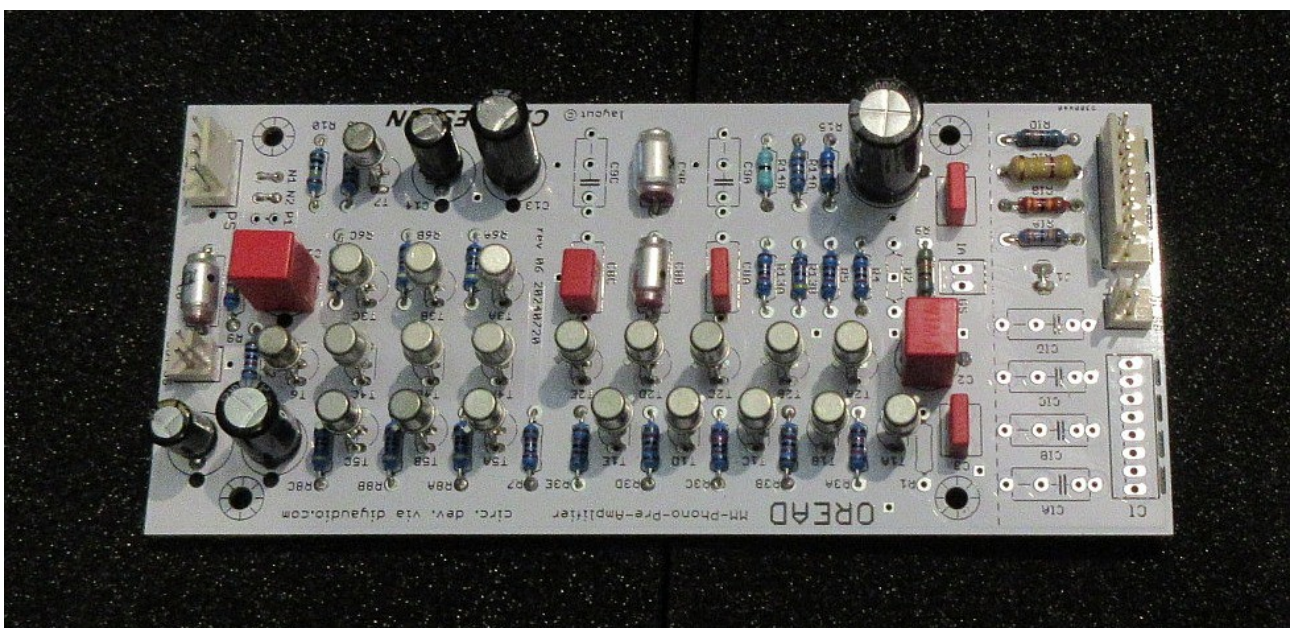


<https://www.diyaudio.com/community/threads/oread-a-diy-mm-phono-approach.406480/post-7534402>



This time, as already announced, the 'NPN circuit', i.e. with NPN transistors at the input. All other transistors, electrolytic capacitors and of course the operating voltages have their polarity swapped accordingly. To do this, I made a few small changes to the board layout compared to version r04. To avoid the operating voltage having to be connected the other way round than the board print indicates depending on the selected circuit (NPN/PNP), the polarity of the operating voltages on the new board r06 is determined by wire bridges P1/P2 and N1/N2, but the external connection to the power supply remains as before. The polarity of electrolytic capacitors is also marked by a dot in the assembly print.

There is also now a separate place and print for the resistor RB.

PNP circuit:

Wire bridges P1, P2

Transistors T1, T2, T5, T7 = PNP

Transistors T3, T4, T6 = NPN

Capacitor connection: dot = negative

NPN circuit:

Wire bridges N1, N2

Transistors T1, T2, T5, T7 = NPN

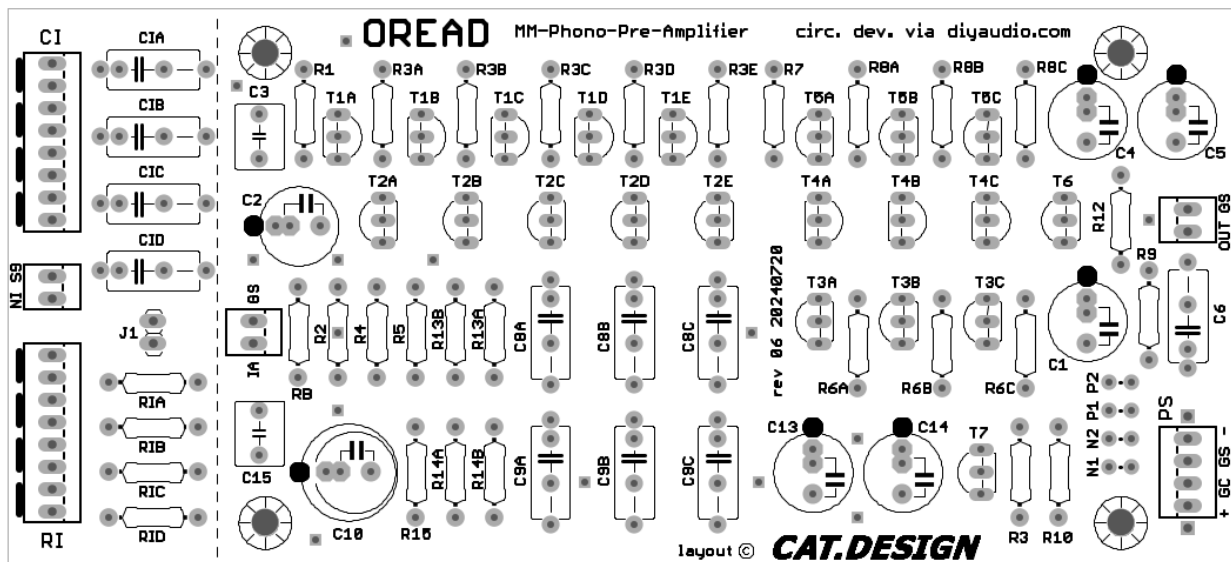
Transistors T3, T4, T6 = PNP

Capacitor connection: dot = positive

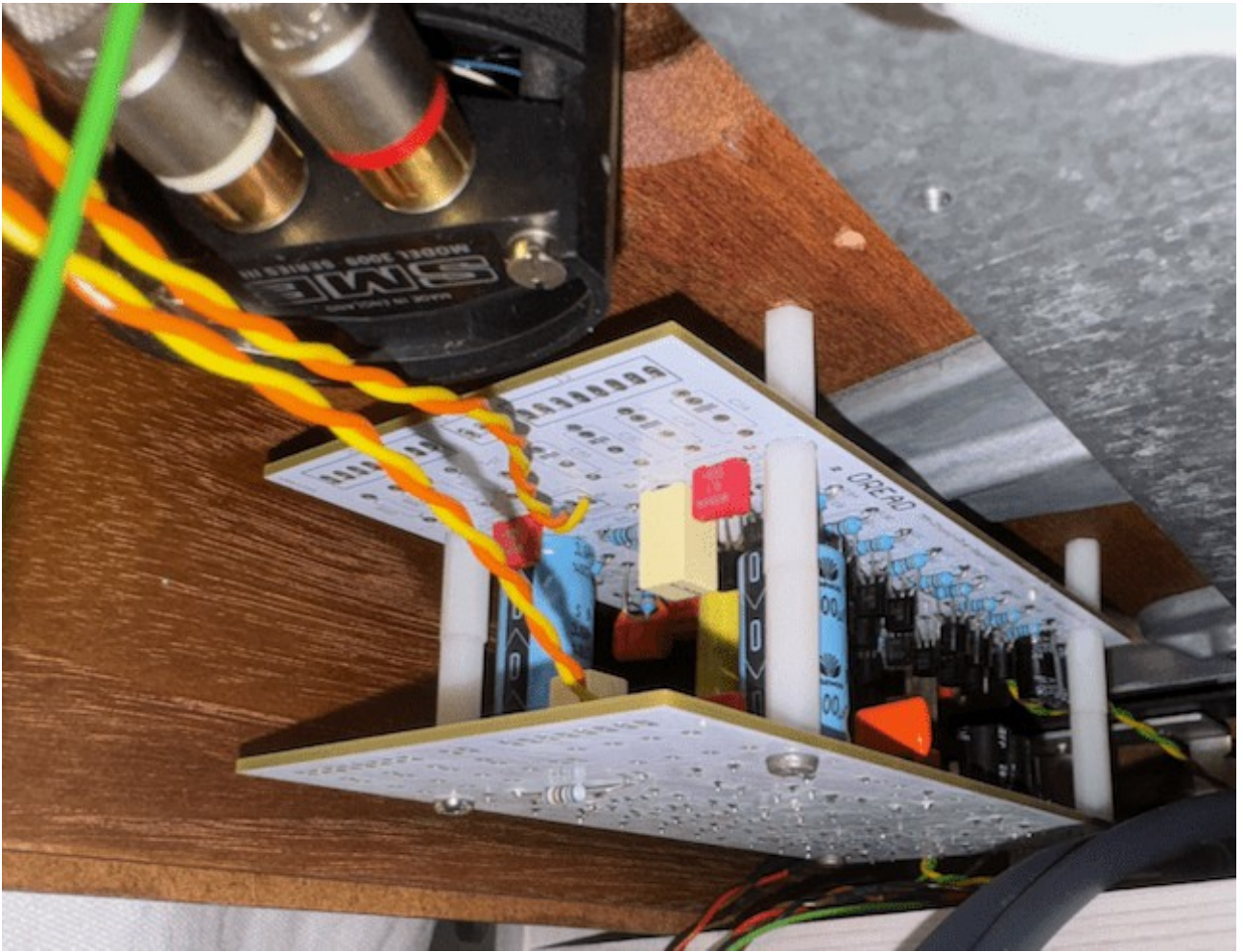
I used the transistors BC107B (NPN) and BC177B (PNP) in the NPN circuit because I have a lot of them; I kept all other component values.

