User Manual to the Laser- and Multimedia-Software Showcontroller

Program Part LIVE

Index

1. Introduction

1.a. Description

Shocontroller LIVE is part of the Showcontroller software package and included in the license.

The general layout of Showcontroller LIVE is adapted to common MIDI controllers (e.g. the Akai APC-40) to make live laser show control even easier.
It is possible to address every output scanner individually via the individual time-line programming feature per scene, so the utmost of the versatile programming features of Showcontroller RealTime are available for the customization of Showcontroller LIVE as well. This allows for very flexible configuration of the very scenes.

Even bigger laser setups can be easily and versatile controlled with advanced features like scanner groups or chaser effects. Thus very diversified live laser shows become possible.
Scanner mapping features known from RealTime can be applied to the Showcontroller LIVE Control Center as well.

2. File system

The operating data is loaded from the folder "Live" that resides within the Showcontroller installation folder. Default path for this folder is on the desktop - an alternative location may have been chosen during installation.

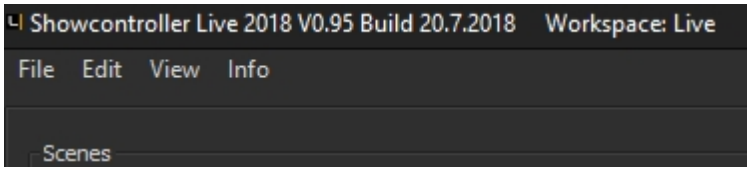
Showcontroller Live uses the same scanning parameters and worlds as realTime, but read-only.
As RealTime is still the main processing software in the back end it is not possible to save these settings from Live. To change the settings, switch to RealTime and adjust the global variables there.

The files used in Live are:

*.cat	A catalog of laser frames, can be created and edited in PicEdit (see PicEdit manual)
*.sce	An animation-file
Recolor.ini	The color table

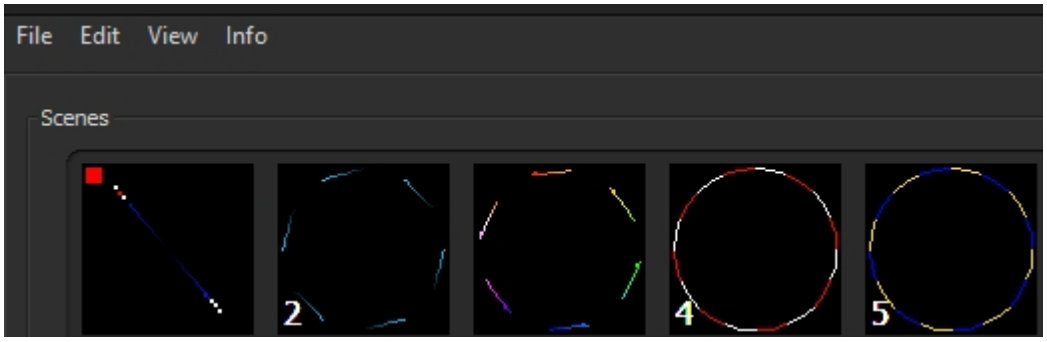
The software loads the workspace "Live.sce" and "Live.cat" as standard on startup. As an option, the last used workspace can also be loaded.

The name of the active workspace is displayed in the top status bar.
In this case: "Workspace Live"



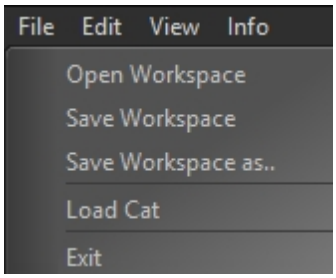
3. Menu

The main menu:



3.a. File

The menu item "File" contains all options for saving or opening files:



"Open Workspace" opens the workspace with the file extension *.sce . It is necessary that a *.cat file exists with the same name, so the correct catalog can be loaded.

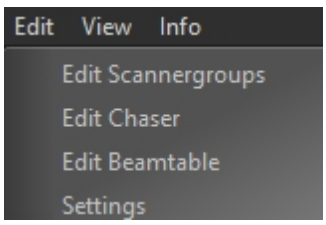
"Save Workspace"saves the workspace, including all settings (Scenes, Groups, Chaser, Beams,..), to a file.

"Load CAT" only loads a catalog of frames. This catalog file will be saved with the same name as the workspace on next workspace save.

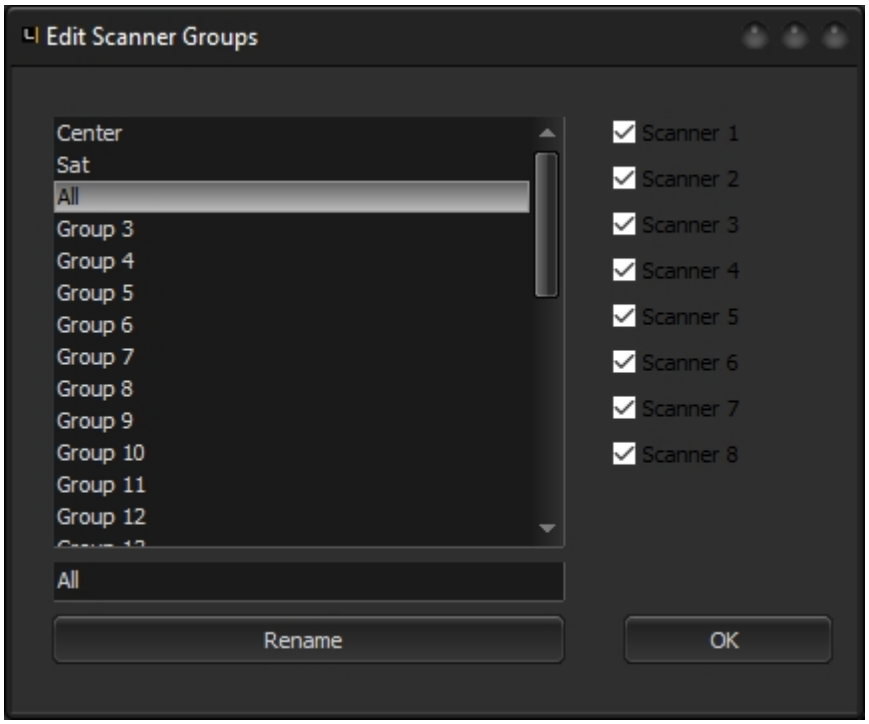
"Exit" closes the software.

3.b. Edit

The menu item "Edit" allows for additional settings:

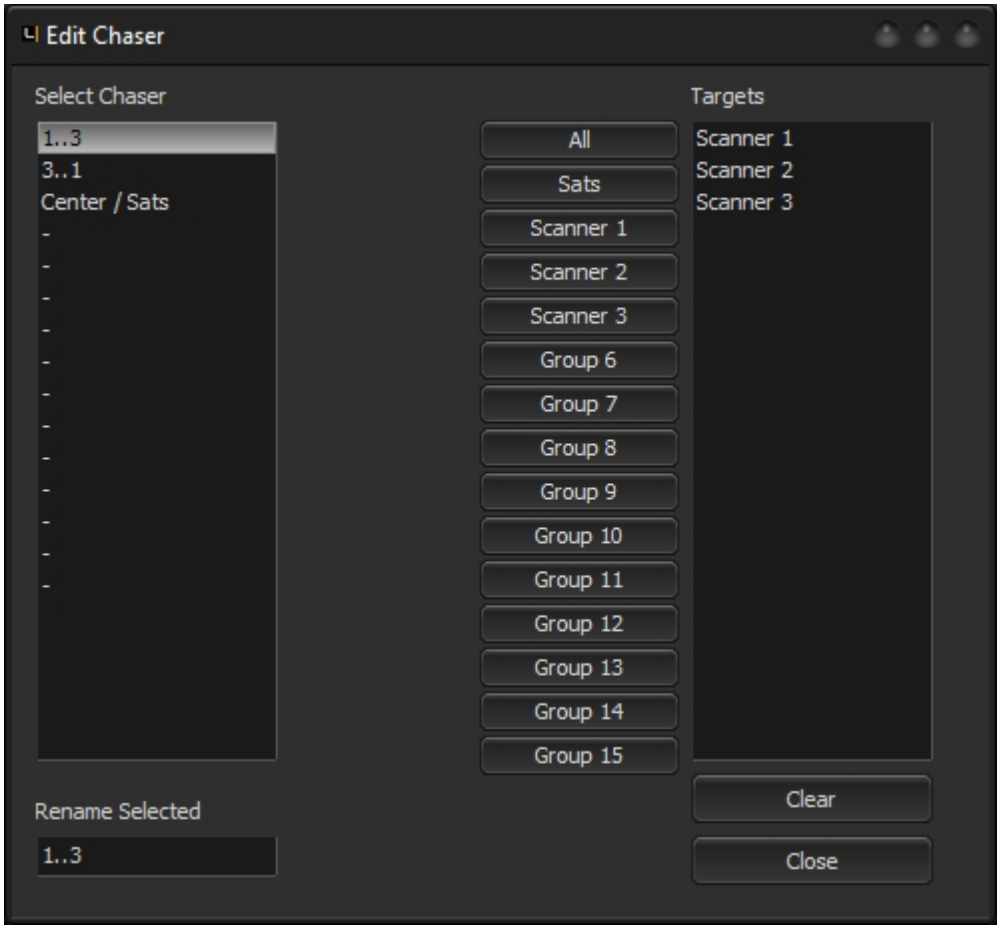


Edit Scannergroups:



This dialog provides the option to specify the group assignment for different scanners. These groups are also the basis for the use of chaser effects.
To edit a group, select it in the left list and specify the assigned scanners to the right. It is possible to rename the group, too.

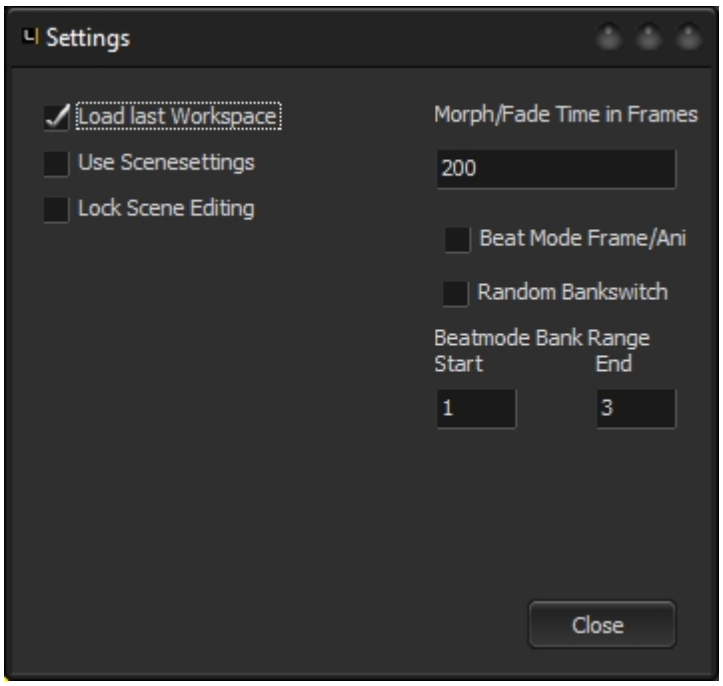
Edit Chaser:



The chaser presets are shown to the left. click a position in the list for editing. The chaser can be renamed at the bottom, confirm renaming with "Rename".
To the right the targets for the chaser are shown. The list can be cleared with "Clear".
When running, the chaser effects targets the scanner groups in the order they are listed here, one after another.
The buttons left of the targets list show the scanner groups that have already been specified.
Click on the group to add it to the chaser Targets list.

Click "Close" to close the dialog.

Settings:

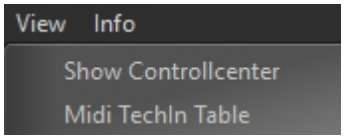


Global program settings:

"Load last Workspace"	The last used workspace will be loaded on program start instead of the default "Live.sce".
"Use Scenesettings"	Fader / Chaser / Group settings will be saved with the active scene and are recalled on selection.
"Lock Scene Editing"	Prevents the editing of scenes with right click during show operation.
"Morph/Fade Time"	Duration of the frame transition animation (Morph, Fade)
"Beat Mode Frame/Ani"	Specifies if only scenes or programmed animations (ANI) shall be called in BeatMode.
"Random Bankswitch"	BeatMode not only switches between scenes but also between banks. The banks can be selected.

