

DMX Specification rev4. Thursday, March 11, 2004

Catalyst and PixelMAD DMX spec

Some features may or may not be in versions of either.

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<i>Channel</i>	<i>Usage</i>	<i>Default value</i>
1	Library Folder	0
2	Library File	0
3 & 4	In point	0
5 & 6	Out point	0
7	Play mode	0
8	Play speed	0
9 & 10	X rotation	32768
11 & 12	Y Rotation	32768
13 & 14	Z rotation	32768
15 & 16	Image size	36864
17 & 18	X position	32768
19 & 20	Y position	32768
21	Aspect ratio	0
22	Movement speed	0
23	Intensity	0
24	Red Parameter	255
25	Green Parameter	255
26	Blue Parameter	255
27	Strobing	0
28	Trails	0
29	Colour FX	0
30	Visual Geometry FX	0
31	Visual FX Parameter 1	0
32	Visual FX Parameter 2	0
33	Keystone X1	128
34	Keystone Y1	128
35	Keystone X2	128

36	Keystone Y2	128
37	Keystone X3	128
38	Keystone Y3	128
39	Keystone X4	128
40	Keystone Y4	128

Image source *Folder*

Ch 1 Folder	Usage	Comments
0- 253	Selects Library Folder	
254	Use Layer Mode	
255	Select Video input	

Image source *File*

Ch 2 File	Usage	Comments
Ch1 in Library mode 0- 255	Selects Library File in folder	
Ch1 in 'Use Layer Mode'	0	Selects Layer 1
	1	Selects Layer 2
	2	Selects Layer 3
	3	Selects Layer 4
Ch 1 in Video Input Mode	0	Selects video input 1
	1	Selects video input 2

Inpoint

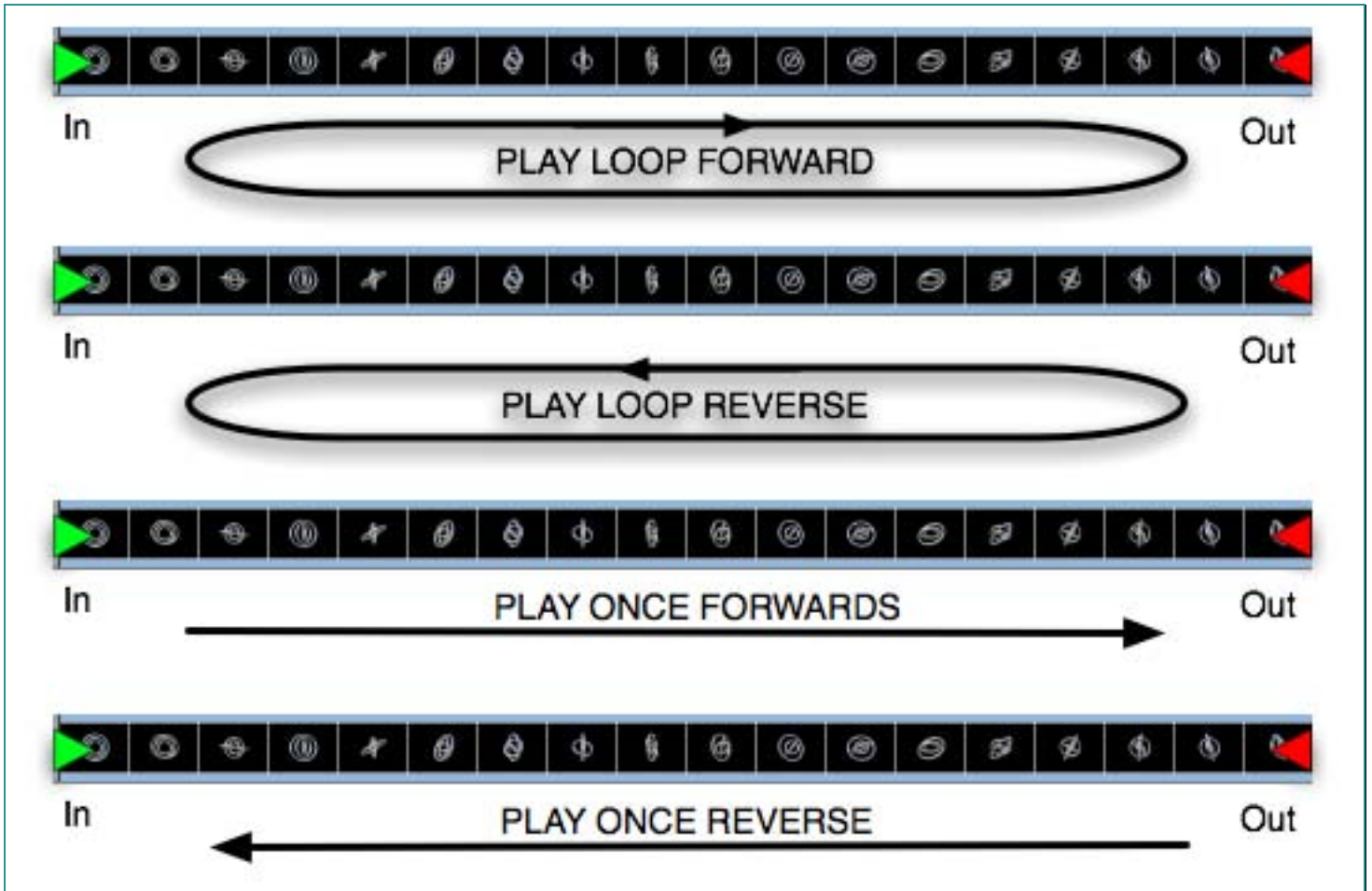
Ch 3&4 Inpoints	Usage	Comments
0- 65535	Selects inpoint	Video looping inpoint – see Playmode

