Manual, and Element v1.6 User Manual and should be used in conjunction with it.

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**Eos Family v1.9 Operations Manual Supplement**  
Electronic Theatre Controls, Inc.
Save As
Pressing [Label] or [Delete] on the console, or DELETE on an alphanumeric keyboard will remove the default show label when doing a Save As.

{Manual} Flexichannel
A {Manual} softkey has been added to [Flexi]. This view shows the selected channels and any channels with manual data.

Playback Status Display Changes

Paging in the Playback Status Display
When focus is on the Playback Status Display, you can now use the paging keys to navigate in this display.

Moves Column in the Playback Status Display
A ‘MV’ column to indicate moves has been added to the Playback Status Display.

A ‘D’ will be used to indicate a dark move. A dark move is a non-intensity move of a channel that is at an intensity level of 0 in the associated cue. An ‘L’ will be used to indicate a live move. A live move is a non-intensity move of a channel that is also moving to an active intensity level.

Update Library
When a new library is installed on Eos Family consoles (for example, included in a software update), changes in library data will not automatically update your show files. This is to prevent library changes from affecting a functional show file.

Using the {Fixtures} softkey in patch will open up the list of fixtures used in the current show file. In this view, you will be able to tell which fixtures in the currently loaded show file differ from the console’s fixture library. For fixtures that have a library update, the {Update Lib} softkey will display in white, and for fixtures that don’t have an update, the {Update Lib} softkey will be greyed out.

Scroller Fan Curves
Curves can now be applied to the scroller fan parameter allowing for the output of the fan to be controlled by the intensity of the channel. The curves available for this are the same used for intensity parameters and cues.

To set a curve to a scroller fan, go to Displays>Patch>Attributes>Fan Curve for each scroller.

LED Virtual Intensity
All LED fixtures now have a virtual intensity channel that will act as a master for all LED parameters. LED parameters will default to full when controlled by the virtual intensity channel.

[Select Active]
On Eos, pressing [Select Active] once will capture all active levels. Pressing [Select Active] twice will capture all active manual levels and those from playbacks except for submasters. Select NonSub Active will post to the command line.

On Ion, press and hold [Select Last] to display the {Select Active} softkey. Pressing {Select Active} once will capture all active levels. Pressing {Select Active} twice will capture all active manual levels and those from playbacks except for submasters. Select NonSub Active will post to the command line.

New Palette and Preset Options
When recording palettes and presets, three new softkey options are available. Columns have been added to the palette and preset lists to indicate when these options have been applied.
{By Type} Palettes
By Type palettes are created with ‘default’ channels which contain values that can be assigned to any other channel within the same fixture type. By Type palettes can also contain discrete channel values.

By Type palettes will display a ‘T’ in the lower corner of the direct selects. A ‘+’ will display after the ‘T’ if there are channels stored with discrete data.

{Absolute} Palettes and Presets
Absolute palettes/presets are palettes/presets that when recalled the data is displayed and treated like absolute data applied to a channel. The data is never referenced.

An absolute palette/preset will display with an ‘A’ in the lower corner of the direct selects.

{Locked} Palettes and Presets
Locked palettes/presets are palettes/presets that are protected from being accidentally changed in Live.

Locked palettes/presets can be updated by specifically calling the channels and the record target, [channel list] [Update] [record target] [Enter]. Using [Update] [Color Palette] [1] [Enter] would not work in Live for a locked palette. However locked palettes and presets are not protected in Blind.

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

- [1] [Thru] [5] [Record] [Int Palette] [1] {By Type} [Enter] - Channels 1 through 5 are saved to Intensity Palette 1. Channels 1 through 5 are of the same fixture type. Channel 1 will be the default channel and channels 2 through 5 will be saved with discrete data.
- [1] [Thru] [5] [Record] [Intensity Palette 1] [Enter] - If a by type palette is recorded without using the {By Type} softkey and the default channel is included in the record, the default channel's level will change and all other changes will be discrete.
- [1] [Thru] [5] [Record] [Intensity Palette 1] [Discrete] [Enter] - If a default channel is included in a record where {Discrete} is used and another channel is tracking it, the default channel will be changed to having discrete data and the lowest numbered tracking channel will become the new default channel. All other channels in the record will also have discrete data.

