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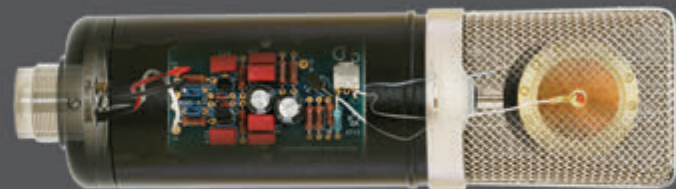


Fresh From the Bench Bricasti Design M1 Dual Mono D/A Converter—Deluxe Limited Edition

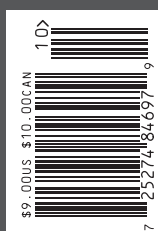
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Creating a Business from Modding and DIY Kit Microphones

An Interview with Matthew McGlynn, Owner of Microphone-Parts.com



Matthew McGlynn started Microphone-Parts.com after building a comprehensive microphone database.

By
Shannon Becker
(United States)

SHANNON BECKER: Tell us a little about your background, how you became interested in audio gear and specifically microphones.

MATTHEW MCGLYNN: I was a musician first, buying gear to record drums in a home studio. I bought a pair of overhead mics based on a recommendation posted in an online forum. The author seemed to know what he was talking about, and that was as close to an expert opinion as I had access to at the time.

The microphones worked fine, in the sense that they plugged in to my audio interface and allowed me to record the drums. At the time, that seemed miraculous, that for a few hundred dollars I could record myself at home. I'm not sure it ever occurred to me that my recordings never sounded very good. I had no basis for comparison.

Months later, while researching my next gear investment, I stumbled across another online forum thread about drum overhead microphones. The conversation took a turn when someone mentioned the specific mics I was using. Suddenly, dozens of people were chiming in to say how lousy those microphones are! I remember one post clearly: the author wrote, "I keep a pair of those around the studio so I can loan them to people I don't like."

The consensus of this thread was that an alternative product delivered far superior results. I bought a pair and set up a quick shootout at home—I hung both pairs of mics, new and old, and recorded 30 seconds of something. Then I listened back and was blown away. My original overhead mics

sounded lifeless, flat, and weirdly colored. The new pair sounded like my drums, only better: I could hear all three dimensions of the space, with greater punch and impact. Through the new microphones, the drums sounded alive.

That mic shootout changed my life. The idea that changing from one microphone to another could make a night-and-day difference to the quality of a recording was absolutely transformative.

SHANNON: What is your go-to audio equipment?

MATTHEW: I made the shift from buying gear to building gear before acquiring anything worth bragging about. And ironically, all the time I used to spend *using* recording gear is now spent on designing and manufacturing of recording gear.

SHANNON: Prior to starting Microphone-Parts.com you built a comprehensive microphone database at RecordingHacks.com. Can you share with us how and why you started this company?

MATTHEW: As a consumer, I wanted access to a comprehensive list of microphones, with impartial product info—meaning, not the hyped-up descriptions from the various manufacturers' marketing departments.

Retail stores will only tell you about the products they sell, so that's not the answer. Using the online forums for product advice was clearly a hit-or-miss approach. Print magazines tend to review single products in depth, but too often don't convey that



A kit from Microphone-Parts.com will enable you to build a quality microphone.

product's place in the wider market of alternative options. All of those sources of information are useful, but none gave me what I was looking for, which was basically "Wikipedia for microphones."

I sat on the idea for two years, half-hoping someone else would build it. But nobody did, so I built it myself. The concept was to make an online magazine about recording techniques, plus a database of microphone information. If I had a list of every microphone ever made, slicing that down to show only "multi-pattern tube condensers" or "active ribbon microphones" would be pretty easy, and pretty compelling. The design goal was that someone shopping for drum overhead mics could easily list all the available options, then filter by price, or availability, or any other criteria.

Documenting the microphones forced me to learn how they work: condenser capsules, moving-coil cartridges, ribbons, transistors, tubes, transformers, and so forth. If my goal was to objectively describe what's actually inside every microphone, I needed to know which components made a difference.

A curious side-effect of this research was the discovery that many of the lower-cost microphones differed only in cosmetic details. Strip the body and grille off all those models, and you'll see the same capsule and circuit underneath—despite retail prices that vary from \$50 to \$400. I started buying used mics for cheap on Ebay so I could photograph their guts. The RecordingHacks database contains all this information.

Meanwhile, I wanted to recreate the magic of that very first mic shootout. I started an ambitious series of comparison reviews that attempted to review every mic within a single product category. We did one for broadcast microphones, called the "Ultimate Podcasting Mic Shootout." We did one for small-diaphragm tube mics. We did one for sub-\$200 condensers. We did one for ribbon mics—we had \$60,000 worth of gear on hand for that. I spent unbelievable amounts of time on those articles. I learned a ton, and met fantastic people along the way. It was immensely gratifying.

SHANNON: How did it segue into the Microphone-Parts.com website?

MATTHEW: When I was coming up, I didn't have the budget for the gear I wanted. I had to make do with the stuff I could afford. But I had become fascinated by the idea that my cheap gear could be upgraded.

We started selling replacement condenser mic capsules first, then segued into selling circuit upgrade kits. The next step was to sell all-inclusive



These are from my "prototype PCB" junk box.

microphone kits. At every step, it felt like a huge dice roll; we had no idea whether anybody would buy these products. But we've had great results across the board, with thousands of loyal customers and fantastic word-of-mouth promotion.

