

DigitalSpot 3000 DT - DMX protocol v. 1.4; June 26, 2009			
DMX Channel	DMX Value	Function	Type of control
1		Pan	
	0-255	Pan movement by 530°	proportional
2		Pan Fine	
	0-255	Fine control of pan movement	proportional
3		Tilt	
	0-255	Tilt movement by 280°	proportional
4		Tilt Fine	
	0-255	Fine control of tilt movement	proportional
5		Pan/Tilt speed,Pan/Tilt time	
	0	Max.speed (tracking mode)	step
		P./T. speed-set Speed Mode in menu: Pan/Tilt Mode	
	1-255	Speed from max. to min.(vector mode)	step
		P./T. time-set Time Mode in menu: Pan/Tilt Mode	
	1-255	Time from 0.1s to 25.5s	step
6		Pan/Tilt macro selection	
	0-9	Disabled pan/tilt macro	step
	10-31	Reserved	
	32-63	Figure of circle (from small to large)	proportional
	64-95	Figure of horizontal eight (from small to large)	proportional
	96-127	Figure of vertical eight (from small to large)	proportional
	128-159	Figure of reactangle (from small to large)	proportional
	160-191	Figure of triangle (from small to large)	proportional
	192-223	Figure of star (from small to large)	proportional
	224-255	Figure of cross (from small to large)	proportional
7		Pan/Tilt macro speed	
	0	No macro	step
	1-127	Macro generation from fast to slow (forwards)	proportional
	128-129	No macro	step
	130-255	Macro generation from slow to fast (backwards)	proportional
8		Power/Special functions	
	0-39	Reserved	
		To activate following function, the LED Shutter (channel 16) must be at range 240-250 DMX.	
	40-44	Internal Hardware (PC) reset	step
	45-49	Reserved	
		To activate following functions,hold DMX value 3 sec. and digital iris must be closed at least 3 sec. (channel 33 must be at 255 DMX).Corresponding menu items are temporarily overridden	
	50-59	Pan/Tilt speed mode	step
	60-69	Pan/Tilt time mode	step
	70-79	Blackout while pan/tilt moving	step
	80-89	Disabled blackout while pan/tilt moving	step
	90-94	Ceiling projection On	step
	95-99	Ceiling projection Off	step
	100-104	Rear projection On	step
	105-109	Rear projection Off	step
	110-114	DMX In	step
	115-119	Artnet In	step
	120-129	Reserved	

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DMX Channel	DMX Value	Function	Type of control
8		To activate following function,hold DMX value 3 seconds	
	130-139	Lamp On	step
	140-149	Pan/Tilt reset	step
	150-179	Reserved	
	180-189	Focus reset	step
	190-199	Reserved	step
	200-209	Total reset	step
	210-215	Graphic engine reset/software update executing	step
	216-229	Reserved	
	230-239	Lamp Off	step
	240-249	Lamp Off,Fixture Off (<i>hold DMX value 5 seconds</i>)	step
	250-255	Reserved	
9		Video input selection	
	0-63	Internal graphic engine	step
	64-127	External Composite to projector	step
	128-191	External S-video to projector	step
	192-255	Reserved	
10		Focus	
	0-255	Continuous adjustment from far to near (128-default)	proportional
11		Fine Focus	
	0-255	Fine adjustment (128-default)	proportional
12		Red LEDs	
	0-255	Red LEDs saturation control 0 --> 100 %	proportional
13		Green LEDs	
	0-255	Green LEDs saturation control 0 --> 100 %	proportional
14		Blue LEDs	
	0-255	Blue LEDs saturation control 0 --> 100 %	proportional
15		White LEDs	
	0-255	White LEDs saturation control 0 --> 100 %	proportional
16		LED shutter and strobe	
	0-31	Shutter closed	step
	32-63	Shutter open	step
	64-95	Strobe effect, slow --> fast	proportional
	96-127	Shutter open	step
	128-143	Opening pulses in sequences, slow --> fast	proportional
	144-159	Closing pulses in sequences, fast --> slow	proportional
	160-191	Shutter open	step
	192-223	Random strobe-effects, slow --> fast	proportional
	224-255	Shutter open	step
17		LED Dimmer	
	0-255	Led module dimmer intensity 0 --> 100 %	proportional
18		KeyStone Top Left X	
	0-255	Move top left corner X value to center (0-default)	proportional
19		KeyStone Top Left Y	
	0-255	Move top left corner Y value to center (0-default)	proportional
20		KeyStone Top Right X	
	0-255	Move top right corner X value to center (0-default)	proportional
21		KeyStone Top Right Y	

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DMX Channel	DMX Value	Function	Type of control
	0-255	Move top right corner Y value to center (0-default)	proportional
22		KeyStoneBottom Right X	
	0-255	Move bottom right corner X value to center (0-default)	proportional
23		KeyStone Bottom Right Y	
	0-255	Move bottom right corner Y value to center (0-default)	proportional
24		KeyStone Bottom Left X	
	0-255	Move bottom left corner X value to center (0-default)	proportional
25		KeyStone Bottom Left Y	
	0-255	Move bottom left corner Y value to center (0-default)	proportional
26		KeyStone X-ratio	
	0-127	Ratio control from left to center	proportional
	128	Center (default)	step
	129-255	Ratio control from center to right	proportional
27		KeyStone Y-ratio	
	0-127	Ratio control from bottom to center	proportional
	128	Center (default)	step
	129-255	Ratio control from center to top	proportional
Common effects for all gobo layers			
28		Cyan	
	0-255	Cyan continuously (0-white,255-full cyan)	proportional
29		Magenta	
	0-255	Magenta continuously (0-white,255-full magenta)	proportional
30		Yellow	
	0-255	Yellow continuously (0-white,255-full yellow)	proportional
31		CTF	
	0	Without CTF	step
	1	14000 K	step
	2	13000 K	step
	3	12500 K	step
	4	12000 K	step
	5	11500 K	step
	6	11000 K	step
	7	10500 K	step
	8	10000 K	step
	9	9500 K	step
	10	9000 K	step
	11	8600 K	step
	12	8575 K	step
	13	85550 K	step
	:	:	:
	255	2500 K	step
32		Digital Iris-type selection	
	0	Circular ,outside-->in,sharp edge	step
	1	Circular ,outside-->in,fuzzy edge 1	step
	2	Circular ,outside-->in,fuzzy edge 2	step
	3	Circular ,outside-->in,fuzzy edge 3	step
	4	Circular ,outside-->in,fuzzy edge 4 (maximum)	step
	5	Circular ,inside-->out,sharp edge	step
	6	Circular ,inside-->out,fuzzy edge 1	step

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DMX Channel	DMX Value	Function	Type of control
32	7	Circular ,inside-->out,fuzzy edge 2	step
	8	Circular ,inside-->out,fuzzy edge 3	step
	9	Circular ,inside-->out,fuzzy edge 4 (maximum)	step
	10	Horizontal ellipse ,outside-->in,sharp edge	step
	11	Horizontal ellipse ,outside-->in,fuzzy edge 1	step
	12	Horizontal ellipse ,outside-->in,fuzzy edge 2	step
	13	Horizontal ellipse ,outside-->in,fuzzy edge 3	step
	14	Horizontal ellipse ,outside-->in,fuzzy edge 4 (maximum)	step
	15	Horizontal ellipse ,inside-->out,sharp edge	step
	16	Horizontal ellipse ,inside-->out,fuzzy edge 1	step
	17	Horizontal ellipse ,inside-->out,fuzzy edge 2	step
	18	Horizontal ellipse ,inside-->out,fuzzy edge 3	step
	19	Horizontal ellipse ,inside-->out,fuzzy edge 4 (maximum)	step
	20	Vertical ellipse ,outside-->in,sharp edge	step
	21	Vertical ellipse ,outside-->in,fuzzy edge 1	step
	22	Vertical ellipse ,outside-->in,fuzzy edge 2	step
	23	Vertical ellipse ,outside-->in,fuzzy edge 3	step
	24	Vertical ellipse ,outside-->in,fuzzy edge 4 (maximum)	step
	25	Vertical ellipse ,inside-->out,sharp edge	step
	26	Vertical ellipse ,inside-->out,fuzzy edge 1	step
	27	Vertical ellipse ,inside-->out,fuzzy edge 2	step
	27	Vertical ellipse ,inside-->out,fuzzy edge 3	step
	29	Vertical ellipse ,inside-->out,fuzzy edge 4 (maximum)	step
	30	Clockwise wipe,sharp edge	step
	31	Clockwise wipe,fuzzy edge 1	step
	32	Clockwise wipe,fuzzy edge 2	step
	33	Clockwise wipe,fuzzy edge 3	step
	34	Clockwise wipe,fuzzy edge 4 (maximum)	step
	35	Anticlockwise wipe,sharp edge	step
	36	Anticlockwise wipe,fuzzy edge 1	step
	37	Anticlockwise wipe,fuzzy edge 2	step
	38	Anticlockwise wipe,fuzzy edge 3	step
	39	Anticlockwise wipe,fuzzy edge 4 (maximum)	step
	40	Wedge wipe ,top-->down, sharp edge	step
	41	Wedge wipe ,top-->down, fuzzy edge 1	step
	42	Wedge wipe ,top-->down, fuzzy edge 2	step
	43	Wedge wipe ,top-->down, fuzzy edge 3	step
	44	Wedge wipe ,top-->down, fuzzy edge 4 (maximum)	step
	45	Wedge wipe ,bottom-->up, sharp edge	step
	46	Wedge wipe ,bottom-->up, fuzzy edge 1	step
	47	Wedge wipe ,bottom-->up, fuzzy edge 2	step
	48	Wedge wipe ,bottom-->up, fuzzy edge 3	step
	49	Wedge wipe ,bottom-->up, fuzzy edge 4 (maximum)	step
	50	Radial wipe ,left -->bottom,sharp edge	step
	51	Radial wipe ,left -->bottom,fuzzy edge 1	step
	52	Radial wipe ,left -->bottom,fuzzy edge 2	step
	53	Radial wipe ,left -->bottom,fuzzy edge 3	step
	54	Radial wipe ,left -->bottom,fuzzy edge 4 (maximum)	step
	55	Radial wipe ,bottom-->left,sharp edge	step
	56	Radial wipe ,bottom-->left,fuzzy edge 1	step