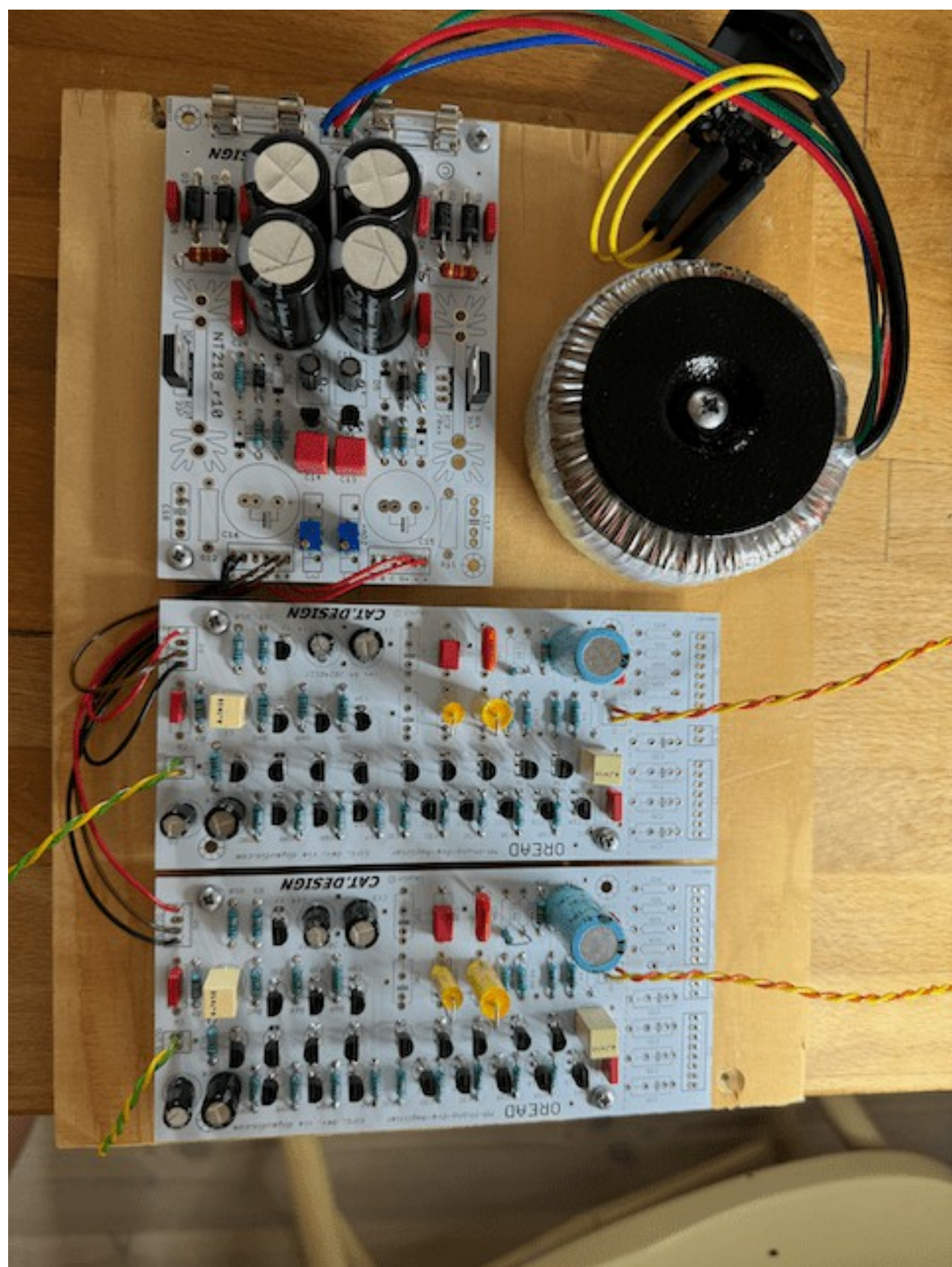
Thanks to the modified design of the circuit board described, I was able to swap it - even with the NPN circuit - for one of the two (stereo) PNP circuit boards (r04) in my phono preamplifier simply by plugging it in. It worked straight away without any problems and there was no difference between the two channels when I first listened to it briefly.

There is also no difference in terms of noise. You only hear a very quiet hissing sound when the volume control is turned up all the way, the same for both versions.

