



Bad Boy Ground Control DMX Mapping

Chan	Function	Description	8-Bit Value	16-Bit Value	DMX Percent	
1	INTENSITY	Intensity adjustment	home: 0		0%	
		Out	0		0%	
		Full	255		100%	
2	PAN	Pan linear coarse adjustment	home: 127	32768	50%	
		0°	0		0%	
		540°	255		100%	
3	Pan Fine	Pan fine adjustment	home: 0		0%	
4	TILT	Tilt linear coarse adjustment	home: 127	32768	50%	
		0°	0		0%	
		270°	255		100%	
5	Tilt Fine	Tilt fine adjustment	home: 0		0%	
6	CYAN	Cyan Color Mix	home: 0		0%	
		Mix	[Mode: Continuous]		0-255	0-100%
			Open		0	0%
	Full		255		100%	
	Wheel Spin	[Mode: Spin]	0-255		0-100%	
		<i>Clockwise</i>	0-126		0-49%	
		Fast	0		0%	
		Slow	126		49%	
		Stop	127-128		49-50%	
		<i>Counter-Clockwise</i>	129-255		50-100%	
		Slow	129		50%	
		Fast	255		100%	
	7	YELLOW	Yellow Color Mix		home: 0	
Mix			[Mode: Continuous]	0-255	0-100%	
			Open	0	0%	
		Full	255	100%		
Wheel Spin		[Mode: Spin]	0-255	0-100%		
		<i>Clockwise</i>	0-126	0-49%		
		Fast	0	0%		
		Slow	126	49%		
		Stop	127-128	49-50%		
		<i>Counter-Clockwise</i>	129-255	50-100%		
		Slow	129	50%		
		Fast	255	100%		
8		MAGENTA	Magenta Color Mix	home: 0		
	Mix		[Mode: Continuous]	0-255		0-100%
			Open	0		0%
		Full	255	100%		
	Wheel Spin	[Mode: Spin]	0-255	0-100%		
		<i>Clockwise</i>	0-126	0-49%		
		Fast	0	0%		
		Slow	126	49%		
		Stop	127-128	49-50%		
		<i>Counter-Clockwise</i>	129-255	50-100%		
		Slow	129	50%		
		Fast	255	100%		

Bad Boy Ground Control DMX Mapping

Chan	Function	Description	8-Bit Value	16-Bit Value	DMX Percent
9	COLOR MIX CONTROL	Sets color mix control mode	home: 0		0%
		Continuous	0-9		0-3%
		Spin Cyan	10-19		3-7%
		Spin Yellow	20-29		7-11%
		Spin Magenta	30-39		11-15%
		Spin ALL mixers	40-49		15-19%
		Reserved	50-255		19-100%
		10	CTO	CTO Wheel Choice	home: 0
	Color Choice	[Mode: Continuous, Discrete, Strobe]	0-255		0-100%
		Open	0		0%
		Open / Color 1	26		10%
		Color 1	32		12%
		Color 1 / Color 2	42		16%
		Color 2	64		25%
		Color 2 / Color 3	79		30%
		Color 3	96		37%
		Color 3 / Color 4	114		44%
		Color 4	128		50%
		Color 4 / Color 5	145		56%
		Color 5	160		62%
		Color 5 / Color 6	175		68%
		Color 6	192		75%
		Color 6 / Color 7	208		81%
		Color 7	224		87%
		Color 7 / Open	232		90%
	Open	255		100%	
	Wheel Spin	[Mode: Spin]	0-255		0-100%
		<i>Clockwise</i>	0-126		0-49%
		Fast	0		0%
		Slow	126		49%
		Stop	127-128		49-50%
		<i>Counter-Clockwise</i>	129-255		50-100%
		Slow	129		50%
		Fast	255		100%
11	CTO CONTROL	Sets CTO Wheel control mode	home: 0		0%
		Continuous	0-9		0-3%
		Discrete	10-19		3-7%
		Spin	20-39		7-15%
		Strobe Random - Slow	40-43		15-16%
		Strobe Random - Medium	44-46		17-18%
		Strobe Random - Fast	47-49		18-19%
		Variable Strobe Rate	50-255		19-100%
		Slow	50		19%
		Fast	255		100%

