

MEET THE MAKERS EURORACK DIY

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Milwaukee Maker Faire

Karl Stamm

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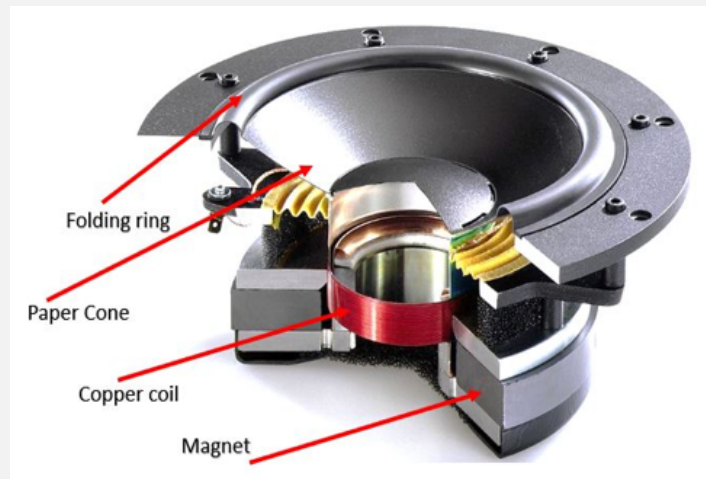
What is that?

*Eurorack is a type of 'modular synthesizer'
A musical instrument or sound design
tool you play by rewiring signal flows.*

*DIY = do-it-yourself
What you can build at home
Usually a tenth the cost vs store-bought,
and a deep hobby.*

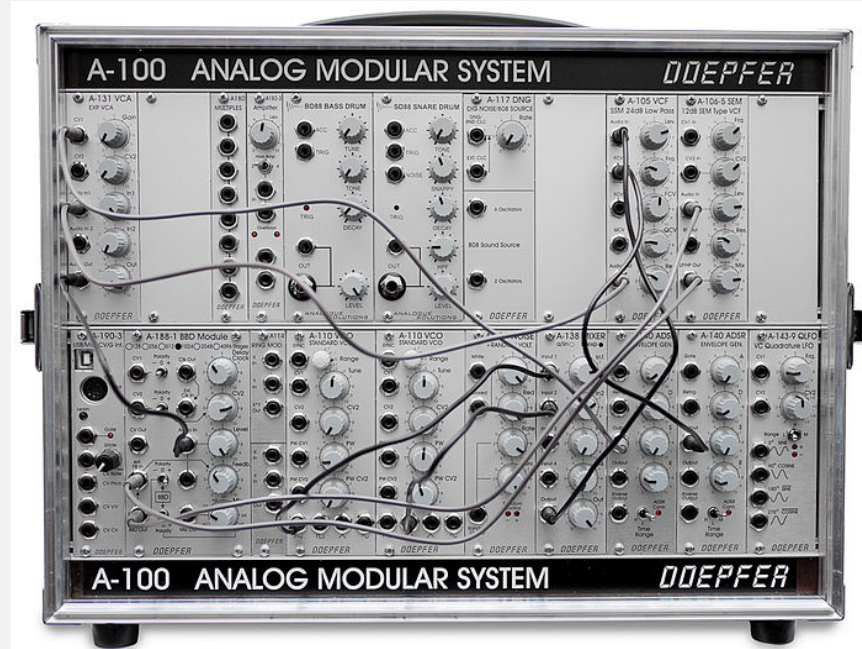
WHO AM I, WHY ARE WE HERE?

- Karl Stamm, from New Berlin, Wisconsin. Went to Marquette University for a Mathematics degree, eventually Doctor of Computation.
- We can make your computer do anything you can imagine. The tough part is inventing something useful and cost-effective (for example we're not going to make a self driving car any better than Ford already can).
- Looking for something tactile, tired of software, let's look at controlling 'stuff'. Something with direct output like light or sound. There's a lot of room for innovation.
- Musical synthesizers are electronic gadgets that have tangible results, forgiving requirements, and no expectations. Music combines fun and artistic expression and valuable skills too.



MODULAR SYNTHESIS AND ELECTRONICS D.I.Y.