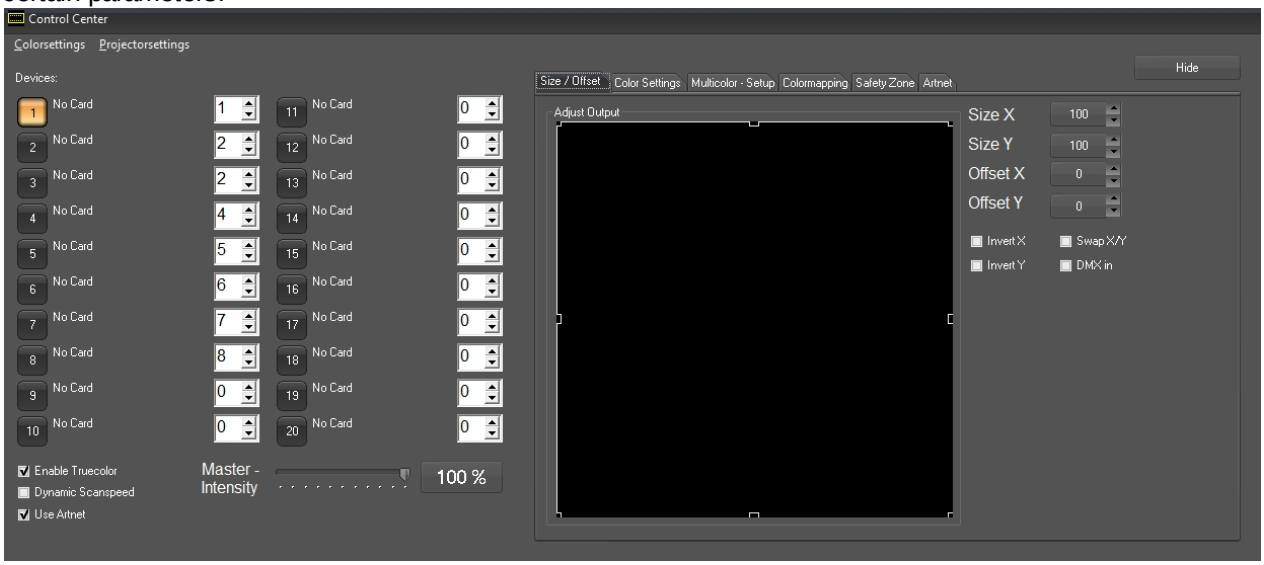
3.c. View

Menu item "View":



Show Controlcenter

"Show Controlcenter" opens the control center that allows for assigning scanners to tracks and for setting certain parameters:



Midi TeachIn Table:

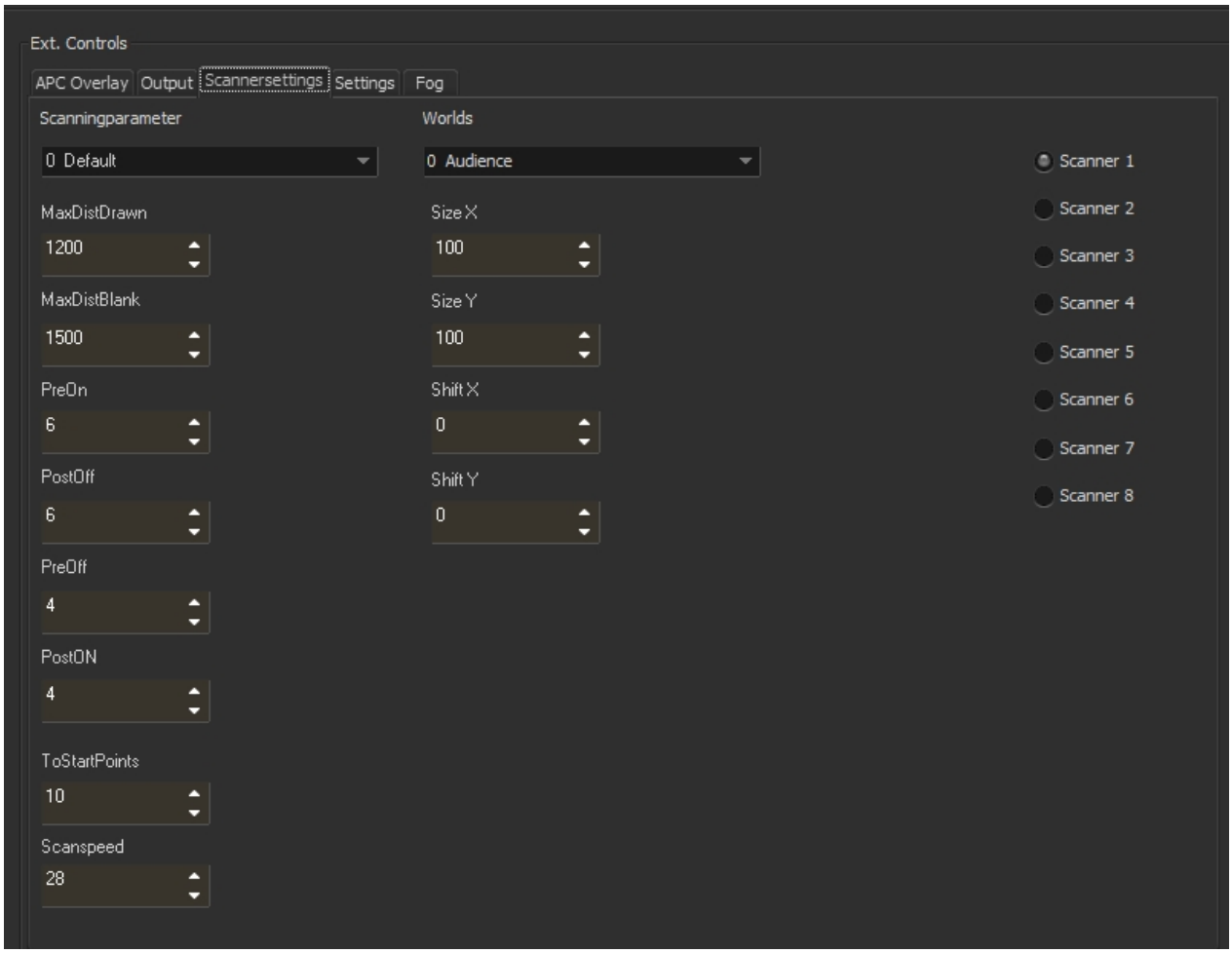
Opens the teach in dialog for MIDI devices:
Several MIDI devices are already preset in the software and are automatically detected (Akai APC40, APC40 mkII, APC mini). If other MIDI devices shall be used, the teach in dialog provides the option to map these to the scenes.
However, LED feedback is not supported for customized MIDI devices. Further features are to be added to this dialog.

4. Worlds and scanning parameters

The tab "Scannersettings" allows for temporarily changing the parameters for the scanners and the world. It is not possible to save these settings, as this tab is only meant for temporary changes.

General, global scanner- and world settings must be made in the RealTime Control Center!

Changing settings temporarily in Showcontroller LIVE is easy: Select the very scanner ("output hardware", according to the assignment in the Control Center configuration) on the right side, then apply the desired settings for the scanning parameters and worlds.



These are the standard parameters:

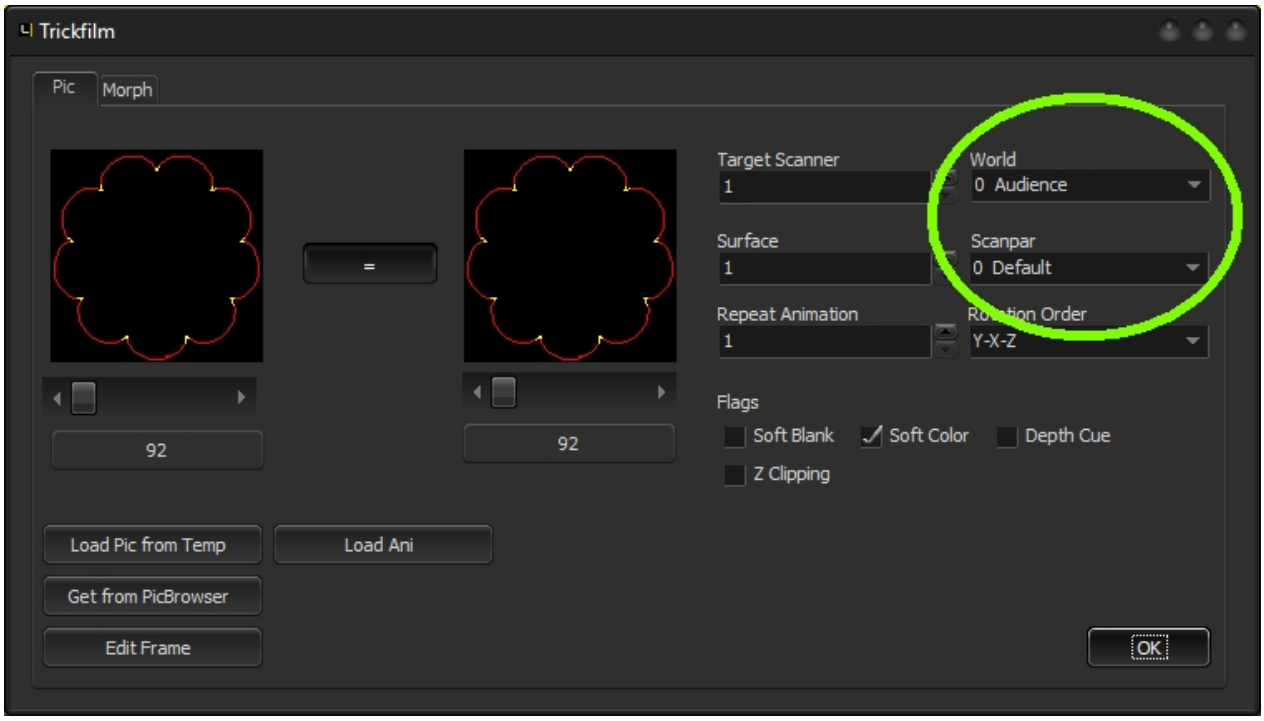
Scanning parameters:

"Default"	28K	Standard value for beam shows
"Graphics"	30K	For fast scanning of graphics
"Raster"	50K	Raster frames, currently not supported in Live

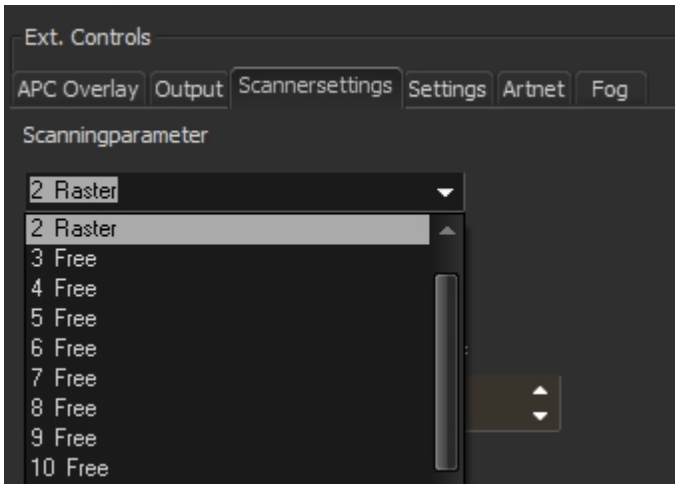
Worlds:

"Audience"	Per default 100% of the possible scan area
"Beam"	A special area in the upper part of the scan area, especially for frame based hot beams
"Screen"	A virtual screen or similar projection zone for graphics
"Raster"	Area with a very small angle for raster frame projections. Currently not supported in LIVE.

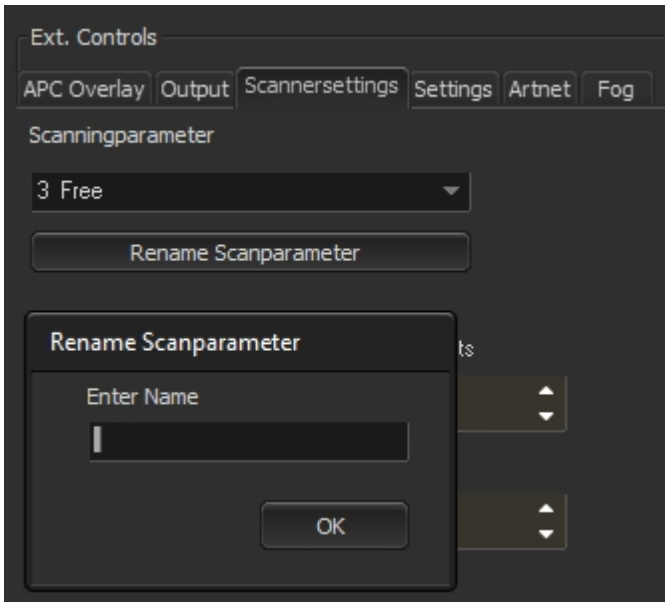
The parameters are specified in the trickfilm event of the very scene:



Of course it is possible to specify custom parameters. Open the drop down menu:



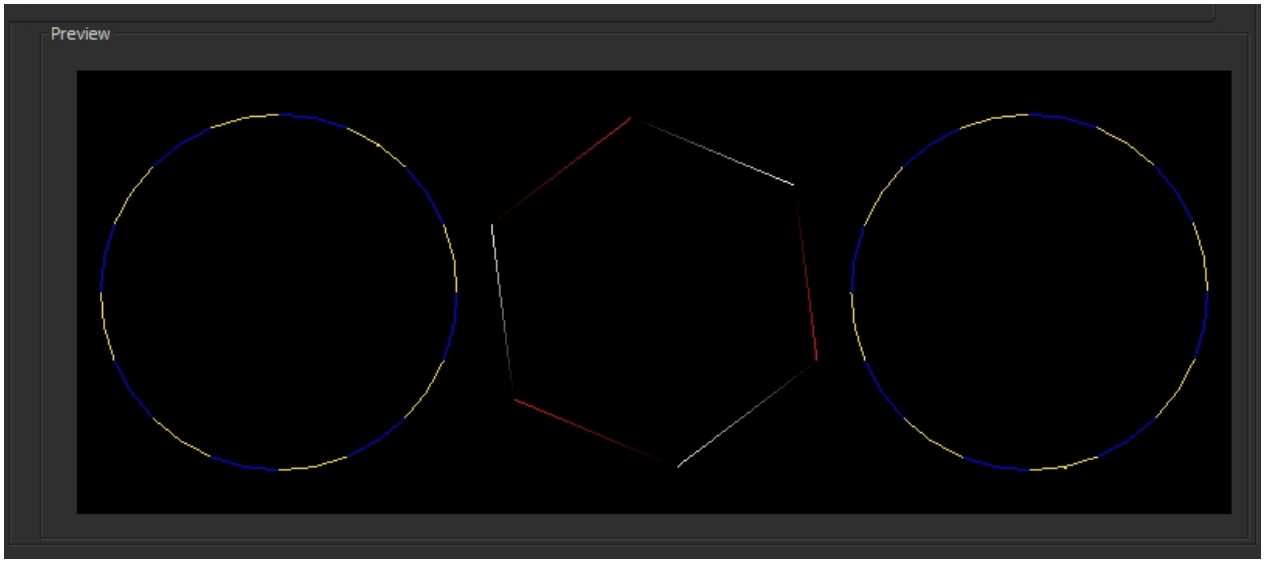
and select a free index position:



Click on "Rename" opens a dialog for specifying a name. Adjust the parameters to the specific requirements and use the World with the desired Trickfilm event.

