

Appendix A:

DMX Protocol

The following tables list the parameters and their associated DMX channel number(s). The range for a server on the DMX link depends on the number of Graphic Objects you select for your application. For more detailed information on DMX Protocol, please contact customer support at High End Systems.

NOTE: *Gray shaded parameters are not available in Version 1 Protocol*

DLV Version 2 DMX Channel Assignment

DLV Mechanical Control

Parameter Name	DMX Chan #
Motion Functions	
Pan	1
	2
Tilt	3
	4
Dimmer	5
Focus	6
Zoom	7
MSpeed	8
Macro	9
Control	10
Indigo Highlighter Control	11
Indigo Highlighter Level	12

DLV Global Control

Parameter Name	DMX Chan #	Parameter Name	DMX Chan #
Global Intensity	13	Keystone Top Left X	41
Global Effect 1	14	Keystone Top Left Y	42
Global Effect 1 Modifier 1	15	Keystone Top Right X	43
Global Effect 1 Modifier 2	16	Keystone Top Right Y	44
Global Effect 1 Modifier 3	17	Keystone Bottom Right X	45
Global Effect 2	18	Keystone Bottom Right Y	46
Global Effect 2 Modifier 1	19	Keystone Bottom Left X	47
Global Effect 2 Modifier 2	20	Keystone Bottom Left Y	48
Global Effect 2 Modifier 3	21	Keystone X Ratio	49
Global Effect 3	22	Keystone Y Ratio	50
Global Effect 3 Modifier 1	23	Framing Top Left X	51
Global Effect 3 Modifier 2	24	Framing Top Left Y	52
Global Effect 3 Modifier 3	25	Framing Top Right X	53
Global Effect 4	26	Framing Top Right Y	54
Global Effect 4 Modifier 1	27	Framing Bottom Right X	55
Global Effect 4 Modifier 2	28	Framing Bottom Right Y	56
Global Effect 4 Modifier 3	29	Framing Bottom Left X	57
Global Effect 5	30	Framing Bottom Left Y	58
Global Effect 5 Modifier 1	31	Viewpoint mode	59
Global Effect 5 Modifier 2	32	Viewpoint Position X	60
Global Effect 5 Modifier 3	33		61
Mask Select (default iris)	34	Viewpoint Position Y	62
Mask Size	35		63
Mask Edge	36	Viewpoint Position Z	64
Edge Fade Top	37		65
Edge Fade Right	38	Global Control	66
Edge Fade Bottom	39	Global Control Modifier	67
Edge Fade Left	40		

DLV Graphic Object Control

Parameter Name	DMX Channel #			
	Obj.1	Obj.2	Obj.3	Obj.4
Opacity	68	113	158	203
3-D Object File	69	114	159	204
Media Folder	70	115	160	205
Media File	71	116	161	206
In Frame	72	117	162	207
	73	118	163	208
Out Frame	74	119	164	209
	75	120	165	210
Play Mode	76	121	166	211
Play Speed	77	122	167	212
Sync Type	78	123	168	213
Sync To	79	124	169	214
Visual Mode	80	125	170	215
Visual Mode Modifier 1	81	126	171	216
Visual Mode Modifier 2	82	127	172	217
Graphic Effect 1	83	128	173	218
Effect 1 Modifier 1	84	129	174	219
Effect 1 Modifier 2	85	130	175	220
Effect 1 Modifier 3	86	131	176	221
Graphic Effect 2	87	132	177	222
Effect 2 Modifier 1	88	133	178	223
Effect 2 Modifier 2	89	134	179	224
Effect 2 Modifier 3	90	135	180	225
Graphic Effect 3	91	136	181	226
Effect 3 Modifier 1	92	137	182	227
Effect 3 Modifier 2	93	138	183	228
Effect 3 Modifier 3	94	139	184	229
X-axis rotation	95	140	185	230
	96	141	186	231
Y -axis rotation	97	142	187	232
	98	143	188	233
Z-axis rotation	99	144	189	234
	100	145	190	235
Scale X	101	146	191	236
	102	147	192	237
Scale Y	103	148	193	238
	104	149	194	239
Scale Z	105	150	195	240
	106	151	196	241
X Position	107	152	197	242
	108	153	198	243
Y Position	109	154	199	244
	110	155	200	245
Z Position	111	156	201	246
	112	157	202	247

Parameter Description and Options

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
MECHANICAL CONTROL					
Movement Functions					
Pan Course	Moves projector head from 0° to 400°	0-	0-100	32768	50
Pan Fine		65535			
Tilt Course	Moves projector head from 0° to 240°	0-	0-100	32768	50
Tilt Fine		65535			
Dimmer	Adjusts the mechanical shutter located in front of the projector output lens from closed to open	0-255	0-100	0	0
Focus	Adjusts focus from near to far	0-255	0-100	128	50
Zoom	Adjusts mechanical zoom from narrow to wide	128-255	50-100	192	75
	Adjusts digital zoom from extra narrow to narrow	0-127	0-49		
MSpeed	See Appendix B for conversion tables	0-255	0-100	0	0
Macro	Reserved for future use	0-255	0-100	0	0
Control Function	Fixture Options (Set Dimmer Channel = 0 except for MSpeed Off)				
<i>(To prevent inadvertent triggering, some Control Function options will not activate until the value has been held for a period of time. A number in parenthesis is the minimum number of consecutive times a DMX value must be received from a controller before the operation begins.)</i>	Pan and Tilt MSpeed off	10-13	NA	0	0
	Reserved	14-19			
	Menu Display Off (5)	20-28			
	Reserved	29			
	Menu Display Dim (5)	30-38			
	Reserved	39			
	Menu Display Bright (5)	40-48			
	Reserved	49			
	Preview	50-58			
	Reserved	59			
	Home All (20)	60-68			
	Reserved	69-79			
	Lamp ON (80)	80-88			
	Reserved	89			
	Lamp OFF (80)	90-98			
	Reserved	99-119			
Shutdown (80)	120-130				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Control Function <i>(To prevent inadvertent triggering, some Control Function options will not activate until the value has been held for a period of time. A number in parenthesis is the minimum number of consecutive times a DMX value must be received from a controller before the operation begins.)</i>	Reserved	131-144		0	0
	Graphics System Reset (80)	145-149		0	0
	Reserved	150-155		0	0
	Home Pan/Tilt (20)	160-168		0	0
	Reserved	169		0	0
	Home Focus/Zoom/Shutter (20)	170-178		0	0
	Reserved	179-255		0	0

