

PC



System requirements:

Operating System : Microsoft Windows XP / Windows Vista / Windows 7 / Windows 8
C.P.U : Intel Pentium IV at 2.0 GHz (or higher)
Video Card : 128 MB VRAM
Memory : 1 GB RAM
Hard Disk : 200 MB of free Hard Drive space
Sound : DirectX compatible sound card
Direct X : 9.0c
Controls : Keyboard & Mouse
Installation : CD-ROM / DVD-ROM Drive
Network : Active Internet connection for firmware updates
Software: Apple QuickTime installed

System recommendations:

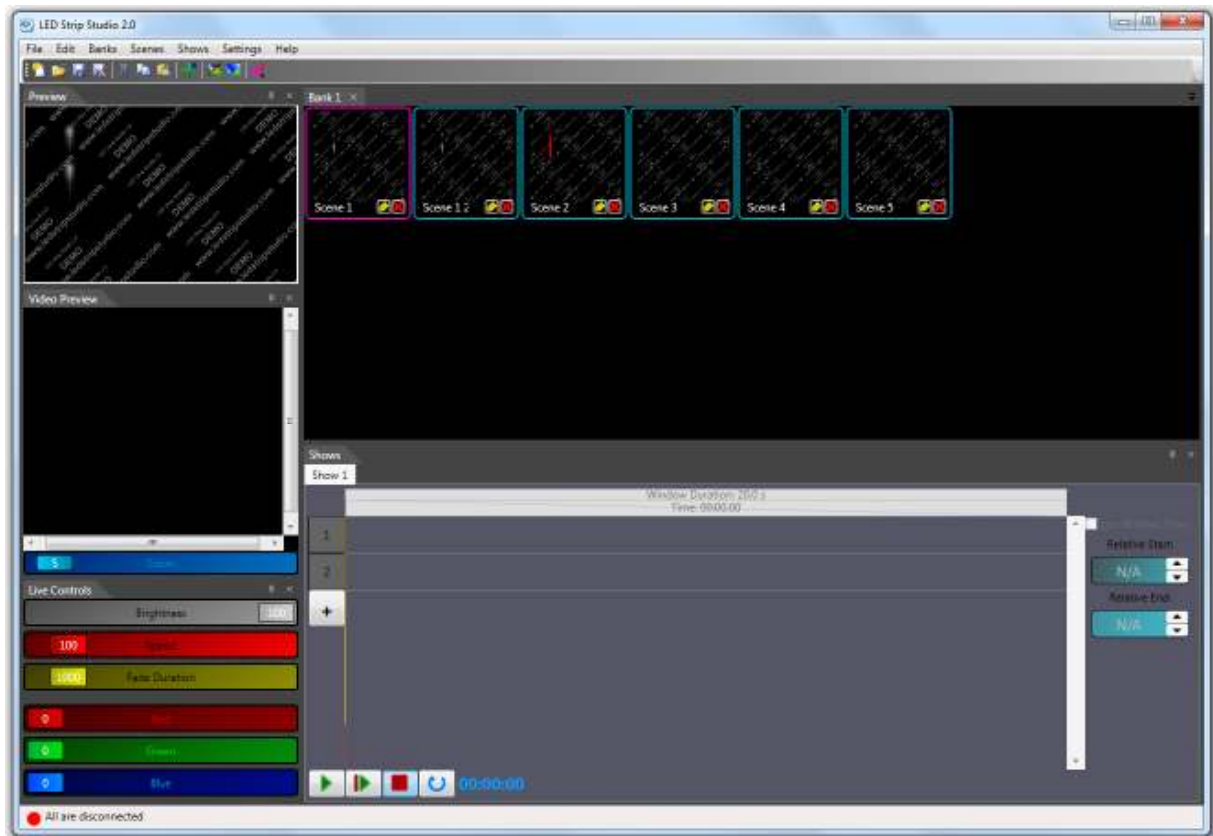
Operating System : Microsoft Windows XP / Vista / 7 / 8
C.P.U : Intel Dual Core or equivalent AMD Processor
Video Card : 256 MB VRAM
Memory : 2 GB RAM
Hard Disk : 1 GB of free Hard Drive space
Sound : DirectX compatible sound card
Direct X : 9.0c
Controls : Keyboard & Mouse
Installation : CD-ROM / DVD-ROM Drive
Network : Active Internet connection for firmware updates

**Note that LL Studio can also work in Stand-alone mode with an SD card.*

Software overview

In this part we will get to know the basics about LL Studio Software.

Main Window



LSS 2.0 Main Window

(Demo kit users only) To start testing your new digital LED strips, you can load already prepared workspace. It's stored on your LL Studio installation CD. Choose File->Open from LL Studio software and locate **Samples\Demo Kit** directory on your installation CD. There is **demo kit IP16.ls2** file with prepared configuration.

To start controlling your strips, you have to do following steps:

1. Connect the strips
2. Setup IPs, install LL Studio software
3. Map the strips in LL Studio software
4. Assign the strips to distributors
5. Import/create scenes

6. Play the scenes (live or with controllers (MIDI, DMX) or in standalone mode)

This is just a short overview on how the LSS system works, for more detailed information continue reading.

If your hardware is connected and your IP address is set correctly, the “**LL Studio software DEMO**” sign should disappear and you should be able to play scenes on your LED strips.

Menu

File Edit View Banks Scenes Shows Settings Help

Menu

File

- Create a new file - Creates a new .ls2 file
- Open a file - Opens a file from a specific location
- Recent files - list of recently opened files
- Save File - We recommend saving files continuously
- Save File as - Saves file to a specific location
- Exit - exit the application

Edit

- Cut - (Ctrl+X) - Cut a scene
- Copy - (Ctrl+C) - Copy a scene
- Paste - (Ctrl+V) - Paste a scene

View

Arrange your workspace. Check a section if you want to see it in your workspace. You can use **Reset** to reset the workspace to default arrangement.

Banks

- Add Bank - Adds a bank to your workspace
- Export bank - it's possible to save selected bank to file (and later open with Import bank)
- Import bank - load stored bank from file

Scenes

- Add Strip Scene - Adds a Strip Scene (With Strip Scene you can create LED strip effects).
- Add Video Scene - Add a Video Scene (With Video Scene you can create LED strip effects based on pictures, videos, texts ..)

- Add Multi Scene - Adds a Multi Scene(Multi scene can combine strip and video scenes)
- Add Roll The Dice Scene - Special scene to emulate wheel of fortune
- Foreground - it's possible to use some scene as front scene - it's always displayed over current running scene (or show)
- Background - allows you to select some scene, which will be always activated below current scene. It's practical if you need to display some picture always if no scene is activated.
- Scene Start Commands - You can set commands for scene when the scene starts(for example-play sound)
- Scene End Commands - You can set commands for scene when the scene ends(for example-play sound)
- Export Selected Scene to SD-card - allows you to export selected scene to SD card file, which can be later played without the computer from LSS Ethernet board.
- Export Selected Bank to SD-card - exports all the scenes from selected bank to SD card files.
- Export Selected Scene DMX to SD-Card (*.ldm) - exports selected scene DMX part (usually used for analog LED strips) to SD-card.
- Export Selected Bank DMX to SD-Card (*.ldm) - exports all scenes DMX part from current bank to SD-card.
- Export Scene - allows you to save selected scene to file and import later in another workspace.
- Import Scene - imports scene from file.

Shows

- Add Show - Creates a show
- Delete Show - Deletes a show
- Select Synchronization - Sets synchronization for your show (audio file, MIDI time code, ...)
- Synchronization Settings - Sets synchronization settings
- Export show to SD-card - allows you to export show to SD-card file and later play without the computer (using DMX or auto play feature)
- Export show's DMX to SD-card (*.ldm) - export show DMX part to SD-card. Can be used with Tron Dance LED Suit Receiver.
- Export Show/Import Show - allows you to save selected show to disk and later import in another workspace.

Settings

- Strips and Mapping - Map your strips
- Controls - Use this feature if you want to use LSS with DMX, MIDI or other devices

- Start up commands - Set startup commands for LL Studio software
- Other - GRF Files - Used only for compatibility with older versions

Toolbar

You can also use following shortcuts from the toolbar to make your work with LL Studio software faster.



- Create a file



- Open a file



- Save a file (We recommend to save files periodically)



- Save file as



- Cut a scene



- Copy a scene



- Paste a scene



- Add a bank



- Add a strip scene



- Add a video scene



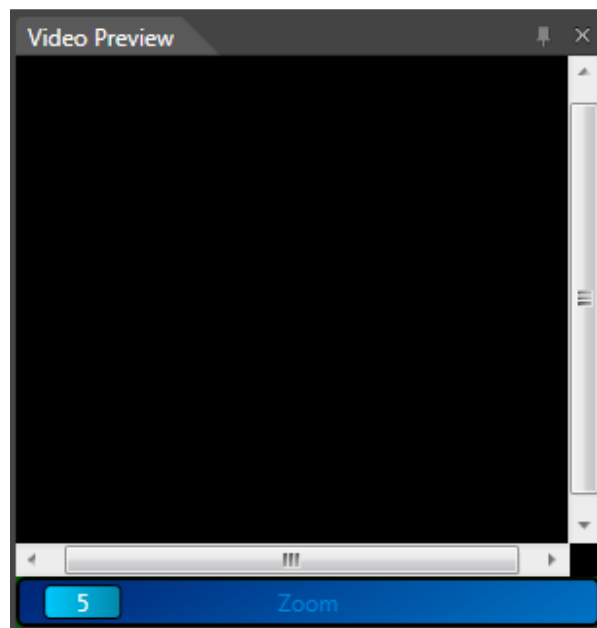
- Strip settings

Windows



Preview

In the preview window, you can see the actual preview of the scene on your strips.



Video Preview

In the video preview window, you can see the actual preview of a video that you have loaded into your video scene.
Use Zoom feature to zoom in or out.

Live Controls



Live Controls

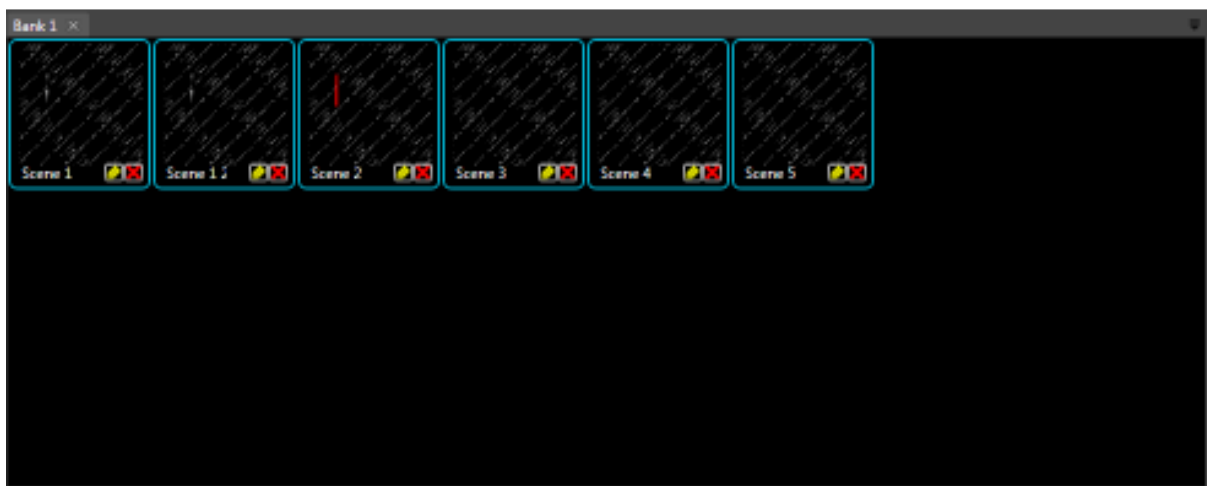
Set Brightness, Speed, Fade Duration values by dragging buttons in the range.

Right mouse click to reset value.

You can also define Colors: Red, Green and Blue.

The settings will apply live in the scenes/show

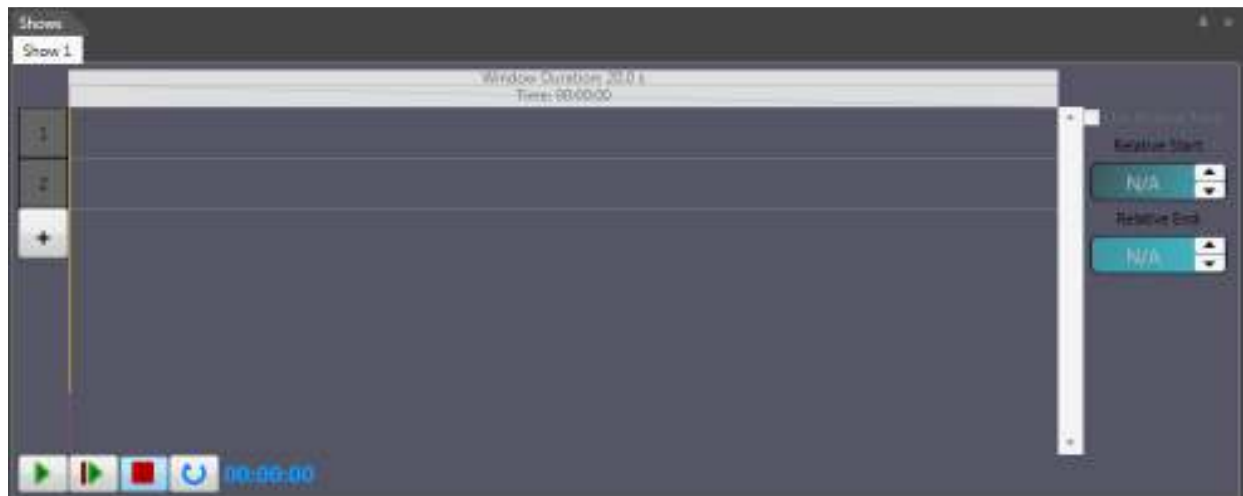
Banks



Banks

Create banks to store your Scenes.