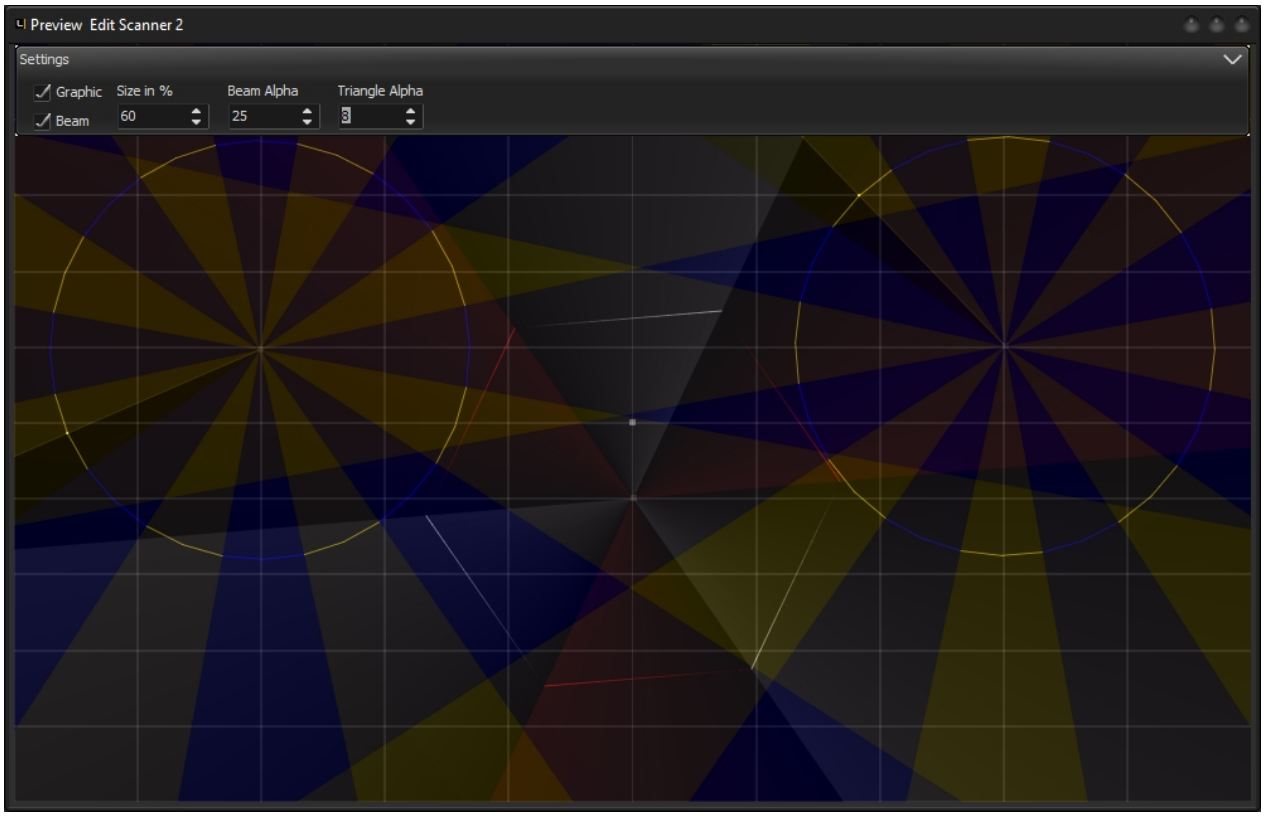
5. Preview

The "Preview" allows for programming without output hardware attached.
The main window shows a preview area in the bottom right corner, where 3 fixed scanners are displayed (which corresponds to the maximum possible output hardware interfaces in teh Showcontroller basic version):



The center picture displays scanner 1, the left one is scanner 2 and the right one scanner 3.

When using the full version Showcontroller PLUS (8 individually programmable scanners) it is possible to open an extended preview window by double clicking on the small preview area in the bottom right corner:



This window can be scaled and also be moved to a second screen.

It is possible to specify the type of preview by checking the boxes "Graphic" / "Beam"
"Size" specifies the output size in %
"Beam Alpha" specifies the brightness of the display
"Triangle Alpha" specifies the brightness of the visible areas in the fog simulation

The projector positions can be moved by clicking and dragging them with the left mouse button. The active scanner is named in the title bar.
The settings area can be toggled with a click on the icon in the upper right corner.

6. Call scenes

The software Showcontroller LIVE enables the direct live control of one or more laser systems.

The user interface is adapted to common MIDI controller and automatically detects the Akai APC40 as well as the Akai APC Mini.

The main part of Showcontroller LIVE is a grid of 5 x 8 scenes, which can be assigned different scenes with switching banks - 10 banks are available. Thus it is possible to access up to 400 preset scenes from the LIVE user interface.

Start the laser output with a click on "Start". Laser and DMX output become active.
The buttons "Start" and "Stop" only start / stop the laser output - the preview is active even if the output has been stopped.

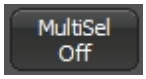
An animation of the very scene is shown on mouse-over.
A click on a scene activates it and marks it with a red square (active scene).

If a yellow square is visible too, ...

... this means, that the very scene has been configured to be in "Flash only" mode. It means that the scene is only played, as long as the mouse button is clicked or the very
scene button/key is pressed.
The "Flash only" option can be assigned in the trickfilm event of the scene.

On selecting a new scene, the previously active scene becomes unselected.

The Multi Select Button enables the parallel selection of several scenes.



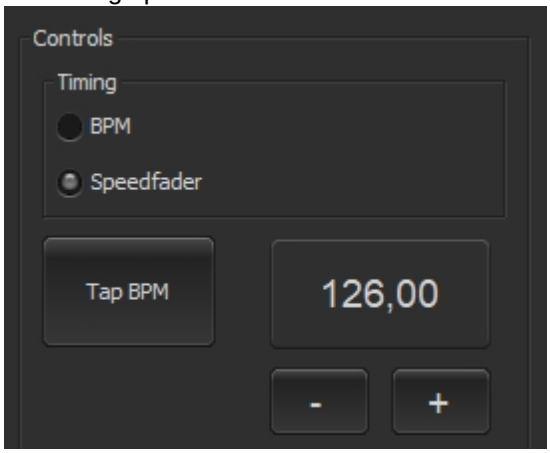
If the button is set to "on", several scenes can be selected by click. another click on an active scene deselects it again.

6.a. Control the speed

There are two methods to influence on the playback speed of the very scenes:

a) BPM count

The timing/speed can base on the BPM count that can be input by clicking on "Tap BPM":



b) Speed fader
The speed fader can be used to vary the scene play speed too. The speed fader position can be saved with the scene settings as an option and can be recalled when the scene is activated again. Only one speed value is possible at a time.

If the speed is specified to be e.g. 128 BPM, the preview animation of a scene on mouse-over is also shown in the specified speed.
Only a click on the very scene adjusts the speed to a potentially specifically assigned slower or faster speed.

7. Program scenes

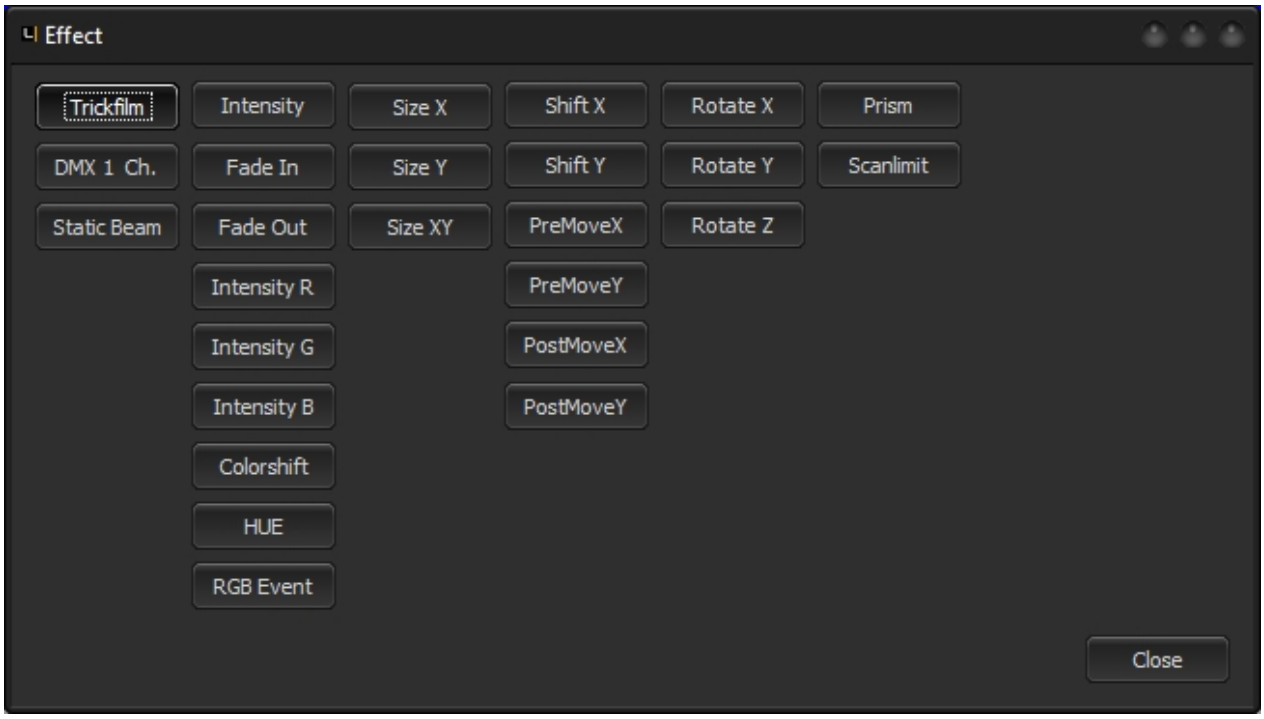
To program or edit a scene, click on it with the right mouse button.

This dialog opens:

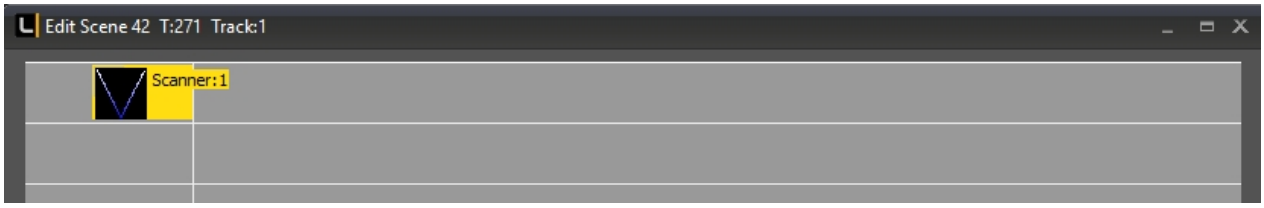
It corresponds with an empty timeline, as known from RealTime.

Program the short-timeline

Double-click the first row, and the effects window opens:



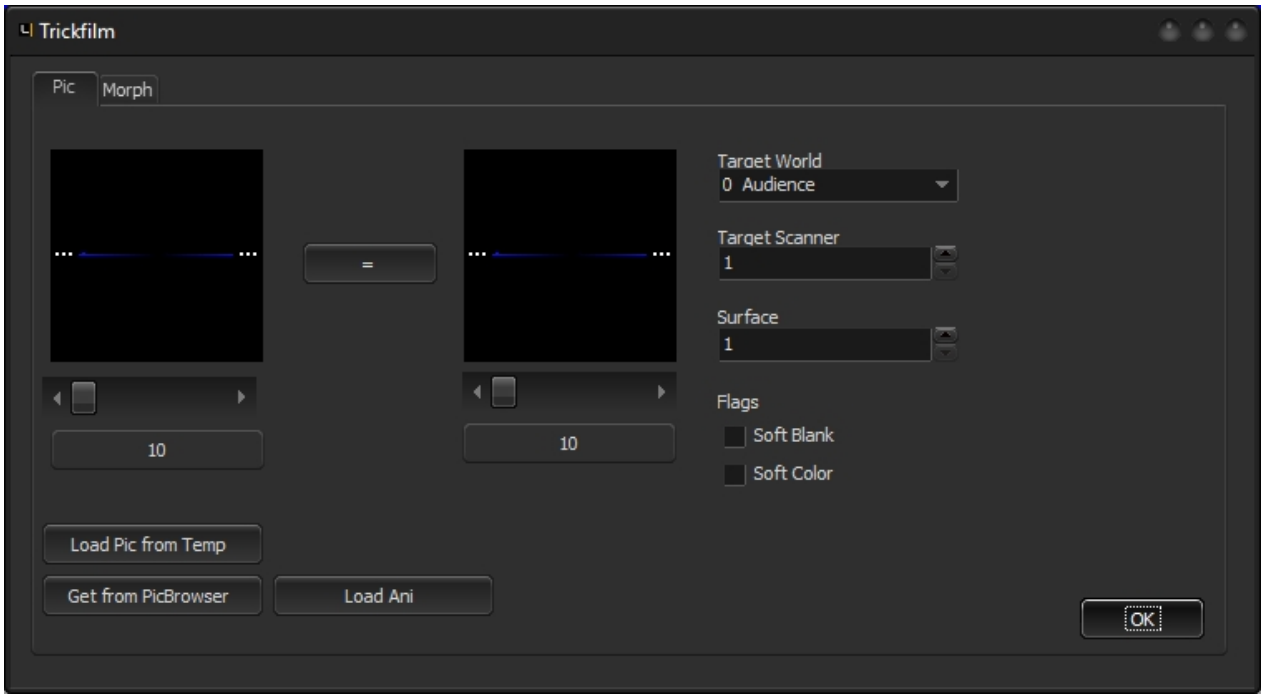
Basic element for a scene is, like in realTime, a Trickfilm event (that's the actual laser frame). Select this event with a double click.
The Trickfilm event is then automatically inserted to the time-line.



A left mouse click selects the very event. It is possible to modify the duration or the position of the event with using the controls that show when hovering the element.
"Del" deletes the selected element.

Pressing the "F" key automatically extends the event to span the full duration of the timeline.