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
GLOBAL FUNCTIONS					
Global Intensity	Selects intensity level for the composite image	0-255	0-100	255	100
Global Effects					
Global Effect Mode 1, 2, 3, 4 & 5	Off, no effects selection	0	0	0	0
	CMY simulates CMY by subtracting RGB. Reduces color values. Mod1 = cyan, Mod2 = magenta, Mod3 = yellow	1			
	CMY adds to all pixels. Increases color values. Mod1 = cyan, Mod2 = magenta, Mod3 = yellow	2			
	CMY adds to non-black pixels. Increases color values. Mod1 = cyan, Mod2 = magenta, Mod3 = yellow	3			
	RGB Add, all pixels. Mod1 = red, Mod2 = green, Mod3 = blue	4			
	RGB Add 2, all pixels. Mod1 = red, Mod2 = green, Mod3 = blue	5			
	RGB Add, non-black pixels. Mod1 = red, Mod2 = green, Mod3 = blue	6			
	RGB Swap to GBR. Mod1 = red, Mod2 = green, Mod3 = blue.	7			
	RGB Swap to BRG. Mod1 = red, Mod2 = green, Mod3 = blue.	8			
	Solarize 1 If color value < DMX value, invert color. Mod1 = red, Mod2 = green, Mod3 = blue.	9	NA		
	Solarize 2 If color value > DMX, invert color. Mod1 = red, Mod2 = green, Mod3 = blue.	10			
	Solarize 3 If color value < DMX, set color to 0. Mod1 = red, Mod2 = green, Mod3 = blue.	11			
	Solarize 4 If color value > DMX, set color to 0. Mod1 = red, Mod2 = green, Mod3 = blue.	12			
	DotP and Resample. Mod1, Mod2 and Mod3 control resampling.	13			
	Color Cycle, DMX value controls cycle speed. Mod1 = red, Mod2 = green, Mod3 = blue.	14			
	All or nothing. Mod1 = red, Mod2 = green, Mod3 = blue.	15			
	Solid color RGB, Mod1 = red, Mod2 = green, Mod3 = blue.	16			
	RGB Invert Mod1 = red to cyan, Mod2 = green to magenta, Mod3 = blue to yellow	17			
	RGB Invert & Swap to GBR. Mod1 = red to magenta, Mod2 = green to yellow, Mod3 = blue to cyan	18			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Global Effect Mode 1, 2, 3, 4 & 5	RGB Invert & Swap to BRG. Mod1 = red to yellow, Mod2 = green to cyan, Mod3 = blue to magenta	19			
	Edge Detect Color. Mod1 = horizontal size, Mod2 = vertical search size, Mod3 = comparison threshold	20			
	Edge Detect B/W. Mod1 = horizontal size, Mod2 = vertical search size, Mod3 = comparison threshold	21			
	Texture Ripple, Horizontal. Mod1 = size, Mod2 = rate, Mod3 = offset	22			
	Texture Ripple, Vertical. Mod1 = size, Mod2 = rate, Mod3 = offset	23			
	Texture Ripple, Circular. Mod1 = size, Mod2 = rate, Mod3 = offset	24			
	Texture Ripple, Asymmetrical Circular. Mod1 = size, Mod2 = rate, Mod3 = offset	25			
	Transparent Color Fine. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	26			
	Transparent Color Medium. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	27			
	Transparent Color Coarse. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	28	NA	0	0
	Transparent Color Invert, Fine. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	29			
	Transparent Color Invert, Medium. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	30			
	Transparent Color Invert, Coarse. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	31			
	Scan Line. Mod1 selects scan line as texture, Mod2 fades from original image to converted image, Mod3 not used, reserved	32			
	Transparent wipes. Mod1 = width and transparent area, Mod2 = center of transparent area, Mod3 = transparency mode	33			
	Pixel Twist. Mod1 = x twist center, Mod2 = y twist center, Mod3 = direction and amount of twist	34			
	Picture-in-Picture. Mod1 = x subpicture center, Mod2 = y subpicture center, Mod3 = subpicture size	35			
	Magnifying lens. Mod1 = x lens center, Mod2 = y lens center, Mod3 lens size	36			
Magnifying lens 2, Mod1 = x lens center, Mod2 = y lens center, Mod3 = lens size	37				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Global Effect Mode 1, 2, 3, 4 & 5	Cartoon Edge. Mod1 = Edge Color, Mod2 = Contrast, Mod3 = Edge detection sensitivity	38			
	Color DeConverge. Mod1 = Moves red up, Mod2 = Moves green down and right, Mod3 = Moves blue down and left	39			
	Horizontal Mirror. Mod1 = mirror center, Mod2 and Mod3 not used	40			
	RGB Swap to BGR. Mod1 = red, Mod2 = green, Mod3 = blue	41			
	RGB Swap to RBG. Mod1 = red, Mod2 = green, Mod3 = blue	42			
	RGB Swap to GRB. Mod1 = red, Mod2 = green, Mod3 = blue	43			
	Colorize Gray Scale maps pixel intensity to color. Mod1 = Color Scheme selection, Mod2 = Zero intensity point in color scheme, Mod3 = Fading	44			
	Intensity key turns pixels of selected intensity transparent: Mod1 = Color Scheme, Mod2 = Intensity bandwidth, Mod3 = Transparency level	45			
	Raindrop effect. Mod1 = size/speed, Mod2 = position, and Mod3 = raindrop rate.	46			
	RGB Scale. Mod1 = scale red, Mod2 = scale green, Mod3 = scale blue. Maximum of Mod1, Mod2 and Mod3 sets overall color range	47	NA	0	0
	Tiling on. Mod1 = x-axis tile scale, Mod2 = y-axis tile scaler, Mod3 = space between lines	48			
	Color to Alpha. Mod1 = red to alpha, Mod2 = green to alpha, Mod3 = blue to alpha	49			
	Color to Alpha, Inverted. Mod1 = cyan to alpha, Mod2 = magenta to alpha, Mod3 = yellow to alpha	50			
	Texture Mixing. Mod1 = Source media file, Mod2 = Source effect level, Mod3 = Crossfade from original to source texture	51			
	Image Scale and Rotate. Mod1 = scales image, Mod2 = rotation angle, Mod3 = rotation speed	52			
	Film Roll. Mod1 = horizontal roll speed, Mod2 = vertical roll speed, Mod3 = Image scale	53			
	Pixelate. Mod1 = Amount of pixelation, Mod2 = horizontal scale, Mod3 = vertical scale	54			
	Faux LED. Mod1 = "LED" size, Mod2 = spacing, Mod 3 = color peaking	55			
	Faux Tile. Mod1 = Tile size, Mod2 = spacing, Mod3 = color peaking	56			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Global Effect Mode 1, 2, 3, 4 & 5	Fuzzifier. Mod1 = Horizontal distance, Mod2 = vertical distance, Mod3 = fuzz decay	57	NA	0	0
	Drop Shadow. Mod1 = horizontal size, Mod2 = vertical size, Mod3 = shadow opacity	58			
	Zoom Blur. Mod1 = horizontal position center, Mod2 = vertical position center, Mod3 = zoom	59			
	Chroma Shift. Mod1 = horizontal shift, Mod2 = vertical shift, Mod3 = Scale	60			
	ShakeNBake. Mod1 = horizontal shake, Mod2 = vertical shake, Mod3 = Scale	61			
	Slats, Vertical. Mod1 = number, Mod2 = displacement, Mod3 = fade	62			
	Slats, Horizontal. Mod1 = number, Mod2 = displacement, Mod3 = fade	63			
	Reserved. Defaults to effect mode = 0	64-79			
	Downward Vertical Streaks. Mod1 = start position, Mod2 = streak angle, Mod3 = fade	80			
