# System Sound V1.0→V2.0

These mods are mostly about changing resistor (and one capacitor) values, except for one where two resistors are moved. The mods make it 100% like a V2.0, there will still be some small differences that don't really matter. But these should be the ones that change the sound and interaction noticeably.

All the mods are optional, of course, you can pick and choose which ones you like. I've listed them here in some rough perceived order of importance.

For reference, here is the board with all the part references. I've tried to make the screenshots below clear, and to include text. Together with the squiggles you should be able to find all the parts. Any questions, just write to <u>info@noise.technology</u>.

Parts	needed:
-------	---------

1k resistors	x4
3k3k resistors	x3
5k1 resistor	x1
51k resistor	x1
10k resistors	x2
470k resistors	x2
22nf capacitor	x1



Figure 1: System Sound parts locations

## Mic preamp

This makes the microphone sound 10x better. The old way was stupid. Sorry. This I would call an essential fix.

- Replace R4 with a component leg.
- Replace R44 with a 10k resistor.
- Replace R8 with a 5k1 resistor.



Figure 2: Positions of R4, R44, and R8

#### **Preamp biases**

This was another mistake. Just a schematic error that escaped my notice until revising some stuff for V2. It distorted like hell before, now it can but won't distort all the time. The mod doesn't seem to change the feedback sound really, which is nice.

If you want the distortion, you can keep it. Another option is to only do it on one channel.



• Remove R5 and R6 completelly.

Figure 3: Positions of R5 and R6

• On the back of the opamps, solder in 470k resistors between legs 3 and 5, as in the photographs. This is a bit tricky, take your time.



Figure 4: Placing new bias resistors behind opamps

#### **OSC** level

Raises the oscillator level relative to the other channels. I always thought it had to fight hard for its place among the others, so if you wanted a loud sine it would no longer be a sine, because it was clipping because you maxed it to compete with the no-inputing preamps. You can still get that sound now, but it's further up on the knob.

• Replace R14 with a 3k3 resistor

## **OSC DAC filter capacitor.**

This is inspired by me revising the PCBSNR device. I realised that the DAC on it has a super low frequency. This uses the same values, but the capacitor change doesn't have to be as dramatic because there is also a resistor change (replacing R14, above). I've written 22n here, because that's what the V2 uses (for simplicity, the value is also used in one of the equalisers). But if you want to use e.g. a 10nf capacitor that's also fine.

• Replace C15 with a 22nf capacitor. I use polyester ones, but I'm sure a ceramic will be fine.



Figure 5: Positions of R14 and C15

## **Equaliser curve shift**

Makes the tilt equalisers more powerful, especially in the treble.

• Replace resistors R17, R18, R21, R22 with 1k resistors.



Figure 6: Position or R17 and R18



Figure 7: Position of R21 and R22

# Gain reduction on the inputs

I decided that the inputs should have a little less gain. It's still plenty, and this matches the new microphone and oscillator levels.



• Replace resistors R7 and R9 with 3k3 resistors



Figure 9: Position of R9

#### Power amp gain

As I've lowered some signal levels earlier, and the power amp was not getting all the volts it could handle, I increased the gain at this final stage. This makes it easier to overwhelm the power amp and/or power supply, so it does make it easier to get oscillating power cuts. Meaning that the LED starts blinking and things sound weird. It can sound good, and will mostly happen with a weak power supply, loud low frequency sounds, and a big speaker.



• Replace R39 with a 10k resistor

• Replace R33 with a 51k resistor



Figure 11: Position of R33