Editing By Type Palettes in Blind
In Blind, the default channel’s levels will display in blue, discrete data for the other channels will display in white, and any channels that are using the default channel value will display in magenta.

New softkeys available for editing palettes in blind are {By Type}, {Discrete}, and {Cleanup}.

- [3] {By Type} [Enter] - makes channel 3 the new default channel for that device type. If another channel for that type was the default channel, its data will now be discrete.
- [1] [0] [Thru] [2] [0] {Discrete} [Enter] - changes the levels for channels 10 through 20 to discrete. If any of those channels are default, the lowest numbered tracking channel will become the new default channel.
- [5] [Thru] [8] [At] [Enter] - removes the discrete data for channels 5 through 8. They will now use the default channel’s values.
- [Color Palette] [2] {Discrete} [Enter] - changes all tracking and default channels to discrete.
- [Intensity Palette] [5] {By Type} [Enter] - makes the first channel of each device type a
default channel.

• **[Beam Palette] [3] {Cleanup} [Enter]** - converts palettes created in earlier versions of Eos Family software to by type palettes. This command will use the first channel of each type as the default, and allow other channels of the same type to use that value upon recall.

### Updating By Type Palettes

Pressing **{By Type}** after an **[Update]** command, with a channel tracking but no default channel included in the update, will cause the lowest numbered tracking channel's level to be updated into the default channel. The tracking channel will remain tracking. This means that when updating a default value in a by type palette, you don’t need to know the default channel number.

When a default channel is included in an **[Update]** command without using **{By Type}** and another channel is tracking it, the default channel’s data will be changed to discrete. The lowest numbered tracking channel will then become the new default channel. Any other updated channels will be made discrete.

### Update Changes

The Update Dialogue Box has been modified in version 1.9. Now the dialogue box displays the target of the update, any labels associated with it, and the channels impacted by the update. By clicking on a target, it is possible to deselect it from the update. If you accidentally deselect a target, pressing **{Reset}** in the Update Dialogue Box will put the target back into the list.

Two new options have been added to the Update Dialogue Box. These options are **{Last Ref}** and **{Ref Only}**. **{Update All}** has been renamed to **{All}**.

### Update Styles and Modifiers

Update styles and modifiers for those styles have been divided in the Update Dialogue Box.

#### Update Styles

- **{All}** - this button will update the background cue and all references stored to that cue (nested and otherwise).
- **{Make Absolute}** - this button will update the background cue and convert all levels to absolute values, thereby removing any references.
- **{Ref Only}** - this button will only update the palettes or presets used in the cue, but will not update the cue itself. If a manual reference was used before using **{Ref Only}**, the last manual reference will be updated.

#### Update Modifiers

- **{Last Ref}** - this button will update using the last reference that was applied.
• **{Break Nested}** - this button now has a toggle state that does not change the update mode allowing it to be used with **{Last Ref}** or **{All}** as needed. This button will update a background cue’s preset, but breaks the reference to any palettes stored in that preset. For example, if cue 1 channel 1 references preset 3, and preset 3 was built using color palette 5. When updated with this option, preset 3 would be updated, color palette 5 would not, and the reference to CP5 would be broken in preset 3.

• **{Reset}** - this button will clear any commands after the [Update] command to quickly undo changes before [Enter] is pressed.

In 1.9, it is also possible to update palettes and presets that were set manually and then modified manually, by using [Update] {Last Ref} [Enter]. It is also now possible to update all references of a specific type, without updating cues or other references without specifying the target number, for example, [Update] [Color Palette] [Enter].

In addition to these changes, it is now possible to select a default Update Mode in Setup. The new Update Setup option is under Browser>Setup>Desk Settings>Record Defaults. Eos/Ion will default to **{All}**.