	Gaussian Blur. Mod1 = sample distance, Mod2 = filter pass number, Mod3 = curve shape	81			
	Sharpen. Mod1 = sample distance, Mod2 = number of filter passes, Mod3 = sharpen scale	82			
	Flip, Mod1 = flip horizontally, Mod2 = flip vertically, Mod3 = not used	83			
	UV to Gray. Mod1 = U coordinate, Mod2 = V coordinate, Mod3 = Tolerance	84			
	UV to Transparent. Mod1 = U coordinate, Mod2 = V coordinate, Mod3 = Tolerance	85			
	UV Select to Transparent. Mod1 = U coordinate, Mod2 = V coordinate, Mod3 = Tolerance	86			
	HS to Gray. Mod1 = H coordinate, Mod2 = S coordinate, Mod3 = Tolerance	87			
	HS to Transparent. Mod1 = H coordinate, Mod2 = S coordinate, Mod3 = Tolerance	88			
	HSSelect to Transparent. Mod1 = H coordinate, Mod2 = S coordinate, Mod3 = Tolerance	89			
	Texture Shift. Mod1 = horizontal shift, Mod2 = vertical shift, Mod3 = colors and scale	90			
	Lens Grid. Mod1 = magnification, Mod2 = edge shading, Mod3 = number of lenses	91			
Edge Detect BW2. Mod1 = Sample distance, Mod2 = edge threshold comparison, Mod3 = detected edge scaler	92				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Global Effect Mode 1, 2, 3, 4 & 5	Film Burn. Mod1 = burn/unburn rate, Mod2 = film blackening, Mod3 = burn pattern	93			
	Film Noise. Mod1 = noise rate, Mod2 = push to sepia with/without jitter, Mod3 = noise level	94			
	Particle System 1. Mod1 = emitter type, Mod2 = trail length, Mod3 = particle acceleration	95			
	Particle System 2. Mod1 = number of particles, Mod2 = size of particles, Mod3 = emitter size	96			
	Particle System 3. Mod1 = particle initial velocity, Mod2 = particle rotation, Mod3 = particle life	97			
	Prism. Mod1 = number of facets, Mod2 = index of refraction, Mod3 = rotation	98			
	Gaussian Halo. Mod1 = sample distance, Mod2 = number of filter passes, Mod3 = shape of Gaussian curve	99			
	Scene Change Detect Mod1 = Scale RGB, Mod2 = RGB to Alpha, Mod3 = Scale color after alpha applied	100			
	Yxy Luminance Scaling. Mod1 = scale luminance (default 64), Mod2 = scale x (default 128), Mod3 = scale y (default 128)	101			
	Prerotatation Translation. Mod1 = translate x, Mod2 = translate y, Mod3 = translate z.	102	NA	0	0
	Digital MSpeed. Mod1 = rotation mspeed. Mod2 = scaling mspeed. Mod3 = position mspeed	103			
	Reserved. Defaults to effect mode = 0	104-127			
	Mask Color. Mod1 = red, Mod2 = green, Mod3 = blue	128			
	Edge Fade color. Mod1 = red, Mod2 = green, Mod3 = blue	129			
	Mask Color and Edge Fade Color. Mod1 = red, Mod2 = green, Mod3 = blue	130			
	Background Color. Mod1 = red, Mod2 = green, Mod3 = blue	131			
	Background Color Cycle. Mod1 = red speed, Mod2 = green speed, Mod3 = blue speed	132			
	Edge Fade Profile. Mod1 = Mode, Mod2 = Profile, Mod3 = Source	133			
	Collage. Mod1 = grid style selection, Mod2 = grid portion displayed, Mod3 = edge blend adjustment	134			
	Curve Correction, Vertical Convex Cylinder. Mod1 = correction, Mod2 = adjusts vertical centerpoint, Mod3 = Not used	135			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Global Effect Mode 1, 2, 3, 4 & 5	Curve Correction, Vertical Concave Cylinder. Mod1 = correction, Mod2 = adjusts vertical centerpoint, Mod3 = Not used	136			
	Curve Correction, Vertical Inside Corner. Mod1 = correction, Mod2 = adjusts vertical centerpoint, Mod3 = adjusts horizontal centerpoint	137			
	Curve Correction, Vertical Outside Corner. Mod1 = correction, Mod2 = adjusts vertical centerpoint, Mod3 = adjusts horizontal centerpoint	138			
	Curved Surface, Outside Sphere. Mod1 = correction, Mod2 = adjusts vertical centerpoint, Mod3 = adjusts horizontal centerpoint	139			
	Curved Surface, Inside Sphere. Mod1 = correction, Mod2 = adjusts vertical centerpoint, Mod3 = adjusts horizontal centerpoint.	140			
	Enhanced Collage Generator. Mod1 = grid style selection, Mod2 = grid portion displayed, Mod3 = edge blend.	141			
	Spherical Mapping. Outside. Mod1 = longitude angle, Mod2 = latitude angle, Mod3 = center latitude.	142			
	Spherical Mapping. Inside. Mod1 = longitude angle, Mod2 = latitude angle, Mod3 = center latitude.	143	NA	0	0
	Mattes. Mod1 = Mode, Mod2 = Matte Select, Mod3 = texture source	144			
	Enhanced Collage Wrap. Mod1 = array type, Mod2 = display cell, Mod3 = edge blending	145			
	Segmented Collage Generator. Mod1 = array type, Mod2 = display cell, Mod3 = edge blending	146			
	Segmented Collage Generator Wrap. Mod1 = array type, Mod2 = display cell, Mod3 = edge blending	147			
	Output Correction, Horizontal Convex Cylinder. Mod1 = correction, Mod2 = adjusts horizontal centerpoint, Mod3 = Not used	148			
	Output Correction, Horizontal Concave Cylinder. Mod1 = correction, Mod2 = adjusts horizontal centerpoint, Mod3 = Not used	149			
	Collage Gen 3, improves blending. Otherwise, the same as global effect 141. Mod1 = grid style selection, Mod2 = grid portion displayed, Mod3 = edge blend	150			
Collage Gen 3 Wrap, improved blending. Otherwise, the same as global effect 145. Mod1 = grid style selection, Mod2 = grid portion displayed, Mod3 = edge blend	151				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Global Effect Mode 1, 2, 3, 4 & 5	Segmented Collage Gen 3, improves edge blending. Otherwise, the same as global effect 146. Mod1 = grid style selection, Mod2 = grid portion displayed, Mod3 = edge blend	152	NA	0	0
	Segmented Collage Gen 3 Wrap, improves edge blending. Otherwise, the same as global effect 147. Mod1 = grid style selection, Mod2 = grid portion displayed, Mod3 = edge blend.	153			
	Reserved. Defaults to effect 0	154-252			
	Special value used with global spherical mapping effect 142. Defaults to 0 otherwise.	253			
	Special value used with global spherical mapping effect 142. Defaults to 0 otherwise.	254			
	Pan and Scan. Mod1 = horizontal position, Mod2 = vertical position, Mod3 = Zoom	255			
Global Effect Modifier 1	These Modifier parameters adjust the option selected in the corresponding channel of each of the five Global Effects Modes. The type of adjustment and the default value depends on the particular effect option.	0-255	0-100	NA	NA
Global Effect Modifier 2	NOTE: Setting the Graphic Effect Mode DMX = 253 or 254 activates specific spherical mapping control options for Modifier parameters. For more about Modifier parameter functionality, see <i>Global Effect Mode Channels</i> on page 114, and specific effect options listed alphabetically in <i>Chapter 13</i> .	0-255	0-100		
Global Effect Modifier 3		0-255	0-100		

