DMX protocol

Channel Std.	Channel Ext.	DMX value	Percent	Function	Fade status	Default value
1				**Beam electronic shutter effect**	Snap	22
		0 - 19	0 - 7	Shutter closed		
		20 - 24	8 - 9	Shutter open		
		25 - 64	10 - 25	Strobe 1 (fast → slow)		
		65 - 69	26 - 27	Shutter open		
		70 - 84	28 - 33	Strobe 2: opening pulse (fast → slow)		
		85 - 89	34 - 35	Shutter open		
		90 - 104	36 - 41	Strobe 3: closing pulse (fast → slow)		
		105 - 109	42 - 43	Shutter open		
		110 - 124	44 - 49	Strobe 4: random strobe (fast → slow)		
		125 - 129	50 - 51	Shutter open		
		130 - 144	52 - 57	Strobe 5: random opening pulse (fast → slow)		
		145 - 149	58 - 59	Shutter open		
		150 - 164	60 - 65	Strobe 6: random closing pulse (fast → slow)		
		165 - 169	66 - 67	Shutter open		
		170 - 184	68 - 73	Strobe 7: burst pulse (fast → slow)		
		185 - 189	74 - 75	Shutter open		
		190 - 204	76 - 81	Strobe 8: random burst pulse (fast → slow)		
		205 - 209	82 - 83	Shutter open		
		210 - 224	84 - 89	Strobe 9: sine wave (fast → slow)		
		225 - 229	90 - 91	Shutter open		
		230 - 244	92 - 97	Strobe 10: burst (fast → slow)		
		245 - 255	98 - 100	Shutter open		
2		0 - 255	0 - 100	**Beam dimmer** 0 → 100% intensity	Fade	0
3		0 - 255	0 - 100	**Zoom** Wide → narrow	Fade	255
4		0 - 255	0 - 100	**Pan** Pan 0° - 540°	Fade	128
5		0 - 255	0 - 100	**Pan fine** Pan fine adjustment (Least Significant Byte)	Fade	32768
6		0 - 255	0 - 100	**Tilt** Tilt 0° - 232°	Fade	128
7		0 - 255	0 - 100	**Tilt fine** Tilt fine adjustment (Least Significant Byte)	Fade	32768

Table 2: MAC Aura DMX Protocol

Channel Std.	Channel Ext.	DMX value	Percent	Function	Fade status	Default value
				Fixture control settings		
		0 - 9	0 - 3	*No function*		
		10 - 14	4 - 5	Reset entire fixture[1]		
		15 - 39	6 - 13	*No function*		
		40 - 44	14 - 15	PTSP = NORM[2]		
		45 - 49	16 - 17	PTSP = FAST[2]		
		50 - 54	18 - 19	PTSP = SLOW[2]		
		55 - 59	20 - 21	*No function*		
		60 - 64	22 - 23	Fan mode FULL[2]		
		65 - 69	24 - 25	*No function*		
		70 - 74	26 - 27	Fan mode REGULATED[2]		
		75 - 89	28 - 33	*No function*		
		90 - 94	34 - 35	Calibrated color output mode COLOR CALIB = ON[3]		
		95 - 99	36 - 37	*No function*		
8		100 - 104	38 - 40	Raw color output mode COLOR CALIB = OFF[3]	Snap	0
		105 - 109	41 - 42	*No function*		
		110 - 114	43 - 44	Fast dimming, speed of changes unrestricted[2]		
		115 - 119	45 - 46	*No function*		
		120 - 124	47 - 48	Smooth dimming, speed of changes restricted slightly[2]		
		125 - 249	49 - 97	*No function*		
		250 - 255	98 - 100	Illuminate display		
				[1]If DMX Reset is disabled in the menu, a reset command can only be executed if channel 2 is set to 232 and channel 1 is set to zero. These values need to be held for 5 seconds before feature is activated. Values must be "snapped to" to function.		
				[2]Menu override: setting unaffected by power off/on.		
				[3]Value must be held for 3 seconds to activate. Setting unaffected by power off/on.		

