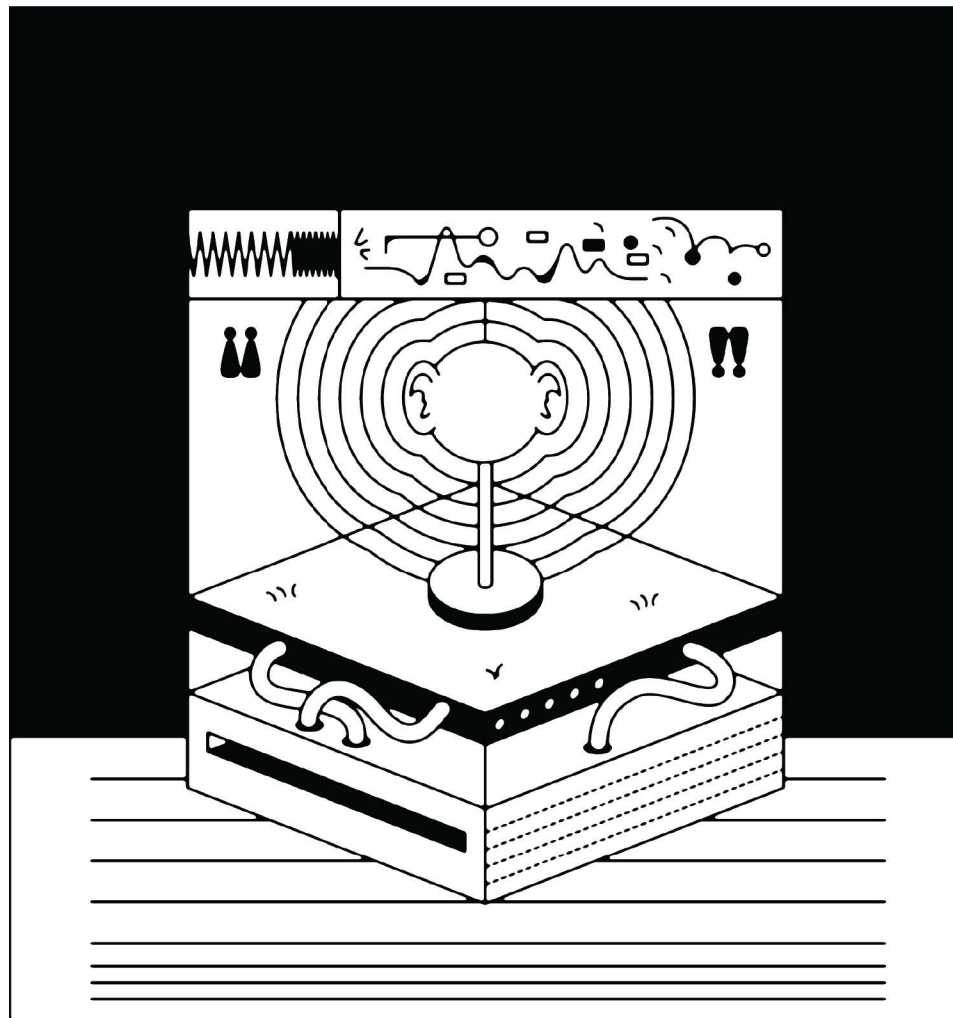
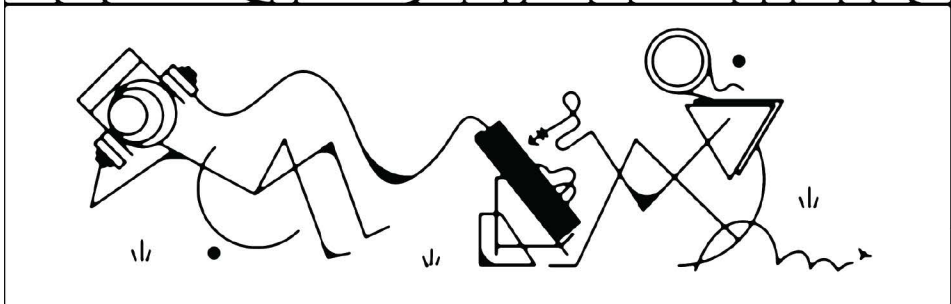
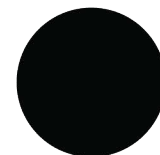


