

impression[&] X4BAR

Programming Notes



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This guide will serve as an outline for the various DMX modes for the X4 BAR 10 and X4 BAR 20 with a focus on **Normal Mode** to assist in understanding how to program the fixtures when set to this DMX Mode.

Normal Mode in the X4 BAR fixture implements a unique layer effect system that allows for an extremely wide array of effects whilst using a minimum of DMX Channels.

You can choose between 7 DMX modes each designed for different applications and preferences:

- **Normal Mode (BAR 20 - 34 Channels / BAR 10 - 33 Channels):**
Most common mode with all basic functions with layered effect features
- **Compressed Mode (BAR 20 - 19 Channels / BAR 10 - 19):**
Limited channel mode.
Channels are sorted to match the impression X4 normal mode.
- **High Resolution Mode (BAR 20 - 35 Channels / BAR 10 - 34 Channels):**
Same as the Normal Mode but with 16bit Master Intensity dimming
- **Single Pixel Mode (BAR 20 - 88 Channels / BAR 10 - 48 Channels):**
Individual control of the RGBW values for each pixel (i.e. for pixel mapping)
- **Single Pixel High Resolution Mode (BAR 20 - 89 Channels / BAR 10 - 49 Channels):**
Same as the Single Pixel Mode but with 16bit Master Intensity dimming
- **Dual Pixel Mode (BAR 20 - 48 Channels / BAR 10 - 28 Channels):**
Same as the Single Pixel Mode but with 2 pixel combined as one to reduce the channel count.
- **Dual Pixel High Resolution Mode (BAR 20 - 49 Channels / BAR 10 - 29 Channels):**
Same as the Dual Pixel Mode but with 16bit Master Intensity dimming

The example that will be shared in these notes will apply to both the X4 BAR 10 and the X4 BAR 20

1 Guide to the Set Layers

- There are 3 Set Layers for the fixture.
- Set 1 and Set 2 have 8 channels each attributed to their functionality
 - Set 1 or 2 Color Wheel
 - Set 1 or 2 Red
 - Set 1 or 2 Green
 - Set 1 or 2 Blue
 - Set 1 or 2 White
 - Set 1 or 2 Intensity
 - Set 1 or 2 Pattern Select
 - Set 1 or 2 Pattern Movement
- Set 3 has 6 channels attributed to its functionality
 - Set 3 Color Wheel
 - Set 3 Red
 - Set 3 Green
 - Set 3 Blue
 - Set 3 White
 - Set 3 Intensity
- Set Layer 1 has highest priority over Set Layers 2 & 3 with Set Layer 2 having priority over Set Layer 3
- Pixel Select 1 – 8, Pixel Select 9 – 16, Pixel Select 17 – 20 are for custom patterns and apply only to Set Layer 1 when Pattern Select is at value 255
- Shutter and Master Intensity take precedent over all 3 Set Layers
- Crossfade allows for the fade instead of snap in Set Layer Movement Effects
- Star Effect randomly strobes all pixels in all active Set Layers

2 An Example to Demonstrate the Set Layers Functions

- This demonstration uses the X4 BAR 20
- Make sure the fixture is patched to a Normal Mode library and the fixture is set to Normal Mode
 - Fixture libraries from different console manufacturers will vary on how the library is patched in regards to which channel is patched to which attribute. Some Console libraries require that the fixture be a multi part fixture. Please check with the Console manufacture or Console Fixture library editor to verify the correct channel patch and layout.
 - All channel numbers noted are in parentheses and applied as in the DMX chart. All values are in DMX 8 bit
 - The demonstration will use Red for Set Layer 1, Green for Set Layer 2 and Blue for Set Layer 3

1. Select the fixture
2. Choose the Shutter Channel(11) and set to value 255
3. Choose the Master Intensity Channel(12) and set to value 255
4. Choose Set 1 Red(6) and set to value 255
5. Choose Set 1 Intensity(10) and set to value 255
6. All the pixels of the of the fixture should now be Red
7. Choose Set Pattern 1 Select(28) and set to value 8
 - a. If the value of Set Pattern 1 stay at value 0, then it will take precedence and layers 2 and 3 will not be seen.
8. Pixels 1-5 should be Red and 6 – 20 should be blacked out as shown below:



9. Choose Set 2 Green(16) and set to 255
10. Choose Set 2 Intensity(19) and set to 255
11. Pixels 1-5 should be Red and 6 – 20 should now be Green as shown below:



12. Choose Set Pattern 2 Select(30) and set to value 13
 - a. If the value of Set Pattern 1 stay at value 0, then it will take precedence and layers 2 and 3 will not be seen.
13. Pixels 1-5 should be Red and 6 – 10 should now be Green with 11 – 20 being blacked out as shown below:
 - a. The value set for Set Pattern 2 Select has activated pixels 1 -10 in green, but Set Pattern 1 has precedence over pixels 1 – 5 so they are still Red



14. Choose Set 3 Blue(23) and set to 255
15. Choose Set 3 Intensity(25) and set to 255
16. Pixels 1-5 should be Red and 6 – 10 should now be Green with 11 – 20 in Blue as shown below:
 - a. Select Set 3 with Blue will now always be in the background



17. Choose Set 1 Pattern Movement(29) and set to 170
 - a. The Red pixels at 1 – 5 will now chase from left to right, leaving Green in pixels 1 – 10, and Blue in Pixels 11 – 20
18. Choose Set 2 Pattern Movement(31) and set to 190
 - a. The Green pixels at 1 – 10 will now chase from right to left, as the 5 Red pixels continue to chase left to right and blue remains in the background
19. Choose Crossfade(26) to affect the fading from color to color within the Set Layers.
20. Choose Star Effect(27) to create a random strobing of each individual pixel.

3 Normal Mode (norm) 34 DMX channels:

Channel	Function	Time and Value	DMX
1 Tilt - High	Tilt coarse	0° - 210°	0..255
2 Tilt - Low	Tilt fine		0..255
3 Zoom	Wide (flood) - narrow (spot)	50° - 7°	0..255
4 CTO	No CTO		0..7
	Continuous color temperature correction	Applicable for ALL colors	8..255
5 Set 1 Color (fixed)	Colors adjustable via RGB		0..7
	Color 01 - Red ¹⁾		8..15
	Color 02 - Amber ¹⁾		16..23
	Color 03 - Warm Yellow ¹⁾		24..31
	Color 04 - Yellow ¹⁾		32..39
	Color 05 - Green ¹⁾		40..47
	Color 06 - Turquoise ¹⁾		48..55
	Color 07 - Cyan ¹⁾		56..63
	Color 08 - Blue ¹⁾		64..71
	Color 09 - Lavender ¹⁾		72..79
	Color 10 - Mauve ¹⁾		80..87
	Color 11 - Magenta ¹⁾		88..95
	Color 12 - Pink ¹⁾		96..103
	White - CTO	3200K	104..111
	White	5600K	112..119
White - CTB	7200K	120..127	
Rainbow Effect Stop ²⁾		128	
Rainbow Effect ³⁾	slow - fast	129..223	
Random colors	slow - fast	224..255	
6 Set 1 Red	Color mixing system - Red	0 - 100%	0..255
7 Set 1 Green	Color mixing system - Green	0 - 100%	0..255
8 Set 1 Blue	Color mixing system - Blue	0 - 100%	0..255
9 Set 1 White	Color mixing system - White	0 - 100%	0..255
10 Set 1 Intensity	Intensity	0 - 100%	0..255
11 Shutter	Shutter closed		0..15
	Shutter pulse random	slow – fast	16..47
	Fade on, snap off (random patterns)	slow – fast	48..79
	Snap on, fade off (random patterns)	slow – fast	80..111

