synesthesia

Official Manual

by Matt McIntyre

Synesthesia is being built by a small group of audiovisual enthusiasts out of Austin, TX. We started this because we wanted visuals that are live, directly tied to the music, & interactively performed- like a visual instrument. Please connect with us at any of the links below. We love meetings users & sharing ideas for the ongoing development of Synesthesia.

www.synesthesia.live

facebook usergroup

system requirements

runs on OSX 10.11 & above, will run best on hardware from 2013 or newer.

runs on Windows 10 & above, requires a dedicated graphics card for best performance.

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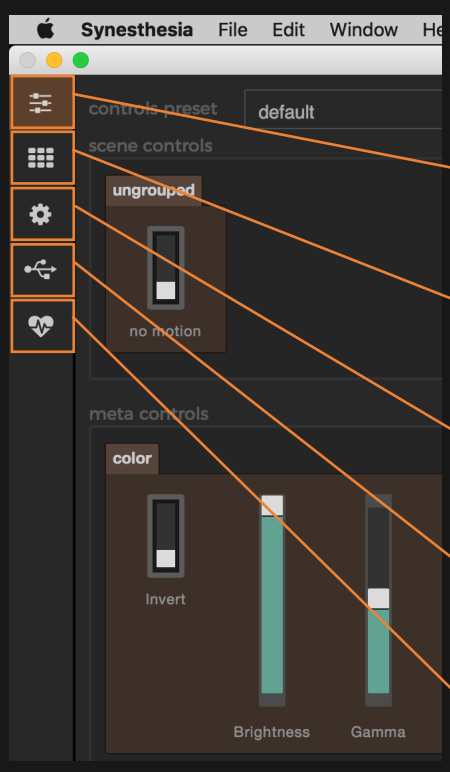
Definitions:

Scene - different shaders that uniquely react to the music.
Shader - an algorithm that generates visuals within certain parameters that are modified by the music.
Media - images or videos of your own that can be mixed into Scenes as textures.
Meta Controls - controls that work universally over Synesthesia
Scene Controls - controls that work over specific scenes

1. familiarize yourself



When you first open Synesthesia, you will see five tabs in a column on the left which house your five key panels: Control, Library, Settings, MIDI, & Community. Each panel will be described in more detail later in the guide.

This is your Control Panel, this is where you perform. Here you will find Scene Controls for the shaders and Meta Controls for your visual outout, as well as your media.

This is your Library Panel, where you can view your whole library of shader scenes. Here you can build playlists, duplicate & edit scenes, or view custom scenes.

This is your Settings Panel, were you change important aspects of Synesthesia's performance. Such as: select your audio device, configure your graphics, add or remove both media folders & custom scene folders, as well as product key input/deactivation. **(Audio Device & Resolution are critical to set properly.)**

This is your MIDI Panel, where you can program and edit MIDI-mappable parameters. They are organized into tabs, which we will cover in the MIDI section of the guide.

This is your Community Panel, where you can connect to the rest of the Synesthesia community. You can download new scenes, find help documents, and send us feedback.

You may have noticed that the windows on the right don't change across different tabs.

On the top right is your preview window.

Just below it you will see an audio meter,

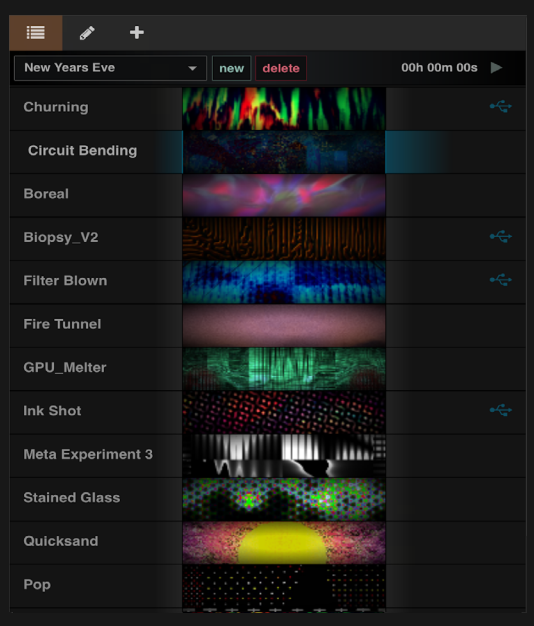
an fps (frames per second) meter,

a preview toggle,

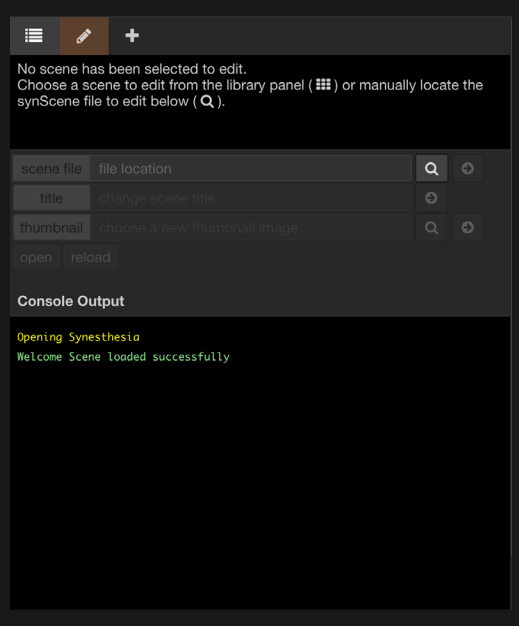
and a shortcut to the visualizer window.

Below that you'll find the Playlist Tab, Edit Tab, and Import Tab.

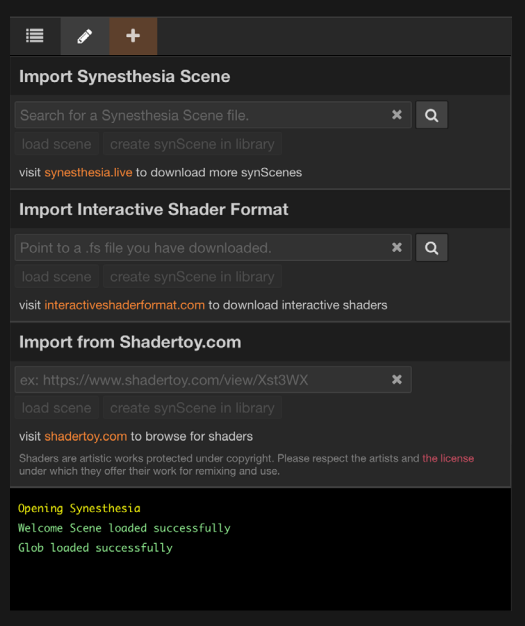
Playlist Tab:
Go here to launch your shader scenes during a performance. You can also switch, edit, & delete playlists.



Edit Tab:
This is a live coding environment where you can modify anything about a scene. Open your favorite code editor & make changes to the main.glsl & scene.json files. Save changes & press R to reload the shader.



Import Tab:
Here you can add new custom content to your scene folder. Import .synScenes that you've downloaded or use the ISF & Shadertoy converters to automatically convert & save new .synScenes.



2. startup settings

Before you do anything in Synesthesia, you'll need to configure the two most important items in your settings: Audio Device & Graphics Window.

Click the Gear Icon to get to the Settings Panel.