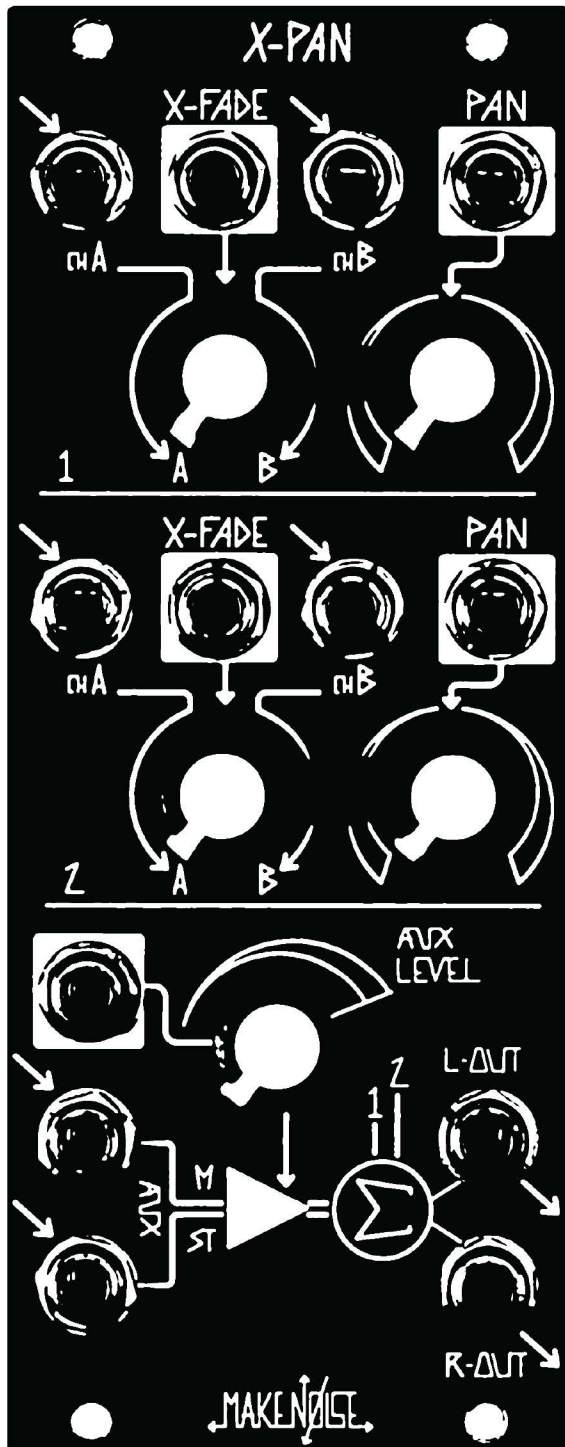
MAY 2019



MAKE NOISE

((((IN STEREO)))





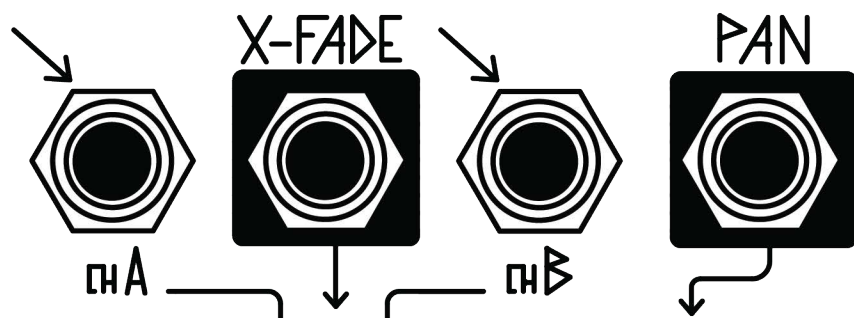
X-PAN

a compact 6-input crossfading,
panning and mixing module
in 10HP

Two channels with
voltage controlled crossfading
& voltage controlled panning

- Fully DC coupled
- Low noise
- High headroom
- 6 Linear VCAs
- Loves audio-rate modulation

One stereo Aux channel with
voltage controlled amplitude



/// TONY ROLANDO on XPAN DEVELOPMENT ///

What goals did you have in mind when developing XPAN?

