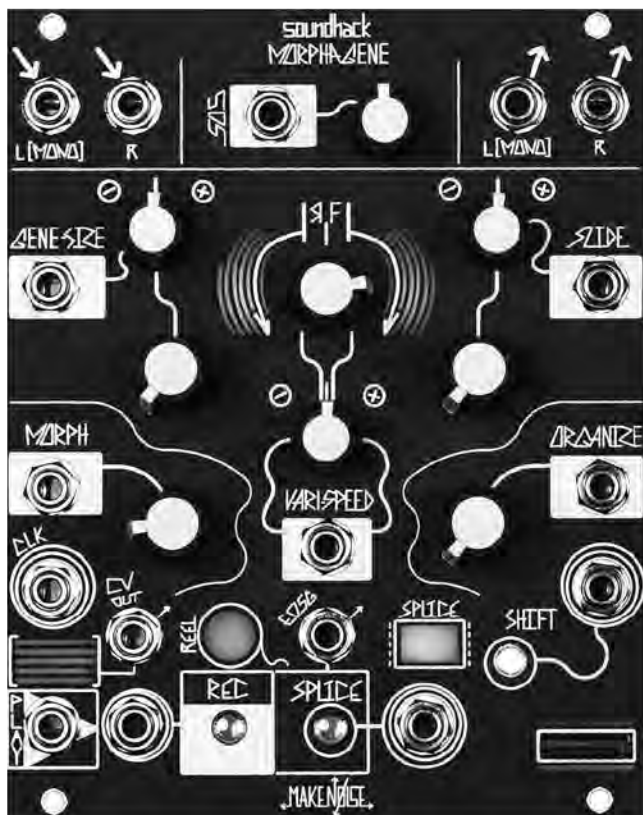
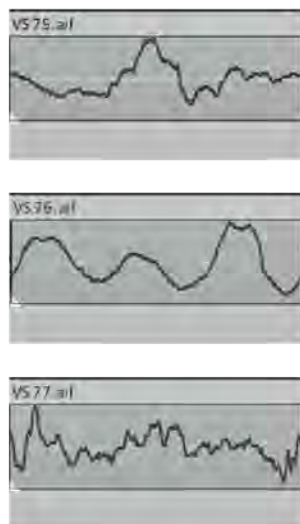


MAKE NOISE ZINE #3
FALL, 2019



Single-Cycle Waveforms on the Morphagene: a quick-start guide



Creating tones from single-cycle waveforms is a classic technique for generating sounds by playing an extremely short sample (a solitary start-to-finish cycle of a waveform) in a loop.

These single-cycle waveforms can be arranged as Splices on a Reel and played back on the Morphagene to provide a wealth of new tonalities!

The Morphagene's panel controls and CV inputs can then be used to modulate these sounds and transform the Morphagene into a powerful voice module, with controls for frequency, timbre, amplitude and more!

To get started, head to our page on [Freesound.org](https://freesound.org/people/makenoisemusic/sounds/482906/) and download the file listed below-- it contains over 100 different single-cycle waveforms, formatted as Splices in a Reel for use in the Morphagene, using the method described in the Morphagene's manual using a DAW called Reaper):

<https://freesound.org/people/makenoisemusic/sounds/482906/>

The next step is to place this Reel on your Morphagene's SD card. While we have the card in a computer, let's make a couple of changes to the User Defined Firmware Options, accessible in the options.txt file.

The important ones here are:

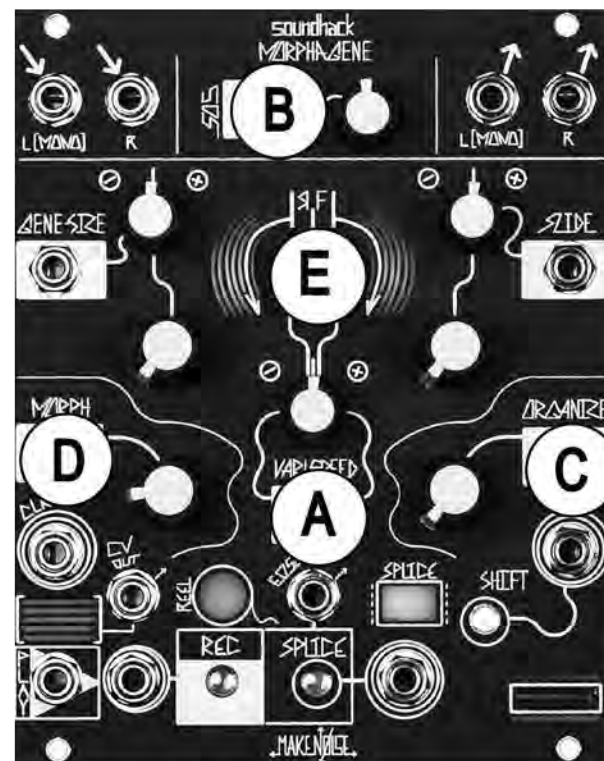
vsop set to 2, for positive-only v/oct CV response.

pmin set to 1. If you haven't used the Phase Mod option before, this is a great opportunity to try it out!

gnsm set to 0. The waveforms are already click-free and do not need windowing.

omod is up to you— a setting of 1 here has the potential to introduce more noise when switching waveforms, whereas 0 is a bit more tame, but the difference is subtle.