Bad Boy Ground Control DMX Mapping

Chan	Function	Description	8-Bit Value	16-Bit Value	DMX Percent
12	GOBO 1	Rotating Gobo 1 Choice / Modifier	home: 0	0	0%
		<i>Discrete Choice</i>	0-64	0-16383	0-25%
		Open	0-7	0-1910	1%
		Gobo 1	8-16	1911-4005	4%
		Gobo 2	17-24	4006-6099	7%
		Gobo 3	25-32	6100-8191	10%
		Gobo 4	33-40	8192-10285	13%
		Gobo 5	41-48	10286-12377	16%
		Gobo 6	49-57	12378-14473	19%
		Gobo 7	58-64	14474-16383	22%
		<i>Continuous Choice</i>	64-191	16384-49151	25%
		Open	64	16384	25%
		Open / Gobo 1	72	18432	28%
		Gobo 1	80	20480	31%
		Gobo 1 / Gobo 2	89	22784	35%
		Gobo 2	97	24832	38%
		Gobo 2 / Gobo 3	105	26880	41%
		Gobo 3	113	28928	44%
		Gobo 3 / Gobo 4	121	30976	47%
		Gobo 4	129	33024	50%
		Gobo 4 / Gobo 5	138	35328	54%
		Gobo 5	146	37376	57%
		Gobo 5 / Gobo 6	154	39424	60%
		Gobo 6	162	41472	63%
		Gobo 6 / Gobo 7	170	43520	66%
		Gobo 7	178	45568	70%
		Gobo 7 / Open	185	47360	72%
		<i>Wheel Spin</i>	192-255	49152-65535	75-100%
		<i>Clockwise</i>	192-222	49152-57087	75-87%
		Fast	192	49152	75%
		Slow	222	57087	87%
		Stop	223-224	57088-57599	87%
		<i>Counter-Clockwise</i>	225-255	57600-65535	88-100%
Slow	225	57600	88%		
Fast	255	65535	100%		
13	Gobo 1 Fine	Gobo 1 fine adjustment	home: 0		0%
14	GOBO 1 INDEX	Rotating Gobo 1 Wheel Index Modifier	home: 96	24575	37%
		<i>Index Position</i>	0-191	0-49151	0-74%
		0°	0	0	0%
		180°	96	24575	37%
		360°	191	49151	74%
		<i>Index Rotation</i>	192-255	49152-65535	75-100%
		<i>Spin Negative</i>	192-222	49152-57087	75-87%
		Fast	192	49152	75%
		Slow	222	57087	87%
		Stop	223-224	57088-57599	87%
		<i>Spin Positive</i>	225-255	57600-65535	88-100%
		Slow	225	57600	88%
		Fast	255	65535	100%
15	Gobo 1 Index Fine	Gobo 1 Index fine adjustment	home: 0		0%

Bad Boy Ground Control DMX Mapping

Chan	Function	Description	8-Bit Value	16-Bit Value	DMX Percent
16	CTB	Rotating CTB Wheel Choice / Modifier	home: 0	0	0%
		<i>Discrete Choice</i>	0-64	0-16383	0-25%
		Open	0-7	0-1910	1%
		Gobo 1	8-16	1911-4005	4%
		Gobo 2	17-24	4006-6099	7%
		Gobo 3	25-32	6100-8191	10%
		Gobo 4	33-40	8192-10285	13%
		Gobo 5	41-48	10286-12377	16%
		Gobo 6	49-57	12378-14473	19%
		Gobo 7	58-64	14474-16383	22%
		<i>Continuous Choice</i>	64-191	16384-49151	25%
		Open	64	16384	25%
		Open / Gobo 1	72	18432	28%
		Gobo 1	80	20480	31%
		Gobo 1 / Gobo 2	89	22784	35%
		Gobo 2	97	24832	38%
		Gobo 2 / Gobo 3	105	26880	41%
		Gobo 3	113	28928	44%
		Gobo 3 / Gobo 4	121	30976	47%
		Gobo 4	129	33024	50%
		Gobo 4 / Gobo 5	138	35328	54%
		Gobo 5	146	37376	57%
		Gobo 5 / Gobo 6	154	39424	60%
		Gobo 6	162	41472	63%
		Gobo 6 / Gobo 7	170	43520	66%
		Gobo 7	178	45568	70%
		Gobo 7 / Open	185	47360	72%
		<i>Wheel Spin</i>	192-255	49152-65535	75-100%
		<i>Clockwise</i>	192-222	49152-57087	75-87%
		Fast	192	49152	75%
		Slow	222	57087	87%
		Stop	223-224	57088-57599	87%
		<i>Counter-Clockwise</i>	225-255	57600-65535	88-100%
Slow	225	57600	88%		
Fast	255	65535	100%		
17	CTB Fine	CTB fine adjustment	home: 0		0%
18	CTB INDEX	Rotating CTB Wheel Index Modifier	home: 96	24575	37%
		<i>Index Position</i>	0-191	0-49151	0-74%
		0°	0	0	0%
		180°	96	24575	37%
		360°	191	49151	74%
		<i>Index Rotation</i>	192-255	49152-65535	75-100%
		<i>Spin Negative</i>	192-222	49152-57087	75-87%
		Fast	192	49152	75%
		Slow	222	57087	87%
		Stop	223-224	57088-57599	87%
		<i>Spin Positive</i>	225-255	57600-65535	88-100%
		Slow	225	57600	88%
		Fast	255	65535	100%
		19	CTB Index Fine	CTB Index fine adjustment	home: 0