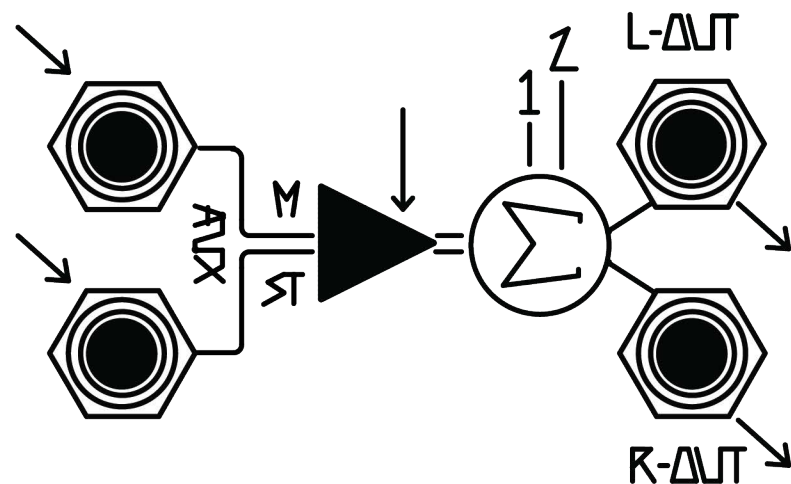
The biggest design constraint was size, because we wanted it to be easily added to systems. Size was the biggest constraint. But it also needed to have full voltage control over the spatial animation elements of it. So those two things are definitely battling against each other.

Speaking of the size it's a very compact module for what it is. How many VCAs are under the hood?

The crossfader section uses 2, the panner section uses 2, and those circuits are each repeated twice— that gives us 8— and then there's a stereo VCA for the unity input which drops another 2 VCAs into the module, so 10 total. 10 VCAs in 10HP, which is quite a bit.

Crossfading and panning is a flexible pairing of functions. Did you have usecases in mind for that duo when designing them?

Well, initially each channel was going to be different and it was going to be a Toolbox of sorts. There was going to be a channel that had more options for the panning, one that had more options for the crossfading, so on and so fourth. But in beta testing earlier versions, what we found was people wanted a more complete set of options per channel, so we came to a compromise of what worked best and that lead us to having what is on the module now, which is unity CV inputs with panel controls, and in order to make the module smaller, no attenuverters.



If you are using a sequencer you don't really need the attenuversion, but if you're using LFOs or what have you, you might need to patch into something like a center channel of Maths in order to really get subtle modulation.

The main idea was just to allow people to take all of the mono voices in the system— something like a DPO or an STO or even a TELHARMONIC— and be able to spatialize that to pair with the Morphagene, which is stereo, and to be able to send that stereo signal to a new a stereo DSP signal processor module that we're developing— to be able to patch those things alongside a stereo Morphagene into this stereo digital signal processor. That's really the main goal, but in a tiny footprint.

As a Make Noise mixing module— like the Optomix or modDemix, etc.— can this one be chained to other modules?

Absolutely. The stereo VCA input acts as an Auxiliary input, so if you have another XPAN you could link them together like that. If you have an Optomix or a modDemix the stereo VCA input is also set up so that if you only patch into the left channel input then it's mono-to-stereo, so it's basically the same thing on both channels. Or say you have a RxMx that has Left and Right outputs, that could be piped in there as well! So it fits in with the other 'Mix modules.

Can you modulate Crossfading or Panning at audio Rate?

Definitely. That was another goal from the start, to design it without opto-isolators (Vactrols), in order to get a few things: more repeatable results, remove the dreaded audio bleed and also to allow for audio rate panning and crossfading which can create some pretty interesting effects.