Save your Reel as mga.wav



after making the Options selections

Load the SD card, select the Reel and transform your Morphagene into a voice module with the following controls:

A. Vari-Speed CV is now your v/oct input (note: v/oct response will need to be set-- see our YouTube channel for more info!)

B. SOS can be used as a VCA, controlling the amplitude of the output with voltage.

C. Organize selects the waveform. Try scanning through this with CV!

D. Morph acts as a kind of "quantized" transpose input, raising or lowering the frequency in regular intervals.

E. Vari-Speed panel control sets the base frequency.

To create your own single-cycle waveforms from scratch, try these:

Hardcore, Softcore
<https://www.floats.se>

SCW Editor
<http://scw.sheetsofsound.com>
(note: great YouTube tutorials for these made by Tom Hall of Cycling '74)

SynthTech Wave Edit
<http://synthtech.com/waveedit/>

Audacity walkthrough
<https://groovesizer.com/make-your-own-single-cycle-waveforms/>

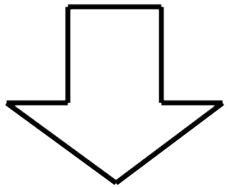
To download pre-made single-cycle waveforms, try these:

Adventure Kid pack
<https://www.adventurekid.se/akrt/waveforms/>
(don't forget to download the 4 NES waves from this site too)

Void Vertex
<https://www.lotsofnoise.technology/post/octatrack-with-single-cycle-waveforms>
(100 single cycle waveforms by the artist Void Vertex)

Only somewhat related, but be sure to set aside some time and check out the...

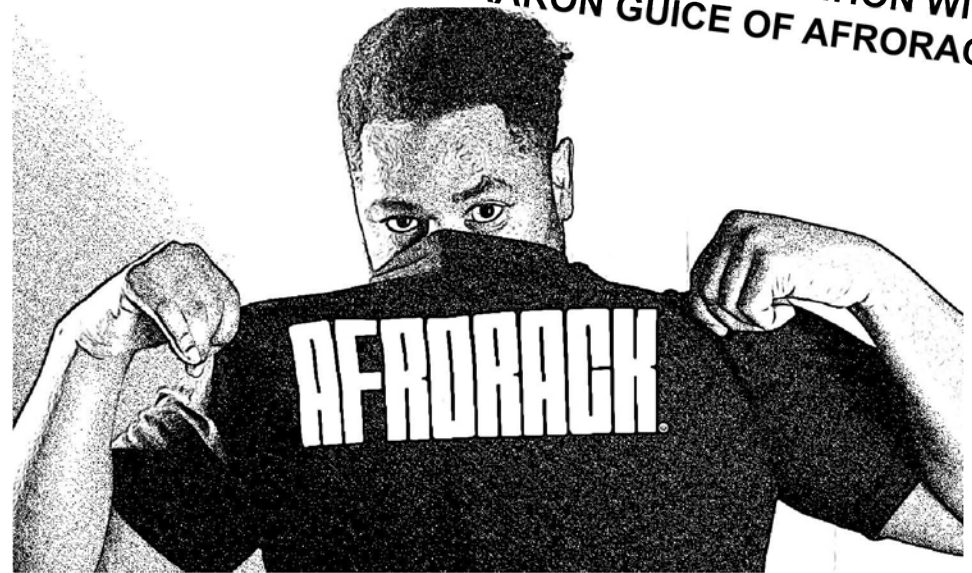
ENSONIQ MIRAGE NEWSLETTER ARCHIVE (1985-1999)
http://www.buchty.net/~buchty/ensoniq/transoniq_hacker/



This is not an exhaustive list! Search around and find more single-cycle waveforms to try!

For a detailed walkthrough on playing single-cycle waveforms on your Morphagene (and information on quickly setting v/oct response for its Vari-Speed input), please check out the **"Single-Cycle Morphagene"** video on our YouTube page!

KELLY KELBEL IN CONVERSATION WITH
AARON GUICE OF AFRORACK



Tell me about your organization, AFRORACK, and your mission.

AFRORACK is a Chicago based organization that educates African American youth about modular synthesis. Our goal is to help the community develop and thrive through technology resources and audio arts education.

Those who know Chicago know that it's a complex city. We often think about it as a city of neighborhoods and communities, but there are many racial and class divisions as well. Education provides hope and a real moment for growth. I began from an early age experiencing different ways of living between where I grew up and other areas of the city and the world. By the time I was 12 I had been to 42 states and 3 different countries. The opportunity to see life through a variety of lenses shaped who I am and how I problem solve.

What has your experience getting into modular been like? Why are you interested in sharing modular/eurorack with African American Youth?

I often compare synthesis to the city itself. At first glance, everything appears to be pre patched and the pathways predetermined. Modular synthesis introduces the concept of taking control of these pathways and creating alternate outcomes. You know how at one point they were teaching chess to kids to help them with long term decision making? Modular synthesis is the next step beyond that. I'm creating a bridge between the modular world and the African American community. It's difficult to think about the impact that I'm trying to have on Chicago without also thinking about the fact that these

synthesizers are luxury items that exist outside reach for most people.

Why did you decide to start this organization? Are there any other projects that informed its creation?

I am passionate about making a positive impact in my city through volunteering, teaching, and creating. I wanted to find a way to make modular synthesizers and audio arts education more accessible.

I was in search of a way to invest in the people who make Chicago diverse, who give the city energy and add value. The city is a place for everyone. Only when the investments in Chicagoans become more balanced will the city be more balanced.