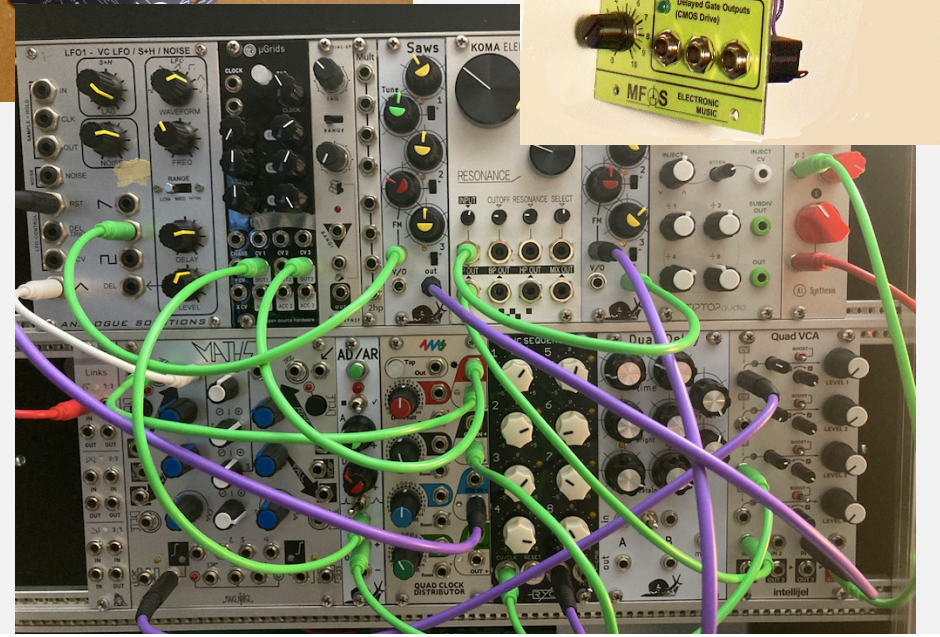
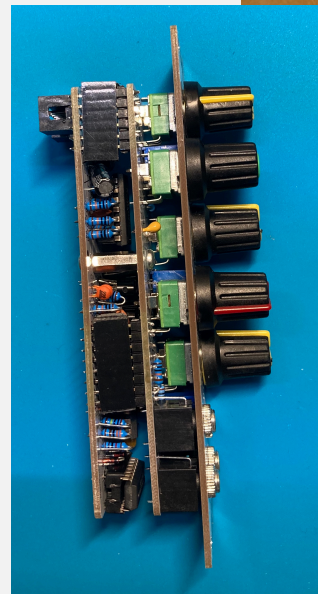
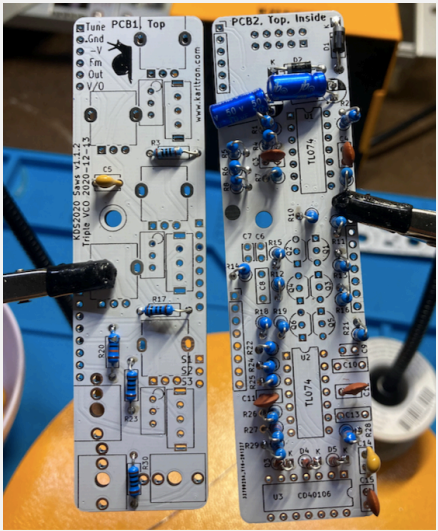
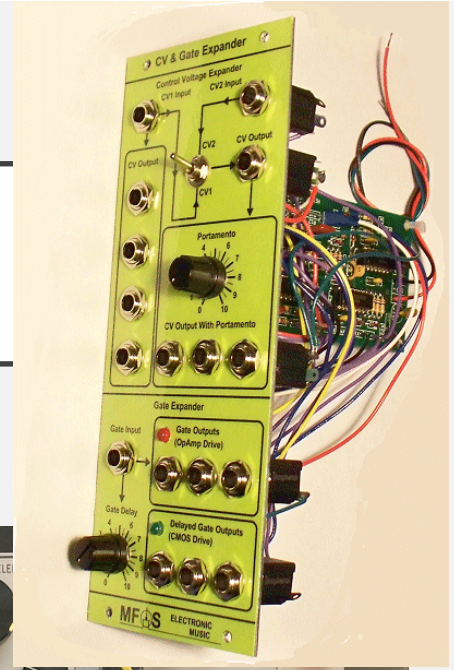
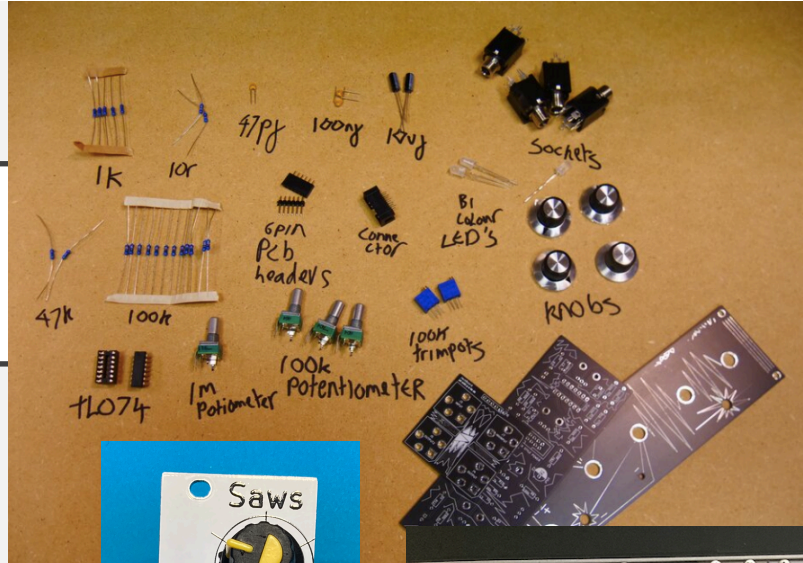
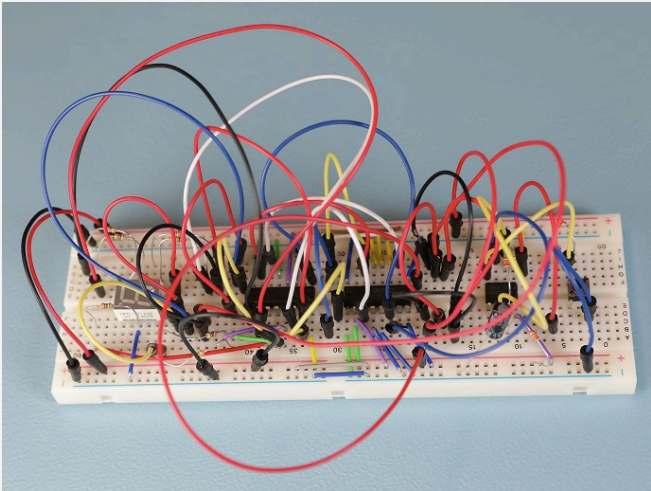
- A regular synthesizer is usually a keyboard with some circuitry bolted on. Your artistic interface is determined by the manufacturer's best buttons.
- A modular synthesizer is inside-out: Play with the circuits directly, and make sounds nobody has ever heard before!
- Each module is interchangeable, which somewhat increases the cost; therefore let's look at DIY.
- Patents are expiring on classic synthesizer circuits and open-source designs can walk you through developing an instrument that is really unique.
- Bits and pieces like resistors and cabling only cost pennies, although you'll need a lot of them: seek a 'breadboard kit' online for <\$30.



LOOK MUM, NO COMPUTER!

- LMNC is an inspiration of mine.
- Mr. Battle is a British Youtuber who hacks together silly machines.
- Informal tutorials, always saying don't be scared to try it.
- Famous for an organ made of Gameboys and a chorus made of Furbys.
- It's 2022, you should be able to make robots sing if you want to.





LINKS WITH SCHEMATICS AND IMPORTANT ELECTRICAL DESIGNS

- **Vcvrack.com** - is the free software simulator
- **MusicFromOuterSpace.com** schematics and discussions
- **yusynth.net** - circuits and modules
- **elby-designs.com** - circuits and modules
- **SchmitzBits.de** - schematics and discussions
- **LookMumNoComputer.com** - fun projects and tutorials
- **sdiy.info/wiki/Atari_Punk_Console** - fun noise-maker in just a few parts.
- Just search Synth DIY on Youtube for dozens of creators showing off their toys, and how to build them.
 - I've written a brochure of the concepts - karltrn.com/mtm