Shows



Shows

In the show section, you can create music synchronized shows. You can also synchronize your show with Midi Time Code (MTC).

LL Studio software Setup

In this part we will describe how to setup your PC and how to install LL Studio software properly.

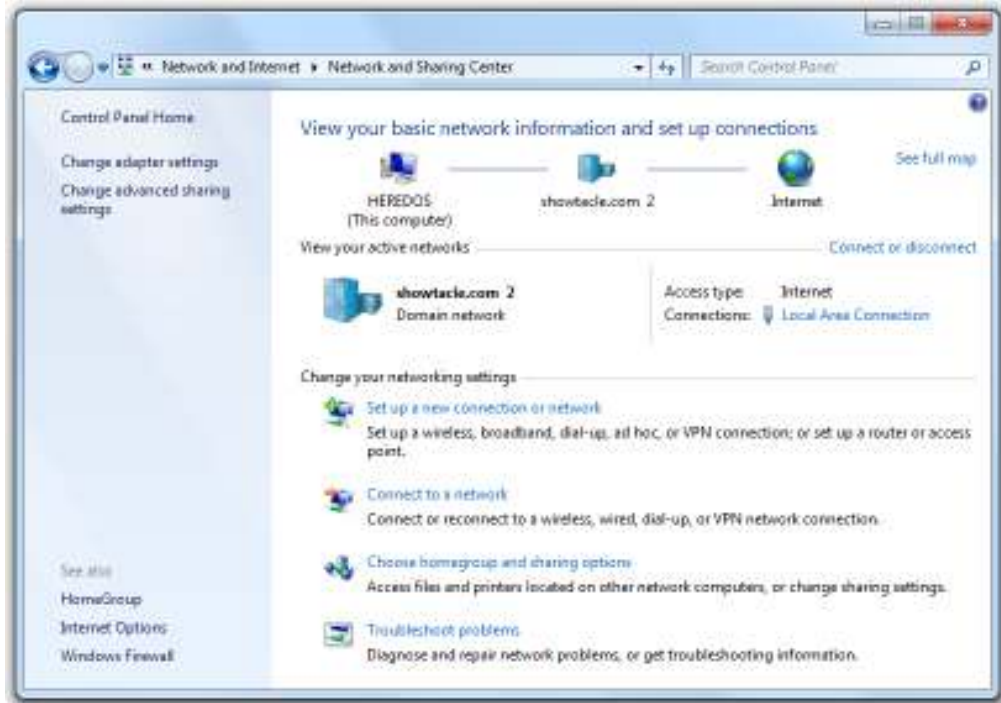
Setting up Network IP

Ethernet Controller IP: Using IP switch you define last number of IP address. LL Studio software system uses IP address 192.168.1.X, where X is set by IP switch. Your default IP address is set to 16 (only switch no. 5 is ON). It's better to keep this address for the start, also the demo workspace requires your Ethernet board to be on address 16.

If you don't understand how the switch is working, you can use the tool from web to calculate desired IP address:

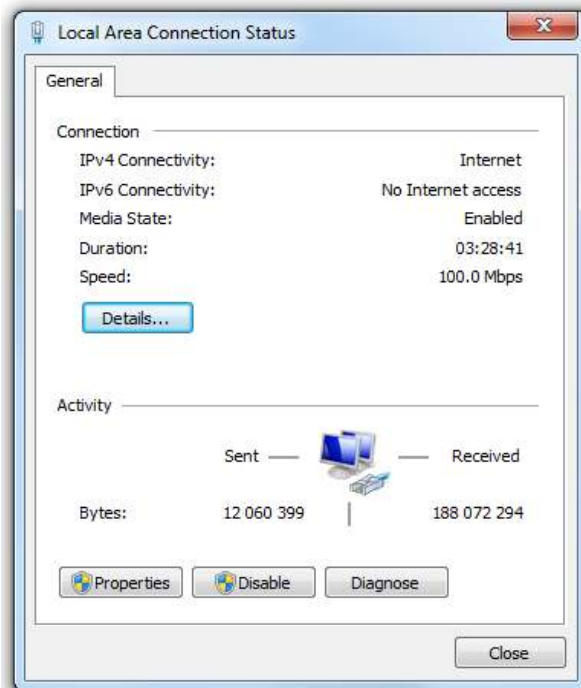
<http://www.sabretechnology.co.uk/calc.asp>

PC IP: You have to set the IP address **of your computer** manually. From your desktop please go to Start->Control panel. Choose Network and sharing center:



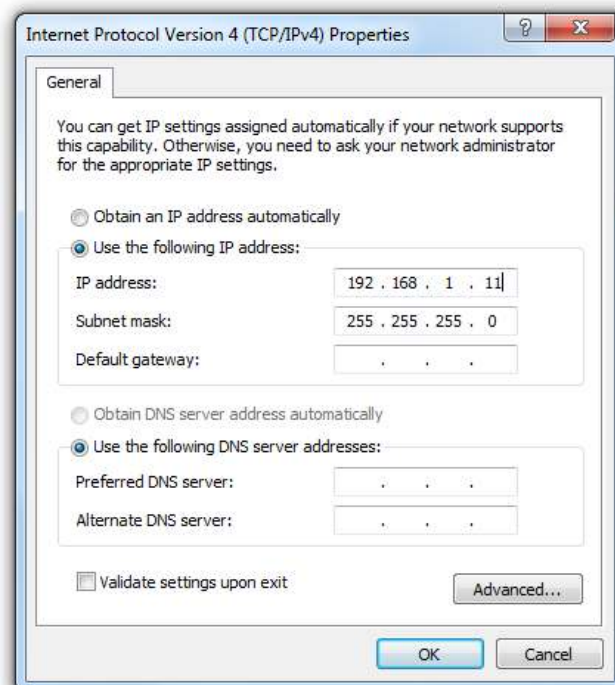
Network and Sharing Center

Then go to Local Area Connection



Local Area Connection Status

Then go to Properties->Internet Protocol v4->Properties



Internet Protocol v4 Properties

Configure your network adapter to **static IP** address in range 192.168.1.**1** – 192.168.1.**255** and Subnet mask to 255.255.255.0.

Note: Please make sure, your computer IP address (set in this dialog) is **different** than the one set on Ethernet Controller!

We recommend using address 11 or 22 for your computer. It's easy to remember to not use this address for your Ethernet controllers.

Installing LL Studio software

Insert your LL Studio software CD into your drive. Press Autorun, or browse file: Setup.exe and run the installation.

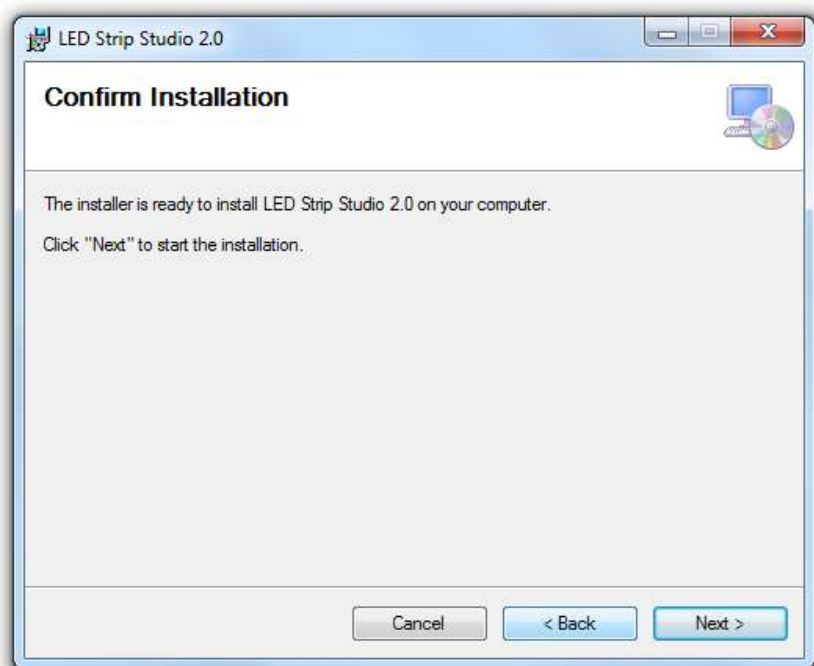


Install Step 1



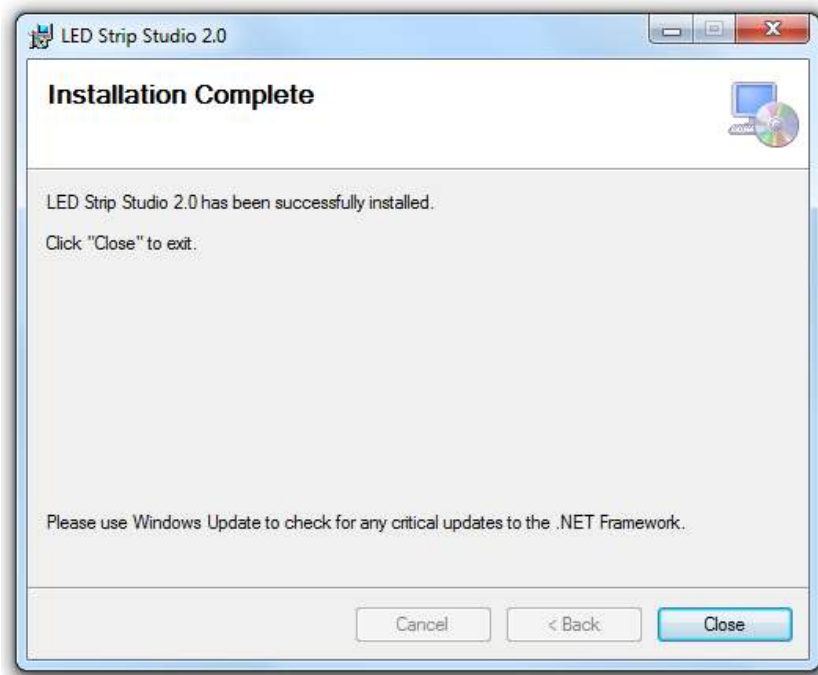
Install Step 2

Select the destination and privacy settings.



Install Step 3

Confirm with Next, then the application will start installing LSS to your computer



Install Step 4

Your Installation is now Complete.

Registering Product

To start using the full version of LL Studio software, you need to register your product first:

1. Send us your product ID
2. We will send you back your registration key
3. Paste the key in the Register key column and press register. LL Studio software will now work in full version.



Registering Product ID

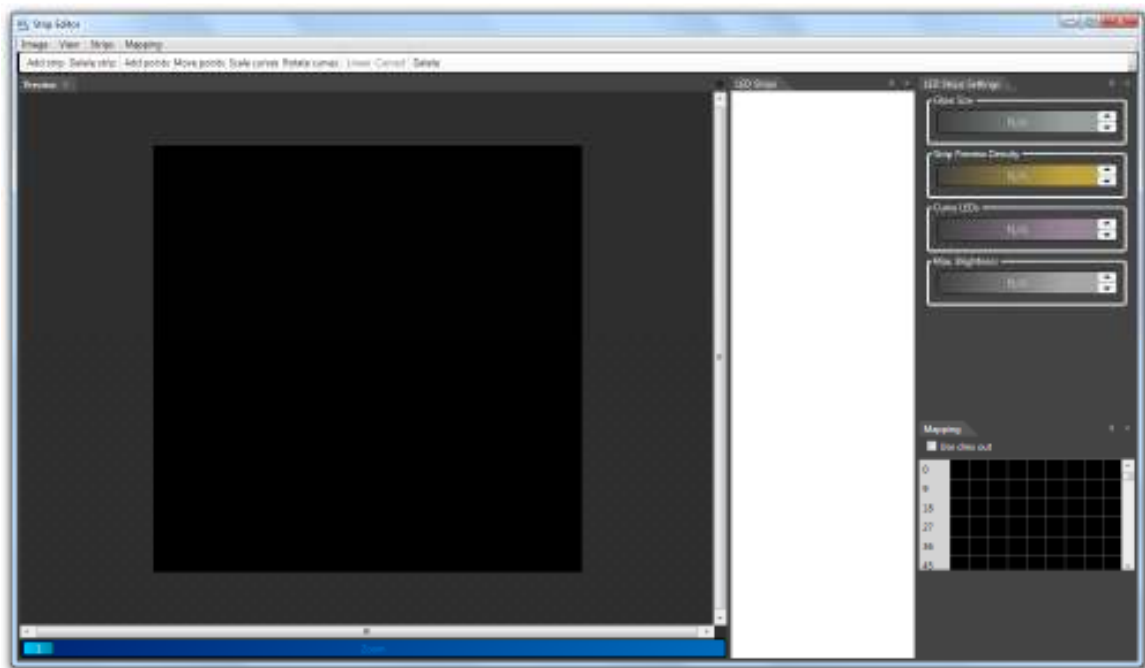
You can also use LL Studio software as a Trial version for limited number of starts.