Outpoint

<i>Ch 5&6 Outpoints</i>	<i>Usage</i>	<i>Comments</i>
0- 65535	Selects outpoint	Video looping outpoint – see playmode

Playmode

<i>Ch 7 - Playmode</i>	<i>Usage</i>	<i>Comments</i>
0	Display frame at inpoint	
1	Display frame at outpoint	
2	Play Looping forwards	Play between inpoint and outpoint
3	Play Looping reverse	Play between inpoint and outpoint
4	Play Once forward	Single shot play forwards
5	Play Once Reverse	Single shot play reverse
6	Stop	
7	Random	Play a random frame
8	Play sine	Bounce between in and out points
10	Play Looping forwards Intensity > 0	Play between inpoint and outpoint
11	Play Looping reverse Intensity > 0	Play between inpoint and outpoint
12	Play Once forward Intensity > 0	Single shot play forwards
13	Play Once Reverse Intensity > 0	Single shot play reverse
14	Random Intensity > 0	Play a random frame
15	Play sine Intensity > 0	Bounce between in and out points
80 - 99	Sync to master ID	



Playspeed

<i>Ch 8 - Playspeed</i>	<i>Usage</i>	<i>Comments</i>
0	100%	
1	Pause	
2 - 255	1 – 200%	

Image Rotation

<i>Ch 9 & 10</i>	<i>Usage</i>	<i>Comments</i>
X Rotation	See Diagram below	

Ch 11 & 12

Y Rotation

See Diagram below

Ch 13 & 14

Z Rotation

See Diagram below

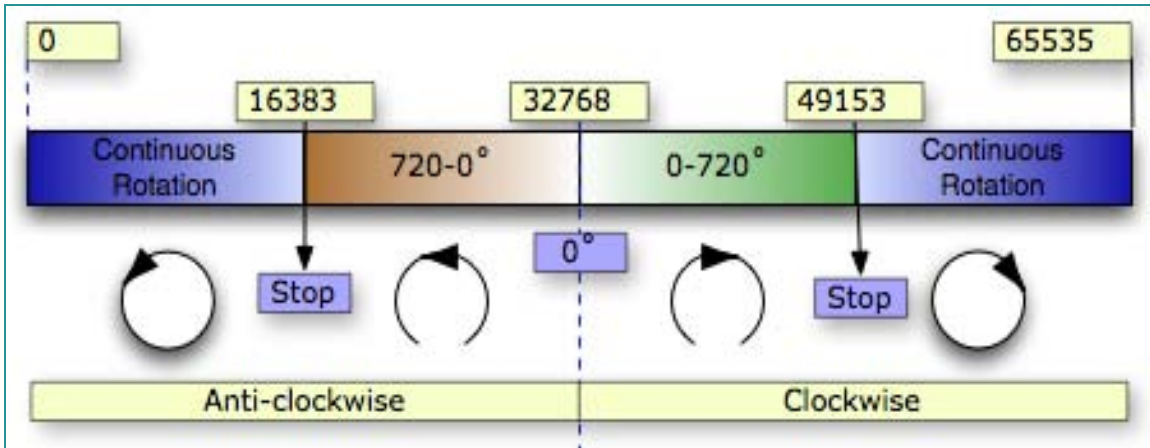


Image Scale