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DMX Channel	DMX Value	Function	Type of control
32	57	Radial wipe ,bottom-->left,fuzzy edge 2	step
	58	Radial wipe ,bottom-->left,fuzzy edge 3	step
	59	Radial wipe ,bottom-->left,fuzzy edge 4 (maximum)	step
	60	Radial wipe ,top-->left,sharp edge	step
	61	Radial wipe ,top-->left,fuzzy edge 1	step
	62	Radial wipe ,top-->left,fuzzy edge 2	step
	63	Radial wipe ,top-->left,fuzzy edge 3	step
	64	Radial wipe ,top-->left,fuzzy edge 4 (maximum)	step
	65	Radial wipe ,left-->top,sharp edge	step
	66	Radial wipe ,left-->top,fuzzy edge 1	step
	67	Radial wipe ,left-->top,fuzzy edge 2	step
	68	Radial wipe ,left-->top,fuzzy edge 3	step
	69	Radial wipe ,left-->top,fuzzy edge 4 (maximum)	step
	70	Vertical barn-doors,outside-->in,sharp edge	step
	71	Vertical barn-doors,outside-->in,fuzzy edge 1	step
	72	Vertical barn-doors,outside-->in,fuzzy edge 2	step
	73	Vertical barn-doors,outside-->in,fuzzy edge 3	step
	74	Vertical barn-doors,outside-->in,fuzzy edge 4 (maximum)	step
	75	Vertical barn-doors,inside-->out,sharp edge	step
	76	Vertical barn-doors,inside-->out,fuzzy edge 1	step
	77	Vertical barn-doors,inside-->out,fuzzy edge 2	step
	78	Vertical barn-doors,inside-->out,fuzzy edge 3	step
	79	Vertical barn-doors,inside-->out,fuzzy edge 4 (maximum)	step
	80	Horizontal barn-doors,outside-->in,sharp edge	step
	81	Horizontal barn-doors,outside-->in,fuzzy edge 1	step
	82	Horizontal barn-doors,outside-->in,fuzzy edge 2	step
	83	Horizontal barn-doors,outside-->in,fuzzy edge 3	step
	84	Horizontal barn-doors,outside-->in,fuzzy edge 4 (maximum)	step
	85	Horizontal barn-doors,inside-->out,sharp edge	step
	86	Horizontal barn-doors,inside-->out,fuzzy edge 1	step
	87	Horizontal barn-doors,inside-->out,fuzzy edge 2	step
	88	Horizontal barn-doors,inside-->out,fuzzy edge 3	step
89	Horizontal barn-doors,inside-->out,fuzzy edge 4 (maximum)	step	
90	Horizontal one-way band wipe,top left-->bottom right	step	
91	Horizontal one-way band wipe,bottom right-->top left	step	
92	Horizontal one-way band wipe,top right-->bottom left	step	
93	Horizontal one-way band wipe,bottom left-->top right	step	
94	Horizontal two-way band wipe,top left-->bottom right	step	
95	Horizontal two-way band wipe,bottom right-->top left	step	
96	Horizontal two-way band wipe,top right-->bottom left	step	
97	Horizontal two-way band wipe,bottom left-->top right	step	
98	Vertical one-way band wipe,top left-->bottom right	step	
99	Vertical one-way band wipe,bottom right-->top left	step	
100	Vertical one-way band wipe,bottom left-->top right	step	
101	Vertical one-way band wipe,top right-->bottom left	step	
102	Vertical two-way band wipe,top right-->bottom left	step	
103	Vertical two-way band wipe,bottom right-->top left	step	
104	Vertical two-way band wipe,bottom left-->top right	step	
105	Vertical two-way band wipe,top right-->bottom left	step	
106	Horizontal bands 4x,top-->bottom	step	

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DMX Channel	DMX Value	Function	Type of control
32	107	Horizontal bands 4x,bottom-->top	step
	108	Vertical bands 4x,left -->right	step
	109	Vertical bands 4x,right -->left	step
	110	Horizontal bands 8x,top-->bottom	step
	111	Horizontal bands 8x,bottom-->top	step
	112	Vertical bands 8x,left-->right	step
	113	Vertical bands 8x,right-->left	step
	114	Horizontal bands 16x,top-->bottom	step
	115	Horizontal bands 16x,bottom-->top	step
	116	Vertical bands 16x,left-->right	step
	117	Vertical bands 16x,right-->left	step
	118	Horizontal bands 32x,top-->bottom	step
	119	Horizontal bands 32x,bottom-->top	step
	120	Vertical bands 32x,left-->right	step
	121	Vertical bands 32x,right-->left	step
	122	Horizontal crossing 4x	step
	123	Horizontal crossing 4x,inverse	step
	124	Vertical crossing 4x	step
	125	Vertical crossing 4x,inverse	step
	126	Horizontal crossing 8x	step
	127	Horizontal crossing 8x,inverse	step
	128	Vertical crossing 8x	step
	129	Vertical crossing 8x,inverse	step
	130	Horizontal crossing 16x	step
	131	Horizontal crossing 16x,inverse	step
	132	Vertical crossing 16x	step
	133	Vertical crossing 16x,inverse	step
	134	Checker wipe 3x4, left-->right	step
	135	Checker wipe 3x4, right-->left	step
	136	Checker wipe 4x4, left-->right	step
	137	Checker wipe 4x4, right-->left	step
	138	Checker wipe 5x8, left-->right	step
139	Checker wipe 5x8, right-->left	step	
140	Checker wipe 9x8, left-->right	step	
141	Checker wipe 9x8, right-->left	step	
142	Checker wipe 9x16, left-->right	step	
143	Checker wipe 9x16, right-->left	step	
144	Checker wipe 10x32, left-->right	step	
145	Checker wipe 10x32, right-->left	step	
146	2 diagonal curtains, bottom left-->center<-- top right	step	
147	2 diagonal curtains, top left-->center<-- bottom right	step	
148	Grid wipe 8x8,bottom right-->top left	step	
149	Grid wipe 8x8,bottom right-->top left,inverse	step	
150	Grid wipe 8x8,top right-->bottom left	step	
151	Grid wipe 8x8,top right-->bottom left,inverse	step	
152	Grid wipe 16x16,bottom right-->top left	step	
153	Grid wipe 16x16,bottom right-->top left,inverse	step	
154	Grid wipe 16x16,top right-->bottom left	step	
155	Grid wipe 16x16,top right-->bottom left,inverse	step	
156	Grid wipe 32x32,bottom right-->top left	step	

