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PART 1 - INTRODUCTION TO VOLTA <Add video link>

1) What is Volta?

Volta is a self-serve XR creation platform that gives artists & creators the ability to design and broadcast experiential content. Volta integrates seamlessly into artists and creators existing workflows, allowing you to quickly and easily build new immersive worlds.

<Image of Volta Create complete>

2) How does Volta work?

You can think of Volta as Squarespace for mixed reality environments. We've created a number of templates that can react in real time to any audio or midi source and allows you to integrate any 2D media (such as photos, videos, and camera feeds) into the 3D environment. Then broadcast them to 2D platforms like Youtube and Twitch, onto LED screens live at concerts and very soon to our VR app on the Oculus Quest store.

3) Base Worlds

Volta has a number of base worlds, in each one there bunch of world elements, these are 3D assets placed throughout the environment. Each one has a number of behaviors, which can all be controlled manually or by audio or midi.

<3 X images of base worlds stacked>

4) Behaviours

Behaviors include toggling visibility on/off, changing the position, scale and rotation, wrapping 2D media around the element and some have behaviors that are unique to each.

<Show toggles + elements>

5) Navigation

You can navigate around the environment by clicking and dragging, shift click and drag to pan, pinch or 2 finger scroll to zoom as well as by using the WSAD keys

<No image>

6) Create, Perform, Settings

At the top of the screen you have the ability to toggle the user interface between creating/editing the world and performing, which is how you stream or record.

<Show toggles create / perform>

7) Navigation pane and Inspector pane

On the left you have the navigation pane, which is where you will find your world elements and visual sources. If you click on an element or visual source the inspector pane will pop up on the right, which is how you change the settings, set behaviors to be reactive to audio and MIDI and choose which visual sources

<Nav Pane>
<Inspector pane>

8) Directors Cut Mode

We've also built what we call directors cut mode. If you click this icon the rendered view of the world will automatically switch between virtual camera angles every 6-10 seconds. You will get a variety of shots include long sweeping and panning shots to make your world more cinematic wherever it is being viewed.

<Camera button>
<+ cinematic view?>

9) Streaming to 2D platforms and very soon, to VR!

We've also built the ability to stream to any platform that takes an RTMP link into Volta. You don't need to use OBS at all to stream to YouTube, Twitch, Mixcloud, Tik Tok, Facebook Live or anywhere else that requires an rtmp stream key to stream.

<Streaming images>

We are currently working on letting anyone stream to our VR app on the Quest store just as easily. We have a few experiences in our quest app at the moment. If you want to download it and check them out here <[Add oculus store link](#)>

10) Recording Video

We've made it super easy to record really compelling video for social media, especially instagram that won't take an external streaming source. Just click this folder icon to choose a location to save videos, then click the record button. Volta will record the rendered video but not the user interface panels. When you are done just click the record button again to end it. If you go to that folder you will see the video right away.

<Recording Images>

11) Save / Load Worlds

You can of course save and load the worlds you've built. Just click save or load. If you navigate to a different base world without saving you will lose your progress.

<Load/Save images>

12) Link + desktop audio + FFT

Volta has built in audio analysis as well. Whatever audio source you choose, Volta can parse into 5 different frequency bands, letting you get more varied reactivity from anything from a DJ set to just pulling audio in from Spotify.

Volta can't pick up audio and let you listen to it just yet, which means you **need to use audio routing software**. Click this link for instructions [**<Add link>**](#)

That's it for the basics and an introduction to Volta! Go to the next tutorial to **connect an audio or midi source** and **start building your own experiential performances**.