Table 2: MAC Aura DMX Protocol

Channel Std.	Channel Ext.	DMX value	Percent	Function	Fade status	Default value
9				**Beam color wheel effect**	Snap	0
		0 - 9	0 - 2	Open. RGBW color mixing enabled		
		10 - 14	3- 4	LEE 790 - Moroccan pink		
		15 - 19	4 - 5	LEE 157 - Pink		
		20 - 24	6 - 7	LEE 332 - Special rose pink		
		25 - 29	8 - 9	LEE 328 - Follies pink		
		30 - 34	10 - 11	LEE 345 - Fuchsia pink		
		35 - 39	12 - 13	LEE 194 - Surprise pink		
		40 - 44	14 - 15	LEE 181 - Congo Blue		
		45 - 49	16 - 17	LEE 071 - Tokyo Blue		
		50 - 54	18 - 19	LEE 120 - Deep Blue		
		55 - 59	20 - 21	LEE 079 - Just Blue		
		60 - 64	22 - 23	LEE 132 - Medium Blue		
		65 - 69	24 - 25	LEE 200 - Double CT Blue		
		70 - 74	26 - 27	LEE 161 - Slate Blue		
		75 - 79	28 - 29	LEE 201 - Full CT Blue		
		80 - 84	30 - 31	LEE 202 - Half CT Blue		
		85 - 89	32 - 33	LEE 117 - Steel Blue		
		90 - 94	34 - 35	LEE 353 - Lighter Blue		
		95 - 99	36 - 37	LEE 118 - Light Blue		
		100 - 104	38 - 39	LEE 116 - Medium Blue Green		
		105 - 109	40 - 41	LEE 124 - Dark Green		
		110 - 114	42 - 43	LEE 139 - Primary Green		
		115 - 119	44 - 45	LEE 089 - Moss Green		
		120 - 124	46 - 47	LEE 122 - Fern Green		
		125 - 129	48 - 49	LEE 738 - JAS Green		
		130 - 134	50 - 51	LEE 088 - Lime Green		
		135 - 139	52 - 53	LEE 100 - Spring Yellow		
		140 - 144	54 - 55	LEE 104 - Deep Amber		
		145 - 149	56 - 57	LEE 179 - Chrome Orange		
		150 - 154	58 - 59	LEE 105 - Orange		
		155 - 159	60 - 61	LEE 021 - Gold Amber		
		160 - 164	62 - 63	LEE 778 - Millennium Gold		
		165 - 169	64 - 65	LEE 135 - Deep Golden Amber		
		170 - 174	66 - 67	LEE 164 - Flame Red		
		175 - 179	68 - 69	Open		
				Color wheel rotation effect		
		180 - 201	70 - 78	Clockwise, fast → slow		
		202 - 207	79 - 80	Stop (this will stop wherever the color is at the time)		
		208 - 229	81 - 89	Counter-clockwise, slow → fast		
		230 - 234	90 - 91	Open		
				Random color		
		235 - 239	92 - 93	Fast		
		240 - 244	94 - 95	Medium		
		245 - 249	96 - 97	Slow		
		250 - 255	98 - 100	Open		
10		0 - 255	0 - 100	**Beam red** Red 0 → 100%	Fade	255
11		0 - 255	0 - 100	**Beam green** Green 0 → 100%	Fade	255
12		0 - 255	0 - 100	**Beam blue** Blue 0 → 100%	Fade	255
13		0 - 255	0 - 100	**Beam white** White 0 → 100% *Note: if **Color Calib** is set to **On**, this channel has no effect – white LEDs are activated by RGB mixing*	Fade	0
14				**Beam CTC (Color Temperature Control)**	Fade	0
		0 - 19	0 - 7	CTC disabled		
		20 - 255	8 - 100	CTC 10 000K → 2 500K		
-	15	0 - 255	0 - 100	**FX1 select** Pre-programmed effect 1 selection (see “FX: pre-programmed effects” on page 27)	Snap	0
-	16	0 - 255	0 - 100	**FX1 adjust, sync speed adjust** Zero → maximum • *If no sync set on channel 19, adjusts FX1* • *If sync set on channel 19, adjusts synchronized FX1+FX2 speed*	Fade	128
-	17	0 - 255	0 - 100	**FX2 select** Pre-programmed effect 2 selection (see “FX: pre-programmed effects” on page 27)	Snap	0