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DMX Channel	DMX Value	Function	Type of control
32	157	Grid wipe 32x32,bottom right-->top left,inverse	step
	158	Grid wipe 32x32,top right-->bottom left	step
	159	Grid wipe 32x32,top right-->bottom left,inverse	step
	160	4 sliding triangles	step
	161-169	Reserved	
	170	Rectangular ,outside-->in,sharp edge	step
	171	Rectangular ,outside-->in,fuzzy edge 1	step
	172	Rectangular ,outside-->in,fuzzy edge 2	step
	173	Rectangular ,outside-->in,fuzzy edge 3	step
	174	Rectangular ,outside-->in,fuzzy edge 4 (maximum)	step
	175	Rectangular ,inside-->out,sharp edge	step
	176	Rectangular ,inside-->out,fuzzy edge 1	step
	177	Rectangular ,inside-->out,fuzzy edge 2	step
	178	Rectangular ,inside-->out,fuzzy edge 3	step
	179	Rectangular ,inside-->out,fuzzy edge 4 (maximum)	step
180-255	Reserved		
33		Digital Iris	
	0	Open iris	step
	1-254	From max. diameter to min. diameter	proportional
	255	Closed iris	step
34		Digital Iris fine	
	0-255	Iris fine	proportional
35		Digital strobe	
	0 - 30	Open light output	step
	31 - 80	Digital strobe-effect from slow to fast	proportional
	81 - 110	Open light output	step
	111 - 140	Random digital strobe-effect from slow to fast	proportional
	141 - 149	Open light output	step
	150 - 154	Iris displays current gobo from gobo layer 1	step
	155 - 159	Iris displays current gobo from gobo layer 2	step
	160 - 164	Iris displays current gobo from gobo layer 3	step
	165 - 189	Reserved	
	190-194	Banner displays current gobo from gobo layer 1	step
	195-199	Banner displays current gobo from gobo layer 2	step
	200 - 204	Banner displays current gobo from gobo layer 3	step
	205-244	Reserved	
245-249	Digital strobe closed	step	
250-255	Mechanical shutter closed	step	
36		Banner left positioning	
	0-255	Positioning from left to right (0-default)	proportional
37		Banner left rotation	
	0-255	Rotation +/- 45° (128-default)	proportional
38		Banner right positioning	
	0-255	Positioning from right to left (0-default)	proportional
39		Banner right rotation	
	0-255	Rotation +/- 45° (128-default)	proportional
40		Banner top positioning	
	0-255	Positioning from top to bottom (0-default)	proportional
41		Banner top rotation	

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DMX Channel	DMX Value	Function	Type of control
	0-255	Rotation +/- 45° (128-default)	proportional
42		Banner bottom positioning	
	0-255	Positioning from bottom to top (0-default)	proportional
43		Banner bottom rotation	
	0-255	Rotation +/- 45° (128-default)	proportional
44		All Banners rotation	
	0-255	Rotation +/- 45° (128-default)	proportional
45		Global Effect 1	
	0	No effect	
		<u>Picture merging -selection of width of overlapping edges:</u>	
	1	Width of overlapping edges -10 %	P1, P2, P3
	2	Width of overlapping edges - 0 %	P1, P2, P3
	3	Width of overlapping edges - 15 %	P1, P2, P3
	4	Width of overlapping edges - 20 %	P1, P2, P3
	5	Width of overlapping edges - 25 %	P1, P2, P3
	6	Width of overlapping edges - 30 %	P1, P2, P3
	7	Width of overlapping edges - 35 %	P1, P2, P3
	8-10		
		<u>Picture merging -selection of width of overlapping edges for pre-cutted content mode:</u>	
	11	Width of overlapping edges -10 %	P1, P2, P3
	12	Width of overlapping edges - 0 %	P1, P2, P3
	13	Width of overlapping edges - 15 %	P1, P2, P3
	14	Width of overlapping edges - 20 %	P1, P2, P3
	15	Width of overlapping edges - 25 %	P1, P2, P3
	16	Width of overlapping edges - 30 %	P1, P2, P3
	17	Width of overlapping edges - 35 %	P1, P2, P3
		<i>P1- field configuration, P2- segment selection, P3- segment edge</i>	
18-255	Reserved		
46		Global effect 1- Parameter 1	
	0	None	
		<u>Image field configuration for Picture merging</u>	
	1-109	Non-mirrored configurations	step
	110-127	Reserved	
	128-163	Horizontally mirrored configurations	step
	164-199	Vertically mirrored configurations	step
	200-235	Horizontally and vertically mirrored configurations	step
236-255	Reserved		
47		Global effect 1- Parameter 2	
	0-255	Segment selection for Pixture merging	step
48		Global effect 1- Parameter 3	
	0-171	<u>Segment edge display for Pixture merging</u>	step
	172-255	Reserved	
49		Global Effect 2	
	0	None	
	1	Vertical inside corner mapping	P1, P2,P3
	2	Vertical outside corner mapping	P1, P2,P3
	3	Horizontal inside corner mapping	P1, P2,P3
	4	Horizontal outside corner mapping	P1, P2,P3
5	Vertical convex cylinder mapping	P1, P2,P3	

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DMX Channel	DMX Value	Function	Type of control
	6	Vertical concave cylinder mapping	P1, P2,P3
	7	Horizontal convex cylinder mapping	P1, P2,P3
	8	Horizontal concave cylinder mapping	P1, P2,P3
	9	Orthographic sphere mapping	P1, P2,P3
	10	Rectangle on circle (sphere) mapping*	P1, P2,P3
	11	Square on circle (sphere) mapping*	P1, P2,P3
	12	Rectangle on circle (sphere) mapping with picture merging	P1, P2,P3
	13-19	Reserved	
	20	Picture merging - R/G/B gamma adjustment in blended edges	P1, P2,P3
		<i>P 1 - red, P 2 - green, P 3 - blue</i>	
	21-255	Reserved	
50		Global Effect 2 - Parameter 1	
	0-255	Function depends on selected Global Effect 2	depends on effect
51		Global Effect 2 - Parameter 2	
	0-255	Function depends on selected Global Effect 2	depends on effect
52		Global Effect 2 - Parameter 3	
	0-255	Function depends on selected Global Effect 2	depends on effect
Gobo layer 1			
53		Dimmer	
	0-255	Dimmer intensity from 0% to 100% (255-default)	proportional
54		Gobo Folder selection	
	0-20	Factory folders	step
	21-240	User folders	step
	241-250	Reserved	
	251	Live input (grab. card)-see channel 55	step
	252	Streaming from remote sources	step
	253-255	Reserved	
55		Gobo selection	
	0	White	step
	1-255	255 Gobos (one by one)	step
		If Live input (251 DMX) is selected on channel 54	
	0	White screen	step
	1-20	Video composite input-PAL system	step
	21-40	SVIDEO input- PAL system	step
	21-60	Video composite input-NTSC system	step
	61-80	SVIDEO input- NTSC system	step
	81-100	Video composite input-SECAM system	step
	101-120	SVIDEO input- SECAM system	step
		121-255	Reserved
56		In Frame High	
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (0-default)	proportional
57		In Frame Low	
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (0-default)	proportional
58		Out Frame High	
	0-255	Defines the end of a media file segment as a percentage of the movie length (255-default)	proportional
59		Out Frame Low	

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DMX Channel	DMX Value	Function	Type of control
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (255-default)	proportional
60		Gobo control	
		<u>Copy mode</u>	
		<i>Video stream 1:</i>	
	0	Play forward if dimmer (on layer 1) > 0, looping continuously	step
	1	Play forward if dimmer (on layer 1) > 0, hold on last frame	step
	2	Pause	step
	3	Play forward in continuous loop	step
	4	Play forward once and hold on the last frame	step
	5	No function	
	6	Scrub (Display) the selected In Frame	step
	7	Scrub (Display) the selected Out Frame	step
	8-9	Reserved	
		<i>Video stream 2 (the same functionality as for Video stream 1):</i>	
	10	Play forward if dimmer (on layer 1) > 0, looping continuously	step
	11	Play forward if dimmer (on layer 1) > 0, hold on last frame	step
	12	Pause	step
	13	Play forward in continuous loop	step
	14	Play forward once and hold on the last frame	step
	15	No function	
	16	Scrub (Display) the selected In Frame	step
	17	Scrub (Display) the selected Out Frame	step
	18-19	Reserved	
		<u>Addition mode</u>	
		<i>Video stream 1:</i>	
	20	Play forward if dimmer (on layer 1) > 0, looping continuously	step
	21	Play forward if dimmer (on layer 1) > 0, hold on last frame	step
	22	Pause	step
	23	Play forward in continuous loop	step
	24	Play forward once and hold on the last frame	step
	25	No function	
	26	Scrub (Display) the selected In Frame	step
	27	Scrub (Display) the selected Out Frame	step
	28-29	Reserved	
		<i>Video stream 2:</i>	
	30-37	<i>The same functionality as for Video stream 1</i>	step
	38-39	Reserved	
		<u>Substraction mode</u>	
		<i>Video stream 1:</i>	
	40	Play forward if dimmer (on layer 1) > 0, looping continuously	step
	41	Play forward if dimmer (on layer 1) > 0, hold on last frame	step
	42	Pause	step
	43	Play forward in continuous loop	step
	44	Play forward once and hold on the last frame	step
	45	No function	
	46	Scrub (Display) the selected In Frame	step
	47	Scrub (Display) the selected Out Frame	step
	48-49	Reserved	
		<i>Video stream 2:</i>	