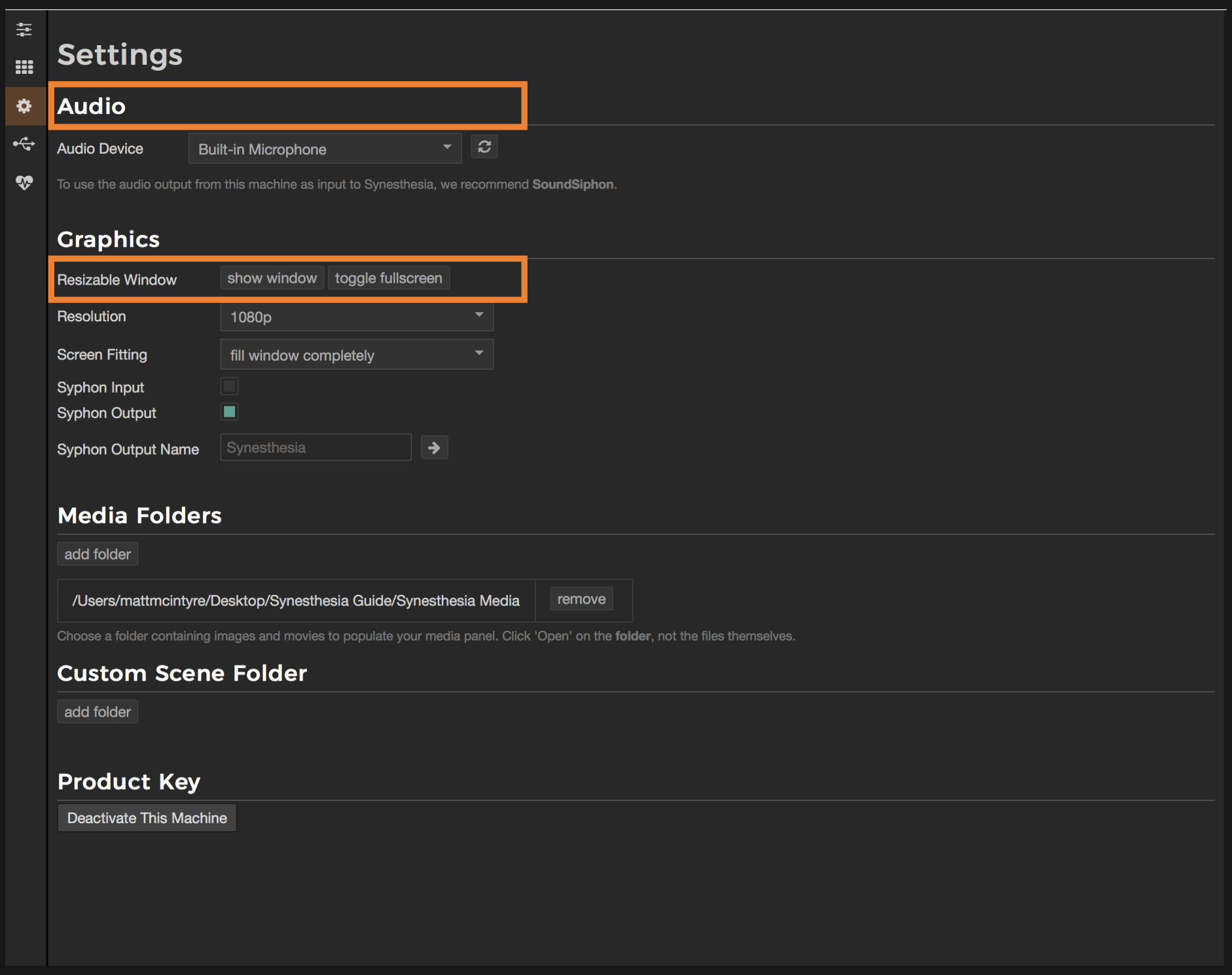
Under "Audio Device" you will select where the program listens for music.

macOS:
Under Graphics click the "show window" button to open the Resizeable Window (or press Command + S).
You can also use the show window shortcut under your preview window.
Drag the window to your second display, then press "toggle fullscreen" (or press Command + Shift + F to enter/exit fullscreen).

Windows:
Select your display from the "Connected Displays" dropdown. Then click "toggle fullscreen" to fullscreen it on the selected display. Press "Esc" to leave fullscreen.

Once your audio device is selected and output window configured, you've got the basics of using Synesthesia!

Under "Graphics > Resolution" you can select your output resolution. Ideally it should match your projector's native resolution. However, lower your resolution for better performance if your fps is slow.



Hint:
You can also pull audio right from the soundboard at a gig into an audio interface. Just select your interface under audio device once it's plugged in.

If you want to set up a virtual audio input, so Synesthesia can react to the sound coming out of your computer, here is what we recommend:

macOS:
Sound Siphon
this free program will
re-route audio internallly

windows:
Stereo Mix
this comes with windows, but
needs to be activated manually
in audio settings

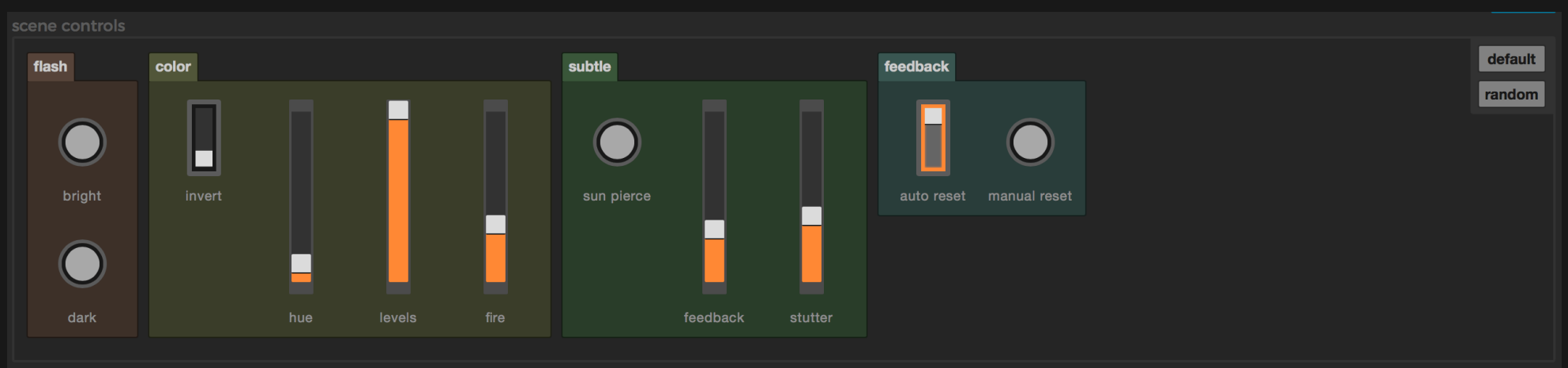
With these programs you can pull audio from anywhere on your computer & send it to Synesthesia.
This is the best way to use Synesthesia with iTunes or Spotify on the same computer.

3. controls : meta versus scene

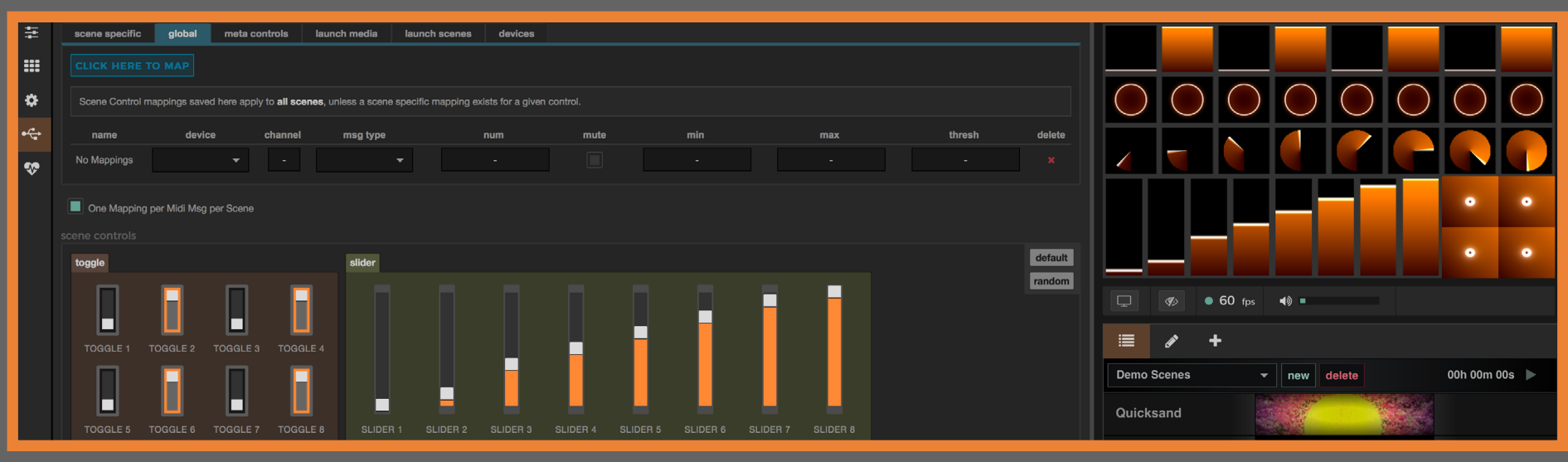
In your Control Panel,
you will see that there are scene controls
& meta controls.

Each have default & random buttons
to reset or randomize each set of controls.