PART 2 - CONNECTING TO ABLETON <Add link to video>

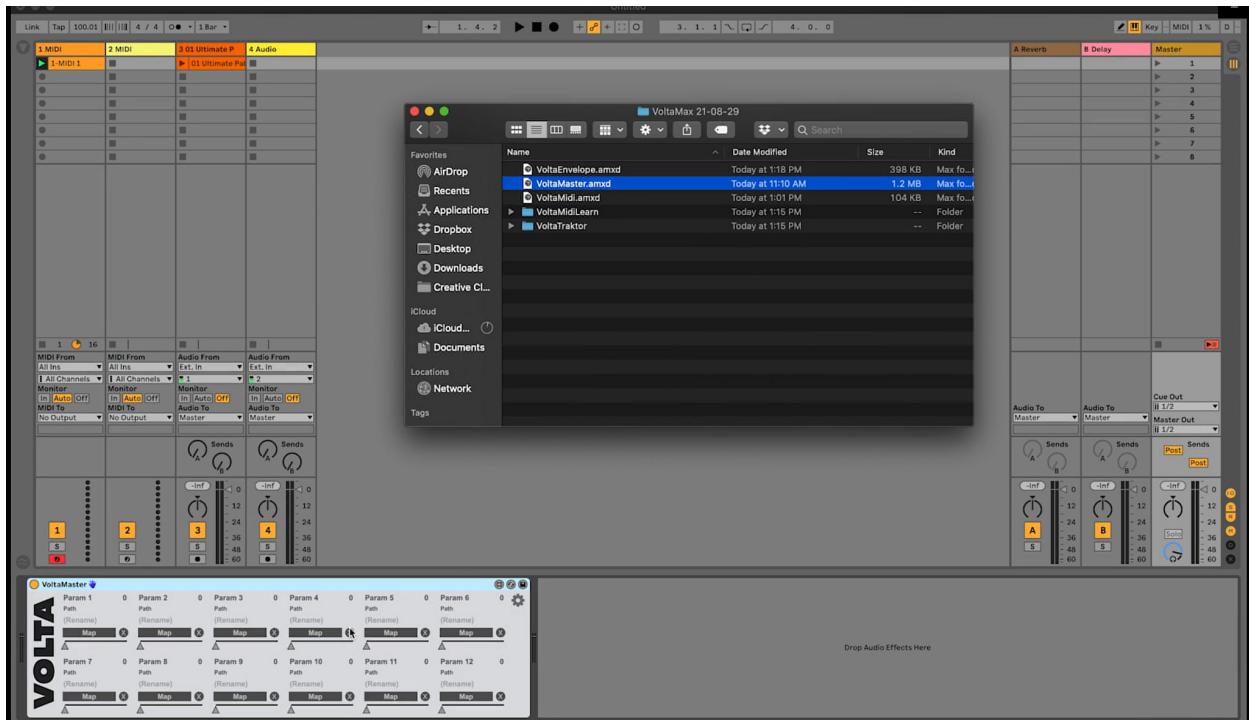
This section will show you how to connect Ableton to Volta Create.

1) Download Max Devices

If you haven't already, you need to download the Max for live devices that pull data from ableton and send it to Volta. Download here <[Add link](#)>

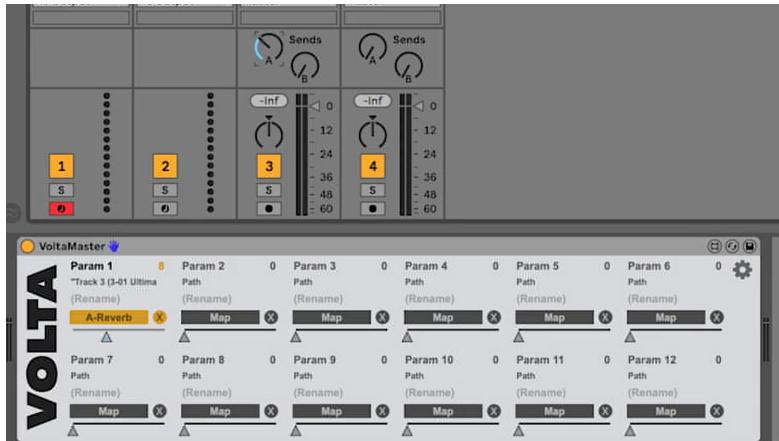
2) Add Volta Master Device to master channel

The first step is to add the Volta master device to your master channel in Ableton.



