

Mikrophonie Documentation

PCB v2

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Mikrophonie is a microphone preamp with a piezo contact mic built into the panel.

It is an easy way to bring environmental noise and feedback into a modular system, inspired by the early days of electroacoustic music in Paris and Cologne, and by the contact microphone and phonograph cartridge experiments of John Cage, Gordon Mumma, Robert Ashley and Nicholas Collins.

Stockhausen's Mikrophonie 1: youtu.be/EhXU7wQCU0Y

How to use this module

The built in microphone is selected if you have nothing plugged into the input. Just set the gain, start low, watch out for your ears and speakers.

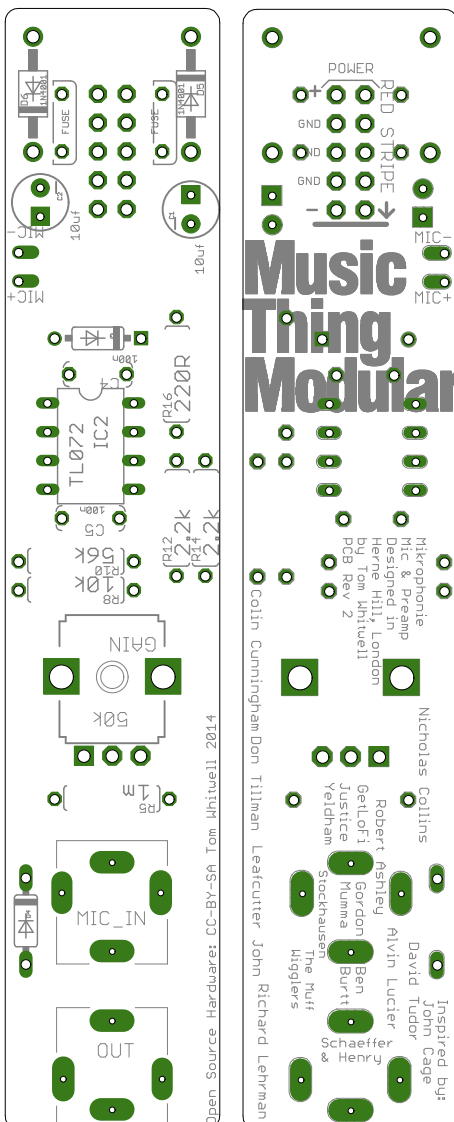
The preamp is diode protected against the very high voltages that piezo disks can produce, but can still produce large signals.

To use an external microphone, wire a piezo disk to shielded cable and a 3.5mm plug in this way:

Tip => white part

Sleeve => copper disk

Shielded microphone-style cable is important if you want to reduce hum. Ensure the shield is connected to ground.



Patch Ideas

1. Gently tap the piezo element to produce a strong trigger, that will open a low pass gate or trigger a Maths envelope.
2. This module plays well with the Makenoise Echophon like: <http://goo.gl/wHv81l>
3. Use the outputs as voltage sources, rather than audio sources; FM an oscillator with the output. Works well with low frequency signals like pinged springs
4. Use channels 1 or 4 in a Maths as an envelope follower, with configurable rise and fall.
5. The circuit is DC coupled so that very low frequency modulations (i.e a bouncing spring, a flexing piece of wood) might be like an LFO source. However Piezo elements only produce a signal while their stress is changing. Pressing and holding the panel **will not** produce a sustained high signal.
6. You can also use the mic input as a massively high-gain bright op-amp distortion/fuzz/boost for other modular signals.
7. Switches + patching + touching patch cables = fun

Quirks

- The circuit is optimised for simplicity and cheap easy-to-find parts, rather than audiophile performance.
- Very extreme gain is possible, and extreme results should be expected. Be careful with your gain structure; any kind of tapping or drumming should probably be at minimum gain, otherwise you'll get a very distorted, clipped sound.
- The DC coupling means you'll get an offset - a slight DC bias on the output that will increase with more gain. So, if you patch it to an oscillator, the pitch will rise a little when it's plugged in. When you patch it to an output, you may hear a small thump.

Making your own contact microphones

Plenty of instructions online about making your own contact mics.

<http://www.west.asu.edu/rlerman/>

<http://contactmics.com/>

<http://youtu.be/a0JuCYgmPPE>

<http://wp.me/p2DkLV-5Cr>