Audio rate crossfading can create one new signal from two old signals, which is a nice effect. Audio rate panning creates these sidebands that fluctuate from the left ear to the right ear, which can be pretty interesting. They're subtle effects if you're listening in mono— you can't hear the panning in mono— but in stereo the audio rate panning is pretty interesting. It's totally possible with existing panning modules, but I just don't think it's been that well explored.

So now you have two channels that can do panning— one can be more standard panning and the other can be audio rate panning— and then you still have a stereo input to pipe in your Morphogene or other XPAN or whatever other stereo sources you have into your stereo mix.

Are the channels DC coupled as well?

They are, so you can do control voltage... I wouldn't say panning is exactly the word. When you're talking about CV, I think the word would be "routing." So you basically have 2 different routing destinations with Left and Right and then in addition the two channels have crossfaders so you can blend control voltages or crossfade from one to the other. Finally, with that stereo VCA at the bottom, you can bring in a single control voltage to both the routing destinations or you can have independent control voltages going to the independent routing destinations.

Have you had any favorite pairings in developing it?

The audio rate panning is pretty interesting. It creates an effect that you probably haven't experienced too often, and with that, honestly anything— you could take a sine wave from a DPO, patch that in and use the other sine on the DPO through an attenuverter (or an attenuator) to the Pan CV input on that channel and the relationship between those two VCOs is going to create your fluctuating sidebands, left to right. It's a simple patch but it's highly effective for getting those kinds of sounds.

Then, if you wanted to, you could also use the Crossfader as a VCA. So if you combine your function generator (such as Maths or Function) patched in to the Crossfade CV and then you patch your DPO sine to one side of the crossfader and nothing in the other channel, now you've got a VCA as well, providing amplitude control. You can create some beautiful effects with just a DPO and an XPAN, and a Maths or a Function. You're going to get a pretty interesting result with just those simple components.

And there's 2 channels of that as well!

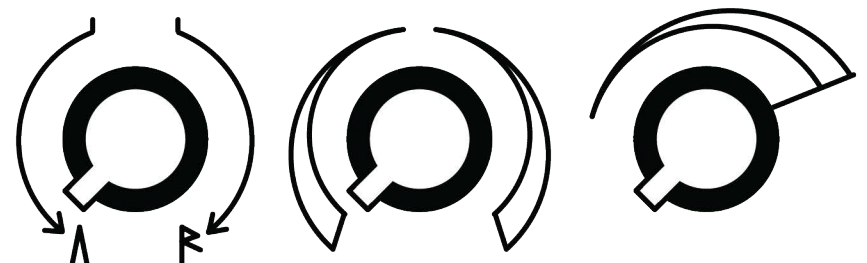
Yeah. 2 channels of that. In total, you could blend 6 signals total into the unit, which is pretty great for 10HP. Crossfaders are just a simple way of doing mixing and they take up less space. That's one of the big reasons why I chose them.

It's good to hear you talk about how to use it with DPO and Maths, but also as a way to connect the new Stereo Suite with a Shared System.

We have a few stereo modules: we just released QPAS which is a stereo filter, and we're talking about XPAN which is a stereo panner, crossfader and mixer. We're also working on a toolbox of stereo digital signal processing called the Mimeophon, which has Stereo In and Stereo Out. Something like the XPAN would work great in front of the Mimeophon, because it would allow you to set up your voices in the stereo field before being stereo processed further by the Mimeophon— that would be the typical way of patching XPAN into that signal path. But you could also get crazy: you could go, from example, from the XPAN into QPAS into Mimeophone, or you could start with the Mimeophon! Take one mono signal and patch it into the Mimeophon to get a stereo processed signal out of that and patch that into the Aux input on your XPAN, take some mono voices and place them in the stereo field, run that whole stereo result through the QPAS and then take that as your final signal. You don't always want to apply all the processing on your entire mix.

Another thing you could do: take a mono signal, run it through the Erbe-Verb, which results in a stereo signal, patch that into the Aux in and combine it with some other mono signals and then take the total of that into the Mimeophone.