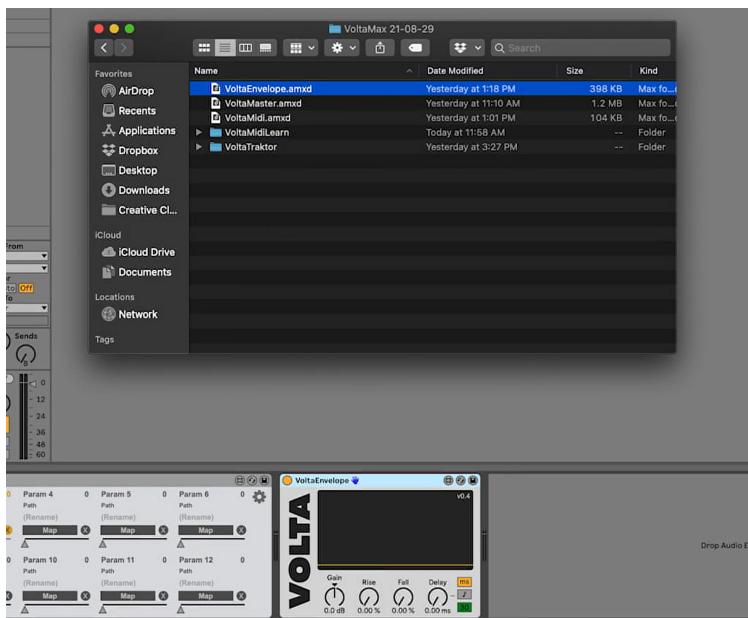
3) Choose parameters in master channel

Choose which parameters in your set you want to control parameters in Volta simply by clicking map, click on your parameter and you can see when you move that parameter it will move right here showing that it will be sending that value to Volta.

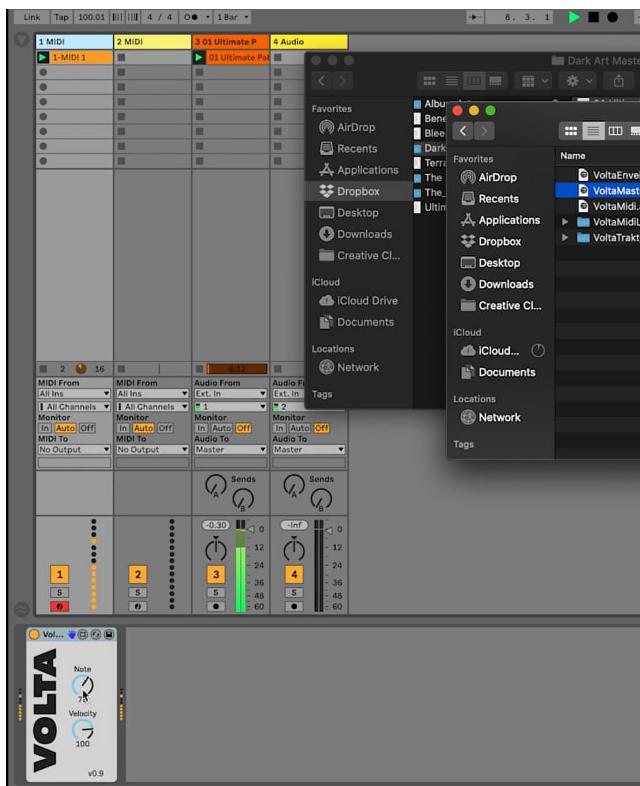


4) Audio and MIDI control, MIDI listener to MIDI track

You can also add audio and MIDI to control Volta, so drop an envelope follower on any track that you want to use to send the waveform data to Volta.

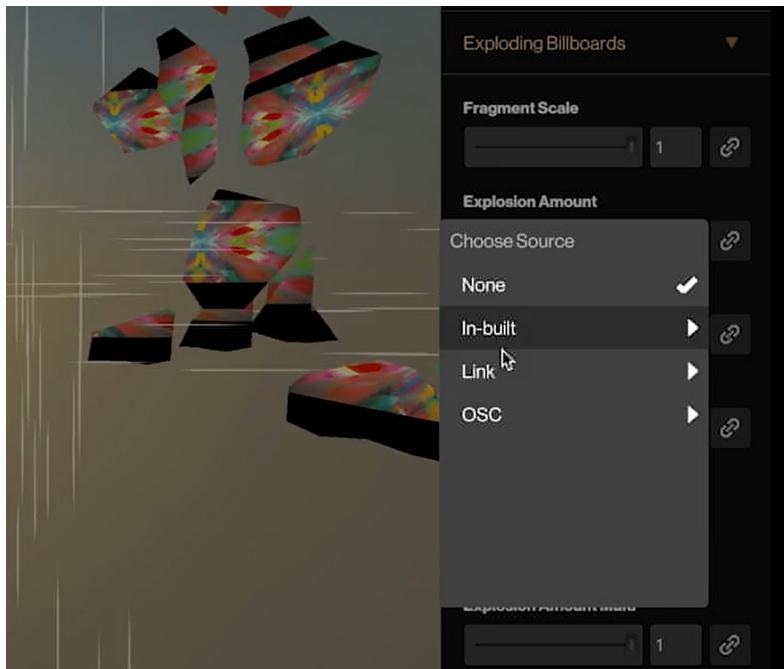


Do the same for our MIDI listener. You can see when different notes are triggered it will identify them and use them in Volta to trigger different effects - unlike the parameters in the master channel in which you had to explicitly choose to map them, envelope followers and midi listeners will automatically populate in Volta