We've been extremely excited to share technology resources with young emerging creatives. Our work has always aimed to revitalize forgotten people and, in doing so, mend communities that have felt forgotten. Sometimes making culture visible is simply giving a platform so that culture can happen.

How do you get young folks involved in AFRORACK? Are you working with any community partners, schools, etc.?

AFRORACK helps to connect youth who are curious about audio and synthesizers and to provide them with time and space for creative expression through an interactive and collaborative experience. Attendees are asked to bring their imagination, curiosity, and willingness to participate. This system of music production empowers anyone to create sound stories regardless of musical background, training, or abilities.

The teaching process is one that combines hands-on-learning, individual work, and group collaboration. Students receive an introduction to the basics of modular synthesis and apply the lesson on-site. Everyone is encouraged to explore their individual voice by using concepts of improvisation within the context of music, sound and storytelling. Students leave with a toolkit of concepts that encourage the creative engagement within their own personal and social spaces

AFRORACK offers a safe environment for African American youth to challenge the rules and boundaries of society without fear. This is a real thing. This fear these kids have. I mean, everyone around the world has heard about Chicago. Challenging ideas is something that African American youth don't do on a normal basis. And this becomes the center of a deeper issue. If you don't question or challenge your current situation then when or how does the change happen?

How do you plan to sustain and grow the project?

AFRORACK is not about musical genres like Ambient, Techno or Modbap. It's about creative problem solving. Many cities are searching for ways to reinvent themselves. Art and culture are important elements of reinvention. Ambitious art programming can play a huge role in building a strong community. My idea of readapting the fundamental ideas of synthesis, of uplifting the youth as well as rebuilding self worth, is a model that has great potential to be replicated in other places around the world.

What are your hopes & dreams for the future of AFRORACK?

If we think of education as just facts and repetition then that becomes a very short story. Educators need to remind themselves that they're partners and allies. That's when education has more value, when it makes neighborhoods better and cultivates healthier communities, it also brings into existence a pathway for better opportunities and opens up conversation for true understanding of one another.

Anything else you think is important to share is great, too...

The invention of this platform is designed to elevate. The symbolism of this work also confronts ideas of appropriation and classicism head on. I'm confident that amplifying these voices and translating their stories on a global scale will eventually shape new conversations.

AFRORACK, and maybe the value of this word 'AFRORACK', will help people focus themselves, I think that it might be the kind of an ambitious future that others are willing to invest in. A future of connection and exchanging ideas deeper than their own.

The long-term intention of the work I am doing in Chicago is to construct a nerve center of cultural activity. The privilege to view the world through multiple lenses shaped who I am and how I problem solve. That connection may not exist for many youth in areas where I teach, so I wanted to invest in that opportunity for others. I'm no expert, but I'm interested in creating conversations using modular synthesis and the audio arts, and if I ask questions and create a setting to actively listen to others, amazing things could happen. I have to lead from my own personal experiences and allow the community to take shape from it.

How can folks learn more?

Website and social:
afrorack.org, @afrorack



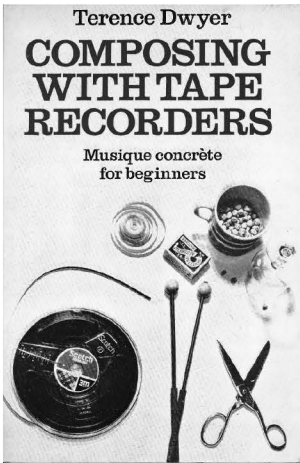
TONY ROLANDO on THE TAPE & MICROSOUND MUSIC MACHINE (and his first experiences with MUSIQUE CONCRÈTE)

How did you first get interested in Tape Music and Microsound-- both the music and the types of instruments and practices associated with them?

I purchased a collection of musique concrète at a library record sale around 1990. I had no idea what it was and I purchased it based on the album cover art and library card description. A couple years later I found a book about tape music in a library at Southern Illinois University.

Have you made Tape Music yourself?

Yes, not long after I discover the "Composing with Tape Recorders" book, I was lucky enough to find a tape machine at a Salvation Army Thrift store in central Illinois (where I grew up). It was called the "Superba" and was very similar to this machine:



To use the loops I would record the them playing back as many times as needed to my cassette recorder and then play that cassette back into the Superba machine while adding more instrumentation and recording the result to a single mono track on the Superba. Using SOS I could layer multiple instruments and loops. Later I found a Casio SK-1 and I began using that for loops because it was so much faster and easier. I also liked how you could play the loops with the keyboard.



Each of the modules in the Tape & Microsound Music Machine contains a wealth of possibilities in terms of patch programmability— Maths is a universe all on its own! What were your thoughts behind incorporating these particular modules into a System?

I have learned that creating a good modular system requires more than just the latest, greatest modules. Many folks building their first modular system lack the knowledge to form a functional instrument and instead end up with a box of cool modules that may not be used to full potential. This is why modules like MATHS, XOH and the Mult end up in so many systems we put together.

Is there an intended workflow with the Tape & Microsound Music Machine?

Capture sound with Morphagene. Modulate Morphagene playback with hands, MATHS and/ or Wogglebug. Post process Morphagene output signal with QPAS and Mimephon, which should also be modulated with hands, MATHS and/ or Wogglebug. XOH for combining and monitoring the results.

NEW from
knight-kit

FEATURING SOLID-STATE
PLUG-IN MODULES
(ELECTRONICS AND...)