Parameter	Description	DMX Value		Default		
		Dec.	%	Dec.	%	
Global Mask						
Mask Select	Static Masks					
	Round <i>iris</i> closing from outside in	0	0			
	Round <i>iris</i> closing from inside out	1				
	Rectangle closing from outside in	2				
	Rectangle closing from inside out	3				
	Checkerboard, variation 1	4				
	Checkerboard, variation 2	5				
	Radial wipe, variation 1	6				
	Radial wipe, variation 2	7				
	Radial wipe, variation 3	8				
	Radial wipe, variation 4	9				
	Triangles, variation 1	10				
	Triangles, variation 2	11				
	Rectangular wrap	12				
	Tiles closing in	13				
	Horizontal doors, closing	14				
	Horizontal doors closing from opposing sides	15			0	0
	Vertical doors closing from outside in	16		NA		
	Vertical wipe closing from inside out	17				
	Rectangular tiles closing from inside out 1	18				
	Rectangular tiles closing from inside out 2	19				
	Vertical panels closing from outside in 1	20				
	Vertical panels closing from outside in 2	21				
	Vertical diamonds 1	22				
	Vertical diamonds 2	23				
	Horizontal diamonds 1	24				
	Horizontal diamonds 2	25				
	Pinwheel	26				
	Oval Iris closing from outside in	27				
	Oval Iris closing from inside out	28				
	Oscillating iris closing from outside in	29				
Artistic Iris	30					
Reserved for other installed masks, defaults to 0	31-127					