5) Connect parameters in Volta

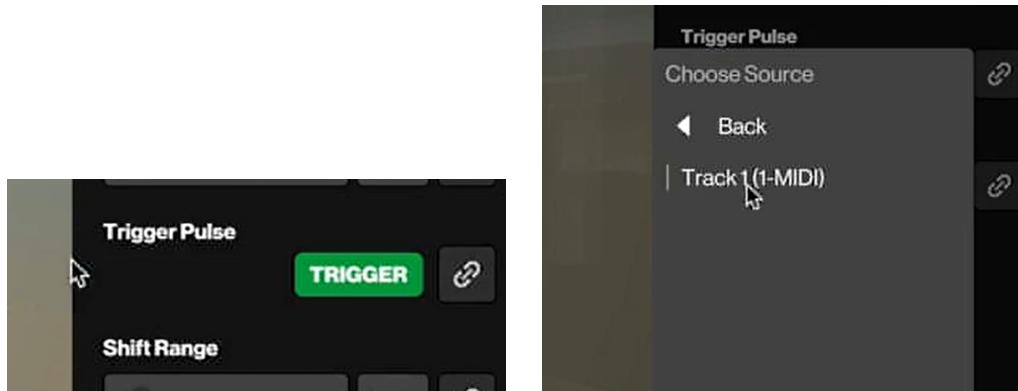
Now over to Volta. Click on the Create tab. Click on an element, go over to the inspector tab on the right and click on a link icon. You will see a list of sources in the list, go to Ableton and choose the parameter from ableton you want to control the behavior in Volta.



You can either choose the parameter or you can just press shift and click while moving the fader or sending parameter data or audio

6) Trigger button = MIDI note

MIDI notes work a little differently than other parameters or amplitude. Wherever you see a green trigger button you can link that to midi channels and then choose individual notes from your set.



7) Audio routing

Unfortunately, there isn't a direct way to route audio in computers. You need to download third party software. Blackhole or Soundflower are pretty typical for mac, Voicemeeter is what we use for windows.

In Mac you need to go to Applications > Utilities > Audio MIDI set up. Make a new multi output device. Choose the audio routing software you just downloaded and choose built in output. Go back to Ableton, choose Built In + your audio routing software as the output. Then go to Volta settings and under audio choose the audio routing software.

On Windows open Ableton, choose voicemeeter as the output. Open voicemeeter, this needs to be open and running. Go to Volta, go to settings, audio and choose voicemeeter.

Now you will be streaming the visual output as well as the audio output

PART 3 - CONNECT TO TRAKTOR <Add link to video>

This section will show you how to set up and control Volta Create from Traktor.

1) Download Max MSP

If you don't already have it, download the free version of Max msp <Add link> - this is what converts and sends data in traktor into data that Volta knows how to read.

2) Download Traktor files - Max project, TSI file, exportparamstraktor list

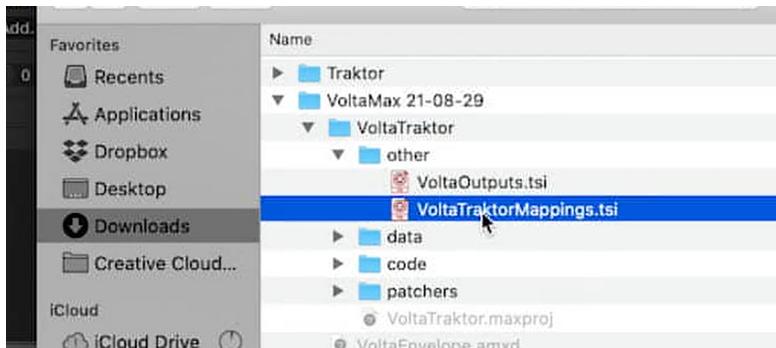
Now download the max project files and Traktor TSI file <Add link>.