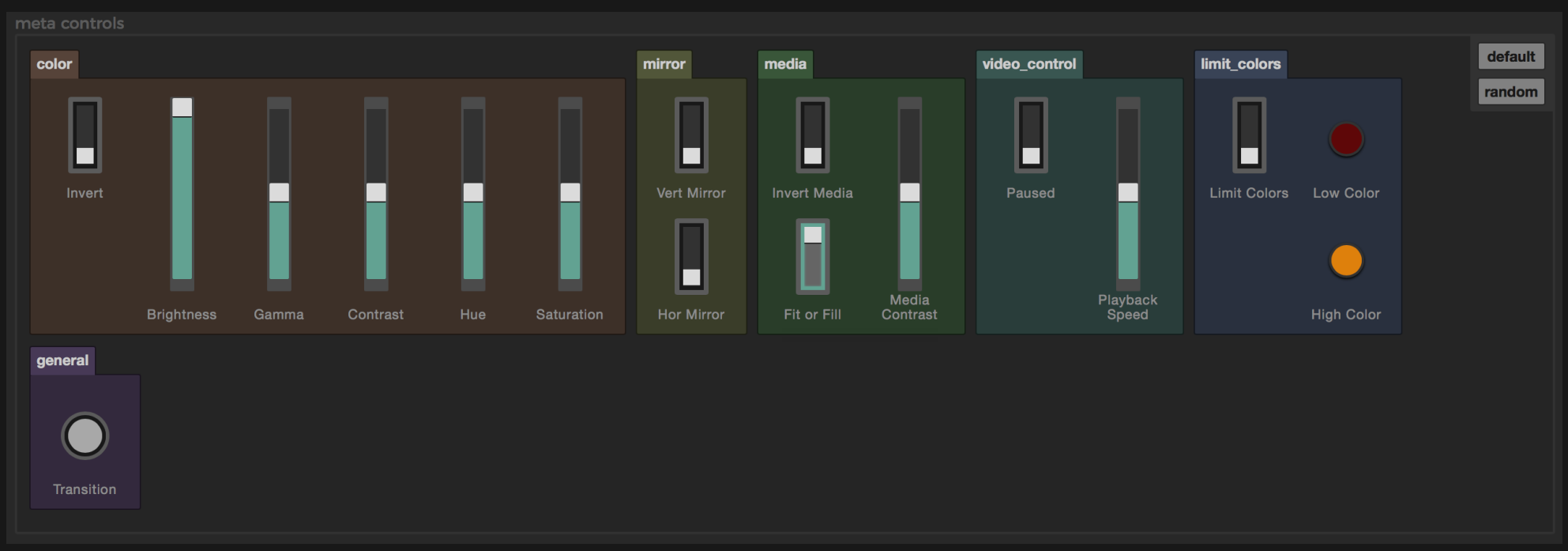
Scene Controls will change with each scene. Some are similar while others are very unique. Playing with these will be a large part of your control over the program as a VJ. All of them are MIDI-mappable.



Hint: you can use the global tab in the MIDI panel to program mappings that are consistent across different scenes. Toggles, sliders, buttons, knobs, and xy pads are at your disposal.



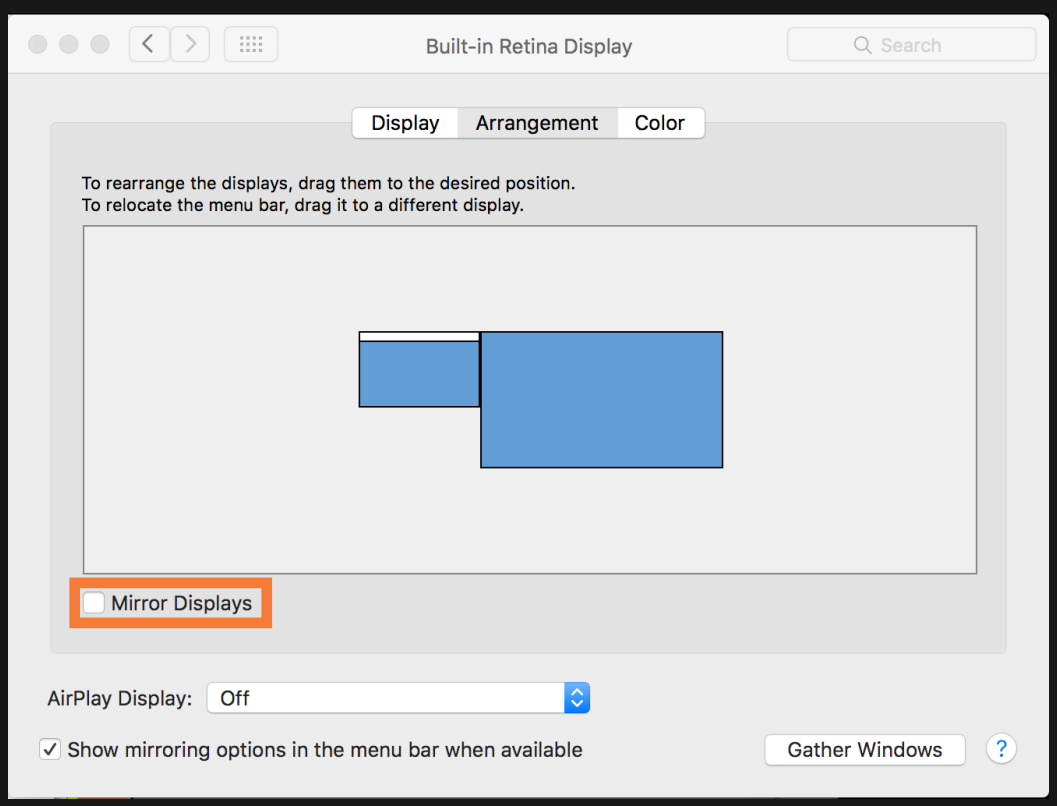
Meta Controls are the same across all scenes & never change.
Invert toggles a color inversion.
Sliders for Brightness, Gamma, Contrast, Hue, & Saturation work the same as in any video program.
There are vertical & horizontal mirrors.
Once you have media (covered later) you can control contrast, fitting, & playback speed if it's a video.



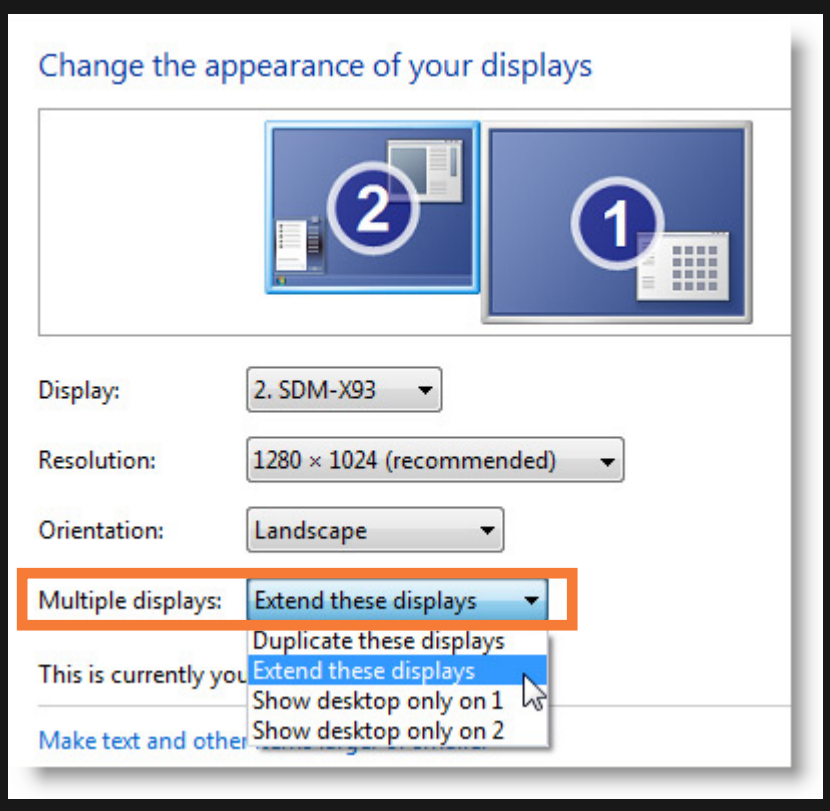
4. outputs

Now that you know the basics of Synesthesia you may want to output your visuals to a projector, tv, or other device.

Once you've connected your computer to a device, head to your computer's display settings.