The beauty of modular is that there is not a specific signal path— there's just suggested signal paths— but any of them are just as valid. A bunch of them are less likely to be used but could still potentially be interesting.

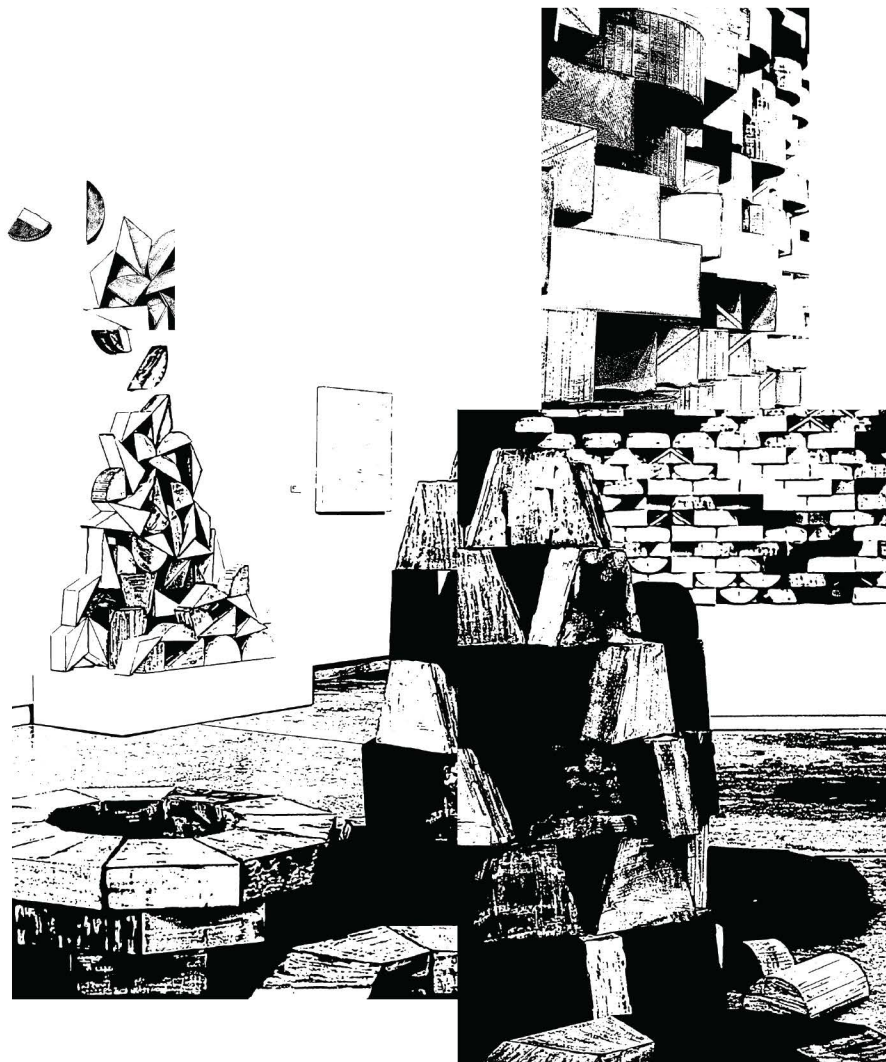
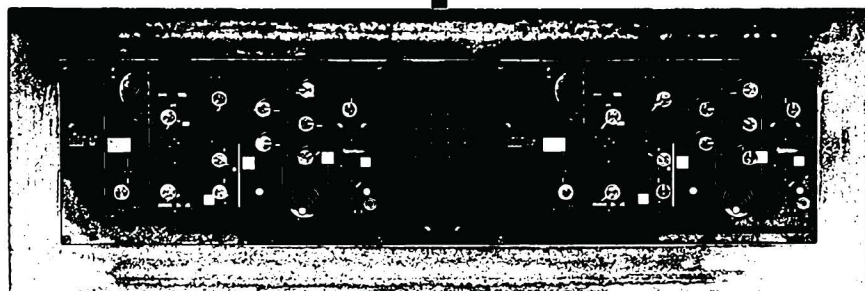
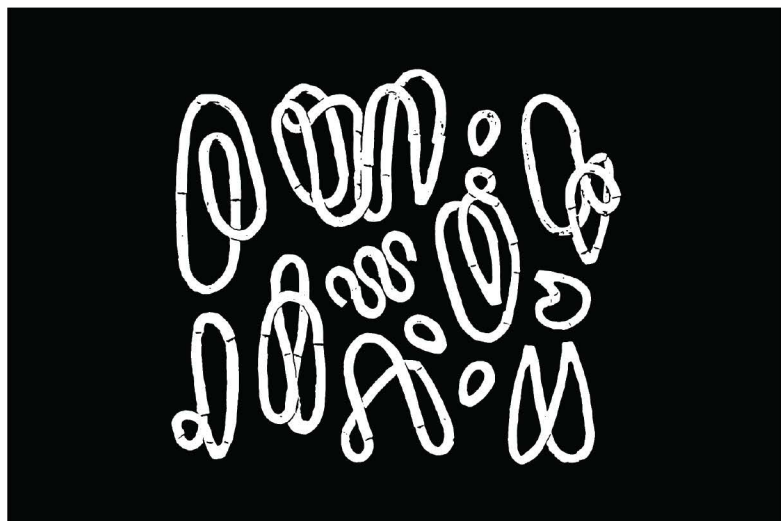