3) Open Traktor - add TSI file

First we are going to add a TSI mapping file to traktor so we can pull audio data and midi data from traktor. So, unzip the file, open traktor, go to preferences, controller manager. At the top under device, click add, import TSI, Import other.

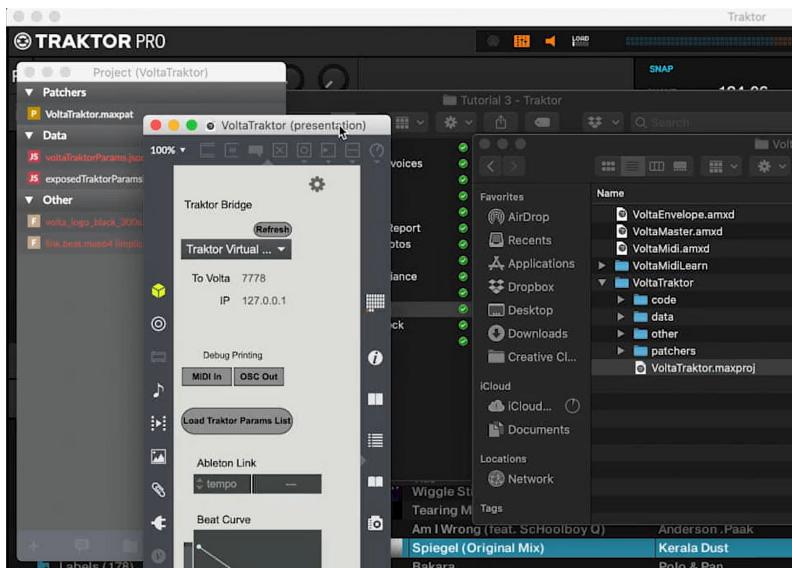


Now navigate to the folder with the TSI file.



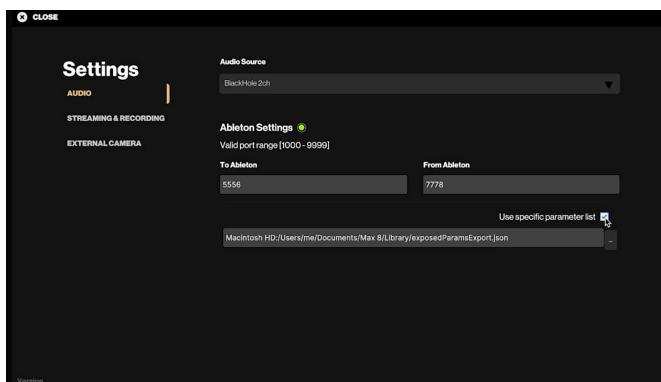
4) Open Max MSP - open traktor max project

Now open Max msp, open the Volta Traktor.maxproj file



5) Open Volta and point params list to exposedparamstraktor list

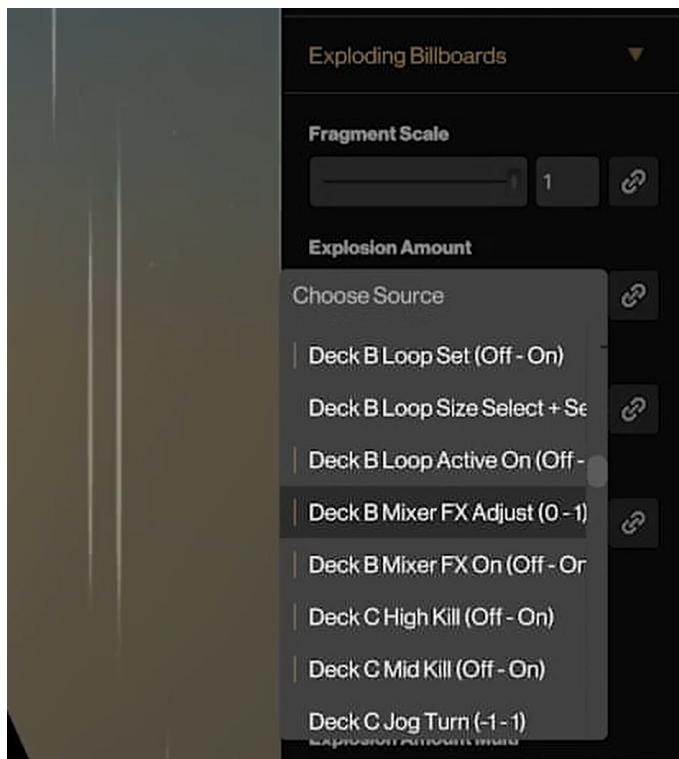
Now open Volta, go to settings and under audio choose use specific parameter list. Click on the 3 dot icon and navigate to the volta traktor folder, and choose the exposedparamstraktor.json file.