Table 2: MAC Aura DMX Protocol

Channel Std.	Channel Ext.	DMX value	Percent	Function	Fade status	Default value
-	18	0 - 255	0 - 100	**FX2 adjust** Zero → maximum • *If no sync set on channel 19, adjusts FX2* • *If sync set on channel 19, has no effect*	Fade	128
-	19	0 - 49	0 - 19	**Sync (FX synchronization)** No sync • *FX1 and FX2 run through cycles independently* • *Cycle duration is regular* • *Channel 16 and channel 18 adjust FX1 and FX2 independently*	Snap	0
		50	20	Sync • *FX1 and FX2 run through cycles in sync* • *Cycle duration is regular* • *Channel 16 adjusts overall speed, channel 18 has no effect*		
		51 - 169	21 - 66	Sync shift • *FX1 and FX2 run through cycles in sync* • *FX2 is offset (delayed) relative to FX1* • *Offset is adjustable from zero → maximum* • *Channel 16 adjusts overall speed, channel 18 has no effect*		
		170 - 209	67 - 81	Sync random • *FX1 and FX2 run through cycles in sync* • *Cycle duration for synchronized FX1 and FX2 is made shorter and longer at random.* • *Channel 16 adjusts overall speed, channel 18 has no effect*		
		210 - 255	82 - 100	No sync, random • *FX1 and FX2 run through cycles independently* • *Cycle duration is for FX1 and FX2 is made shorter and longer at random* • *Channel 16 and channel 18 adjust FX1 and FX2 speed independently*		

Aura control

-	20			**Aura shutter and strobe effect**	Snap	22
		0 - 19	0 - 7	Shutter closed		
		20 - 24	8 - 9	Shutter open		
		25 - 64	10 - 25	Strobe 1 (fast → slow)		
		65 - 69	26 - 27	Shutter open		
		70 - 84	28 - 33	Strobe 2: opening pulse (fast → slow)		
		85 - 89	34 - 35	Shutter open		
		90 - 104	36 - 41	Strobe 3: closing pulse (fast → slow)		
		105 - 109	42 - 43	Shutter open		
		110 - 124	44 - 49	Strobe 4: random strobe (fast → slow)		
		125 - 129	50 - 51	Shutter open		
		130 - 144	52 - 57	Strobe 5: random opening pulse (fast → slow)		
		145 - 149	58 - 59	Shutter open		
		150 - 164	60 - 65	Strobe 6: random closing pulse (fast → slow)		
		165 - 169	66 - 67	Shutter open		
		170 - 184	68 - 73	Strobe 7: burst pulse (fast → slow)		
		185 - 189	74 - 75	Shutter open		
		190 - 204	76 - 81	Strobe 8: random burst pulse (fast → slow)		
		205 - 209	82 - 83	Shutter open		
		210 - 224	84 - 89	Strobe 9: sine wave (fast → slow)		
		225 - 229	90 - 91	Shutter open		
		230 - 244	92 - 97	Strobe 10: burst (fast → slow)		
		245 - 255	98 - 100	Shutter open		
-	21	0 - 255	0 - 100	**Aura dimmer** 0 → 100% intensity	Fade	0