SHANNON: What are some benefits of building your own microphone?

MATTHEW: The most significant benefit is cost savings. As an example, my two FET condenser microphone kits use parts and circuit designs equivalent to what you'd find in a \$1,000 microphone. But we sell the kits for \$350 or less. There's no dealer markup, no brand-name price inflation. If you can solder, you can build a premium mic for less than half the cost of a comparable retail product.

The other benefit is customization. Customers can select from three different circuit designs and three different capsule designs, then further fine-tune the microphone's sound via in-circuit EQ.

Most boutique manufacturers cannot offer that much variety: three circuits and three capsules gives you nine combinations, which is an insanely broad



Here are some examples of our component bins.



Questions & Answers



These are mic bodies just back from the powder coat shop.

product line. By offering the components in an “a la carte” fashion, we let the customer choose whichever product s/he desires.

SHANNON: Tell us about some of the kits and various options for mic capsules and circuits...Where do the parts originate? How do you choose which ones to sell on your website?

MATTHEW: The three circuit designs are based on landmark vintage mics: the transformerless JFET is based on a Schoeps design. The transformer-coupled JFET circuit is based on Neumann’s KM84. The transformer/tube circuit is a sort of hybrid of the AKG C12 and Elam 251.

Those are the three primary topologies for microphones. Each one delivers different benefits. For example, the transformerless circuit has high output and very low noise and distortion. It embraces

accuracy. The transformer JFET circuit, in contrast, is all about vibe. It has a healthy amount of second harmonic distortion. Neither of these circuits is “best” for every application; a well-rounded mic locker would have a couple examples of each type.

The three large-diaphragm capsule designs are modeled after the Neumann K47, Neumann K67, and AKG CK-12. As with the circuits, each of these excels at a different application. The goal of the company is to provide an affordable way for engineers to build a ton of sonic variety into their collections.

SHANNON: What is the most challenging aspect involved with building your own microphone?

MATTHEW: Anyone who can solder can build a microphone. The challenges we see are from customers who are learning to solder via our kits—that’s a bad idea. Learn to solder on a scrap PCB, not a \$300 microphone kit.


Customers say our installation/build manuals are the best in the business. The manuals include step-by-step photos, with detailed text explanations of every step. Customers don’t need any theoretical knowledge, nor even how to read a schematic.

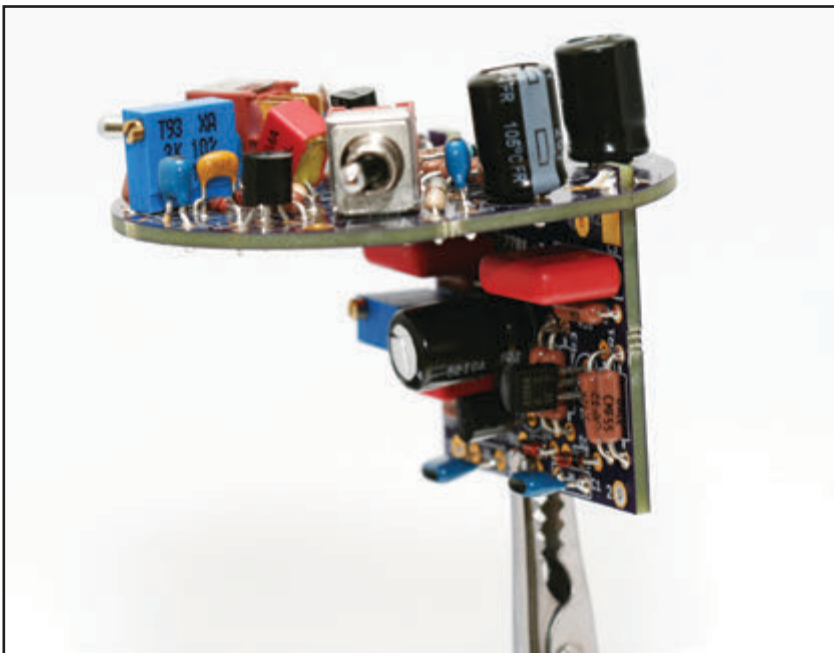
My snarky trade-show answer is that the two prerequisites to building a microphone are: 1) knowing how to solder and 2) knowing how to read.

SHANNON: What’s next for Microphone-Parts.com?

MATTHEW: We are constantly developing new DIY audio products and evolving existing products. The next microphone kit will be a three-pattern transformerless design, called the TL3. It will be unique in the product line because the donor body has two external switches. Switches are hard to do well via DIY, but we sourced a donor body that avoids the common pitfalls.

The TL3 circuit provides user-selectable high-frequency attenuation, which allows the use of brightly-voiced capsules. The builder can dial in exactly the desired high-frequency response, or even experiment with alternate voicings, without touching the soldering iron.

We also plan to introduce a low-priced microphone kit for students, called the S-25. We’ve taken our transformerless circuit, which is essentially an optimized version of the Schoeps design, and adapted it for a high-quality electret capsule. The idea is to provide a professional-quality, all-inclusive kit at a price audio engineering students can afford. It will be simple to build in a single lab session, and sound good enough to use in commercial recordings. 



This is a prototype of the TL3 multi pattern circuit kit (mentioned in the interview).