

BEYOND DMX Server mode.

The DMX server mode designed for using BEYOND as media server style system. Server mode works with ArtNet only. It is important to separate functions of control system and performing system. BEYOND as a control system has many specific options. In server mode this should not be used. In general, server mode is not a way to control BEYOND. It is a way to use BEYOND core and external control system for making a laser show.

One of typical way of making a live show is using MIDI controller such as AKAI APC 40. For such method of control it make sense to use BEYONDS functionality as a control system. For control from Lighting Console it is better to use uniform style of control for lighting fixtures as well as for laser projectors. This is why BEYOND has new specialized mode.

Server use special playback system. Projection Zone should be considered as a fixture. Each Projection zone has embedded Cue Player. This is new and specially designed subsystem. Usually we use "trackless tracks" mode in a live shows controllerd by BEYOND. We click on Grid and click create player and start cue playback. Also, there are ProTracks, a static players that can do output to multiple zones. The Server mode is a third and a special model. Players of Server mode controlled only by DMX, and nothing else can get it out of sync. DMX has a monopoly of control. As soon as you enable DMX IN, BEYOND take DMX IN state and initialize players exactly as defined in mapping. It happen immediattely and independenly on Grid, MIDI, OSC or other inputs. You cannot make it out of sync.

Server do not use script, or internal BEYOND commands. It served by short, fast and native BEYOND code.

Mappings / Fixture profiles

There are 3 predefiend mappings, and they are not supposed to be editable. The simplest mapping use up to 16 channels and duplicate FB3 profile. There is "Mid" and "Max" mapping. Max is a supper set of Mid mapping. We will work on making a profiles for popular consoles, what

will provide fast, plug-and-play experience. Editable mapping means incompatibility with already made profiles. Users who need such flexibility can use PangoScript, Effects of Zones, ProTracks and make own settings, scripting and so on. The Server mode designed to be fixed, well known, and... not flexible. This is something that you will know how it works.

Safety - 3 important buttons.

"DMX IN", "Blackout", "Enable Laser Output". Server become active when you click on "DMX IN" button. If you need to terminate DMX control and take a manual control - click on "Blackout" or "DMX IN" button or disable laser output. Blackout button stop "DMX IN". Server is active while "DMX IN" button is in pressed state only.

Laser Projector Settings from DMX.

Projector settings, and Projection Zone settings or Beam Settings are NOT supposed to be controlled by DMX because of Safety reasons.

Basic things.

One Projection Zone - one Fixture. At Advanced tab you can set option for Projection zone - mode and based address. By default, Projection Zone is not controlled by DMX IN.

Each Projecton Zone has one cue player (ProTrack). If you need more tracks per projection then add more Projection Zones.

Effects. In Mid and Max modes is possible to use effects of FX table. All effects calculated in real time.

Interactive and DMX controlled content. In opposite to DMX controlled Animation file players, BEYOND calculate all output on the fly. It allow to use audio driven, DMX controlled or any other types of effects and images you can use in BEYOND. It is possible extend Projection Zone by means of personal effects (Effect tab) that nothing else as an output filter.

Parameters and Channels.

"Channel" is well know way of Effect and Image control for BEYOND Users, Effect may be linked to Channel and this is constant, absolute

link. "Parameter", sorry for abstract name, is a Player based value. Each Player has own set of parameters, and you can control them personally. The Cue/Image during calculation take Paramets from the Player and use it during calculation. Image that use Parameters will be rendered differently/personally in each Player. As example, Abstract where Oscillator linked to Parameter will be calculated according to Parameter value for each Player. So, it is place-dependent thing. From Image standpoint, Channels is absolute global addressing, and Parameters are relative.

"Classic FB3 Style" MODE

#	Name	Description
1	Access	Access mod, same as in FB3
2	Page	
3	Cue	
4	Speed	
5	Brightness	
6	Zoom	
7	Size X	
8	Size Y	
9	Angle Z	
10	Position X	
11	Position Y	
12	Visible Points	
13	Scan rate	
14	Release	
15	Color slider	
16	Reserved	

"Mid" MODE

"Mid" mapping allow to access all cues and all pages of BEYOND, what is impossible with standard FB3 mapping. Page and Cue mapping made 1:1. Playback control is simple. All geometric block use 16 bit values. Color section is a bit tricky, and has two blocks. First block is "Color Slider", Brightness, Hue Offset and Saturation Offset. This is a mix of HSB and "effect". Color slider has inactive zone at start, then fully saturated color circle, and white. Depending on Configuration dialog box setting, Color slider may leave incoming color saturation value unchanged, or simply recolor points and ignore original incoming color. If original saturation ignored, then Saturation shift actually set the value. Saturation value is in range of 0%..100%. Shift has range -100% to +100% with a limiter around. What allow shift incoming saturation or set it to zero of full 100%. Hue Shift work in all cases. R,G,B,A section comes after. HSB block. When Alpha value set to maximum, then it completely replace original color. When Alpha is zero, the RGB has no action. If you are interested in direct color control then set Alpha to 255 and use R,G,B channels. FX (effects) channels work with FX table, values 1:1, step is 1. 0 means inactive. Parameters are 2 optional parameters of currently playing image.