Bad Boy Ground Control DMX Mapping

Chan	Function	Description	8-Bit Value	16-Bit Value	DMX Percent
20	ZOOM	Zoom coarse adjustment	home: 94	home: 24064	36%
		7° (narrow)	0	0	0%
		56° (wide)	255	65535	100%
21	Zoom Fine	Zoom fine adjustment	home: 0		0%
22	DISTANCE	Throw distance control	home: 42		16%
		<i>Zoom Table</i>	0-245		0-96%
		15-ft zoom	0-35		0-13%
		30-ft zoom	36-70		14-27%
		50-ft zoom	71-105		28-41%
		75-ft zoom	106-140		42-54%
		100-ft zoom	141-175		55-68%
		300-ft zoom	176-210		69-82%
		Narrow zoom	211-245		83-96%
		23	EDGE	Edge coarse adjustment	home: 255
Near	0			0	0%
Far	255			65535	100%
24	Edge Fine	Edge fine adjustment	home: 255		100%
25	BEAM IRIS	Iris control	home: 255		100%
		Small	0		0%
		Large	255		100%
26	STROBE	Strobe adjustment	home: 0		0%
		Open	0-9		0-3%
		Closed	10-19		3-7%
		<i>Pulse Clockwise</i>	20-39		7-15%
		Fast	20		7%
		Slow	39		15%
		<i>Pulse Counter-Clockwise</i>	40-59		15-23%
		Slow	40		15%
		Fast	59		23%
		<i>Ceiling Fan Clockwise</i>	60-79		23-30%
		Fast	60		23%
		Slow	79		30%
		<i>Ceiling Fan Counter-Clockwise</i>	80-99		31-38%
		Slow	80		31%
		Fast	99		38%
		Slow Random	100-102		39-40%
		Medium Random	103-106		40-41%
		Fast Random	107-109		41-42%
<i>Speed</i>	110-255		43-100%		
Slow	110		43%		
Fast	255		100%		
27	FROST	Frost control	home: 0		0%
28	CONTROLLER	FSC mechanism selection	home: 0		
		Refer to " Followspot Controller Mechanism Selection " on page 7	0-140		
29	CAMERA RETICLE	Camera reticle on/off	home: 0		0%
		No change	0		0%
		Reticle Off	1		1%
		Reticle On	255		100%
30	CAMERA EXPOSURE	Camera exposure control	home: 0		0%
		No change	0		0%

Bad Boy Ground Control DMX Mapping

Chan	Function	Description	8-Bit Value	16-Bit Value	DMX Percent
31	CAMERA ZOOM	Camera zoom control	home: 0		0%
		No change	0		0%
		Wide	1		1%
		Narrow	255		100%
32	CAMERA WB	Camera white balance	home: 0		0%
		No change	0		0%
		Automatic	1-60		1-23%
		3200K	61-120		24-47%
		5800K	121-180		48-70%
		ATW	181-240		71-94%
33	FOCUS TIME		home: 255		100%
34	COLOR TIME	Refer to "Timing Channels" on page 8	home: 255		100%
35	IMAGE TIME		home: 255		100%
36	BEAM TIME		home: 255		100%
37	CONTROL		Control Channels	home: 0	
	<p>All values must be held for a minimum of 3 seconds to take effect.</p> <p>* default setting</p>	Idle	0		0%
		Recalibrate: All	10		3%
		Recalibrate: Erred Mechanisms	11		4%
		Recalibrate: Zoom/Edge and Effects	12		4%
		Recalibrate: Color	14		5%
		Recalibrate: Gobos	16		6%
		Recalibrate: Dimmer/Strobe/Iris	18		7%
		Recalibrate: Pan/Tilt	19		7%
		Lamp: Douse	20		7%
		Lamp: Wait on Power-Up *	21		8%
		Lamp: Strike on Power-Up	22		9%
		Lamp: Start	30		11%
		Lamp Power Limit Select: 1400W *	40		15%
		Lamp Power Limit Select: 1200W	45		17%
		Lamp Power Limit Select: 900W	50		19%
		Lamp: Override Start-Up Power Limit	55		21%
		Zoom Speed Select: Move Fast	77		30%
		Gobo: Set Zero Position	80		32%
		Fixture Display: Turn Backlight On *	90		35%
		Fixture Display: Turn Backlight Off	95		37%
		Pan/Tilt Remote Control: Enable *	98		38%
		Pan/Tilt Remote Control: Disable	99		38%
		Pan: Lock	100		39%
		Pan: Unlock *	102		40%
		Tilt: Lock	104		40%
		Tilt: Unlock *	106		41%
		Pan/Tilt: Free Motion	108		42%
		Pan/Tilt: Free Lock	110		43%
		Pan/Tilt: End Free Motion *	112		43%
		No Fade Out *	114		44%
		Fade Out After 30s	116		45%
		Fade Out After 60s	118		46%
		Clear Logs	120		47%
	Invert Pan	122		47%	
	Don't Invert Pan *	124		48%	
	Invert Tilt	126		49%	