Table 2: MAC Aura DMX Protocol

Channel Std.	Channel Ext.	DMX value	Percent	Function	Fade status	Default value
				Aura color wheel effect		
		0 - 9	0 - 1	Open. RGB color mixing enabled		
		10 - 14	2 - 3	LEE 790 - Moroccan pink		
		15 - 19	4 - 5	LEE 157 - Pink		
		20 - 24	6 - 7	LEE 332 - Special rose pink		
		25 - 29	8 -9	LEE 328 - Follies pink		
		30 - 34	10 - 11	LEE 345 - Fuchsia pink		
		35 - 39	12 - 13	LEE 194 - Surprise pink		
		40 - 44	14 - 15	LEE 181 - Congo Blue		
		45 - 49	16 - 17	LEE 071 - Tokyo Blue		
		50 - 54	18 - 19	LEE 120 - Deep Blue		
		55 - 59	20 - 21	LEE 079 - Just Blue		
		60 - 64	22 - 23	LEE 132 - Medium Blue		
		65 - 69	24 - 25	LEE 200 - Double CT Blue		
		70 - 74	26 - 27	LEE 161 - Slate Blue		
		75 - 79	28 - 29	LEE 201 - Full CT Blue		
		80 - 84	30 - 31	LEE 202 - Half CT Blue		
		85 - 89	32 - 33	LEE 117 - Steel Blue		
		90 - 94	34 - 35	LEE 353 - Lighter Blue		
		95 - 99	36 - 37	LEE 118 - Light Blue		
		100 - 104	38 - 39	LEE 116 - Medium Blue Green		
		105 - 109	40 - 41	LEE 124 - Dark Green		
		110 - 114	42 - 43	LEE 139 - Primary Green		
-	22	115 - 119	44 - 45	LEE 089 - Moss Green	Snap	0
		120 - 124	46 - 47	LEE 122 - Fern Green		
		125 - 129	48 - 49	LEE 738 - JAS Green		
		130 - 134	50 - 51	LEE 088 - Lime Green		
		135 - 139	52 - 53	LEE 100 - Spring Yellow		
		140 - 144	54 - 55	LEE 104 - Deep Amber		
		145 - 149	56 - 57	LEE 179 - Chrome Orange		
		150 - 154	58 - 59	LEE 105 - Orange		
		155 - 159	60 - 61	LEE 021 - Gold Amber		
		160 - 164	62 - 63	LEE 778 - Millennium Gold		
		165 - 169	64 - 65	LEE 135 - Deep Golden Amber		
		170 - 174	66 - 67	LEE 164 - Flame Red		
		175 - 179	68 - 69	Open		
				Color wheel rotation effect		
		180 - 201	70 - 78	Clockwise, fast → slow		
		202 - 207	79 - 80	Stop (this will stop wherever the color is at the time)		
		208 - 229	81 - 89	Counter-clockwise, slow → fast		
		230 - 234	90 - 91	Open		
				Random color		
		235 - 239	92 - 93	Fast		
		240 - 244	94 - 95	Medium		
		245 - 249	96 - 97	Slow		
		250 - 255	98 - 100	Open		
-	23	0 - 255	0 - 100	**Aura red** Red 0 → 100%	Fade	255
-	24	0 - 255	0 - 100	**Aura green** Green 0 → 100%	Fade	255
-	25	0 - 255	0 - 100	**Aura blue** Blue 0 → 100%	Fade	255

Table 2: MAC Aura DMX Protocol

Note: DMX values labeled "No function" will have no effect - the last functional value will be used.

If **COLOR CALIB** is set to **OFF** in the control menus, RGBW, RGB and color wheel effect output is uncalibrated. If **COLOR CALIB** is set to **ON**, output is calibrated.

FX: pre-programmed effects

The table below lists the pre-programmed effects that can be selected on DMX channels 15 and 17. Two effects can be superimposed by selecting one effect on channel 15 and a different effect on channel 17.