Ch 15 & 16 - scale	Usage	Comments
Image Scale	See Diagram below	

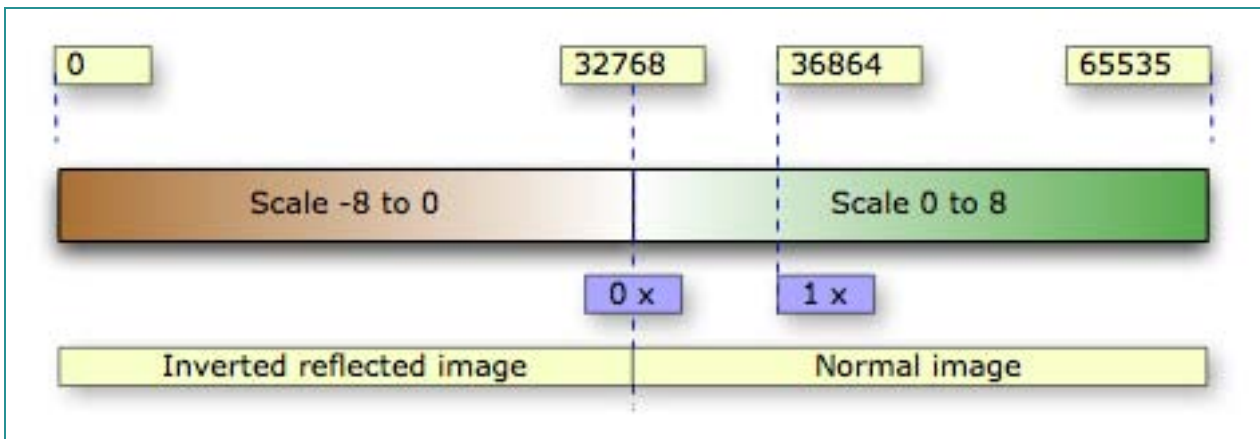
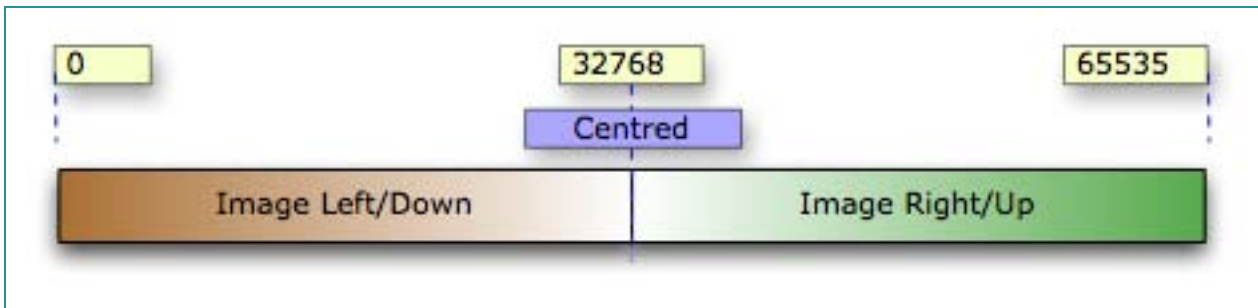


Image Position

Ch 17 & 18	Usage	Comments
X Position	See Diagram below	
Ch 19 & 20		
Y Position	See Diagram below	



Aspect Ratio

Ch 21 – Aspect ratio	Usage	Comments
0 -128		Image Compressed horizontally
129-255		Image Compressed Vertically

Movement Speed

Ch 22 – Movement speed	Usage	Comments
0 -255	Damping Factor	Use when panning or zooming around image to make movement smoother



Intensity





Ch 23 - Intensity	Usage	Comments
0 -255	Layer Intensity or transparency	Opacity of Layer

Red Green Blue

Ch 24 25 26	Usage	Comments
Red	Depends on Colour FX	
Green	Depends on Colour FX	
Blue	Depends on Colour FX	

Strobe

Ch 27 - Strobe	Usage		Comments
0	Strobe Off		No strobing
1 - 24	On Off Fast - slow		Even On Off Time
25 - 49	Pulse 1		Time between pulses varies. Pulse Length always 1 frame long

50 - 74	Pulse 2		Pulse length varies. Time between pulses 25 frames
75 - 99	Pulse Train		Pulse number varies. Time between pulse group is 25 frames
100 - 124	Random 1 – even on off time.		Even on off pulse, length of pulse varies randomly.
125 - 149	Random 1 – single frame pulse.		Pulse length always 1 frame. Time between pulses is random.