### Discrete Timing

The [+ ] and [- ] hardkeys can be used to increase or decrease discrete timing values.

- [channel list] [Time] [+ ] [3] [Enter] - increases the discrete timing values by 3 seconds.
- [channel list] [Delay] [- ] [1] [Enter] - decreases the discrete delay value by 1 second.

### Multiple Intensity HTP Effects

Multiple intensity HTP effects are either step or absolute effects running on HTP submasters or cue lists. For multiple intensity HTP effects to run correctly, they must be recorded and played back from different sources.

For example, you create three separate step effects. Each effect impacts the same channels. For the three separate effects to run correctly you need to record them to three separate effect submasters or cues in separate cue lists. Either method will allow for each effect to run together according to the rules of HTP. But, for example, if you were to have three separate effects running on three separate effects submasters and you try to record that into one cue, the cue will only run the effects that were currently at the highest level at the moment of the record.
About Channel
While in the {Usage} screen for About Channel, if another channel is selected, you will need to hit the {Refresh Usage} button to see the information for the new channel.

Releasing Intensity Master Submasters
When non-intensity parameters on a intensity master submaster have been marked using the bump button, the LED on its bump button will now pulse to tell you that the non-intensity parameters have been marked.

Pressing the bump button for an intensity master submaster that is currently bumped will release the non-intensity parameters using the bump button timing. Its bump button LED will also be turned off.

Creating a Mirror Mode Macro

Note: An alphanumeric keyboard will be needed to create this macro.

To create a macro to place a device in mirror mode:
Step 1: Set the User ID of all devices to match the Primary.
Step 2: Press ALT + M to open the mirror mode display.
Step 3: Highlight the device to mirror.
Step 4: Press [Learn] [x] [Enter] to record the macro.

To create a macro to exit mirror mode:
Step 5: With the console in mirror mode, press [Learn] [x] [Enter]
Step 6: Press ALT + X
Step 7: Press [Learn] to finish recording the macro.

Once the macros are created, you should save the show and set all User IDs back.

Mac Client
It is now possible to connect an Intel or PowerPC Mac as a client. Without a client dongle, a Mac client will only work in mirror mode. With a client dongle, a Mac will work like a PC client.

Note: Mac clients connected to Element consoles will only run in mirror mode.

Please see the Eos Family Client Kit Quick Guide Version 1.9 for system requirements and installation instructions.

Note: A Mac client will not support any external ETC USB devices, such as fader wings and the RFR. A Mac client will support the use of the iRFR.

Scroll Lock
Use of the SCROLL LOCK key to access Hot Keys on an alphanumeric keyboard when using a client or an ETC produced Eos Family processor is no longer required.

Remote Software Installation
Within a multi-console system, you can now remotely install software to all devices.
Note: All devices must be upgraded to version 1.9 before remote software installation is available.

In the ECU, go to Setting>General>Automatically Update Software to enable. Once enabled, the devices can be remotely updated with the next version of software. Devices will receive the software update from the Primary. When you install software on the Primary, the software will first be copied to its hard drive.

With the devices synchronized with the Primary, install the new version of software onto the Primary. All devices will lose their connection with the Primary at that time. When the Primary comes back online after installing the software, all the connected devices will be forced to update their software before they can reconnect with the Primary.

Remote Power On/Off

In a multi-console system, it is possible to power on and off devices remotely. Remote Power On and Remote Power Off must be enabled on each device before it can receive the power on and off commands. In the ECU go to Settings>Network>Enable Remote Power Off and Enable Remote Power On. The default setting for both is “Disabled”.

Note: Remote Power On is only available for RVIs and RPUs, not on Eos, Ion, or Element. Remote Power Off will work for RVIs, RPUs, Eos, Ion, and Element.

The Remote Power commands are sent from the browser. The command for Power On is sent from Browser>Network>Power On MultiConsole System, and the command for Power Off is from Browser>Network>Power Off MultiConsole System.

