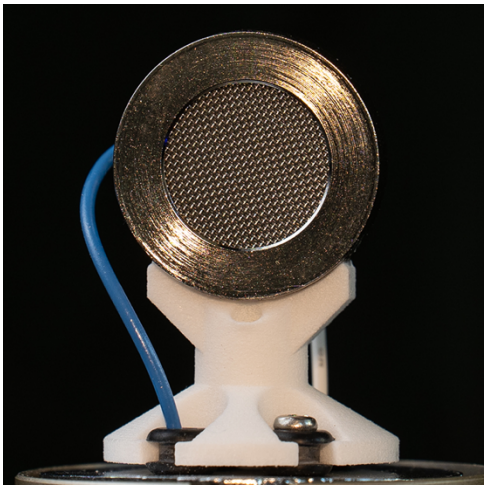
Samantha



- 26mm Electret Capsule
- Cardioid Response
- Opamp Impedance Converter
- Pristine Sonic Clarity

Samantha is the starting point into OPA based Sound Sleuth microphones. The design goal was low noise, low distortion, high bandwidth and a lot of headroom. This led us to a Texas Instruments operational amplifier, the OPA1642. It met all the requirements along with one more. The quiescent current of each amplifier was low enough that it could be powered by phantom power. Once the design was finalized and proven, it was presented at the 153rd Audio Engineering Society meeting "Improved Microphone Impedance Converter Using an Operational Amplifier". Samantha was the first microphone to use this circuit. And she is an excellent microphone. Self-noise measures <13dBA. That means the ambient noise from most rooms dominates any noise from the microphone. Additionally, the circuit can cleanly output a voltage high enough to exceed most microphone preamps. This means that the mic electronics are not limiting the signal chain. And you get an exceptional dynamic range from the microphone.

With the OPA circuit, the microphone is in essence, the capsule. Samantha uses the JLI2555B, a 26mm electret condenser. This capsule is used in several commercial microphones and many DIY mics. She works well on most sound sources without adding any flavor or nuances. Samantha can close mic most things, but for really loud sources such as close miking drums, a 220pF capacitor can be added across the 1Gig resistor on the PCB. This pads the output by about 17dB. Ever wanted to put a condenser microphone on a snare or hi hat? Samantha is all ears.

The JLI2555B is manufactured in an ISO9001 certified facility to tight quality standards, with little variation between each capsule. Combine these with a repeatable circuit that does not require hand selected bias resistors, and you end up with repeatable microphones that don't require matching.

Samantha is at home as a drum overhead microphone, in front of a guitar amplifier, doing voice over work, and due to the low noise floor, even nature recording. Not bad for a microphone you built yourself.