Trails

Ch 28 - Trails	Usage	Comments
0 -255	Image Trails	Only really works on layer 1

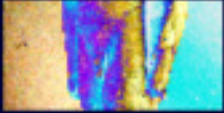











Colour FX






Ch 29 Colour FX	Name	Ch 24 R	Ch 25 G	Ch 26 B	Comments
0 RGB	RGB Mix	<input type="button" value="Red"/>	<input type="button" value="Green"/>	<input type="button" value="Blue"/>	
1 RGB high Contrast	RGB High Contrast	<input type="button" value="Red"/>	<input type="button" value="Green"/>	<input type="button" value="Blue"/>	

2 RGB v high Contrast	RGB V hi contrast	<input type="checkbox"/> Red	<input type="checkbox"/> Green	<input type="checkbox"/> Blue	
3 transparent - black	Transparent black	<input type="checkbox"/> Red	<input type="checkbox"/> Green	<input type="checkbox"/> Blue	<input type="checkbox"/> Transparent
4 transparent - white	Transparent white	<input type="checkbox"/> Red	<input type="checkbox"/> Green	<input type="checkbox"/> Blue	<input type="checkbox"/> Transparent
10 RGB inverted color	RGB Invert	<input type="checkbox"/> Red	<input type="checkbox"/> Green	<input type="checkbox"/> Blue	
11 RGB Invert hi-Contrast	RGB Invert hi-con	<input type="checkbox"/> Red	<input type="checkbox"/> Green	<input type="checkbox"/> Blue	
12 RGB Invert v hi-Contrast	RGB Invert v hi-con	<input type="checkbox"/> Red	<input type="checkbox"/> Green	<input type="checkbox"/> Blue	
13 invert whatever	Invert whatever	<input type="checkbox"/> Red %	<input type="checkbox"/> Green %	<input type="checkbox"/> Blue %	<input type="checkbox"/> Transparent
20 black white	Black & white	<input type="checkbox"/> .	<input type="checkbox"/> .	<input type="checkbox"/> .	
21 BW - hi contrast	BW variable	<input type="checkbox"/> Red %	<input type="checkbox"/> Green %	<input type="checkbox"/> Blue %	<input type="checkbox"/> Transparent
22 BW vhi contrast	BW hi-con	<input type="checkbox"/> .	<input type="checkbox"/> .	<input type="checkbox"/> .	<input type="checkbox"/> Transparent
23 BW - variable vhi contrast	BW variable hi-con	<input type="checkbox"/> Red %	<input type="checkbox"/> Green %	<input type="checkbox"/> Blue %	<input type="checkbox"/> Transparent
24 invert BW	Invert BW	<input type="checkbox"/> Red %	<input type="checkbox"/> Green %	<input type="checkbox"/> Blue %	<input type="checkbox"/> Transparent

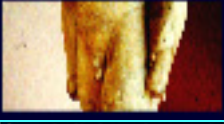


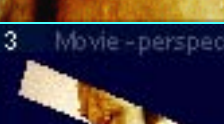
30 mask 	Mask	<input type="text" value="Mask %"/>	<input type="button" value="Transparent"/> <input type="button" value="No Fading"/>
31 invert mask 1 	Invert Mask 1	<input type="text" value="Mask %"/>	<input type="button" value="Transparent"/> <input type="button" value="No Fading"/>
32 invert mask 2 	Invert Mask 2	<input type="text" value="Mask %"/>	<input type="button" value="Transparent"/> <input type="button" value="No Fading"/>
35	Mask - Fading	<input type="text" value="Mask %"/>	<input type="button" value="Transparent"/>
36	Invert Mask 1- Fading	<input type="text" value="Mask %"/>	<input type="button" value="Transparent"/>
37	Invert Mask 1- Fading	<input type="text" value="Mask %"/>	<input type="button" value="Transparent"/>
40 Alpha.invert-as re 	Alpha Invert -Red	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>	
41 Alpha.invert - as gr 	Alpha Invert - Green	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>	
42 Alpha.invert-as bl 	Alpha Invert - Blue	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>	
43 Alpha.invert-as oc 	Alpha Invert - Colour	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	
44 Alpha - as red 	Alpha - as Red	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>	
45 Alpha - as green 	Alpha - as Green	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>	
46 Alpha - as blue 	Alpha - as Blue	<input type="text" value="."/> <input type="text" value="."/> <input type="text" value="."/>	
47 Alpha - as colour 	Alpha - as Colour	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	