Strip Mapping

If you want to use LL Studio software you have to define strips mapping first.

Strips Configuration

To configure strips, go to Settings->Strips and Mapping. Following window appears:



Strips and Mapping

In this window you can:

- add new strips
- draw strip positions and layout
- edit existing strips
- set number of LEDs for every strip
- assign strips to distributors

LED Strip Types

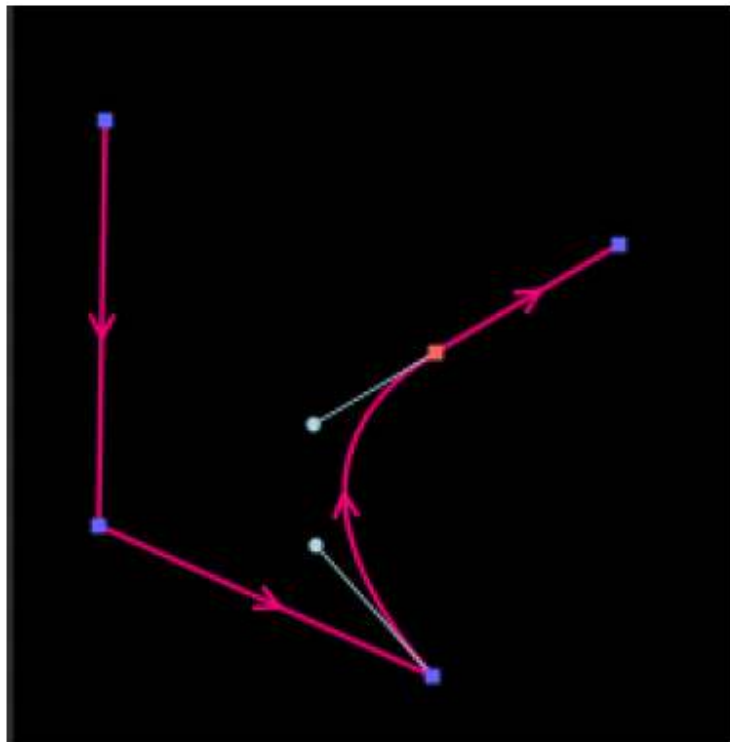
In LL Studio software you can control two types of LED strips - analog and digital. Digital LED strips allows you to control each individual LED

separately, while analog LED strips display only one color at once (it can be changed, if you use RGB analog LED strip).

Digital LED strips can be controlled using LL Studio software Master (using 4 digital outputs). Analog LED strips are controlled over DMX signal. The LL Master sends also DMX out signal, which can be used to control analog LED strips.

Add new Strip

To add new strip click Strips->Add analog or Strips->Add digital according the strip type you want to add. You can use LED strip studio for digital (=video) strips or even analog strips (standard strips). After you choose add, you can start drawing strip segments layout (Add points function will become active). Strips can be more complicated than just simple lines. Strip segments can be even curved, not just linear. And you can also divide strip into many independent curves.



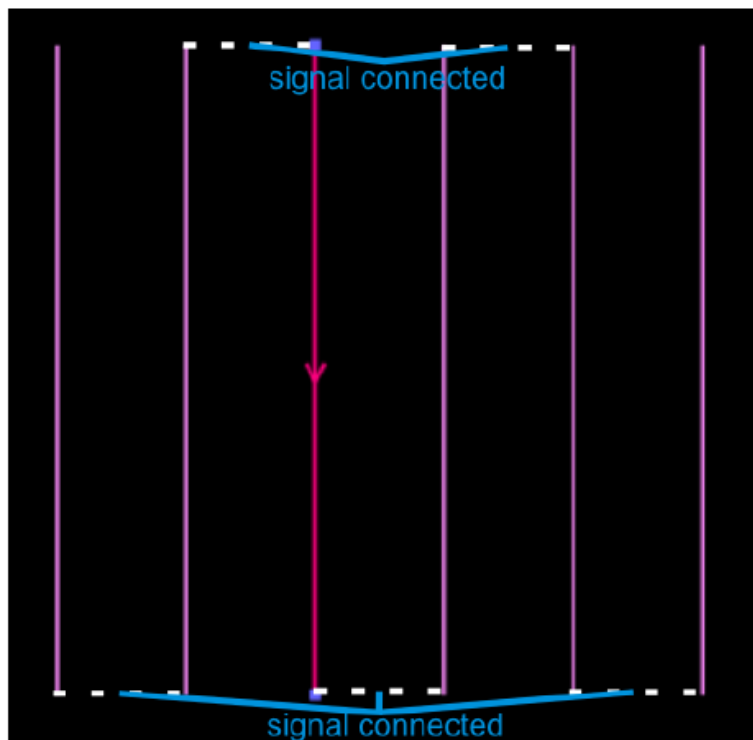
Curved Strip

Drawing tools (editing strips layout)

You can use Move points tool to change control point positions. And you can use Curved button, to create curved segments. Linear button will convert curved segment back to linear). You can also edit whole curves – Scale curves tool is used to resize, Rotate curves to rotate. In both (Scale and Rotate) modes you can also move curves.

More complicated strips (divided into curves)

Strips can be more complicated. It means, one strip can be group of separated curves. E.g. it's used a lot by rectangular screens using LED strips:



Strip Group (All in 1 Signal Line)

The example shows six (linear) strip curves, which are connected to **one** LED strip distributor output. As you can see, you can create really complicated configurations using LL Studio software tools.

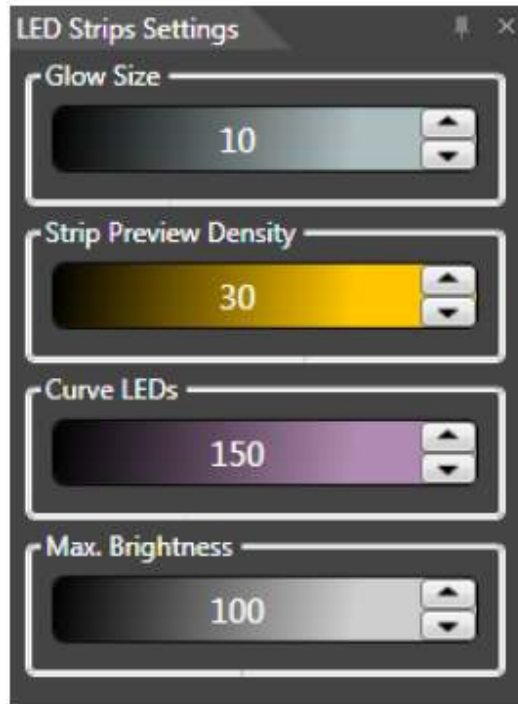
Define LED count for curves

You can define properties for every strip. There are 3 settings common for whole strip:

Glow Size – size of glow for preview.

Strip Preview Density – density of preview LEDs. It's important to use this setting when creating presentation for customer.

Max. Brightness – sometimes it's required to lower maximal intensity of some strips (especially in TV). This setting can be used to do that.

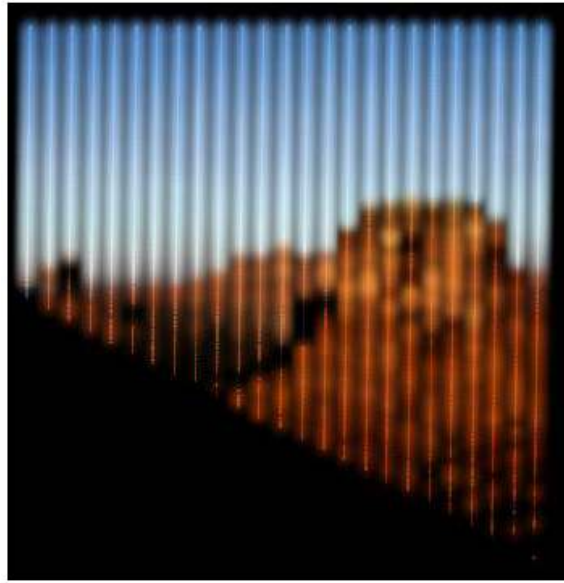


Led Strip Settings

All previous settings are defined for the whole strip. But last setting is defined for every curve separately:

Curve LEDs - defines how many *real hardware LEDs* the selected curve consists of.

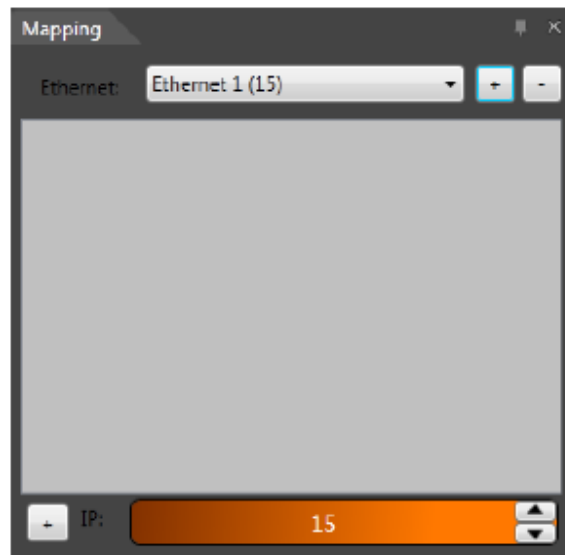
This setting allows you to create non rectangular screens easily. Following example shows, you can create screens where number of LEDs for each curve changes. LL Studio software can handle correct mapping to the screen.



Example: Non-Rectangular LED Screen

Assigning strips

After you finish drawing your strips, you have to assign digital LED strips to distributors (or DMX universe for analog LED strips). First you must activate Ethernet mapping. In Strip Editor Window menu choose Mapping->Ethernet. You'll see empty mapping in your Mapping window:



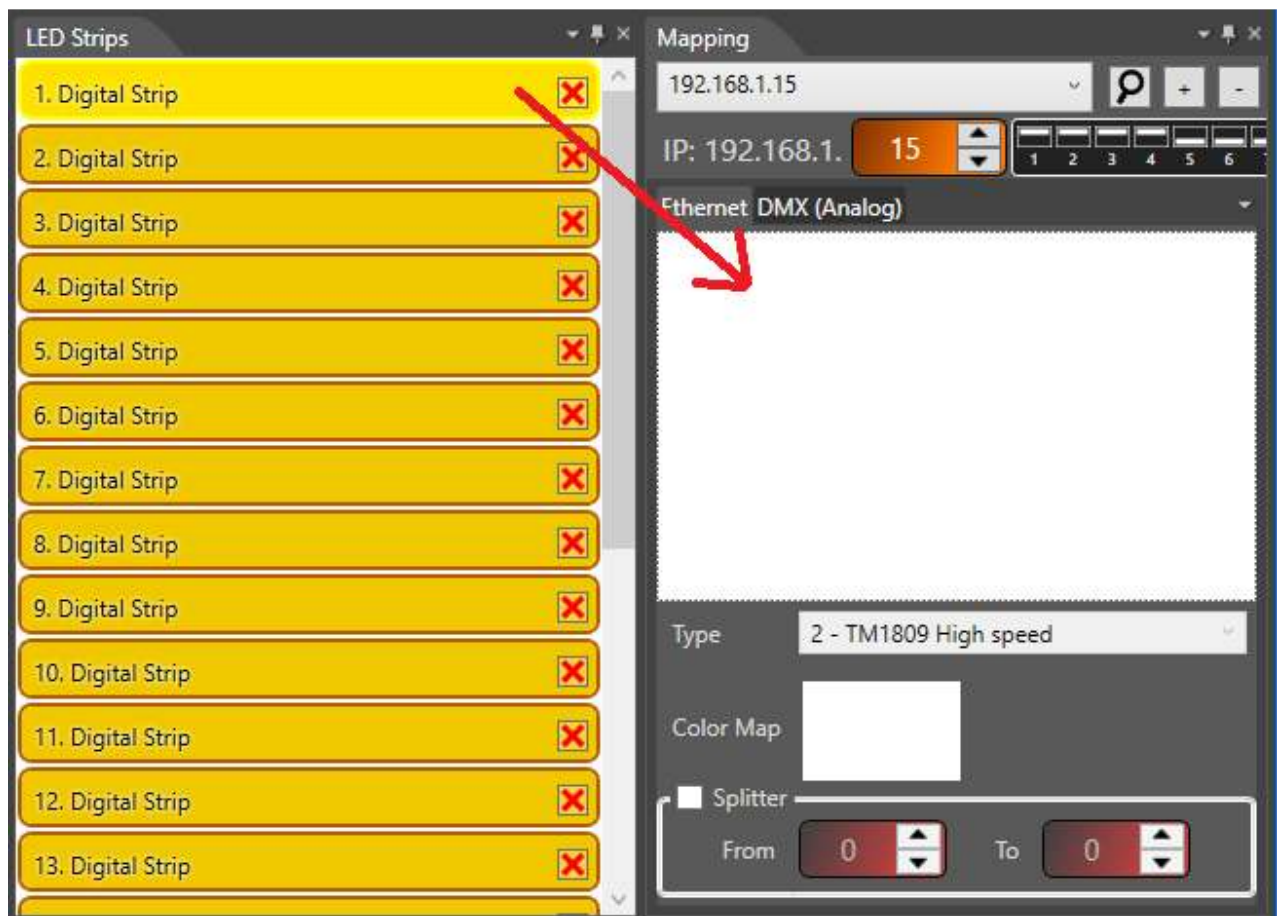
Empty Ethernet Mapping

Add new Ethernet controller

Bottom orange box sets IP address of your LSS Ethernet controller. You must set this value to value set by DIP switch on the controller.