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Mask Select	Strobing Masks				
	Periodic strobe, round "iris" mask closing outside in.	128	50		
	Round <i>iris</i> closing from inside out	129			
	Rectangle closing from outside in	130			
	Rectangle closing from inside out	131			
	Checkerboard, variation 1	132			
	Checkerboard, variation 2	133			
	Radial wipe, variation 1	134			
	Radial wipe, variation 2	135			
	Radial wipe, variation 3	136			
	Radial wipe, variation 4	137			
	Triangles, variation 1	138			
	Triangles, variation 2	139			
	Rectangular wrap	140			
	Tiles closing in	141			
	Horizontal doors, closing	142			
	Horizontal doors closing from opposing sides	143		0	0
	Vertical doors closing from outside in	144	NA		
	Vertical wipe closing from inside out	145			
	Rectangular tiles closing from inside out 1	146			
	Rectangular tiles closing from inside out 2	147			
	Vertical panels closing from outside in 1	148			
	Vertical panels closing from outside in 2	149			
	Vertical diamonds 1	150			
	Vertical diamonds 2	151			
	Horizontal diamonds 1	152			
	Horizontal diamonds 2	153			
Pinwheel	154				
Oval Iris closing from outside in	155				
Oval Iris closing from inside out	156				
Oscillating iris closing from outside in	157				
Animated Dynamic Iris	158				
Reserved for other strobing installed masks	159-255				
Mask Size	Adjusts mask size from fully closed to open	0-255	0-100	255	100
Mask Edge Fade	Hard edge to faded edge when Mask Select = 0-127. Strobe rate control from fastest to slowest when Mask Select parameter value = 128-255	0-255	0-100	0	0

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Global Image Edge Fade					
Image Edge Fade, Top	Adjusts the image's top edge diffusion from hard edge (0) to maximum fade (255)	0-255	0-100	0	0
Image Edge Fade, Right	Adjusts the image's right edge diffusion from hard edge (0) to maximum fade (255)	0-255	0-100	0	0
Image Edge Fade, Bottom	Adjusts the image's bottom edge diffusion from hard edge (0) to maximum fade (255)	0-255	0-100	0	0
Image Edge Fade, Left	Adjusts the image's left edge diffusion from hard edge (0) to maximum fade (255)	0-255	0-100	0	0
Global Keystone Correction					
Keystone X Top Left	Moves top left corner x value to center	0-255	0-100	0	0
Keystone Y Top Left	Moves top left corner y value to center	0-255	0-100	0	0
Keystone X Top Right	Moves top right corner x value to center	0-255	0-100	0	0
Keystone Y Top Right	Moves top right corner y value to center	0-255	0-100	0	0
Keystone X Bottom Right	Moves bottom right corner x value to center	0-255	0-100	0	0
Keystone Y Bottom Right	Moves bottom right corner y value to center	0-255	0-100	0	0
Keystone X Bottom Left	Moves bottom left corner x value to center	0-255	0-100	0	0
Keystone Y Bottom Left	Moves bottom left corner y value to center	0-255	0-100	0	0
Keystone X Ratio	Compresses and expands image horizontally	0-255	0-100	128	50
Keystone Y Ratio	Compresses or expands image vertically	0-255	0-100	128	50
Global Framing					
Framing X Top Left	Clip image from top left corner x value	0-255	0-100	0	0
Framing Y Top Left	Clip image from top left corner y value	0-255	0-100	0	0
Framing X Top Right	Clip image from top right corner x value	0-255	0-100	0	0
Framing Y Top Right	Clip image from top right corner y value	0-255	0-100	0	0