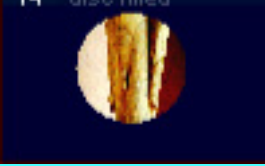


50	lookup 1 - colour w	Lookup 1 – color hue	Red %	Green %	Blue %	
51	lookup 2 - false co	Lookup 2 – false color	Red %	Green %	Blue %	
52	lookup 3 - tint sola	Lookup 3 – solarize	Red %	Green %	Blue %	
60	Gamma bw	Gamma bw	bw gamma			
61	Gamma colour	Gamma color	gamma			
62	Gamma colour-se	Gamma col sep channels	red gamma	green gamma	blue gamma	
63	Gain colour-separ	Gain – color – sep channels	red gain	green gain	blue gain	
65	Quantise colour-s	Quantise color	red quantise	green quantise	blue quantise	
70	Convert to YUV	Convert to YUV	Red	Green	Blue	
71	Saturation	Saturation	saturation			
72	Mega Saturation	Mega saturation	saturation			
73	Solarise	Solarise	Red	Green	Blue	

74 Solarise- Invert 	Solarise invert	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	
80 RGB Layer Blend 1 	RGB layer blend 1	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
81 RGB Layer Blend 2 	RGB layer blend 2	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
82 RGB Layer Blend 3 	RGB layer blend 3	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
83 RGB Layer Blend 4 	RGB layer blend 4	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
84 RGB Layer Blend 5 	RGB layer blend 5	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
85 RGB Layer Blend 6 -add 	RGB layer blend 6 -add	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
86 RGB Layer Blend 7 -subtract 	RGB layer blend 7 -subtract	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
89 RGB Layer Blend 10 -Max 	RGB layer blend 10 -Max	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
90 RGB Layer Blend 11 - add 2 	RGB layer blend 11 - add 2	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
91 RGB Layer Blend 12 - invadd2 	RGB layer blend 12 - invadd2	<input type="button" value="Red"/> <input type="button" value="Green"/> <input type="button" value="Blue"/>	<input type="button" value="Layer Mode"/>
100 Tint 	Tint	<input type="button" value="red tint"/> <input type="button" value="green tint"/> <input type="button" value="blue tint"/>	





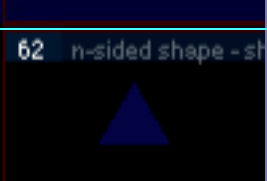
101 Tint Inverse 	Tint inverse	red tint green tint blue tint	
102 Fade to hue 	Fade to hue	Fade % Hue -	
103 RGB -> GBR 	RGB -> GBR	Red Green Blue	
104 RGB -> BGR 	RGB -> BGR	Red Green Blue	
105 RGB -> GRB 	RGB -> GRB	Red Green Blue	


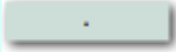

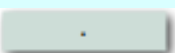
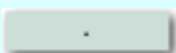


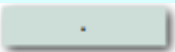


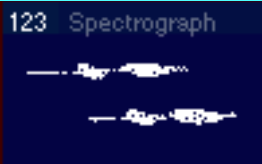
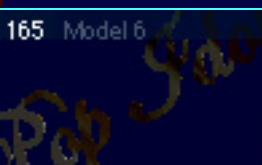
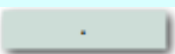
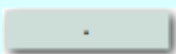
Visual Shape FX

Ch 30 FX	Name	Ch 31 Param 1	Ch 32 Param 2	Comments
0 Movie-Non-infinite 	Movie – non-infinite plane	-	-	
1 Infinite plane - bla 	Movie – infinite plane	-	-	
2 Unity scale 	Unity Scale	-	-	
3 Movie - perspecti 	Movie - Perspective	Field Of View	Camera	

<p>5 Keystone 1</p> 	Keystone 1	-	-	<p>Keystone channels active</p>
<p>6 Keystone 2 - Rotatable</p> 	Keystone 2 - rotatable	-	-	<p>Keystone channels active</p>
<p>9</p> 	Setup Keystone 1	-	-	<p>Keystone channels active</p>
<p>10 Sphere filled</p> 	Sphere solid	-	-	
<p>11 Sphere wireframe</p> 	Sphere wireframe	-	-	
<p>12 Sphere points</p> 	Sphere points	-	-	
<p>13 Sphere lit</p> 	Sphere – with lighting	-	-	
<p>14 disc filled</p> 	Disc solid	-	-	
<p>15 disc wireframe</p> 	Disc Wireframe	-	-	
<p>16 disc points</p> 	Disc points	-	-	