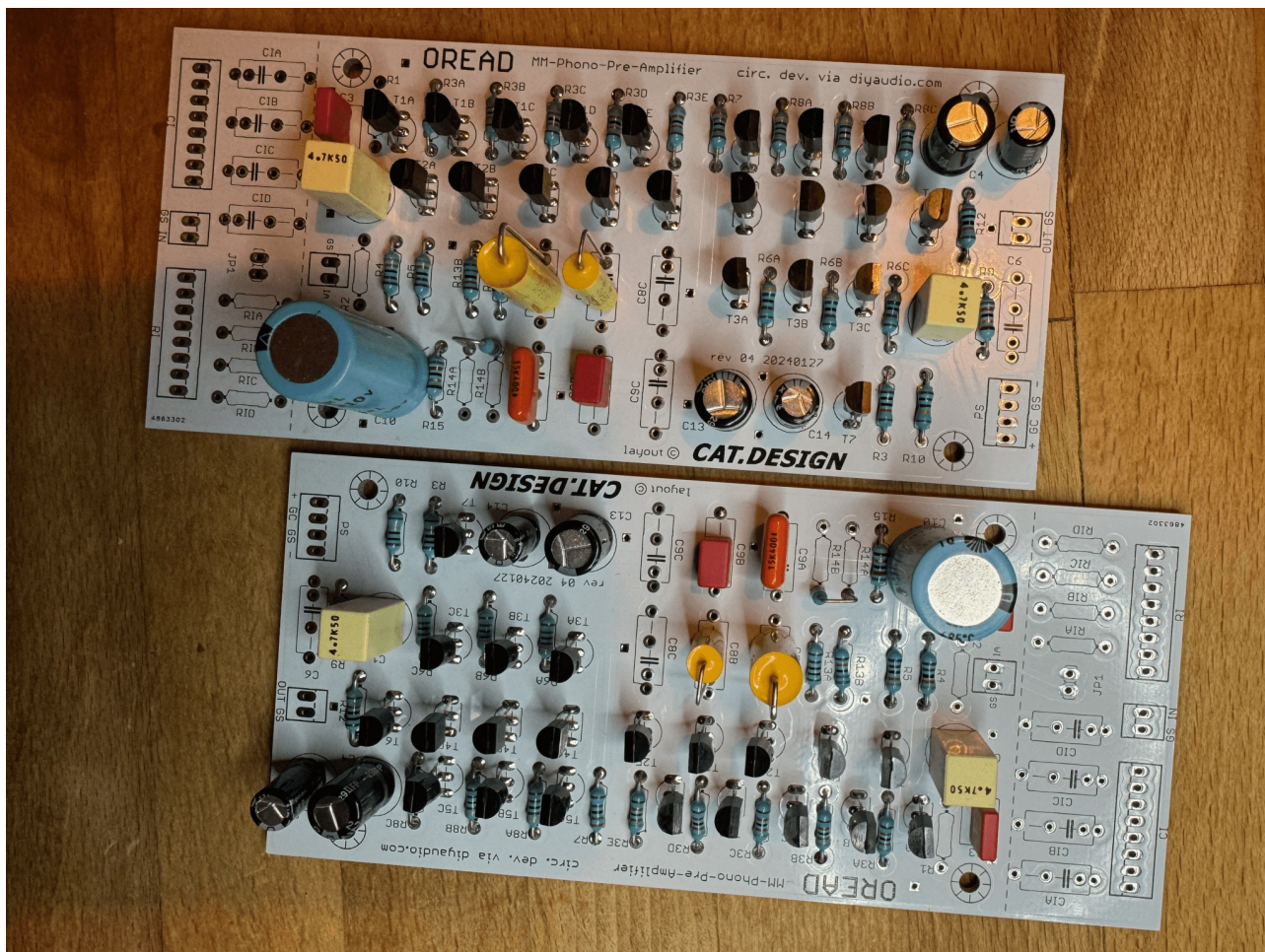




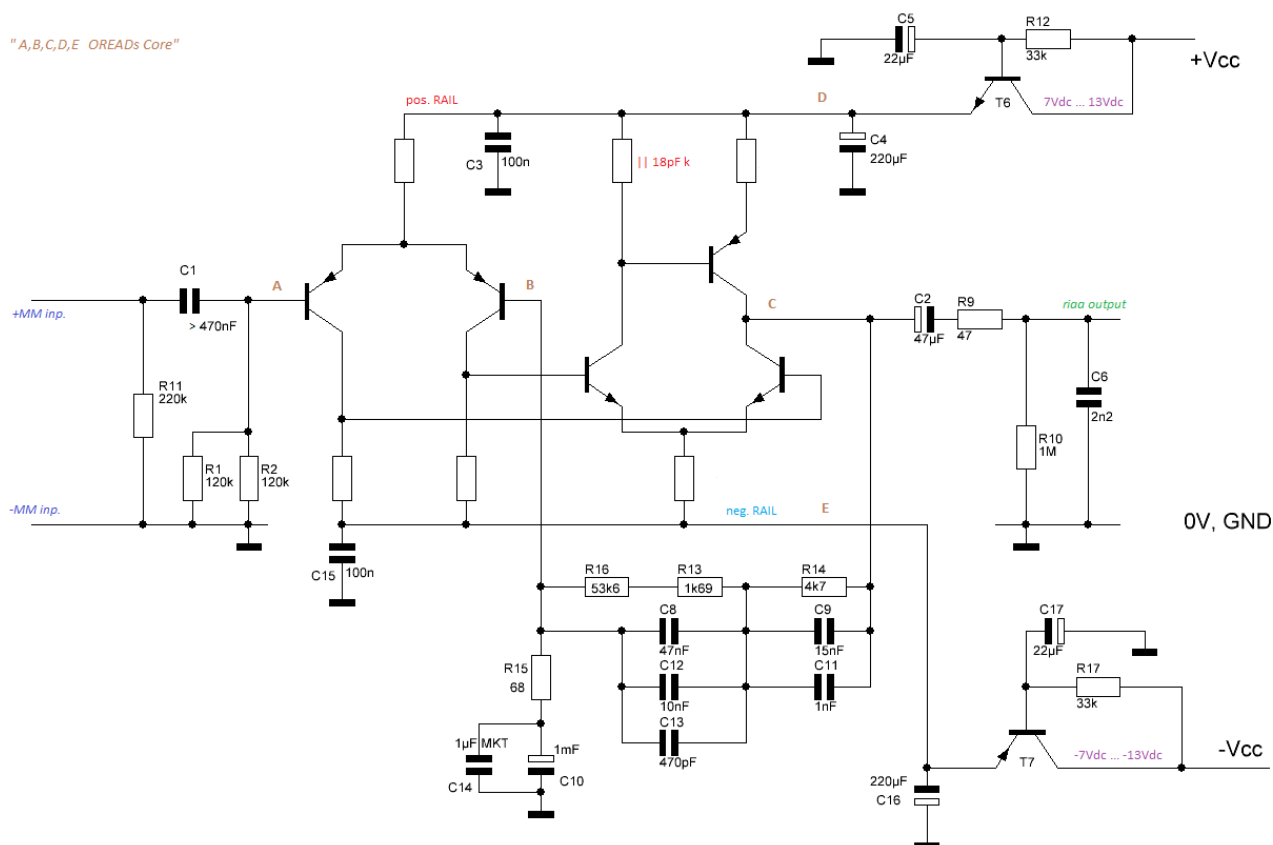




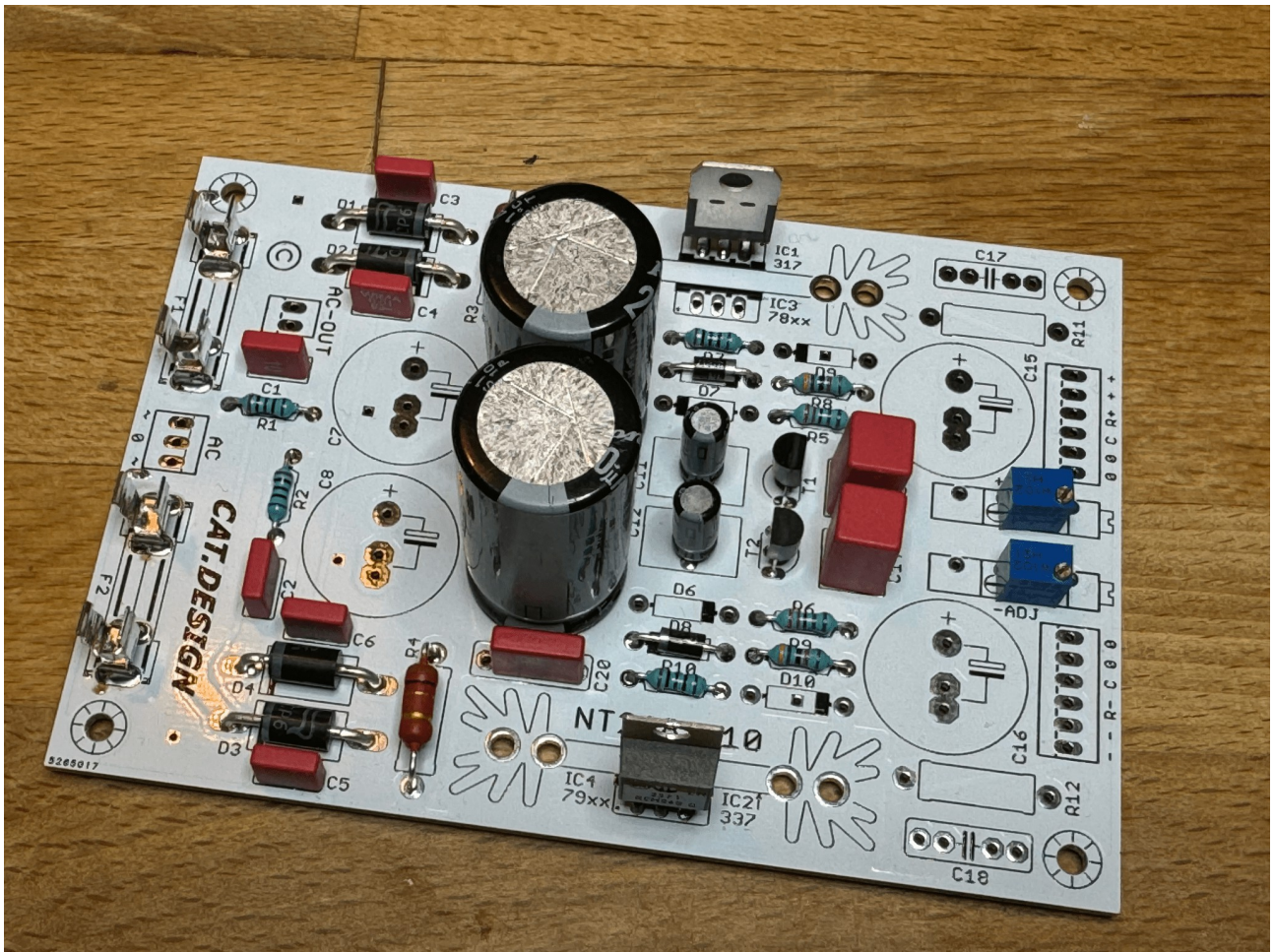




