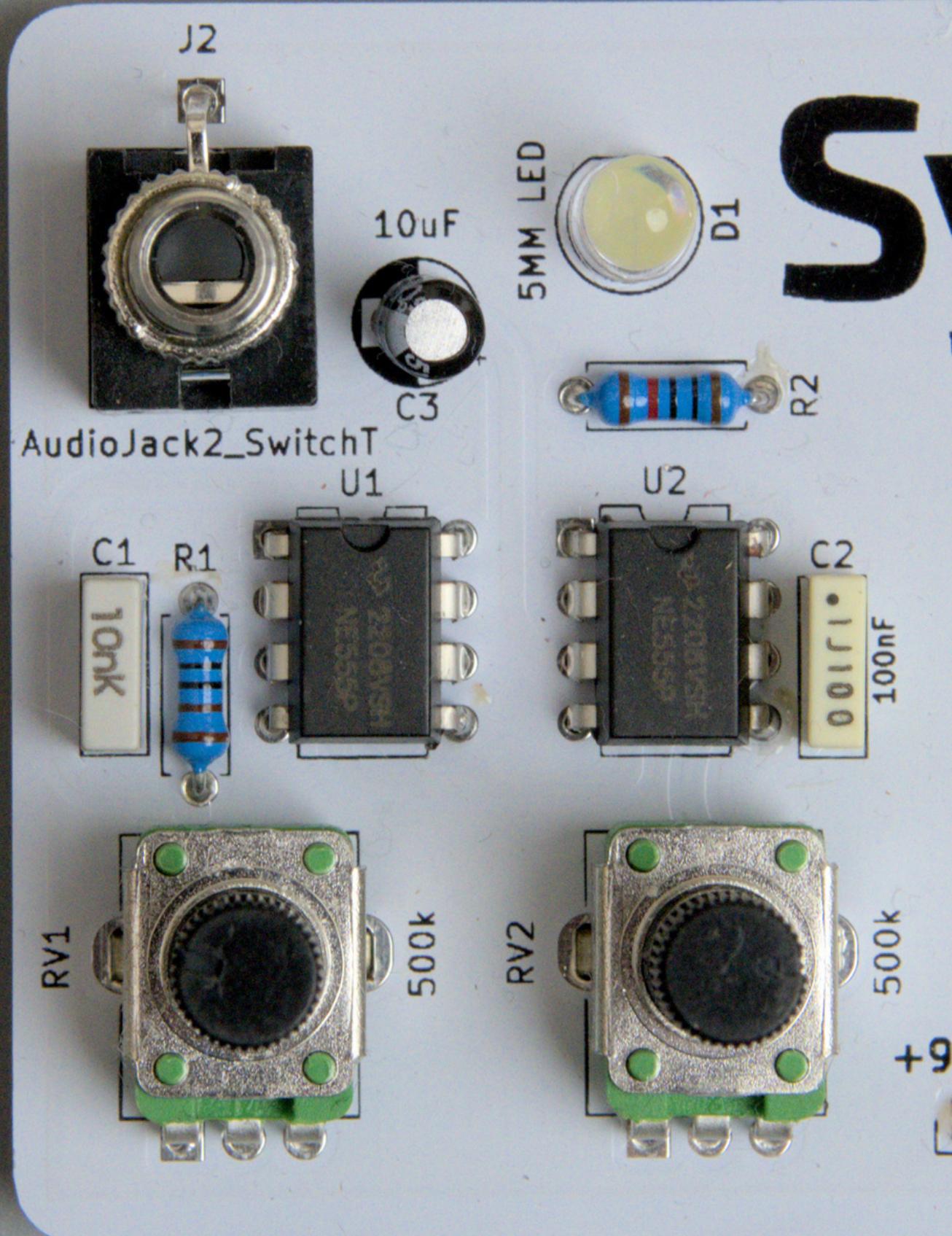


SynthDIY Workshop

Benjie Jiao | November 18, 2023 | Anima Art Space

Presented by: SYNTHICIDE and 98B Collaboratory

Supported by: Anima Art Space and PCBWay



Warnings

Irons are HOT

Fumes are bad

Don't lick your hands

Unplug if things get out of control

Hi, I'm Benjie

Hi, I'm Benjie

Computer Science

Hi, I'm Benjie

Computer Science
Geoinformatics

Hi, I'm Benjie

Computer Science

Geoinformatics

Self-taught in Electronics

Hi, I'm Benjie

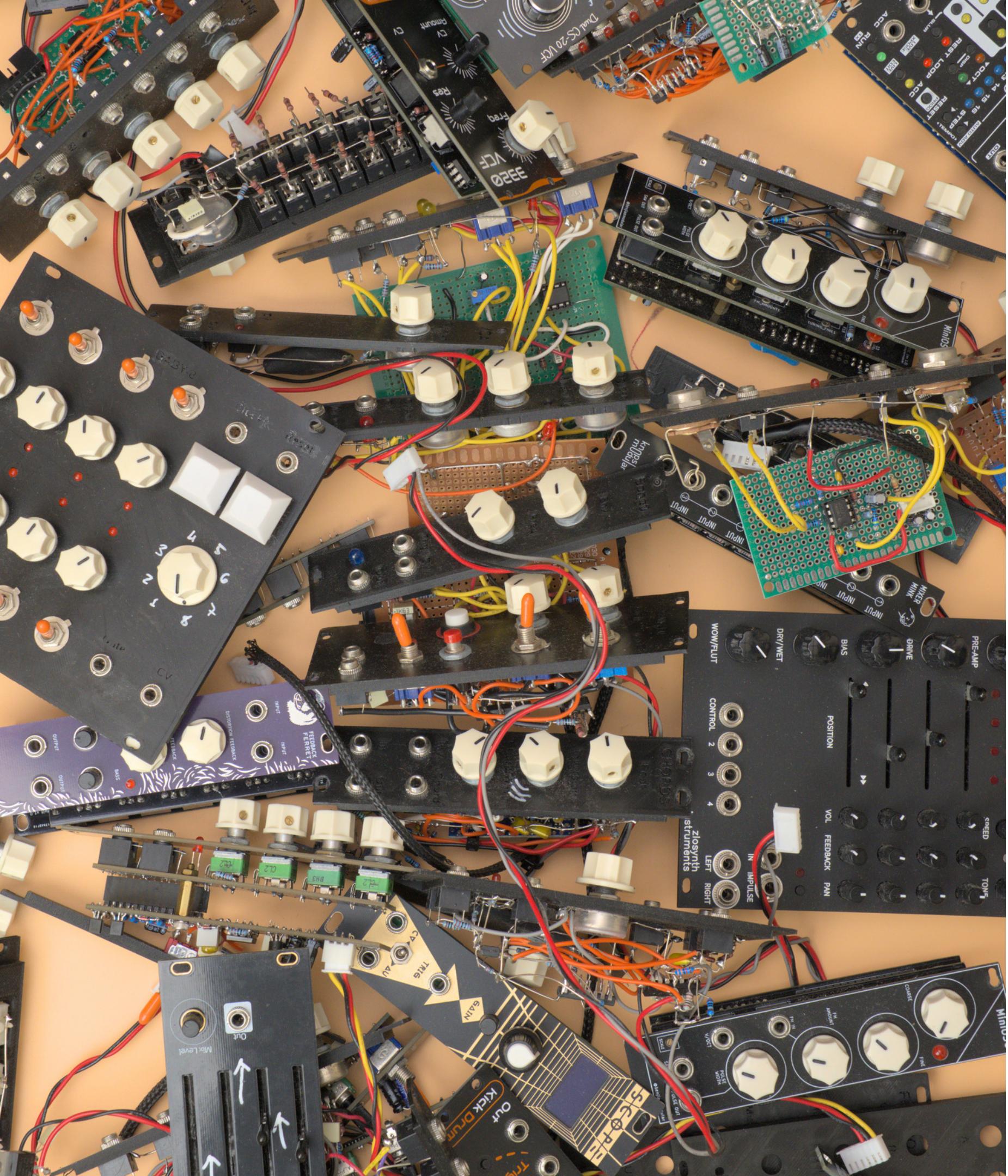
Computer Science

Geoinformatics

Self-taught in Electronics

Open-source Synthesizer Modules

@benjiamodular



benjiaomodular

Benjie's Synth DIY notes.