<p>17 disc silhouette</p> 	<p>Disc Silhouette</p>	<input type="text" value="."/> <input type="text" value="."/>	
<p>20 Kaleidoscope</p> 	<p>Kaleidoscope</p>	<input type="text" value="."/> <input type="text" value="."/>	
<p>21 Magic Lantern 1</p> 	<p>Magic Lantern 1</p>	<input type="button" value="Aspect Ratio"/> <input type="button" value="Movie Count"/>	
<p>22 Stretch</p> 	<p>Stretch 1</p>	<input type="button" value="Start"/> <input type="button" value="Stretch"/>	
<p>23 Panorama slices</p> 	<p>Panorama slices</p>	<input type="button" value="X slices"/>	
<p>24 Magic Lantern 2</p> 	<p>Magic Lantern 2</p>	<input type="button" value="Aspect Ratio"/> <input type="button" value="Movie Count"/>	
<p>30 cube 4 sides</p> 	<p>Cube – 4 sides</p>	<input type="text" value="."/> <input type="text" value="."/>	
<p>31 cube 6 sides</p> 	<p>Cube 6 sides</p>	<input type="text" value="."/> <input type="text" value="."/>	
<p>32 cube 6 colour</p> 	<p>Cube 6 sides + colour</p>	<input type="text" value="."/> <input type="text" value="."/>	
<p>33 4 layers - on - cube</p> 	<p>Cube – first 4 layers</p>	<input type="text" value="."/> <input type="text" value="."/>	

	<p>Tile 1</p>	<p>X Tile Count</p> <p>Y Tile Count</p>	
	<p>Tile 4 – Random colour</p>	<p>X Tile Count</p> <p>Y Tile Count</p>	
	<p>Tile 5 - consecutive</p>	<p>X Tile Count</p> <p>Y Tile Count</p>	
	<p>Tile 6 – random colour</p>	<p>X Tile Count</p> <p>Y Tile Count</p>	
	<p>Tile 7 – Random frame</p>	<p>X Tile Count</p> <p>Y Tile Count</p>	
	<p>Random flicker</p>	<p>[Slider]</p> <p>[Slider]</p>	
	<p>Random colour flicker</p>	<p>[Slider]</p> <p>[Slider]</p>	
	<p>Rectangle – plain colour</p>	<p>[Slider]</p>	<p>Keystone channels active</p>
	<p>Rectangle – gradient colour</p>	<p>Top Hue</p> <p>Bottom Hue</p>	<p>Keystone channels active</p>
	<p>n-sided shape</p>	<p>Side Count</p>	

70 Shutter - shuttered		Shutter - black	 	Keystone channels active
71 Shutter - shuttered		Shutter - colour	 	Keystone channels active
72 Iris - shutter - black		Iris - shutter	Softness	
100 Teapot		Teapot		
120 Coloured Sphere		Coloured Sphere		
123 Spectrograph		Spectrograph	Waveform	Uses Sound Input to show waveforms
165 Model 6		Models -OBJ format	 	
160 - 179				

Param 1 Param 2

Ch 31 - Param 1	Usage	Comments
0 - 255	Depends on Visual FX. See table above	

<i>Ch 32 – Param 2</i>	<i>Usage</i>	<i>Comments</i>
0 - 255	Depends on Visual FX. See table above	

Keystone – shutter channels

These channels are only active in visual effects with the

Keystone

Flag.

Visual FX 5 8 9

<i>Ch 33 – X1</i>	<i>Usage</i>	<i>Comments</i>
0 - 255	See diagram below	Only active in Visual effects with Keystone
<i>Ch 34 – Y1</i>		
0 - 255	See diagram below	Keystone
<i>Ch 35 – X2</i>		
0 - 255	See diagram below	Keystone
<i>Ch 36 – Y2</i>		
0 - 255	See diagram below	Keystone
<i>Ch 37 – X3</i>		
0 - 255	See diagram below	Keystone
<i>Ch 38 – Y3</i>		
0 - 255	See diagram below	Keystone
<i>Ch 39 – X4</i>		
0 - 255	See diagram below	Keystone
<i>Ch 40 – Y4</i>		
0 - 255	See diagram below	