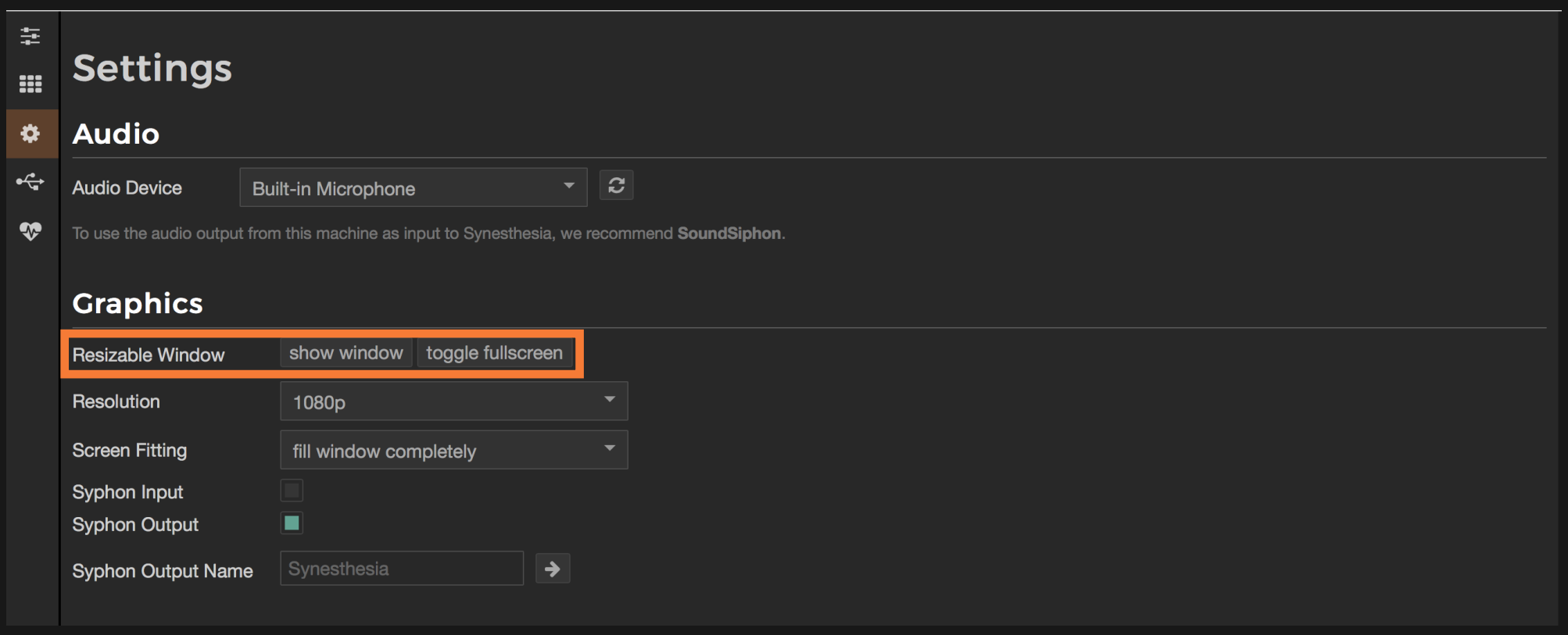


On Mac: go to *System Preferences* > *Display* > *Arrangement*
Make sure "Mirror Displays" is unchecked.



On Windows 10: rightclick
your desktop & choose "Display Settings"
Under *Multiple Displays* select "Extend These Displays"
You do not want them Duplicated.

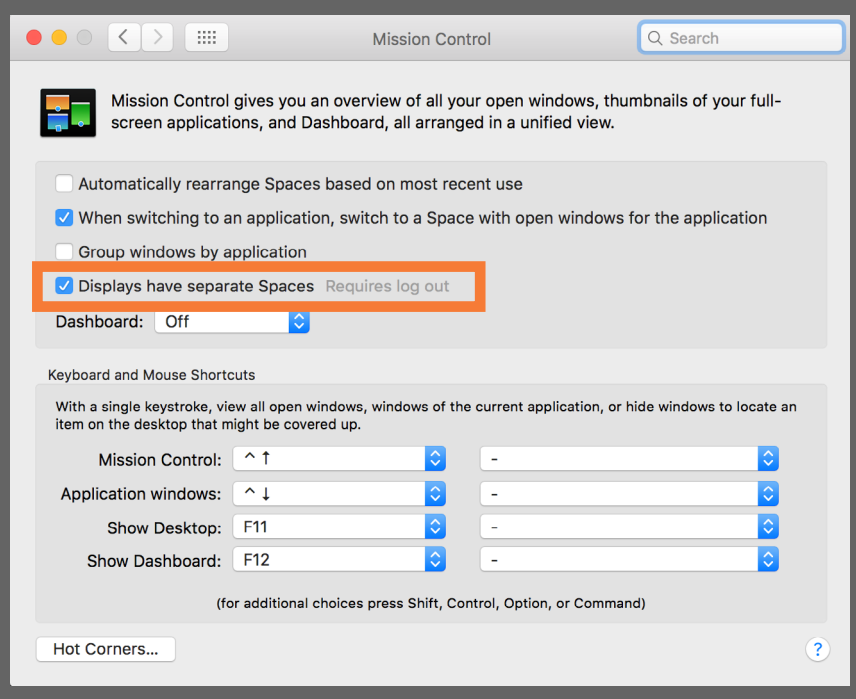
Click the gear to get back to the Settings Panel in Synesthesia.
Under *Graphics* click the "show window" button to open the *Resizeable Window*. Drag it over to your second display, then press "toggle fullscreen".
You can also use the show window shortcut under your preview window. Mac users can press Command + S to open the window and Command + Shift + F to fullscreen it.



Hint for Mac Users:
If fullscreening causes you to lose your control panel, make sure "Displays Have Separate Spaces" is enabled under System Preferences > Mission Control. Log out and back in. Now you should be able to use the main app and the fullscreen visualizer at the same time.

You may notice your second display has a menu bar.
This can also be fixed by checking "Displays Have Separate Spaces" in Mission Control.

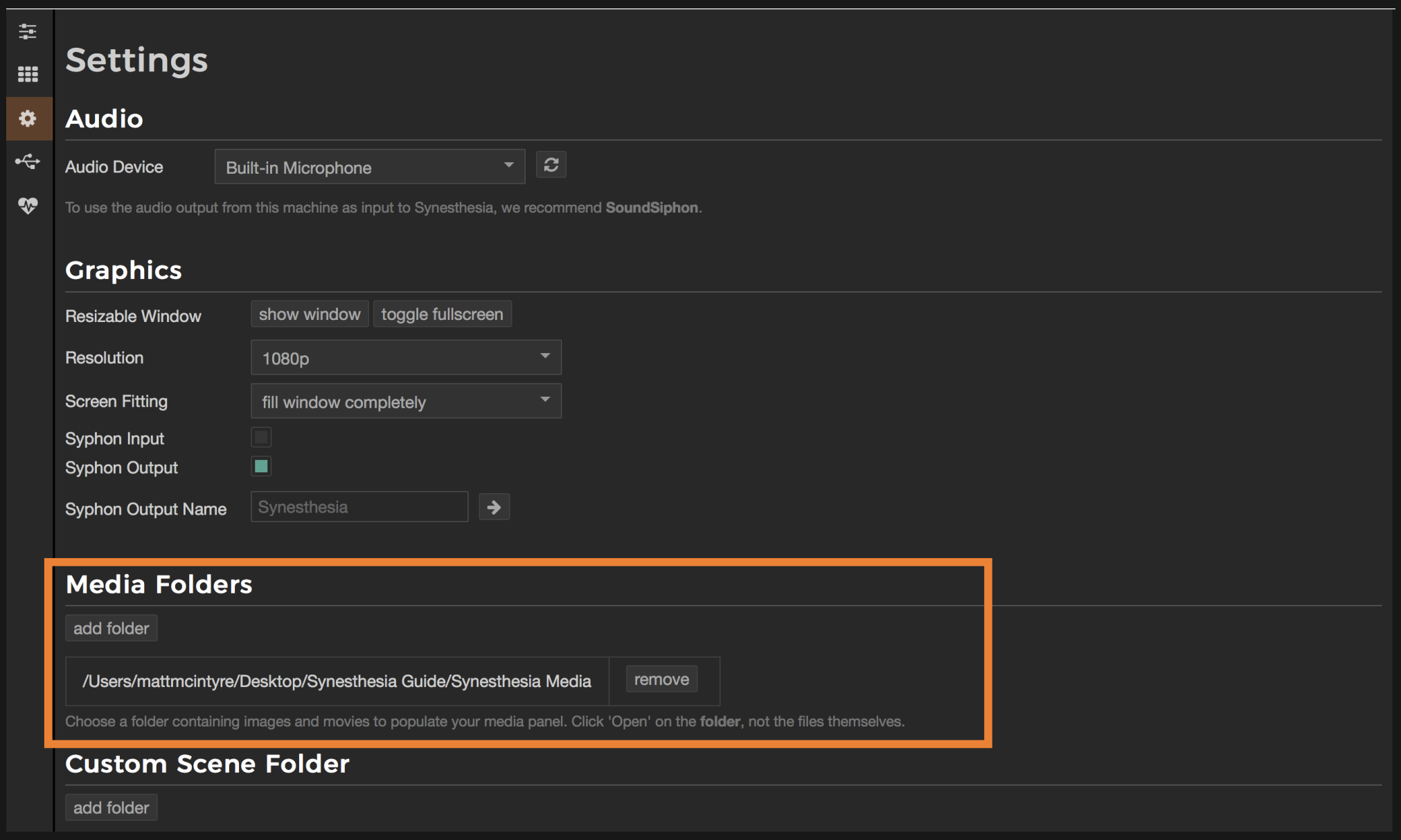
However, other third party VJ software users may notice checking this box will cause the menu bar to appear in your second display. So, choose wisely when siphoning one program to the other.