Modules

BOMs

About

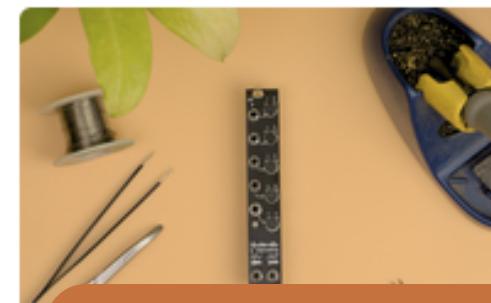
References



Support Me on Ko-fi

Modules

References for modules I have successfully built myself. DM me on IG if you need help [@benjiaomodular.](#) :)



Nov 8, 2023

MiniAttenuMix

A 4HP 5-channel CV mixer with attenuverted inputs

+/-12v Analog Pcb

benjiamodular.com



MiniDiv

A clock divider based on the CD4040 binary counter IC

+/-12v Digital Pcb



Aug 30, 2023

MiniSeq

My second CV sequencer build

+/-12v Analog

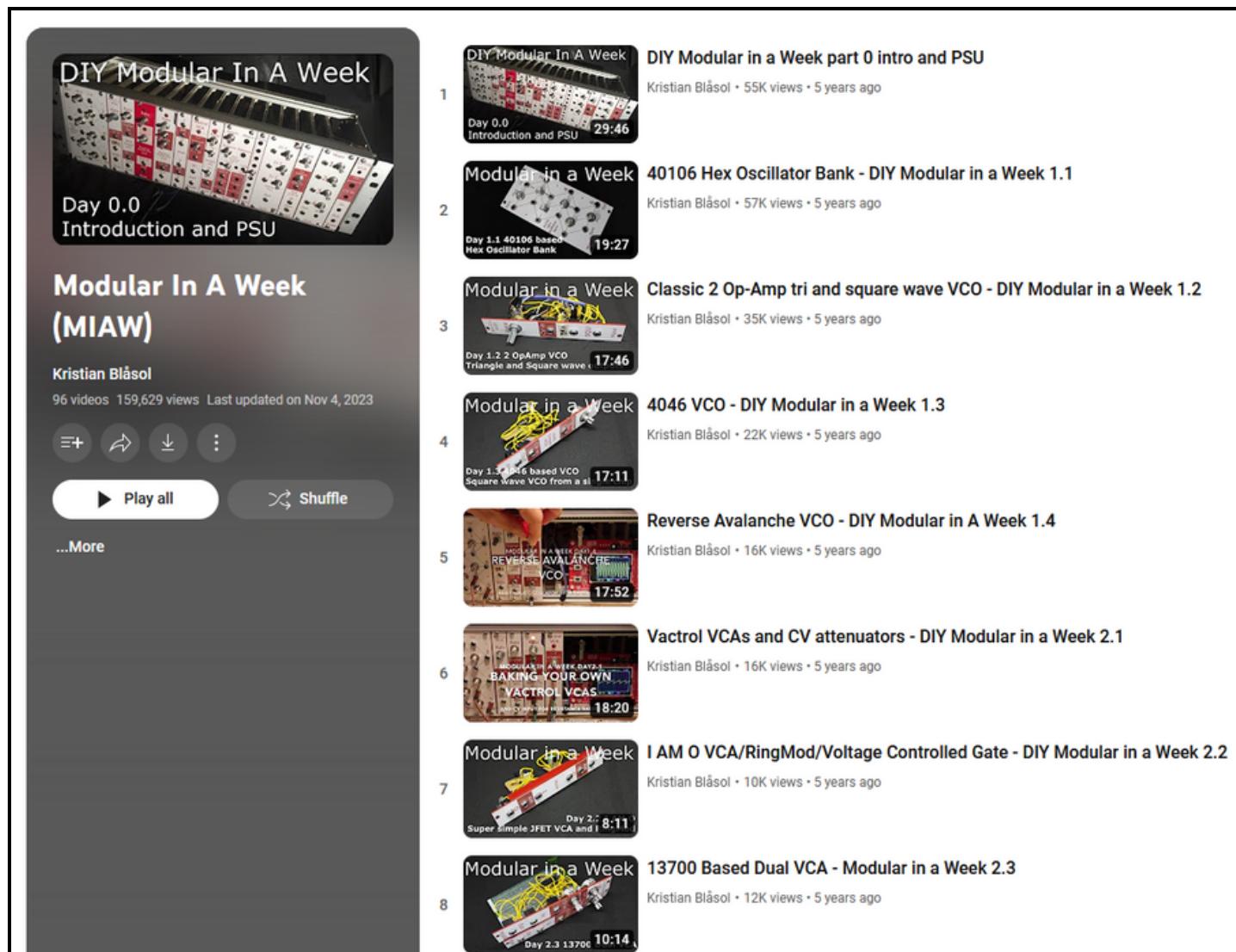
Open Source

Sharing all your
design files FOR FREE

Open Source

does not gatekeep knowledge and learning

I personally learned how to build instruments because of free and open-source modules



Free resources from the greatest makers such as Emilie of Mutable Instruments for free

» Modules » Blades » Manual

Installation

Blades requires a **-12V/+12V** power supply (2x5 pin connector). (-12V side) must be oriented on the same side as the "Red stripe" module draws **150mA** from the **-12V** rail and **140mA** from the **+12V** rail.