Note: Only devices that synchronize with the Primary will be available for Remote Power On and Off.

Fader Wing Paging

The fader wings will now page in increments of 10.

Note: On a 2x10 fader wing, you can only access the first 19 pages of faders.

Holding down the [Fader Control] button while a fader wing is attached will cause the last button on the wing to toggle between Channel and Fader modes.

Sneaking Channel Faders

On Ion and Element, holding down [Sneak] while moving channel faders will allow them to be moved without asserting control.
Softkeys

The ordering for softkeys available, when no channel is selected and when channels are selected, have changed.

**Softkeys Available With No Channel Selected**

<table>
<thead>
<tr>
<th>Softkey Pg</th>
<th>Eos</th>
<th>Ion</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td>Query</td>
<td>Select Last</td>
</tr>
<tr>
<td>S2</td>
<td>N/A</td>
<td>Address</td>
<td>Select Active</td>
</tr>
<tr>
<td>S3</td>
<td>N/A</td>
<td>Snapshot</td>
<td>Select Manual</td>
</tr>
<tr>
<td>S4</td>
<td>Address</td>
<td>Highlight</td>
<td>Park</td>
</tr>
<tr>
<td>S5</td>
<td>N/A</td>
<td>Assert</td>
<td>Fader Control</td>
</tr>
<tr>
<td>S6</td>
<td>N/A</td>
<td>N/A</td>
<td>Page Subs</td>
</tr>
</tbody>
</table>

**Softkeys Available With a Channel Selected**

<table>
<thead>
<tr>
<th>Softkey Pg</th>
<th>Eos</th>
<th>Ion</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Make Man</td>
<td>Make Man</td>
<td>Replace With</td>
</tr>
<tr>
<td>S2</td>
<td>Make Abs</td>
<td>Make Abs</td>
<td>Make Abs</td>
</tr>
<tr>
<td>S3</td>
<td>Flash</td>
<td>Flash</td>
<td>Chan Check</td>
</tr>
<tr>
<td>S4</td>
<td>Address</td>
<td>Address</td>
<td>Park</td>
</tr>
<tr>
<td>S5</td>
<td>Offset</td>
<td>Offset</td>
<td>Offset</td>
</tr>
<tr>
<td>S6</td>
<td>N/A</td>
<td>Mark</td>
<td>Flash</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Softkey Pg</th>
<th>Eos</th>
<th>Ion</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Replace With</td>
<td>Replace With</td>
<td>N/A</td>
</tr>
<tr>
<td>S2</td>
<td>LampCtrls</td>
<td>Fan</td>
<td>N/A</td>
</tr>
<tr>
<td>S3</td>
<td>N/A</td>
<td>Assert</td>
<td>LampCtrls</td>
</tr>
<tr>
<td>S4</td>
<td>N/A</td>
<td>Highlight</td>
<td>N/A</td>
</tr>
<tr>
<td>S5</td>
<td>Chan Check</td>
<td>Chan Check</td>
<td>N/A</td>
</tr>
<tr>
<td>S6</td>
<td>Make Null</td>
<td>Make Null</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Changes to Ion**

**Tab Navigation**

Ion now uses tabs for the displays. Ion’s [Swap] key will now perform the same actions as the [Tab] key on Eos.

The Live/Blind display is open as tab 1. The playback status display is always open as tab 2. Neither of these displays can be closed. With a single monitor, Ion will display a default tab 3, which is a combined Live/Blind and playback status display.
Other displays are numbered as they are opened. Tab numbering is useful for navigating to views.

From the Browser
When you open a new display (such as the cue list index, group list, or patch) and it is posted in a tab view, it will open on monitor 2 if in dual monitor configuration. If the display does not open as a tab view (such as “setup” or the browser) it will open in the CIA.

Closing Displays
To close any tab display, select the display by using the [Swap] key or other means of navigation.

When the desired display is active, press [Escape] to close it.

To close a display in the CIA, press the [Displays] key and the browser will reappear.