Add new distributor

To add new distributor drag and drop some LED strip from **LED Strips** to the mapping.



Empty Distributors

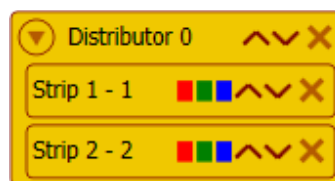
Assign digital strip to distributor

Assigning strips to distributors is pretty straight-forward. You just have to drag & drop desired strip on to the distributor.



Drag and drop strips to distributors

You can assign up to 4 different strips to one distributor. Later you can also remove strips from distributor using red 'X' buttons.

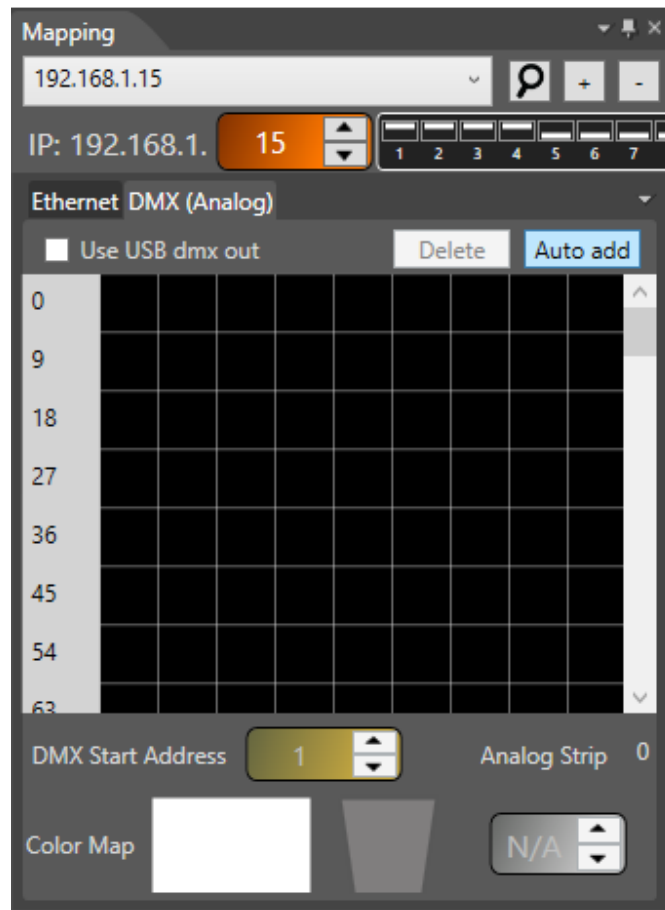


Assigned Strip

You have to of course respect your hardware configuration to correctly assign the strips.

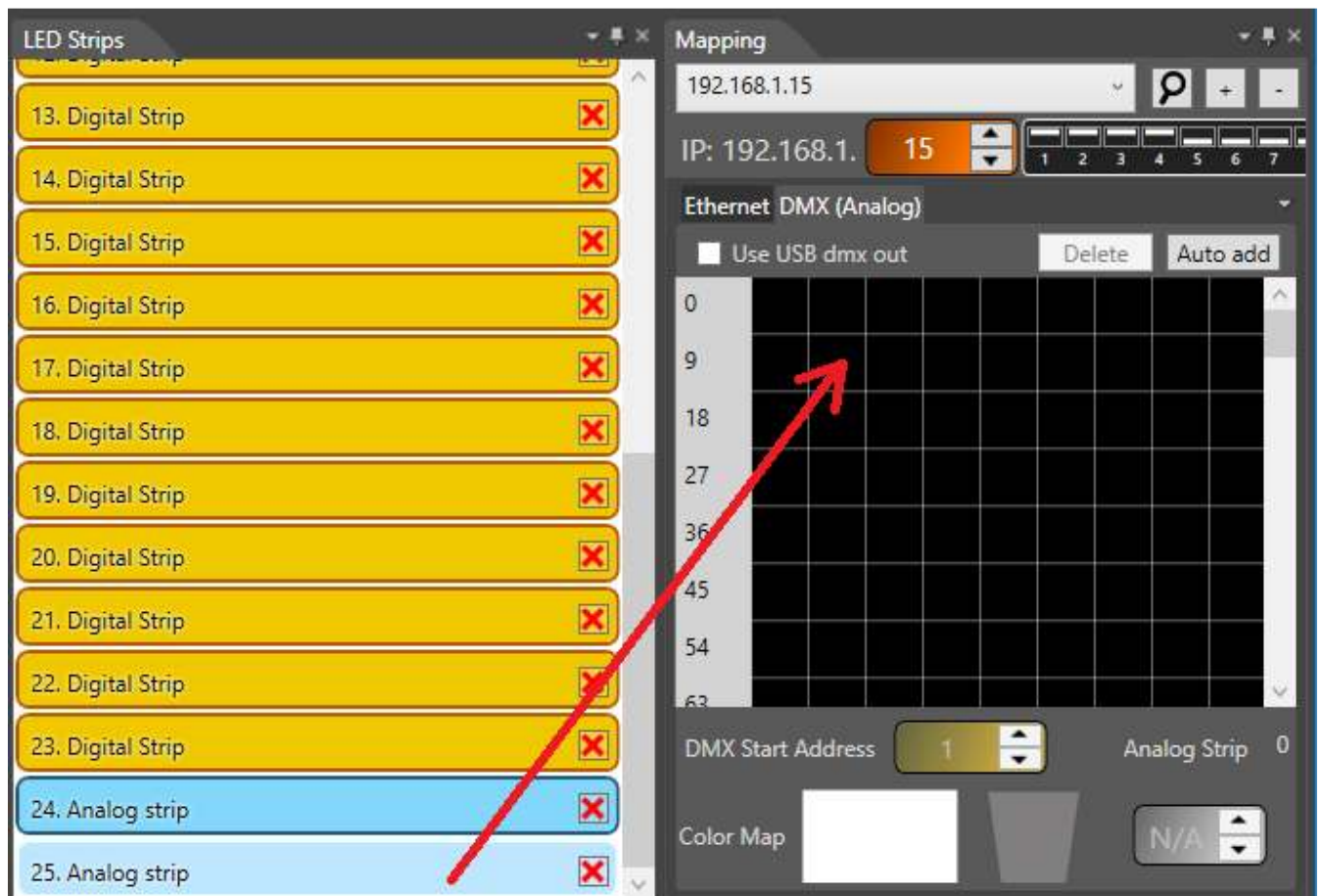
Add analog LED strip to DMX universe

Each LSS Ethernet contains separate DMX output (also called DMX Universe). To use analog LED strips, you have to assign analog LED strip to some LL Studio software Ethernet DMX universe. DMX mapping of some LL Studio software Ethernet can be displayed after clicking DMX (Analog) in Mapping window.



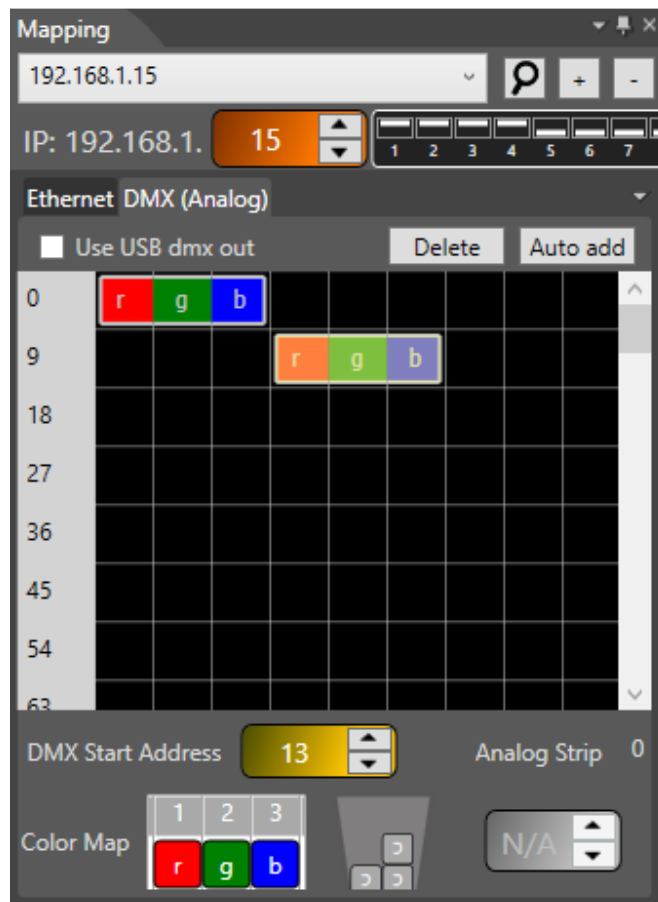
DMX universe

To add analog LED strip to DMX Universe again just drag and drop the analog LED strip from LED Strip list to DMX (Analog) panel.



To add analog LED strip to DMX Universe just use drag and drop

You can then move the assigned analog LED strip in the DMX mapping area to set DMX address.



DMX Universe with two assigned analog LED strips

There are several settings available for each analog LED strip at the bottom of the DMX window. You can set DMX Start Address to define DMX address of the selected LED strips. Color map allows you to change the order of Red, Green and Blue channel. And you can also define Constant values for each analog LED strip. To add constant to analog LED strip just drag and drop it from the bucket.



Add constant to analog LED strip

The constant can be used to define constant value for some channel of the LED strip. It's e.g. used for some DMX dimmers to set strobe or intensity value (or intensity of Tron Dance LED Suit Receiver).

Background bitmap

Especially when you'll want to prepare visualization for your client, you'll have to put background bitmap behind your strips. You can do that by choosing Image->Open in Strip Editor window.



Bitmap visualization

Creating scenes

To display effects on your strips you have to create scenes.

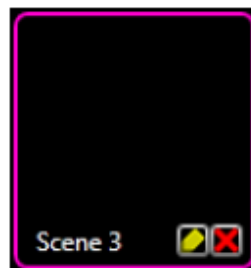
LL Studio software contains 3 basic types of scenes. One is Strip scene specially designed to create strip effects. The other one is Video scene for displaying pictures, texts or even videos correctly. Last one is Multi scene, which allows you to combine both.

Scenes are organized into banks. You can have as many banks as you need in your workspace. To add new bank choose Banks->Add from main window menu.

After you add some bank, you can add scenes.

Strip Scene

Strip scene is specially designed for creating LED strip effects. It's perfect for illuminating disco clubs, bars or even whole buildings. To create new strip scene, choose Scenes->Add Strip Scene from main window menu.