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DMX Channel	DMX Value	Function	Type of control
60	50-57	<i>The same functionality as for Video stream 1</i>	step
	58-59	Reserved	
		<u>Multiplication mode</u>	
		<i>Video stream 1:</i>	
	60	Play forward if dimmer (on layer 1) > 0, looping continuously	step
	61	Play forward if dimmer (on layer 1) > 0, hold on last frame	step
	62	Pause	step
	63	Play forward in continuous loop	step
	64	Play forward once and hold on the last frame	step
	65	No function	
	66	Scrub (Display) the selected In Frame	step
	67	Scrub (Display) the selected Out Frame	step
	68-69	Reserved	
		<i>Video stream 2:</i>	
	70-77	<i>The same functionality as for Video stream 1</i>	step
	78-79	Reserved	
		<u>Minimum mode</u>	
		<i>Video stream 1:</i>	
	80	Play forward if dimmer (on layer 1) > 0, looping continuously	step
	81	Play forward if dimmer (on layer 1) > 0, hold on last frame	step
	82	Pause	step
	83	Play forward in continuous loop	step
	84	Play forward once and hold on the last frame	step
	85	No function	
	86	Scrub (Display) the selected In Frame	step
	87	Scrub (Display) the selected Out Frame	step
	88-89	Reserved	
		<i>Video stream 2:</i>	
	90-97	<i>The same functionality as for Video stream 1</i>	
	98-99	Reserved	
		<u>Maximum mode</u>	
		<i>Video stream 1:</i>	
	100	Play forward if dimmer (on layer 1) > 0, looping continuously	step
	101	Play forward if dimmer (on layer 1) > 0, hold on last frame	step
	102	Pause	step
	103	Play forward in continuous loop	step
	104	Play forward once and hold on the last frame	step
	105	No function	
	106	Scrub (Display) the selected In Frame	step
	107	Scrub (Display) the selected Out Frame	step
108-109	Reserved		
	<i>Video stream 2:</i>		
110-117	<i>The same functionality as for Video stream 1</i>	step	
118-255	Reserved		
61		Playback Speed	
	0	Normal Speed	step
	1-127	Slow speeds from slowest ---> normal	proportional
	128	Normal Speed	step
	129-255	Faster than Normal ---> Fastest	proportional
62		Gobo rotation and indexing	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
	0-63	Clockwise rotation from fast to slow	proportional
	64-127	Indexing	proportional
	128	No rotation-centre (128-default)	step
	129-192	Indexing	proportional
	193-255	Anticlockwise rotation from slow to fast	proportional
63		Gobo fine indexing (rotation)	
	0-255	Fine indexing (rotation)	proportional
64		Gobo effect 1 Selection	
	0	No effect	
	1	Zoom sinus	P1-speed
	2	Zoom bump in fade out	P1-speed
	3	Zoom fade in bump out	P1-speed
	4	Reserved	
	5	Zoom in fade	P1-speed
	6	Zoom out fade	P1-speed
	7	Scale xy sinus	P1-speed
	8	Reserved	
	9	Reserved	
	10	Reserved	
	11	XY pos. circle counter-clockwise	P1-speed
	12	XY pos. circle clockwise	P1-speed
	13	XY pos. scroll up	P1-speed
	14	XY pos. scroll down	P1-speed
	15	XY pos. scroll left	P1-speed
	16	XY pos. scroll right	P1-speed
	17	Right-left diag. down scroll	P1-speed
	18	Right-left diag. up scroll	P1-speed
	19	Left-right diag. down scroll	P1-speed
	20	Left-right diag. up scroll	P1-speed
	21	X rotate	P1-speed
	22	Y rotate	P1-speed
	23	XY rotate	P1-speed
	24	XY inv. rotate	P1-speed
	25	X inv. y rotate	P1-speed
	26	Tile xy	P1-amount
	27	Tile xy	P1-speed
	28	XYZ rot. cube	P1-speed
	29	XYZ rot. sphere	P1-speed
	30	X rot. cylinder	P1-speed
	31	Y rot. cylinder	P1-speed
	32	Reserved	
	33	Kaleidoscope	none
	34	Squeeze in	none
	35	Squeeze out	none
	36	Bend X	none
	37	Bend Y	none
	38	Tile frame	none
	39	Frame	none
	40	Plane Flip X	none
41	Plane Flip Y	none	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control					
64	42	Plane Flip XY	none					
	43	Plane mirror X top	none					
	44	Plane mirror X bottom	none					
	45	Plane mirror Y left	none					
	46	Plane mirror Y right	none					
	47	Plane mirror XY segment 1	<table border="1"> <tr> <td>segment 1</td> <td>segment 2</td> </tr> <tr> <td>segment 4</td> <td>segment 3</td> </tr> </table>	segment 1	segment 2	segment 4	segment 3	none
	segment 1	segment 2						
	segment 4	segment 3						
	48	Plane mirror XY segment 2		none				
	49	Plane mirror XY segment 3	none					
	50	Plane mirror XY segment 4	none					
	51	Plane tile 2x	none					
	52	Plane tile 3x	none					
	53	Plane tile 4x	none					
	54	Plane tile 5x	none					
	55	Plane cross tile 2x	none					
	56	Plane cross tile 2x inverse	none					
	57	Plane cross tile 3x	none					
	58	Plane cross tile 3x inverse	none					
	59	Plane cross tile 4x	none					
	60	Plane cross tile 4x inverse	none					
	61	Plane cross tile 5x	none					
	62	Plane cross tile 5x inverse	none					
	63	Plane cross tiler 5x	none					
	64	Plane cross tiler 5x inverse	none					
	65	Plane bar	none					
	66	Plane bar inverse	none					
	67	Plane bar left-right	none					
	68	Plane bar top-bottom	none					
	69	Reserved						
	70	Reserved						
	71	Gobo disc	none					
	72	Gobo disc Flip X	none					
	73	Gobo disc Flip Y	none					
	74	Gobo disc Flip XY	none					
	75	Gobo disc mirror X	none					
	76	Gobo disc mirror Y	none					
	77	Gobo disc mirror XY	none					
	78-79	Reserved						
	80	Plane mirror X top inverse	none					
	81	Plane mirror X bottom inverse	none					
	82	Plane mirror Y left inverse	none					
	83	Plane mirror Y right inverse	none					
	84	Plane mirror XY inverse	none					
	85	Plane mirror X-inverse,Y	none					
	86	Plane mirror X,Y-inverse	none					
	87-89	Reserved						
	90	Circular effect (Fish eye)	P1, P2, P3					
		<i>P1-character, P2-X ratio, P3-Y ratio</i>						
	91-99	Reserved						
		kaleidoscope - mode and mosaic segment selection:						
	100	Square -static mode	P1, P2, P3					