Three 4-track
reversible Revolu-
tion tape recording,
Compositional and
Echo Recording

Selector Control
with Record, Play,
Pause, Stop, and
Eject buttons

VU Meters indicate
Record and Playback
Signal Level

Single-Roll Tape
Advance with
Push-Button
Push-Button Switch

Push-to-Reset
Digital Counter for
Counting of
Recorded Selections

Separate Master-Level
Control for
Balance between
Master and
Source

\$249⁹⁵
plus
tax

\$13 monthly

ACCESSORIES

Portable Carrying Case, Accessories
KG-415 deck, 2 inches, tape, tape
reels, 100 ft. 1/4 inch, 150 ft. 1/2
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The Tape & Microsound Music Machine collects many of our recent stereo modules, including QPAS, Morphagene and Mimeophon. Was the latest Make Noise module— XOH— designed alongside those modules, or did the idea for it arise once we had so many stereo modules to mix?

XOH was designed to facilitate the QPAS, Morphagene and Mimeophon as was the X-PAN. The Rosie output module was designed for Mono to Stereo post processing via Erbe Verb with auto-cue facilitating live mono patch creation and morph-mixing. XOH allows for full stereo voice mixing thus relying upon the MIX functionality of the individual modules and patching for control over post processing blends. The auto cue functionality never saw much use in the field as far as I could see, so I dropped that and in place I give the artist two different stereo outputs. Independent Left and Right TS Unity Line Level outs and one Stereo TRS high current out with Level control and capable of driving everything from line level inputs to headphones.

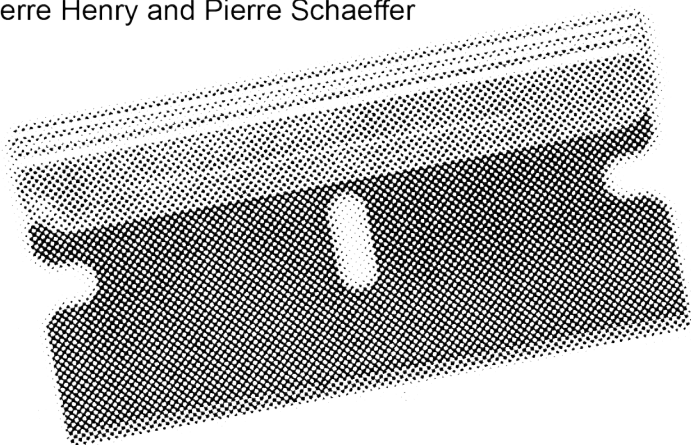
I did not include the X-PAN in the T&MMM because many users might not find it essential as the Morphagene is the primary signal source and it is capable of capturing sounds which already have stereo character. However, one could add the X-PAN and use it to dramatically animate Mono signals captured by Morphagene. Another useful addition could be the TEMPI for synchronizing events within the system.

What artists/records/videos would you recommend people check out for inspiration when using the Tape & Microsound Music Machine?