Parameter	Description	DMX Value		Default		
		Dec.	%	Dec.	%	
Framing X Bottom Right	Clip image from bottom right corner x value	0-255	0-100	0	0	
Framing Y Bottom Right	Clip image from bottom right corner y value	0-255	0-100	0	0	
Framing X Bottom Left	Clip image from bottom left corner x value	0-255	0-100	0	0	
Framing Bottom Left	Clip image from bottom left corner y value	0-255	0-100	0	0	
Global Viewpoint						
Viewpoint Mode	Perspective View, Spherical Coordinates				0	0
	Look at point: center of universe		0	0		
	Look at point: graphic 1		1	NA		
	Look at point: graphic 2		2			
	Look at point: graphic 3		3			
	Perspective View, Cartesian Coordinates					
	Look at point: center of universe		4	NA		
	Look at point: graphic 1		5			
	Look at point: graphic 2		6			
	Look at point: graphic 3		7			
	Orthogonal View, Cartesian Coordinates					
	Look at point: center of universe		8	NA		
	Look at point: graphic 1		9			
	Look at point: graphic 2		10			
	Look at point: graphic 3		11			
	Perspective View, Spherical Coordinates					
	Look at point: graphic 4		12	NA		
	Perspective View, Cartesian Coordinates					
Look at point: graphic 4		18	NA			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Viewpoint Mode	Orthogonal View, Cartesian Coordinates			0	0
	Look at point: graphic 4	24	NA		
	Additional Effects				
	Reserved	30-127			
	Variable Edge Blend	128			
	Reserved	129-255			
Viewpoint X Position	Maximum horizontal angle clockwise	0	0	32768	50
	Center	32768	50		
	Maximum horizontal angle counterclockwise	65535	100		
Viewpoint Y Position	Maximum Vertical angle clockwise	0	0-	32768	50
	Center	32768	50		
	Maximum Vertical angle counterclockwise	65535	100		
Viewpoint Z Position (Zoom)	Maximum distance from origin in front of view target	0	0	30260	49
	Center	32768	50		
	Maximum distance from origin behind view target	65535	100		
Global Control					
Global Control <i>(A number in parenthesis is the minimum number of consecutive times a DMX value must be received from a controller before the operation begins.)</i>	No control selected. Safe	0	0	NA	0
	Reserved	1-119			
	Shutdown when Intensity = 0 (80)	120-130			
	Reserved	131-144			
	Reset when Intensity = 0 (80)	145-149			
	Reserved	150-251			
	Spherical Control Statistics (Global Control Modifier Parameter selects text color)	252			
	All-in-One displays an array that includes each layer's output, each layer's combined output, and any spherical effects applied.	253			
	Performance Statistics	254			
	On-screen Statistics	255			

Parameter	Description	DMX Value		Default		
		Dec.	%	Dec.	%	
Global Control Modifier	All-in-one Combined Quadrant (Global Control Channel = 253)					
	Displays each defined Graphic Object with no effects applied	0	0			
	Displays the first effect (if any) applied to any defined Graphic Object	1				
	Displays the second effect (if any) applied to any defined Graphic Object	2				
	Displays the third effect (if any) applied to any defined Graphic Object	3				
	Displays the fourth effect (if any) applied to any defined Graphic Object	4				
	Displays the fifth effect (if any) applied to any defined Graphic Object	5	NA			
	Displays the sixth effect (if any) applied to any defined Graphic Object	6				
	Displays the seventh effect (if any) applied to any defined Graphic Object	7		0	0	
	Displays the eighth effect (if any) applied to any defined Graphic Object	8				
	Displays the ninth effect (if any) applied to any defined Graphic Object	9				
	Reserved. Reverts to raw image display	10-255				
	On-screen Statistics (Global Control Channel = 252 or 255)					
	Text color = gray	0				
	Text color = red	1	NA			
	Text color = blue	2				
	Text color = green	3				
	On-screen Statistics (Global Control Channel = 254)					
	Controls opacity from full to transparent	0-255	NA			

Parameter	Description	DMX Value		Default		
		Dec.	%	Dec.	%	
GRAPHIC OBJECT FUNCTIONS						
Opacity	Selects transparency level from completely transparent (0) to opaque (255)	0-255	0-100	0	0	
Graphic Content Definition						
3-D Object File	No selection	0	0	1	1	
	First Stock 3-D Object (flat plane)	1	1			
	Additional Stock 3-D Objects	2-149	NA			
	First User 3-D Objects	150				
	Additional User Objects	151-255				
Media Folder	No selection	0	NA	0	0	
	HES Folder 1	1				
	HES Folders 2- 40	2-40				
	First User Folder 41	41				
	User Folders 42-239	42-239				
	Reserved	240-254				
	Reserved	255				
Media File	No selection	0	0	0	0	
	First Media File	1	NA			
	Additional Media Files 2-255	2-255				
In Frame	Defines the beginning of a media file segment as a percentage of the movie length	0-65535	0-100	0	0	
Out Frame	Defines the end of a Media File segment as a percentage of the movie length	0-65535	0-100	65535	100	
Play Mode	Play forward looping continuously	0	0	NA	0	0
	Play forward once and hold on the last frame	1				
	Pause	2				
	Play forward if opacity > 0, hold on last frame	3				
	Play forward if opacity > 0, looping continuously	4				
	Pause and rewind to In Frame	5				
	Scrub (Display) the selected In Frame	6				
	Scrub (Display) the selected Out Frame	7				
	Scrub (Display) the selected In Frame with statistics	8				
	Scrub (Display) the selected Out Frame with statistics	9				
	Reserved	10-255	3-100			
Play Speed	Normal Speed	0	0	128	50	
	Slow speeds from slowest toward normal	1-127	1-49			
	Normal Speed	128	50			
	Faster than Normal to Fastest	129-255	51-100			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic Synchronization					
Sync Type	No selection	0	0	0	0
	Sync to Graphic 1 movie time	1			
	Sync to Graphic 2 movie time	2			
	Sync to Graphic 3 movie time	3			
	Sync to Object 1 rotation	4			
	Sync to Object 2 rotation	5			
	Sync to Object 3 rotation	6			
	Sync to reverse Object 1 rotation	7			
	Sync to reverse Object 2 rotation	8			
	Sync to reverse Object 3 rotation	9			
	Sync to Graphic 1 movie time and Object 1 rotation	10			
	Sync to Graphic 2 movie time and Object 2 rotation	11			
	Sync to Graphic 3 movie time and Object 3 rotation	12			
	Sync to Graphic 1 movie time and Object 1 reverse rotation	13			
Sync to Graphic 1 movie time and Object 2 reverse rotation	14				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Sync Type	Sync to Graphic 1 movie time and Object 3 reverse rotation	15	NA	0	0
	Sync to Graphic 4 movie time	16			
	Sync to Graphic 5 movie time	17			
	Sync to Graphic 6 movie time	18			
	Sync to Graphic 7 movie time	19			
	Sync to Graphic 8 movie time	20			
	Sync to Graphic 9 movie time	21			
	Sync to Object 4 rotation	22			
	Sync to Object 5 rotation	23			
	Sync to Object 6 rotation	24			
	Sync to Object 7 rotation	25			
	Sync to Object 8 rotation	26			
	Sync to Object 9 rotation	27			
	Sync to Object 4 reverse rotation	28			
	Sync to Object 5 reverse rotation	29			
	Sync to Object 6 reverse rotation	30			
	Sync to Object 7 reverse rotation	31			
	Sync to Object 8 reverse rotation	32			
	Sync to Object 9 reverse rotation	33			
	Sync to Graphic 4 movie time and Object 4 rotation	34			
	Sync to Graphic 5 movie time and Object 5 rotation	35			
	Sync to Graphic 6 movie time and Object 6 rotation	36			
	Sync to Graphic 7 movie time and Object 7 rotation	37			
	Sync to Graphic 8 movie time and Object 8 rotation	38			
	Sync to Graphic 9 movie time and Object 9 rotation	39			
	Sync to Graphic 4 movie time and Object 4 reverse rotation	40			
	Sync to Graphic 5 movie time and Object 5 reverse rotation	41			
	Sync to Graphic 6 movie time and Object 6 reverse rotation	42			
	Sync to Graphic 7 movie time and Object 7 reverse rotation	43			
	Sync to Graphic 8 movie time and Object 8 reverse rotation	44			
Sync to Graphic 9 movie time and Object 9 reverse rotation	45				
Reserved. Defaults to mode 0, no selection.	46-255				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Sync To	No Selection	0	NA	0	0
	Sync to Fixture ID Number 1	1			
	Sync to Fixture ID Number 2	2			
			
