

Table 2-1 EC-2 DMX Protocol

Channel	Construct	Description	Value (dec.)	Value (%)	Value (hex)
1	Dim	Continuous Positioning (closed to open)	0-255	0-100	00-FF
2	Shutter (Note: Snap instantly opens or closes at full speed. Ramp opens or closes at specified speeds.)	Close	0-31	0-12	00-1F
		Periodic Strobe (Variable)	32-63	13-25	20-3F
		Random/Rand Strobe (Variable)	64-95	25-37	40-5F
		Random/Sync (Variable)	96-127	38-50	60-7F
		Ramp Open/Ramp Shut (Variable)	128-159	50-62	80-9F
		Random Ramp/Ramp (Variable)	160-191	63-75	A0-BF
		TBD (Reserved for future use)	192-223	75-88	C0-DF
		Open	224-255	88-100	E0-FF
3	Color Function	Full Speeds			
		Continuous	0-15	0-6	00-0F
		TBD	16-31	6-12	10-1F
		TBD	32-47	13-18	20-2F
		Spin (Puts all the color wheels in spin mode. Wheel spin speed, direction, or fixed position can be set individually on Red, Green, and Blue channels)	48-63	19-25	30-3F
		Cycle (3 wheels use color mix portion to cycle colors. Rate set by Red channel)	64-79	25-31	40-4F
		Color Scan (Puts all the color wheels in scan mode. Scans only the continuous color portion of the wheel - not the open "white" portion. Fixed position or scanning speed can be set individually on Red, Green, and Blue channels)	80-95	31-37	50-5F
		Random (3 wheels perform pseudo-random color chase. Rate set by Red channel)	96-111	38-44	60-6F
		Blink (Closes shutter between color wheel changes. Blink Mode is defined using continuous wheel operation)	112-127	44-50	70-7F
		MSpeed Controlled (same functional descriptions as Full Speeds)			
		Continuous	128-143	50-56	80-8F
		TBD	144-159	57-62	90-9F
		TBD	160-175	63-69	A0-AF
		Spin	176-191	69-75	B0-BF
		Cycle	192-207	75-81	C0-CF
		Color Scan	208-223	82-88	D0-DF
		Random	224-239	88-94	E0-EF
		Blink	240-255	94-100	F0-FF

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Table 2-1 EC-2 DMX Protocol

Channel	Construct	Description	Value (dec.)	Value (%)	Value (hex)
4	Red (-Cyan)	Continuous Mode			
		Full Red	0	0	00
		Open	255	100	FF
		Spin Mode			
		Continuous Positioning	0-127	0-50	00-7F
		Spin Reverse fastest (variable)	128-157	50-62	80-9D
		Spin Reverse slowest (variable)	158-187	62-73	9E-BB
		Spin Stop	188-195	74-77	BC-C3
		Spin Forward slowest (variable)	196-225	77-88	C4-E1
		Spin Forward fastest (variable)	226-255	89-100	E2-FF
		Color Scan Mode			
		Continuous Positioning	0-127	0-50	00-7F
		Scanning (slow to fast)	128-255	50-100	80-FF
		Cycle & Random Modes			
		Slow Rate	0	0	00
		Fast Rate	255	100	FF
5	Green (-Magenta)	Continuous Mode			
		Full Green	0	0	00
		Open	255	100	FF
		Spin Mode			
		Continuous Positioning	0-127	0-50	00-7F
		Spin Reverse fastest (variable)	128-157	50-62	80-9D
		Spin Reverse slowest (variable)	158-187	62-73	9E-BB
		Spin Stop	188-195	74-77	BC-C3
		Spin Forward slowest (variable)	196-225	77-88	C4-E1
		Spin Forward fastest (variable)	226-255	89-100	E2-FF
		Color Scan Mode			
		Continuous Positioning	0-127	0-50	00-7F
		Scanning (slow to fast)	128-255	50-100	80-FF
6	Blue (-Yellow)	Continuous Mode			
		Full Blue	0	0	00
		Open	255	100	FF
		Spin Mode			
		Continuous Positioning	0-127	0-50	00-7F
		Spin Reverse fastest (variable)	128-157	50-62	80-9D
		Spin Reverse slowest (variable)	158-187	62-73	9E-BB
		Spin Stop	188-195	74-77	BC-C3

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Channel	Construct	Description	Value (dec.)	Value (%)	Value (hex)	
6 cont.	Blue (-Yellow) cont.	Spin Forward slowest (variable)	196-225	77-88	C4-E1	
		Spin Forward fastest (variable)	226-255	89-100	E2-FF	
		Color Scan Mode				
		Continuous Positioning	0-127	0-50	00-7F	
		Scanning (slow to fast)	128-255	50-100	80-FF	
7	MSpeed	(see Table A-2 on page A-2)				
8	Control (Note: The Shutter channel must be set to "0" to access Control channel settings.)	Safe (disables all Control settings)	0-9	0-4	00-09	
		Home	60-68	24-27	3C-44	
		Lamp On	80-88	31-35	50-58	
		Lamp Off	90-98	35-38	5A-62	
		Shutdown*	120-130	47	78	

*Note: Fixture shutdown allows you to remotely deactivate the fixture. When a fixture is shut down, the lamp is extinguished, and power to the motors is disabled. If a fixture is in shutdown mode, you must home the fixture to bring it back into operation.