"Point Line Cloud" by Curtis Roads

"River Run" by Barry Truax

"Bidule et un" by Pierre Henry and Pierre Schaeffer

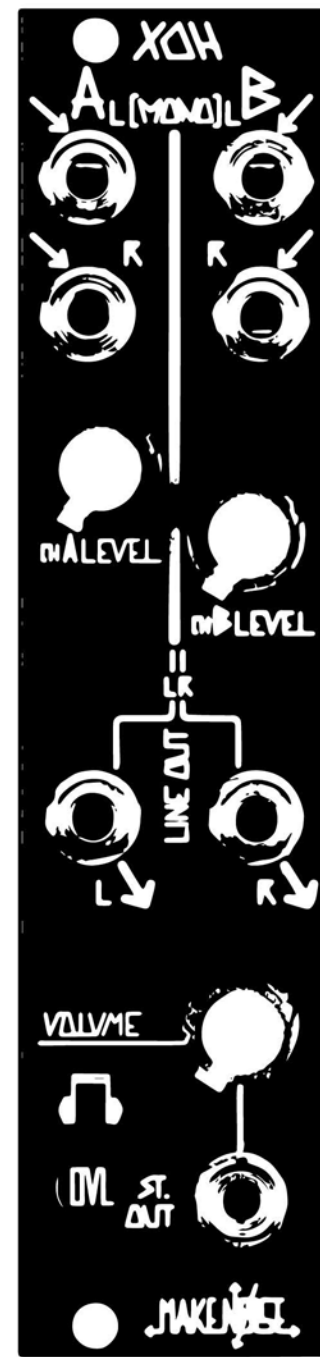


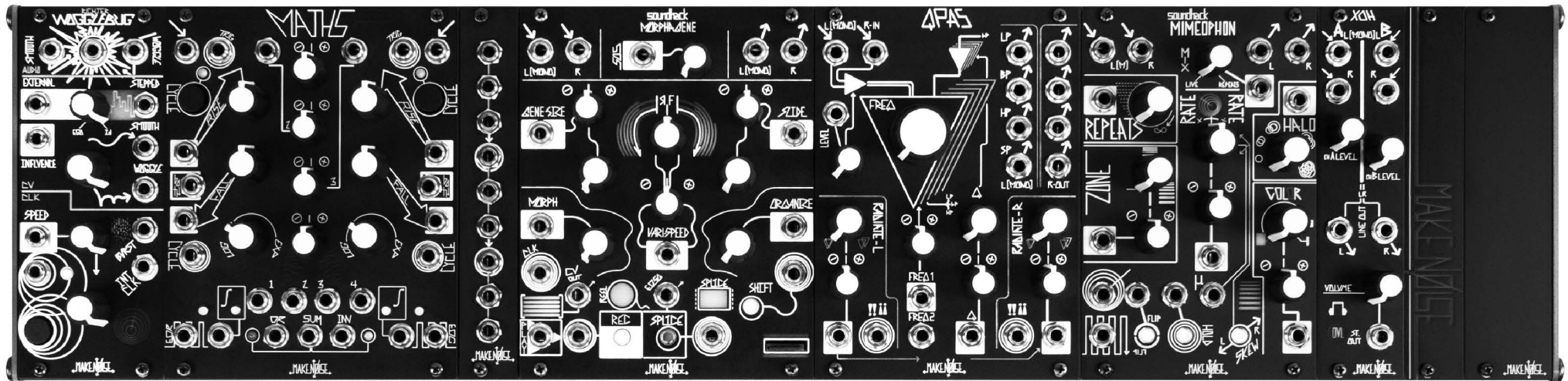
XOH

The XOH (miX Out Headphone) music synthesizer module is a stereo mixer, headphone amplifier and output interfacing module for your modular synthesizer.

It consists of two stereo input channels with independent level controls, and two stereo outputs: one pair of independent line level left and right outputs at unity gain; and one TRS headphone or line level output with dedicated level control, all in 6HP!

NOW AVAILABLE!





The Tape & Microsound Music Machine!

The Tape & Microsound Music Machine music synthesizer is a small stereo system devoted to capturing external sounds and sculpting them into new ones. Centered around the **Morphagene**, and featuring both **QPAS** and a **Mimeophon** for stereo processing, **Maths** & **Wobblebug** for modulation and the brand new **XOH** output module for mixing, line-level conversion and a headphone output. Plus a **Mult** and 10HP open for expansion. Reinterpret and process the world around you!

AVAILABLE NOW!



On November 8th, Make Noise Records released "Electronic Hypnosis Program," the new EP by Chicago-based musician Brett Naucke. We spoke to Brett about the themes of the new record, and the theft that almost erased it entirely.

Your releases in the past— *The Mansion*, *Executable Dreamtime* and others— have been albums anchored around specific themes, and *Electronic Hypnosis Program* is no different. Can you talk a bit about what inspired the tracks on this record and give some context for where they sit thematically?

Yes, everything I've done for some time now has focused on a personal narrative that has been extremely powerful or in some way mind altering. *EHP* began with trying to convey different altered brain states. I've long been into "ritual music" as a focus when I write to envelop myself deeper into the project and "live" in the recording so to speak. For instance, *The Mansion* focused on memory distortion and childhood told through the lens of a house I lived in, where the end goal was to make music that sounded like these memories. This was years of recording. *EHP* was a much different project as I was trying to convey many different "altered" states within a short amount of time, all of which were self-induced through some sort of induction. Secondly, it's extremely rare that I release music as EPs and really wanted to play to the format. Having 5-6 short tracks that were com-

pletely different from one to the other was the method that made the most sense to me as it maximizes the format. I found this to be beneficial to coming up with a variety of thematic ideas as they are these short bursts of various brain states.

As someone who has both a recording practice and a performance practice, do you tend to assemble and refine music through playing live, or do you perform what you have written in the studio?

My studio practice and live practice are very separated at this point and actually rarely intersect. Much like the "ritual music" aspect of writing I mentioned before, the same aspect applies to live performance. I rarely perform the same thing twice as different pieces work for different rooms, events, etc. This has just come with many years of performing and finally getting down to what I enjoy and have learned from it all. I am very influenced by the environment and want to produce something back to match, and it's rare that previous material just happens to fit perfectly. Ultimately, it makes touring harder, but makes the individual performances, installations and other work much more fun for me and that's what I've been focusing more on the last few years anyway. Ultimately, I create everything in the studio so it's not to say that nothing in the studio influenced the live work, but the work I write for any live pieces tend to only exist in that world and I rarely find that they "hold up" as just recordings.

During the creation of *Electronic Hypnosis Program*, many of the recordings were lost due to your computer being stolen. How did you go about re-creating them? How do you transcribe your work—sheet music, notes, photographs of patches?

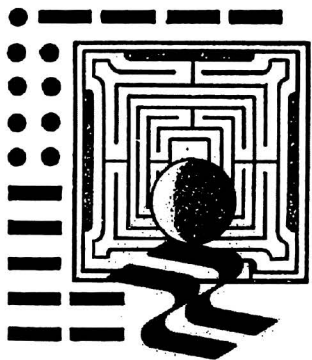
My studio being robbed was definitely a hidden blessing in that I was able to completely re-do something I had 100% finished, whether I liked it or not. Which I initially did not... at all. I felt pretty despondent to re-record it initially but when I started trying to re-create tracks they ended up in new and exciting places. In the 10 years or more I've written music on the modular, I've written maybe 2 patches down but I could probably patch up dozens on the fly from the past without hesitation. My brain is constantly de-bugging and reverse engineering sounds as I hear them so figuring out my own sounds on a familiar system wasn't really the difficult part-- it was much more finding the inspiration for the tracks. Some of the initial *EHP* work was fresh enough in my brain that I could remember the foundations of these patches, but again, I ended up in much more interesting places using my memory of these tracks than if I actually just re-patched them identically.