	Sync to Fixture Number 254	254			
	Sync to Fixture ID Number 255	255			
Graphic Object Effects					

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Visual Mode	Off. No visual mode processing applied to output.	0	0	0	0
	Content Optimization. Mod1 = black level, Mod2 = contrast.	1			
	Sepia tones. Mod1 fades from original color to sepia colors. Mod2 controls saturation.	2			
	Red tones. Mod1 fades from original color to red tones. Mod2 controls saturation.	3			
	Gray maker. Mod1 compresses colors to shades of gray. Mod2 adjusts contrast	4			
	Gray maker2. Always gray. Mod1 = brightness, Mod2 = contrast	5			
	Posterizer. Mod1 reduces color detail. Mod2 adjusts contrast.	6			
	Color to Black & White. Mod1 fades color RGB @ 0 to B/W @ 50% to white @100%. Mod2 = not used.	7			
	Fire Gradient, Mod1fades original to converted Mod2 not used, reserved.	8			
	Negative Art. Mod1 fades from original image to converted image, Mod2 subtracts red from 0-128, subtracts green from 129-255.	9	NA		
	Exposure Control. Mod1 adjusts color contrast, Mod2 adjusts color shift	10			
	Invert B&W, Keep Color. Mod1 = black comparison level, Mod2 = white comparison level	11			
	Texture Mixing. Mod1 = Source media file, Mod2 = Crossfade from original to source texture	12			
	Image Scale and Rotate. Mod1 = image scale, Mod2 = rotation angle.	13			
	Film Roll. Mod1 = horizontal roll speed, Mod2 = Vertical roll speed	14			
	Pixelate. Mod1 = amount of pixelation, Mod 2 not used	15			
	Faux LED. Mod1 = "LED" size, Mod2 = spacing	16			
Faux Tile. Mod1 = Tile size, Mod2 = spacing	17				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Visual Mode	Fuzzifier. Mod1 = x-axis distance, Mod2 = y-axis distance	18	NA	0	0
	Drop Shadow. Mod1 = horizontal shadow size, Mod2 = vertical shadow size	19			
	Zoom Blur. Mod1 = horizontal position center, Mod2 = vertical position center	20			
	Chroma Shift. Mod1 = horizontal shift, Mod2 = vertical shift	21			
	ShakeNBake. Mod1 = horizontal shake, Mod2 = vertical shake	22			
	CTO/CTB. Mod1 = push to orange, Mod2 = push to blue	23			
	Flip. Mod1 = flip horizontally, Mod2 = flip vertically	24			
	Reserved (Defaults to 0)	25-254			
	Pan and Scan. Mod1 = horizontal position, Mod2 = vertical position	255			
Visual Mode Modifier 1	Adjusts option selected in the Visual Mode Parameter	0-255	0-100	NA	NA
Visual Mode Modifier 2	The type of adjustment and the default value depends on the particular visual mode option selected. For more about Visual Mode Modifier parameter functionality, see, <i>Visual Mode</i> on page 80 and <i>Visual Mode Options</i> on page 82.	0-255	0-100		
Graphic Effect Mode 1, 2 & 3	Off, no effects selection	0	0 NA	0	0
	CMY simulates CMY by subtracting RGB (reduces color values) Mod1 = cyan, Mod2 = magenta, Mod3 = yellow	1			
	CMY Add to All Pixels increases color values. Mod1 = cyan, Mod2 = magenta, Mod3 = yellow	2			
	CMY Add to Non-black Pixels increases color values. Mod1 = cyan, Mod2 = magenta, Mod3 = yellow	3			
	RGB Add All Pixels. Mod1 = red, Mod2 = green, Mod3 = blue	4			
	RGB Add 2 All Pixels. Mod1 = red, Mod2 = green, Mod3 = blue	5			
	RGB Add, non-black pixels. Mod1 = red, Mod2 = green, Mod3 = blue	6			
	RGB Swap to GBR. Mod1 = red, Mod2 = green, Mod3 = blue.	7			
	RGB Swap to BRG. Mod1 = red, Mod2 = green, Mod3 = blue.	8			
	Solarize 1 (if color value < DMX value, invert color). Mod1 = red, Mod2 = green, Mod3 = blue.	9			
	Solarize 2 (if color value > DMX, invert color). Mod1 = red, Mod2 = green, Mod3 = blue.	10			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic Effect Mode 1, 2 & 3	Solarize (if color value < DMX, color = 0). Mod1 = red, Mod2 = green, Mod3 = blue.	11			
	Solarize 4 (if color value > DMX, color = 0). Mod1 = red, Mod2 = green, Mod3 = blue.	12			
	DotP and Resample. Mod1, Mod2 and Mod3 control resampling.	13			
	Color Cycle (DMX value controls cycle speed) Mod1 = red, Mod2 = green, Mod3 = blue.	14			
	All or Nothing (Color value greater than Mod value, color = 255, else color = 0) Mod1 = red, Mod2 = green, Mod3 = blue.	15			
	Solid Color RGB. Mod1 = red, Mod2 = green, Mod3 = blue.	16			
	RGB Invert. Mod1 = red to cyan, Mod2 = green to magenta, Mod3 = blue to yellow	17			
	RGB Invert & Swap to GBR. Mod1 = red to magenta, Mod2 = green to yellow, Mod3 = blue to cyan	18			
	RGB Invert & Swap to BRG. Mod1 = red to yellow, Mod2 = green to cyan, Mod3 = blue to magenta	19			
	Edge Detect Color. Mod1 = horizontal size, Mod2 = vertical search size, Mod3 = comparison threshold	20	NA	0	0
	Edge Detect B/W Mod1 = horizontal size, Mod2 = vertical search size, Mod3 = comparison threshold	21			
	Texture Ripple, Horizontal. Mod1 = size, Mod2 = rate, Mod3 = offset	22			
	Texture Ripple, Vertical. Mod1 = size, Mod2 = rate, Mod3 = offset	23			
	Texture Ripple, Circular. Mod1 = size, Mod2 = rate, Mod3 = offset	24			
	Texture Ripple, Asymmetrical Circular. Mod1 = size, Mod2 = rate, Mod3 = offset	25			
	Transparent Color Fine. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	26			
	Transparent Color Medium. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	27			
	Transparent Color Coarse. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	28			
	Transparent Color Invert, Fine. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	29			
	Transparent Color Invert, Medium. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	30			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic Effect Mode 1, 2 & 3	Transparent Color Invert, Coarse. Select key color. Mod1 = red, Mod2 = green, Mod3 = blue	31			
	Scan Line. Mod1 selects scan line as texture, Mod2 fades from original image to converted image, Mod3 not used, reserved	32			
	Transparent Wipes. Mod1 = width of transparent area, Mod2 = center of transparent area, Mod3 = transparency mode	33			
	Pixel Twist. Mod1 = x twist center, Mod2 = y twist center, Mod3 = direction and amount of twist	34			
	Picture-in-Picture. Mod1 = x subpicture center, Mod2 = y subpicture center, Mod3 = subpicture size	35			
	Magnifying Lens. Mod1 = x lens center, Mod2 = y lens center, Mod3 = lens size	36			
	Magnifying Lens 2. Mod1 = x lens center, Mod2 = y lens center, Mod3 = lens size	37			
	Cartoon Edge. Mod1 = Edge Color, Mod2 = Contrast, Mod3 = Edge detection sensitivity	38			
	Color DeConverge. Mod1 = Moves red up, Mod2 = Moves green down and right, Mod3 = Moves blue down and left	39			
	Horizontal Mirror. Mod1 = mirror center, Mod2 and Mod3 not used	40	NA	0	0
	RGB Swap to BGR. Mod1 = red, Mod2 = green, Mod3 = blue	41			
	RGB Swap to RBG. Mod1 = red, Mod2 = green, Mod3 = blue	42			
	RGB Swap to GRB. Mod1 = red, Mod2 = green, Mod3 = blue	43			
	Colorize Gray Scale maps pixel intensity to color. Mod1 = Color Scheme selection, Mod2 = Zero intensity point in color scheme, Mod3 = Fading	44			
	Intensity key turns pixels of selected intensity transparent. Mod1 = Color Scheme, Mod2 = Intensity bandwidth, Mod3 = Transparency	45			
	Raindrop effect. Mod1 controls size/speed, Mod2 seeds the random number generator, and Mod3 controls raindrop rate.	46			
	Scale RGB. Mod1 = scale red, Mod2 = scale green, Mod3 = scale blue. Maximum of Mod1, Mod2 and Mod3 sets overall color range	47			
Tiling on. Mod1 = x-axis tile scale, Mod2 = y-axis tile scaler, Mod3 = space between lines	48				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic Effect Mode 1, 2 & 3	Color to Alpha. Mod1 = red to alpha, Mod2 = green to alpha, Mod3 = blue to alpha	49			
	Color to Alpha, Inverted. Mod1 = cyan to alpha, Mod2 = magenta to alpha, Mod3 = yellow to alpha	50			
	Texture Mixing. Mod1 = Source media file, Mod2 = Source effect level, Mod3 = Crossfade from original to source texture	51			
	Image Scale and Rotate. Mod1 = scales image, Mod2 = rotation angle, Mod3 = rotation speed	52			
	Film Roll. Mod1 = horizontal roll speed, Mod2 = vertical roll speed, Mod3 = Image scale	53			
	Pixelate. Mod1 = Amount of pixelation, Mod2 = horizontal scale, Mod3 = vertical scale	54			
	Faux LED. Mod1 = "LED" size, Mod2 = spacing, Mod 3 = color peaking	55			
	Faux Tile. Mod1 = Tile size, Mod2 = spacing, Mod 3 = color peaking	56			
	Fuzzifier. Mod1 = Horizontal distance, Mod2 = vertical distance, Mod3 = fuzz decay	57			
	Drop Shadow. Mod1 = horizontal shadow size, Mod2 = vertical shadow size, Mod3 = shadow opacity	58	NA	0	0
	Zoom Blur. Mod1 = horizontal position center, Mod2 = vertical position center, Mod3 = zoom	59			
	Chroma Shift. Mod1 = horizontal shift, Mod2 = vertical shift, Mod3 = scale	60			
	ShakeNBake. Mod1 = horizontal shake, Mod2 = vertical shake, Mod3 = scale	61			
	Slats, Vertical. Mod1 = number, Mod2 = displacement, Mod3 = fade	62			
	Slats, Horizontal. Mod1 = number, Mod2 = displacement, Mod3 = fade	63			
	Sinewave, Circular with Y-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	64			
	Sinewave, Circular with Y-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	65			
	Sinewave, Circular with Z-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	66			
	Sinewave, Horizontal with X-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	67			
	Sinewave, Horizontal with Y-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	68			

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic Effect Mode 1, 2 & 3	Sinewave, Horizontal with Z-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	69	NA	0	0
	Sinewave, Vertical with X-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	70			
	Sinewave, Vertical with Y-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	71			
	Sinewave, Vertical with Z-axis Wobulation Mod1 = size, Mod2 = rate, Mod3 = offset	72			
	Glow: Mod1 = red, Mod2 = green, Mod3 = blue	73			
	Glow Color Cycle: Mod1 = red cycle speed, Mod2 = green cycle speed, Mod3 = blue cycle speed	74			
	Reserved, defaults to Effect 0	75-79			
	Downward Vertical Streaks. Mod1 = start position, Mod2 = streak angle, Mod3 = fade	80			
	Gaussian Blur. Mod1 = sample distance, Mod2 = filter pass number, Mod3 = curve shape	81			
	Sharpen. Mod1 = sample distance, Mod2 = number of filter passes, Mod3 = sharpen scale	82			
	Flip, Mod1 = flip horizontally, Mod2 = flip vertically, Mod3 = not used	83			
	UV to Gray. Mod1 = U coordinate, Mod2 = V coordinate, Mod3 = Tolerance	84			
	UV to Transparent. Mod1 = U coordinate, Mod2 = V coordinate, Mod3 = Tolerance	85			
	UVSelect to Transparent. Mod1 = U coordinate, Mod2 = V coordinate, Mod3 = Tolerance	86			
	HS to Gray. Mod1 = H coordinate, Mod2 = S coordinate, Mod3 = Tolerance	87			
	HS to Transparent. Mod1 = H coordinate, Mod2 = S coordinate, Mod3 = Tolerance	88			
	HSSelect to Transparent. Mod1 = H coordinate, Mod2 = S coordinate, Mod3 = Tolerance	89			
	Texture Shift. Mod1 = horizontal shift, Mod2 = vertical shift, Mod3 = colors and scale	90			
	Lens Grid. Mod1 = magnification, Mod2 = edge shading, Mod3 = number of lenses	91			
	Edge Detect BW2. Mod1 = Sample distance, Mod2 = edge threshold comparison, Mod3 = detected edge scaler	92			
Film Burn. Mod1 = burn/unburn rate, Mod2 = film blackening, Mod3 = burn pattern	93				