COMPOSE | DECOMPOSE

Conversation: Eleanor Annand + Make Noise

March 26 - May 12

Penland Gallery / Penland, NC



Make Noise partnered with the artist Eleanor Annand to create COMPOSE | DECOMPOSE, a Mixed Media Sculpture and Sound Installation show at the Penland Gallery featuring new work by Eleanor alongside interactive instruments and patches created by Make Noise.

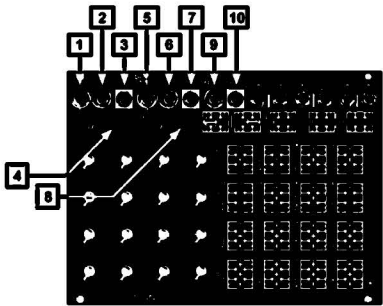
The opening reception featured performances by Make Noise Crew members Walker Farrell, Meg Mulhearn and Jake Pew.

For more information and images from the show, head to:
penland.org/gallery/2019-horn-gallery_conversation-compose-decompose/

WRITING MANUALS

With

WALKER FARRELL



As our resident manual author, have you always had an eye towards manuals? Are they something you read for leisure?

I actually get made fun of in my house for being a manual reader. I always have. I'm always toting around manuals, or if it isn't a manual, some sort of technical book, like the *Computer Music Tutorial*, which weighs enough to squash a dog with.

The Shared System manual in particular is a great resource for learning about the basics of synthesis. How did you approach that angle of it?

I'd been inspired by the Allen Strange book, the *Complete Guide to Synthesizers* by Devarahi and similar books that I had found over time. These are books that were written in the '70s and '80s and they give you a beginner overview of modular synthesis, but for anything modern you'd have to piece it together yourself. The Shared System manual was an opportunity to put our own spin on those general concepts, as well as paying homage to the history.

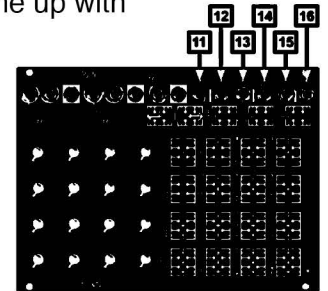
When you were just getting started with modular synthesis, learning about the concepts and getting your head around the terms, were you someone who read the manuals to do that?

I would read the manual for any device that had it, although there were a lot of devices at the time that didn't. I read them where I could. I definitely read the Doepfer manuals. In fact, reading Doepfer manuals (even reading manuals for modules I didn't have) introduced me to a lot of concepts and was a thing that opened my eyes to a lot of ways to do synthesis that I hadn't thought of before. I'm thinking specifically of a lot of the logic and switch based stuff, which before I found Doepfer I hadn't really used anything like that for music. Reading those was very eye-opening for me.

