



Advanced Ion: Effects

An in-depth look into effects on Ion

V1.9.5 Rev.A

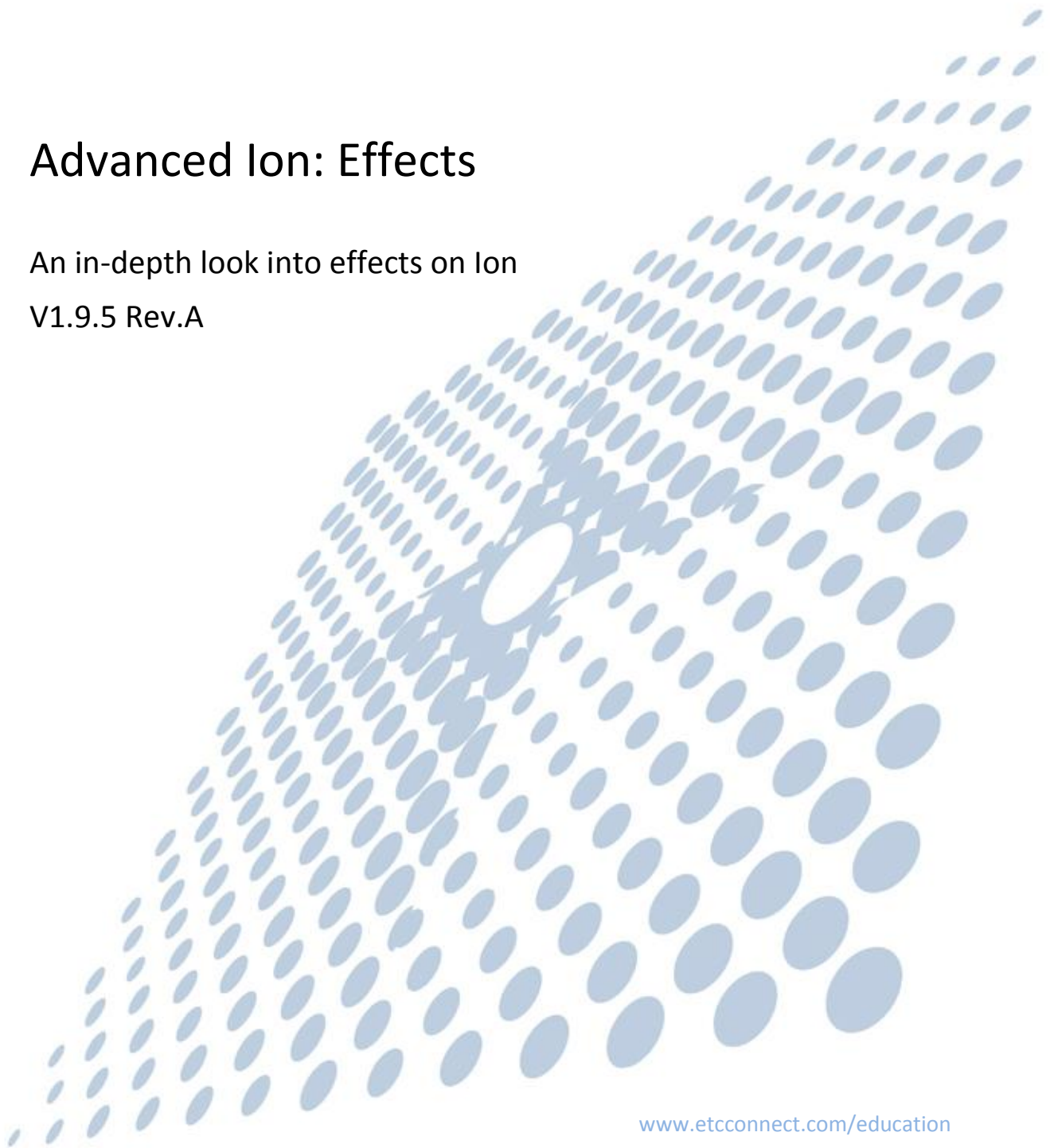


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Purpose of the Class

The Advanced Ion: Effects class will provide an in-depth exploration into Eos Family effects and their implementation. The Class is geared towards intermediate to advanced users looking to expand their knowledge of the effects package. And for users looking to spice up their show files.

LEARNING OBJECTIVES:

After completing the Ion Effects class, one should be able to:

- Identify key elements of effects package
- Create any of the five effect types
- Modify the effects parameters
- Apply effects to channels
- Modify parameters of instance effects
- Save effects to both subs and cues
- Playback effects.
- Understand the basics of working with a multi-parameter device (introductory concepts)

WORKBOOK SYNTAX ANNOTATION

- **Bold** Browser menus
- **[Brackets]** Face panel buttons
- **{Braces}** Softkeys and direct selects
- **<Angle brackets>** Optional keys
- **[Next] & [Last]** Keys to be pressed & held simultaneously

HELP

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

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

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

Getting Started

EFFECTS: A DEFINITION

Effects are manual control functions that can be applied to a channel parameter and then included in cues or submasters. Cues can contain both standard transitions for some channels and parameters and effects for the same or other channels and parameters.