"A,B,C,D,E OREADs Core"

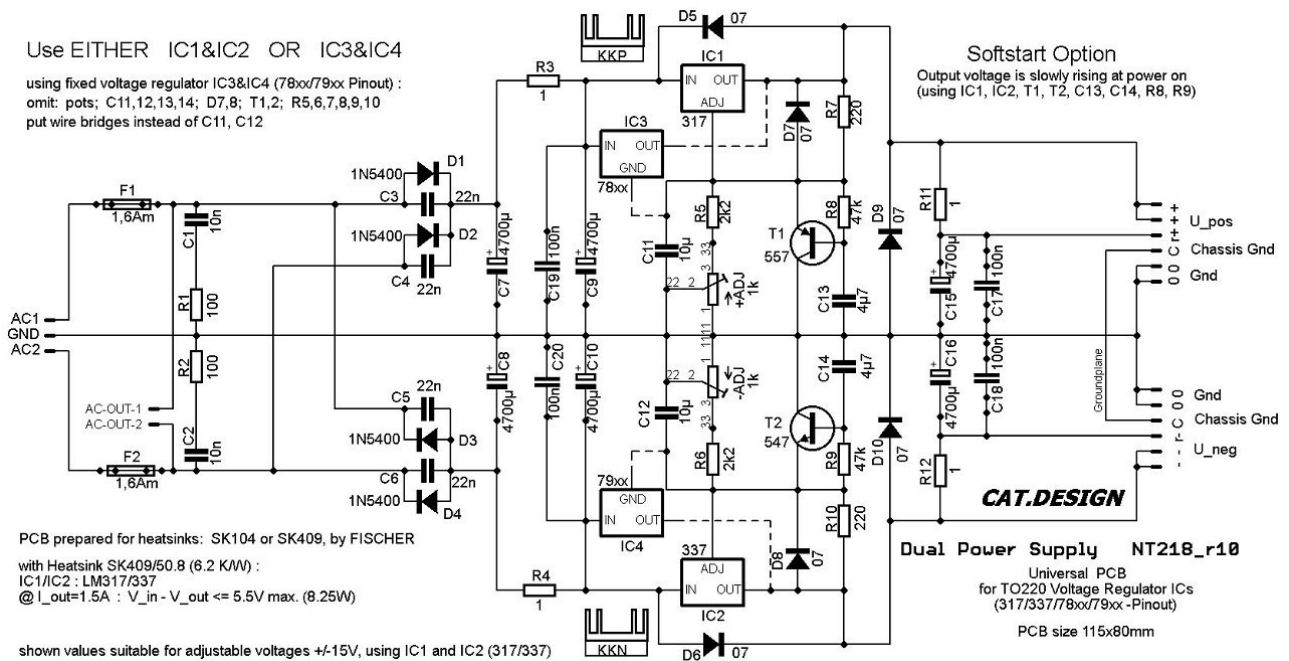




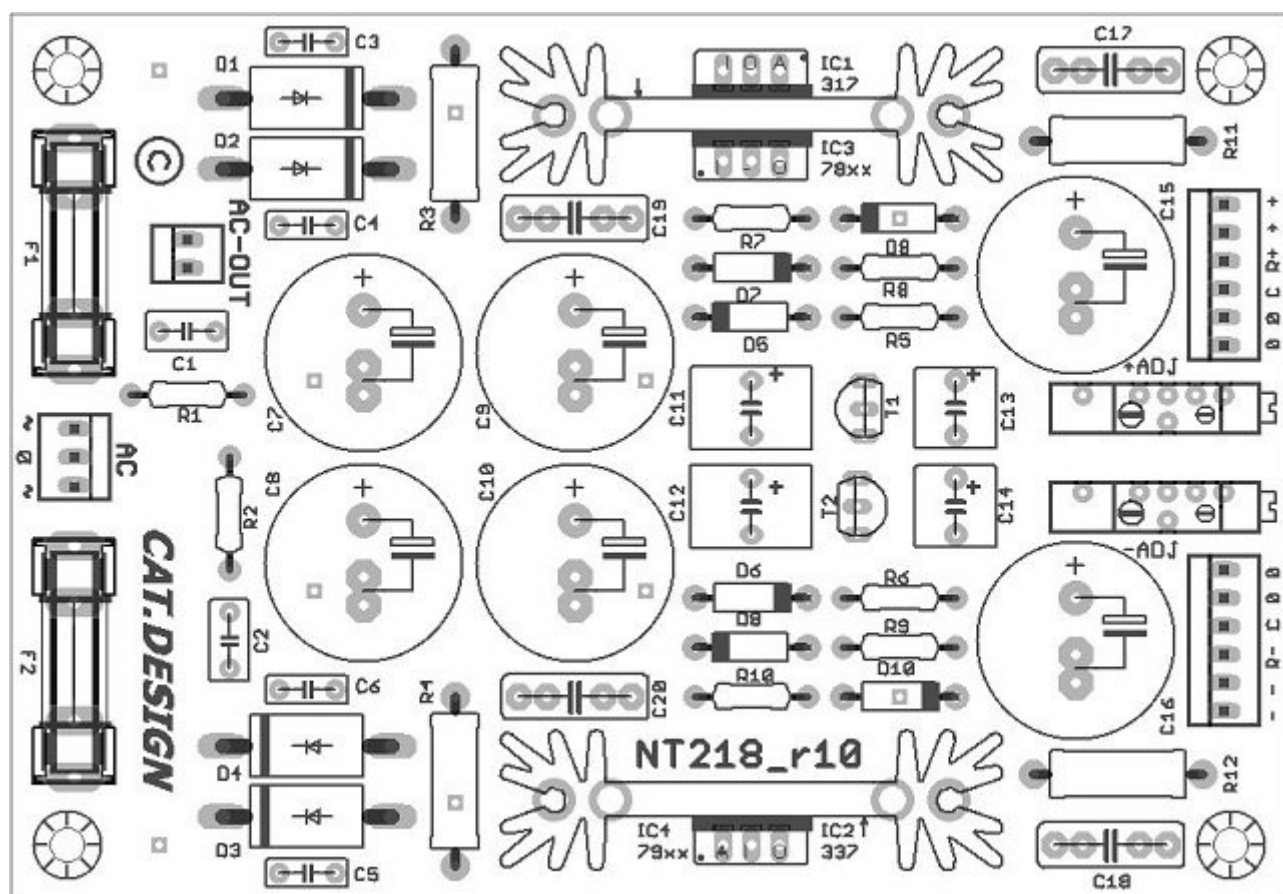
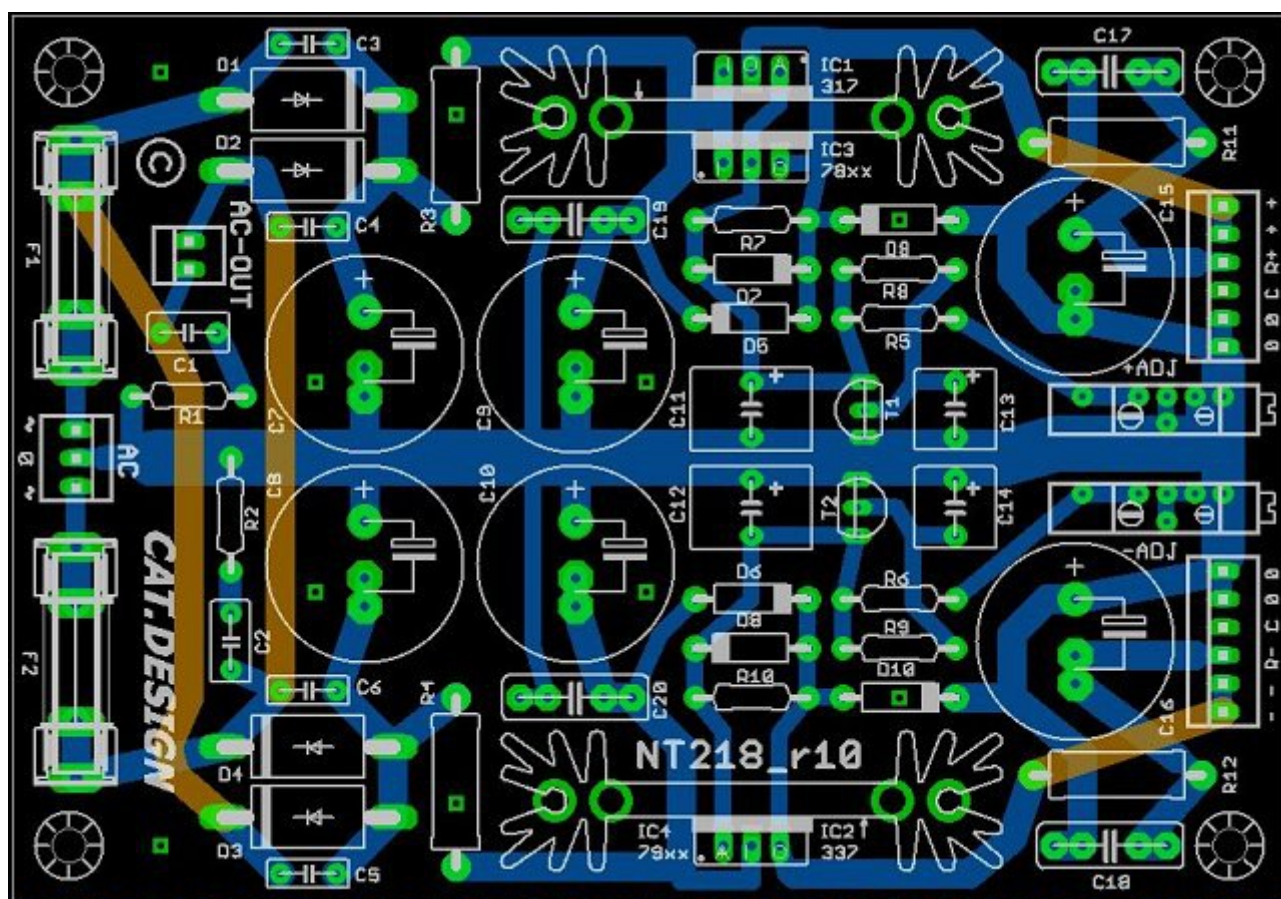