Bad Boy Ground Control DMX Mapping

Chan	Function	Description	8-Bit Value	16-Bit Value	DMX Percent
		Don't Invert Tilt *	128		50%
		Swap Pan/Tilt	130		50%
		Don't Swap Pan/Tilt *	132		51%
		FSC: Intensity Scaling On	150		58%
		FSC: Intensity Scaling Off *	152		59%
		FSC: Reset Mechanisms to Default Positions	153		60%
		FSC: Reset Camera to Default Settings	155		60%

Gobo: Set Zero Position

Set Zero Position Allows adjustment of the gobo wheel home position.

Zoom Tables

The zoom tables, which allow the fixture to maintain sharp focus on an image throughout the zoom range, are sensitive to the throw distance. For this reason, a variety of zoom table versions are available for use with different throws. The Zoom Table Select values are handled live to allow cue recall with different zoom tables. If the zoom value changes and the control channel is on one of the zoom select values, the indicated zoom table will be used for that zoom recall. Note also that zoom table select is not persistent between power cycles, it always resets to the default 30' table at power-up.

Followspot Controller Mechanism Selection

Control Channel 28 allows followspot controller mechanisms to be selected as follows:

DMX Range	Mech 1	Mech 2	Mech 3	Mech4	Mech 5
0	No Change (leave mechanisms set as they are)				
1-5 (default)	Intensity	Iris	Edge	Zoom	Frost
6-10	Intensity	Iris	Edge	Zoom	
11-15	Intensity	Iris	Edge		
16-20	Intensity	Iris		Zoom	Frost
21-25	Intensity	Iris		Zoom	
26-30	Intensity	Iris			Frost
31-35	Intensity	Iris			
36-40	Intensity				
41-45	Intensity		Edge	Zoom	Frost
46-50	Intensity		Edge	Zoom	
51-55	Intensity		Edge		
56-60	Intensity			Zoom	Frost
61-65	Intensity			Zoom	
66-70	Intensity				Frost
71-75		Iris	Edge	Zoom	Frost
76-80		Iris	Edge	Zoom	
81-85		Iris	Edge		
86-90		Iris		Zoom	Frost
91-95		Iris		Zoom	
96-100		Iris			Frost
101-105		Iris			
106-110			Edge	Zoom	
111-115			Edge	Zoom	
116-120			Edge		
121-125				Zoom	Frost
126-130				Zoom	
131-135					Frost
136-140	No Followspot Controller Mechanisms				

Bad Boy Ground Control DMX Mapping

Timing Channels

Channel Functions

Timing channel control improves the timed moves of certain groups of parameters. Four timing channels are provided for this purpose: Focus, Color, Beam, and Image.

Timing channels support time values of up to six minutes.

Timing Channel Allocations

Channel Function	Timing Channel
Pan	Focus
Tilt	
Cyan	Color
Yellow	
Magenta	
Color Wheel	
Zoom	Beam
Edge	
Iris	
Framing	
Rotating Gobo Wheels 1 & 2	Image
Gobo Index 1 & 2	
Effects Wheel	
Effects Index	

Timing Channel Mapping

Refer to the **Timing Channels Table** starting on the next page. The following guidelines apply:

- + A timing value of zero is full speed.
- + A time value of 100% (or 255 in DMX) causes the associated parameter(s) to follow cue fade time (console time) rather than the timing channel.
- + Timing channels can be set in either % or 0-255 (DMX) modes, with the values assigned - as shown in the tables.