	Fade on, fade off (random patterns)	slow – fast	112..143
	Strobe random	5s - 0.1s	144..199
	Strobe effect slow - fast	1 Hz - 10 Hz	200..239
	Shutter open		240..255
12 Master Intensity	Intensity	0 - 100%	0..255
13 Special ⁵⁾	See special features below ⁵⁾	-	-
14 Set 2 Color ⁴⁾	Values see Channel 5	-	-
15 Set 2 Red ⁴⁾	Color mixing system - Red	0 - 100%	0..255
16 Set 2 Green ⁴⁾	Color mixing system - Green	0 - 100%	0..255
17 Set 2 Blue ⁴⁾	Color mixing system - Blue	0 - 100%	0..255
18 Set 2 White ⁴⁾	Color mixing system - White	0 - 100%	0..255
19 Set 2 Intensity ⁴⁾	Intensity	0 - 100%	0..255
20 Set 3 Color ⁴⁾	Values see Channel 5	-	-
21 Set 3 Red ⁴⁾	Color mixing system - Red	0 - 100%	0..255
22 Set 3 Green ⁴⁾	Color mixing system - Green	0 - 100%	0..255
23 Set 3 Blue ⁴⁾	Color mixing system - Blue	0 - 100%	0..255
24 Set 3 White ⁴⁾	Color mixing system - White	0 - 100%	0..255
25 Set 3 Intensity ⁴⁾	Intensity	0 - 100%	0..255
26 Crossfade	0..2 seconds transition time		0..255
27 Star Effect	Random internal shutter effect	slow – fast	0..255
28 Set 1 Pattern Select			0..255
29 Set 1 Pattern Movement			0..255
30 Set 2 Pattern Select			0..255
31 Set 2 Pattern Movement			0..255
32 Pixel Select 1 - 8			0..255
33 Pixel Select 9 - 16			0..255
34 Pixel Select 17 - 20			0..255

4 Special Channel Addendum

5) Special Channel Function Overview:

DMX value		Active	Function	Save to eeprom	Remarks
from	to				
0	3	not in SPix/DPix mode	no mirror	no	
4	7	not in SPix/DPix mode	mirror color priority	no	
8	11	not in SPix/DPix mode	mirror color mixing	no	
The following switch boxes only work if special channel has been enabled with DMX value zero (0) before:					
128	131	3 seconds	Tilt current off	yes	Only applicable from Tilt Firmware V.015 ⁶⁾
132	135	3 seconds	Tilt current on	yes	Only applicable from Tilt Firmware V.015 ⁶⁾
136	139	3 seconds	Tilt reset off	yes	Only applicable from Tilt Firmware V.015 ⁶⁾
140	143	3 seconds	Tilt reset on	yes	Only applicable from Tilt Firmware V.015 ⁶⁾
144	147	3 seconds	Display Flip off	yes	
148	151	3 seconds	Display Flip on	yes	
152	155	3 seconds	DMX Mode DPixH (HiRes)	yes	only if shutter=48..49 and intensity=50..51 (12800..13056 at high resolution)
156	159	3 seconds	DMX Mode SPixH (HiRes)	yes	only if shutter=48..49 and intensity=50..51 (12800..13056 at high resolution)
160	163	3 seconds	DMX Mode High Resolution	yes	only if shutter=48..49 and intensity =50..51 (12800..13056 at high resolution)
164	167	3 seconds	DMX Mode Normal	yes	only if shutter=48..49 and intensity =50..51 (12800..13056 at high resolution)
168	171	3 seconds	DMX Mode Compressed	yes	only if shutter=48..49 and intensity =50..51 (12800..13056 at high resolution)
172	175	3 seconds	DMX Mode DPix	yes	
176	179	3 seconds	DMX Mode SPix	yes	
180	183	3 seconds	Dimmer Curve ESoft	yes	
184	187	3 seconds	Dimmer Curve Soft	yes	
188	191	3 seconds	Dimmer Curve Lin	yes	
192	195	3 seconds	X4 Compatibility off	yes	
196	199	3 seconds	X4 Compatibility on	yes	
200	203	3 seconds	Silent-Mode off	yes	
204	207	3 seconds	Silent-Mode on	yes	
208	211	3 seconds	Position Feedback off	yes	
212	215	3 seconds	Position Feedback on	yes	
216	219	3 seconds	DMX hold off	yes	
220	223	3 seconds	DMX hold on	yes	
224	227	3 seconds	Tilt invers off	yes	
228	231	3 seconds	Tilt invers on	yes	
232	235	3 seconds	Pixel invers off	yes	
236	239	3 seconds	Pixel invers on	yes	
240	243	3 seconds	Zoom invers off	yes	
244	247	3 seconds	Zoom invers on	yes	
248	251	3 seconds	Fixture default	yes	
252	255	3 seconds	Fixture reset	no	