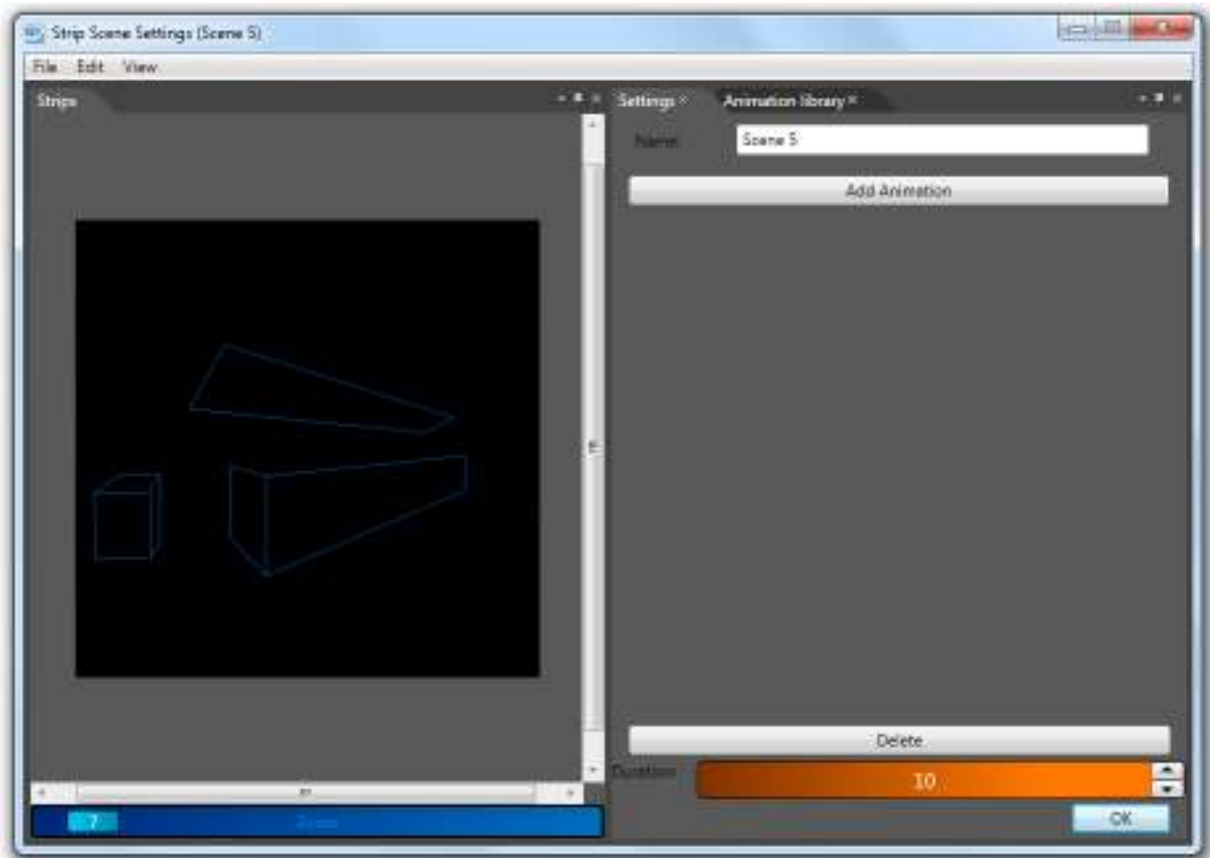


Empty Scene

Empty new scene appears in your bank. To edit the scene, you have to select it first with left mouse button (border becomes purple) and then click right mouse button.

Strip Scene Settings

Strip scene settings window is displayed on following picture. It's split into 2 basic parts. Left part (Strips) displays strips. You can select the strips here (selected strip becomes red).



Strip Scene Settings Window

After a strip is **selected**, you can click Add Animation button. It allows you to create new animation for selected strip.

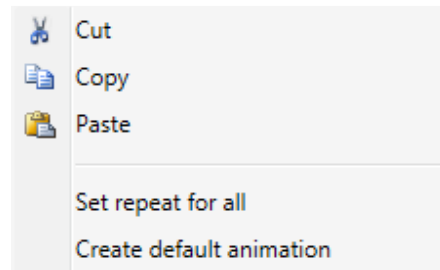
Animation settings will be displayed. It's empty at the beginning. The most important part is a black rectangle. It's the **Timeline**.



Timeline

You can double click on Timeline to add new time keyframe.

Keyframe menu (right mouse click) contains following functions:



Keyframe Menu

Cut, copy and paste the keyframe settings.

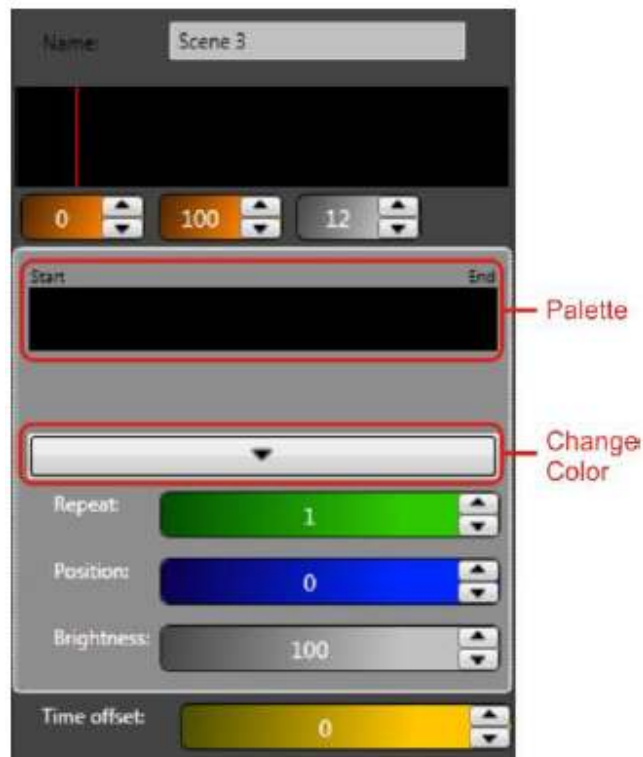
Set repeat for all - sets the repeat for all keyframes

Create default animation - creates a default animation

You define **Palette** with basic properties for every keyframe in timeline. Again with mouse left double-click you add color points on the Palette rectangle.

You can as many color points as you want on the palette. And you can change the color of every palette point using down arrow button (Change Color).

There are some other settings for every timeline keyframe.



Palette and settings

Repeat – how many times the palette is applied on strip. It's very practical when creating light effects.

Example:



Repeat value set to 1



Repeat value set to 2



Repeat value set to 8

Position – palette position. Using this setting you can move the palette along the strip.

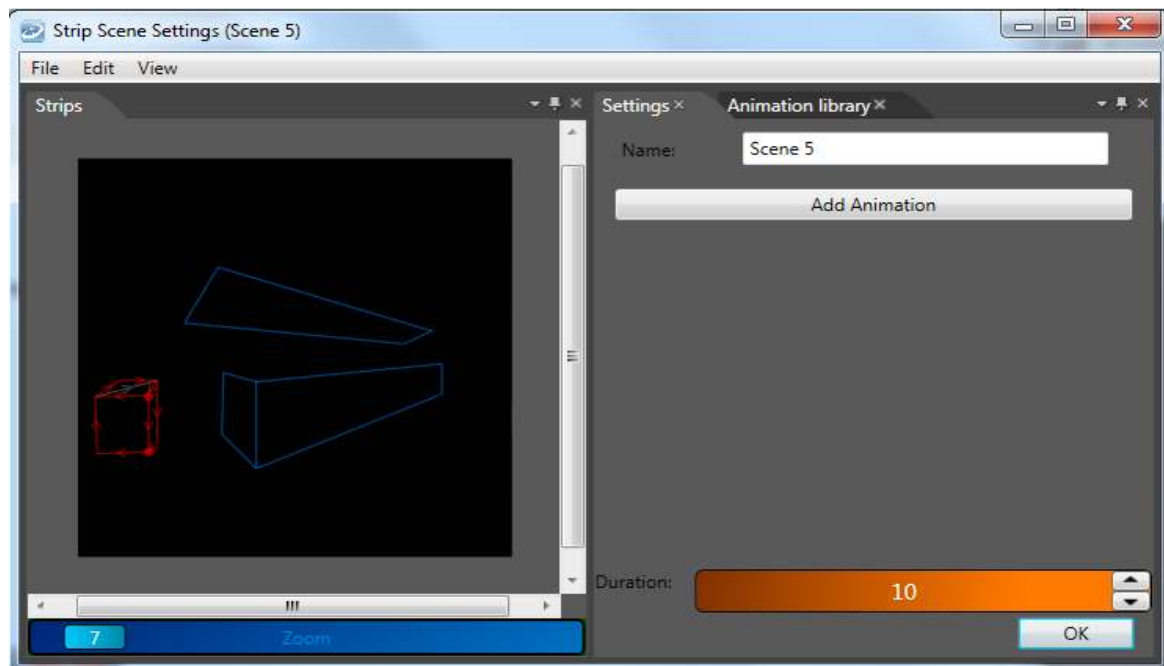
Brightness – brightness of selected timeline keyframe point.

Time offset – this setting is used to set starting time position of current strip animation. It's nice effect, when many same strips are near each other and you want every next to be "moved in time" a bit.

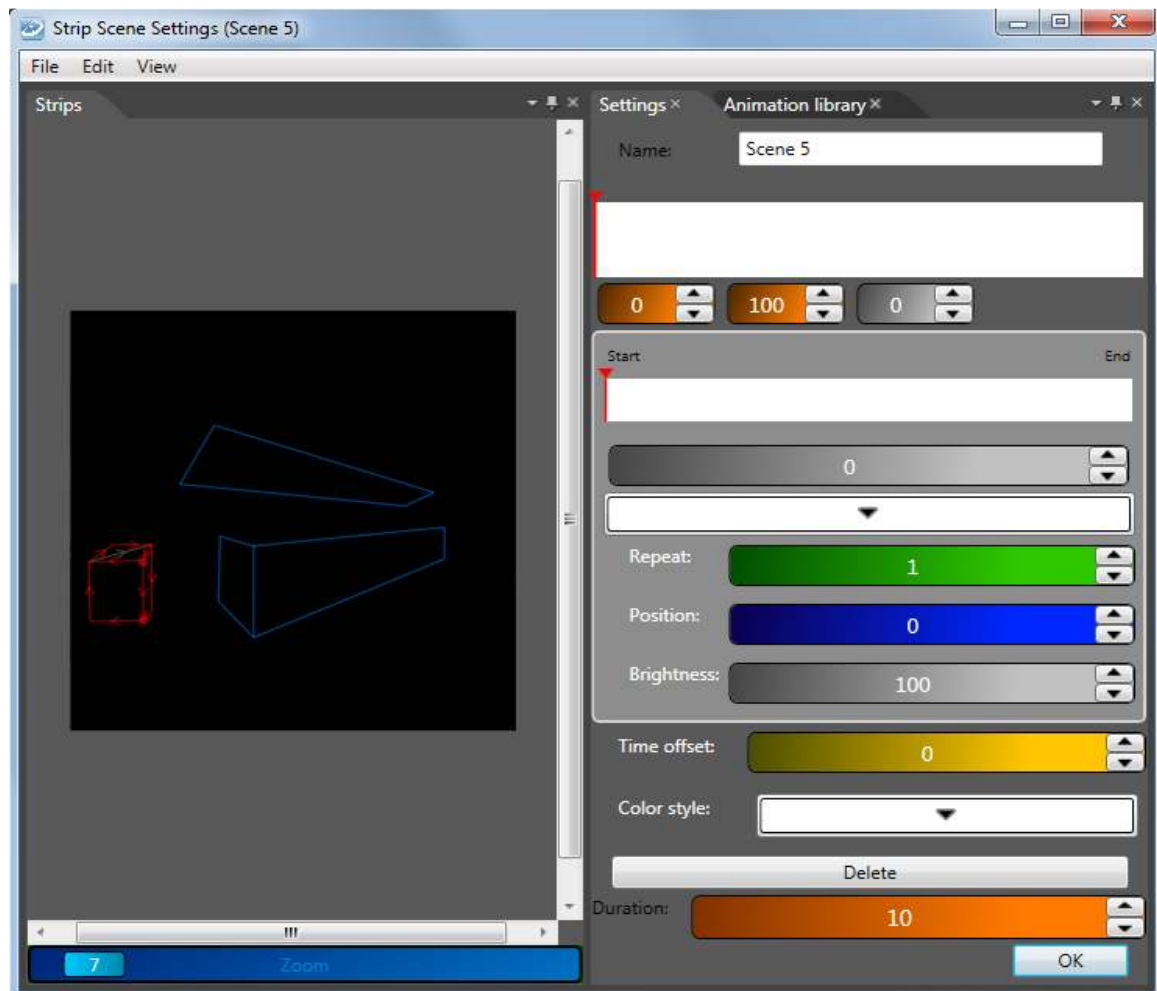
(It's good to use **Time offset** when using 2 or more strips. It delays the start of animation of the strip.)