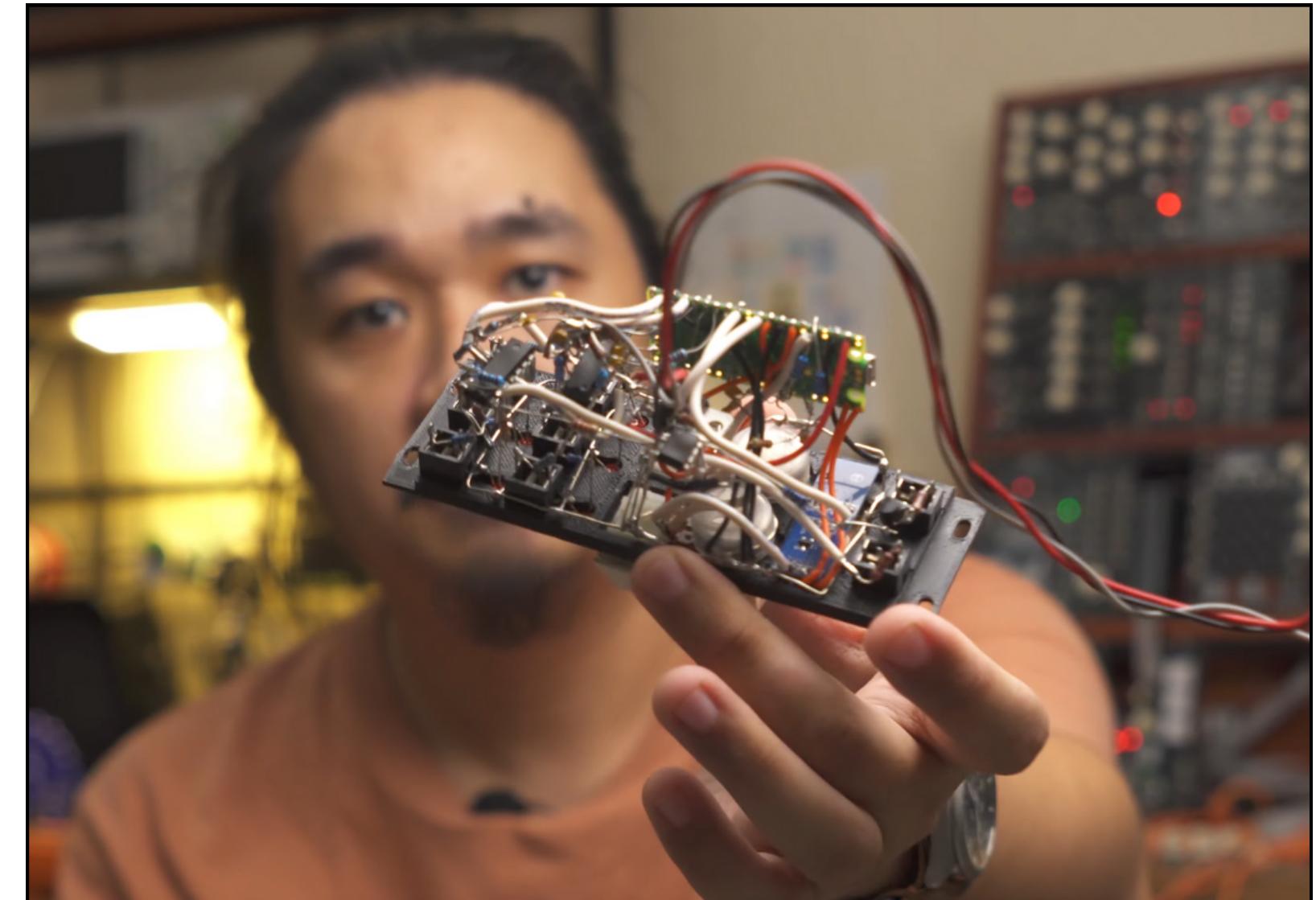
Open Source

makes hardware more accessible

Allen Synthesis released an open-source module called the EuroPi



I was able to build a handwired one for very cheap



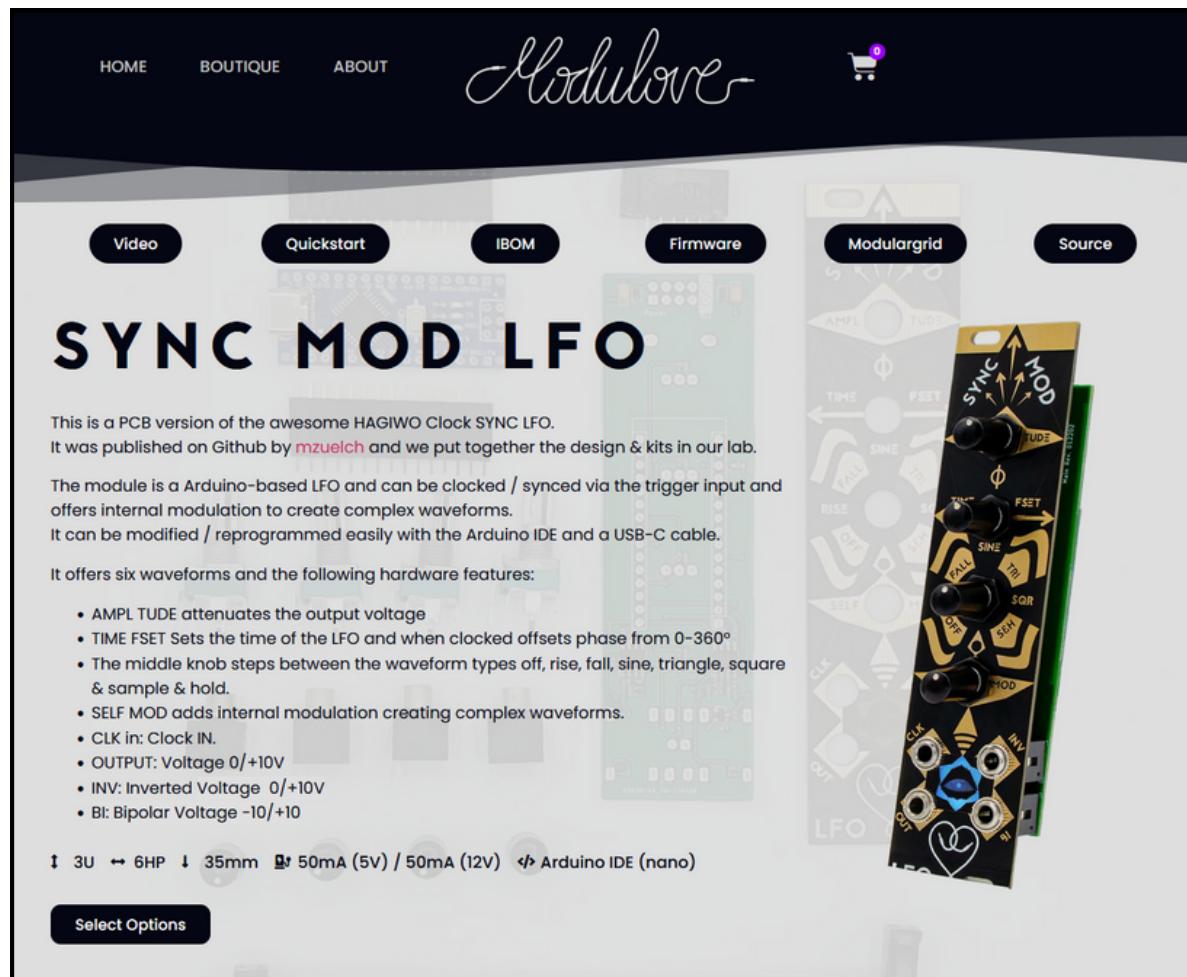
Open Source

encourages building on top of other people's work

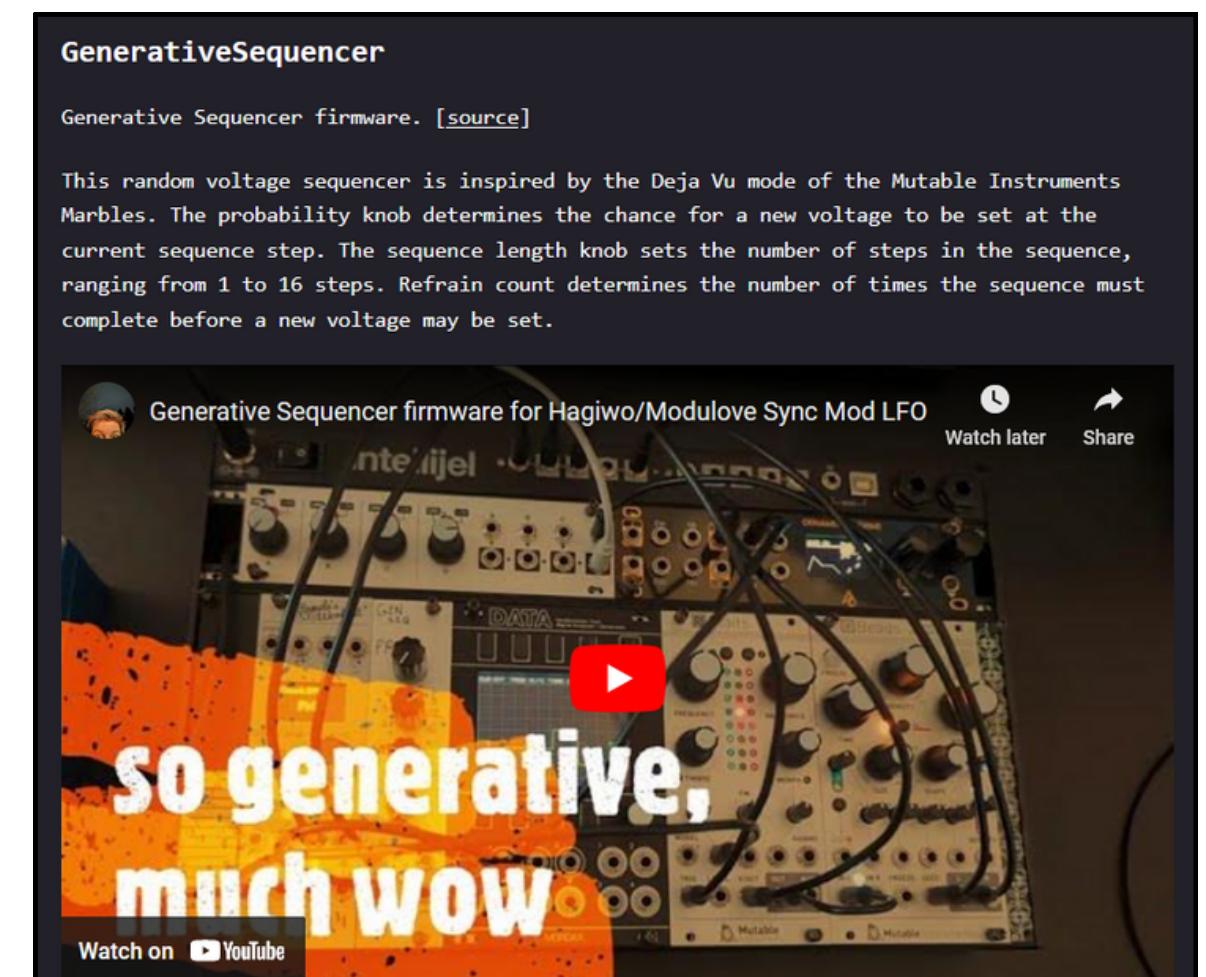
HAGIWO released open-source schematics and code