Double click on the Trickfilm event to edit it:



In this case the Trickfilm event bases on a CAT-file. It's also possible to substitute the present frame, but it must be made sure that this frame is not used in another scene, otherwise it would be altered in that scene as well.

A click on "Get from PicBrowser" opens the dialog to select from preset frames, which is already known from RealTime.
A click on "Load Pic from Temp" fetches the contents of the temporary buffer

Target World, Target Scanner
This dialog also provides the possibility to specify the projection zone (World) as well as the specific output scanner (Hardware interface) for the very trickfilm event.

Surface
"Surface" specifies the layer of the Trickfilm event - with overlaying several layers of Trickfilm events it is possible to create overlap effects of different Trickfilm event layers (layer pyramiding).

Soft Blank
SoftBlank activates smooth fading in and out.

Soft Color
Soft Color activates smooth color gradient.

These effects and many others are explained in the main RealTime manual more in detail

Flash only
The short timeline overview window offers the option to select the "Flash only" checkbox. This option sets the scene to only play as long as the respective scene selection button/key is pressed or the mouse is clicked on that scene.

If the "Flash only" has been set, the scene is added a yellow square in the preview.
The red square means that this scene is selected and active.

Clear Scene
The "Clear Scene" button deletes all events from the short timeline of the very scene.

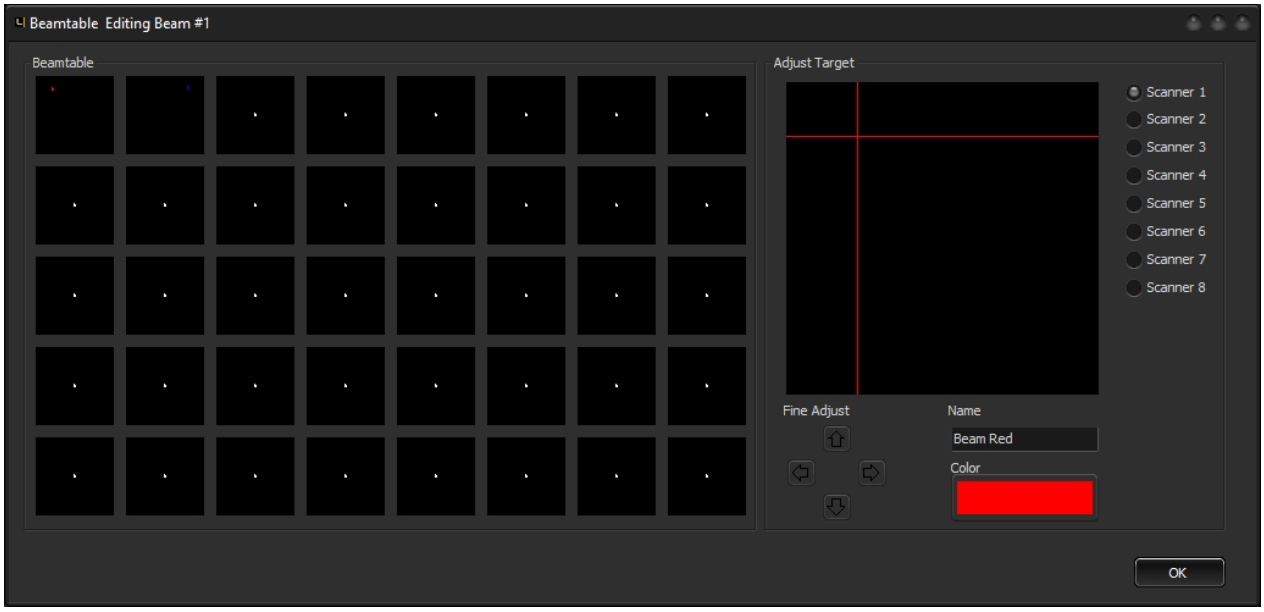
Further details on how to program on the timeline can be found in the main Showcontroller RealTime manual.

7.a. Static beams

Static beams are often used for targeting mirrors or grating effects, but also for creating highlight beam effects.

It's functionality is slightly different than in Showcontroller RealTime. The beam positions are specified in LIVE via beam table. Each of the 8 maximum possible scanners can be assigned up to 40 static beams with position and color.

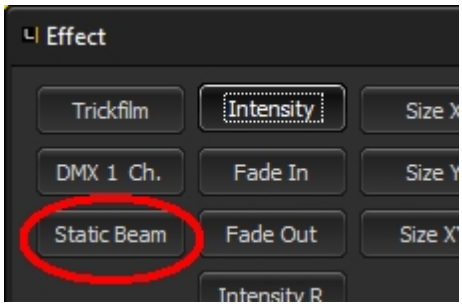
The bream table dialog can be accessed vial "Edit" -> "Edit Beamtable"



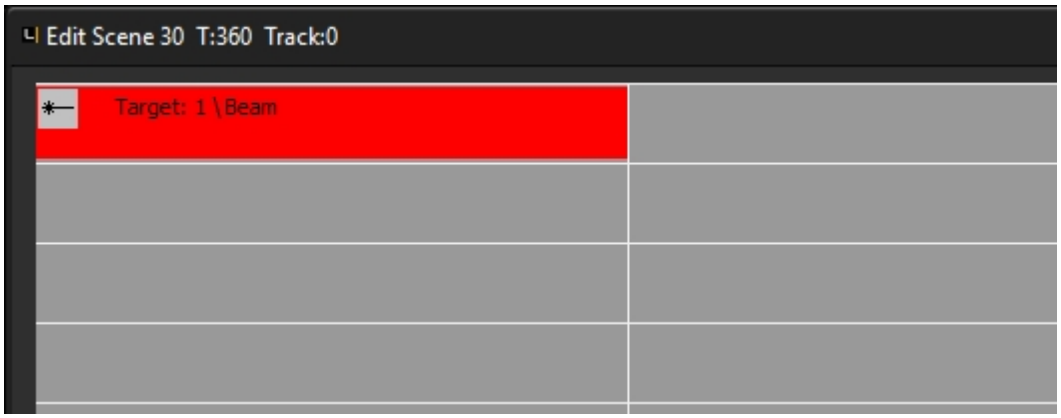
First select the target scanner on the right side. Then select one of the 40 scenes. The current index is shown in the title bar. The position can then be adjusted in the "Adjust Target" area with left mouse button click and dragging.
Fine adjustment can be made with the arrows below the adjustment area. Right besides the fine adjustment arrows is the possibility to name the target and to select a specific color for the very target beam.

The beam that have been specified in the beam table can then be used as an effects event on the LIVE timeline.

Place a static beam event on the timeline:

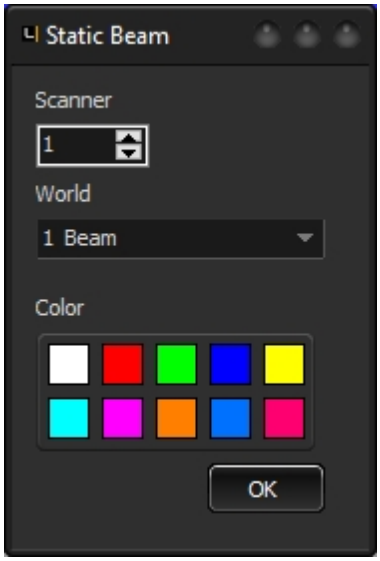


Timeline:



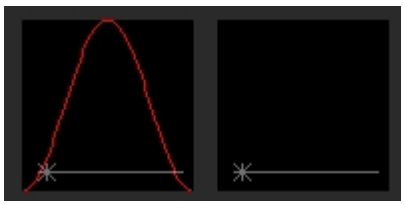
The text behind "Target" specifies the World the scanner will be outputting this static beam to.

Double click the event:



Specify target scanner, world name and color for the beam.

As soon as a scene contains a programmes static beam, it is market with a grey laser beam symbol (for safety reasons, so it's easier to identify these static beam scenes):

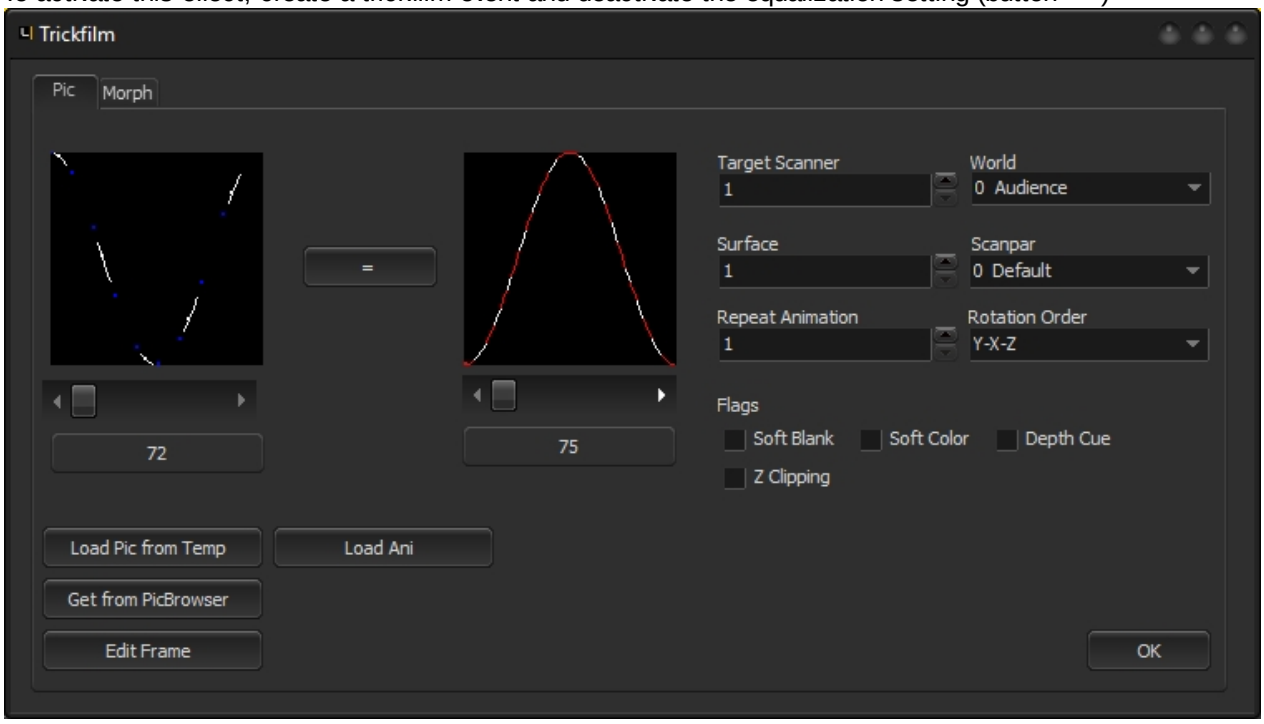


Always ensure that no static beams hit the audience area or areas they must not hit!
Never exceed the MPE in the public area!

7.b. Morphing

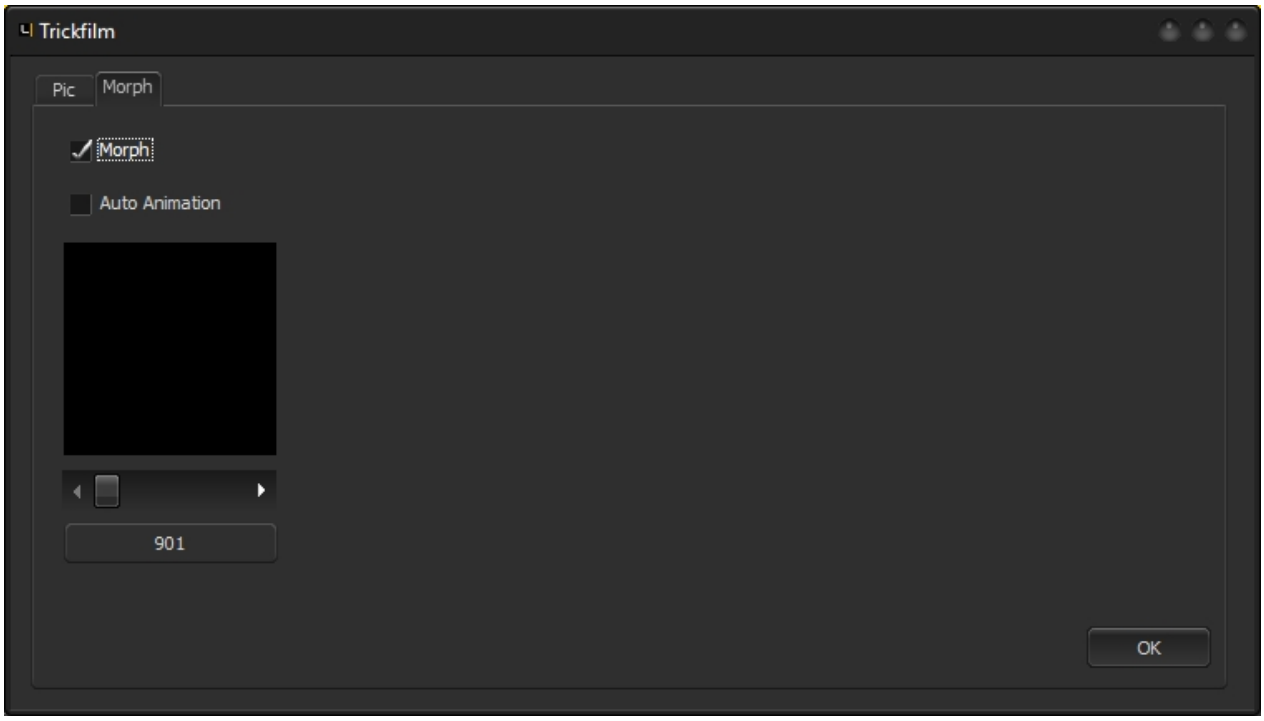
The Trickfilm event already shows that start and end frame do not necessarily need to be identical. If different frames are selected, the software would just switch between the frames from start frame to end frame without any transition, but just a clean cut.
To smoothen this transition it is possible to add a morph effect: The intermediate frames are calculated to create a smooth transition from one frame to another. The start figure smoothly transforms to the end figure.