Creating a simple animation

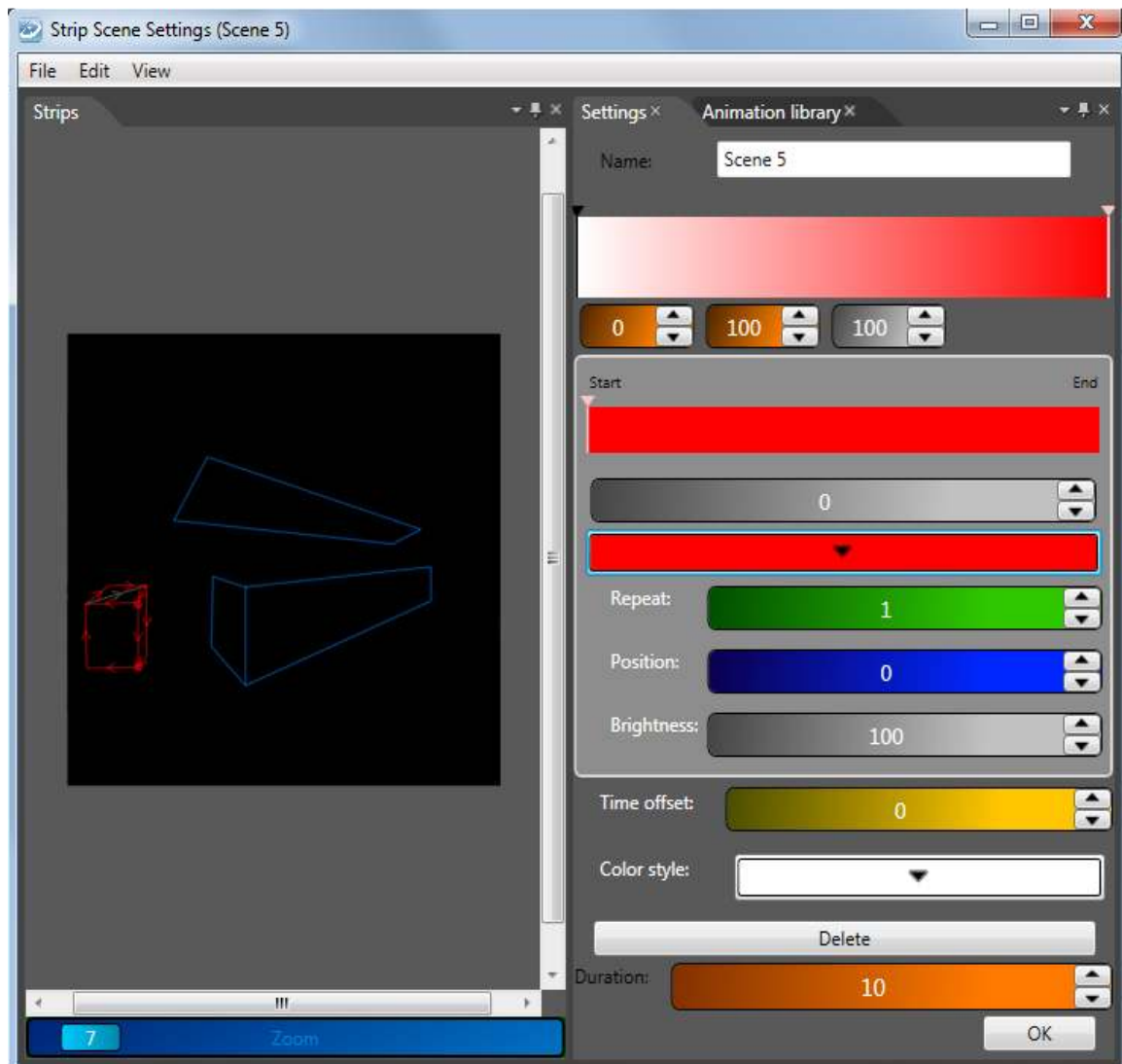
Here is a short example on how to create a simple animation. We will create a transition from white to red.



First open the Strip Scene Settings window and select a strip. Click Add Animation.



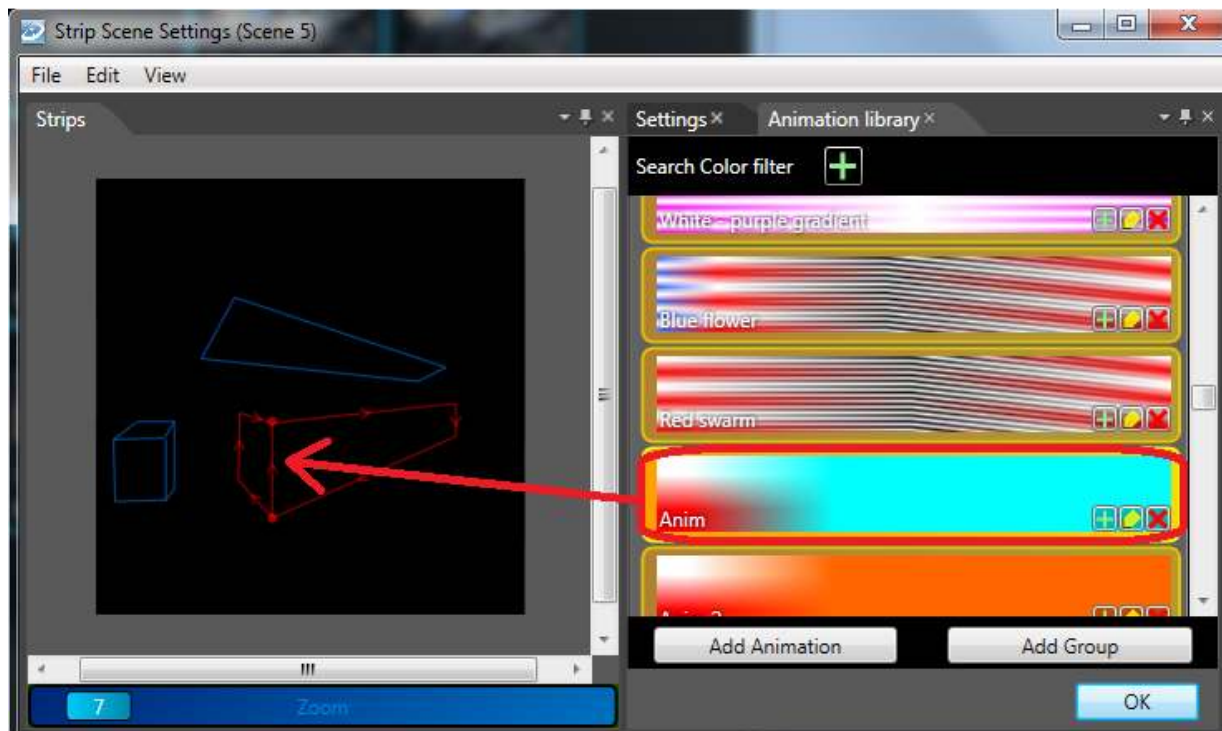
Now double click in timeline and set position to 0. Double click into Palette and set the position to 0 and color to white. Confirm all changes.



Now double click in timeline and set position to 100. Double click into Palette and set the position to 0 and color to red. Confirm all changes and close the settings window. Your Strips should be illuminating a White to Red animation.

Drag & Drop Animations from Library

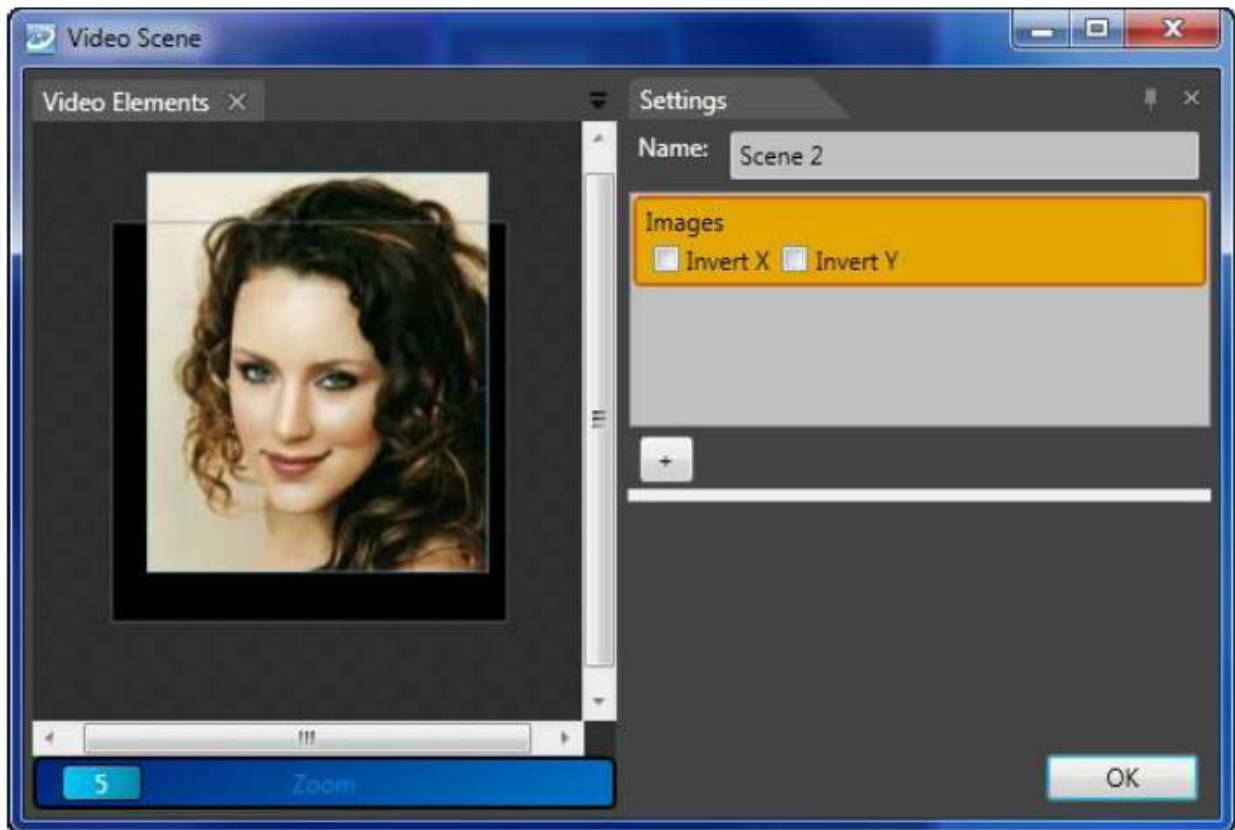
You can also use a pre made animation from your library. Just open the library, select the animation and Drag&drop it onto the strip



Drag and Drop Animations

Video Scenes

Video scene allows you to display pictures, texts or even videos on your strips. Video scene settings are displayed on following image:



Video Scene

On the left part you can see and move Video Elements. Every Video Element defines image generator (which is picture, text, video...). And you can also define position and size of every element in this window.

On the right side of the window you can see list of all Video Elements in the scene (in the Settings part). You can add new elements using '+' button. You can then choose between Text, Screen grabber, Images or Video type. Every type of image generator has different settings.

BlackMagic Grabber

To import signal through HDMI use BlackMagic Grabber.

GRF File

Deprecated (Used only for compatibility with older versions)

Images

This generator allows you to choose Browse and locate your image file to be displayed.

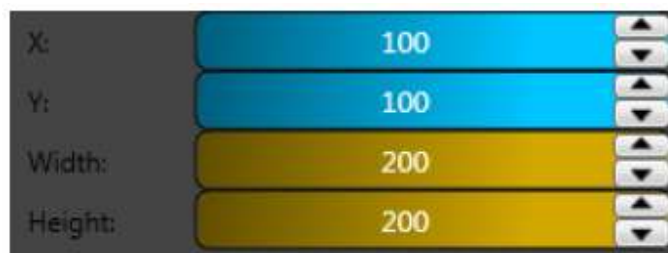
Video(Quicktime)

Video is again very simple. Just choose Browse and locate your video to play. Note that currently streamed videos can't be used. (LL Studio software requires random play).

**Note that to use this feature you have to have QuickTime installed on your computer.*

Screen Grabber

Screen Grabber is perfect, if you plan to use LL Studio software in combination with some other video software. It allows you to grab portion of your screen and display it on LSS strips.

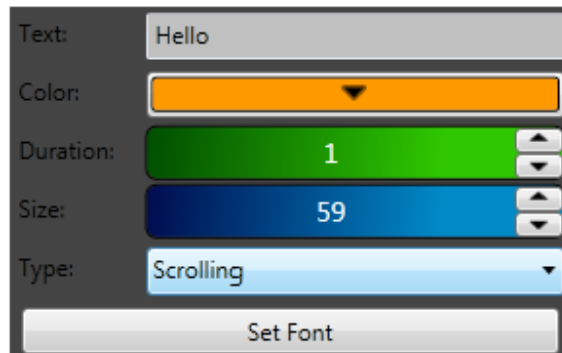


Screen Grabber

You can define area, which is grabbed and displayed on LL Studio software. You can define left top corner (X and Y) and size of the window (Width and Height) to be used.

Text

In the Text field you can type your text. The length is unlimited and text can be also displayed as scrolling text.



Text Scene

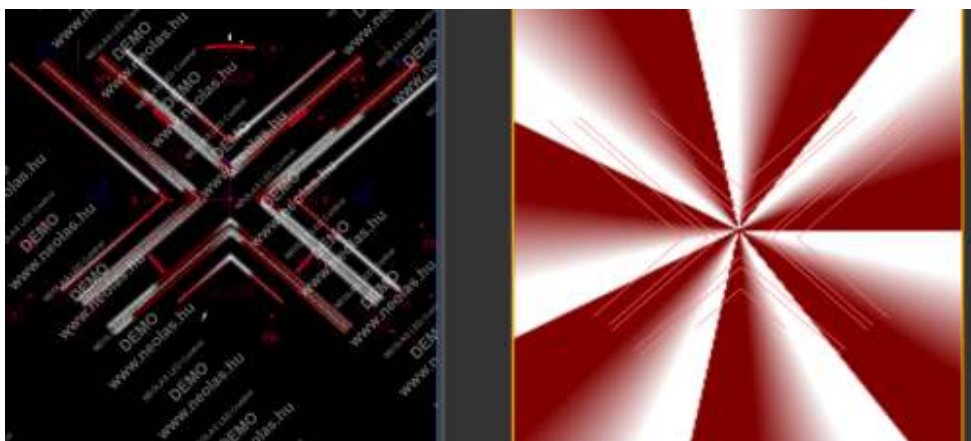
Color defines color of the text. Duration is used only for scrolling text type. Defines how long it should take to display whole text (in seconds). Size is practical for scrolling text only. Type determines whether the text should be displayed whole or scrolling.