To close all displays except for the Live/Blind display and the playback status display (tabs 1 and 2), press [Clear] & [Swap].

Selecting Displays
When a display is selected, the screen is highlighted with a gold border and the display name (such as “1. Live Channel”) will be in gold as well. When a display is not selected, there is no border and the tab name is grey.

If a display is already open, it can be selected in the following ways:

• Press [Swap] to change focus from the currently selected tab to the tab immediately to the right. If no tabs are to the right, the selection moves to the first tab on the left of all available monitors.

• Press [Swap] & [n], where “n” represents the tab number of the desired tab.

• Press [Live] or [Blind] to automatically bring Live/Blind into focus.

• Double press a record target button (such as [Preset] or [Submaster]) to either open the associated display or select it if it is already open.

Moving Displays
To move the active display from one monitor to another, press and hold the [Swap] key and use the page arrow keys to move the tab in the direction of the desired screen. One press of the left or right page keys will move the tab to the next screen in that direction. To move it back, press the opposite arrow key.

Query

{Query} is used to select channels that meet criteria specified by you. These selections are conditional, based on what type of luminaire a channel is or what that channel is doing, isn’t doing, can do or cannot do. These criteria are established in the command line using the softkeys, the keypad, and the direct selects.

When {Query} is used, the softkeys change to:

• Is In
• Isn’t In
• Can Be
• Can’t Be
• Or
• Moves Only
The CIA also repaints to display the available keywords and fixture types by which you can search. These can be used in defining your query criteria.

As a query is defined in the command line, channels will be specified in the Live/Blind display. When an [Enter] command is used to end the query, the remaining channels of the query will be selected.

For Example:

You wish to find channels which are in color palette 2 and have an intensity of 50%:

- {Query} <Is In> [Color Palette] [2] [At] [5] [0] [Enter]

In the Live/Blind display, any channels meeting this criteria will be selected.

You may use [Next] and [Last] to cycle through the query selection, one channel at a time to control only a specific channel.

Other examples of using a query are:

- {Query} {Isn’t In} [Beam Palette] [2] [5] [Enter]
- {Query} {Luminaire} {Can Be} [Focus Palette] [8] [Enter]
- {Query} {Fixture Type} {Revolution} {Can Be} [Focus Palette] [6] {Isn’t In} [Cue] [4] [Thru] [9] [Enter]
- [Next] [Next] [Enter] - selects one channel from the query result.

Additionally, in patch you can define up to four “query” keywords for each channel. These keywords can be used to create a query condition as well. Buttons on the facepanel, such as [Time] can also be used to construct a query.

Adding Keywords in Patch

If you plan on being able to query channels based on a keyword association, the keyword must be defined in patch.

To enter a keyword for a channel:

Step 1: Press [Displays].
Step 2: Press {Patch}.
Step 3: Press {Database}.
Step 4: Select a channel or range of channels in the command line.
Step 5: Select one of the {Text (1-4)} buttons in the CIA to specify which keyword you are entering. A list of previously defined keywords will be posted. Select from these or press {New Keyword}. A virtual alphanumeric keyboard will appear.
Step 6: Type the keyword or words you wish to use.
Step 7: When finished, press [Enter].

Once keywords have been created, they will appear in the keyword section of the CIA when a query is performed.

Snapshots

Snapshots are record targets that store the current state of the Ion console and monitor configuration. These can then be recalled to instantly reset the console and displays to the state stored in the snapshot. You can choose which parts of the console and displays you wish to store as a part of the snapshot.
About Snapshots

When you record a snapshot, aspects of the Ion user-interface, based on user-preference, are stored so that you can recall them in the future. This allows you to bring the console back to a desired state quickly.

Snapshots can be used on Ion RPU's or Net3 RVI's to change what is currently displayed on the external monitors and how that information is displayed.

Snapshots contents are global. They can be stored and recalled on any control interface, other than Net3 RFRs. When recorded, they store the relevant settings of the device initiating the record. When recalled, they recall only the controls that are appropriate on the device the snapshot is recalled.