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control	
	101	Square -dynamic mode	P1, P2, P3	
	102	Right triangular - static mode	P1, P2, P3	
	103	Right triangular - dynamic mode	P1, P2, P3	
	104	Isosceles triangular - static mode	P1, P2, P3	
	105	Isosceles triangular - dynamic mode	P1, P2, P3	
	106	Triangular 1 - static mode	P1, P2, P3	
	107	Triangular 1 -dynamic mode	P1, P2, P3	
	108	Triangular 2 -static mode	P1, P2, P3	
	109	Triangular 2 - dynamic mode	P1, P2, P3	
	110	Centered kaleidoscope (rough)-static mode	P1, P2, P3	
	111	Centered kaleidoscope (rough)-dynamic mode	P1, P2, P3	
	112	Centered kaleidoscope (fine)-static mode	P1, P2, P3	
	113	Centered kaleidoscope (fine)-dynamic mode	P1, P2, P3	
			<i>Stat. mode:P1-density, P2-content (coarse), P3-content (fine)</i>	
			<i>Dyn. mode:P1-density, P2-size and pulsation, P3-movement</i>	
	114-149	Reserved		
	150	Layer keystoneing	P1,P2,P3	
		<i>P1-skewing in X, P2-skewing in Y, P3-squeezing/stretching in Y</i>		
	151-255	Reserved		
65		Gobo effect 1 - Parameter 1		
	0-255	Effect control	depends on effect	
66		Gobo effect 1 - Parameter 2		
	0-255	Effect control	depends on effect	
67		Gobo effect 1 - Parameter 3		
	0-255	Effect control	depends on effect	
68		Gobo effect 2 Selection		
	0	No effect		
	1	Colour to black and white	P1-amount	
	2	Colour to black and white inverse	P1-amount	
	3	Black and white to black and white inverse	P1-amount	
	4	Inversion	P1-amount	
	5	Black Mask	P1-amount	
	6	Black Mask inverse	P1-amount	
	7	Contrast	P1-amount	
	8	Brightness	P1-amount	
	9	RGB to GBR	P1-amount	
	10	RGB to BRG	P1-amount	
	11	RGB to RBG	P1-amount	
	12	Black and white to black and white inverse timed	P1-speed	
	13	Colour to black and white timed	P1-speed	
	14	Colour to inverse timed	P1-speed	
	15	Cycle	P1-speed	
	16	Cycle inverse	P1-speed	
68	17	Reserved		
	18	Reserved		
	19	Colour Key	P1-amount	
	20	Colour Key inverse	P1-amount	
	21	Key Black	P1-amount	
	22	Key Black inverse	P1-amount	
	23	Key White	P1-amount	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
	24	Key White inverse	P1-amount
	25	White flash	P1-amount
	26	Black flash	P1-amount
	27	Alpha flash	P1-amount
	28	Invert flash	P1-amount
	29	BW Flash	P1-amount
	30	Black and white to black and white inverse Flash	P1-amount
	31	Gradient Wipe X	P1-amount
	32	Gradient Wipe Y	P1-amount
	33-39	Reserved	
	40	Gaussian filter	P1-amount
	41	Mean filter	P1-amount
	42	Laplacian filter	P1-amount
	43	Emboss filter	P1-amount
	44	Sharpness filter	P1-amount
	45-49	Reserved	
			RGB effects:
50		RGB subtract All Pixels	P1, P2, P3
51		RGB add All Pixels	P1, P2, P3
52		RGB add non-black Pixels	P1, P2, P3
53		RGB subtract/add All Pixels	P1, P2, P3
54		Swap RGB to RBG	P1, P2, P3
55		Swap RGB to GRB	P1, P2, P3
56		Swap RGB to GBR	P1, P2, P3
57		Swap RGB to BRG	P1, P2, P3
58		Swap RGB to BGR	P1, P2, P3
59		RGB invert	P1, P2, P3
60		Invert and swap RGB to BRG	P1, P2, P3
61		Invert and swap RGB to GBR	P1, P2, P3
62		Colour to Alpha	P1, P2, P3
63		Colour to Alpha inverted	P1, P2, P3
64-67		Reserved	
68		RGB scale	P1, P2, P3
		<i>P1-red, P2-green, P3-blue</i>	
69		Brightness scale	P1, P2
		<i>P1, P2 - inclination of conversion line</i>	
70-149	Reserved		
150	Layer keystoneing	P1,P2,P3	
	<i>P1-squeezing/stretching in X, P2/P3-compressing & expanding in X/Y</i>		
151-255	Reserved		
69		Gobo effect 2 -Parameter 1	
	0-255	Effect control	depends on effect
70		Gobo effect 2 -Parameter 2	
	0-255	Effect control	depends on effect
71		Gobo effect 2 -Parameter 3	
	0-255	Effect control	depends on effect
72		Gobo Position X coarse	
	0-127	Movement forward	proportional
	128	Centre (128-default)	step
	129-255	Movement backward	proportional

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
73		Gobo position X fine	
	0-255	Position X fine	proportional
74		Gobo position Y coarse	
	0-127	Movement down	proportional
	128	Centre (128-default)	step
	129-255	Movement up	proportional
75		Gobo position Y fine	
	0-255	Position Y fine	proportional
76		Gobo zoom X coarse	
	0-127	Narrowing	proportional
	128	Centre (128-default)	step
	129-255	Widening	proportional
77		Gobo zoom X fine	
	0-255	Zoom X fine	proportional
78		Gobo zoom Y coarse	
	0-127	Narrowing	proportional
	128	Centre (128-default)	step
	129-255	Widening	proportional
79		Gobo zoom Y fine	
	0-255	Zoom Y fine	proportional
80		Synchronization to ID	
	0	No function	step
	1-255	Synchronization to fixture ID	proportional
Gobo layer 2			
81		Dimmer	
	0-255	Dimmer intensity from 0% to 100% (255-default)	proportional
82		Gobo Folder selection	
	0-20	Factory folders	step
	21-240	User folders	step
	241-250	Reserved	
	251	Live input (grab. card)-see channel 83	step
	252	Streaming from remote sources	step
	253-255	Reserved	
83		Gobo selection	
	0	White	step
	1-255	255 Gobos (one by one)	step
		If Live input (251 DMX) is selected on channel 82:	
	0	White screen	step
	1-20	Video composite input-PAL system	step
	21-40	SVIDEO input- PAL system	step
	21-60	Video composite input-NTSC system	step
	61-80	SVIDEO input- NTSC system	step
	81-100	Video composite input-SECAM system	step
	101-120	SVIDEO input- SECAM system	step
121-255	Reserved		
84		In Frame High	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (0-default)	proportional
85		In Frame Low	
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (0-default)	proportional
86		Out Frame High	
	0-255	Defines the end of a media file segment as a percentage of the movie length (255-default)	proportional
87		Out Frame Low	
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (255-default)	proportional
88		Gobo control	
		<u>Copy mode</u>	
		<i>Video stream 1</i>	
	0	Play forward if dimmer (on layer 2) > 0, looping continuously	step
	1	Play forward if dimmer (on layer 2) > 0, hold on last frame	step
	2	Pause	step
	3	Play forward in continuous loop	step
	4	Play forward once and hold on the last frame	step
	5	No function	
	6	Scrub (Display) the selected In Frame	step
	7	Scrub (Display) the selected Out Frame	step
	8-9	Reserved	
		<i>Video stream 2 (the same functionality as for Video stream 1):</i>	
	10	Play forward if dimmer (on layer 2) > 0, looping continuously	step
	11	Play forward if dimmer (on layer 2) > 0, hold on last frame	step
	12	Pause	step
	13	Play forward in continuous loop	step
	14	Play forward once and hold on the last frame	step
	15	No function	
	16	Scrub (Display) the selected In Frame	step
	17	Scrub (Display) the selected Out Frame	step
	18-19	Reserved	
		<u>Addition mode</u>	
		<i>Video Stream 1</i>	
	20	Play forward if dimmer (on layer 2) > 0, looping continuously	step
	21	Play forward if dimmer (on layer 2) > 0, hold on last frame	step
	22	Pause	step
	23	Play forward in continuous loop	step
	24	Play forward once and hold on the last frame	step
	25	No function	
	26	Scrub (Display) the selected In Frame	step
	27	Scrub (Display) the selected Out Frame	step
28-29	Reserved		
	<i>Video stream 2</i>		
30-37	<i>the same functionality as for Video stream 1</i>	step	
38-39	Reserved		
	<u>Substraction mode</u>		
	<i>Video Stream 1</i>		
40	Play forward if dimmer (on layer 2) > 0, looping continuously	step	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
88	41	Play forward if dimmer (on layer 2) > 0, hold on last frame	step
	42	Pause	step
	43	Play forward in continuous loop	step
	44	Play forward once and hold on the last frame	step
	45	No function	
	46	Scrub (Display) the selected In Frame	step
	47	Scrub (Display) the selected Out Frame	step
	48-49	Reserved	
		<i>Video Stream 2</i>	
	50-57	<i>the same functionality as for Video stream 1</i>	step
	58-59	Reserved	
		<u>Multiplication mode</u>	
		<i>Video stream 1</i>	
	60	Play forward if dimmer (on layer 2) > 0, looping continuously	step
	61	Play forward if dimmer (on layer 2) > 0, hold on last frame	step
	62	Pause	step
	63	Play forward in continuous loop	step
	64	Play forward once and hold on the last frame	step
	65	No function	
	66	Scrub (Display) the selected In Frame	step
	67	Scrub (Display) the selected Out Frame	step
	68-69	Reserved	
		<i>Video Stream 2</i>	
	70-77	<i>the same functionality as for Video stream 1</i>	step
	78-79	Reserved	
		<u>Minimum mode</u>	
		<i>Video stream 1</i>	
	80	Play forward if dimmer (on layer 2) > 0, looping continuously	step
	81	Play forward if dimmer (on layer 2) > 0, hold on last frame	step
	82	Pause	step
	83	Play forward in continuous loop	step
	84	Play forward once and hold on the last frame	step
	85	No function	
	86	Scrub (Display) the selected In Frame	step
	87	Scrub (Display) the selected Out Frame	step
	88-89	Reserved	
		<i>Video Stream 2</i>	
	90-97	<i>the same functionality as for Video stream 1</i>	step
	98-99	Reserved	
		<u>Maximum mode</u>	
		<i>Video stream 1</i>	
	100	Play forward if dimmer (on layer 2) > 0, looping continuously	step
	101	Play forward if dimmer (on layer 2) > 0, hold on last frame	step
	102	Pause	step
	103	Play forward in continuous loop	step
	104	Play forward once and hold on the last frame	step
	105	No function	
	106	Scrub (Display) the selected In Frame	step
107	Scrub (Display) the selected Out Frame	step	
108-109	Reserved		