To activate this effect, create a trickfilm event and deactivate the equalization setting (button "=")



In this example start frame is 72 and end frame is 75.

Switch to the tab "Morph":



Select an empty temporary frame . Activate the checkbox "Morph".
"Auto Morph" activates morphing of all frames from start to end.

7.c. HUE

The HUE effect is a color effect that can be parametrized via the animator

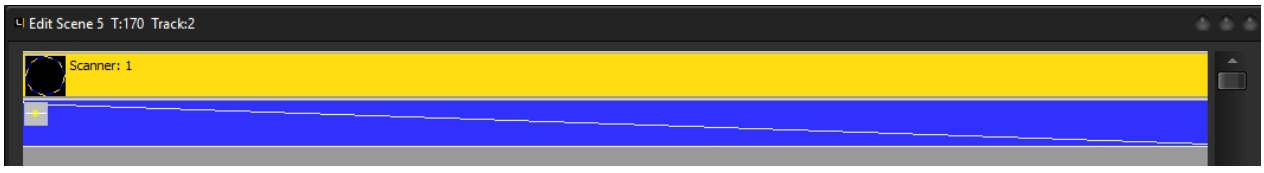
Start and End values are set to 0 / 1 per default. This leads to the original frame bein completely recolored. The values 0 - 1 correspond to the color angle of 0 - 360° in the Hue color circle.

This is a special feature:
Set the start value to 1 amd the end value to 2: The original color of the frame is shifted by the color angel of the animator. This creates very interesting effects in multi color frames.

7.d. Sparkle

The Sparkle / HotSpot effect is only barely visible in the preview window, but it's a big effect with real laser output.

Base for using the Sparkle effect is a frame with several intermediate points, e.g. a circle or an interpolated line.



The sparkle effect event is in the second line. Start value is set to 1 per default, end value is 2. This creates random hot spots in the frame color.

If the start value is set to 2 and the end value to 3, white hot spots are created.

Start value to 0 and end value to 1 makes one hot spot travel through the frame.

The hot spots created with this effect can exceed the MPE in an otherwise safe show!!!
Always make sure to not exceed the MPE!!!

8. Group of scenes

A combination of several scenes can be saved as Group of Scenes.
Use the Multi Select button to select several scenes.

Right click on a free Group-Button:

A dialog opens, providing the options to either save or delete this group. Select "Save", the button is named with "Ani".
The saved group can be recalled with a left mouse click on the button.
The upper left button "Off" deactivates all active groups of scenes.

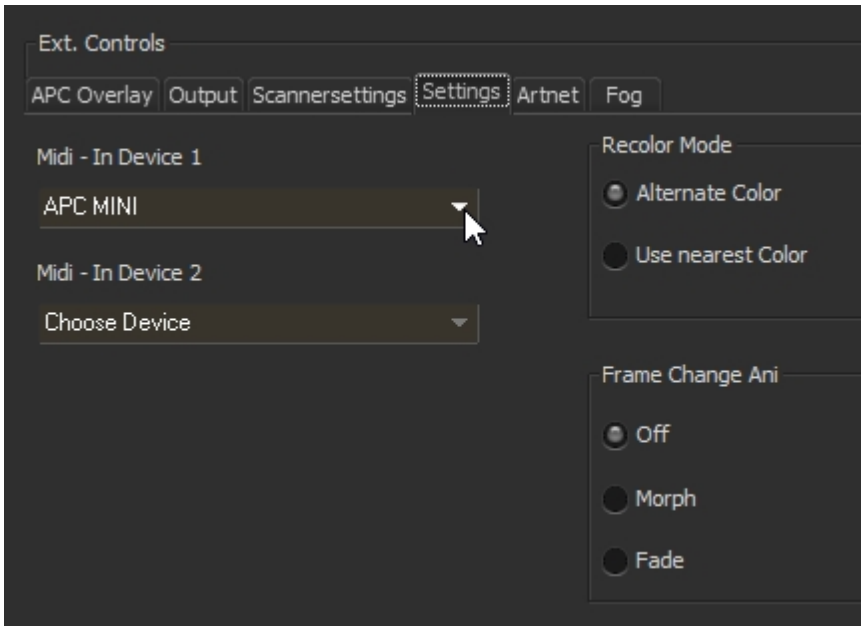
9. Remote control the software

Showcontroller LIVE can easily be remote controlled by different external control input signals.

The Akai APC40 and the Akai APC Mini are automatically detected and also support the LED Feedback.

9.a. MIDI control the software

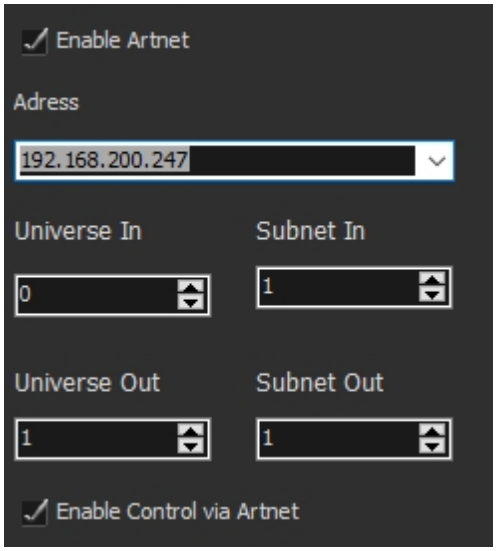
It is possible to configure up to two different MIDI input devices in "Settings":



Showcontroller detects various MIDI devices as standard, like the Akai APC40 and the Akai APC Mini. After first connecting a MIDI controller it can be necessary to reboot the software once to recognize the full functionality of the device.
Buttons and features are already preset and the controller is ready to go.

9.b. ArtNet control the software

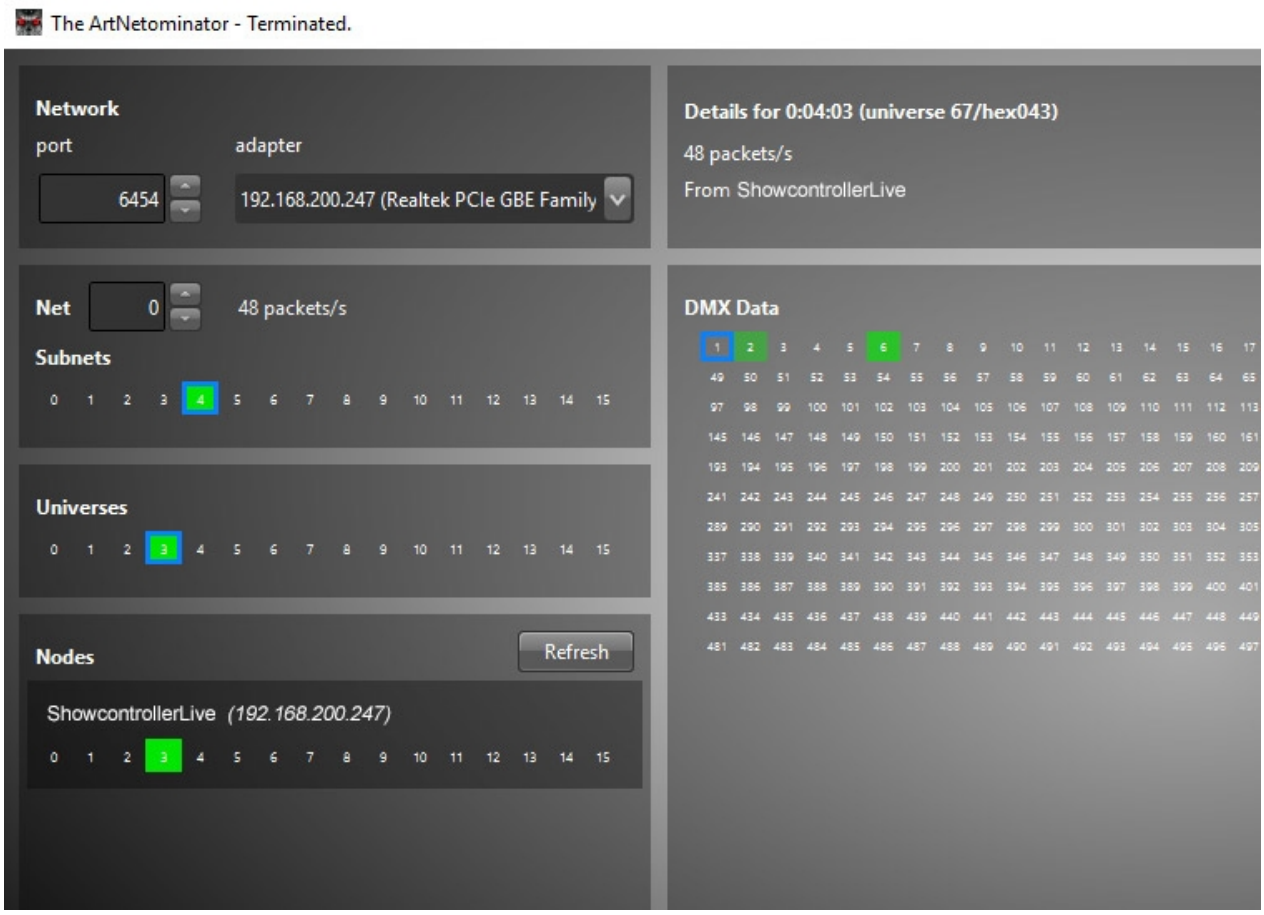
The remote control of Showcontroller LIVE is especially used at professional events.
The necessary settings can be configured in the "Settings" tab to the right.



It is important that the subnet/universe out/in are different. As the software can send out DMX to Artnet with timeline events, the software would remote control itself if the sender and receiver address would be equal!

The checkbox "enable Artnet" activates the Artnet output.
The checkbox "Enable Control via Artnet" activates the remote control via Artnet packages to the specified subnet/universe in

The output can be analysed with the freeware program "ArtNetominator". The software is detected as Node.



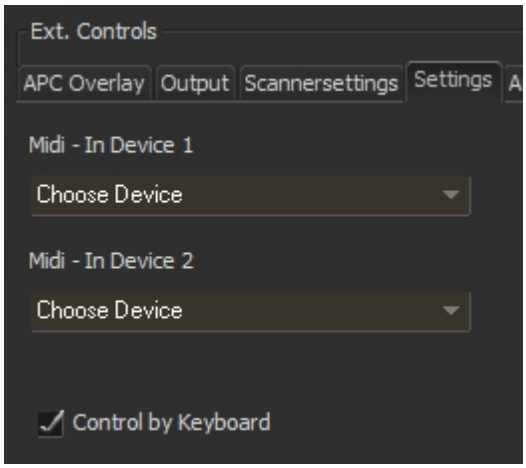
Some few channels are preset for the Artnet control:

Artnet/DMX chart:
Channel 1: selects the scene
Channel 2: selects the bank
Channel 3: Strobe
Channel 4: Color
Channel 5 : Size XY
Channel 6: Size X
Channel 7: Size Y
Channel 8: Shift X
Channel 9: Shift Y
Channel 10: Speed
Channel 11: Master Intensity

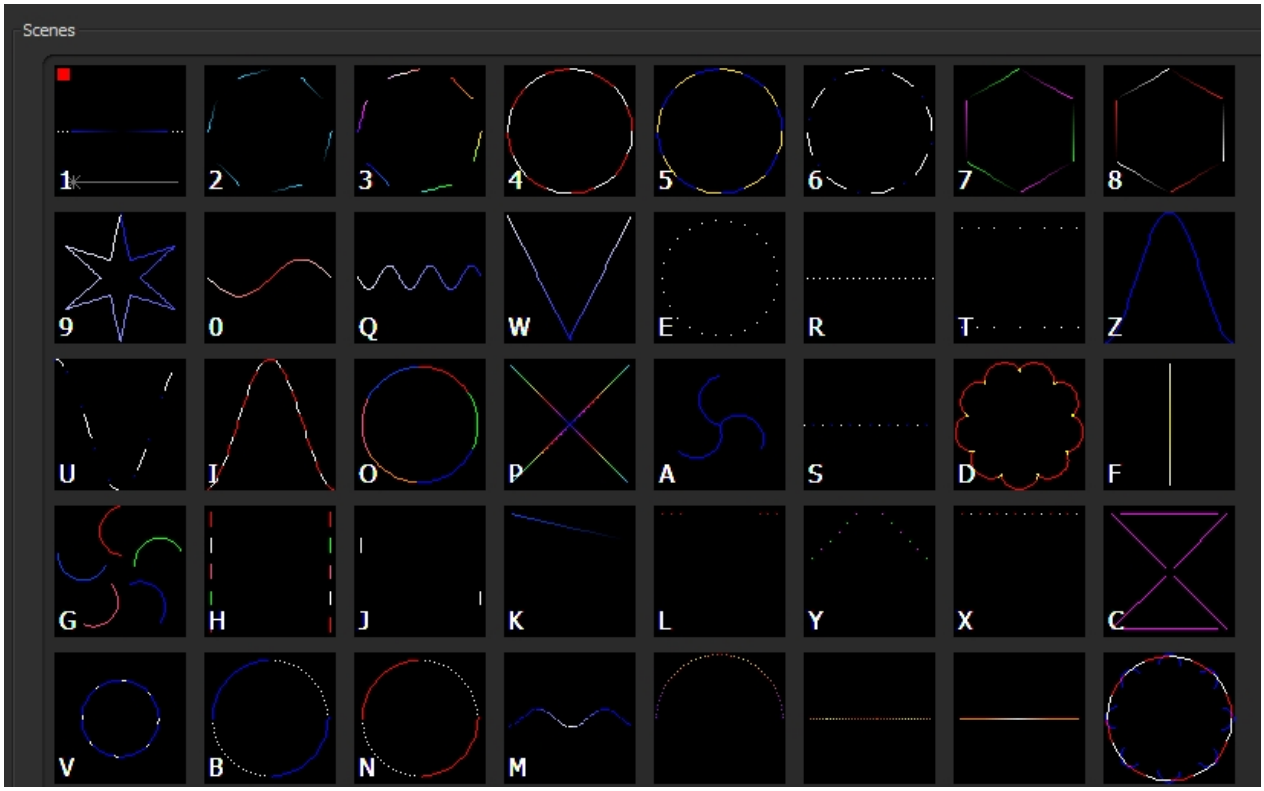
9.c. Keyboard

The selection of scenes is also possible via computer keyboard.