#	Parameter Name	Def. Val.	Parameter Description
1	Page	0	0 is off, 1,2,3... page index. Step is 1, so value 1 means page 1. Number of pages may be 200 or more.
2	Cue	0	0 is off, 1,2,3... cue index. Value 1 means Cue 1. Up to 100 cues
3	AnimationSpeed	255	0..128 is 0%..100%, 128..255 is 100% to 500%. Note: Max speed limited by Live Control settings, and by default, 400% is max value.
4	AnimationMode	0	temporary unused
5	ScanRate	255	0..255 is 25%..100%
6	VisiblePoints	255	0..255 is 0%..100%
7	Size X	127	0..255 is -100%..100%, 127 center is 0 size

(no output)

8	Size X LSB	0	less significant byte of 16 bit
9	Size Y	127	0..255 is -100%..100%, 127 center, Size=0
10	Size Y LSB	0	less significant byte of 16 bit
11	Angle Z	0	0..255 is 0..360 degree
12	Angle Z LSB	0	less significant byte of 16 bit
13	Position X	127	0..255 is -100%..100%, 128 center
14	Position X LSB	0	less significant byte of 16 bit
15	Position Y	127	0..255 is -100%..100%, 128 center
16	Position Y LSB	0	less significant byte of 16 bit
17	Zoom	255	0..255 is 0%..100%
18	Zoom LSB	0	less significant byte of 16 bit
19	ColorSlider/Hue	0	0..32 - inactive, 33..224 hue, 225..255 is white
20	Brightness	255	0..255 is 0%..100% of brightness
21	Hue Shift	0	0..255 is 0..360 hue shift
22	SaturationShift	0	0..128 is -100%..0, 128..255 is 0..100%.
23	Red	0	0..255 is 0%..100% of red. See Alpha
24	Green	0	0..255 is 0%..100% of green. See Alpha
25	Blue	0	0..255 is 0%..100% of blue. See Alpha
26	Alpha	0	0 - no action, 1...255 recolor to R,G,B, where 255 completely replace color
27	Fx1	0	0 - Off, 1..N is FX 1 index
28	Fx2	0	0 - Off, 1..N is FX 2 index
29	Fx3	0	0 - Off, 1..N is FX 3 index
30	Fx4	0	0 - Off, 1..N is FX 4 index

31	Param1	0	0..255 is 0%..100% of Parameter 1
32	Param2	0	0..255 is 0%..100% of Parameter 2

"Max" MODE

Channels marked by blue color are same as in Mid MODE. Max Mode introduce more Parameters and more detailed FX control.

Off- set	Parameter Name	Def. Val.	Parameter Description
1	Page	0	0 is off, 1,2,3... page index. Step is 1, so value 1 means page 1. Number of pages may be 200 or more.
2	Cue	0	0 is off, 1,2,3... cue index. Value 1 means Cue 1. Up to 100 cues
3	AnimationSpeed	255	0..128 is 0%..100%, 128..255 is 100% to 500%
4	AnimationMode	0	temporary unused
5	ScanRate	255	0..255 is 25%..100%
6	VisiblePoints	255	0..255 is 0%..100%
7	Size X	127	0..255 is -100%..100%, 128 center
8	Size X LSB	0	less significant byte of 16 bit
9	Size Y	127	0..255 is -100%..100%, 128 center
10	Size Y LSB	0	less significant byte of 16 bit
11	Angle Z	0	0..255 is 0..360 degree
12	Angle Z LSB	0	less significant byte of 16 bit
13	Position X	127	0..255 is -100%..100%, 128 center
14	Position X LSB	0	less significant byte of 16 bit
15	Position Y	127	0..255 is -100%..100%, 128 center
16	Position Y LSB	0	less significant byte of 16 bit
17	Zoom	255	0..255 is 0%..100%

18	Zoom LSB	0	less significant byte of 16 bit
19	ColorSlider/Hue	0	0..32 - inactive, 33..224 hue, 225..255 is white
20	Brightness	255	0..255 is 0%..100% of brightness
21	Hue Shift	0	0..255 is 0..360 hue shift
22	SaturationShift	0	0..128 is -100%..0, 128..255 is 0..100%.
23	Red	0	0..255 is 0%..100% of red. See Alpha
24	Green	0	0..255 is 0%..100% of green. See Alpha
25	Blue	0	0..255 is 0%..100% of blue. See Alpha
26	Alpha	0	0 - no action, 1..255 recolor to R,G,B, where 255 completely replace color
27	Fx1 index	0	0 - Off, 1..N is FX 4 index
28	Fx1 Action	255	0..255 is 0%..100% Action of FX line.
29	Fx1 Speed	127	0..127 is 0..100% of effect speed 128..255 is 100% to 500%
30	Fx2 index	0	0 - Off, 1..N is FX 4 index
31	Fx2 Action	255	0..255 is 0%..100% Action of FX line.
32	Fx2 Speed	127	0..127 is 0..100% of effect speed 128..255 is 100% to 500%
33	Fx3 index	0	0 - Off, 1..N is FX 4 index
34	Fx3 Action	255	0..255 is 0%..100% Action of FX line.
35	Fx3 Speed	127	0..127 is 0..100% of effect speed 128..255 is 100% to 500%
36	Fx4 index	0	0 - Off, 1..N is FX 4 index
37	Fx4 Action	255	0..255 is 0%..100% Action of FX line.
38	Fx4 Speed	127	0..127 is 0..100% of effect speed 128..255 is 100% to 500%
39	Param1	0	Parameter 1
40	Param2	0	Parameter 2
41	Param3	0	Parameter 3
42	Param4	0	Parameter 4

43	Param5	0	Parameter 5
44	Param6	0	Parameter 6
45	Param7	0	Parameter 7
46	Param8	0	Parameter 8
47	Param9	0	Parameter 9
48	Param10	0	Parameter 10
49	Param11	0	Parameter 11
50	Param12	0	Parameter 12