Modulove created an open-source Eurorack module



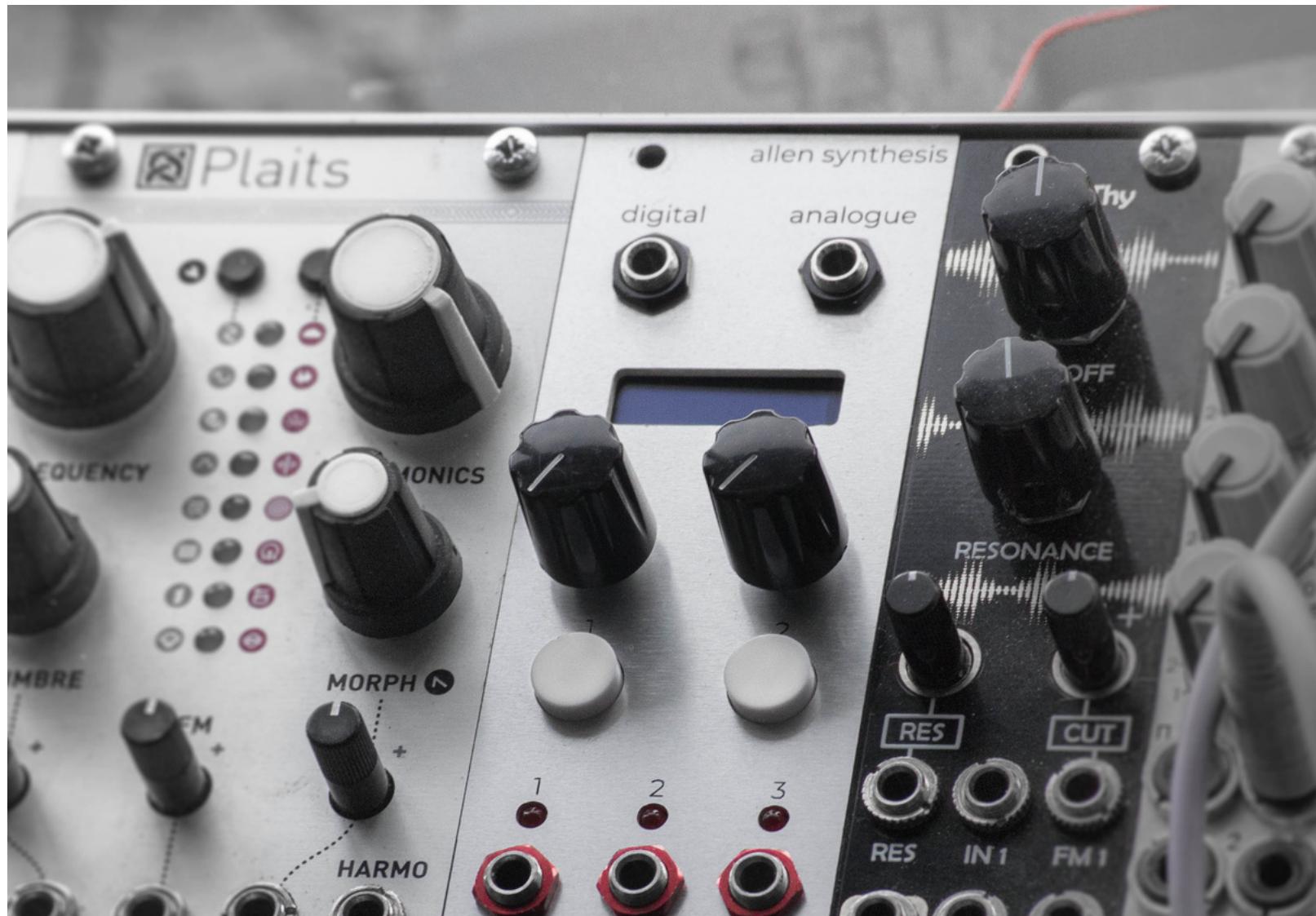
Adam Wonak wrote custom open-source firmware that extends its capabilities



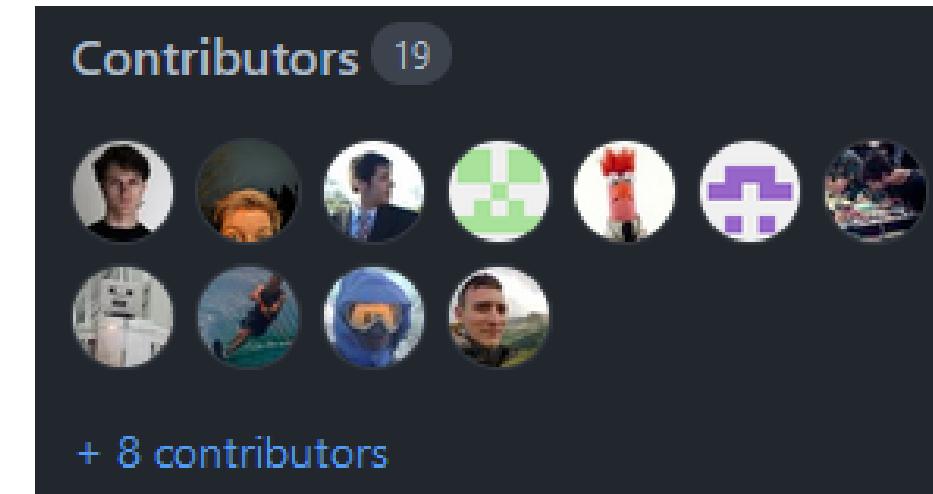
Open Source

encourages collaboration

Allen Synthesis released an open-source module called the EuroPi



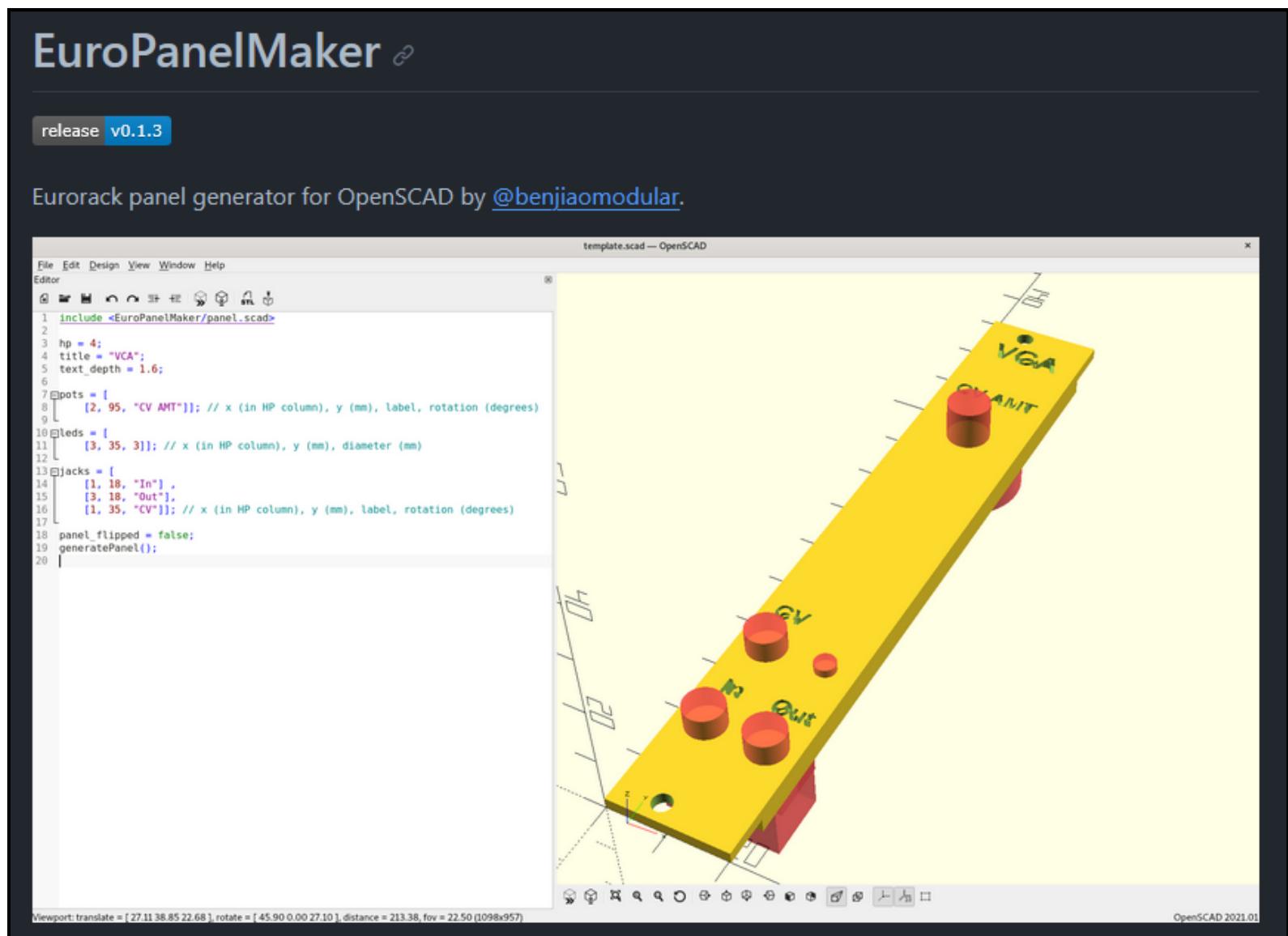
Contributors write custom software for it