A single channel parameter cannot have more than one effect applied at any time. With the exception of intensity if the effects are being played back from submasters. However, a channel may have one effect running on one parameter and another effect running on a different parameter.

Effects have user defined properties and attributes which are applied to the effects whenever they are used in cues or subs. Effects also have level overrides, which allow you to use an effect in multiple locations, and modify its size, shape or rate in individual recordings. An Ion showfile can accommodate building up to 1,000 total effects, with the ability to number them to the 1.xx.

Within Ion, effects are broken up into three fundamental behavior types:

- **Step**
- **Absolute**
- **Relative effects.**

STEP BASED EFFECTS:

In step effects, each step contains an on-state and an off-state. The on-state is the action the channels in the step should take when the step is active. The off-state is the action the channels in the step should take when the step is not active. Step effects are a quick and easy way to build simple chases.

ABSOLUTE EFFECTS:

Absolute effects are a listing of sequential actions that channels are to take. They differ from step effects in that there is no on/off state, rather they define progressive behavior from one action, to the next, to the next, and so on. Types of actions include intensity levels, palettes, and presets. A good example of this is using multiple color palettes to create a rainbow chase.

RELATIVE EFFECTS:

A relative effect is an offset from the current state of a channel parameter. There are three different types of relative effects: focus, color, and linear. Each of these effect types have a graphic editor designed specifically for the parameters involved.

IN THE SHOW FILE:

The following groups are included in the effects show file:

Group #	Channels	Label
1	1 2 3 4	Specials
2	21 + 22	Blue Sides
3	23 + 24	Red Sides
4	25 + 26	Straw Sides
5	31 + 32	Breakups
6	6 Thru 20	Colorams
7	36 Thru 52	LEDs Cyc
8	61 62 63 64	Revolutions
9	71 Thru 78	MAC700s
10	81 Thru 86	MAC2K Wash
11	91 92 93 94	MAC2K Profiles
12	101 Thru 106	VL3500s
13	Groups 8 Thru 12	All Movers
20	36,52,37,51,38,50,39,49,40,48,41,47,42,46,43,45,44	Cyc In
21	44,45,43,46,43,47,41,48,40,49,39,50,38,51,37,52,36	Cyc Out

The following **Color Palettes** are included in the effects show file:

Color Palette #	Label
1	Red
2	Orange
3	Yellow
4	Green
5	Cyan
6	Light Blue
7	Dark Blue
8	Magenta

The Following **Focus Palettes** are included in the effects show file:

Focus Palettes #	Label
1	Lead Singer
2	Bass Player
3	Piano
4	Drums
5	Cyc
6	Edge of Stage
7	Fly-in
8	Fly-Out

The Following **Beam Palettes** are included in the effects show file:

Beam Palettes #	Label
1	Zoom-In
2	Zoom-Out

The Following **Presets** are included in the effects show file:

Preset #	Label
1	Lead Singer In Color
2	Bass Player In Color
3	Piano In Color
4	Drums In Color

LISTS, EDITORS AND PLAYBACK DISPLAYS

There are three tools that are crucial to the use of effects.

THE EFFECT STATUS DISPLAY (ESD):

The **Effect Status Display (ESD)** can be opened in two ways:

- In **[Live]** from a clear command line tap **[Effect]** once
- **[Displays] > {Effect Status}**

The ESD has (9) columns that list various pieces of information for controlling effects in live. Any change made here edits parameters of the instance of the effect not the core effect. Values set here will be manual and will have to be saved.

THE EFFECTS LIST:

Just like every other list type on the console the **Effects List** is accessed in two ways:

- **[Effect][Effect]**
- **[Displays] > {Record Target Lists} > {Effects}**

The **Effects List** displays all of the effects contained in the show file. An Ion showfile can accommodate building up to 1,000 total effects, with the ability to number them to the 1.xx. By default all Eos Family show files contain 16 built in effects, effects 901 thru 916. These effects are largely geared towards moving light movement effects.

As we continue to create effects they will be listed here.

THE EFFECTS EDITOR:

Opening the **Effects List** will also open the **Effect Editor**. This is the primary interface for creating and editing effects. Any change made here will influence every instance of that effect recorded elsewhere.

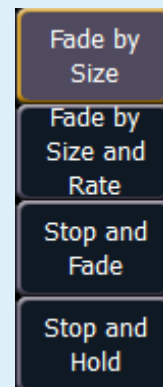
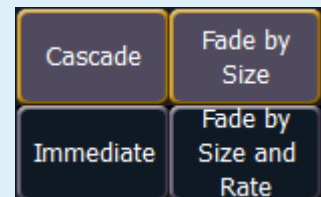
MODIFYING EFFECTS IN THE EDITOR:

[Effect] [Effect]