EC-2 Parameters

Table 2-2 describes the parameters available on the EC-2 fixture for configuration by a controller with DMX TalkBack capabilities. The HandShake™ controller from High End Systems provides access to all of these parameters. If you are using another DMX controller, check with the manufacturer to determine which parameters you can access.

Table 2-2 TalkBack parameters available on EC-2 fixtures

Parameter	Options	Description
Settings		
Factory Defaults	Off	When you set this parameter on, all factory options return to their default settings. The factory defaults for EC-2 are: <ul style="list-style-type: none"> • Preset play mode—Off • Lamp Life Limit—Disabled • Data Loss—Short time-out
	On	
Fixture Channel*	C###	Identifies the starting DMX address offset for the fixture. The EC-2 channel number can range from 1–505.
Lamp Limit Enabled	Off	Turn this parameter on to monitor the lamp life. When the lamp hours are 10% past the rated lamp life, the lamp will not strike. This is a safety feature to reduce potential lamp explosion.
	On	

Table 2-2 TalkBack parameters available on EC-2 fixtures

Parameter	Options	Description
User Mode	A	Use this parameter to switch the user type between User A and User B. Each user type includes values for Fixture Channel, Lamp Limit Enabled, Preset Play Mode, and Data Loss parameters and 16 different preset scenes to give the fixture its total of 32 possible preset scenes.
	B	
Preset Play Mode	Off	This parameter puts the EC-2 into Preset Playback mode to play the internally stored fixture presets and ignore incoming DMX.
	On	
Data Loss	Long	This parameter shuts off the shutter and lamp when no data is received for a period of time. The Short option closes the shutter after not receiving DMX data for 1 second and turns off the lamp after 5 minutes of no data activity. The Long option closes the shutter after a DMX data loss of 3-5 minutes and turns off the lamp after 5 minutes of no data activity.
	Short	
Operations		
Identify Fixture		This parameter allows you to identify a fixture by causing that fixture to rapidly strobe when you address it.
Boot		Use this parameter to copy boot code after uploading new software to EC-2 fixtures.
XLD		Crossload allows you to copy the firmware from one fixture to another. This gives you the ability to bring all fixtures to the same software version.
View Preset Scene		Use this parameter to ignore incoming DMX data and play a selected scene. This allows you to view a scene isolated from its sequence.
Copy User Mode Setting	A→B	Use this parameter to copy the fixture's user settings from User A to User B or from User B to User A.
	B→A	
Copy User Mode Presets	A→B	Use this parameter to copy the fixture's user presets from User A to User B or from User B to User A. Each user type includes 16 different presets (scenes) that can be copied to the other user type.
	B→A	
Copy User Mode All	A→B	Use this parameter to copy the fixture's 16 user presets and fixture setting from user A to user B or from user B to user A.
	B→A	
Fixture Hour Reset		Use this parameter to reset the hours the fixture has been on to 0
Self Tests		Use this parameter to test channel operation on the following selections <ul style="list-style-type: none"> • Dim • Cyan • Magenta • Yellow • All
Lamp Hour/ Strike Reset		Use this parameter to reset the number of hours the current lamp has been on and the number of times the fixture has attempted to turn on (struck) to 0.

Table 2-2 TalkBack parameters available on EC-2 fixtures

Parameter	Options	Description
Information		
Lamp Status*	On	This parameter identifies the current state of the lamp as On, Off, in the process of Striking or Error if it is unable to strike.
	Off	
	Striking	
	Error	
Lamp hours/ strikes*		This parameter indicates the number of hours the current lamp has been on and the number of times the fixture has attempted to turn on (struck) the current lamp.
Sensors Optical/Interlock	Open	This parameter allows you to view the operation of this pair of sensors.
	Closed	
Preset Play Status	Off	This parameter lets you view whether Presets are playing, and, if they are, it will display the current preset scene that is playing.
	Scene #	
Operating Mode	RS422 (DMX)	This parameter indicates the current data source
	Preset Play	
	Self-Tests	
Temperature		This parameter shows the current fixture temperature in degrees C
Software Version*		This parameter allows you to view the current software version

**Note: The Whole Hog ®II lighting console provides access to these parameters plus error analysis.*