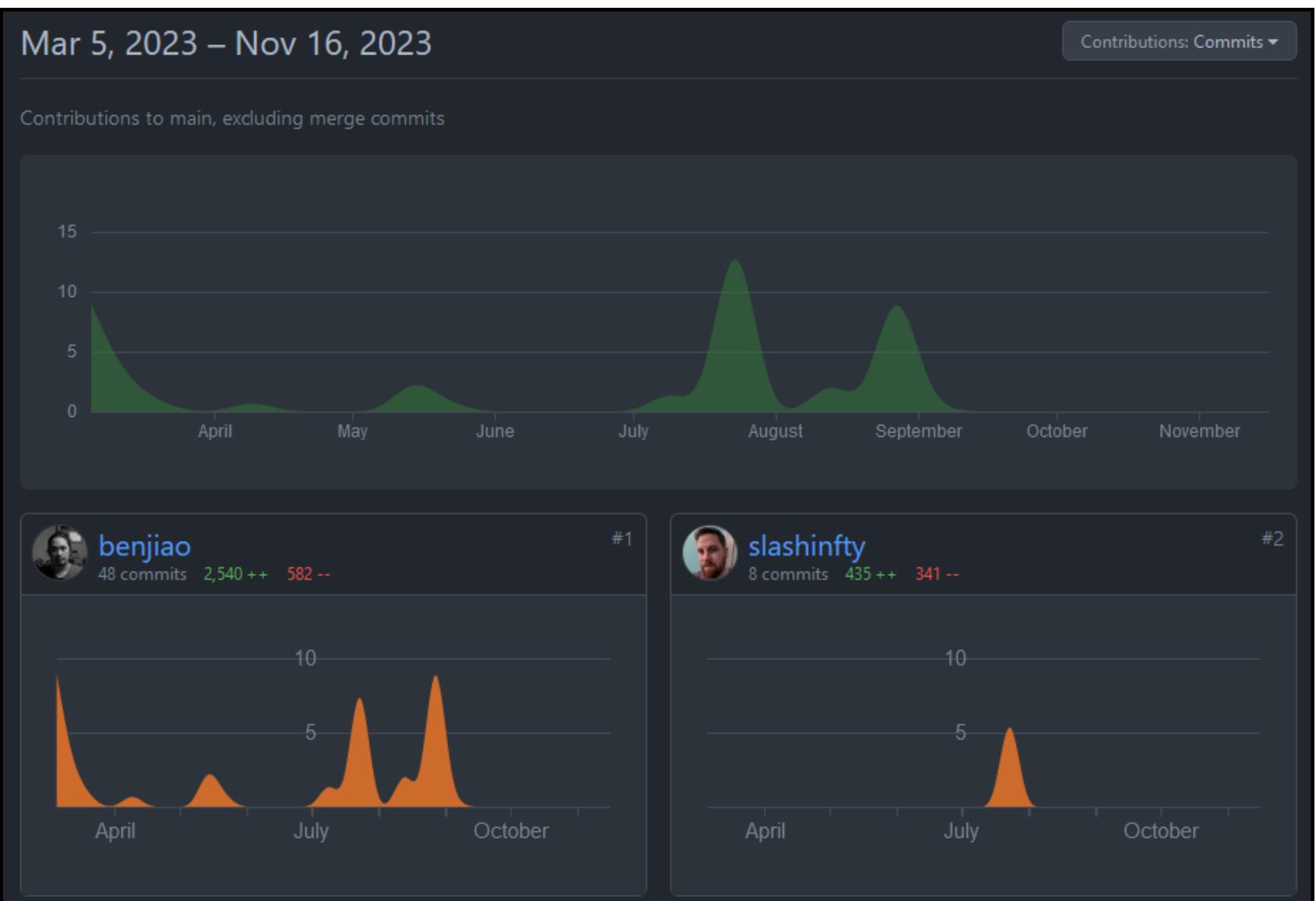
Open Source

encourages collaboration

I released a library for creating 3D-printed panels.



People help me clean up my code and add more features.



Open Source

forms communities

r/synthdiy

The screenshot shows the r/synthdiy subreddit homepage. At the top, there's a banner for "synthdiy" with a "Join" button. Below it, a sidebar displays "About Community" details: "building, modifying and repairing synthesizers", "Created Oct 17, 2012", and "r/synthdiy topics". It also shows member statistics: "44.9k Members" and "81 Online". A "Filter by flair" section includes categories like "components", "modular", and "standalone". The main content area shows several posts. One post by u/WatermelonMannequin discusses launching a synth DIY blog and selling modules. Another post by u/Witzmasta8 asks about building a hand crankable cassette tape player, mentioning a Landscape - HC-TT (V2) as a reference. A third post by u/THUNDERBOLD_ expresses excitement about fully assembling a project.

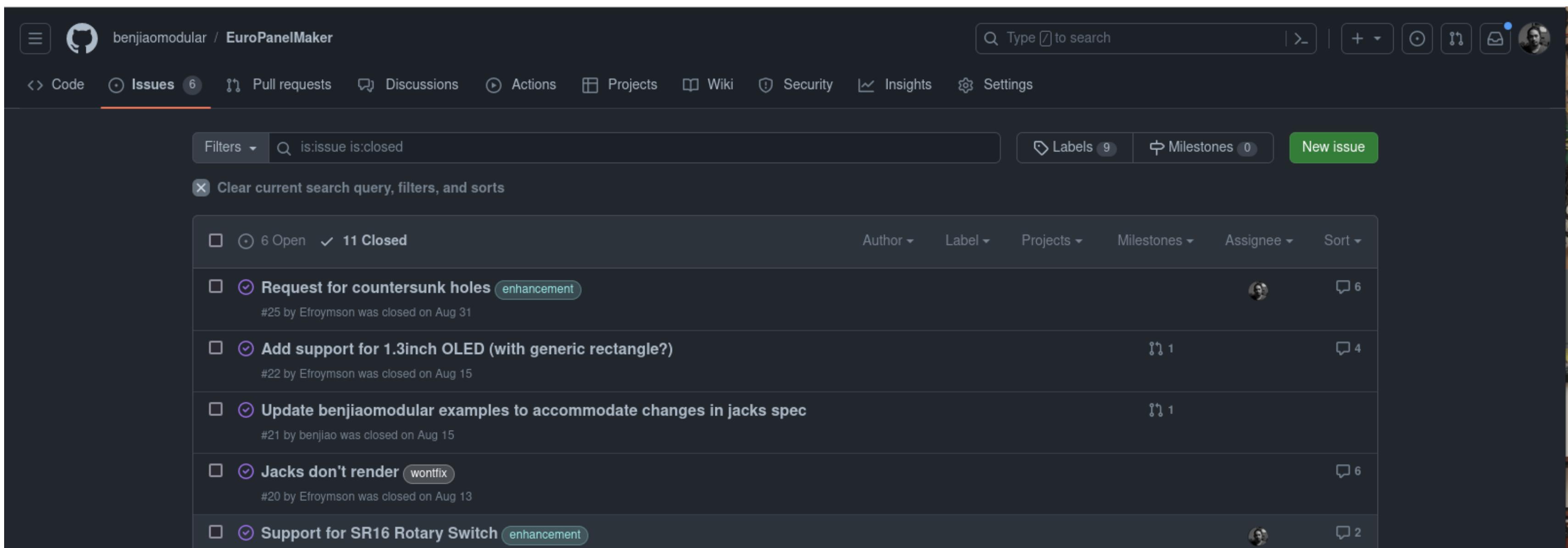
My Discord server

The screenshot shows a "show-off" channel in a Discord server named "benjiaomodular". The channel has a pinned message from C.Stiller at 5:29 AM on October 27, 2023, sharing a photo of a modular case design made from 6mm rods. The message has 1 like. Below the pinned message, another message from Luther at 1:30 PM on October 29, 2023, says "Nice idea!!" with 1 like. The right sidebar lists online members, including "AmenBreak.wav", "awonak", "howlmonkey", "Keurslager Kurt", "Luther", "terrabite3", "The2dCour", "wantan", "andy", "Antonin", "Ari Jani", "Badador", "benjiao", "botanicowl", "C.Stiller", and "Clacktronics".