5. media importing

Synesthesia allows you to import your own pictures & videos as media, which blend uniquely with each shader scene.
All files must be formatted to either .jpg .png .mp4 or .mov

Gather your media & put them in a folder. Then, in your settings panel under *Media Folders* click “add folder”. Find the folder with your media & add it to the list. Media Folders can be removed here at anytime.

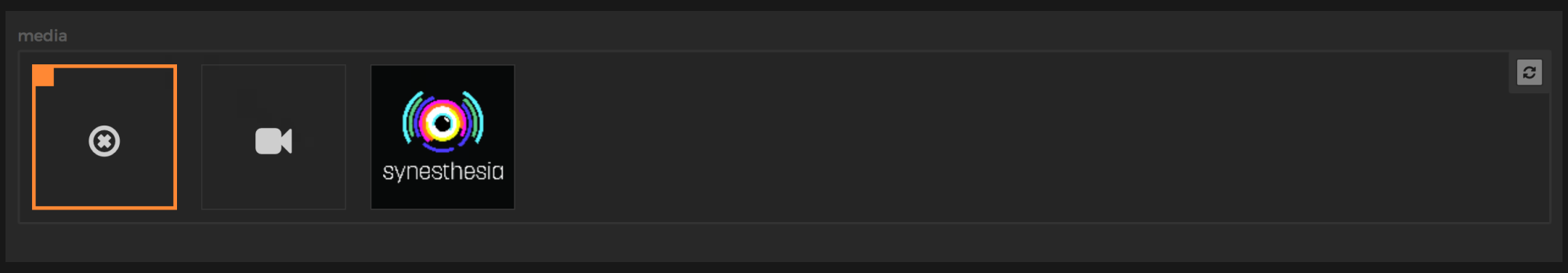


6. media mixing

Click back to the control panel, now under media you should see your images.
(You may need to click the refresh button to the right if you don’t).

Click a scene to launch it, then click on your image to load it into any scene as a texture.
Each scene has a unique way of incorporating User Images into the visual.

Try playing with the Media and Video parameters under your Meta Controls.

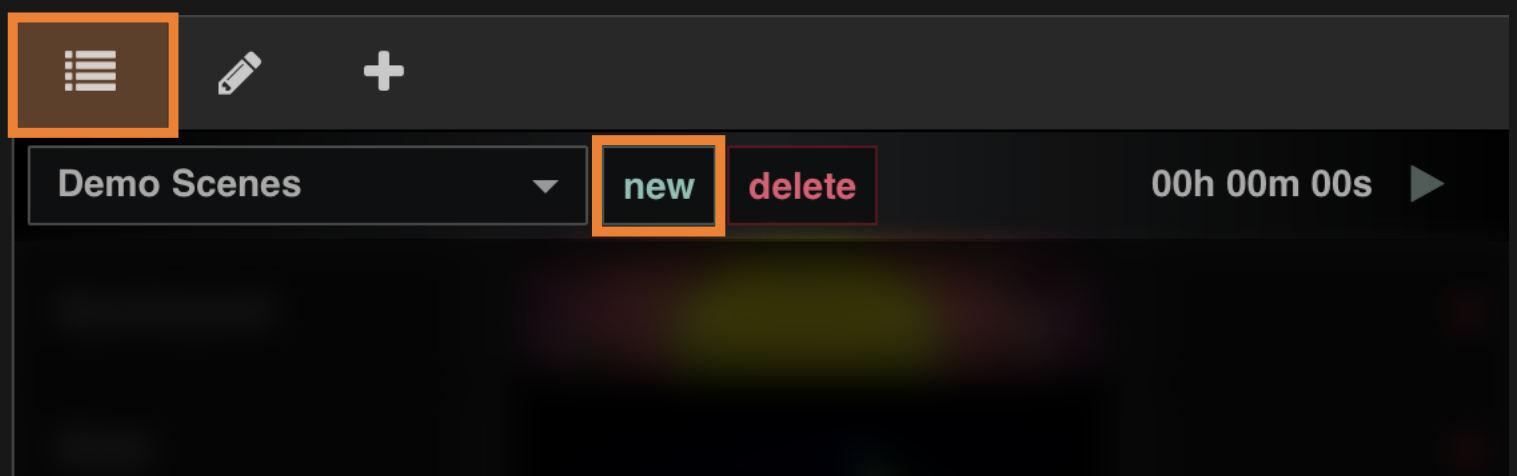


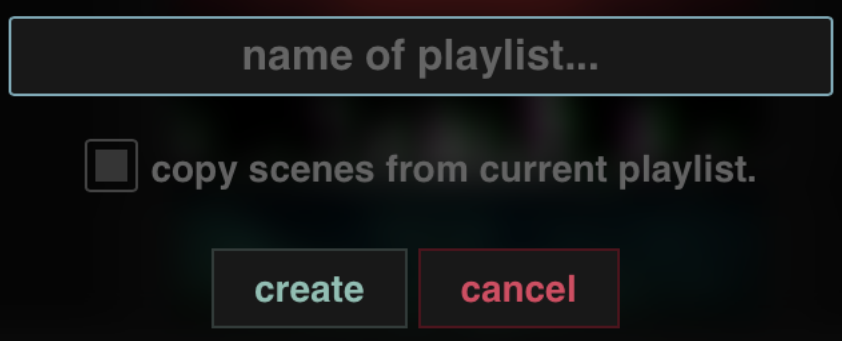
This is a great way to incorporate DJ logos, your own visuals, & more. Get creative!

7. shader scenes & playlists

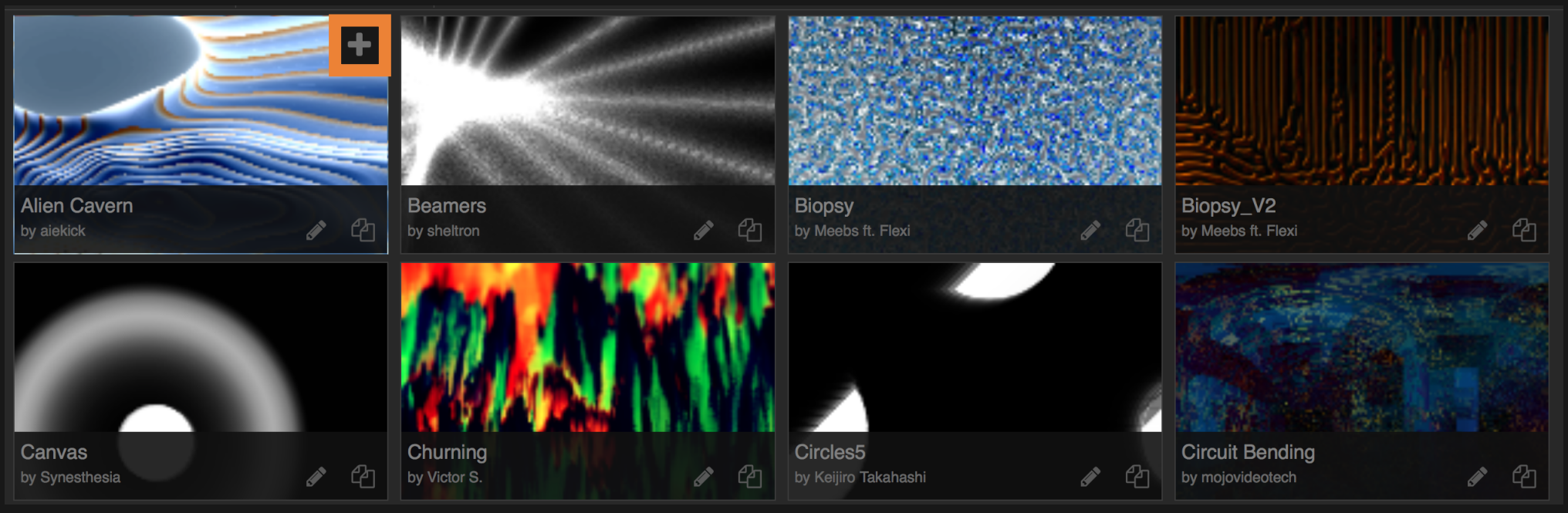
By now you know that clicking scenes on the right loads the shader, but you can make your own playlists for easy grouping of scenes. This is very helpful for preparing a set for a gig.