[Effect] [1] [Enter]

creates a new effect

- **Type** -- Effect type
- **Scale** --Size of the effect (Not Applicable for Step Based or Absolute Effects)
- **Cycle Time** --The Total time for all steps to complete (editable also on encoders)
- **Duration/Cycle** --How long the effect will run. By time or amount of cycles.
- **Entry** -- Entry method with the following options
 - **{Cascade}** - channels enter the effect one at a time in the order of channel selection (default for step-based effects)
 - **{Immediate}** - all channels enter the effect instantaneously (default for absolute and relative effects).
 - **{Fade by Size}** - when the effect exits, values will return to the background state in the exit time while continuing to run at the same speed.
 - **{Fade by Size and Rate}** - when the effect is exited, values will return to the background state and their speed will slow down in the exit time
- **Exit** --Exit method with the following options
 - **{Fade by Size}** - when the effect is exited, values will return to their background state while still running using the exit time.
 - **{Fade by Size and Rate}** - when the effected is exited, channels will stop running the effect and return to their background state using the exit time.
 - **{Stop and Fade}** - when the effected is exited, channels will stop running the effect and return to their background state using the exit time.
 - **{Stop and Hold}** - when the effect is exited, channels will halt exactly where the effect left them.
- **Time** -- These fields establish the length of time for channels to enter/exit the effect. It can be entered in minutes and seconds from the keypad. These timing values are applied to the entry and exit modes. Cue and sub level timing is the default for these. Press **{EnterTime} [Enter]** or **{Exit Time} [Enter]**. To reset to defaults, press **[Time] [Enter]**.
- **Grouping** -- Grouping is used only in relative and absolute effects. This determines how many channels the effect will spread itself across, regardless of the number of channels running the effect
- **Trail** -- Trail is applicable to relative and absolute effects. Trail determines how channels are to follow each other through the effect; it is a percentage of the cycle time. Used only in relative and absolute effects.



Step Based Effects

Within the Effect List:

CREATING AN INTENSITY STEP BASED EFFECT:

[Effect] [1] [Enter] {Step Based}	creates a new step based effect
{Step} [1] [Thru] [4] [Enter]	creates four steps within the effect
[Page →]	selects the channel column for Steps 1 - 4
[1] [Thru] [4] [Enter]	applies channels 1 thru 4 to steps 1 - 4

CREATING A COLOR STEP BASED EFFECT:

[Effect] [2] [Enter] {Step Based}	creates a new step based effect
{Step} [1] [Thru] [17] [Enter]	creates four steps within the effect
[Page →]	selects the channel column for steps 1 - 4
[36] [Thru] [52] [Enter]	applies channels 1 - 4 to steps 1 - 4
[Page →] x5	page over to the On State column
[Color Palette] [1] [Enter]	applies CP 1 to the On State for all steps
[Page→]	page over to the Off State column
[Color Palette] [4] [Enter]	applies CP 2 to the Off State for all steps

CREATING A PRESET STEP BASED EFFECT:

[Effect] [3] [Enter] {Step Based}	creates a new step based effect
{Step} [1] [Thru] [4] [Enter]	creates 4 steps within the effect
[Page →]	selects the channel column for steps 1 - 4
[91] [Thru] [94] [Enter]	applies channels 91 - 94 to steps 1 - 4
[Page →] x6	page over to the Off State column
[At] [Enter]	applies Bkgrd to the Off State for all steps
{Step} [1] [Enter]	selects step 1
[Page →] x6	page over to the On State column
[Preset] [1] [Enter] [Page ↓]	applies Preset 1 to the On State for step 1
[Preset] [2] [Enter] [Page ↓]	applies Preset 2 to the On State for step 2
[Preset] [3] [Enter] [Page ↓]	applies Preset 3 to the On State for step 3
[Preset] [4] [Enter]	applies Preset 4 to the On State for step 4

PLAYING THE STEP BASED EFFECT:

[Live]	jump back into Live
[1] [Thru] [4] [Enter]	select channels 1 - 4
[Effect] [1] [Enter]	runs effect 1 on the selected channels
OR [Recall From] [Effect] [1] [Enter]	runs effect 1 on all of the channels originally used in creation

MODIFYING A STEP BASED EFFECT IN LIVE:

Open the ESD. Since this is a step based effect the only thing available for modification is rate. Rate can be modified in two different ways: Soft Keys and Encoders.

MODIFYING A STEP BASED EFFECT IN EDITOR:

Step	Channels	Param	Step Time	In Time	Dwell Time	Decay Time	On State	Off State
1	1		1	1	0	1	100	0
2	2		1	1	0	1	100	0
3	3		1	1	0	1	100	0
4	4		1	1	0	1	100	0

- **Step Time** - time from triggering the associated step to triggering the next step.
- **In Time** - the length of time for the channels to fade to the “on-state”.
- **Dwell Time** - the length of time the step remains in an “on-state”.
- **Decay Time** - the length of time it takes for the channels to fade to the “off-state”.
- **On State** - the parameter level (in%), or referenced data to be used for the on-state.
- **Off State** - the parameter level (in%) or referenced data to be used for the steps offstate.





MODIFYING THE ATTRIBUTES OF A STEP BASED EFFECT:

- **Forward** - the effect will run in the programmed direction
- **Reverse** - effect will run in the opposite direction of forward
- **Bounce** - effect will run first in forward, then in reverse. Subsequent passes alternate between forward and reverse.
- **Positive** - effect will run the steps (on state and off state) as programmed.
- **Negative** - inverts the on state and off state for the effect.
- **Random Grouping** - channel distribution or step order (depending on the type of effect) are applied in a continuously random fashion.
- **Random Rate** - This randomizes each step time compared to the cycle time in a relative range. 100 is the default rate, meaning 100% of a cycle time of 5 seconds is 5 seconds. 50% of a cycle time of 5 seconds is 10 seconds, and 200% of a cycle time of 5 seconds is 2.5 seconds. This attribute is expressed in a range (for example 50 thru 200).