Control areas that may be stored in a snapshot are:

- Direct Selects - records the configuration, mapping, and current page of any direct selects in use.
- Encoders - records the current page of the encoders.
- Faders - captures the current state of all the faders including: current page, current fader configuration, position of all submasters and playbacks, any fader attributes, and pending cues.
- Monitors - records the current display and configuration of the external monitors.
- Filters - records the current setting of the record filters.

Note: Snapshots that store the faders do not include the active cue in a fader. They only include pending cues and fader attributes.

When snapshots are recorded, you can view them in the snapshot list. To view the list, navigate to Browser>Record Target Lists>Snapshots.

Recording Snapshots

To store the current state of the console, record a snapshot.

For Example:

- [Record] Snapshots [1]

The CIA will display buttons representing the following areas of console:

- Monitors
- Faders
- Encoders
- Direct Selects
- Filters

By default, all of these elements are selected for storing. If you wish to store only some of these elements, select those desired by touching the button in the CIA. Selected elements will be highlighted in grey.

- Monitors Encoders Direct Selects [Enter]

You can label snapshots or attach notes as desired.

- Snapshots [1] Label>Note [text] [Enter]

Recalling Snapshots

Snapshots can be recalled in the following ways:

- from the keypad/command line - Snapshots [5] [Enter]
- from cues using the execute list
• from a recorded macro instruction
• from the direct selects - {Snapshot 4}

Since snapshots can be recalled from any device (except RFRs) on the Ion network, snapshots may be affected by the type of device they are recalled on. If the recalling device does not have the same physical layout or has other limitations that differ from the recording device, Ion will map the snapshot to the best of its ability.

Editing Snapshots
To edit or preview the contents of a snapshot, navigate to Browser>Record Target Lists>Snapshots

You can use [Next] and [Last] to navigate the list or you may specify a snapshot in the command line.

Once a snapshot is specified, the list displays five columns, one for each element. You may change the enabled elements by pressing the CIA buttons or the softkeys found beneath the CIA. If an element is added to the command line using the softkeys, it will be enabled when [Enter] is pressed. All other elements will be disabled.

For Example:
  • <Snapshots> [3] {Monitors} [Enter]

This command will enable the monitors for snapshot 3 and disable any other elements.

Deleting Snapshots
You may delete snapshots using the following syntax:

  • [Delete] {Snapshots} [2] [Enter]
  • [Delete] {Snapshot 5}

1-to-1 Submaster Mapping
The automatic 1-to-1 submaster mapping of Ion has been removed. A quick way to map the submasters is still available.

In Blind, press [Sub] [1] [Thru] [Thru] [3][0][0] [Enter] which creates all 300 submasters. Now in Live, press [Sub] [1] [Thru] [Enter], which selects all submasters created. Then you can hit the load button for the first submaster and it will load all submasters sequentially.

You can also use the {Reset Subs 1 to 1} button in Browser>Clear.

Holding down the [Fader Control] button while a fader wing is attached will cause the last button on the wing to toggle between Channel and Fader modes.
The following information is new for Eos Family software version 1.8. This document is supplemental to information in the Eos v1.7 Operations Manual and Ion v1.7 Operations Manual and should be used in conjunction with it.

**Mirror Mode**

Mirror Mode is used to mirror the displays of another device. When a device is in mirror mode, the only action allowed from that device is paging via the page keys and shut down/start up. When a device in mirror mode pages, it also pages the host.

Mirror mode is intended primarily to allow a designer or assistant to see the exact same displays as a programmer on the system. It can be used on any device on the network, including the primary processor. Any device being mirrored is referred to as the Host.

The is no limit to the number of mirrored devices a host can have. But a console currently in mirror mode cannot be mirrored.

**Using Mirror Mode on a Client without a Dongle**

A client without a dongle can connect to the network. When this is done, the client can only operate in mirror mode, and it will always connect to the primary processor. No other options will be available.