Did you find yourself making conscious changes to the music the second time around, or are the pieces on the record more or less the same as their original versions?

Absolutely. One thing I've always loved about using the modular is that I'll often be inspired by some piece of music, or individual sound, a feeling, whatever.. and head to the modular to produce whats in my head. 99% of the time it ends up being completely different than what I intended, but I end up in a totally fresh new place that I like more. Ultimately it has more agency and myself in it anyway as I'm never interested in hearing the same thing twice. These pieces were so fresh in my head that I initially tried to re-create them to some degree, and ended up in totally new place which I fully embraced. Ultimately the record is in a much different and unique place than its initial run so I am pleased with that.

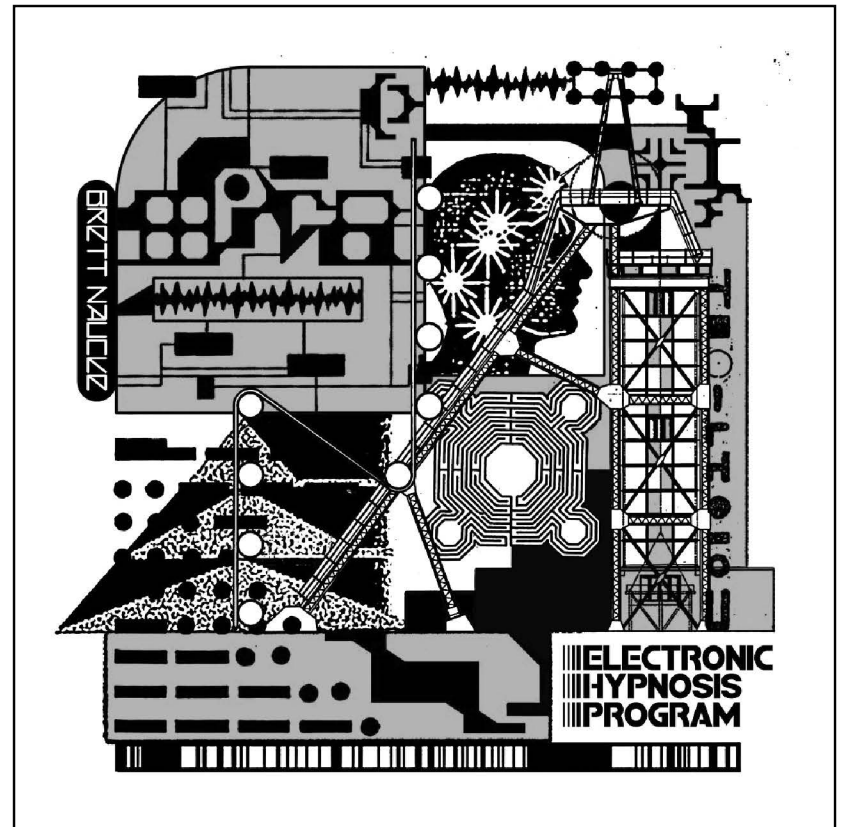
Where does the modular synthesizer sit in your creative process— do you bring ideas to the instrument to be expressed through it, or does the act of playing the synth inspire you to create music?

The modular is definitely the heartbeat of my creative process and makes its way into everything I work on at some point as I rarely (if ever) feel hindered or un-inspired by it. I do rely heavily on the computer for arrangement, mixing and processing, but its very seldom that the modular doesn't make it into each piece and definitely provides me the most inspiring way to make music I've found. As mentioned earlier, I very often try to backwards engineer sounds I hear or am inspired by, and end up in a totally fresh and foreign place. I love the artists' ability to bend an instrument (or any tool for that matter) to their liking as they grow and progress with it and modular isn't much different to me. I don't really see it as this endless sound maker that can be as big as I want, but more of a means to an end / tool box I can bend and shape to my liking.



The artwork for Electronic Hypnosis Program is fascinating— can you talk a bit about your collaboration with Bill Connors on the art, your goals with the album's aesthetics and maybe decode its images for us a bit?

I had wanted to work with Bill on a project since the first time I saw his art years back (many Chicagoans would recognize his work from countless posters/promotions from the Empty Bottle, event posters and record covers) but there hadn't been a project I've worked on until this particular record where his art truly suited the material. I've known him through the Empty Bottle for a good while and he seemed keen on working on it the first time we talked about it and I vaguely illustrated its subject matter. Bill works very reactionary to the material hes given, and thats the same way I've worked w/ everyone else who's done visual art for me: give them the album and hope it inspires something with little direction on my end. I always imagined the visual accompaniment to this record being a sort of "classified ads section of different altered brain states" (pretty sure this is verbatim what I told him) and that really sums it up visually. The record has so many different motifs, and little sound worlds within a short amount of time, and the art really nailed that frantic mind jumble.



Brett Naucke * "Electronic Hypnosis Program" * OUT NOW
12" EP * Clear vinyl * Limited edition on Make Noise Records



WALKER FARRELL on the **Morphagene** Reel Sharing program

In the Morphagene manual, I wrote:

“The Morphagene comes with a blank microSD card for storing sounds. No sounds are included with this card. You don’t need somebody telling you what sounds are approved for use. The world of sound is larger than we could possibly imply with presets. “

At the time of the Morphagene’s release, I felt that this was an important point to make. Even more than with the Phonogene, the character and use of the Morphagene changes dramatically depending on the sound you are using. Not just the type of sound, but the particularity of it, in a way that transcends any written or aural description of its origins. Furthermore, it is only through the direct use and experience of the Morphagene over time that this truly becomes apparent. At the time of the Morphagene’s release, some of us here had already been using it in some form for upwards of two years, and its nature was still only beginning to become fully intuitive to us. So to prescribe sounds and use would be to direct the motion of musicians using the Morphagene, in an inappropriate way.