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
		<i>Video Stream 2</i>	
	110-117	<i>the same functionality as for Video stream 1</i>	step
	118-255	Reserved	
89		Playback Speed	
	0	Normal Speed	step
	1-127	Slow speeds from slowest ---> normal	proportional
	128	Normal Speed	step
	129-255	Faster than Normal ---> Fastest	proportional
90		Gobo rotation and indexing	
	0-63	Clockwise rotation from fast to slow	proportional
	64-127	Indexing	proportional
	128	No rotation-centre (128-default)	step
	129-192	Indexing	proportional
	193-255	Anticlockwise rotation from slow to fast	proportional
91		Gobo fine indexing (rotation)	
	0-255	Fine indexing (rotation)	proportional
92		Gobo effect 1 Selection	
	0	No effect	
	1	Zoom sinus	P1-speed
	2	Zoom bump in fade out	P1-speed
	3	Zoom fade in bump out	P1-speed
	4	Reserved	
	5	Zoom in fade	P1-speed
	6	Zoom out fade	P1-speed
	7	Scale xy sinus	P1-speed
	8	Reserved	
	9	Reserved	
	10	Reserved	
	11	XY pos. circle counter-clockwise	P1-speed
	12	XY pos. circle clockwise	P1-speed
	13	XY pos. scroll up	P1-speed
	14	XY pos. scroll down	P1-speed
	15	XY pos. scroll left	P1-speed
	16	XY pos. scroll right	P1-speed
	17	Right-left diag. down scroll	P1-speed
	18	Right-left diag. up scroll	P1-speed
	19	Left-right diag. down scroll	P1-speed
	20	Left-right diag. up scroll	P1-speed
	21	X rotate	P1-speed
	22	Y rotate	P1-speed
	23	XY rotate	P1-speed
	24	XY inv. rotate	P1-speed
	25	X inv. y rotate	P1-speed
	26	Tile xy	P1-amount
	27	Tile xy	P1-speed
	28	XYZ rot. cube	P1-speed
	29	XYZ rot. sphere	P1-speed
	30	X rot. cylinder	P1-speed
31	Y rot. cylinder	P1-speed	
32	Reserved		

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control					
92	33	Kaleidoscope	none					
	34	Squeeze in	none					
	35	Squeeze out	none					
	36	Bend X	none					
	37	Bend Y	none					
	38	Tile frame	none					
	39	Frame	none					
	40	Plane Flip X	none					
	41	Plane Flip Y	none					
	42	Plane Flip XY	none					
	43	Plane mirror X top	none					
	44	Plane mirror X bottom	none					
	45	Plane mirror Y left	none					
	46	Plane mirror Y right	none					
	47	Plane mirror XY segment 1	<table border="1"> <tr><td>segment 1</td><td>segment 2</td></tr> <tr><td>segment 4</td><td>segment 3</td></tr> </table>	segment 1	segment 2	segment 4	segment 3	none
	segment 1	segment 2						
	segment 4	segment 3						
	48	Plane mirror XY segment 2		none				
	49	Plane mirror XY segment 3	none					
	50	Plane mirror XY segment 4	none					
	51	Plane tile 2x	none					
	52	Plane tile 3x	none					
	53	Plane tile 4x	none					
	54	Plane tile 5x	none					
	55	Plane cross tile 2x	none					
	56	Plane cross tile 2x inverse	none					
	57	Plane cross tile 3x	none					
	58	Plane cross tile 3x inverse	none					
	59	Plane cross tile 4x	none					
	60	Plane cross tile 4x inverse	none					
	61	Plane cross tile 5x	none					
	62	Plane cross tile 5x inverse	none					
	63	Plane cross tiler 5x	none					
	64	Plane cross tiler 5x inverse	none					
	65	Plane bar	none					
	66	Plane bar inverse	none					
	67	Plane bar left-right	none					
	68	Plane bar top-bottom	none					
	69	Reserved						
	70	Reserved						
	71	Gobo disc	none					
	72	Gobo disc Flip X	none					
	73	Gobo disc Flip Y	none					
	74	Gobo disc Flip XY	none					
	75	Gobo disc mirror X	none					
	76	Gobo disc mirror Y	none					
	77	Gobo disc mirror XY	none					
	78-79	Reserved						
	80	Plane mirror X top inverse	none					
	81	Plane mirror X bottom inverse	none					
	82	Plane mirror Y left inverse	none					
	83	Plane mirror Y right inverse	none					

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
	84	Plane mirror XY inverse	none
	85	Plane mirror X-inverse,Y	none
	86	Plane mirror X,Y-inverse	none
	87-89	Reserved	
	90	Circular effect (Fish eye) <i>P1-character, P2-X ratio, P3-Y ratio</i>	P1, P2, P3
	91-99	Reserved	
		kaleidoscope - mode and mosaic segment selection:	
	100	Square -static mode	P1, P2, P3
	101	Square -dynamic mode	P1, P2, P3
	102	Right triangular - static mode	P1, P2, P3
	103	Right triangular - dynamic mode	P1, P2, P3
	104	Isosceles triangular - static mode	P1, P2, P3
	105	Isosceles triangular - dynamic mode	P1, P2, P3
	106	Triangular 1 - static mode	P1, P2, P3
	107	Triangular 1 -dynamic mode	P1, P2, P3
	108	Triangular 2 -static mode	P1, P2, P3
	109	Triangular 2 - dynamic mode	P1, P2, P3
	110	Centered kaleidoscope (rough)-static mode	P1, P2, P3
	111	Centered kaleidoscope (rough)-dynamic mode	P1, P2, P3
	112	Centered kaleidoscope (fine)-static mode	P1, P2, P3
113	Centered kaleidoscope (fine)-dynamic mode <i>Stat. mode:P1-density, P2-content (coarse), P3-content (fine)</i> <i>Dyn. mode:P1-density, P2-size and pulsation, P3-movement</i>	P1, P2, P3	
114-149	Reserved		
150	Layer keystoneing <i>P1-skewing in X, P2-skewing in Y, P3-squeezing/stretching in Y</i>	P1,P2,P3	
151-255	Reserved		
93		Gobo effect 1 - Parameter 1	
	0-255	Effect control	depends on effect
94		Gobo effect 1 - Parameter 2	
	0-255	Effect control	depends on effect
95		Gobo effect 1 - Parameter 3	
	0-255	Effect control	depends on effect
96		Gobo effect 2 Selection	
	0	No effect	
	1	Colour to black and white	P1-amount
	2	Colour to black and white inverse	P1-amount
	3	Black and white to black and white inverse	P1-amount
	4	Inversion	P1-amount
	5	Black Mask	P1-amount
	6	Black Mask inverse	P1-amount
	7	Contrast	P1-amount
	8	Brightness	P1-amount
	9	RGB to GBR	P1-amount
	10	RGB to BRG	P1-amount
	11	RGB to RBG	P1-amount
	12	Black and white to black and white inverse timed	P1-speed
	13	Colour to black and white timed	P1-speed
14	Colour to inverse timed	P1-speed	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
96	15	Cycle	P1-speed
	16	Cycle inverse	P1-speed
	17	Reserved	
	18	Reserved	
	19	Colour Key	P1-amount
	20	Colour Key inverse	P1-amount
	21	Key Black	P1-amount
	22	Key Black inverse	P1-amount
	23	Key White	P1-amount
	24	Key White inverse	P1-amount
	25	White flash	P1-amount
	26	Black flash	P1-amount
	27	Alpha flash	P1-amount
	28	Invert flash	P1-amount
	29	BW Flash	P1-amount
	30	Black and white to black and white inverse Flash	P1-amount
	31	Gradient Wipe X	P1-amount
	32	Gradient Wipe Y	P1-amount
	33-39	Reserved	
	40	Gaussian filter	P1-amount
	41	Mean filter	P1-amount
	42	Laplacian filter	P1-amount
	43	Emboss filter	P1-amount
	44	Sharpness filter	P1-amount
	45-49	Reserved	
97		RGB effects:	
	50	RGB subtract All Pixels	P1, P2, P3
	51	RGB add All Pixels	P1, P2, P3
	52	RGB add non-black Pixels	P1, P2, P3
	53	RGB subtract/add All Pixels	P1, P2, P3
	54	Swap RGB to RBG	P1, P2, P3
	55	Swap RGB to GRB	P1, P2, P3
	56	Swap RGB to GBR	P1, P2, P3
	57	Swap RGB to BRG	P1, P2, P3
	58	Swap RGB to BGR	P1, P2, P3
	59	RGB invert	P1, P2, P3
	60	Invert and swap RGB to BRG	P1, P2, P3
	61	Invert and swap RGB to GBR	P1, P2, P3
	62	Colour to Alpha	P1, P2, P3
	63	Colour to Alpha inverted	P1, P2, P3
	64-67	Reserved	
	68	RGB scale	P1, P2, P3
		<i>P1-red, P2-green, P3-blue</i>	
	69	Brightness scale	P1, P2
		<i>P1, P2 - inclination of conversion line</i>	
70-149	Reserved		
150	Layer keystoneing	P1,P2,P3	
	<i>P1-squeezing/stretching in X, P2/P3-compressing & expanding in X/Y</i>		
151-255	Reserved		
97		Gobo effect 2 -Parameter 1	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
	0-255	Effect control	depends on effect
98		Gobo effect 2 -Parameter 2	
	0-255	Effect control	depends on effect
99		Gobo effect 2 -Parameter 3	
	0-255	Effect control	depends on effect
100		Gobo Position X coarse	
	0-127	Movement forward	proportional
	128	Centre (128-default)	step
	129-255	Movement backward	proportional
101		Gobo position X fine	
	0-255	Position X fine	proportional
102		Gobo position Y coarse	
	0-127	Movement down	proportional
	128	Centre (128-default)	step
	129-255	Movement up	proportional
103		Gobo position Y fine	
	0-255	Position Y fine	proportional
104		Gobo zoom X coarse	
	0-127	Narrowing	proportional
	128	Centre (128-default)	step
	129-255	Widening	proportional
105		Gobo zoom X fine	
	0-255	Zoom X fine	proportional
106		Gobo zoom Y coarse	
	0-127	Narrowing	proportional
	128	Centre (128-default)	step
	129-255	Widening	proportional
107		Gobo zoom Y fine	
	0-255	Zoom Y fine	proportional
108		Synchronization to ID	
	0	No function	step
	1-255	Synchronization to fixture ID	proportional
Gobo layer 3			
109		Dimmer	
	0-255	Dimmer intensity from 0% to 100% (255-default)	proportional
110		Gobo Folder selection	
	0-20	Factory folders	step
	21-240	User folders	step
	241-250	Reserved	
	251	Live input (grab. card)-see channel 111	step
	252	Straming from remote sources	step
253-255	Reserved		
111		Gobo selection	
	0	White	step
	1-255	255 Gobos (one by one)	step
		If Live input (251 DMX) is selected on channel 110:	
	0	White screen	step
	1-20	Video composite input-PAL system	step
21-40	SVIDEO input- PAL system	step	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
	21-60	Video composite input-NTSC system	step
	61-80	SVIDEO input- NTSC system	step
	81-100	Video composite input-SECAM system	step
	101-120	SVIDEO input- SECAM system	step
	121-255	Reserved	
112		In Frame High	
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (0-default)	proportional
113		In Frame Low	
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (0-default)	proportional
114		Out Frame High	
	0-255	Defines the end of a media file segment as a percentage of the movie length (255-default)	proportional
115		Out Frame Low	
	0-255	Defines the beginning of a media file segment as a percentage of the movie length (255-default)	proportional
116		Gobo control	
		<u>Copy mode</u>	
		<i>Video stream 1</i>	
	0	Play forward if dimmer (on layer 3) > 0, looping continuously	step
	1	Play forward if dimmer (on layer 3) > 0, hold on last frame	step
	2	Pause	step
	3	Play forward in continuous loop	step
	4	Play forward once and hold on the last frame	step
	5	No function	
	6	Scrub (Display) the selected In Frame	step
	7	Scrub (Display) the selected Out Frame	step
	8-9	Reserved	
		<i>Video stream 2 (the same functionality as for Video stream 1):</i>	
	10	Play forward if dimmer (on layer 3) > 0, looping continuously	step
	11	Play forward if dimmer (on layer 3) > 0, hold on last frame	step
	12	Pause	step
	13	Play forward in continuous loop	step
	14	Play forward once and hold on the last frame	step
	15	No function	
	16	Scrub (Display) the selected In Frame	step
	17	Scrub (Display) the selected Out Frame	step
	18-19	Reserved	
		<u>Addition mode</u>	
		<i>Video Stream 1</i>	
	20	Play forward if dimmer (on layer 3) > 0, looping continuously	step
	21	Play forward if dimmer (on layer 3) > 0, hold on last frame	step
	22	Pause	step
	23	Play forward in continuous loop	step
	24	Play forward once and hold on the last frame	step
25	No function		
26	Scrub (Display) the selected In Frame	step	
27	Scrub (Display) the selected Out Frame	step	
28-29	Reserved		

