

A Monster Frankenstein Controller, with Fur Keys and Borg-Like Eyepiece, Built by Julie Covello

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Photo by Nina Mouritzen; courtesy Julie Covello/Shakey.

In an explosion of color, buttons, keys, velcro, and fur, and coupled with a cyborg-chic eyepiece, the VoltAxe is controllerism gone Mad Max, a post-apocalyptic keytar bred from salvaged parts. And if you want to make a unique construction of your own, creator Julie Covello — aka New York's DJ Shakey — is willing to tell all her secrets, as well as why this was important to her music.

In modeling (the basement hobby variety, not the skinny fashionista one), "kitbashing" is the act of combining bits of multiple kits to produce one finished whole. Some custom new controllers are following a similar route, taking the best bits of, say, a keyboard and a Novation Launchpad, and going a bit nuts. Julie's work deserves special mention not only because it takes that technique to an extreme, but it couples it with a heads-up, hands-free video display to keep feedback from the computer visible without being a distraction.

Julie tells us all the details:

The VoltAxe controller was created as part of my artist-in-residency at the [Clocktower Gallery](#) in New York City, made possible with support from the [Jerome Foundation](#). I named my residency "DJ Shakey's Audio Control Adventure" and wrote a [pseudo-blog on Facebook](#).

To me, exploring Controllerism means trying to make my performance easier, more creative, and more dynamic. I did quite a bit of general research during this project, but with the performance controller, I focused on making a system that allowed me to walk around, not look at the controller, not look at my laptop (remove the barrier between me and the audience and / or my bandmates), and have maximum flexibility and spontaneity with the sounds I was manipulating.

I had about 5 weeks to work, and I wanted a finished product that I could perform with, so I followed up on simpler solutions and left the hardcore hacking and studying for another time. I was also planning a huge finale party with 23 music and projection artists performing in multiple rooms, so that was on my plate as well.

Here's a description of the final controller system...

I use Ableton Live — the way I perform, I want to see the laptop screen so I can pick clips at random to suit my mood. I don't want to memorize my set and I don't want to stare at my laptop screen either, so the solution was creating an eyepiece that shows my laptop screen within it. To build this I got help from VJ DoctorMojo aka Mark Alan Johnson of [Mojo Video Tech, Inc.](#) We experimented with a number of hacks, repurposing components extracted from the viewfinders of old camcorders. These experiments yielded a number of functional miniature low-voltage displays, however these units were all black-and-white and a color image was what I needed. Very long story short, the final solution was to buy a pair of [Vuzix personal video glasses](#) (US\$250), flip them upside down and attach ONE screen to a regular pair of glasses so that only one of my eyes is looking at the screen and the other eye is looking out into the world. What I see with both eyes open is my laptop screen floating in the air on top of what I normally see. It's amazing how easy this is to use!