Bad Boy Ground Control DMX Mapping

Timing Channels

% Value	DMX	= Seconds
	0	Full Speed
	1	0.2
	2	0.4
1	3	0.6
	4	0.8
2	5	1
	6	1.2
	7	1.4
3	8	1.6
	9	1.8
4	10	2
	11	2.2
	12	2.4
5	13	2.6
	14	2.8
6	15	3
	16	3.2
	17	3.4
7	18	3.6
	19	3.8
8	20	4
	21	4.2
	22	4.4
9	23	4.6
	24	4.8
10	25	5
	26	5.2
	27	5.4
11	28	5.6
	29	5.8
	30	6
12	31	6.2
	32	6.4
13	33	6.6
	34	6.8
	35	7.0
14	36	7.2
	37	7.4
15	38	7.6
	39	7.8
	40	8
16	41	8.2
	42	8.4
17	43	8.6
	44	8.8
	45	9
18	46	9.2
	47	9.4
19	48	9.6
	49	9.8
	50	10
20	51	10.2
	52	10.4

Timing Channels (Continued)

% Value	DMX	= Seconds
	53	10.6
21	54	11
	55	11
22	56	12
	57	12
	58	13
23	59	13
	60	14
24	61	14
	62	14
	63	15
25	64	15
	65	16
26	66	16
	67	16
	68	17
27	69	17
	70	18
28	71	18
	72	18
	73	19
29	74	19
	75	20
30	76	20
	77	20
	78	21
31	79	21
	80	21
	81	22
32	82	22
	83	23
33	84	23
	85	23
	86	24
34	87	24
	88	25
35	89	25
	90	25
	91	26
36	92	26
	93	27
37	94	27
	95	27
	96	28
38	97	28
	98	29
39	99	29
	100	29
	101	30
40	102	30
	103	30
	104	31
41	105	31

Bad Boy Ground Control DMX Mapping

Timing Channels (Continued)

% Value	DMX	= Seconds
	106	32
42	107	32
	108	32
	109	33
43	110	33
	111	34
44	112	34
	113	34
	114	35
45	115	35
	116	36
46	117	36
	118	36
	119	37
47	120	37
	121	38
48	122	38
	123	38
	124	39
49	125	39
	126	39
	127	40
50	128	40
	129	41
51	130	41
	131	41
	132	42
52	133	42
	134	43
53	135	43
	136	43
	137	44
54	138	44
	139	45
55	140	45
	141	45
	142	46
56	143	46
	144	47
57	145	47
	146	47
	147	48
58	148	48
	149	49
59	150	49
	151	49
	152	50
60	153	50
	154	50
	155	51
61	156	51
	157	52
62	158	52

Timing Channels (Continued)

% Value	DMX	= Seconds
	159	52
	160	53
63	161	53
	162	54
64	163	54
	164	54
	165	55
65	166	55
	167	56
66	168	56
	169	56
	170	57
67	171	57
	172	58
68	173	58
	174	58
	175	59
69	176	59
	177	59
	178	60
70	179	60
	180	65
71	181	65
	182	65
	183	70
72	184	70
	185	75
73	186	75
	187	75
	188	80
74	189	80
	190	85
75	191	85
	192	85
	193	90
76	194	90
	195	95
77	196	95
	197	95
	198	100
78	199	100
	200	110
79	201	110
	202	110
	203	120
80	204	120
	205	120
81	206	130
	207	130
	208	140
82	209	140
	210	140
	211	150

Bad Boy Ground Control DMX Mapping

Timing Channels (Continued)

% Value	DMX	= Seconds
83	212	150
	213	160
84	214	160
	215	160
	216	170
85	217	170
	218	180
86	219	180
	220	180
	221	190
87	222	190
	223	200
88	224	200
	225	200
	226	210
89	227	210
	228	210
	229	220
90	230	220
	231	230
91	232	230
	233	230
	234	240
92	235	240
	236	250
93	237	250
	238	250
	239	260
94	240	260
	241	270
95	242	270
	243	270
	244	280
96	245	280
	246	290
97	247	290
	248	290
	249	300
98	250	300
	251	310
99	252	310
	253	310
	254	310
100	255	Follows Cue Data



TOKYO
SHANGHAI
MELBOURNE
SYDNEY
LONDON
BIRMINGHAM
MAIDSTONE
HAMBURG
COLOGNE
FRANKFURT
MUNICH
BERLIN
DUSSELDORF
BRUSSELS
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VERSION: OCTOBER 2015