Use EITHER IC1&IC2 OR IC3&IC4

using fixed voltage regulator IC3&IC4 (78xx/79xx Pinout) :  
omit: pots; C11,12,13,14; D7,8; T1,2; R5,6,7,8,9,10  
put wire bridges instead of C11, C12



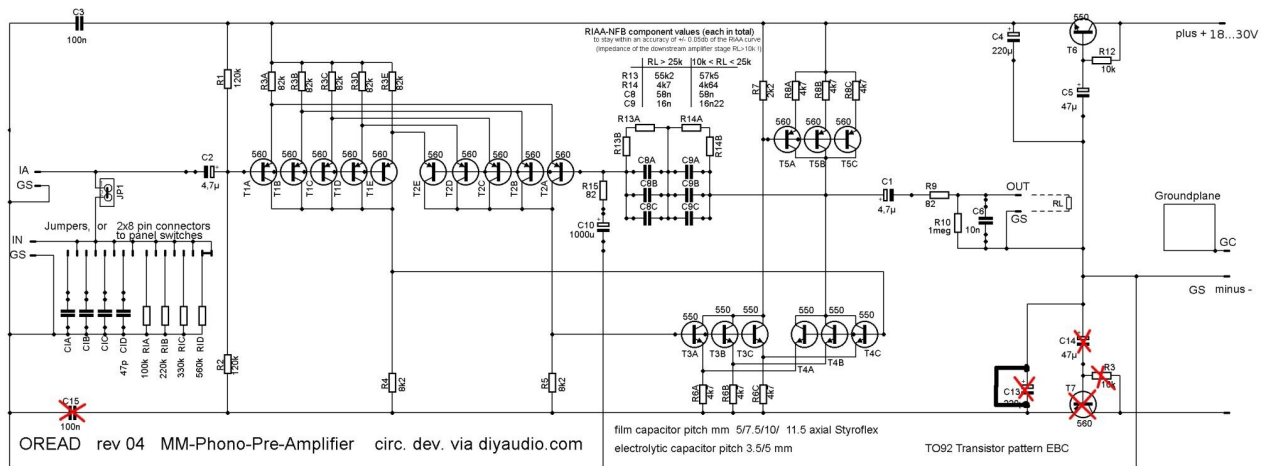




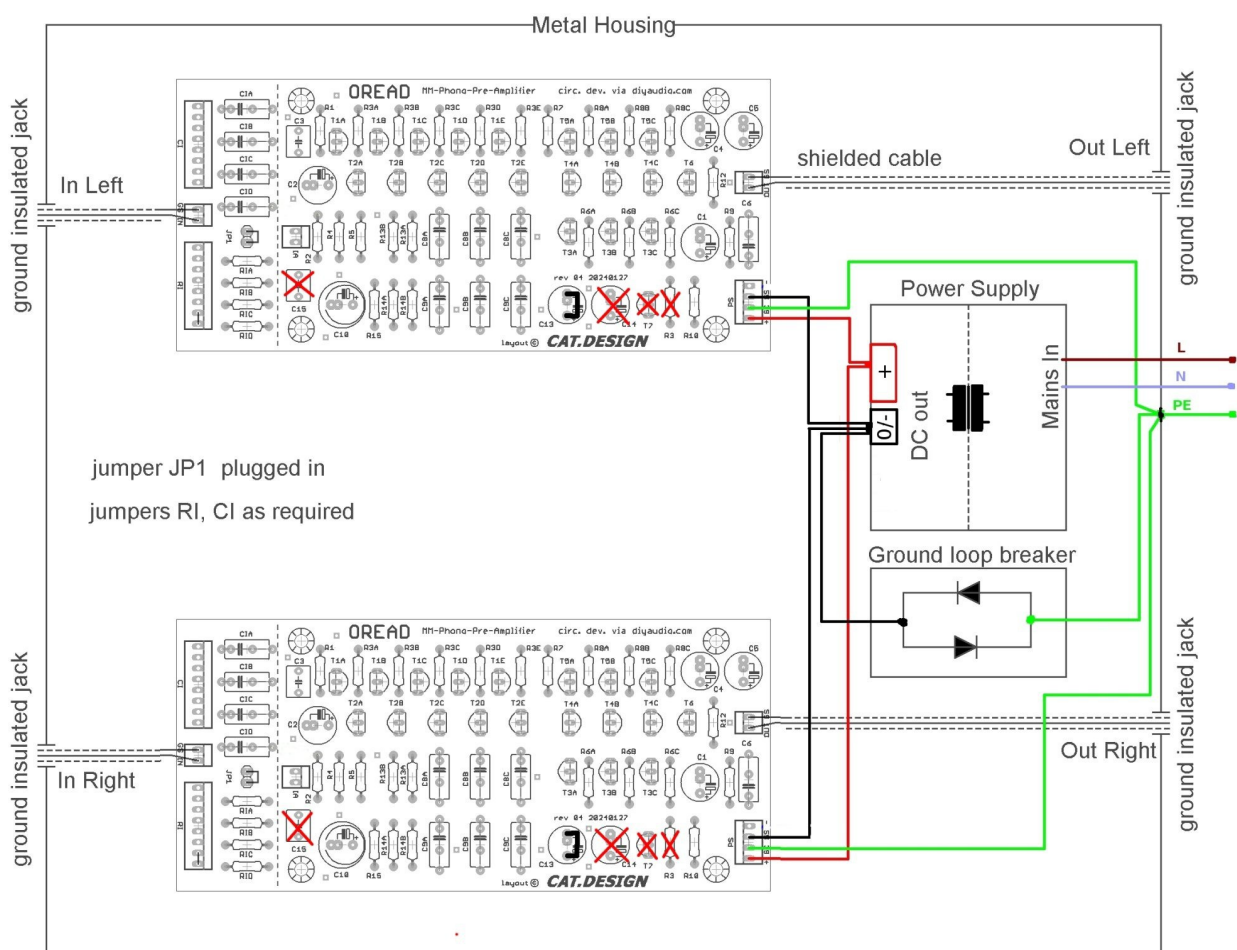
## How to use/connect the OREAD PCB (r04) *for single supply*

omit: C13, C14, C15, R3, T7  
instead of C13 install a wire bridge

When using R1 and R2, which cannot be avoided with a single supply,  
the input is connected to the operating voltage.  
The power supply should therefore be particularly clean.







## How to use/connect the OREAD PCB (r04)

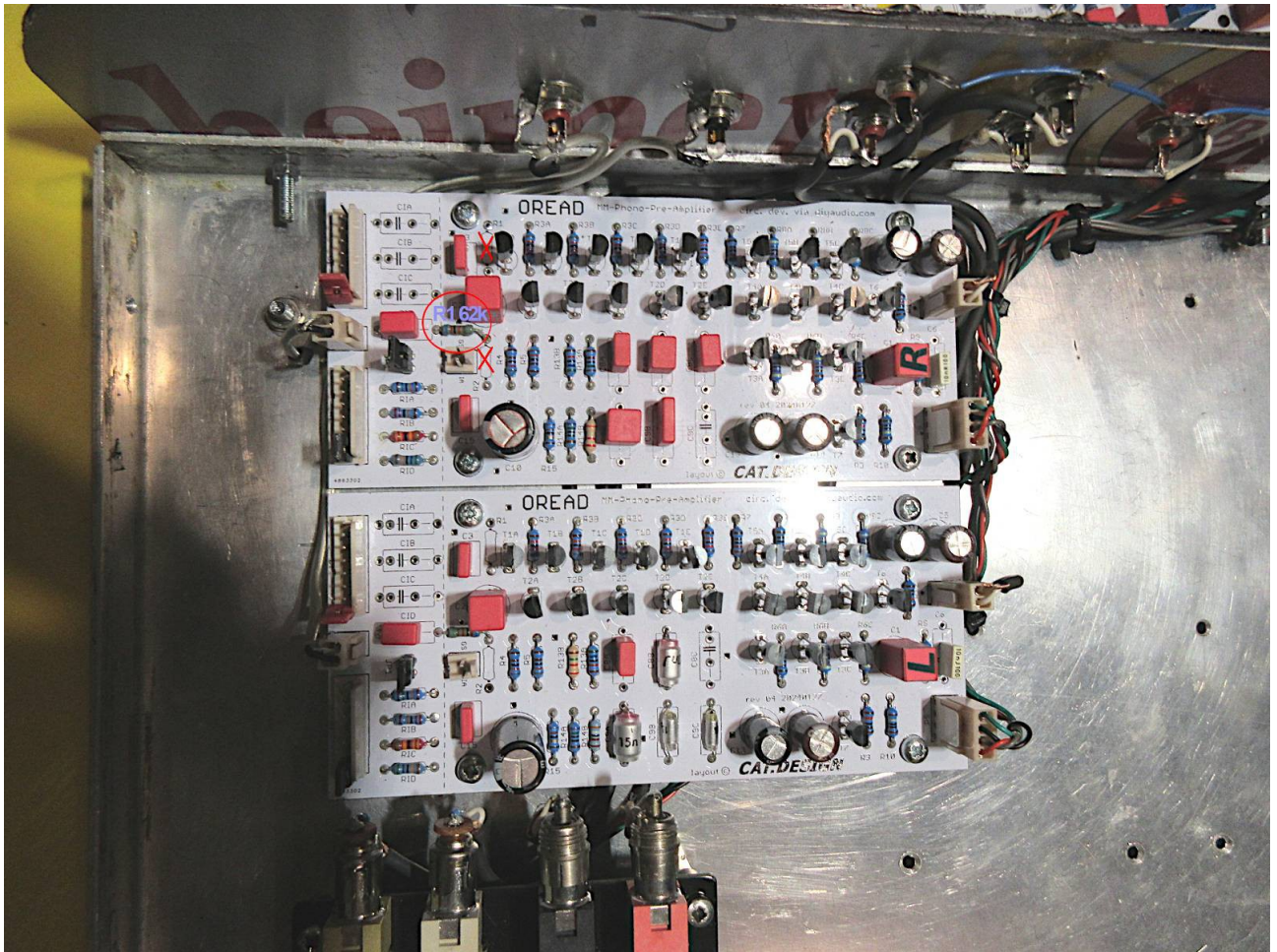
The circuit boards can be used with single supply or dual supply. For double supply, it is better to use resistor RB instead of R1 and R2. RB is not on the screen print of the current PCB version r04. Therefore, the following images show the position of RB if it is used.