The settings provide the option to activate "Control by Keyboard":



This activates the computer keyboard as control . The assigned keys per scene are displayed in white:



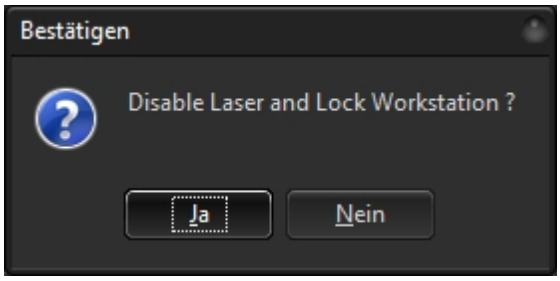
For reasons of compatibility only the numbers 0-9 and the standard alphabet is used. Special characters are not assigned.

9.d. Keyboard shortcuts

Some few features can be quickly accessed via keyboard shortcuts.

Global:
"L" - Lock Screen

Pressing the key "L" opens this dialog:



If confirmed with "yes", the laser output becomes deactivated and Windows gets locked.
Thus unauthorized access to the laser system can be prevented.

"M"
Press "M" to reset fader 1-7 to their standard position.

Timeline:

These keyboard shortcuts are active during programming on the short timeline:

"F"
Extends the selected event to span the full duration of the timeline.

"Del"
deletes the selected event

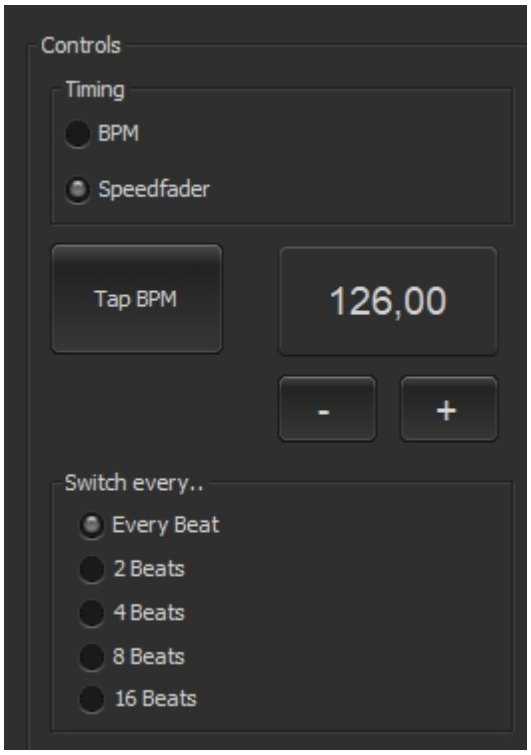
9.e. Timing

The tab "APC Overlay" contains the "Controls" settings on the right side.
These settings specify if the software should act based on BPM (beats per minute) or based on independently assignable speed via fader.

The speed fader does not work if the software is in BPM mode!!

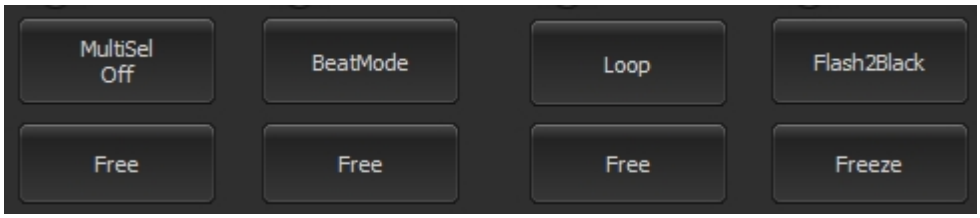
Tab BPM can also be triggered through the MIDI controller APC 40 ("Tap"). The +/- feature can be triggered via "Nudge +/-"

The number of beats the frame changes to in BeatMode can be specified below.



9.f. Modes / Effects

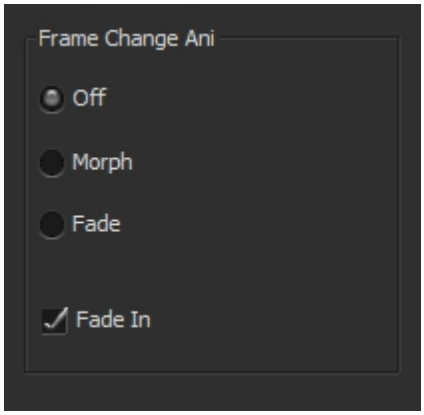
These buttons are above the preview window:



"Multi Sel" Specifies if only one scene can be activated at a time or if multiple scenes can run together
"Beat Mode" Activates the automatic frame change to the beat
"Loop" Toggles Loop or Flash of scenes. Depending on the settings, the scene only runs once for its duration or loops until it's switched off or another scene is selected
"Flash2Black" Blacks out the output as long as the button is pressed
"Freeze" Freezes the scene as long as the button is pressed

9.g. Frame change animations

The tab "Settings" in the upper right corner provides additional options for controlling the frame change animations



"Off"	No animation
"Morph"	Change with morph effect between the frames
"Fade"	The deactivated frame is faded out

These effects do not recalculate the animations of the deactivated frame.

"Fade In"	The newly selected frame is faded in

The timeframe for these frame animations can be specified in the main menu ("Edit" -> "Settings")

10. Control external devices

Showcontroller LIVE is capable of controlling external devices via DMX/Artnet

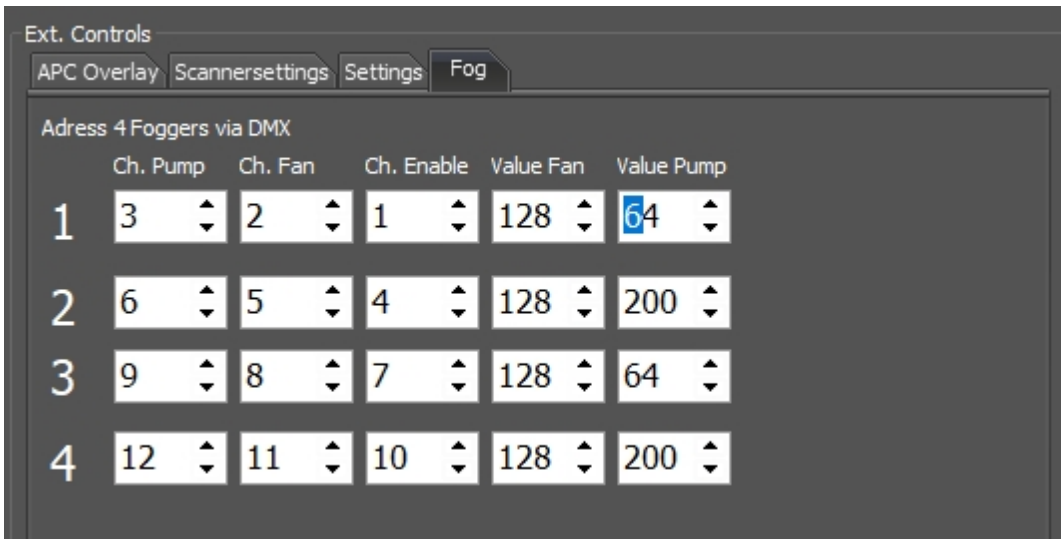
Some options are explained in the following

10.a. Fog machines

The most common case of using DMX control from the Showcontroll LIVE interface is the control of one or more fog/haze machines.

These can either be controlled through the Hardware-Interface #1 DMX output or Artnet.
It is necessary to address the machines first.

Switch to the tab "Fog":



The addressing is rather universal. Only channels with value >1 are used.

Ch. Pump	address of the pump
Ch. Fan	address of the fan
Ch. Enable	heating on/off
Value Fan	value for the fan that is triggered when "Fog On"
Value Pump	value for the fan that is triggered when "Fog On"

Example for unit Nr. 1:

If "Enable Fog Machines" is active in the APC Overlay tab

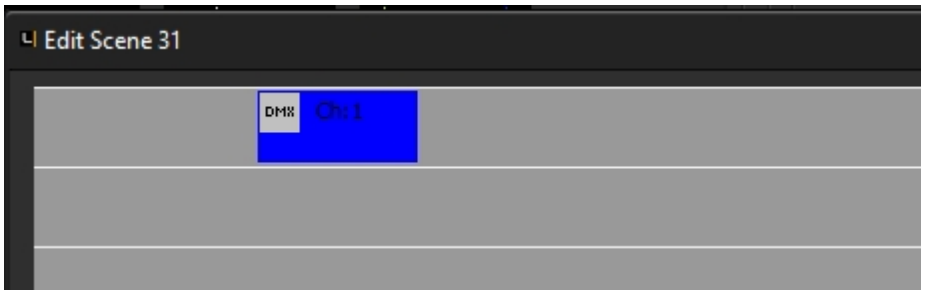
then channel 1 (enable) is set to 255 and heating is on. Also channel 2 (fan) reacts to the value set for "Value Fan".
So heating and fan are on.
A click on "Fog no" or "Fog on/off" sets channel 3 (pump) to the value 64 (Value Pump)

These DMX values are sent via Artnet (if enabled in the tab "Settings") and via DMX on Hardware-Interface #1.

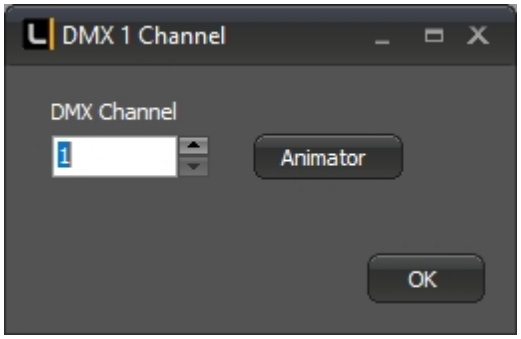
10.b. Via timeline

It is also possible to control external DMX devices via timeline.
However, this method is not suitable for controlling complex, multi channel DMX devices like moving lights, but it's well sufficient for firing a strobe or starting a flame effect.

Doubleclick to the timeline, the event dialog opens. Add the event "DMX 1 Ch.":

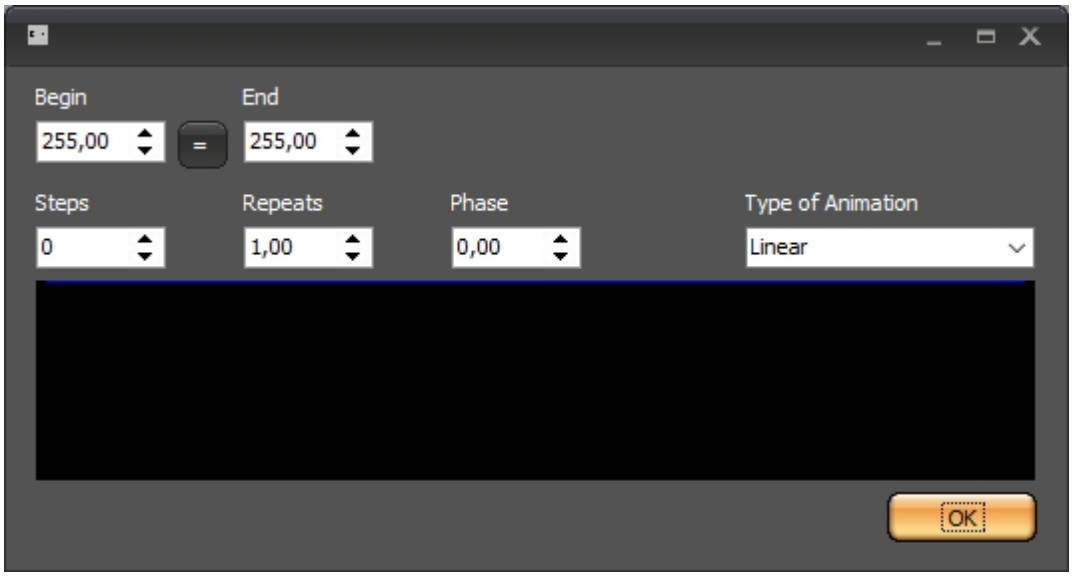


Open the event with a double click:

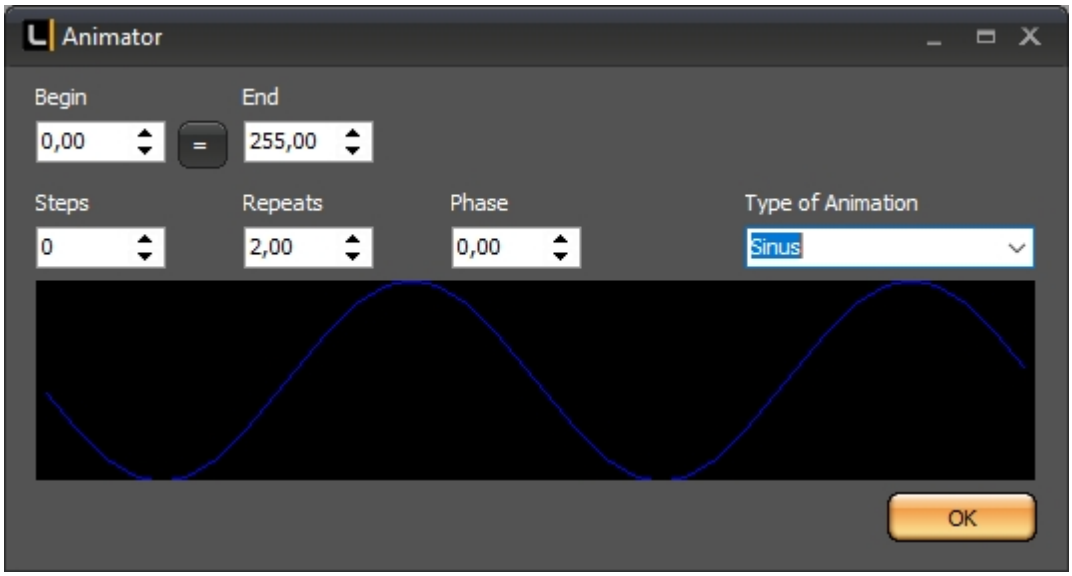


DMX Channel is the address. It is also displayed in the timeline. Click on "Animator" to assign values.