Bounce	Build
Forward	Random Group
Reverse	Random Rate
Positive	
Negative	

MODIFYING THE ATTRIBUTES OF A STEP BASED EFFECT (PART 2):

What that all means:

- Forward: Step 1  Step 4
- Reverse: Step 1  Step 4
- Bounce: Step 1  Step 4

- Build: Step 1, add step 2, then add step 3, then add step 4
- Positive: On State = On State Off State = Off State
- Negative: On State = Off State Off State = On State

STOPPING A STEP BASED EFFECT:

[Live]	jump back into Live
[1] [Thru] [4] [Enter]	select channels 1 - 4
[Effect] [At] [Enter]	stops all effects on selected channels
OR [1] [Thru] [4] [Fader Control] {Stop Effect} [Enter]	stops all effects on selected channels
OR [Effect] [1] [At] [Enter]	stops effect 1

STORING A STEP BASED EFFECT IN A CUE:

[1] [Thru] [4] [Effect] [1] [Enter]	restart Effect 1
[Record] [Cue] [1] [Enter]	records cue 1 which will contain effect 1

STORING A STEP BASED EFFECT IN AN EFFECT SUB:

[1] [Thru] [4] [Effect] [1] [Enter]	restart Effect 1
[Record] [Sub] [1] [Enter]	records Sub 1
[Sub] [1] {Mode} {Mode} [Enter]	turns Sub 1 into an Effect Submaster

PLAYING BACK A STEP BASED EFFECT IN AN EFFECT SUB:

Once an effect has been placed on a submaster the fader will control the max intensity of the on state and the bump button will start and stop the effect.

Relative Effects

Within the Effect List:

CREATING A FOCUS RELATIVE EFFECT:

[Effect] [4] [Enter] {Focus}	creates a new Focus type effect
{Edit}	opens the Pattern Editing Screen
This is the fun part: Draw!	
{Done}	saves the changes made to the pattern

Important Reminder: The Focus Pattern is based on Pan versus Tilt not X/Y. So remember that what you draw might not be perfectly recreated by the light depending on where the fixture is currently located.

CREATING A COLOR RELATIVE EFFECT:

[Effect] [5] [Enter] {Color}	creates a new color type effect
{Edit}	opens the Pattern Editing Screen
Draw!	
{Done}	saves the changes made to the pattern

Note: Hue/Sat effects are great for color chaos effects. For more precise color effects use Absolute Effects.

CREATING A LINEAR RELATIVE EFFECT:

[Effect] [6] [Enter] {Linear}	creates a linear effect
{Edit}	opens the Pattern Editing Screen
Draw!	
{Done}	saves the changes made to the pattern
{Parameters}	selects what parameter the effect is going to be applied to

THE IMPORTANCE OF PARAMETERS IN LINEAR RELATIVE EFFECTS:

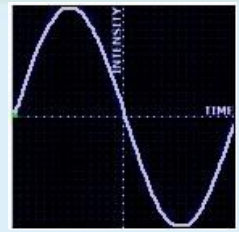
In all of the other types of Relative Effects the parameters are preset. However, in linear effects the user has the ability to choose one parameter. The other parameter will always be Time.

Examples of different types of linear effects:

<u>Parameter:</u>	<u>Result:</u>
Intensity -	Flicker or Pulse
Tilt -	Can Can
Iris -	Strobe

THE IMPORTANCE OF SCALE IN LINEAR RELATIVE EFFECTS:

While scale is important in all relative effects it is especially important in linear effects. Scale is the deciding factor in how much change will occur to the parameter affected. For instance, when dealing with intensity based linear effects a scale of 50 will set a minimum intensity value of: Current Value -50 and a maximum value of Current Value +50. Be sure to keep scale in mind when making linear effects.



PLAYING A RELATIVE EFFECT:

[Live]

jump back into Live

[91] [Thru] [94] [Enter]

select channels 91 - 94

[Effect] [4] [Enter]

runs effect 4 on the selected channels

MODIFYING A RELATIVE EFFECT

IN LIVE:

Open the ESD. There are more options available now. All of them are controllable by Soft Keys and Encoders .

- **Rate** - modifies cycle time. Default is 100% and can be modified from 0%-2000%.
- **Size** - modifies scale. Default is 100% and can be modified from 0%-2000%.
- **Shape** (Vertical or Horizontal as defined by the {Mode} button) - Default is 100% and can be modified from 0%-2000%.
- **Axis** - Default is 0° and can be modified by +/- 180°.

IN EDITOR:

All of the changes made in the editor to the step based effects can be applied to linear effects. However two more categories are added:

- **Grouping:** This determines how many fixtures groups the effect is applied to at once. For example a grouping of 1 will cause all fixtures to run the effect at the same time. A grouping of 2 will cause every other fixture to run in unison. A grouping of spread will evenly space the fixtures throughout the pattern.
- **Trail:** Trail sets how long in between the different groups. It is a percentage of cycle time.