Video(DirectShow)

Deprecated (Used only for compatibility with older versions). Please don't use this type of vide element anymore.

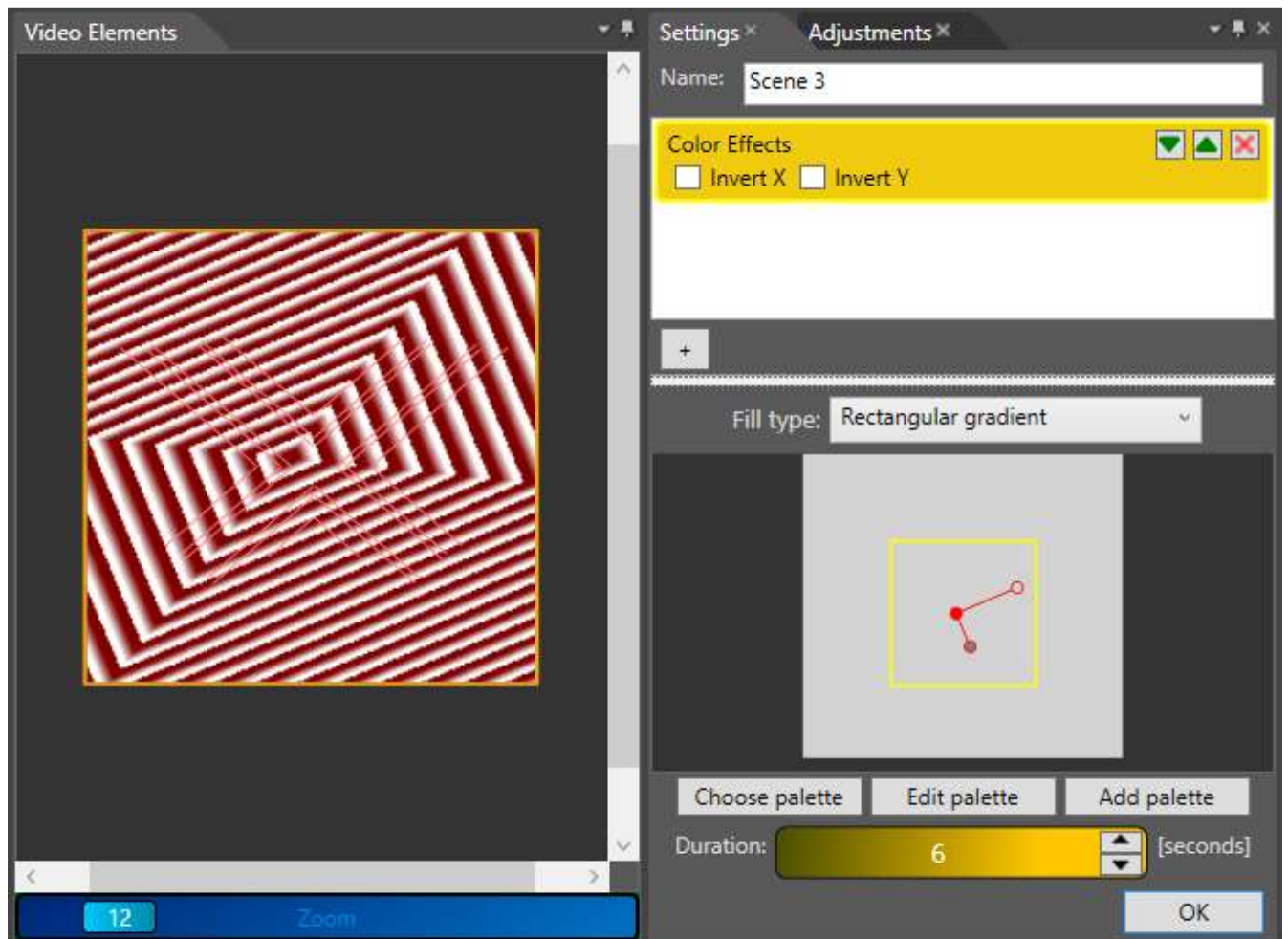
Color Effects

Directly in LL Studio software you can create amazing light effects using this type of video element.



Color Effects running on X Factor stage

You can choose from 4 fill types: Radial gradient, Conical gradient, Linear gradient and Rectangular gradient. For each type of gradient you can define position and color palette.



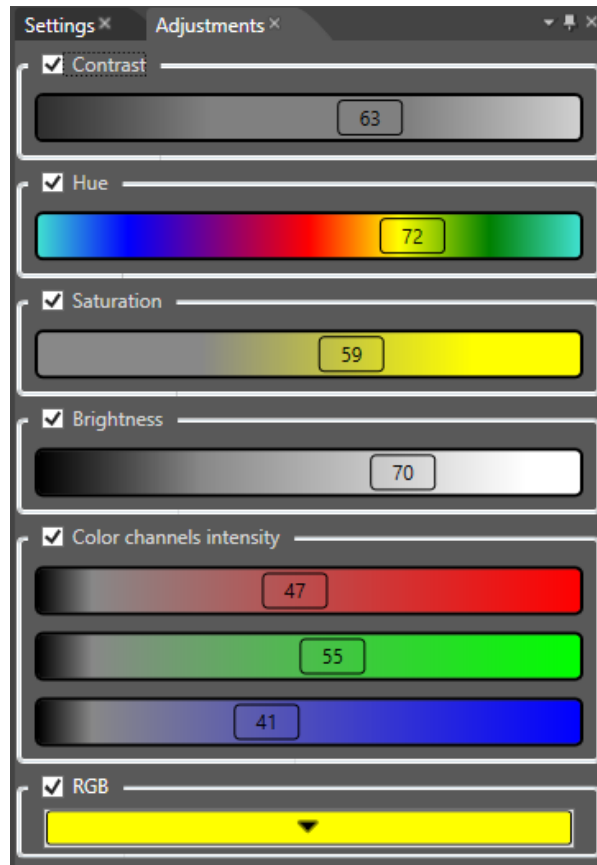
You can define position and rotation of the fill in the settings window

Using Choose palette you can select some palette from the library. Edit palette allows you to define animation palette in the same way as in Strip Scene. Add palette allows you to store current palette to library.

Duration is used to set duration of the animation.

Adjustments

You can define additional settings for Video scene such as Contrast, Hue, Saturation, Brightness, Color channels intensity or completely change color of the scene using RGB.



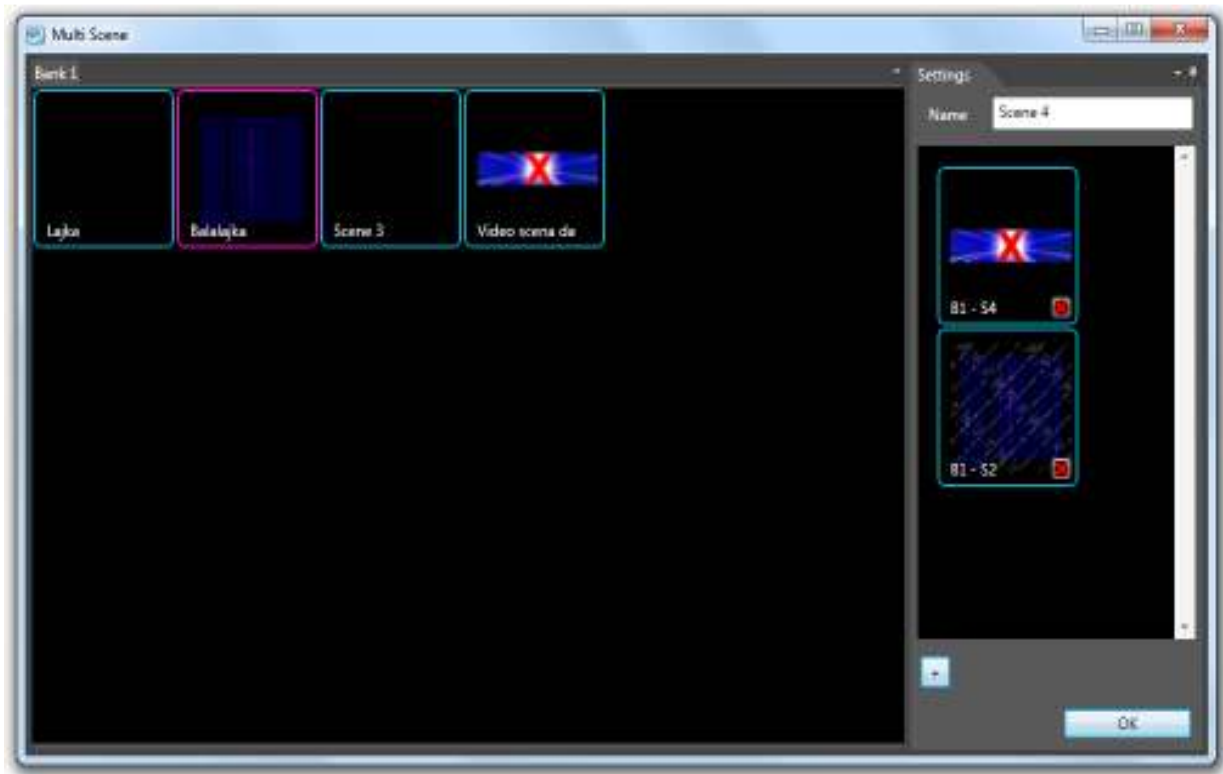
Video Scene Adjustments

The range of values is 0-100. Predefined value is 50. Change Values by dragging the rectangular button. Right mouse click to reset value to default.

The adjustments are self-explanatory. The Color channels intensity is good to lower the intensity of each of the RGB channel. It's usually required to e.g. lower the intensity of the blue color for the TV cameras.

Multi Scenes

Multi scenes serve for combining strip scenes and video scenes. Creating Multi scenes is very easy.



Multi Scene

Go to scenes->Multi scene. Now you added a Multi scene. Select the scene and right click to edit it. The edit window should pop out. Now select the scenes you want to combine and add them with the "+" button in the right section. You can add unlimited number of strip and video scenes. Change the name of the scene and confirm.

**Note, that you can't add multi scenes into multi scenes !*

Exporting scenes

Export scenes to SD Card

Select the scene you want to export, go to scenes->export to SD card and set the Ethernet device.

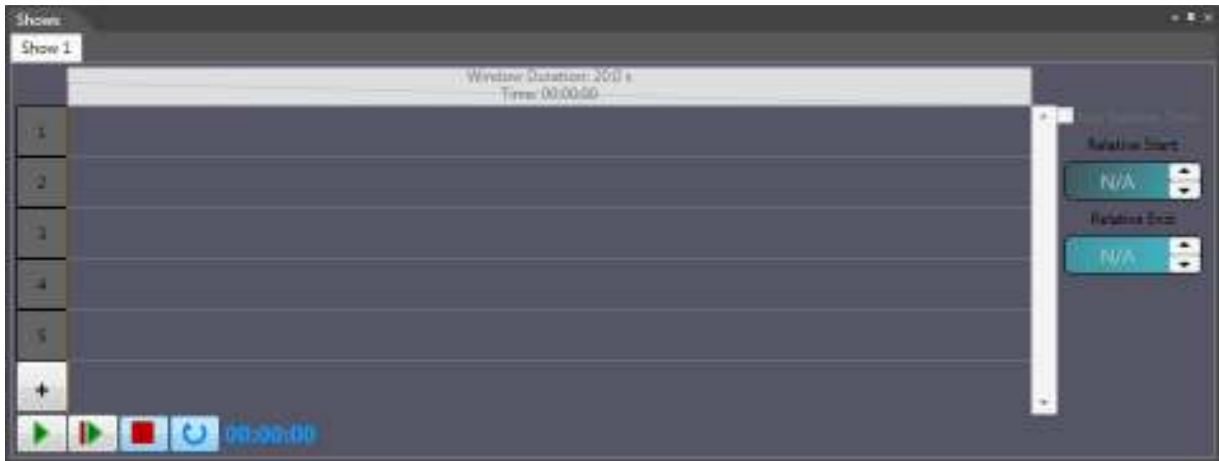
Export All Bank scenes to SD Card

Exports all scenes from the bank to an SD card. Steps are the same as exporting scenes.

Creating shows

This feature is used to put more scenes together in one show.