Values from 0 - 255 are valid for begin and end.
The most simple case is a value set to "high", meaning 255.



Of course it is possible to also animate a value, example:



Star value is 0, end value is 255, implemented as sine form with two repetitions.

A moving light would begin to move to such a form (however, such devices can not be properly controlled with Showcontroller LIVE - rather use an external DMX controller for the programming of the complex device and just trigger that DMX controller with Showcontroller.)

11. Live change colors

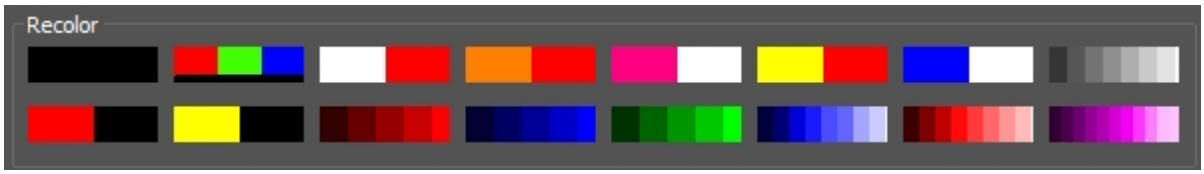
Showcontroller LIVE supports the direct live manipulation of the colors of a scene. This is especially helpful if the colors of the lasers are supposed to match the color set of general lighting or video contents.

There are several options to influence on the coloring of the scenes on output.

Color spectrum:

The most simple method is using the fader "Colorspectrum". If it's value is >0, the complete scene is colored in the new color. The fader position allows to circle through the complete color spectrum (within the boundaries of the fader resolution).

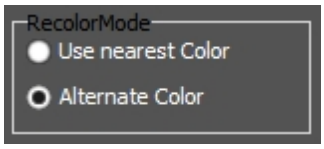
Recolor:



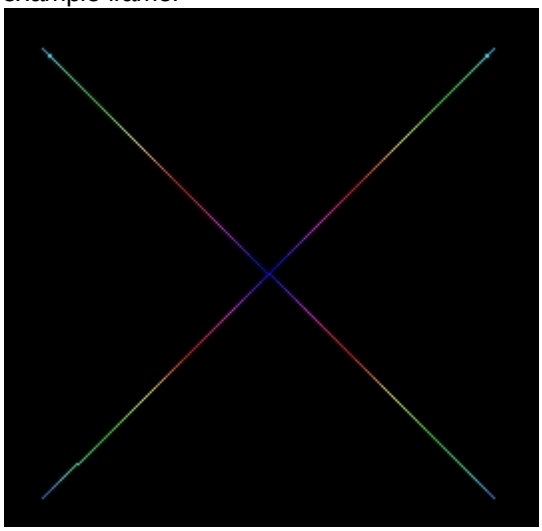
There are preset color palettes underneath the scenes. The very active palette is assigned a black bar (in this picture it's the second one from left, with red-green-blue).

A click on the black field (to the very left top) deactivates the palette coloring.

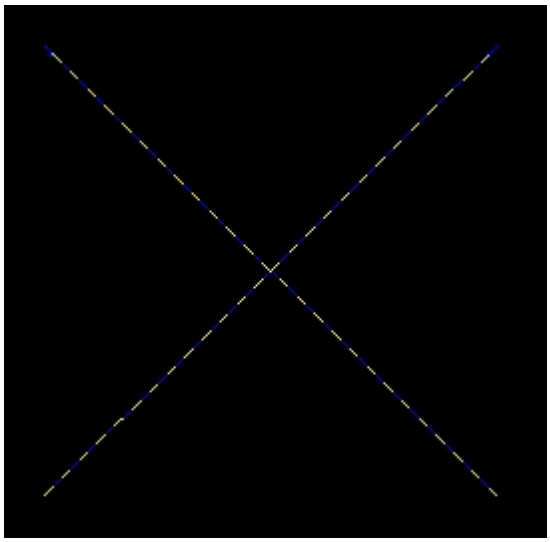
There are two options of how the recoloring with a palette is applied. These options are available in the tab "Settings":



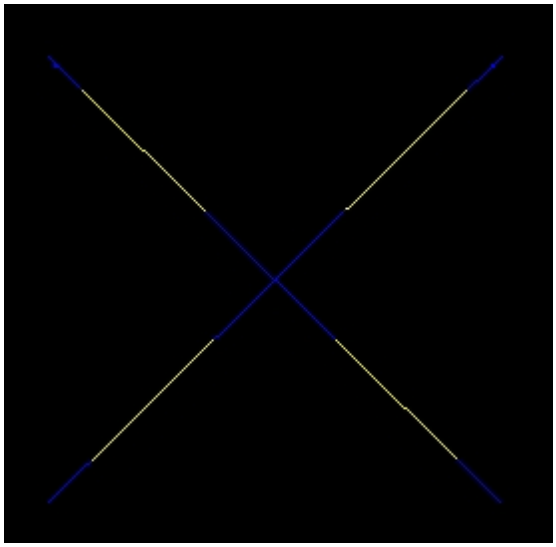
example frame:



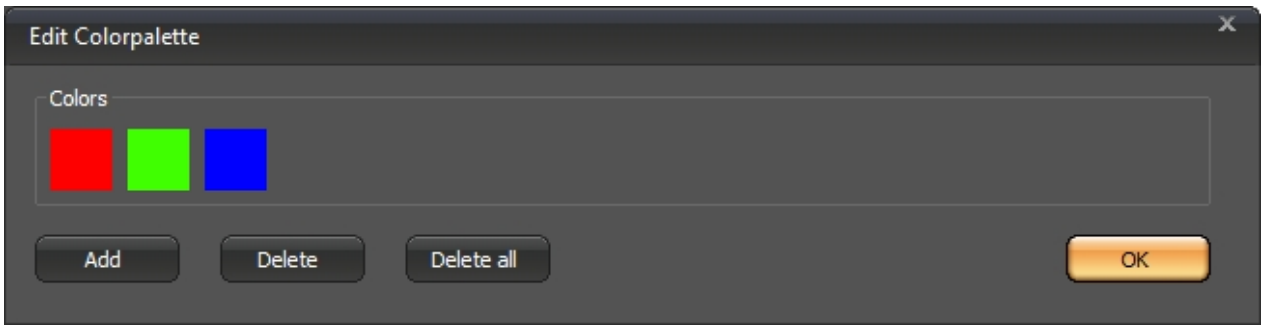
Option 1 takes the color of a laser frame and searches the color from the color palette that is closest to the actual color. A colorful frame thus becomes one in yellow and blue (in this example):



Option 2 changes the color. It starts at point1 of the laser frame. In this case it becomes blue. Only if the frame changes in it's original color, the recolor function changes to the next palette color, in this case yellow. And so on. As soon as the last palette color is reached, the index changes back to the first palette color.



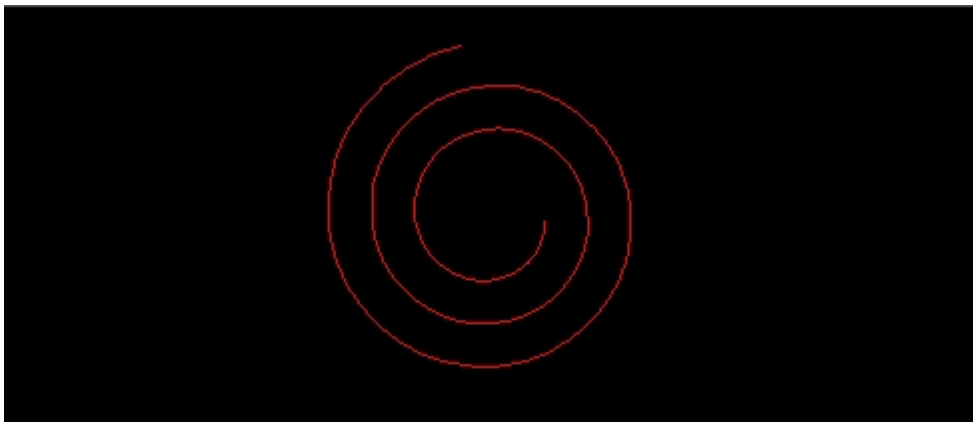
Right click on one of the palettes, and the edit dialog opens:



It is possible to "Delete" colors and "Add" new ones.
Thus color gradients can be created, too.

Example:

The helix then ...



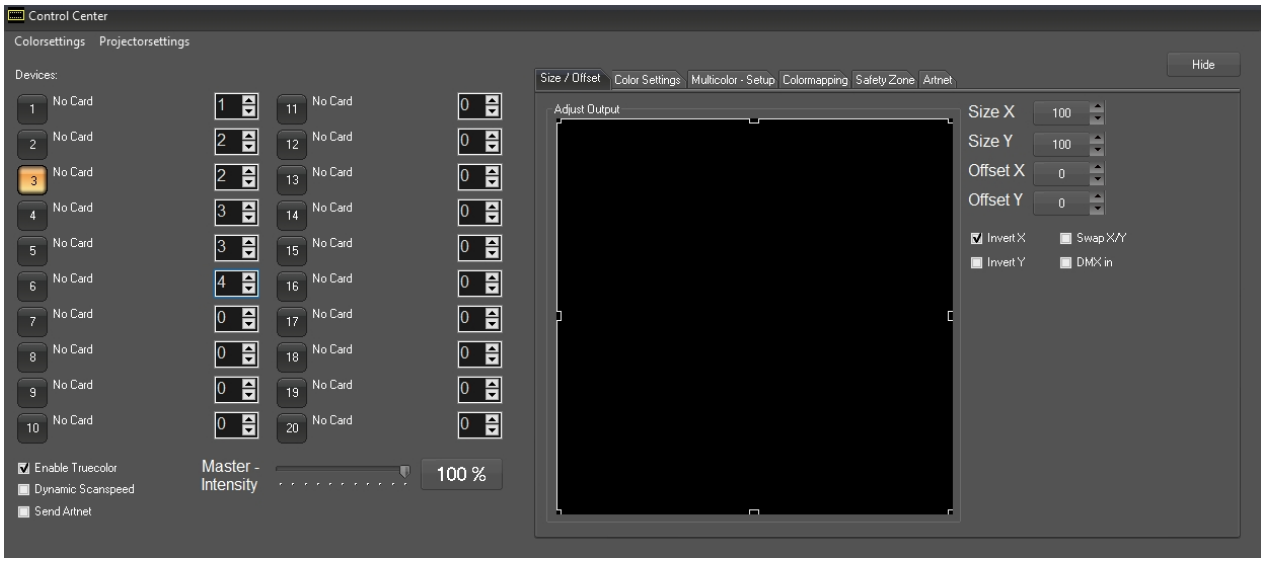
becomes this:

There is slider "Recolorindex" on the right side in the slider area. This allows for setting a table offset. 60 colors can be specified.

12. Scanner routing and groups

The addressing of the scanners / hardware output interfaces is similar to Showcontroller RealTime.

Scanner 1-8 can be programmed and assigned to different hardware output interfaces in the Control Center, like in RealTime (see RealTime manual for further details).

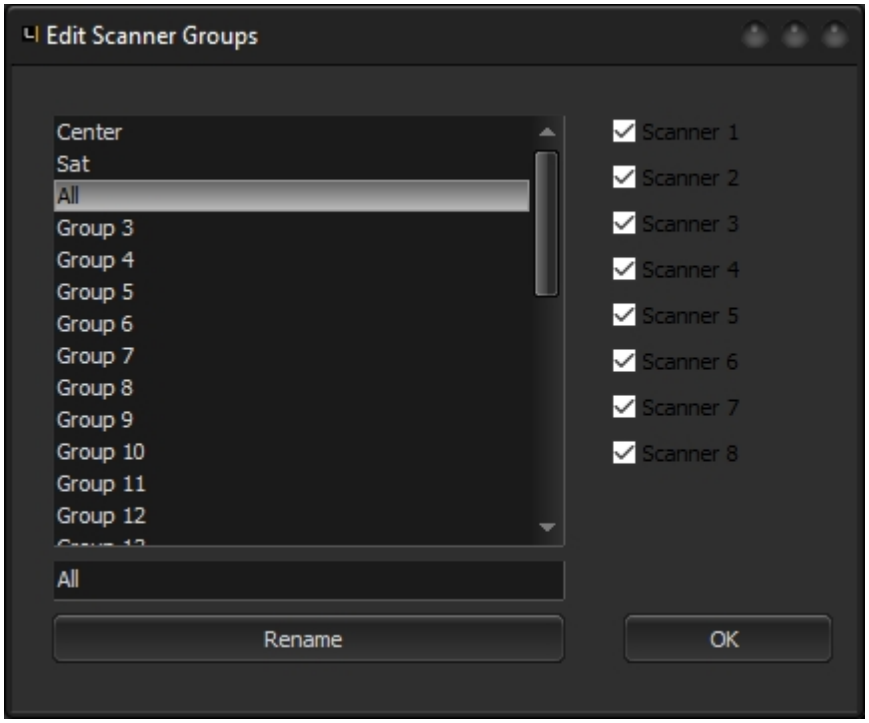


It is also possible to invert or swap the projection axis.