Additionally, I wanted to be radically non-prescriptive about the way you use any given sound and how you conceptualize the use of the Morphagene’s controls. For just one example, consider the division of a Reel into Splices. Do you Splice rhythmic material according to the placement of its transients? Do you separate an arbitrary recording into Splices of equal length? Do you place a completely different type of sound on each Splice? Do you organize Splices from one end of the Reel to the other according to some iterative principle such as a gradual increase in “intensity?” These are a few of the most obvious ideas pulled from the top of my head, but why stop there? Why stop anywhere? What about the many creative possibilities from the depths of your head?

Once the Morphagene had made it into people’s hands, we began to realize that a showcase of its possible uses, by real-world artists, could be powerful. We wanted to develop a platform for us and others to share Reels for each other to use, and it quickly became apparent that freesound.org was an already-existing platform that is perfectly suited to this.

So we reached out to several artists we love and asked them if they’d be interested in creating Reels. When talking to artists about the creation of their Reels, I have been sure to emphasize that the way they conceptualize the creation and use of them is as important as the sounds contained therein. You can find some great commentary on this in for example the video made by Hainbach to discuss his “Film Noir” Reel.

I think that the breadth of sounds available has really opened some eyes and ears to how much can be done with any sound using the Morphagene. On our freesound page you can find Reels of original sounds from artists like Bana Haffar, Scanner, Brett Naucke and Richard Devine; the earthy sounds of handmade acoustic instruments from Nathan Moody; ghosts of Todd Barton’s Kesh Music from his 1980s multimedia collaboration with Ursula K Le Guin; even sounds with visuals encoded in for use in oscilloscopes by BR Laser and a whole crew of collaborators.

We have also had the opportunity to work with some great artists in Asheville who might be lesser-known to the global synth community. Kimathi Moore, with the help of Liz Lang, created an entire SD Card’s worth of fantastic Reels of everything from field recording to musical stabs. Lewis Dahm made a short documentary film for our YouTube channel exploring Kima’s process in the recording of train sounds. We also recently released a series of Reels, with a similar accompanying documentary video, by Carmelo Pampillonio. These Reels capture the geophysical vibrations of the Earth — from Very Low Frequency electromagnetic emissions from the Ionosphere, to sonified seismic motions beneath our feet, to the sounds of thunder, wind, and rainfall. These sounds carry traces of the grandeur and lives of their origins, while also being so far from anything conventionally used for music that they are almost universally useful.

A great thing about hosting Reels on freesound is that anyone can contribute. Just make sure it is correctly formatted, title it descriptively, add the hashtags #morphagene and #mgreel, and anyone in the world who’s searching for Morphagene Reels will find yours! All the Reels we upload use the Creative Commons 0 license, meaning their use, re-use, and re-re-use is totally unrestricted. You could alter, mix, iterate, compost and re-upload your own version of any of them, taking part in a global iterative music composition process. There’s no wrong way to use a Morphagene!

Find us on Freesound:
<https://freesound.org/people/makenoisemusic/>

KELLY AND TONY ON THE BEGINNING OF MAKE NOISE

Kelly: Back then

Eleven years ago, we lived out in the country in a town of about 800 called Marshall in NC. I bet you're imagining something very sweet and simple. In many ways it was: we had neighbors who brought us tomatoes and squash in the summer, said hello to us as we passed their porches on evening walks, and gave a little wave when we drove by in our cars. It's a place where you're surrounded by trees (62 on our little piece of land), and living inside of an actual bird sanctuary. The town motto is "takes all types and we got 'em," and really they did. It's a place where you live just one hilltop away from young homesteaders who have work parties on the regular, down the holler from someone who doesn't want you on their property & is willing to protect it with guns, next door to an elderly couple who gets Swanson food delivery each month, nearby a 4th generation quilter & a 3rd generation potter, the next mountain over from some indie-rockers who were in bands you loved in the 90s, and across the way from someone who'll pray for you. You can rollerskate with your friends on Main St at 6pm because there is no traffic, not one car, and see the town moonshiner who is also the town streetsweeper and the town hardware clerk dumping the bit of dirt from Main St onto Back St. after his nightly sweep & door check. Someone who lives down on Main Street has a Four Runner made from parts of your truck, and when your truck breaks down he fixes it for a 6-pack. It's a place that is friendly and charming and with a type of poverty that a city person doesn't really understand, where you might pipe straight into the river because it's all you can afford for septic relief. It's a town where everyone knows who you are and where you live before you even tell them. I had to adjust to total strangers saying things like "do you want a ride? I know you live far up the mountain and it's a hike up there, especially in them elevated shoes." I did walk up and down the 2.3 miles in my platforms (2006, don't judge!) just to get a coffee on Main St. everyday, but it took a while to not be creeped out by strangers knowing where I lived (they were truly being neighborly!!!). Our car once skidded out on black ice into a ditch and a friendly fellow told us he'd be back to help us out. And then he came back with a chain and pulled us out with his little Geo Tracker (country folk are the most resourceful!). Before we moved there, if you want to know a little more, Tony really romanticized country living. That's what New York City can do to a person.