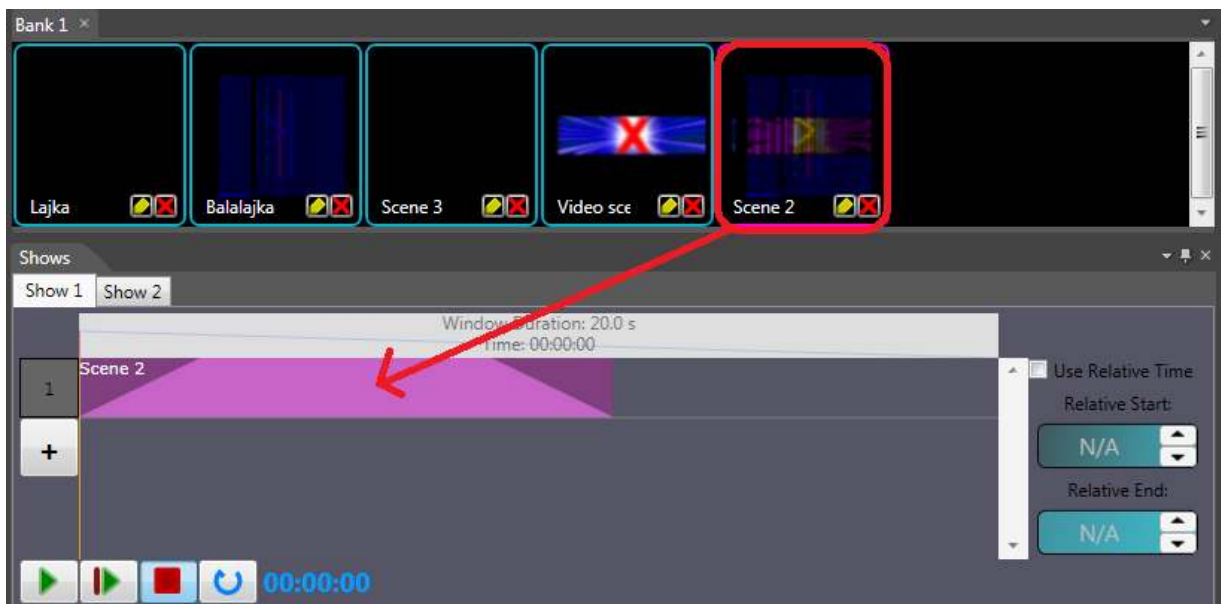
Creating simple shows



Show Window

To create a show go to Shows->Add show

Adding Scenes to show



Drag and Drop scenes to show timeline

To add scenes to a show, select the scene from a bank and drag it into the show workplace.

You can set the length of the scene by right mouse click on the scene and moving right with the cursor.

Fade

You can set additional settings for scenes such as Fade. Right click on the scene in the show and select **Set Fade**.



Set Fade

To set fade, right mouse click on the scene and click Set Fade. (Values 0-50).



Scene with Fade

Relative Time

Relative time is used to repeat strip scenes within a show.

Example: Set relative end to 2 to repeat the scene twice.

Set Relative start to 0.5 to postpone the start of the scene to second 0.5.

Synchronizing Shows

Select synchronization type in Show->Select Synchronization

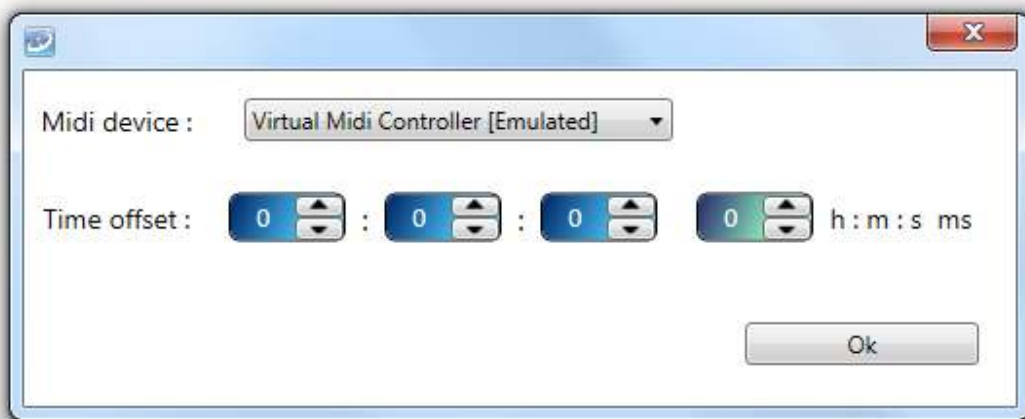
You can choose from : Clock, MTC or Audio file synchronization.

Clock Synchronization

To select Clock synchronization, go to Shows->Select Synchronization->Clock. Your show should be now synchronized with the clock on your computer.

MTC Synchronization

To select MTC Synchronization go to Shows->Select Synchronization->MTC.
Go to Shows->Synchronization Settings to choose the **Midi device**, and setup **Time offset**(optional).



MTC synchronization settings

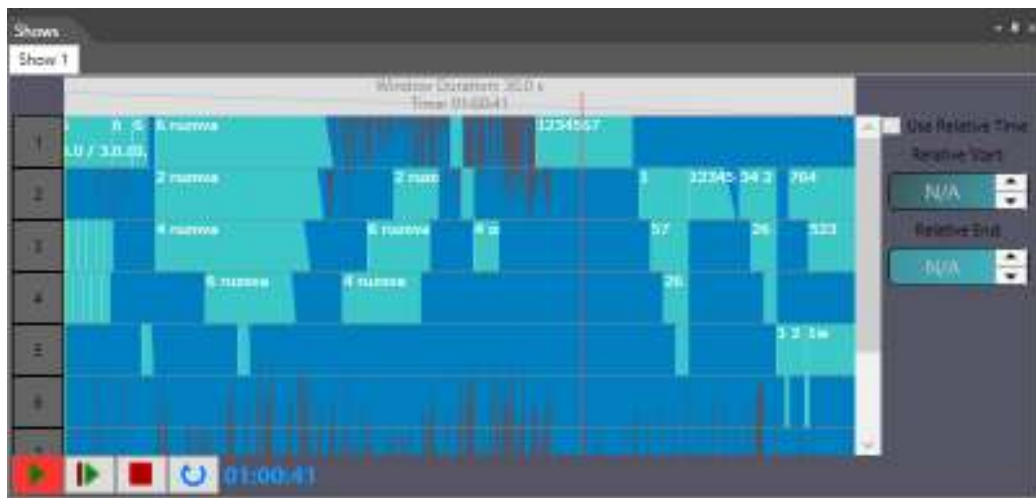
Audio Synchronization

To select audio synchronization, go to Shows->Select Synchronization->Audio.
To browse the audio file, go to Shows->Synchronization Settings->Browse.



Audio synchronization settings

If you want to synchronize your show with a .wav file, LSS can load the audio footage in the background:



Waveform Synchronization

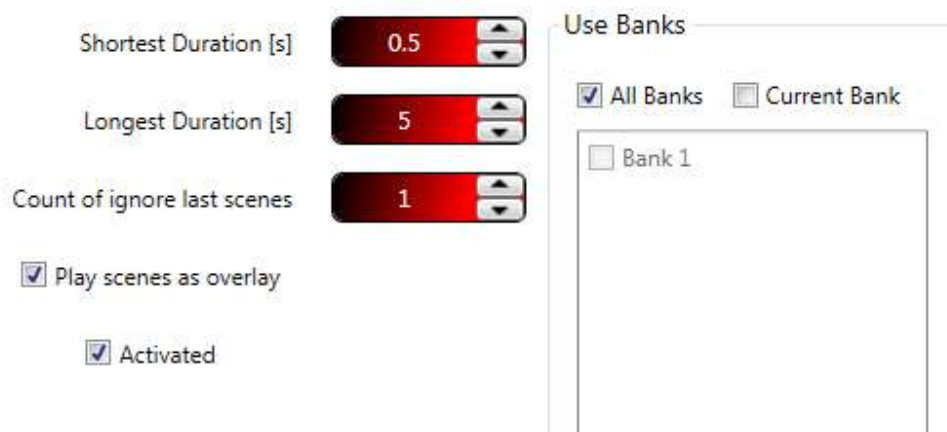
**Note, that the file must be a .wav in CD quality (44.1khz, 16 bit, stereo)*

Control Settings

LL Studio software can be also controlled with other devices (MIDI, DMX...) or can run automatically in Demo mode.

Demo Mode

LL Studio software can run in Demo mode. Demo mode randomly plays scenes from banks. It's a solution for those, who don't want to sit at the computer, and manually play scenes from banks.



Demo Mode Settings

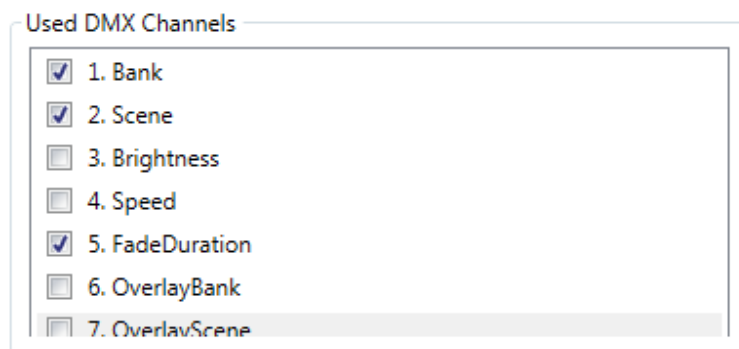
You can also set the duration interval and the banks with scenes you want to display.

Check Activated to run the Demo mode.

DMX In

LSS can be controlled using DMX in. To setup a DMX device, go to: Settings->Controls->DMX In.

- Check Use DMX
- Set the DMX address and input LSS Ethernet device
- Check the DMX channels you are going to use
- You can also setup Fade and Duration



Used DMX Channels

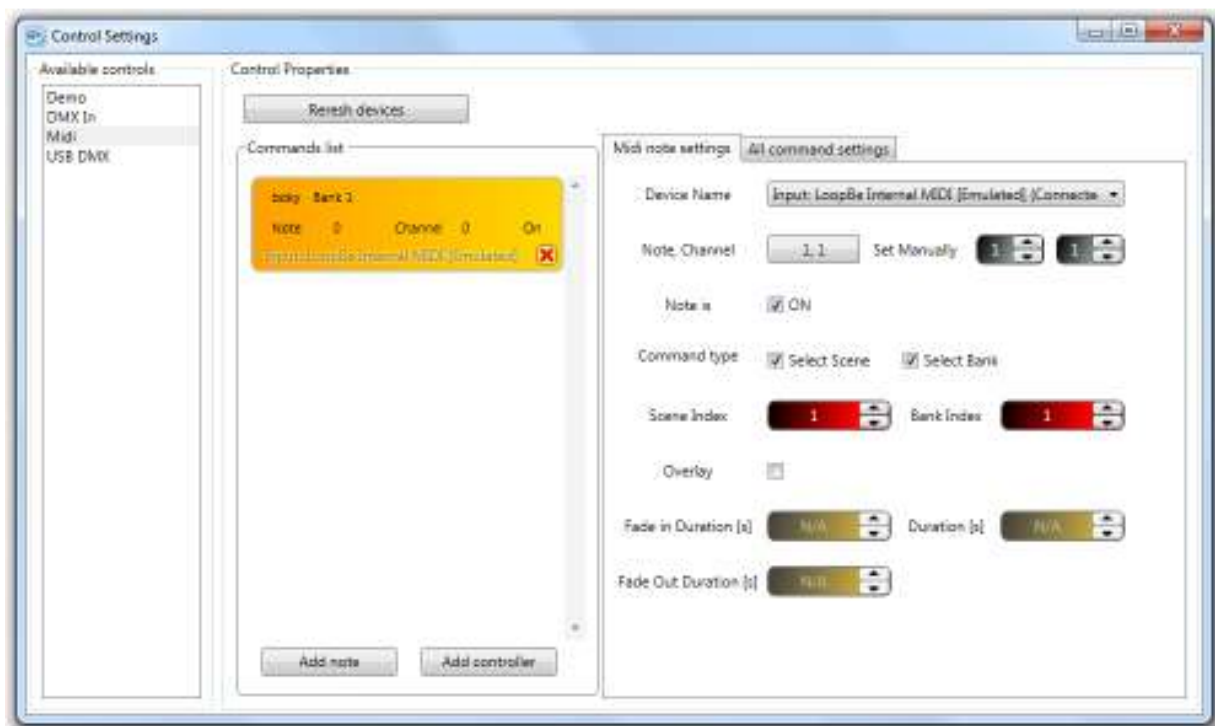
DMX Channels:

- Bank - selects the bank
- Scene - selects the scene
- Brightness - Sets the brightness (values 0-100)
- Speed - Sets the speed (values 0-100)
- Fade duration - sets the fade duration in seconds
- OverlayBank - selects the overlay bank
- OverlayScene - selects the overlay scene (if you are already playing some scenes, you can play another scenes in overlay mode. It will select another scene which will be played onto the strips. This will cause, that two scenes at a time will be played and you can control the overlay scene through DMX.

You can also define special DMX commands in case some of the channel is higher (or lower) than some value.

MIDI

LL Studio software can cooperate with MIDI controllers.
To Set up MIDI controllers go to Settings->Controls



MIDI Control Settings

Notes

Select Input Device.

Select Note - Click on the button and then click on your Midi controller. It should assign a channel automatically. You can always set it manually.

Assign a scene to a Note: Select the Scene and Bank index.

If you want to add more features, check Overlay. It will let you define Fade settings.

**Notes are used for single MIDI commands*

Controllers

Set input device and channel (Follow steps from Adding Notes).

Select the command type.

**Controllers are used for setting up Brightness, Animation Speed, Fade Duration. The difference between a note and a controller is, that Note triggers a single function and Controller can set a value (0-100).*

USB DMX

If you don't want to control LL Studio software over LL Studio software Ethernet DMX In, you can also use USB DMX. It was possible to control LL

Studio software using Showtacle DMX device. But this option is already deprecated, since the device is not being produced anymore.