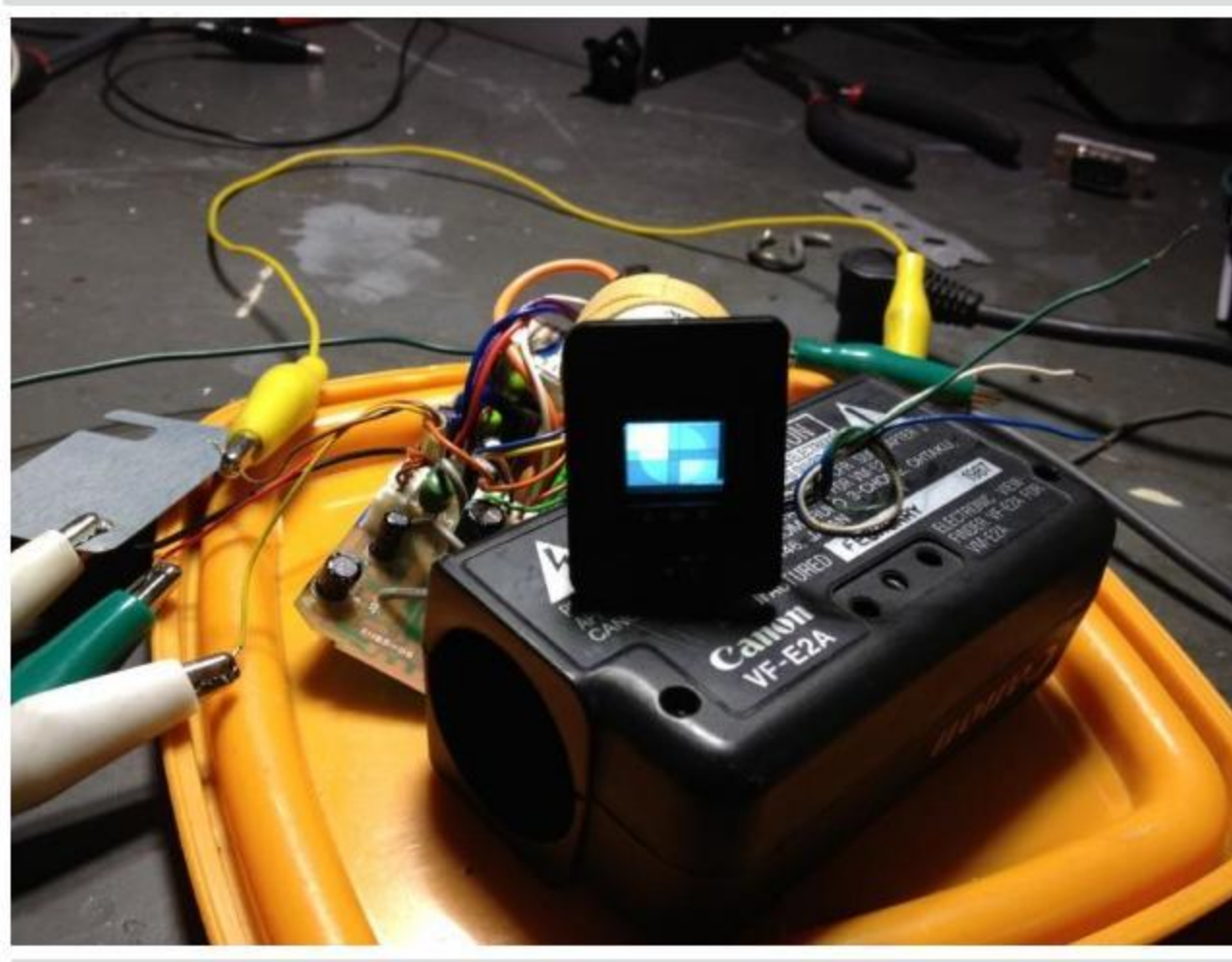


Photo by Mojo; courtesy Julie Covello/Shakey.

There was more to do to make this work:

1. I had to run the output of my computer to a scan converter (\$100) about the size of a cigarette pack and then run a wire to the little box that manages the glasses, adapters and cables were required.
2. I had to power the glasses, so that meant making the power cable about 10 feet longer so it could be plugged in while I walked around.
3. The image in the glasses was upside-down, since the unit was mounted upside-down (to avoid my nose!), so I rotated it 180 degrees via my Mac OS preferences.
4. The cursor size was too small, so I enlarged it with the Mac's "Universal Access" preferences.
5. The image of my laptop screen was pretty low resolution, so low that I couldn't read any of the clip names, I referred to the Universal Access preferences to determine key commands for zoom in and zoom out and then programmed my mouse keys to do the shortcut keys for these functions. Zoom out and I can see levels and stuff, zoom in and I can read type. I also fooled around with the screen resolution so it would be as clear as possible.

Speaking of the mouse, I did more research on the mouse than anything else! I wanted to attach it to my controller, which I was planning on hanging over my shoulders like a *keytar*. It had to have basic mouse functions AND I wanted buttons that could be programmed to do a series of keystrokes with one touch. There were some pretty cool mice on websites for the [handicapped](#), but they were either absurdly expensive or they didn't have all the functionality I wanted. I ended up using the one I had on my desk, the Kensington Expert Pro Turbo Trackball. I've had several over the years and I love them. They don't make them any more, so they are hard to get and costly. (US\$150 – 300) Also, the trackball is not secured in the socket. I basically just duct-taped this to my controller backing, and secured the trackball (with help from Mojo) with a piece of silver solder and a rubber band so it could move freely but securely. The mouse comes with programming software and I programmed the buttons to do — whatever I wanted!

The controller backing is 3/4 foam board (\$5). I need this thing to be light! It is solid and doesn't flex at all. I attached a number of controllers to this backing, a [Novation Launchpad](#) (triggering clips, punching clips in and out), [Korg nanoPAD 2](#) (fx, samples), [Korg nanoKONTROL 2](#) (mixing, fx), and two [V-meters](#) (fx). I also messed around with a [Keith McMillen Softstep](#) foot controller which I like a lot and am still incorporating into the set-up. All of these run into a "Plugable"[-brand] 10-input powered USB hub on the back of the unit. I had to add a 12-foot usb extension to reach my laptop, as well as extending the power brick cable. All these long cables were bound into a single [cable sleeve](#) running to the laptop and power strip.



A controllerist on the roof ... sounds crazy, no? Trying to scratch out a pleasant, simple tune without breaking her neck looking at her laptop. It isn't easy. You might ask, why do we stay up there? Are we checking our email? That I can answer in a single word: improvisation! Photo by Nina Mouritzen; courtesy Julie Covello/Shakey.

In an effort to use the controllers without looking at them, I added textures to many of the keys so I could find them by touch (velcro, rubber, fur). I covered up the keys that I had no plan to use so I wouldn't hit them by accident. I divided the Launchpad up into 4x4 quadrants with miniature wire and ducttape ridges. I'm still adapting to this set-up.

After the whole thing was put together, I hung it from a strap I grabbed off a gear case I had in the room. It took some trial and error to determine where to attach the straps on the controller so that it would hang properly and my hands reached all the controls comfortably. I spent some time with the prototype attaching and re-attaching items until everything was in the right place before cutting out the foam board into the final shape. At this time, everything is attached with checkered duct tape from Home Depot; soon I will upgrade this to velcro (but keep the checkers as decoration!).

The VoltAxe was ready to test play at midnight the day before the huge event where I was going to perform! Thanks to [Moldover](#) and [Mojo](#), who were with me doing ongoing troubleshooting, configuring went quickly and I was able to rehearse for a few hours and pull it together just in time! At the show, everything went as planned and I couldn't have been happier — it was so much fun! I can't wait to evolve this set-up! My next move is to make it mobile and take it to the subway station to do some busking.

More information:

[DJ Shakey](#) : [Clocktower Artist-In-Residency](#) [as written up by the video whiz behind the project, Mojo]

Radio interview, talking DJing, "controllerism," producing, and complete with remixes and original music from Shakey:

[DJ Culture: DJ Shakey, The Illustrated Interview](#)

If you like the project and want to see it developed more, you can also vote for it on [Artists Wanted](#)

Here's a track with the controller in action:



Minor schwing by FreebassBK

Thanks, Julie!