Open Source

encourages growth

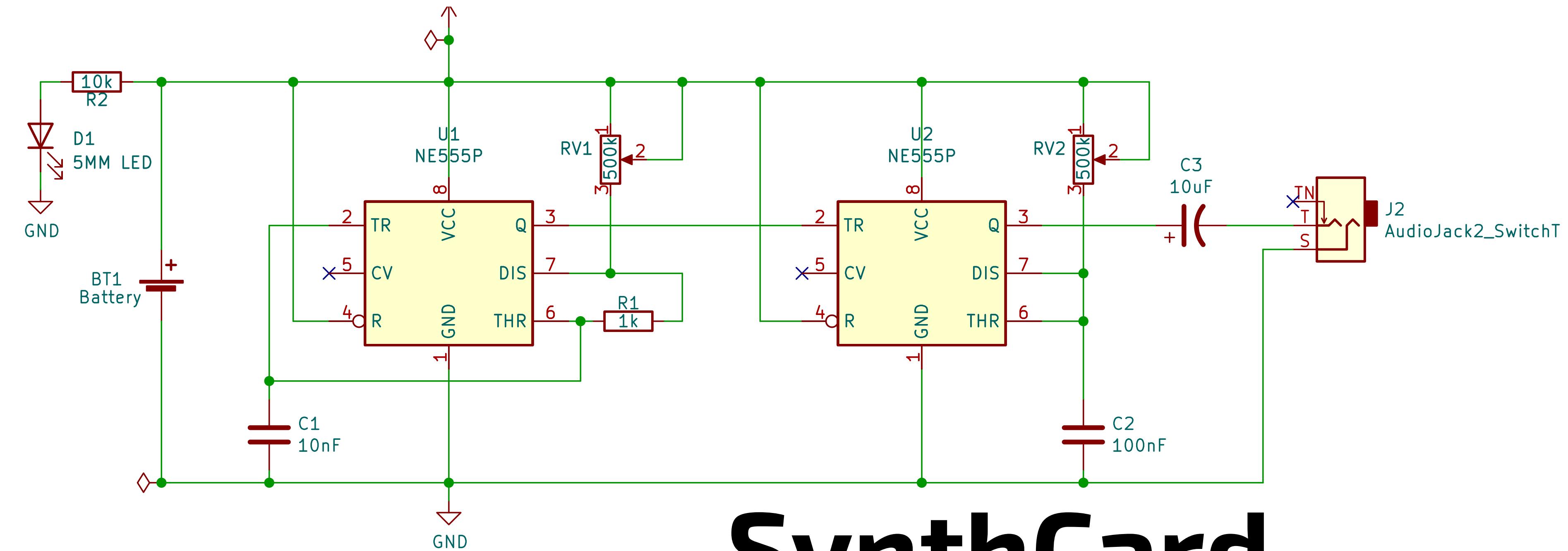
People can review your work and recommend points for improvement.



The screenshot shows a GitHub repository interface for 'benjiaomodular / EuroPanelMaker'. The 'Issues' tab is selected, displaying 6 open issues and 11 closed issues. The closed issues are listed below:

Issue #	Title	Author	Comments
#25	Request for countersunk holes (enhancement)	Efroymson	6
#22	Add support for 1.3inch OLED (with generic rectangle?)	Efroymson	4
#21	Update benjiaomodular examples to accommodate changes in jacks spec	benjiao	1
#20	Jacks don't render (wontfix)	Efroymson	6
#19	Support for SR16 Rotary Switch (enhancement)	benjiao	2