You will have to do this step every time you use Volta and Traktor.

6) Connect Traktor parameters in Volta

Ok now go to the create panel, click on an element and click the link icon on a behavior in the spector panel on the right and you should see your list of parameters. You can either choose the parameter or you can just press shift and click while moving the fader or sending parameter data or audio



7) Audio Routing

This will get you building worlds but it won't pull the audio in directly from Traktor. Unfortunately, there isn't a direct way to route audio in computers. You need to download third party software. Blackhole or Soundflower are pretty typical for mac, Voicemeeter is what I use for windows.

In Mac you need to go to Applications > Utilities > Audio MIDI set up. Make a new multi output device. Choose the audio routing software you just downloaded and choose built in output. Go back to Traktor, choose Built In + your audio routing software as the output. Then go to Volta settings and under audio choose the audio routing software.

On Windows open Traktor, choose voicemeeter as the output. Open voicemeeter, this needs to be open and running. Go to Volta, go to settings, audio and choose voicemeeter.

Now you will be streaming the visual output as well as the audio output

PART 4 - CONNECT VOLTA TO GENERIC MIDI/DAW/CDJs [<Add link to video>](#)

This section will show you how to set up and control Volta Create from any MIDI device, DAW or just from your desktop audio.

1) Download Max MSP

If you don't already have it, download the free version of Max msp [<Add link>](#) - this is what converts and sends data in traktor into data that Volta knows how to read.

2) Download Generic MIDI device

Now download the max project files [<Add link>](#).

3) Open Max + Generic MIDI

Open the max project. If you are using a midi controller plug it in, click refresh and it should appear in this list here. If you're using a DAW you are going to need to route the MIDI data. The ability to do this is built into macs, you just use the IAC driver. On Windows you need to download 3rd party software like RTP Loop midi or something similar. Ableton made a really good guide for routing MIDI [<Add link>](#).

You will need to run this max project whenever you want to use a midi controller or DAW (aside from Ableton or Traktor for those just refer to relevant sections).

4) MIDI Learn

Once you've chosen your device or are routing MIDI from your DAW, click the learn button. Start moving faders, pressing buttons or playing midi notes. You should start seeing them appear here. Buttons will appear as a single item, you will be able to parse the individual notes in Volta.

[<Add image>](#)

You can give your parameters unique names. If you do, **don't use generic words like fader or button** (max msp picks those up and treats them differently).

Once you've chosen your parameters you need to save this list so you can point to that list in Volta. When you go back to a session in Volta and use the same controller you will need to not just open max, but re-load this list in max as well as point to it in Volta.

5) Open Volta and point params list to exported list

In Volta go to settings, the audio tab and choose specific parameters list. Navigate to the list you just made and select it.

[<Add image>](#)

6) Connect parameters to Volta

Ok now go to the create panel, click on an element and click the link icon on a behavior in the spector panel on the right and you should see your list of parameters. You can either choose the parameter or we've made our own midi learn mode in Volta, you can just press shift and click while moving the fader or sending parameter data or audio

<Add image>

7) Audio Routing

This will get you building worlds but it won't pull the audio in directly from wherever you are feeding audio in from. Go back to the max patch, click on envelope follower and we will be using Max maps audio status to pull your audio in.

<Add image>

Unfortunately, there isn't a direct way to route audio in computers. So if you want to route audio from say serrato or logic you will need to do audio routing and will need to download third party software. Blackhole or Soundflower are pretty typical for mac, Voicemeeter is what we use for windows.

In Mac you need to go to Applications > Utilities > Audio MIDI set up. Make a new multi output device. Choose the audio routing software you just downloaded and choose built in output. Go back to the max patch, choose your audio routing software as the input and none for the output or you will get a feedback loop. Go to your audio source if you are using a DAW like logic choose the aggregate device. Then go to Volta settings and under audio choose the audio routing software.