Modifying either of these attributes can change the over all look of the effect, most commonly how smooth the effect seems.

THE IMPORTANCE OF SELECTION IN RELATIVE EFFECTS:

In step based effects the order of selection had no impact on effect playback since channels were contained in the effect itself. However, in relative effects there is no included channels and the effects can be applied to any channel that contains the effect supplied parameter. Because of this freedom a whole new world opens up. Simply reversing the order of selection will make the effect run in the opposite direction. More complicated selections will lead to more complicated and better looking effects.

STOPPING A RELATIVE EFFECT:

[Live]	jump back into Live
[91] [Thru] [94] [Enter]	select channels 91 - 94
[Effect] [At] [Enter]	stops all effects on selected channels
OR [91] [Thru] [94] [Fader Control] {Stop Effect} [Enter]	stops all effects on selected channels
OR [91] [Thru] [94] [Focus] [Fader Control] {Stop Effect} [Enter]	stops only focus effects on selected channels
OR [Effect] [6] [At] [Enter]	stops effect 6

STORING A RELATIVE EFFECT

IN A CUE:

[91] [Thru] [94] [Full] [Enter]	select channels 91 - 94
[Effect] [4] [Enter]	runs effect 4 on selected channels
[Record] [Cue] [11] [Enter]	records cue 11 which contains effect 1

IN AN ADDITIVE SUB::

[91] [Thru] [94] [Effect] [901] [Enter]	start Effect 901 on channels 91 – 94
[Record] [Sub] [5] [Enter]	records Sub 5 (default mode additive)

IN AN EFFECT SUB:

[91] [Thru] [94] [Effect] [901] [Enter]	restart Effect 901
[Record] [Sub] [6] [Enter]	records Sub 6
[Sub] [6] {Mode} {Mode} [Enter]	turns Sub 6 into an Effect Submaster

PLAYING BACK A RELATIVE EFFECT IN AN ADDITIVE SUB:

Once an effect has been placed on a submaster the fader will control the intensity and all of the non intensity parameters of the sub. The bump button will start and stop the effect.

PLAYING BACK A RELATIVE EFFECT IN AN EFFECT SUB:

Relative effects on effect subs behave differently than step based effects on effect subs. First, relative effects need to have the intensity and non intensity parameters supplied elsewhere. The bump button still starts and stops but the true difference comes in the ability of the fader. The fader on an effect submaster controls the size of the effect. This allows you to pile-on an effect on top of a cue or other subs and have on the fly control of the size of the effect!

Absolute Effects

THE BEST OF BOTH WORLDS:

Absolute Effects contain elements from both of the other effect types. This makes them a unique tool in process of programming a show

CREATING A COLOR ABSOLUTE EFFECT:

Within the Effect List:

[Effect] [7] [Enter] {Absolute}	create an absolute effect
{Action}	select Action (similar to step)
[Page →] x4	navigate to the level column
[Color Palette] [1] [Enter]	adds CP1 as the level for the first action
[Page ↓]	creates another action layer
[Color Palette] [2] [Enter] [Page ↓]	adds CP2 as the level for the second action
[Color Palette] [3] [Enter] [Page ↓]	adds CP3 as the level for the third action
[Color Palette] [4] [Enter] [Page ↓]	adds CP4 as the level for the fourth action
[Color Palette] [5] [Enter] [Page ↓]	adds CP5 as the level for the fifth action
[Color Palette] [6] [Enter] [Page ↓]	adds CP6 as the level for the sixth action
[Color Palette] [7] [Enter] [Page ↓]	adds CP7 as the level for the seventh action
[Color Palette] [8] [Enter]	adds CP8 as the level for the eighth action

CREATING A FOCUS ABSOLUTE EFFECT:

Within the Effect List:

[Effect] [8] [Enter] {Absolute}	create an absolute effect
{Action}	select Action (similar to step)
[Page →] x4	navigate to the level column
[Focus Palette] [1] [Enter]	adds FP1 as the level for the first action
[Page ↓]	creates another action layer
[Focus Palette] [2] [Enter]	adds FP2 as the level for the second action

CREATING A BEAM ABSOLUTE EFFECT:

Within the Effect List:

[Effect] [9] [Enter] {Absolute}	create an absolute effect
{Action}	select Action (similar to step)
[Page →] x4	navigate to the level column
[Beam Palette] [1] [Enter]	adds BP1 as the level for the first action
[Page ↓]	creates another action layer
[Beam Palette] [2] [Enter]	adds BP2 as the level for the second action

CREATING AN INTENSITY ABSOLUTE EFFECT:

Within the Effect List:

[Effect] [10] [Enter] {Absolute}	create an absolute effect
{Action}	select Action (similar to step)
[Page →] x4	navigate to the level column
[100] [Enter]	adds 100 as the level for the first action
[Page ↓]	creates another action layer
[0] [Enter]	adds 0 as the level for the second action

PLAYING BACK ABSOLUTE EFFECTS:

Absolute effect play back just like Relative effect so selection is very important.

[Live] [36] [Thru] [52] [Enter] [Effect] [7] [Enter]	runs effect 7 on the selected channels
---	--

EDITING ABSOLUTE EFFECTS

IN LIVE:

Absolute Effects work like Step Based effects and only have the Rate command accessible with in the ESD.