Click on the Library Panel, you'll see a full library of your shader scenes.
On the right side, make sure you are on the Playlist Tab.
Beside a dropdown menu are "New" and "Delete" buttons- these are how you create/delete playlists.
Click "New", give your playlist a name, then click "Create".
Now you have an empty playlist! To fill it, go to your Library Panel. Hover your mouse over any shader and you'll see a plus in the top right corner of the shader; click it to add the scene to your playlist.





^Playlist Tab



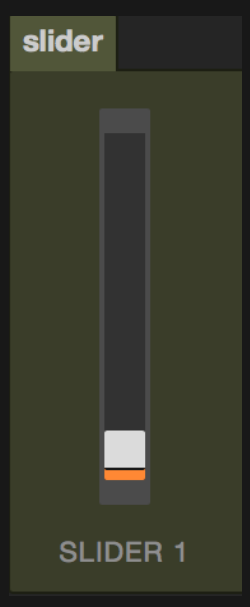
^Library Panel

8. Controls

Synesthesia uses five types of controls: Toggles, Sliders, Bangs, Knobs, & XY Pads.
These are sometimes referred to as GUI's (graphic user iterfaces).
Hold down the Shift key while moving a control to move more slowly, increasing your precision.

Toggles: Have only two states- on or off (like light switches).

With MIDI: best used to "toggle" things like Note On/Off
For CC messages: <64 is OFF, >64 is ON



Sliders: Can vary smoothly between two values.

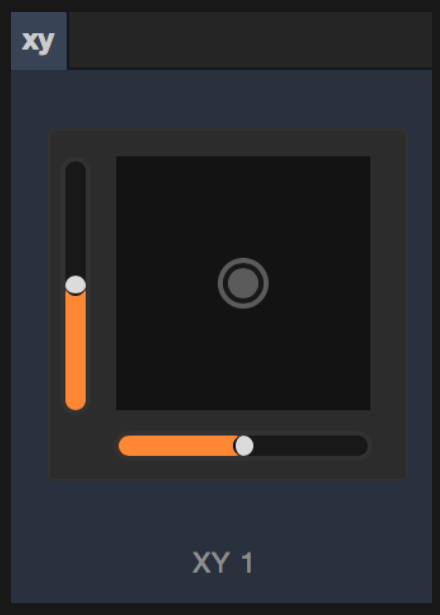
With MIDI: best used with faders or knobs, where 0 is 0% and 127 is 100%.
Note On/Off preferred values can be set in the MIDI panel.

Bangs: Buttons that send a single value when pressed.

With MIDI: best used for NOTE On messages.

Knobs: Are like sliders, but arranged in a circle.

Best for CC messages such as dry/wet controls.



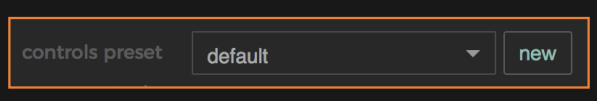
XY Pads: Are essentialy two sliders working in tandem.
Manipulate by grabbing the circlular handle in the middle.
You can also move one axis at a time by grabbing the sliders.

With MIDI: *do not map the center handle.* Instead, map each axis independently by mapping the tiny sliders.

Every shader scene is different, so you will need to learn what the controls do on a scene by scene basis- but knowing the basic functions of the different controls types will help you figure them out.

Remember that meta controls stay same for every scene. Scene & Meta controls can each be reset with the button to the right of their respective boxes.

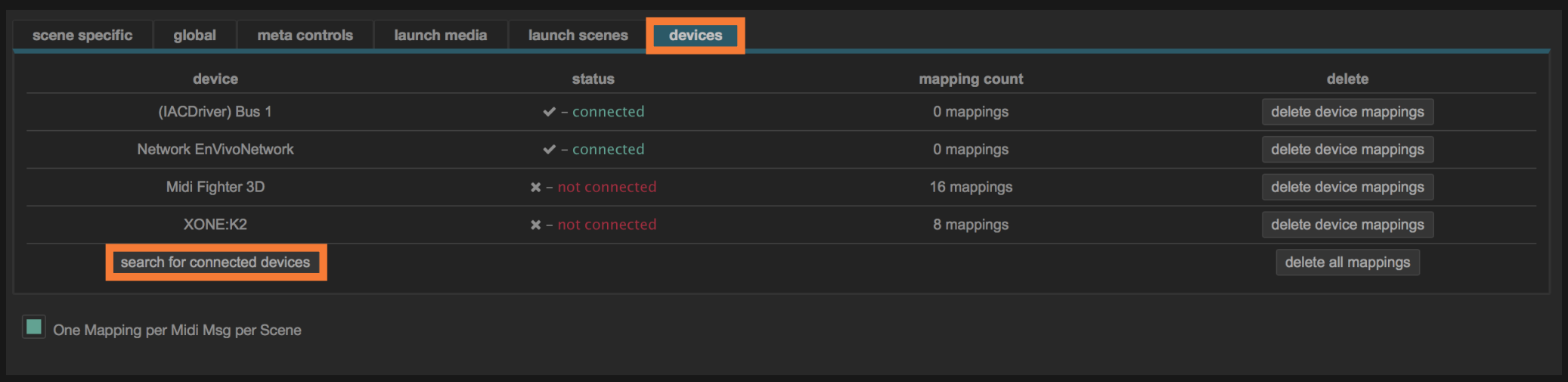
If you find a configuration you like while playing with a scene, create a new "controls preset" at the top of your control panel to quickly recall it.



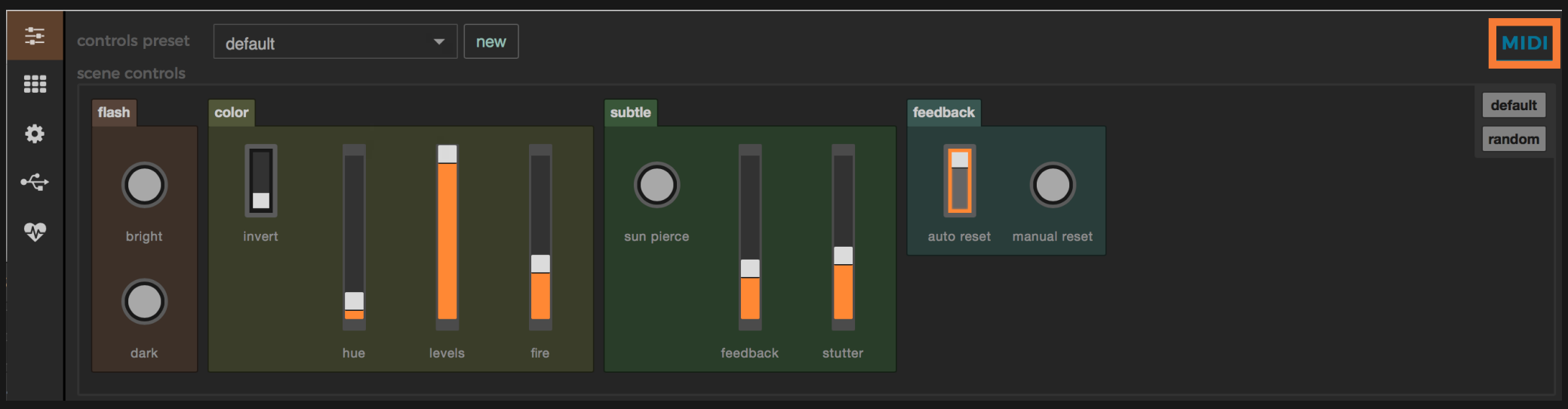
9. midi

Perhaps the most powerful tool for performing VJ's to excerpt control over Synesthesia is the MIDI Panel.