In the back of the Make Noise manuals are Tips & Tricks and Patch Ideas. How and when in the process do you settle on those?

I keep a running list of them, any time that I come up with something that seems like it would be a cool patch I write it down and keep it in the list. Oftentimes Tony will just send me a patch at random in an email on a Saturday night with something he discovered and he'll ask me to include it in the manual.

We might also throw something that is like a Patch Tip but is more of a kernel of an idea, like "consider patching this to that" instead of making it a whole patch. It's pretty unscientific.



Aside from making our manuals you also make our YouTube tutorials. Do you see a correlation between the two as educational resources? Do you plan videos or plan manuals with the other in mind?

I definitely see a correlation between the two, and I do plan one with the other in mind. Sometimes I mine the manuals for patches to demonstrate in videos and vice versa. We've put patches in manuals that were in videos first.

I like making both of those resources available because people have different learning styles and there a lot of people who want to learn by watching someone do a video in real time, and a lot of other people who would rather read the manual or look at a technical description.

Do any of the manuals stick out to you?

For me, I'd say the Shared System manual. It was a long project and a lifelong dream to make it. I feel like the way I described and introduced modular synthesis is different from other ways I've seen it and I feel like it's worth looking at, especially for beginners and can maybe teach something to people who aren't beginners too.

MAKE NOISE CREW RECOMMENDATIONS

“WHAT ARE YOU LISTENING TO RIGHT NOW?”



LEWIS:

Ryuichi Sakamoto - Ongaku Zukan
Jesus & Mary Chain - Darklands
Hokusai - Jade/Sculptures Hide

WALKER:

Celine Gillain - Bad Woman
Laurie Spiegel - Unseen Worlds
Little Simz - Grey Area



JAKE:

Hama - Houmeissa
NET2o - bed bath and beyond
The Rippingtons - Open Road



GRAY:

Anne Roxane - ~~~
oneohtrix point never - replica
Big thief - UFO (Single)



PETE:

Giant Claw - Soft Channel
Brett Naucke - The Mansion
Jan Jelinek - Loop-Finding-Jazz-Records



ERIC:

Autechre - Exai
Anthony Baldino - various tracks
My modular system



JON:

Brown Acid Comps 1-5: Hard and
Heavy from the American
Comedown Era
Cocteau Twins: Blue Bell Knoll
Unida: For the Common Man



Our Technical Specialist
Devin Booze celebrated
his 5-year anniversary
with Make Noise earlier
this month!

Devin is in charge of all
repairs here at the shop
and builds all of our
module prototypes. He rules.

Fun facts about Devin:

Favorite synth: Ensoniq ESQ-1
Favorite module: Mysteron
Favorite hobby: chopping wood



“always ready for real talk with Lee
Coleman/ Mr. Enthusiasm”

The Make Noise Crew said
goodbye to one of its longstanding
members this year and wish
Lee Coleman the best of luck!

“helped me build my house, my first
eurorack case, and my collection of
Hallmark movies”

From folks
at
Make
Noise:

“any major dude will tell you Lee
Coleman's love for modular is No
Ordinary Love. Is it a Crime to make
Boombap with Eurorack? To Lee, it is
the Sweetest Taboo. When You
Came My Way you Brightened Every
Day with your Sweet Smile. I will
always Cherish the Day we met.”



“sweetest, Most Generous People I've
ever met...rare to find people who
care as much- and to find people who
will deck out their Rhodes with gold
upholstery!”

“fast builder of Maths...shining light”

Thanks for working with us for almost
5 years at Make Noise. You'll be
missed!!

New shirts:

Shared System
design by
Wilson Ward Kemp
black on mint green
LIMITED EDITION



Make Noise
2019 logo
black on white



For more shirts and ordering info, head to:
makenoisemusic.com/adjuncts

New stickers:



For stickers, send a self-addressed stamped envelope to:
Make Noise, 414 Haywood Rd., Asheville, NC 28806

Editor: Pete Speer
Photos: Lewis Dahm
Contributors: Kelly Kelbel & the Make Noise Crew
Cover art: Leo Mendez / Super Magic Friend