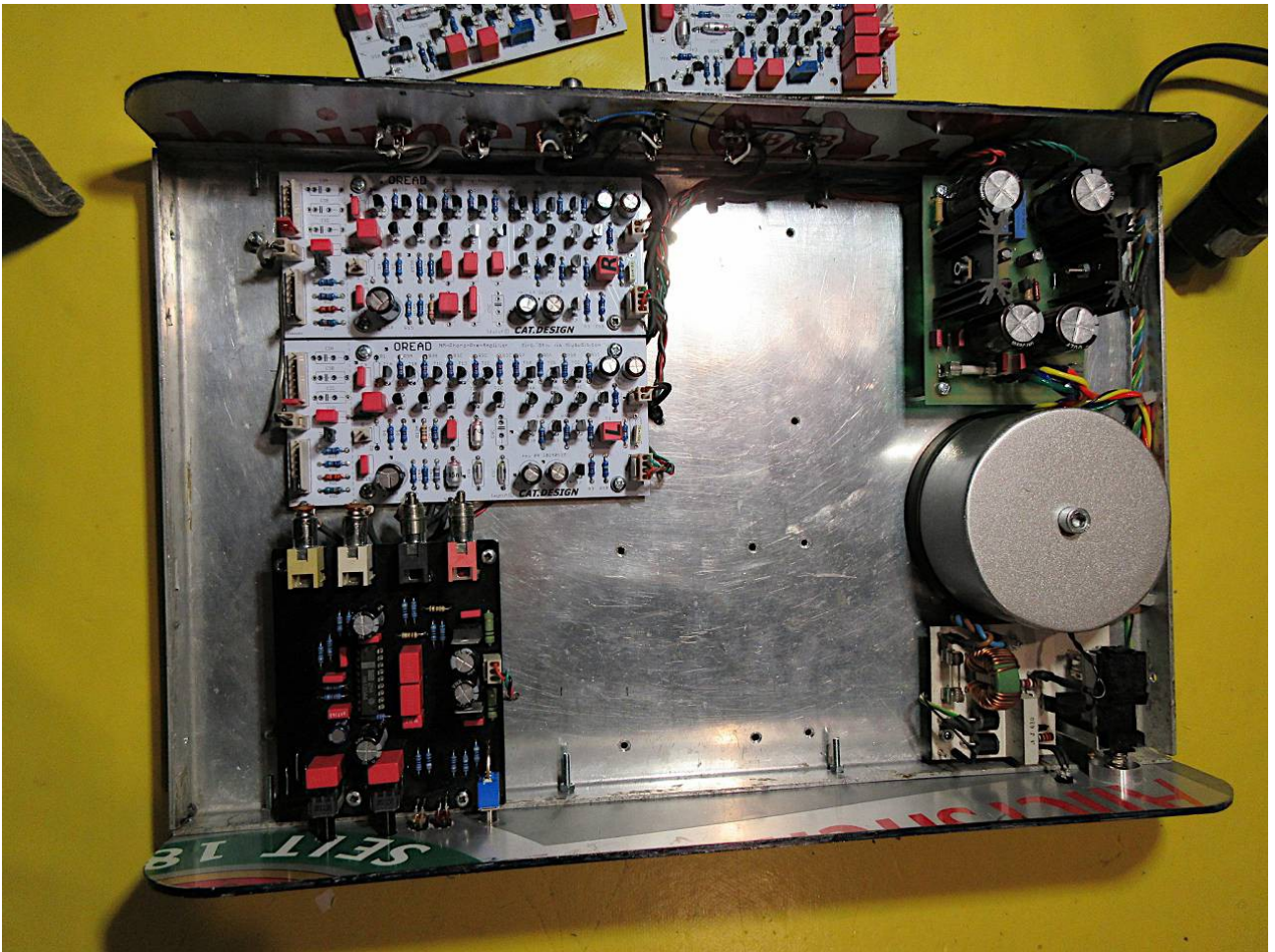
The next picture shows how power supply and ground are connected.

If the boards are installed in a housing together with other amplifier components, you should also use this grounding principle.



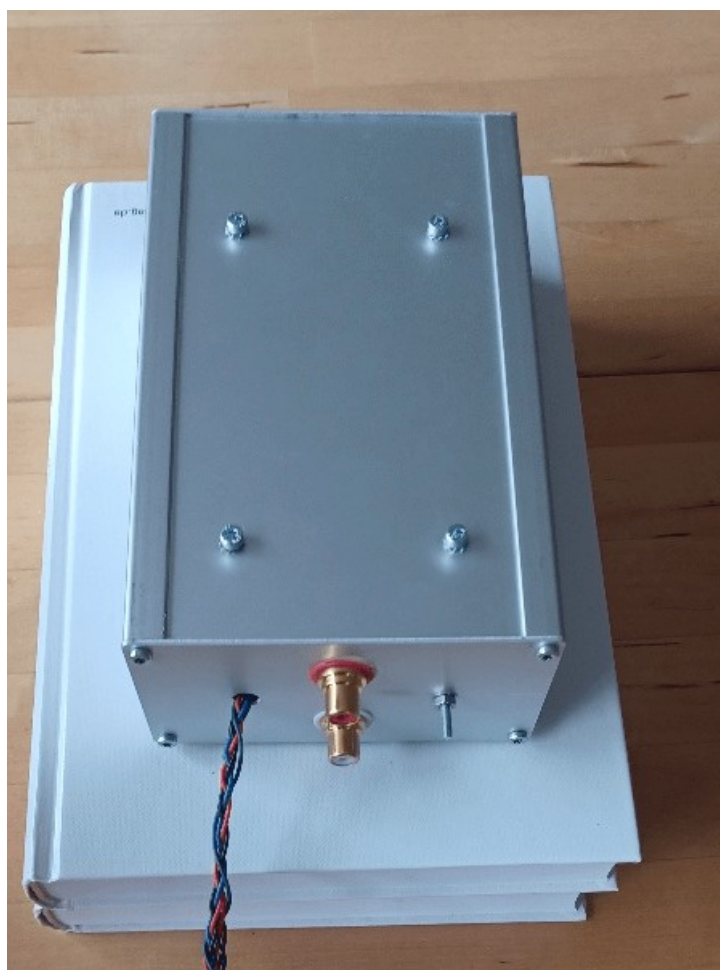




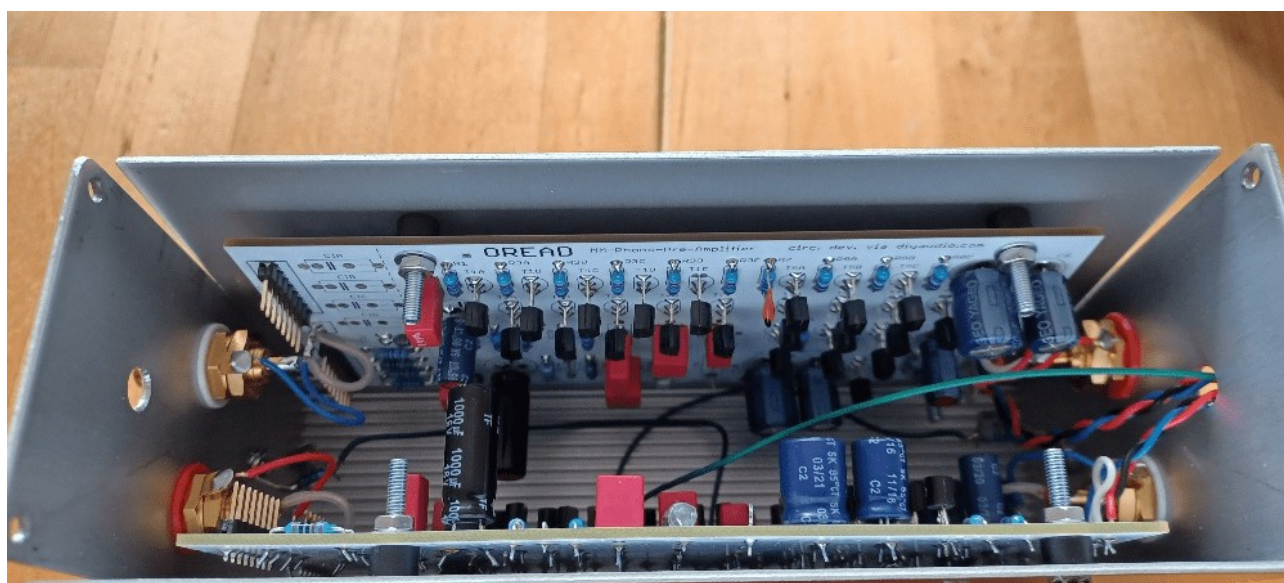


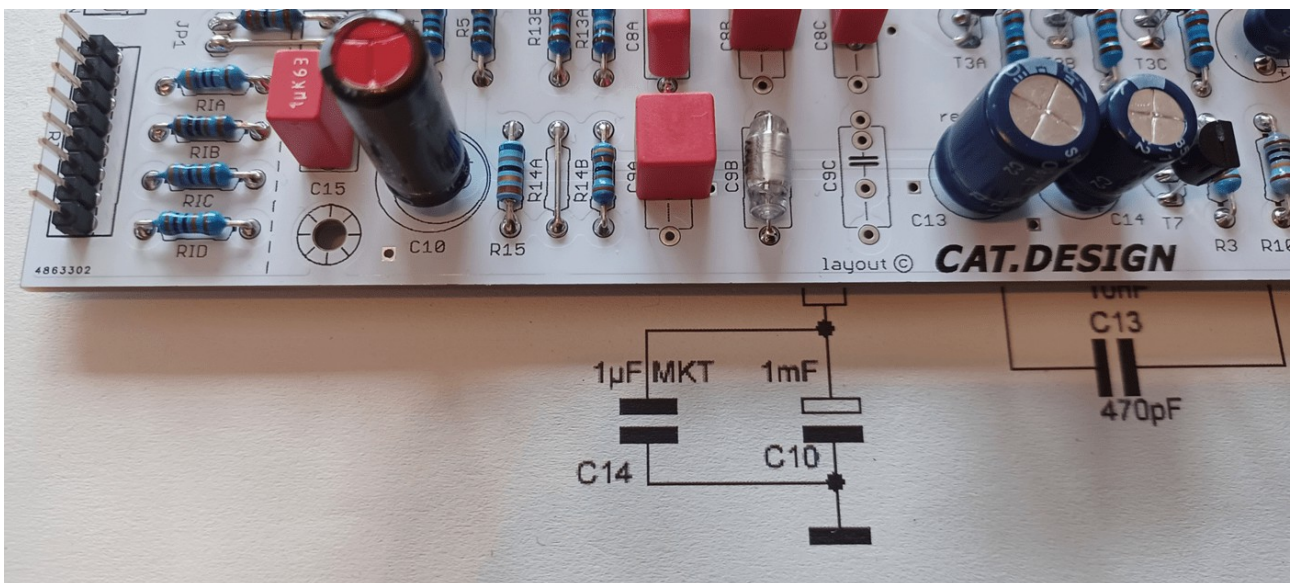
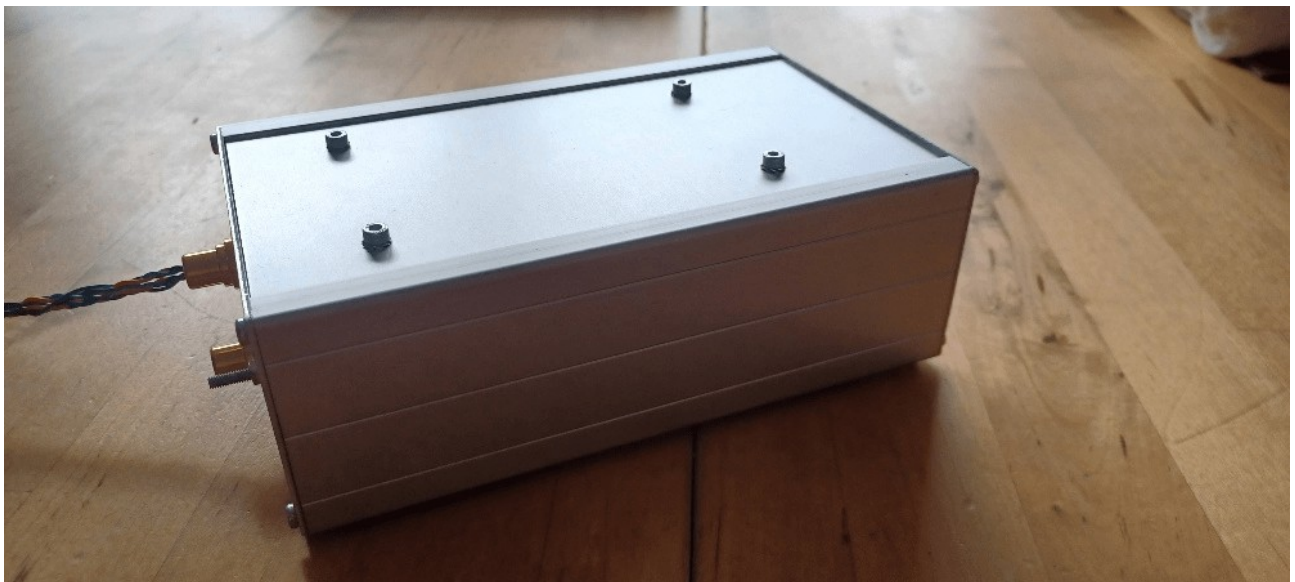
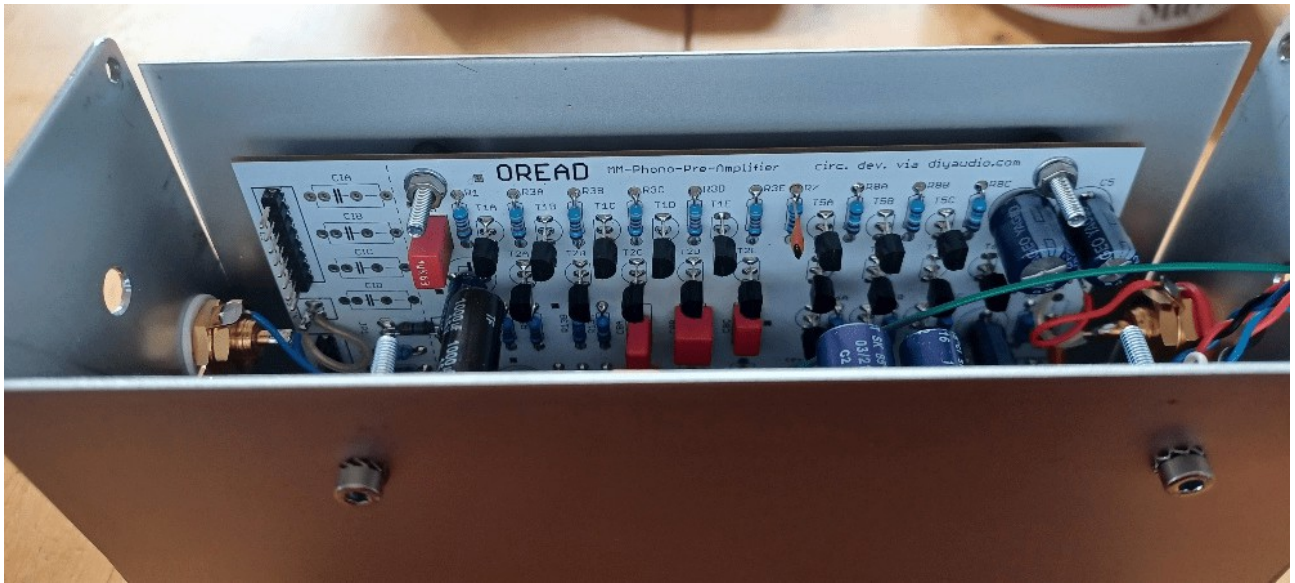