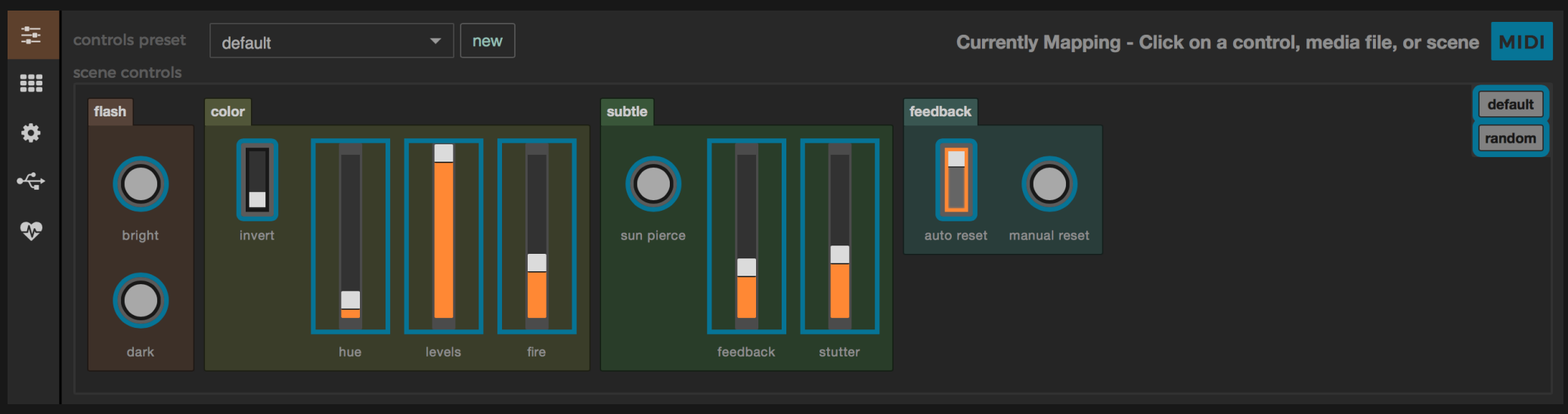
First, plug in your MIDI controller & go to your MIDI Panel, then select the Devices Tab.
Make sure your MIDI controller shows up in this list. If not, press "search for connected devices".
Here you can also quickly delete all mappings for a device.



At the top right of your Control Panel, you will see a blue MIDI button.
Click this to quickly begin MIDI mapping.



Mappable parameters will now be highlighted blue. Select a parameter, press a button or move a slider on your device to program it, then press the blue MIDI button again to finish mapping.



9. midi

The MIDI Panel, however, is a much more robust way to program your MIDI mappings.

There are six tabs within the MIDI Panel which allow you to precisely program all MIDI aspects of Synesthesia.

Scene Specific will allow you to program mappings for each scene individually, select a scene on the right to populate the scene specific tab.

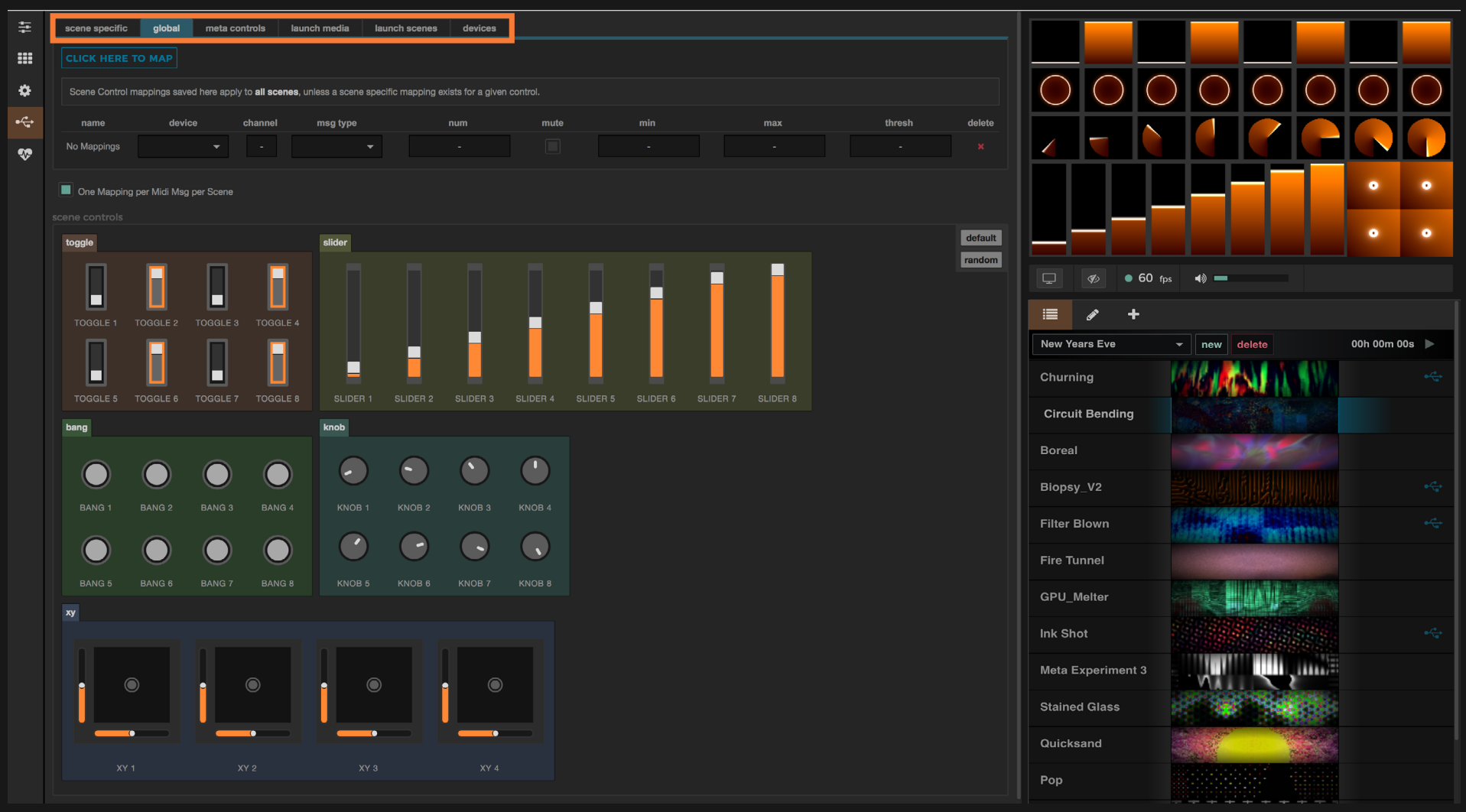
Global is a great tool for creating mappings that work across all scenes. When Toggle 1 is programmed, it will always act as the first toggle in a scene (if there is one). Same for Sliders, Bang Buttons, Knobs, and XY pads. Each programmed GUI in the global tab will act as the corresponding GUI in every shader scene, sequenced numerically from left to right.

Meta Controls allow you to MIDI map your meta controls (which always stay the same).

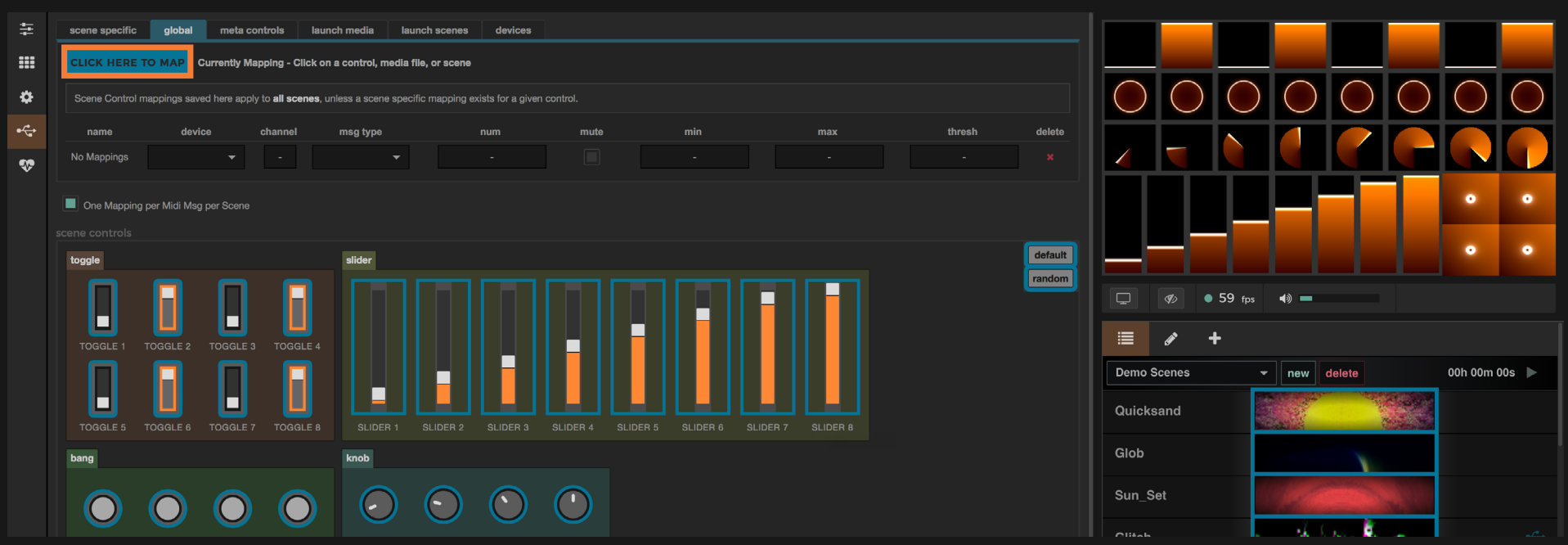
Launch Media lets you program buttons that select your images & videos to use as textures.