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic Effect Mode 1, 2 & 3	Film Noise. Mod1 = noise rate, Mod2 = (0,127) push to sepia, (128,255) push to sepia with jitter, Mod3 = noise level	94			
	Particle System 1. Mod1 = emitter type, Mod2 = trail length, Mod3 = particle acceleration	95			
	Particle System 2. Mod1 = number of particles, Mod2 = size of particles, Mod3 = emitter size	96			
	Particle System 3. Mod1 -> particle initial velocity, Mod2 = particle rotation, Mod3 = particle lifetime	97			
	Prism. Mod1 = number of facets, Mod2 = index of refraction, Mod3 = rotation	98			
	Gaussian Halo. Mod1 = sample distance, Mod2 = number of filter passes, Mod3 = shape of Gaussian curve	99			
	Scene Change Detect Mod1 = Scale RGB, Mod2 = RGB to Alpha, Mod3 = Scale color after alpha applied	100	NA	0	0
	Yxy Luminance Scaling. Mod1 = scale luminance (default 64), Mod2 = scale x (default 128), Mod3 = scale	101			
	Prerotation Translation. Mod1 = translate x, Mod2 = translate y, Mod3 = translate z	102			
	Digital Mspeed. Mod1 = rotation mspeed, Mod2 = scaling mspeed, Mod3 = position mspeed	103			
	Reserved. Defaults to effect mode = 0	104-252			
	Special value used with global spherical mapping effect 142. Defaults to 0 otherwise.	253			
	Special value used with global spherical mapping effect 142. Defaults to 0 otherwise.	254			
	Pan and Scan	255			
Graphic Effect Mode Modifier 1	These Modifier parameters adjust the effect selected in the corresponding channel of each of the three Graphic Effect Mode channels.	0-255	0-100		
Graphic Effect Mode Modifier 2	The type of adjustment and the default value depends on the particular effect. NOTE: Setting the Graphic Effect Mode DMX = 253 or 254 activates specific spherical mapping control options for Modifier parameters. For more about Modifier parameter functionality, see <i>Effect Mode Parameters</i> on page 102, and specific effect options listed alphabetically in <i>Chapter 13</i> .	0-255	0-100	NA	NA
Graphic Modifier 3		0-255	0-100		

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic Rotation					
X-axis Rotation (vertical flip, 16-bit adjustment)	Continuous variable-speed counterclockwise object rotation around X-axis (fast to slow)	0-16382	0-24	32768	50
	Continuous rotation stop	16383	25		
	Rotates the object counterclockwise around X-axis in steps to -720 degrees absolute	16384-32767	26-49		
	0° rotation around X-axis	32768	50		
	Rotates the object clockwise around X-axis in steps to 720 degrees absolute	32769-49151	51-74		
	Continuous rotation stop	49152	75		
	Continuous variable-speed clockwise object rotation around X-axis (slow to fast)	49154-65535	76-100		
Y-axis Rotation (horizontal flip, 16-bit adjustment)	Continuous variable-speed counterclockwise object rotation around Y-axis (fast to slow)	0-16382	0-24	32768	50
	Continuous rotation stop	16383	25		
	Rotates the object counterclockwise around Y-axis in steps to -720 degrees absolute	16384-32767	26-49		
	0° rotation around Y-axis	32768	50		
	Rotates the object clockwise around Y-axis in steps to 720 degrees absolute	32769-49151	51-74		
	Continuous rotation stop	49152	75		
	Continuous variable-speed clockwise object rotation around Y-axis (slow to fast)	49154-65535	76-100		
Z-axis Rotation (circular 16-bit adjustment)	Continuous variable-speed counterclockwise object rotation around Z axis (fast to slow)	0-16382	0-24	32768	50
	Continuous rotation stop	16383	25		
	Rotates the object counterclockwise around Z-axis in steps to -720 degrees absolute	16384-32767	26-49		
	0° rotation around Z-axis	32768	50		
	Rotates the object clockwise around Z-axis in steps to 720 degrees absolute	32769-49151	51-74		
	Continuous rotation stop	49152	75		
	Continuous variable-speed clockwise object rotation around Z axis (slow to fast)	49154-65535	76-100		

Parameter	Description	DMX Value		Default	
		Dec.	%	Dec.	%
Graphic 1 Scaling					
Scale X	Minimum object size along X axis (1:10)	0	0	32768	50
	Increases object size along X axis from minimum to actual size	1-32767	1-49		
	Actual size along X axis (1:1)	32768	50		
	Increases object size along X axis from actual to maximum size	32769-65534	51-99		
	Maximum object size along X axis (10:1)	65535	100		
Scale Y	Minimum object size along Y axis (1:10)	0	0	32768	50
	Increases object size along Y axis from minimum to actual size	1-32767	1-49		
	Actual size along Y axis (1:1)	32768	50		
	Increases object size along Y axis from actual to maximum size	32769-65534	51-99		
	Maximum object size along Y axis (10:1)	65535	100		
Scale Z	Minimum object size along Z axis (1:10)	0	0	32768	50
	Increases object size along Z axis from minimum to actual size	1-32767	1-49		
	Actual size along Z axis (1:1)	32768	50		
	Increases object size along Z axis from actual to maximum size	32769-65534	51-99		
	Maximum object size along Z axis (10:1)	65535	100		
Graphic 1 Position					
X-Position	Moves object left from center of display	0-36767	0-49	32768	50
	Centers object along X axis in display	32768	50		
	Moves object right from center of display	36769-65535	51-100		
Y-Position	Moves object down from center of display	0-36767	0-49	32768	50
	Centers object along Y axis in display	32768	50		
	Moves object up from center of display	36769-65535	51-100		
Z-Position	Moves object nearer from center of display	0-36767	0-49	32768	50
	Centers object along Z axis in display	32768	50		
	Moves object back along Z axis at center of display	36769-65535	51-100		