IN THE EDITOR:

Absolute Effects work like Relative Effects focusing primarily on Grouping and Trail.

STOPPING AN ABSOLUTE EFFECT:

[36] [Thru] [52] [Enter]	select channels 36 - 52
[Effect] [At] [Enter]	stops all effects on selected channels
OR [36] [Thru] [52] [Fader Control] {Stop Effect} [Enter]	stops all effects on selected channels
OR [Effect] [7] [At] [Enter]	stops effect 7

STORING A ABSOLUTE EFFECT

IN A CUE:

[36] [Thru] [52] [Full] [Enter]

select channels 36 - 52

[Effect] [7] [Enter]

runs effect 7 on selected channels

[Record] [Cue] [21] [Enter]

records cue 21 which contains effect 7

IN AN ADDITIVE SUB:

[91] [Thru] [94] [At] [Full] [Enter]

turns on channels 91 – 94

[91] [Thru] [94] [Color Palette] [1] [Enter]

puts channels 91 – 94 in CP1

[91] [Thru] [94] [Effect] [8] [Enter]

starts Effect 8

[Record] [Sub] [15] [Enter]

records Sub 15 (default mode additive)

IN AN EFFECT SUB:

[91] [Thru] [94] [At] [Full] [Enter]

turns on channels 91 – 94

[91] [Thru] [94] [Color Palette] [1] [Enter]

puts channels 91 – 94 in CP1

[91] [Thru] [94] [Effect] [8] [Enter]

starts Effect 8

[Record] [Sub] [16] [Enter]

records Sub 16

[Sub] [16] {Mode} {Mode} [Enter]

turns Sub 16 into an Effect Submaster

PLAYING BACK AN ABSOLUTE EFFECT IN AN ADDITIVE SUB:

Creating an additive sub containing an absolute effect replays in a similar way to that of a relative effect on an additive sub. The fader will set all base parameters and the bump button will start and stop the effect.

PLAYING BACK AN ABSOLUTE EFFECT IN AN EFFECT SUB:

Once an effect has been placed on a submaster the fader will control the percentage from 0 to 100 of the action level provided by the effect and the bump button will start and stop the effect. Similar to a relative effect, all base parameters must be supplied elsewhere.

Appendix 1 – Common Effects

From the Wiki section of ETC's Online Community and does not directly correlate with the showfile used for this workbook. This is a quickguide on the basics of building simple and common effects

COMMON INTENSITY EFFECTS:

- 1) Simple intensity chase
 - a. Create new effect 1, make it step based
 - b. Step 1 thru 10 have channels 1 thru 10
 - c. In live, type [group][effect][1][enter]
 - d. Hold the [data] key if you can't see the intensity
- 2) Simple intensity chase with a build
 - a. In the effects page, type [1][copyto][2][enter] (this will copy effect 1 to effect 2)
 - b. Click on 'Attributes' in the CIA and then click 'Build'
 - c. In live, type [group][effect][2][enter]
- 3) Simple intensity chase with a bounce
 - a) Copy effect 1 to effect 3
 - b) Click on 'Attributes' in the CIA and then click 'Bounce'
 - c) In live, type [group][effect][3][enter]
- 4) A more fluid intensity chase
 - a) Create new effect 4, make it linear
 - b) Click on 'Parameters' in the CIA and choose 'Intensity' [enter]
 - c) Click on 'Size' and type [100][enter]
 - d) In live, put channels 1 thru 10 in effect 4
 - e) Hold the [data] key if you can't see the intensity
- 5) Same fluid intensity chase from the center out
 - a) Record group 1 with channels 5 thru 1 + 6 thru 10
 - b) Copy effect 4 to effect 5
 - c) Click on 'Grouping' and type [5][enter]
 - d) In live, put group 1 in effect 5
- 6) Same fluid intensity chase from the outside to center
 - a) Record group 2 with channels 1 thru 5 + 10 thru 6
 - b) In live, put group 2 in effect 5
- 7) Random flicker
 - a) Create effect 6, make it linear
 - b) Click on 'Parameter' and select 'Intensity' in the CIA, press [enter]
 - c) Hit softkey {edit}, then {clear} to erase the graph
 - d) Draw a simple triangle, starting from the center "x" zero line in the graph, going up to the highest point at "y" line of the graph, then ending at the "x" zero line in the middle of the graph
 - e) Hit softkey {apply}
 - f) Click 'Attributes' and choose 'Random Group'
 - g) Click 'Attributes' and choose 'Random Rate' then type [50][thru][300][enter].
 - h) Click 'Cycle Time' then type [0.3][enter]
 - i) In live put channels 1 thru 10 in effect 6
 - j) If you want to change the base intensity, simply put channels 1 thru 10 at that level.
 - k) If you want to change the top intensity, simply go into the effect and change its 'Size'
 - l) 'Size' refers to how many points above the base intensity the effect will go

COMMON COLOR EFFECTS

Assume channels 1 thru 10 are LEDs:

- 1) Color wipe from left to right across LEDs (just once then stop)
 - a. Record Color Palette 1 with channels 1 thru 10 in red
 - b. Create new effect 1, make it step based
 - c. Step 1 thru 10 have channels 1 thru 10
 - d. On state Color Palette 1. Off state Color Palette 1.
 - e. Click on 'Attributes' then choose 'Build'
 - f. Click on 'Exit' then choose 'Stop and hold'
 - g. In live, turn channels 1 thru 10 at full
 - h. Type [group][effect][1][enter]
- 2) Same color wipe but from right to left (just once then stop)
 - a) Copy effect 1 to effect 2
 - b) Click on 'Attributes' then choose 'Reverse'
- 3) Same color wipe but from center out (just once then stop)
 - a) Record group 1 with channels 5 thru 1 + 6 thru 10
 - b) Start new effect 3, make it step based
 - c) Steps 1 thru 5 have group 1
 - d) On state Color Palette 1. Off state Color Palette 1.
 - e) Click on 'Attributes' then choose 'Build'
 - f) Click on 'Exit' then choose 'Stop and hold'
 - g) In live, type [group][effect][1][enter]
- 4) Color chases using absolute effects
 - a) Create new effect 4, make it absolute
 - b) In action 1, put Color Palette 1
 - c) In action 2, put Color Palette 2
 - d) In live, put channels 1 thru 10 in effect 4
- 5) Absolute color chase from the center out
 - a) Copy effect 4 to effect 5
 - b) Make 'Grouping' be 5
 - c) In live, put group 1 in effect 5
- 6) Rainbow chase
 - a) Create 7 color palettes that represent 7 colors of the rainbow
 - b) Create new effect 6, make it absolute
 - c) In action 1, put Color Palette 1
 - d) Repeat step "c." for all seven colors
 - e) In live, put channels 1 thru 10 into effect 6

Appendix 2 – Channel Hookup

Channel	Universe	Address	Manufacturer	Type	Focus/Notes
1	1	1		Dimmer	19° S4 DSR Special
2	1	2		Dimmer	19° S4 DSC Special
3	1	3		Dimmer	19° S4 DSL Special
4	1	4		Dimmer	36° S4 Drum Special
6	1	51		Dimmer	PAR 64 1kW Area 1
7	1	52		Dimmer	PAR 64 1kW Area 2
8	1	53		Dimmer	PAR 64 1kW Area 3
9	1	54		Dimmer	PAR 64 1kW Area 4
10	1	55		Dimmer	PAR 64 1kW Area 5
11	1	56		Dimmer	PAR 64 1kW Area 6
12	1	57		Dimmer	PAR 64 1kW Area 7
13	1	58		Dimmer	PAR 64 1kW Area 8
14	1	59		Dimmer	PAR 64 1kW Area 9
15	1	60		Dimmer	PAR 64 1kW Area 10
16	1	61		Dimmer	PAR 64 1kW Area 11
17	1	62		Dimmer	PAR 64 1kW Area 12
18	1	63		Dimmer	PAR 64 1kW Area 13
19	1	64		Dimmer	PAR 64 1kW Area 14
20	1	65		Dimmer	PAR 64 1kW Area 15
21	1	5		Dimmer	19° S4 Blue Side Light
21	1	6		Dimmer	19° S4 Blue Side Light
21	1	7		Dimmer	19° S4 Blue Side Light
22	1	8		Dimmer	19° S4 Blue Side Light
22	1	9		Dimmer	19° S4 Blue Side Light
22	1	10		Dimmer	19° S4 Blue Side Light
23	1	11		Dimmer	19° S4 Red Side Light
23	1	12		Dimmer	19° S4 Red Side Light
23	1	13		Dimmer	19° S4 Red Side Light
24	1	14		Dimmer	19° S4 Red Side Light
24	1	15		Dimmer	19° S4 Red Side Light
24	1	16		Dimmer	19° S4 Red Side Light
25	1	17		Dimmer	19° S4 Straw Side Light
25	1	18		Dimmer	19° S4 Straw Side Light
25	1	19		Dimmer	19° S4 Straw Side Light
26	1	20		Dimmer	19° S4 Straw Side Light
26	1	21		Dimmer	19° S4 Straw Side Light
26	1	22		Dimmer	19° S4 Straw Side Light
31	1	23		Dimmer	50° S4 Center Stage Breakups
31	1	24		Dimmer	50° S4 Center Stage Breakups
31	1	25		Dimmer	50° S4 Center Stage Breakups
31	1	26		Dimmer	50° S4 Center Stage Breakups
31	1	27		Dimmer	50° S4 Center Stage Breakups
32	1	28		Dimmer	50° S4 Around Stage Breakup
32	1	29		Dimmer	50° S4 Around Stage Breakup
32	1	30		Dimmer	50° S4 Around Stage Breakup
32	1	31		Dimmer	50° S4 Around Stage Breakup
32	1	32		Dimmer	50° S4 Around Stage Breakup
32	1	33		Dimmer	50° S4 Around Stage Breakup
32	1	34		Dimmer	50° S4 Around Stage Breakup