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
116		<i>Video stream 2</i>	
	30-37	<i>the same functionality as for Video stream 1</i>	step
	38-39	Reserved	
		<u>Substraction mode</u>	
		<i>Video Stream 1</i>	
	40	Play forward if dimmer (on layer 3) > 0, looping continuously	step
	41	Play forward if dimmer (on layer 3) > 0, hold on last frame	step
	42	Pause	step
	43	Play forward in continuous loop	step
	44	Play forward once and hold on the last frame	step
	45	No function	
	46	Scrub (Display) the selected In Frame	step
	47	Scrub (Display) the selected Out Frame	step
	48-49	Reserved	
		<i>Video Stream 2</i>	
	50-57	<i>the same functionality as for Video stream 1</i>	step
	58-59	Reserved	
		<u>Multiplication mode</u>	
		<i>Video stream 1</i>	
	60	Play forward if dimmer (on layer 3) > 0, looping continuously	step
	61	Play forward if dimmer (on layer 3) > 0, hold on last frame	step
	62	Pause	step
	63	Play forward in continuous loop	step
	64	Play forward once and hold on the last frame	step
	65	No function	
	66	Scrub (Display) the selected In Frame	step
	67	Scrub (Display) the selected Out Frame	step
	68-69	Reserved	
		<i>Video Stream 2</i>	
	70-77	<i>the same functionality as for Video stream 1</i>	step
	78-79	Reserved	
		<u>Minimum mode</u>	
		<i>Video stream 1</i>	
	80	Play forward if dimmer (on layer 3) > 0, looping continuously	step
	81	Play forward if dimmer (on layer 3) > 0, hold on last frame	step
	82	Pause	step
	83	Play forward in continuous loop	step
	84	Play forward once and hold on the last frame	step
	85	No function	
	86	Scrub (Display) the selected In Frame	step
	87	Scrub (Display) the selected Out Frame	step
	88-89	Reserved	
		<i>Video Stream 2</i>	
	90-97	<i>the same functionality as for Video stream 1</i>	step
	98-99	Reserved	
		<u>Maximum mode</u>	
	<i>Video stream 1</i>		
100	Play forward if dimmer (on layer 3) > 0, looping continuously	step	
101	Play forward if dimmer (on layer 3) > 0, hold on last frame	step	
102	Pause	step	

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DMX Channel	DMX Value	Function	Type of control
	103	Play forward in continuous loop	step
	104	Play forward once and hold on the last frame	step
	105	No function	
	106	Scrub (Display) the selected In Frame	step
	107	Scrub (Display) the selected Out Frame	step
	108-109	Reserved	
		<i>Video Stream 2</i>	
	110-117	<i>the same functionality as for Video stream 1</i>	step
	118-255	Reserved	
117		Playback Speed	
	0	Normal Speed	step
	1-127	Slow speeds from slowest ---> normal	proportional
	128	Normal Speed	step
	129-255	Faster than Normal ---> Fastest	proportional
118		Gobo rotation and indexing	
	0-63	Clockwise rotation from fast to slow	proportional
	64-127	Indexing	proportional
	128	No rotation-centre (128-default)	step
	129-192	Indexing	proportional
193-255	Anticlockwise rotation from slow to fast	proportional	
119		Gobo fine indexing (rotation)	
	0-255	Fine indexing (rotation)	proportional
120		Gobo effect 1 Selection	
	0	No effect	
	1	Zoom sinus	P1-speed
	2	Zoom bump in fade out	P1-speed
	3	Zoom fade in bump out	P1-speed
	4	Reserved	
	5	Zoom in fade	P1-speed
	6	Zoom out fade	P1-speed
	7	Scale xy sinus	P1-speed
	8	Reserved	
	9	Reserved	
	10	Reserved	
	11	XY pos. circle counter-clockwise	P1-speed
	12	XY pos. circle clockwise	P1-speed
	13	XY pos. scroll up	P1-speed
	14	XY pos. scroll down	P1-speed
	15	XY pos. scroll left	P1-speed
	16	XY pos. scroll right	P1-speed
	17	Right-left diag. down scroll	P1-speed
	18	Right-left diag. up scroll	P1-speed
	19	Left-right diag. down scroll	P1-speed
	20	Left-right diag. up scroll	P1-speed
	21	X rotate	P1-speed
	22	Y rotate	P1-speed
	23	XY rotate	P1-speed
	24	XY inv. rotate	P1-speed
	25	X inv. y rotate	P1-speed
26	Tile xy	P1-amount	