The SynthCard

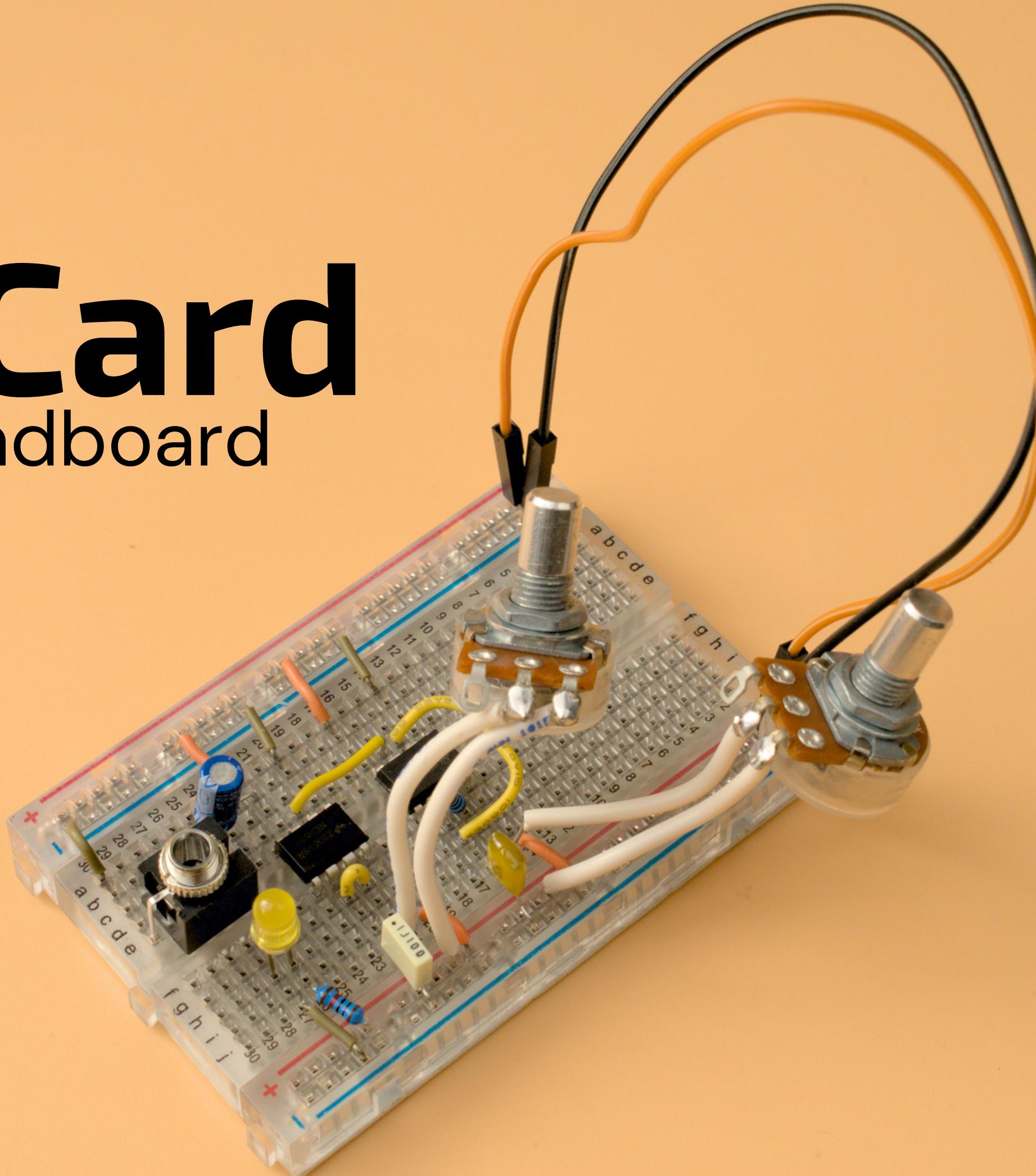


SynthCard

Schematic Diagram

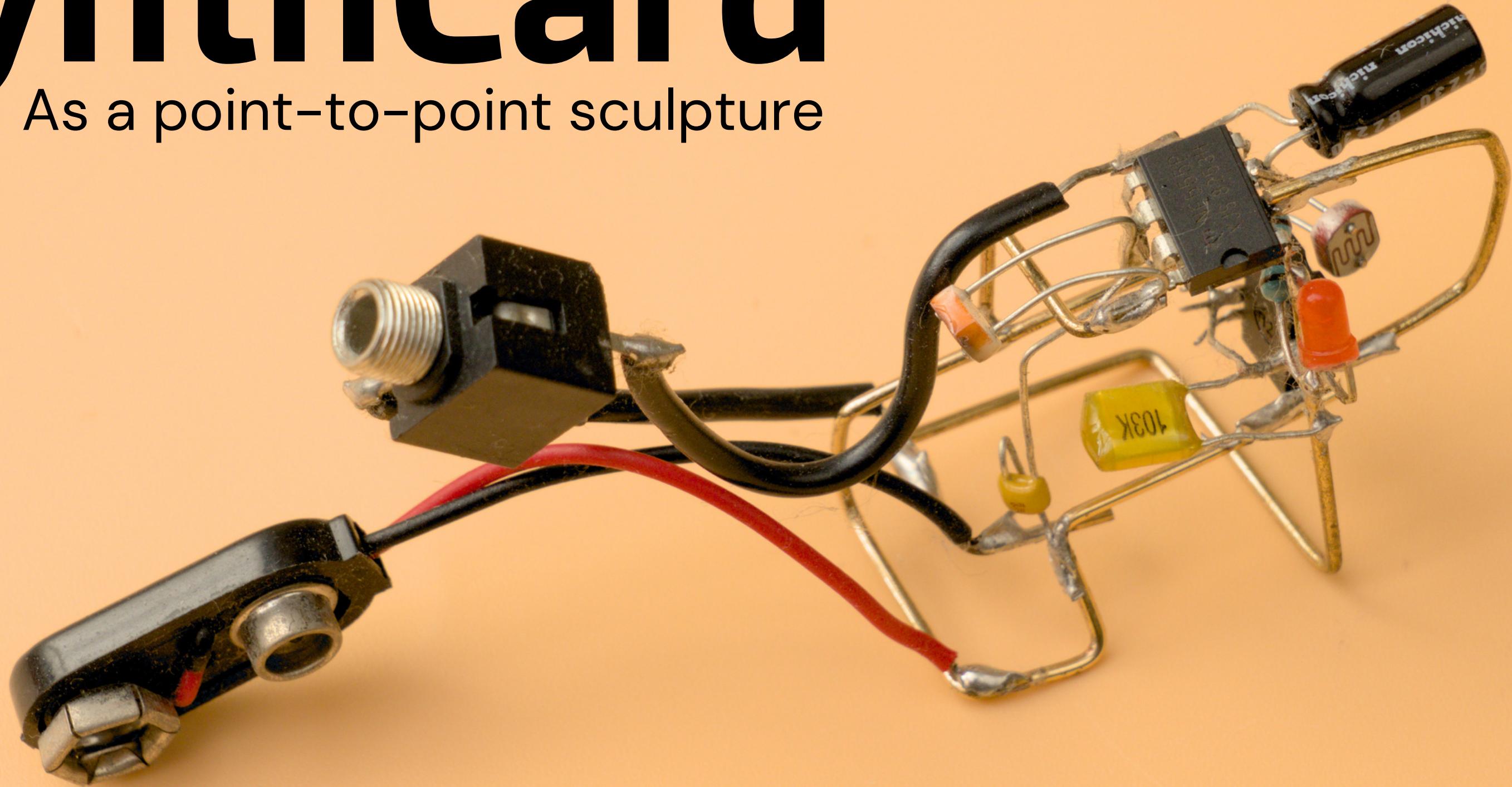
SynthCard

On a breadboard



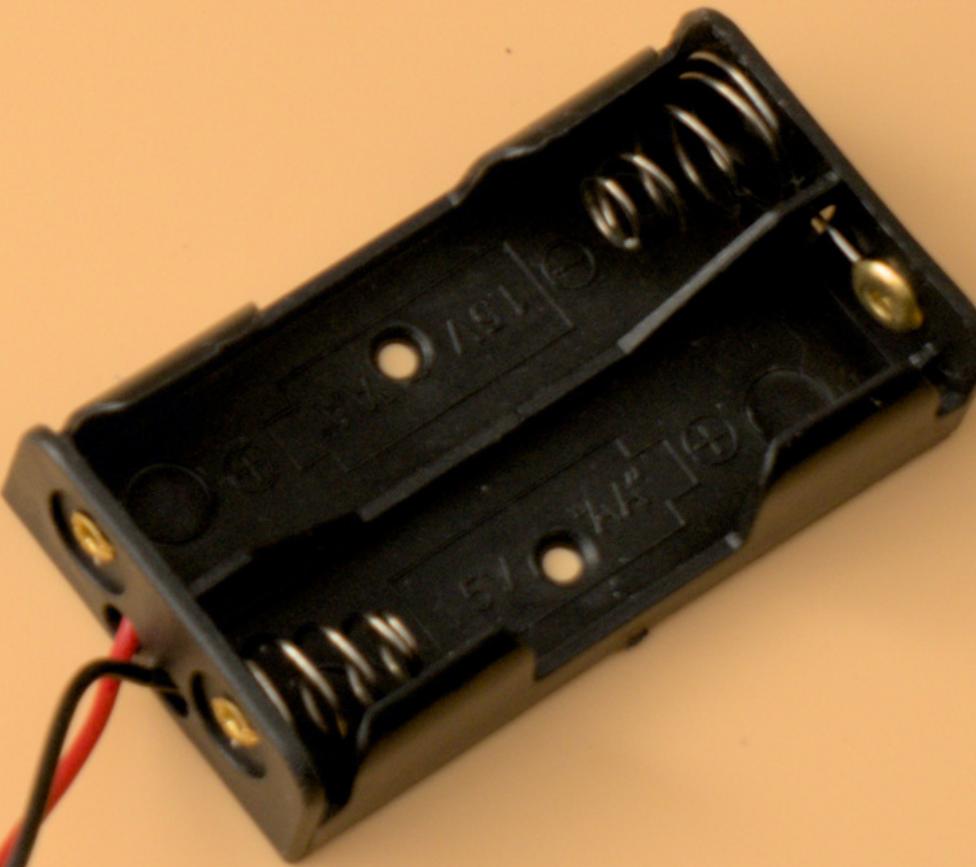
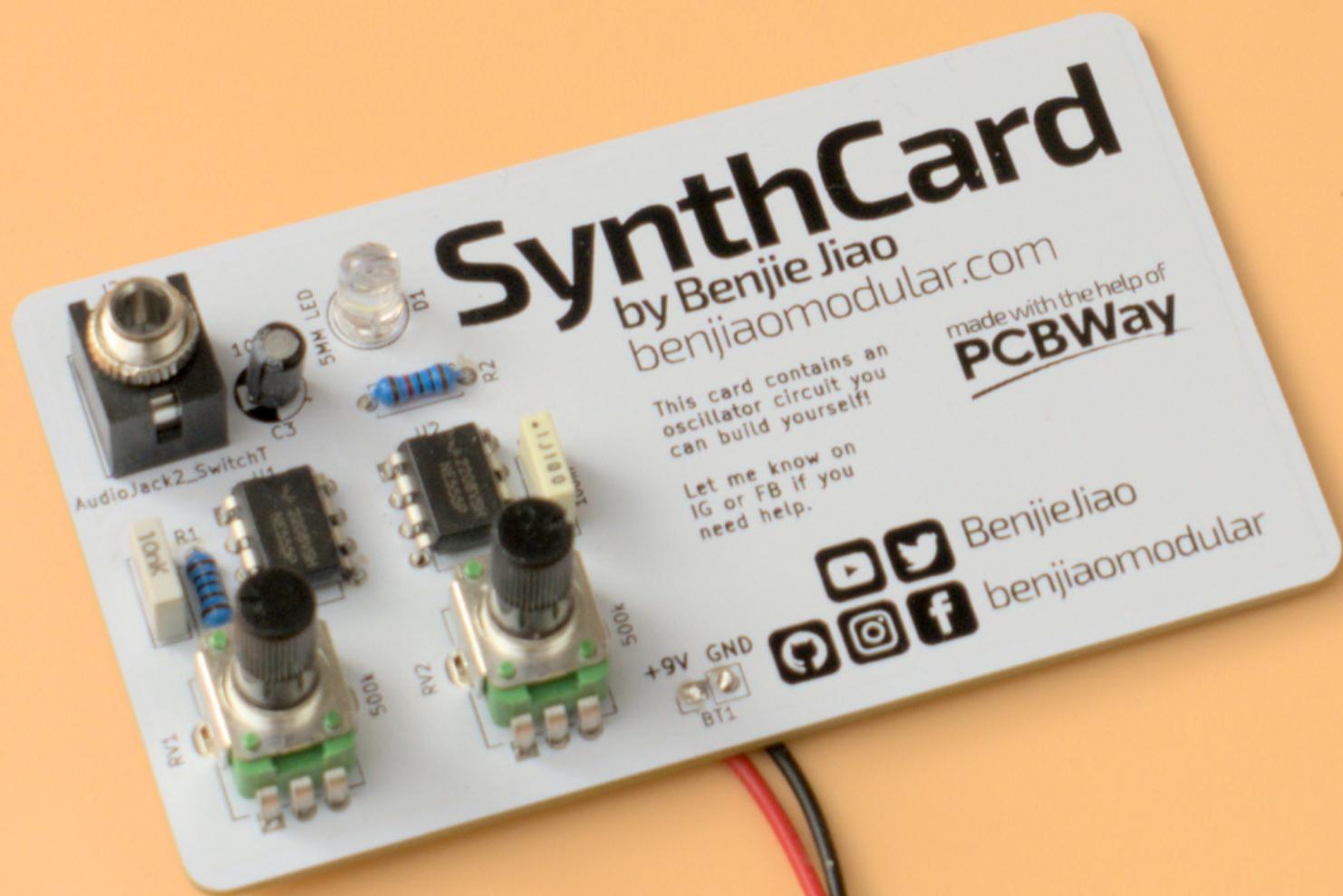
SynthCard