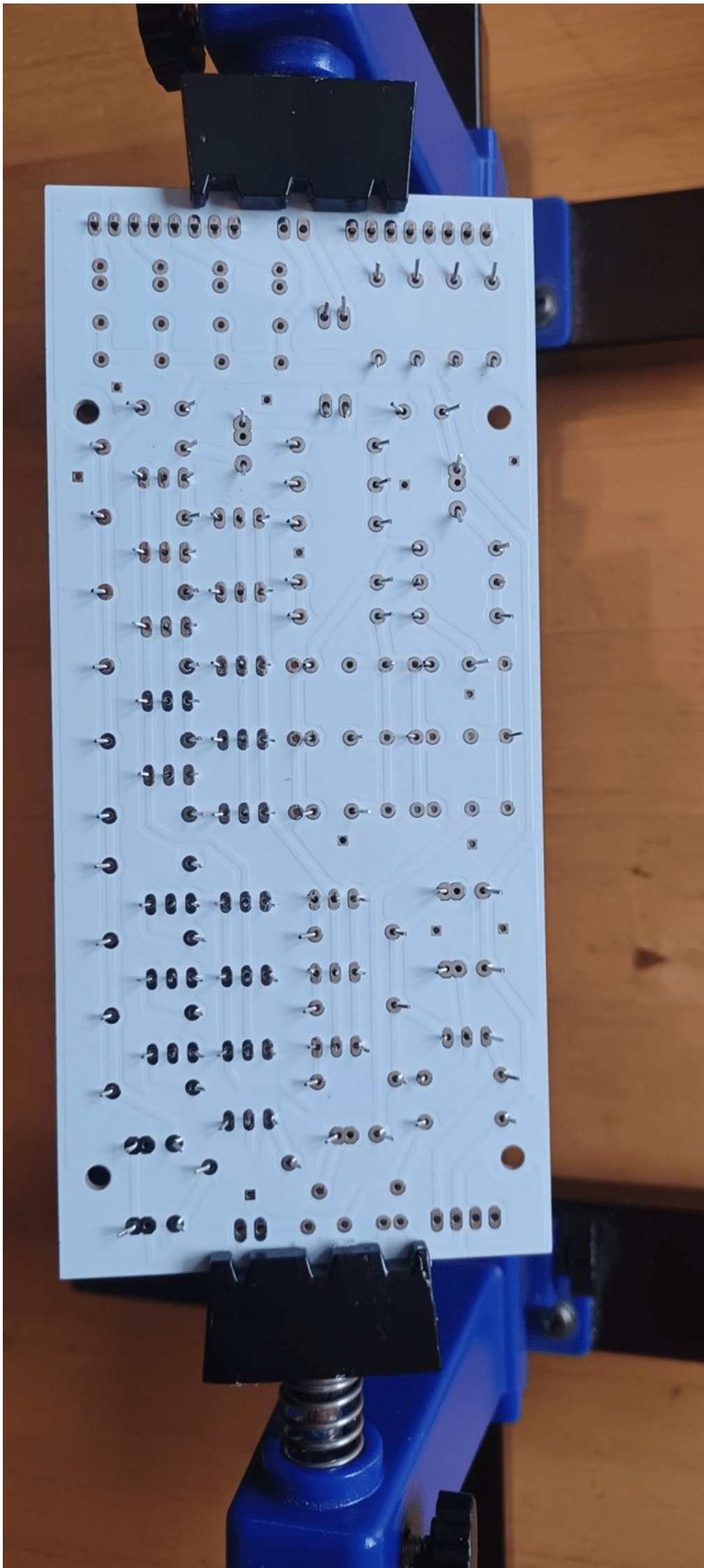


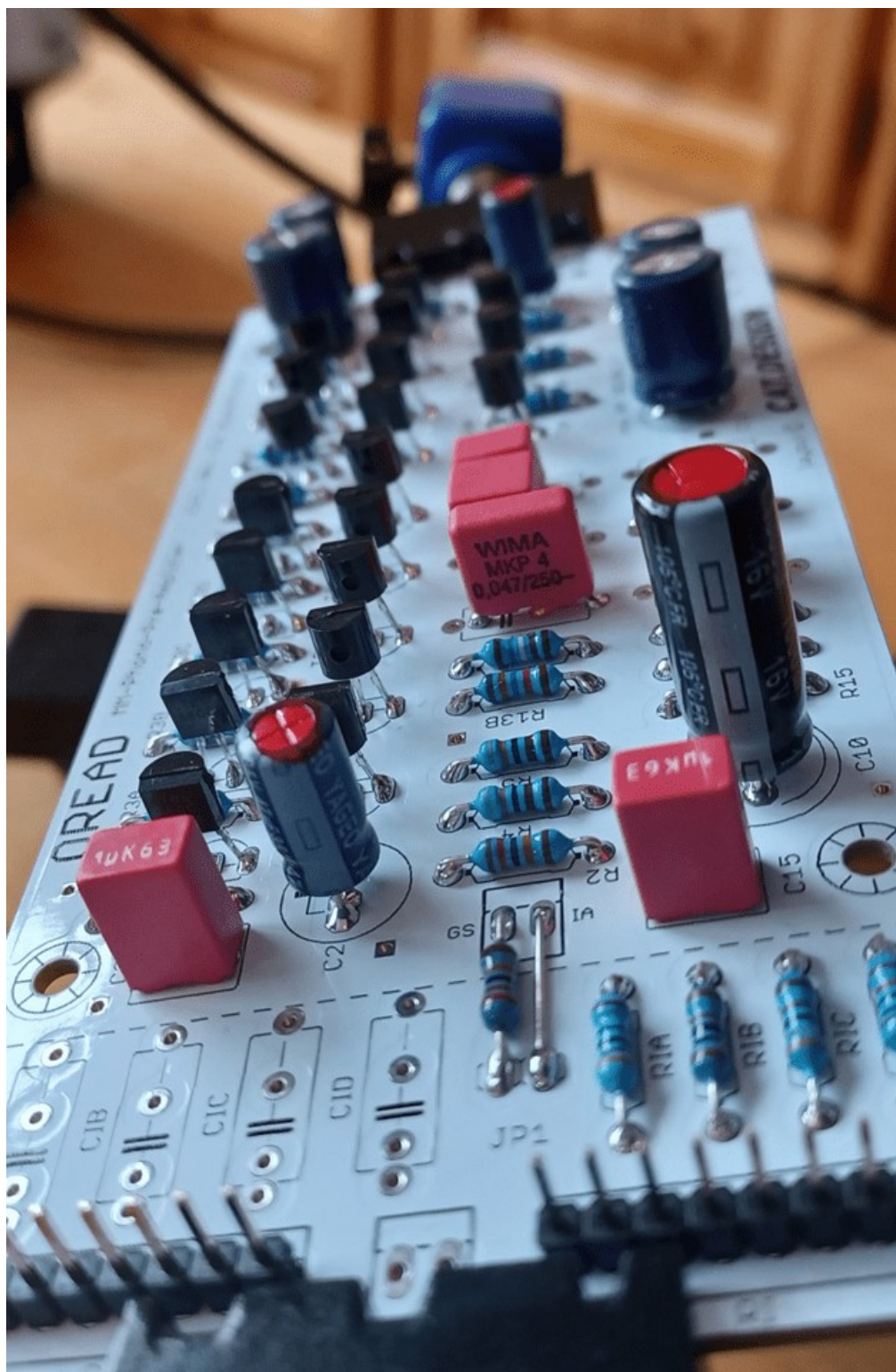




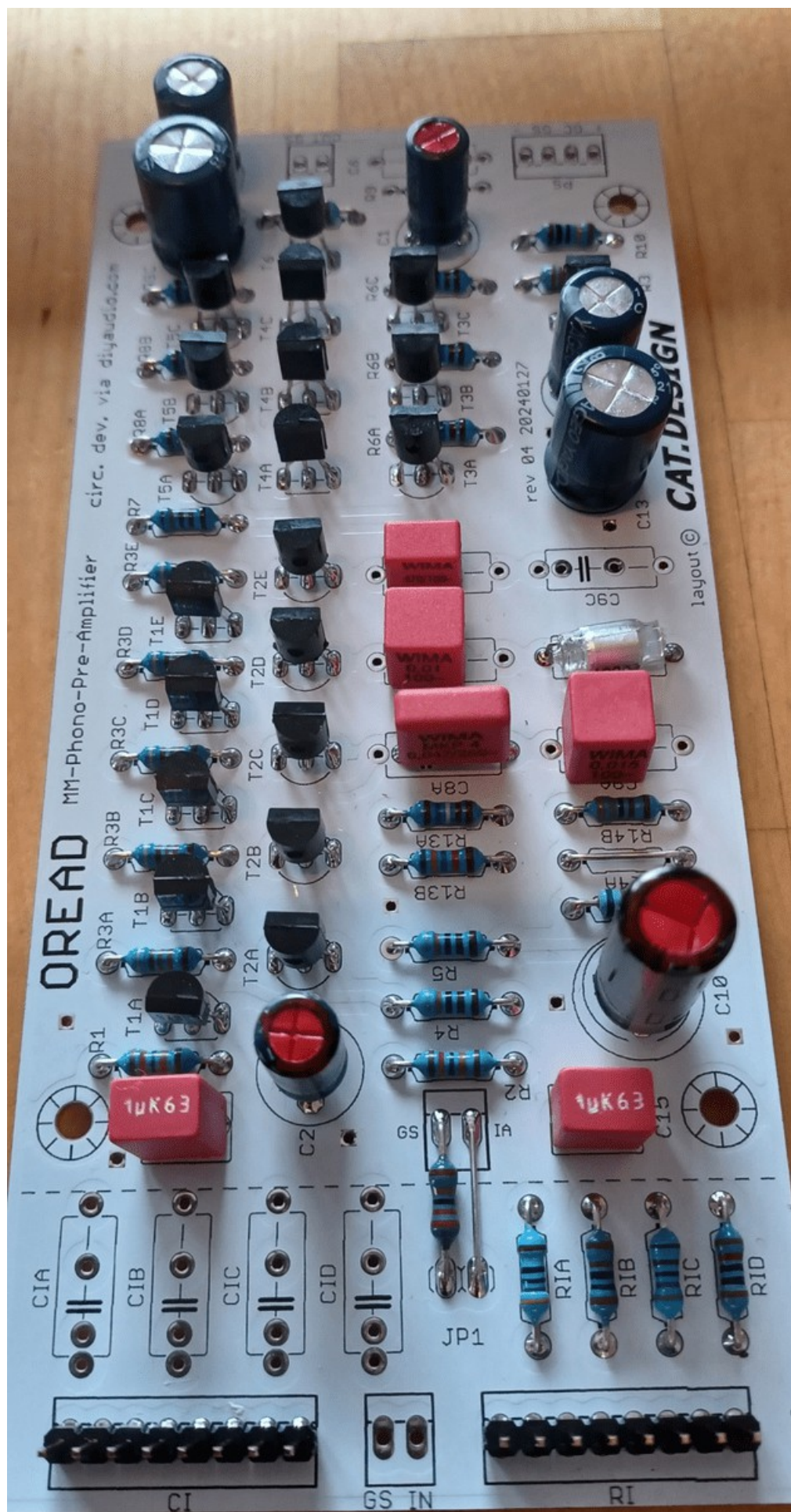




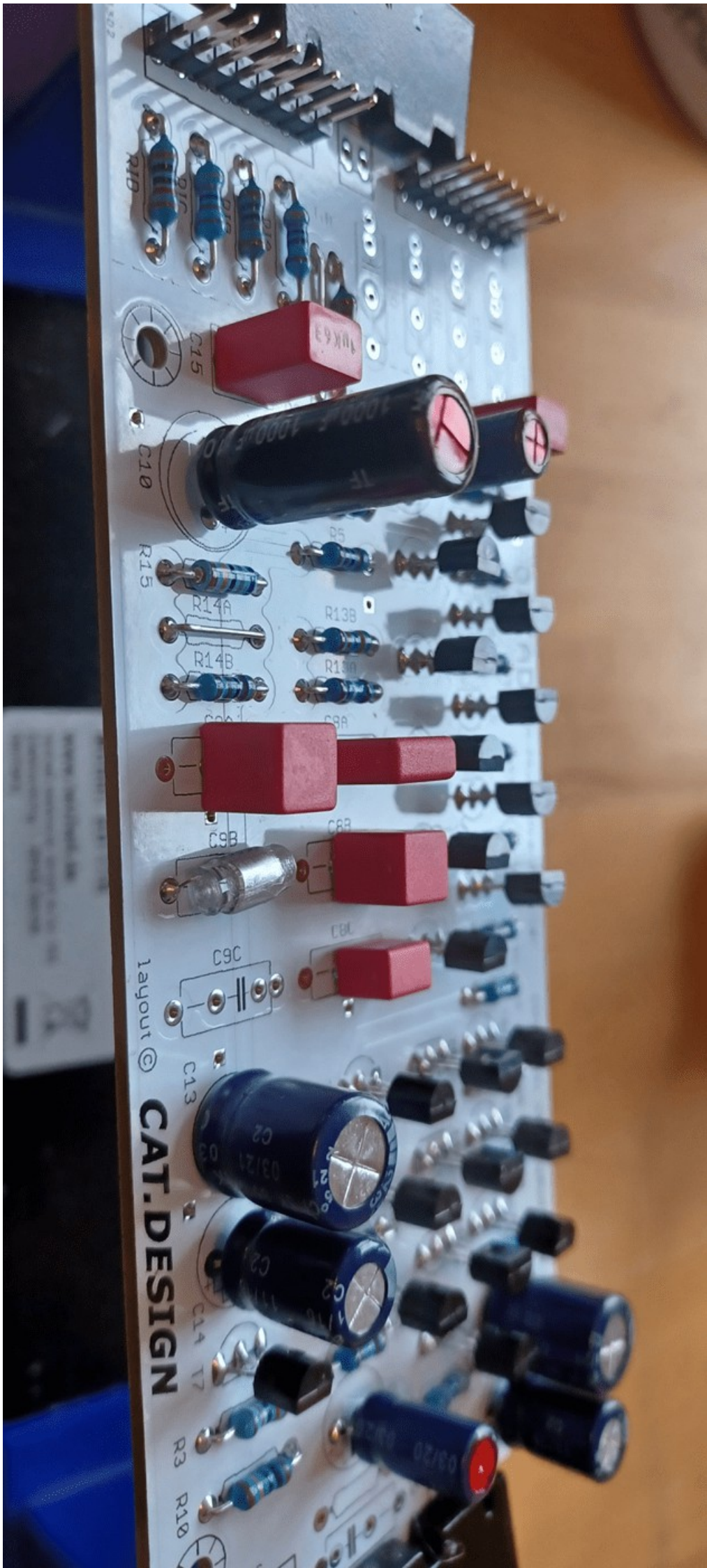








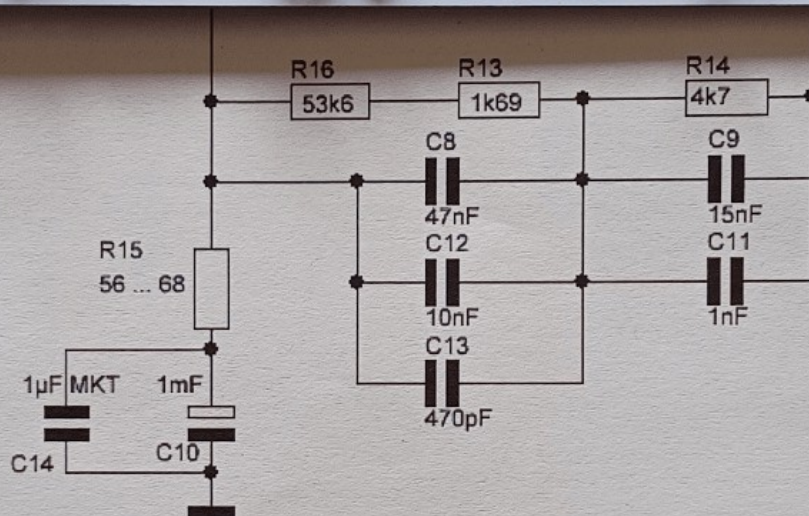
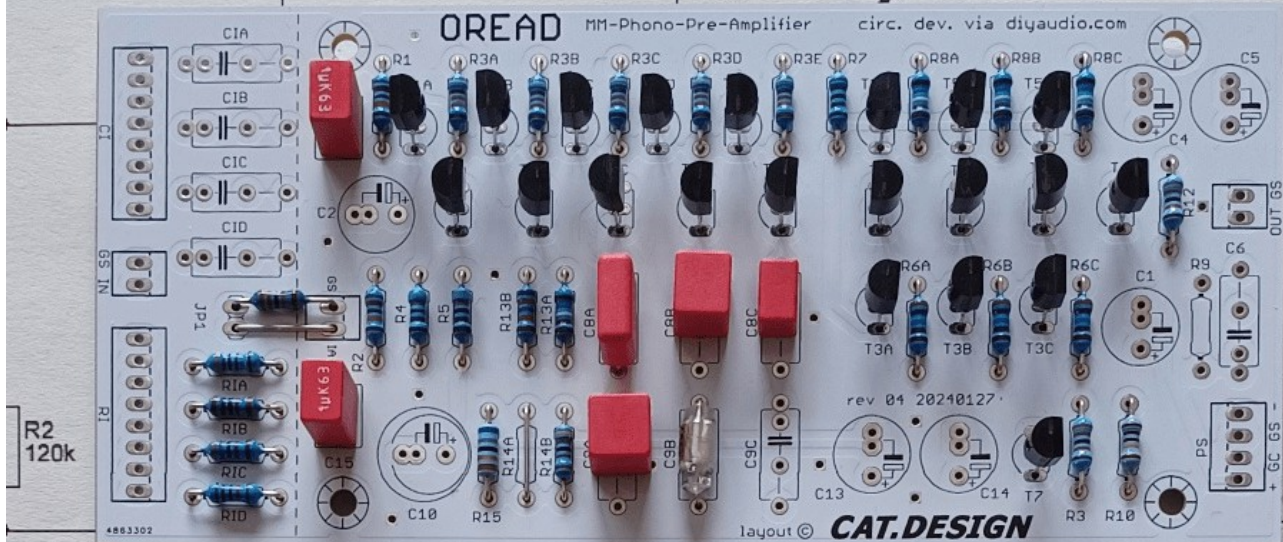
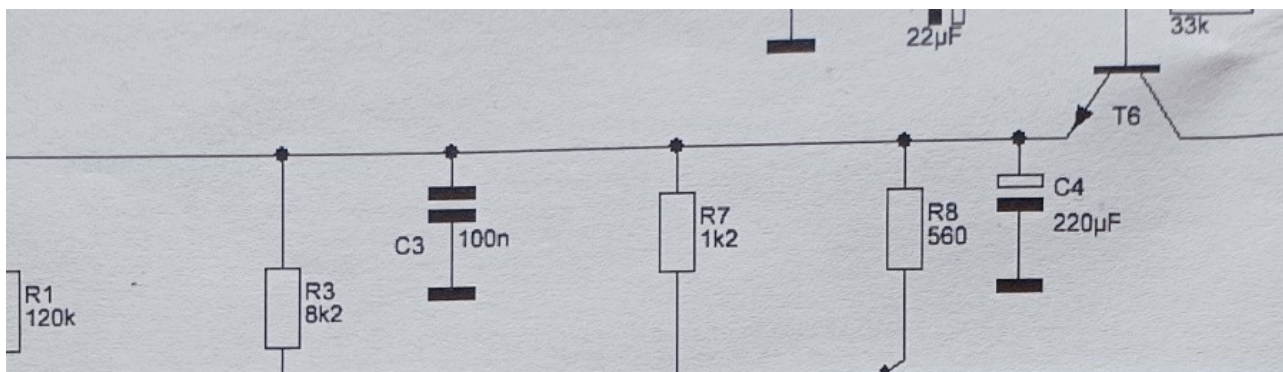