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DMX Channel	DMX Value	Function	Type of control					
120	27	Tile xy	P1-speed					
	28	XYZ rot. cube	P1-speed					
	29	XYZ rot. sphere	P1-speed					
	30	X rot. cylinder	P1-speed					
	31	Y rot. cylinder	P1-speed					
	32	Reserved						
	33	Kaleidoscope	none					
	34	Squeeze in	none					
	35	Squeeze out	none					
	36	Bend X	none					
	37	Bend Y	none					
	38	Tile frame	none					
	39	Frame	none					
	40	Plane Flip X	none					
	41	Plane Flip Y	none					
	42	Plane Flip XY	none					
	43	Plane mirror X top	none					
	44	Plane mirror X bottom	none					
	45	Plane mirror Y left	none					
	46	Plane mirror Y right	none					
	47	Plane mirror XY segment 1	<table border="1"> <tr><td>segment 1</td><td>segment 2</td></tr> <tr><td>segment 4</td><td>segment 3</td></tr> </table>	segment 1	segment 2	segment 4	segment 3	none
	segment 1	segment 2						
	segment 4	segment 3						
	48	Plane mirror XY segment 2		none				
	49	Plane mirror XY segment 3	none					
	50	Plane mirror XY segment 4	none					
	51	Plane tile 2x	none					
	52	Plane tile 3x	none					
	53	Plane tile 4x	none					
	54	Plane tile 5x	none					
	55	Plane cross tile 2x	none					
	56	Plane cross tile 2x inverse	none					
	57	Plane cross tile 3x	none					
	58	Plane cross tile 3x inverse	none					
	59	Plane cross tile 4x	none					
	60	Plane cross tile 4x inverse	none					
	61	Plane cross tile 5x	none					
	62	Plane cross tile 5x inverse	none					
	63	Plane cross tiler 5x	none					
	64	Plane cross tiler 5x inverse	none					
	65	Plane bar	none					
	66	Plane bar inverse	none					
	67	Plane bar left-right	none					
	68	Plane bar top-bottom	none					
	69	Reserved						
	70	Reserved						
	71	Gobo disc	none					
	72	Gobo disc Flip X	none					
	73	Gobo disc Flip Y	none					
	74	Gobo disc Flip XY	none					
75	Gobo disc mirror X	none						
76	Gobo disc mirror Y	none						

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DMX Channel	DMX Value	Function	Type of control
	77	Gobo disc mirror XY	none
	78-79	Reserved	
	80	Plane mirror X top inverse	none
	81	Plane mirror X bottom inverse	none
	82	Plane mirror Y left inverse	none
	83	Plane mirror Y right inverse	none
	84	Plane mirror XY inverse	none
	85	Plane mirror X-inverse,Y	none
	86	Plane mirror X,Y-inverse	none
	87-89	Reserved	
	90	Circular effect (Fish eye)	P1, P2, P3
		<i>P1-character, P2-X ratio, P3-Y ratio</i>	
	91-99	Reserved	
		kaleidoscope - mode and mosaic segment selection:	
	100	Square -static mode	P1,P2,P3
	101	Square -dynamic mode	P1,P2,P3
	102	Right triangular - static mode	P1,P2,P3
	103	Right triangular - dynamic mode	P1,P2,P3
	104	Isosceles triangular - static mode	P1,P2,P3
	105	Isosceles triangular - dynamic mode	P1,P2,P3
	106	Triangular 1 - static mode	P1,P2,P3
	107	Triangular 1 -dynamic mode	P1,P2,P3
	108	Triangular 2 -static mode	P1,P2,P3
	109	Triangular 2 - dynamic mode	P1,P2,P3
	110	Centered kaleidoscope (rough)-static mode	P1, P2, P3
	111	Centered kaleidoscope (rough)-dynamic mode	P1, P2, P3
	112	Centered kaleidoscope (fine)-static mode	P1, P2, P3
	113	Centered kaleidoscope (fine)-dynamic mode	P1, P2, P3
		<i>Stat. mode:P1-density, P2-content (coarse), P3-content (fine)</i>	
		<i>Dyn. mode:P1-density, P2-size and pulsation, P3-movement</i>	
	114-149	Reserved	
	150	Layer keystoneing	P1,P2,P3
		<i>P1-skewing in X, P2-skewing in Y, P3-squeezing/stretching in Y</i>	
	151-255	Reserved	
121		Gobo effect 1 - Parameter 1	
	0 - 255	Effect control	depends on effect
122		Gobo effect 1 - Parameter 2	
	0 - 255	Effect control	depends on effect
123		Gobo effect 1 - Parameter 3	
	0 - 255	Effect control	depends on effect
124		Gobo effect 2 Selection	
	0	No effect	
	1	Colour to black and white	P1-amount
	2	Colour to black and white inverse	P1-amount
	3	Black and white to black and white inverse	P1-amount
	4	Inversion	P1-amount
	5	Black Mask	P1-amount
	6	Black Mask inverse	P1-amount
	7	Contrast	P1-amount
	8	Brightness	P1-amount

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DMX Channel	DMX Value	Function	Type of control	
124	9	RGB to GBR	P1-amount	
	10	RGB to BRG	P1-amount	
	11	RGB to RBG	P1-amount	
	12	Black and white to black and white inverse timed	P1-speed	
	13	Colour to black and white timed	P1-speed	
	14	Colour to inverse timed	P1-speed	
	15	Cycle	P1-speed	
	16	Cycle inverse	P1-speed	
	17	Reserved		
	18	Reserved		
	19	Colour Key	P1-amount	
	20	Colour Key inverse	P1-amount	
	21	Key Black	P1-amount	
	22	Key Black inverse	P1-amount	
	23	Key White	P1-amount	
	24	Key White inverse	P1-amount	
	25	White flash	P1-amount	
	26	Black flash	P1-amount	
	27	Alpha flash	P1-amount	
	28	Invert flash	P1-amount	
	29	BW Flash	P1-amount	
	30	Black and white to black and white inverse Flash	P1-amount	
	31	Gradient Wipe X	P1-amount	
	32	Gradient Wipe Y	P1-amount	
	33-39	Reserved		
	40	Gaussian filter	P1-amount	
	41	Mean filter	P1-amount	
	42	Laplacian filter	P1-amount	
	43	Emboss filter	P1-amount	
	44	Sharpness filter	P1-amount	
	45-49	Reserved		
			RGB effects:	
		50	RGB subtract All Pixels	P1, P2, P3
		51	RGB add All Pixels	P1, P2, P3
		52	RGB add non-black Pixels	P1, P2, P3
		53	RGB subtract/add All Pixels	P1, P2, P3
		54	Swap RGB to RBG	P1, P2, P3
		55	Swap RGB to GRB	P1, P2, P3
		56	Swap RGB to GBR	P1, P2, P3
		57	Swap RGB to BRG	P1, P2, P3
		58	Swap RGB to BGR	P1, P2, P3
		59	RGB invert	P1, P2, P3
		60	Invert and swap RGB to BRG	P1, P2, P3
		61	Invert and swap RGB to GBR	P1, P2, P3
		62	Colour to Alpha	P1, P2, P3
		63	Colour to Alpha inverted	P1, P2, P3
		64-67	Reserved	
		68	RGB scale	P1, P2, P3
			<i>P1-red, P2-green, P3-blue</i>	
	69	Brightness scale	P1, P2, P3	

Appendix - DMX protocol

DMX Channel	DMX Value	Function	Type of control
		<i>P1, P2 - inclination of conversion line</i>	
	70-149	<i>Reserved</i>	
	150	<i>Layer keystoneing</i>	P1,P2,P3
		<i>P1-squeezing/stretching in X, P2/P3-compressing & expanding in X/Y</i>	
125		Gobo effect 2 -Parameter 1	
	0-255	Effect control	depends on effect
126		Gobo effect 2 -Parameter 2	
	0-255	Effect control	depends on effect
127		Gobo effect 2 -Parameter 3	
	0-255	Effect control	depends on effect
128		Gobo Position X coarse	
	0-127	Movement forward	proportional
	128	Centre (128-default)	step
	129-255	Movement backward	proportional
129		Gobo position X fine	
	0-255	Position X fine	proportional
130		Gobo position Y coarse	
	0-127	Movement down	proportional
	128	Centre (128-default)	step
	129-255	Movement up	proportional
131		Gobo position Y fine	
	0-255	Position Y fine	proportional
132		Gobo zoom X coarse	
	0-127	Narrowing	proportional
	128	Centre (128-default)	step
132	129-255	Widening	proportional
133		Gobo zoom X fine	
	0-255	Zoom X fine	proportional
134		Gobo zoom Y coarse	
	0-127	Narrowing	proportional
	128	Centre (128-default)	step
	129-255	Widening	proportional
135		Gobo zoom Y fine	
	0-255	Zoom Y fine	proportional
136		Synchronization to ID	
	0	No function	step
	1-255	Synchronization to fixture ID	proportional
* DMX value 10 and 11 changes meaning of channels 18-25.			
See chapter "Projection onto angular, cylindric or spheric surfaces" in the User manual.			