**Configuring Mirror Mode**

Configuring a device to connect in Mirror mode is done from the Displays menu in the Browser. When [Displays] is pressed, a [Mirror] softkey will be displayed. Pressing (Mirror) will open up a list of potential hosts in the CIA.

The mirror display can be navigated using the arrow keys or a mouse. When the required host is highlighted, press [Enter] or double click with a mouse to confirm the selection. This display can also be opened with the keyboard shortcut of ALT + M.

**Note:** While in Mirror mode, the display will also have options for exiting and powering off the device.
Displays
When a device is placed in mirror mode, monitor 1 on the mirroring device matches external monitor 1 on the host, and monitor 2 matches external monitor 2 on the host. A client will mirror as many monitors as it has available.

All formats used on the host device are shown on the mirroring device including flexichannel states, column widths, chosen parameters, and pages.

Note: Desk settings are not mirrored.

The CIA will open on monitor 1. The CIA on the device in mirror mode can be locked open or closed. When left unlocked, the CIA will expand and close as normal. Not all CIA displays shown on the device in mirror mode. The following CIA displays are synchronized:

- About
- Effects
- Effects Status
- Color Picker
- Curves
- Undo

The CIA can be completely hidden when locked by pressing the [Displays] key. Pressing [Displays] again will display and unlock the CIA.

Exiting Mirror Mode
Exiting mirror mode can be done by selecting {Stop Mirroring} in the mirror display or using the keyboard shortcut ALT + X. When exiting mirror mode, the device will return to its normal, working state.

Note: Clients without a dongle cannot exit mirror mode.

Shutdown/Start Up in Mirror Mode
When a device is shut down in mirror mode, it will restart in mirror mode mirroring the same host as before. If the host has changed settings, mirror mode will need to be reselected on startup.

Macros
Macros can be created to configure a device for mirror mode and to exit the mode. The RPU/RVI face panel configuration utility allows the face panel buttons to be populated with these macros.

Fan
Fan provides the ability to spread parameter and timing values in a range across a channel selection set and have those values be evenly spaced. Fan is applied by channel selection or group order. By default, fan operation is from the start channel.

Eos has a [Fan] button and on Ion {Fan} is a softkey. When [Fan]/(Fan) is pressed after a channel selection, the softkeys will repaint to the following fan styles:

- {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. The level wheel will decrease the lower number channels and increase the higher number channels. {Center} only affects the level wheel.
- {Reverse} - The selected channel order is reversed before applying the fan.
- {Mirror} - 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.

- [5] [Thru] [1][0] [At] [1][0] [Thru] [3][0] [Fan]/{Fan} {Mirror} [Enter] - sets channel 1 to 30%, 2 to 20%, 3 to 10%, 4 to 20%, and 5 to 30%.
- {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] [1][2] [At] [5][0] [Thru] [7][0] [Fan]/{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] [1][2] [At] [5][0] [Thru] [8][0] [Fan]/{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%.

**Fanning Parameter Data**

Fan values can be adjusted with either an encoder or via the keypad. To adjust the fan values with an encoder, select the required channels and provide a baseline, if necessary, followed by [Fan]/(Fan).

If no value is entered, the current values will be used. When using encoders to adjust fan, it is not necessary to specify the parameter to be fanned. This is determined by the encoder used.

- [1] [Thru] [5] [Fan]/{Fan} [Enter] - selects the channels 1 through 5 and puts encoders and level wheel into fan mode.
- [1] [Thru] [5] [At] [5] <0> [Fan]/{Fan} [Enter] - selects the channels 1 through 5, sets a start level of 50% and puts encoders and level wheel into fan mode.
- [1] [Thru] [5] [Fan]/{Fan} {Mirror} [Enter] - selects the channels 1 through 5 and puts encoders and level wheel into fan mode with mirror style.

**Fan From the Command Line**

A level or time command that uses [Thru] or a list of references is a command line fan command.