Launch Scenes allows you to map buttons that launch shaders from your currents playlist in the Playlist Tab on the right.

Devices houses a list of all your MIDI devices, connected & unconnected. You can delete entire mappings here as well.



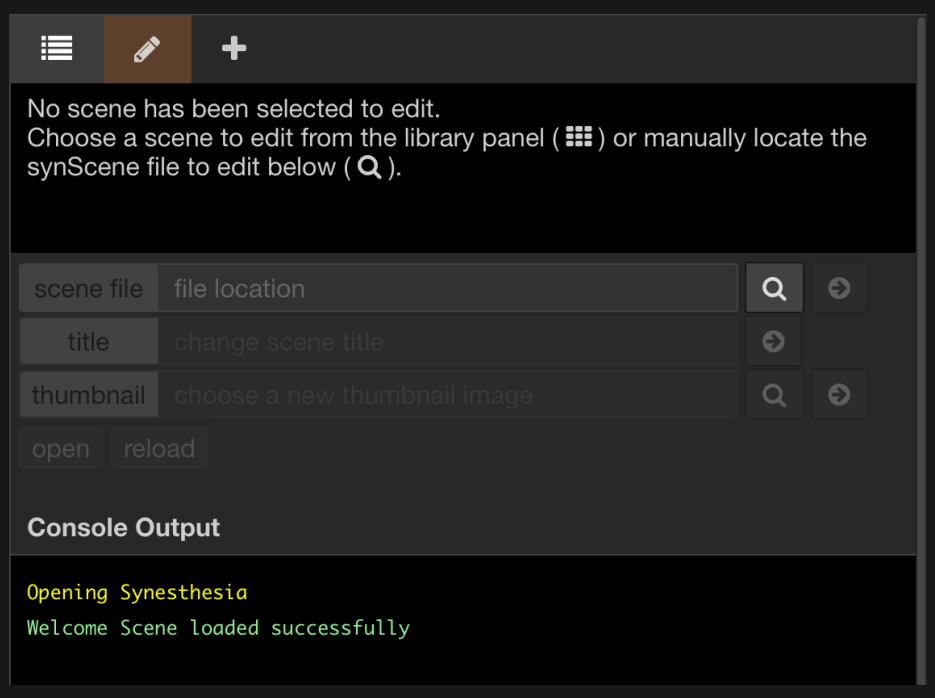
Within each tab is a blue “CLICK HERE TO MAP” button.
Click this to begin the same MIDI programming process as explained on the previous page.



10. Edit Tab

The Edit Tab is a live coding environment where you can modify anything about a scene by editing the code.
You can load a scene in edit mode either by clicking the little magnifying glass to search for it manually, or by clicking the pencil while hovering over a scene in the Scene Gallery.

Open your favorite code editor & make changes to the main.glsl & scene.json files. Save changes & press R to reload the shader.



Import Tab

The Import Tab is where you can add new custom content to your scene folder. Import .synScenes that you've downloaded or use the ISF & Shadertoy converters to automatically convert & save new .synScenes. They are added to your "Scene Library" or custom scene folder.

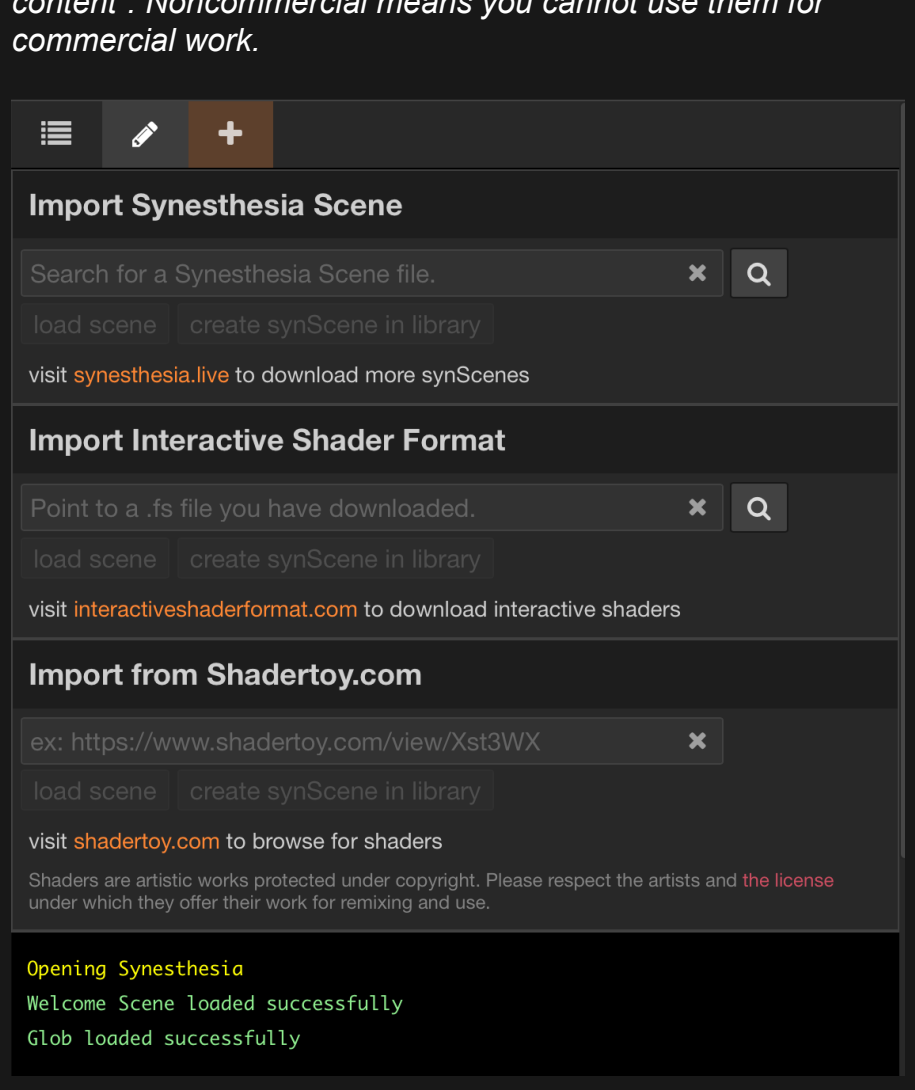
Use "*Import Synesthesia Scene*" to import a .synScene file (an already fully made scene).

Use "*Import Interactive Shader Format*" to import a .fs file you've already downloaded from interactiveshaderformat.com.

Use "*Import from Shadertoy.com*" to automatically download and convert a shader from the Shadertoy API by copy/pasting a URL into Synesthesia.

Note: ISF & Shadertoy shaders will not include audio reactivity, you will then need to manually open the scenes and edit them yourself. Additionally, Shadertoy scenes will not have any controls built into them. But the converter will do a lot of the hard work converting to get them initially running in Synesthesia.

It's important to remember that Shaders are pieces of content that have a license attached to them. They are not just "free content". Noncommercial means you cannot use them for commercial work.



11. resources

[Quickstart Guide]

[Quickstart Video]

[FAQ]

Synesthesia User Group:
Join the active & expanding *Facebook User Group*. Post any unanswered questions there.

What is the .synScene File? How do I make or modify shader scenes?
SSF Documentation
Book of Shaders
Scene Library

Feedback:
submit

Third Party Resources:

Sound Siphon

Syphon Recorder

Spout

MPEG Streamclip

Shadertoy

Interactive Shader Format