Channel	Universe	Address	Manufacturer	Type	Focus/Notes
6 Part 2	1	71	Wybron	Coloram 2	Scroller- Area 1
7 Part 2	1	72	Wybron	Coloram 2	Scroller- Area 2
8 Part 2	1	73	Wybron	Coloram 2	Scroller- Area 3
9 Part 2	1	74	Wybron	Coloram 2	Scroller- Area 4
10 Part 2	1	75	Wybron	Coloram 2	Scroller- Area 5
11 Part 2	1	76	Wybron	Coloram 2	Scroller- Area 6
12 Part 2	1	77	Wybron	Coloram 2	Scroller- Area 7
13 Part 2	1	78	Wybron	Coloram 2	Scroller- Area 8
14 Part 2	1	79	Wybron	Coloram 2	Scroller- Area 9
15 Part 2	1	80	Wybron	Coloram 2	Scroller- Area 10
16 Part 2	1	81	Wybron	Coloram 2	Scroller- Area 11
17 Part 2	1	82	Wybron	Coloram 2	Scroller- Area 12
18 Part 2	1	83	Wybron	Coloram 2	Scroller- Area 13
19 Part 2	1	84	Wybron	Coloram 2	Scroller- Area 14
20 Part 2	1	85	Wybron	Coloram 2	Scroller- Area 15
36	1	101-103	Color Kinetics	ColorBlast 12	Cyc Wash
37	1	104-106	Color Kinetics	ColorBlast 12	Cyc Wash
38	1	107-109	Color Kinetics	ColorBlast 12	Cyc Wash
39	1	110-112	Color Kinetics	ColorBlast 12	Cyc Wash
40	1	113-115	Color Kinetics	ColorBlast 12	Cyc Wash
41	1	116-118	Color Kinetics	ColorBlast 12	Cyc Wash
42	1	119-121	Color Kinetics	ColorBlast 12	Cyc Wash
43	1	122-124	Color Kinetics	ColorBlast 12	Cyc Wash
44	1	125-127	Color Kinetics	ColorBlast 12	Cyc Wash
45	1	128-130	Color Kinetics	ColorBlast 12	Cyc Wash
46	1	131-133	Color Kinetics	ColorBlast 12	Cyc Wash
47	1	134-136	Color Kinetics	ColorBlast 12	Cyc Wash
48	1	137-139	Color Kinetics	ColorBlast 12	Cyc Wash
49	1	140-142	Color Kinetics	ColorBlast 12	Cyc Wash
50	1	143-145	Color Kinetics	ColorBlast 12	Cyc Wash
51	1	146-148	Color Kinetics	ColorBlast 12	Cyc Wash
52	1	149-151	Color Kinetics	ColorBlast 12	Cyc Wash
61	1	152-182	ETC	Revolution RWM / SM Original	(ETC Scroll)
62	1	183-213	ETC	Revolution RWM / SM Original	(ETC Scroll)
63	1	214-244	ETC	Revolution RWM / SM Original	(ETC Scroll)
64	1	245-275	ETC	Revolution RWM / SM Original	(ETC Scroll)

Appendix 3 – Advanced Hookup

Channel	Universe	Address	Manufacturer	Type	Focus/Notes
61	1	152	ETC	Revolution RWM/SM Original	(ETC scroll)
62	1	183	ETC	Revolution RWM/SM Original	(ETC scroll)
63	1	214	ETC	Revolution RWM/SM Original	(ETC scroll)
64	1	245	ETC	Revolution RWM/SM Original	(ETC scroll)
71	1	276	Martin	Mac 700 Profile (Basic Mode)	CS Circle
72	1	299	Martin	Mac 700 Profile (Basic Mode)	CS Circle
73	1	322	Martin	Mac 700 Profile (Basic Mode)	CS Circle
74	1	345	Martin	Mac 700 Profile (Basic Mode)	CS Circle
75	1	368	Martin	Mac 700 Profile (Basic Mode)	CS Circle
76	1	391	Martin	Mac 700 Profile (Basic Mode)	CS Circle
77	1	414	Martin	Mac 700 Profile (Basic Mode)	CS Circle
78	1	437	Martin	Mac 700 Profile (Basic Mode)	CS Circle
81	2	1	Martin	Mac 2000 Wash Color (16-bit)	Floor unit
82	2	22	Martin	Mac 2000 Wash Color (16-bit)	Floor unit
83	2	43	Martin	Mac 2000 Wash Color (16-bit)	Floor unit
84	2	64	Martin	Mac 2000 Wash Color (16-bit)	Floor unit
85	2	85	Martin	Mac 2000 Wash Color (16-bit)	Floor unit
86	2	106	Martin	Mac 2000 Wash Color (16-bit)	Floor unit
91	2	127	Martin	Mac 2000 Profile (16-bit)	FOH
92	2	151	Martin	Mac 2000 Profile (16-bit)	FOH
93	2	175	Martin	Mac 2000 Profile (16-bit)	FOH
94	2	199	Martin	Mac 2000 Profile (16-bit)	FOH
101	2	230 *	Vari-Lite	VL3500 Spot	FOH
102	2	270	Vari-Lite	VL3500 Spot	FOH
103	2	310	Vari-Lite	VL3500 Spot	FOH
104	2	350	Vari-Lite	VL3500 Spot	FOH
105	2	390	Vari-Lite	VL3500 Spot	FOH
106	2	430	Vari-Lite	VL3500 Spot	FOH

* Think Offset!