<Add image?>

On Windows just go back to the max patch, choose voicemeeter as the input and none as the output. Open voicemeeter, this needs to be open and running. Same deal here, go to your audio source if you are using a DAW like logic or serrato choose the aggregate device. Go to Volta, go to settings, audio and choose voicemeeter.

<Add image?>

Link a behavior to your audio and you're all set!

<Add image>

Now you will be streaming the visual output as well as the audio output

PART 5 - CREATIVE BASICS <[Add link to video](#)>

This section will show you how to wrap any sort of 2D media around our library of 3D elements in Volta create.

You can map photos, videos, camera feeds, we also have native support for syphon spout and NDI so you can use VJ software like resolume and touch designer as well as LiDAR for volumetric effects if you have one of the new iphones or ipads with a lidar sensor.

1) How to wrap any 2D media into world

Under the Create panel you have elements at the top and visual sources at the bottom. Click on a blank visual sources tab and the inspector panel on the right will open giving you options for the type of media you can pull in and how to change or manipulate it manually, with a midi controller, or DAW.

<[Add image](#)>

Under the preview window you can choose the type of media you want to pull in. One of the first things you can try is add a webcam as a visual source. Volta will detect any video feeds on your computer, this second drop down will let you select which one you want. You can even have multiple video feeds as separate visual sources.

<[Add image](#)>

Now go to an element and map your webcam on to the 3D element. Just click on the Video texture and choose the one you want. You might need to make some adjustments to get it to be visible or how you want it to look. For example, you will need to make sure the blend of the texture is up and sometimes the global visibility of the element.

<[Add image](#)>

You can try the same with single or multiple videos. You can manually move through the videos or can link it to a parameter and use a midi controller, DAW etc. to do the same.

And again go to an element and wrap that video around the element by choosing video texture

<[Add image](#)>

2) Image Generator

We've built another way to make visual engaging graphics from within Volta too. Go to Image generator. Choose the type of image you want - we have moving lines, sunburst, solid color. From there you can control the different aspects of it the same way you would any other behavior in Volta. Just click the link icon and connect it to a parameter.

<[Add image](#)>

There are some special elements that act a little differently like Chromakey elements and Lidar which provides volumetric effects in Volta. These are explored in the next section.

PART 6 - SPECIAL ELEMENTS VIDEO TO BE COMPLETED

There are a few special elements in Volta that will let you appear more immersed or actually be volumetrically in Volta.

1) Chromakey Billboard

First is the chromakey billboard. This gives you the ability to make a certain color or color range transparent. For example if you have a green screen you can choose that color and appear in the volta environment without a border or background.

[<Add image>](#)

Go to the chromakey billboard element and choose your input texture. This will most likely be your video camera but I'll show you in a second how you can get creative with this. So to start choose your camera, and adjust the chroma hue to define the median color you want to make transparent, then use the range to narrow it down so you don't cut out too many colors in the range.

[<Add image>](#)

Next we've also added the ability to add a layer mask on top of whatever isn't transparent. So for example, I'll add a folder of VJ loops to my visual sources. Go back to the chromakey billboard and choose the VJ loop as the mask texture. Now flip on the use mask color texture option and there is a you shaped VJ loop!

[<Add image>](#)

We also have volumetric effects that you can add on top of the billboard to give a 2D you a little more dimension. Play around with these effects here.

[<Add image>](#)

Here is a little creative tip. Try using the same vj loop as the main video texture and play around with the transparency. You can do things like set it far in the distance and have it take up a lot of space.

[<Add image>](#)

2) Rcam

Ok now if you have one of the newer iPhones or iPads with a LiDAR sensor you can actually put a 3D volumetric you into Volta. We are using a library by an extremely talented developer named Kiejiro Takahashi, so big ups to him for making RCam.

This requires an iOS app that handles the capture and transmitting of LiDAR data to Volta. [<Add link to app>](#)

Your iPhone or iPad need to be on the same WiFi network as your computer and have Volta already opened, click on a new visual source, choose NDI. Now open the app on your iPhone or iPad and select it on this second drop down menu. This part is admittedly a little buggy, so you might need to toggle off of NDI to a different visual source and back to NDI or do a hard restart of the app on your iPhone or iPad to get it to appear and start sending data.

[<Add image>](#)