Type	DMX value	Percent	FX Name	FX Adjust
			Dimmer sync	
Aura Sync	0 - 9	0 - 3	Idle	n/a
	10 - 12	4	Dimmer sync	n/a
	13 - 15	5	Strobe sync	n/a
	16 - 18	6 - 7	Dimmer + strobe sync	n/a
	19 - 21	8	Aura color sync	n/a
	22 - 24	9	Aura all sync	n/a
	25 - 39	10 - 15	*Reserved*	n/a
			Aura strobe delay	
Intensity FX	40 - 42	16	Aura strobe delay	Trigger Delay
	43 - 45	17	Strobe alternate single	Speed
	46 - 48	18	Strobe alternate dual	Speed
	49 - 51	19 - 20	Strobe alternate triple	Speed
	52 - 54	21	3-step strobe	Speed
	55 - 60	22 - 23	*Reserved*	n/a
	61 - 63	24	Intensity random alternate	Speed
	64 - 66	25	Aura ramp, Beam flash	Speed
	67 - 69	26 - 27	Beam ramp, Aura flash	Speed
	70 - 72	28	Intensity Aura, Beam ramp	Speed
	73 - 75	29	Intensity Beam, Aura ramp	Speed
	76 - 99	30 - 38	*Reserved*	n/a
			Aura color offset	
Color FX	100 - 102	39	Aura color offset	Color offset
	103 - 108	40 - 42	*Reserved*	n/a
	109 - 111	43	Hue shimmer	Amount
	112 - 114	44	Saturation shimmer	Amount
	115 - 126	45 - 49	*Reserved*	n/a
	127 - 129	50	Color strobe	n/a
	130 - 132	51	Color offset strobe	Color offset on strobe
	133 - 135	52	Aura color strobe	n/a
	136 - 138	53	Aura color offset strobe	Aura color offset on strobe
	139 - 141	54 - 55	Color spikes	Strength
	142 - 159	56 - 62	*Reserved*	n/a
			Zoom / color offset	
Zoom FX	160 - 162	63	Color zoom ramp in	Speed
	163 - 165	64	Color zoom ramp out	Speed
	166 - 168	65	Color zoom fade in	Speed
	169 - 171	66	Color zoom fade out	Speed
	172 - 174	67 - 68	*Reserved*	n/a
	175 - 177	69	Zoom ramp up	Speed
	178 - 180	70	Zoom ramp down	Speed
	181 - 219	71 - 85	*Reserved*	n/a
Reserved	*220 - 255*	*86 - 100*	*Reserved*	*n/a*

Table 3: FX (pre-programmed Beam and Aura effects)

The MAC Aura Product Support page on www.martin.com features a downloadable detailed description of the parameters that are adjusted and algorithms that are applied in the different FX.

LEE colors and RGB equivalents

The table below gives approximate RGB equivalents for the LEE colors available in the standard MAC Aura's color wheel effects for the Beam (on DMX channel 9 in **STD** and **EXT** modes) and Aura (on DMX channel 22 in **EXT** mode only).

		DMX Integer		
Lee no.	**Name**	**Red**	**Green**	**Blue**
790	Moroccan Pink	255	235	052
157	Pink	214	134	048
332	Special rose Pink	255	000	044
328	Follies Pink	255	059	113
345	Fuchsia Pink	255	138	219
194	Surprise Pink	226	175	226
181	Congo Blue	040	001	255
071	Tokyo Blue	000	000	255
120	Deep Blue	000	078	255
079	Just Blue	000	199	255
132	Medium Blue	000	255	234
200	Double CT Blue	149	246	255
161	State Blue	137	255	227
201	Full CT Blue	213	220	222
202	Half CT Blue	219	232	175
117	Steel Blue	205	255	199
353	Lighter Blue	115	255	165
118	Light Blue	006	255	143
116	Medium Blue Green	000	255	94
124	Dark Green	029	255	000
139	Primary Green	032	223	000
089	Moss Green	075	255	000
122	Fern Green	080	232	000
738	JAS Green	108	226	000
088	Lime Green	145	194	000
100	Spring Yellow	210	255	000
104	Deep Amber	225	232	000
179	Chrome Orange	023	215	000
105	Orange	247	214	000
021	Gold Amber	255	163	000
778	Millennium Gold	255	152	000
135	Deep Golden Amber	255	108	000
164	Flame Red	255	080	000