- [1] [Thru] [5] [At] [1] <0> [Thru] [5] <0> [Enter] - sets channel 1 to 10%, 2 to 20%, 3 to 30%, 4 to 40%, and 5 to 50%. This is the default fan adjustment and the [Fan]/(Fan) command is not necessary.
- [1] [Thru] [5] [At] [1] <0> [Thru] [3] <0> [Fan]/{Fan} {Mirror} [Enter] - sets channel 1 to 30%, 2 to 20%, 3 to 10%, 4 to 20%, and 5 to 30%.

**Fanning References**

When fanning references, such as palettes, if there are more than 2 reference lists are used then the data will be referenced data. The fan will be repeated if there are more channels than references.

- [1] [Thru] [5] [Int Palette] [1] [Thru] [3] [Enter] - sets channel 1 to IP1, 2 to IP2, 3 to IP3, 4 to IP1, and 5 to IP2.

If the list contains 2 or less references, fan will be set to the levels between the references as absolute data.

- [1] [Thru] [5] [Int Palette] [1] [Thru] [2] [Enter] - (Intensity palette 1 is all channels at 0% and Intensity palette 2 is all channels set to 100%) sets channel 1 to 0%, 2 to 25%, 3 to 50%, 4 to 75%, and 5 to 100% as absolute data.

**Note:** The [Fan] key or (Fan) softkey is not necessary unless a fan style other than the default is needed.
Fanning Timing and Delays

Fanning timing and delays work exactly like fanning parameters.

- [1] [Thru] [5] [Time] [6] [Thru] [1] [0] [Enter] - sets the discrete times for channel 1 to 6 seconds, 2 to 7 seconds, 3 to 8 seconds, 4 to 9 seconds, and 5 to 10 seconds.

- [1] [Thru] [5] [Delay] [6] [Thru] [8] [Fan]/[Fan] {Mirror} [Enter] - sets the discrete delays of channel 1 to 8 seconds, 2 to 7 seconds, 3 to 6 seconds, 4 to 7 seconds, and 5 to 8 seconds.

Time Code Events

Linking Time Code Event Lists to Cue Lists

It is possible to link a cue list to a time code event list.

- [Cue] [1] [/] {Execute} {TimeCode} [3] [Enter] - links cue list 1 to timecode event list 3. If there is no timecode event list 3, it will be created as a SMPTE event. If the event list does exist but isn’t a timecode event, an error will display. Once a cue list is linked to an event list, the cue list will display the timecode in the external links field for any cue triggered by the associated event list. This also enables editing the timecode from Live.

- [Cue] [1] [/] {Execute} {Enter} or [Cue] [1] [/] {Execute} {TimeCode} [Enter] - will remove the link.

The cue list display for each cue will display the time of the first event in the linked time code list that triggers that cue.

Creating and Editing Time Code Events in Live

It is possible to create and edit time code events while in Live.

- [Cue] [3] {Execute} {TimeCode} [5][4][5] [Enter] - changes the time of the first event that fires cue 3 to 5:45.

- [Cue] [5] {Execute} {TimeCode} [-] [6] [Enter] - subtracts six frames from the current time. [-] will add six frames to the current time.

- [Cue] [1][0] [Thru] [2][0] {Execute}{TimeCode} [+][4] - adds four frames to the current time of each cue within the range. [-] would subtract frames from the current time.

Time

When the [Time] button is pressed on a terminated command line, the selected cue is always displayed for time modification. To add discrete timing to channels on a terminated command line, those channels must be reselected. The [Select Last] command can be helpful.

Color Encoder Page

The first page of the color encoder will provide some scroller control, such as frame selection, on the top encoder. The next three encoders will control HS, CYM, or RGB color mixing. There will be buttons on the first page for switching between HS, CYM, and RGB. The HS controls will include buttons for {Brightness to Full}, {Home}, {Min}, and {Max}. The CMY and RGB controls include buttons for {Home} and {Max} for each of the parameters. No {Min} button will be displayed.