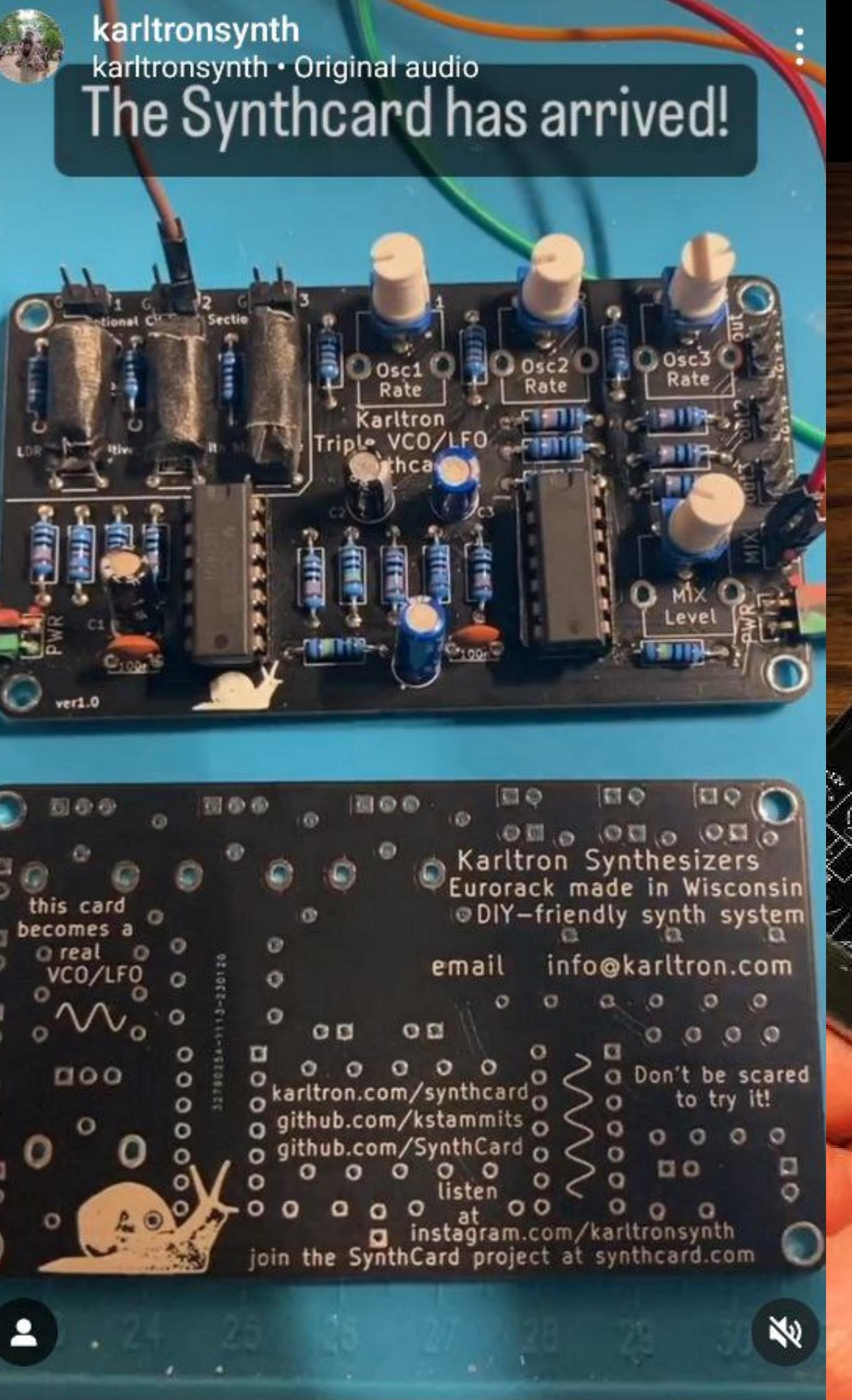
As a point-to-point sculpture



SynthCard

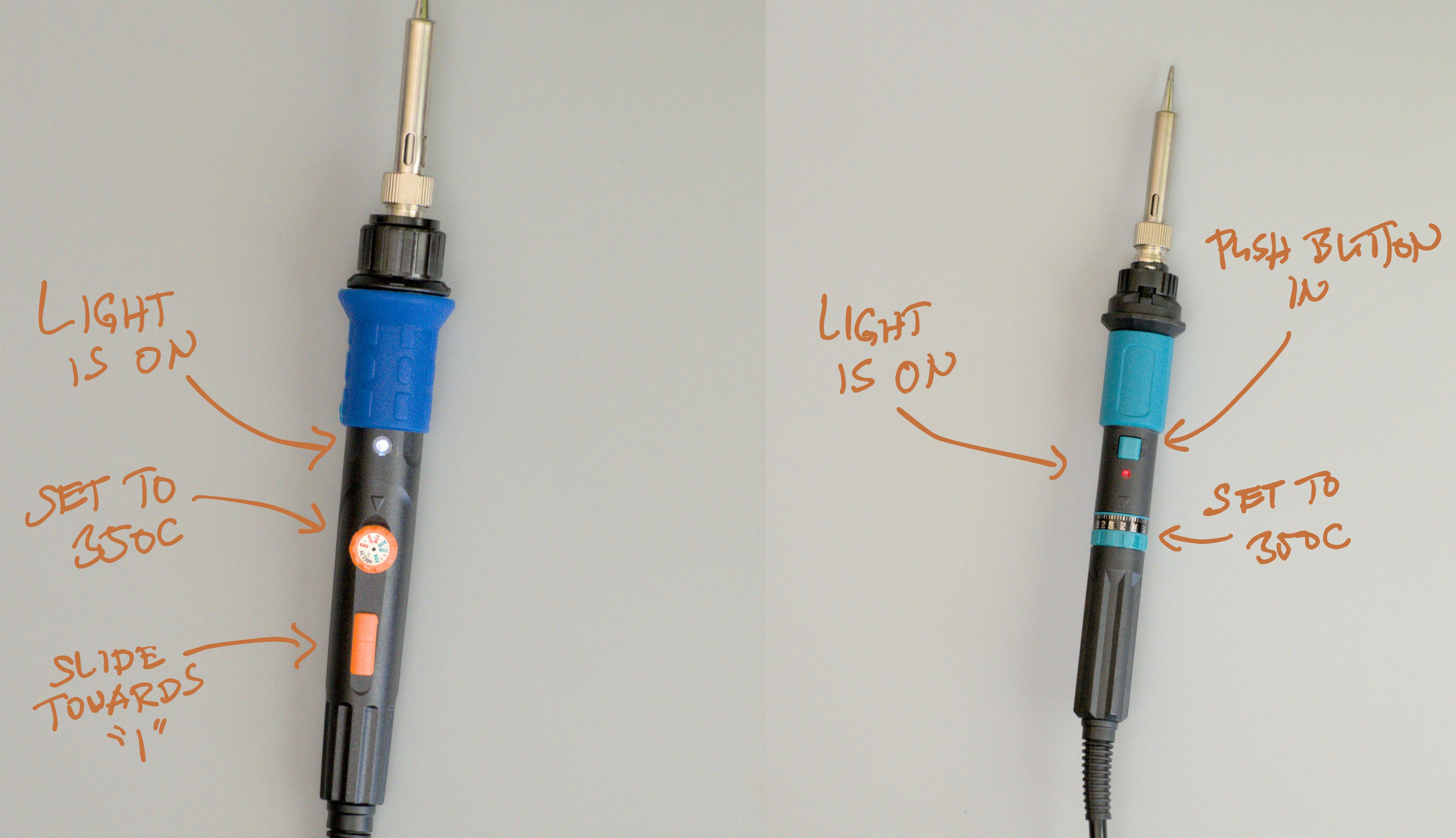
On a printed circuit board





The tools

What's in the kit?



Let's start building!

Outro

Q&A