I didn't totally get it (I grew up mostly in Chicago & didn't have a driver's license. Tony taught me how to drive in these mountains!), but I was down for a new kind of adventure. It took us 7 years of living out there to understand that what's good about the country wasn't necessarily what we wanted (aside from a dog-we got the most magical one). While we aren't country folk, we learned quite a bit living out on that mountaintop among so many folks generous of heart. {I'll never forget the first time someone called us yuns.} Why is all of this relevant? Something special and unexpected came to be out there so just stick with me on this.



The house
where
Make Noise
started,
Marshall, NC

When you live in the country, you rely on wood. The college where I taught gave us a cord of wood each year as part of my contract. We should have had a wood stove, but we didn't have the money to put one in and get the old chimney properly lined. {This did mean we got to be neighborly, too, and give our cord of wood to some friends up the mountain.} A wood stove would've really helped out when the power was out and we were freezing. But we were stuck with an old monitor heater. If you've never heard of a monitor heater, you're not alone. I hadn't before living in this little country house on a mountaintop. It's one little unit that works kind of like a space heater, but it's powered by kerosene oil & has a little engine in it like your lawnmower. You cannot heat a whole house with it. It is a terrible invention and the countryside in southern Appalachia is full of them.

You have a huge oil tank outside and call to get the oil company to come out and fill it when you're running low. There are 2 ways you know if you're low: pick up a nearby tree branch and stick it in the tank, measure the liquid, & decide you need to get a fill up, or *oh shit, I think the heater just turned off. We must be out of oil.* Soon after winter started, we had heard that the new biodiesel company could fill your tank and save you a little money and also you'd be doing just a little less harm to the environment. We were pretty stoked to fill the tank with grease left over from Asheville's restaurants and they were excited to fill our tank. They came out and we told them we had \$60 to put into the tank. They put just a little biodiesel in and left.

After just a day or two, our heater broke. Straight up stopped working. We called the only place in Marshall that we knew of for service and Vaughn came out to our house at 6:30pm to fix it. We spent a lot of time with Vaughn that winter. Our heater broke repeatedly. Apparently, biodiesel wasn't a good option for this type of heater. We couldn't afford a new heater. Vaughn was nice enough to charge us as little as he could, but in the end he basically rebuilt the thing and it still never worked all that well.

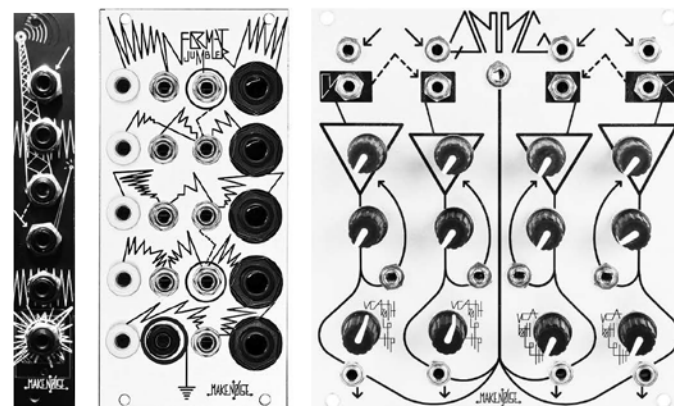
Tony had to sell a synthesizer that he had played for a few years to fix it. There was a little money left over and it was Tony's birthday. He used the remaining money to buy the parts to build 20 modDemods, the first Make Noise module. He kept 2 and sold the other 18 on the Matrixsynth forum.

Tony: The modDemod

There was a ring modulator made by Doepfer that was really clean, and I wanted one that would clip and saturate, and found this circuit that would create even more harmonics to get a dirty old sound. The circuit comes from the Amateur Radio Relay League, ARRL, 1975 Radio Amateur's Handbook, page 248. There were other synths that used this transformer based balance modulator, like Bebe Baron and Louis Baron's homemade synths, which they used to make soundtracks for films like Forbidden Planet. This was a known circuit

It was used to modulate and demodulate sounds: when you broadcast you have to modulate your audio and mix it with a high frequency signal to transmit the audio. It's a carrier signal. When it arrives, it's demodulated so the carrier signal is removed and you just hear the audio. Analogue Haven was the first shop that got in touch to carry this ringmod.

The second module I was working on was the QMMG, but I didn't have money to pay for it. I was told a lot of people with Serge and Moog systems were getting into Eurorack, and asked if I could design something that allowed the formats to work together. This was at a time when there were about 100 customers in all of Eurorack. I designed and hand-soldered the Format Jumbler, and used the sales to fund the design and build of the original QMMG.



3 of our earliest modules, all designed in Marshall:
modDemod
Format Jumbler
QMMG

Kelly: And now

We moved Make Noise out of our house in 2012, 4.5 years after Tony started it, and moved ourselves out of the country and into Asheville in 2013, after 8 years. Make Noise is not especially influenced by the country, nor was it really part of Marshall, but the space, the quiet, the beauty, the boredom, and the lack of distraction created the time and the conditions for Tony to focus on making something special and unexpected. We are still selling synthesizers to heat our home, but they're synthesizers we've designed and built. And we're not just heating 1 house. We're heating the homes of a team of people and the home of Make Noise. Plus, fortunately, we now have something a little more reliable than that old, busted monitor heater.