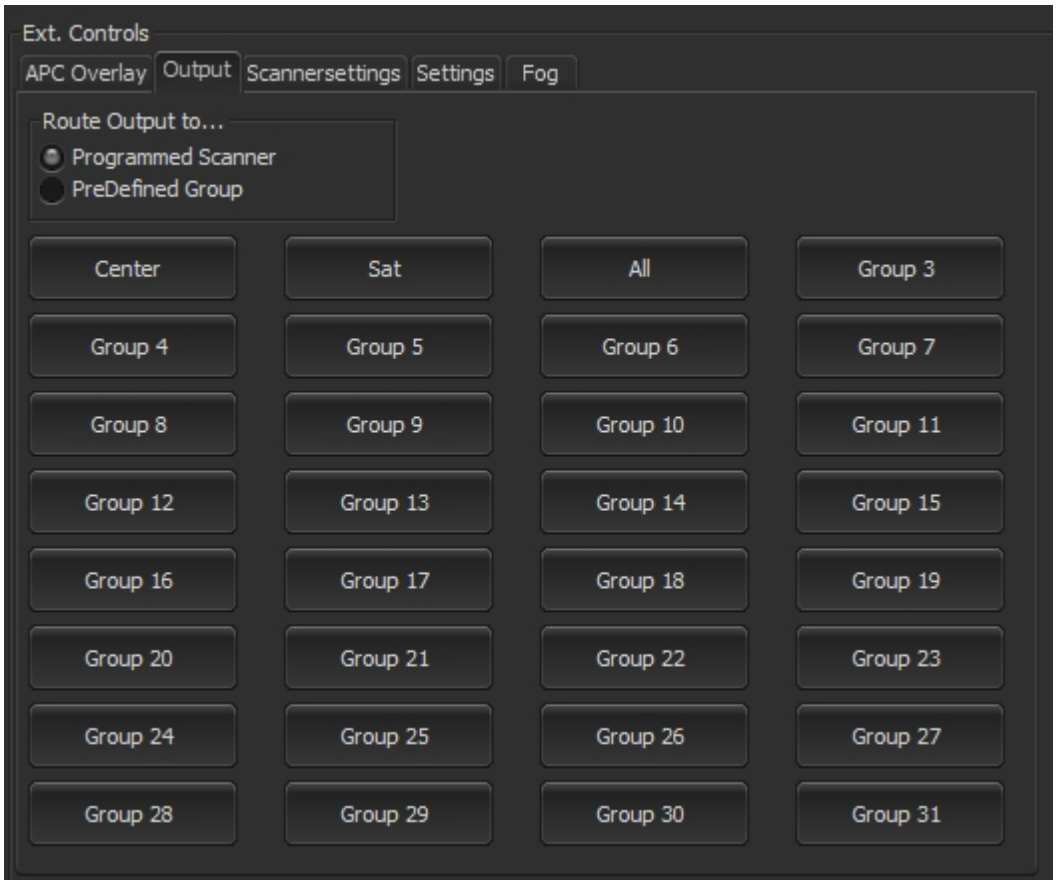
The addressing assigned in the timeline can be overwritten with the scanner routing.

Up to 32 groups of a combination of 1-8 output-scanners can be created via "Edit"->"Edit Scannergroups". E.g.: "Center", "Satellites" or "All"

Click the group to be edited, rename it and assign the desired output scanner to the right:



Switch to the tab "Output" in the top right corner of the output window:



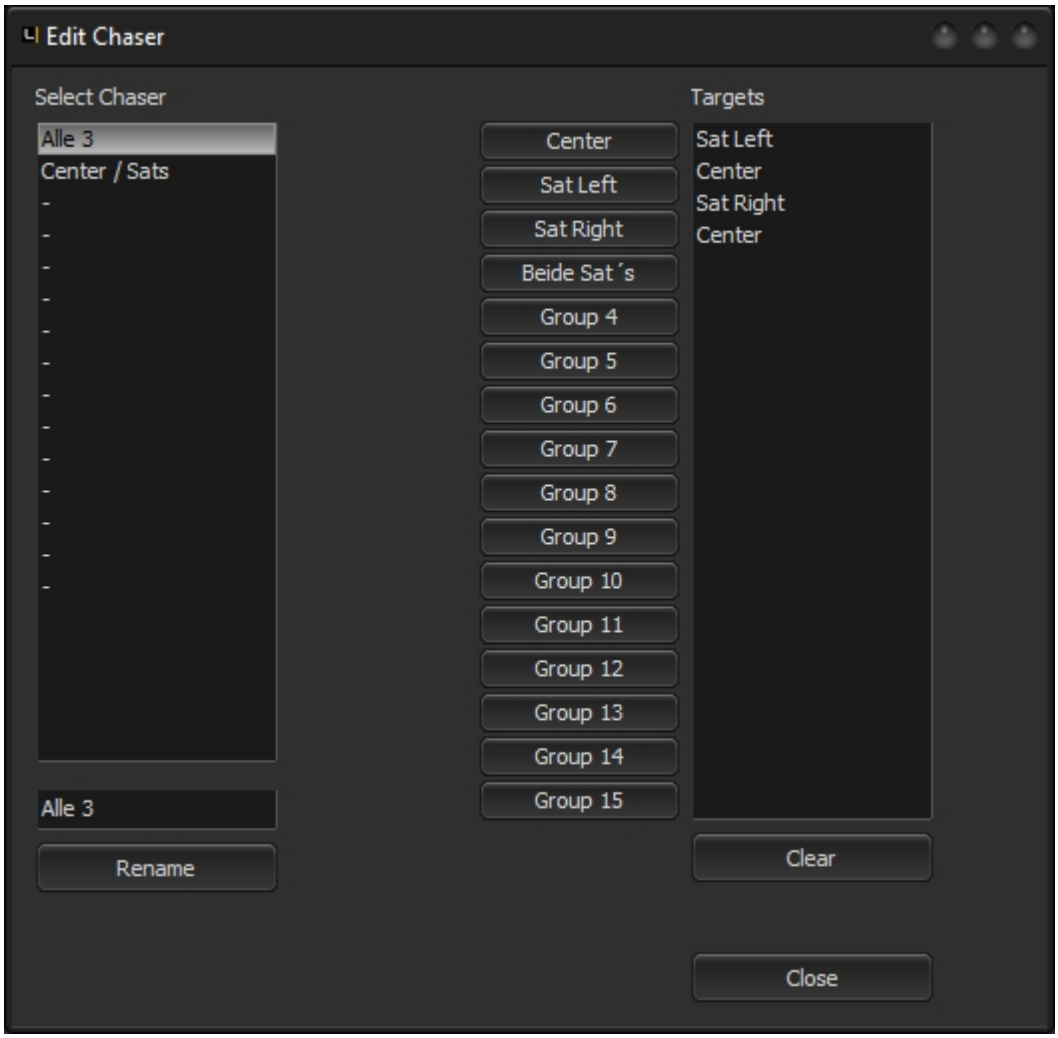
To use the groups it is necessary to switch from "Preprogrammed Scanner" to "PreDefined Group". The buttons automatically become named after the predefined Group name and can be used for activating the very scanner group.

13. Chaser

Chasers are a great option to add further diversification to laser shows with several output hardware interfaces. Chase means, that the output on the hardware interfaces is switched on and off according to the settings, so it's not always all lasers on but they take turns, depending on the chaser configuration.

It is important to have scanner groups defined (see previous chapter) in order to use the chaser feature, as the chaser effect rely on these scanner groups.

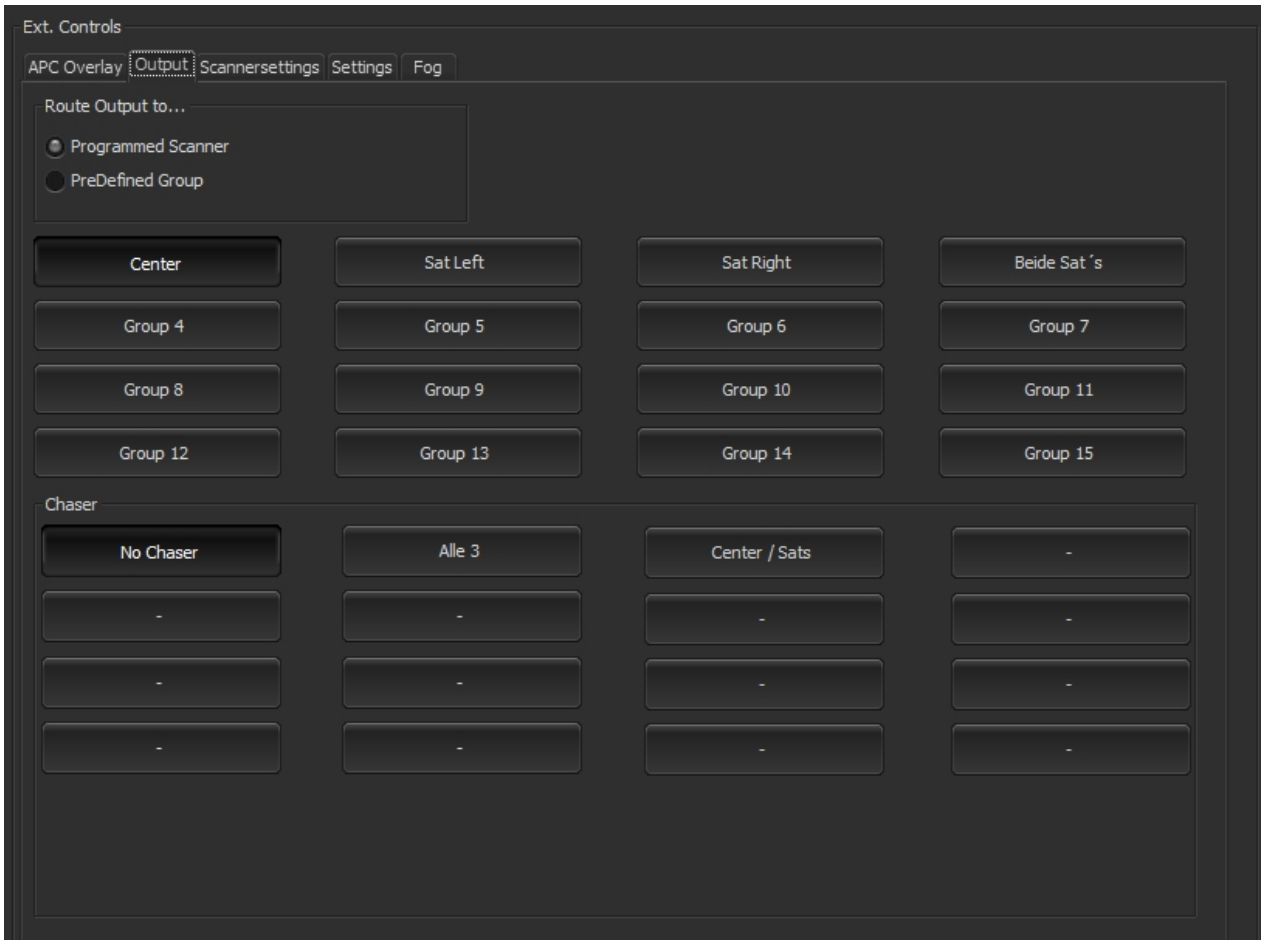
Create chaser effect via "Edit"->"Edit Chaser". This dialog opens:



The chaser presets are shown to the left. click a position in the list for editing. The chaser can be renamed at the bottom, confirm renaming with "Rename".
To the right the targets for the chaser are shown. The list can be cleared with "Clear".
When running, the chaser effects targets the scanner groups in the order they are listed here, one after another.
The buttons left of the targets list show the scanner groups that have already been specified.
Click on the group to add it to the chaser Targets list.

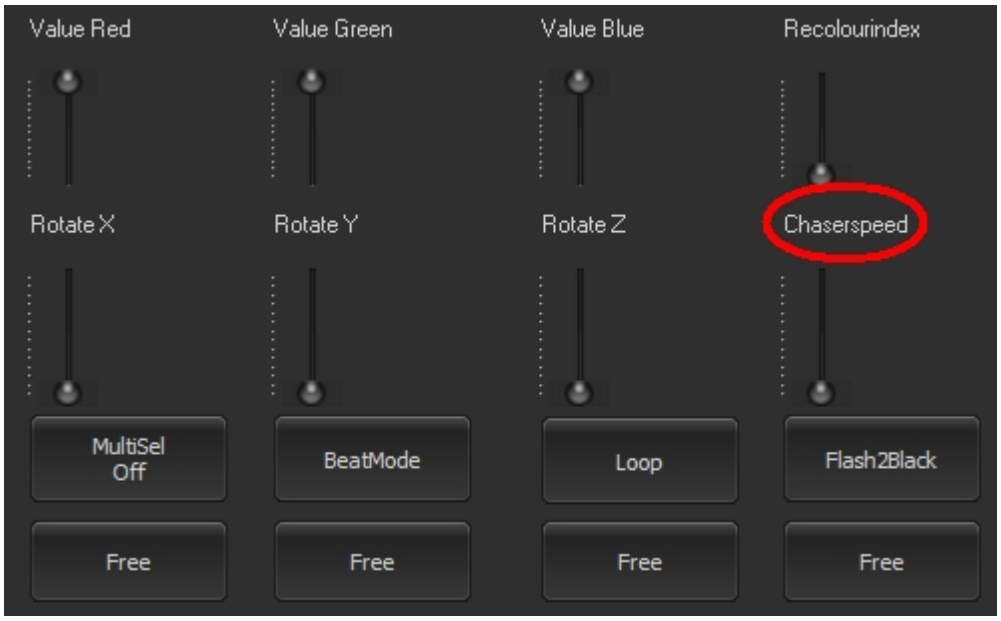
Click "Close" to close the dialog.

Call the chaser in the main window, tab "Output":



In the upper part there are the scanner groups, the lower part shows the programmed chaser effects.

The chaser speed can be adjusted here:



The selected chaser is defined as "free", so not linked to the scene. It also does not get saved with the scene.
To use permanent chaser effects that are linked to a certain scene, it is required to program this effect to the timeline of the very scene.

Legal information

Legal Information:

Laserworld (Switzerland) AG
Kreuzlingerstrasse 5
8574 Lengwil / Switzerland

www.showcontroller.com

Ph +41-71-67780-80

Headquarters: 8574 Lengwil / Switzerland
Company Nr.: CH-440.3.020.548-6
CEO: Martin Werner
Tax Nr. CH: 683 180
VAT ID: DE258030001
UID: CHE-113.954.889
WEEE-Reg.-Nr.: DE 90759352