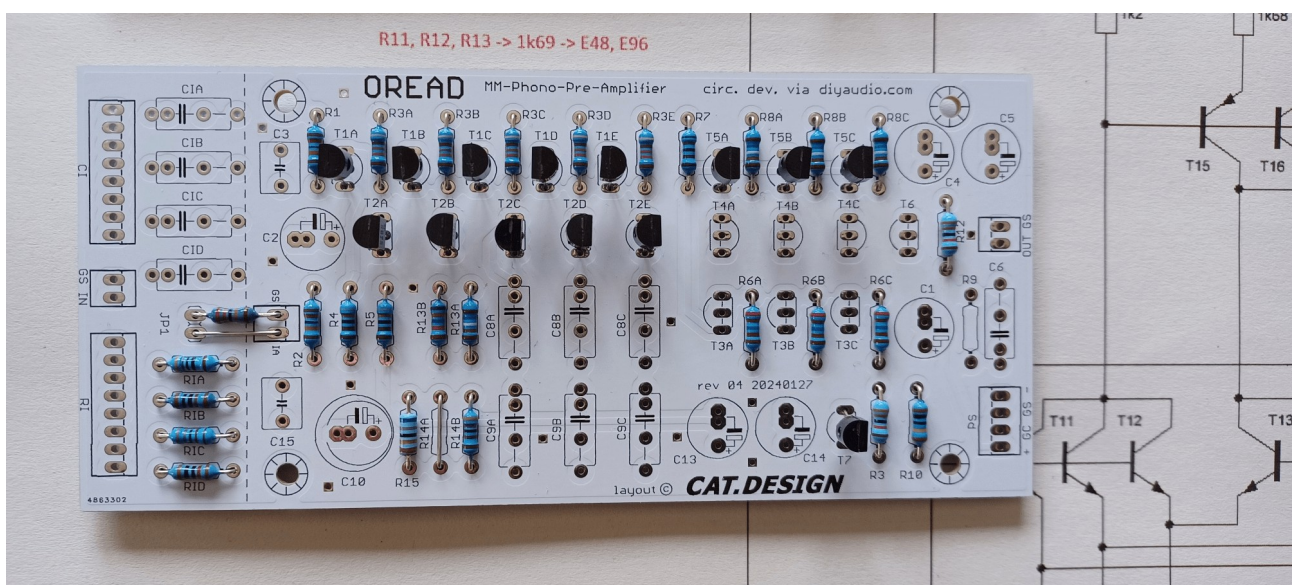
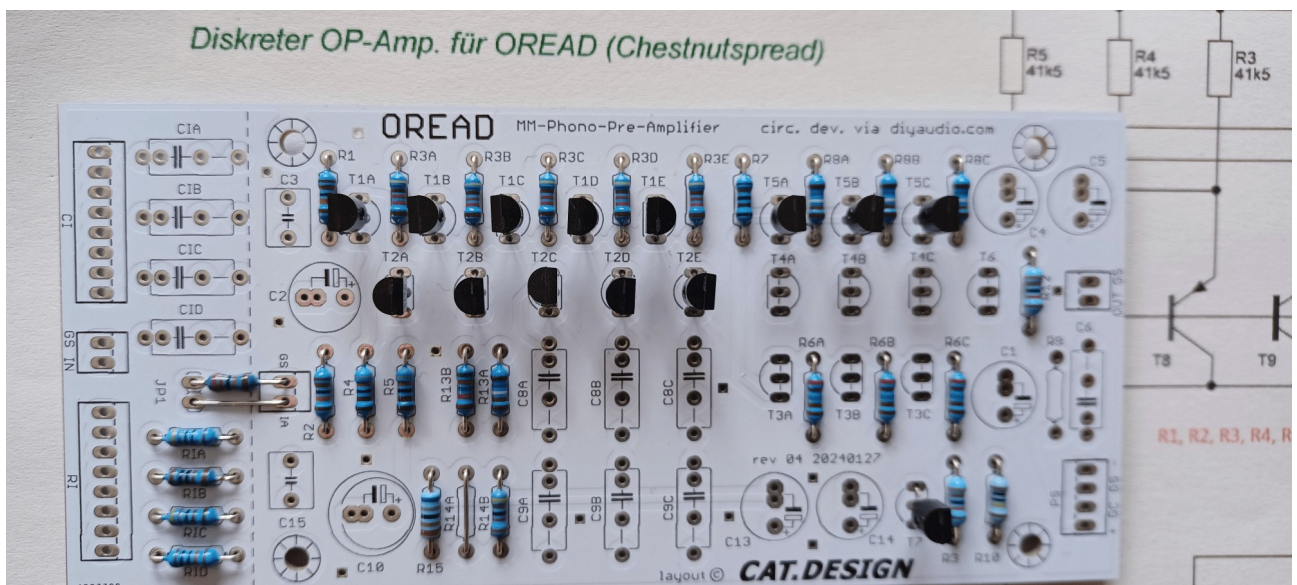
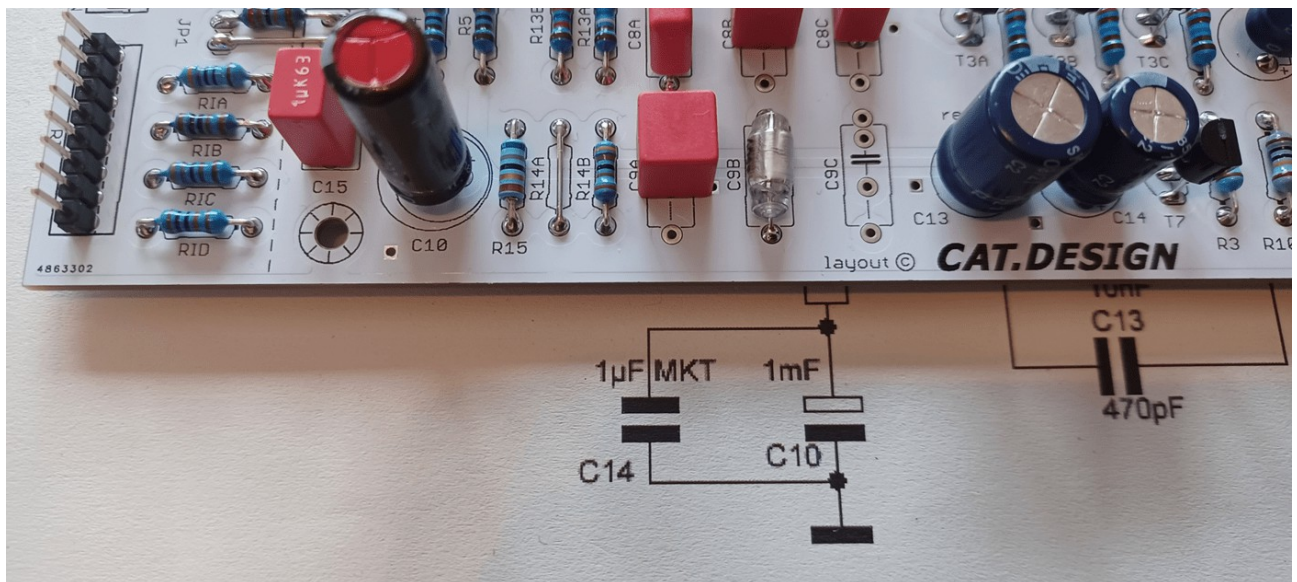




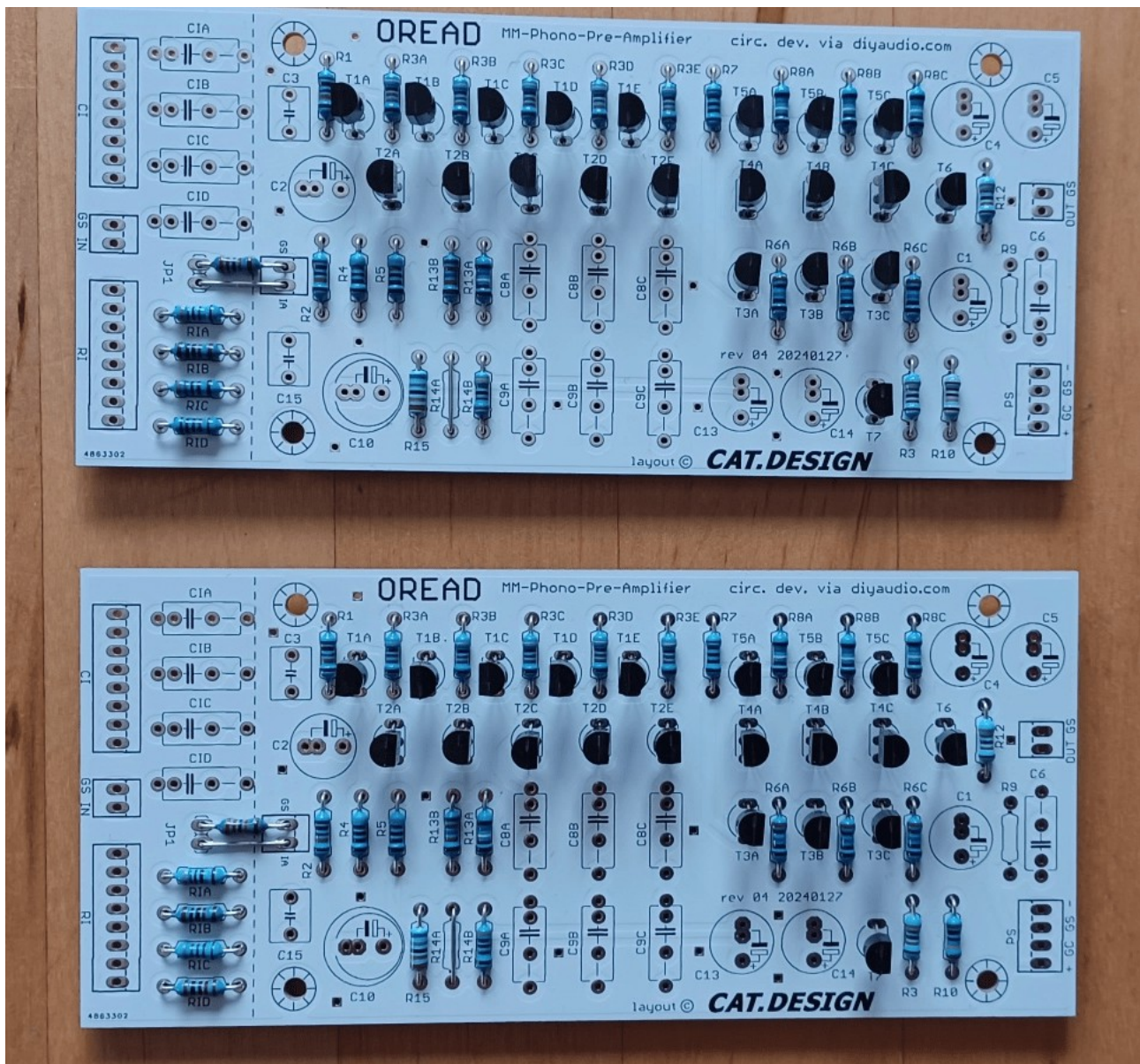












Clearly, the first thing to do is to fit the ohmic resistor component.

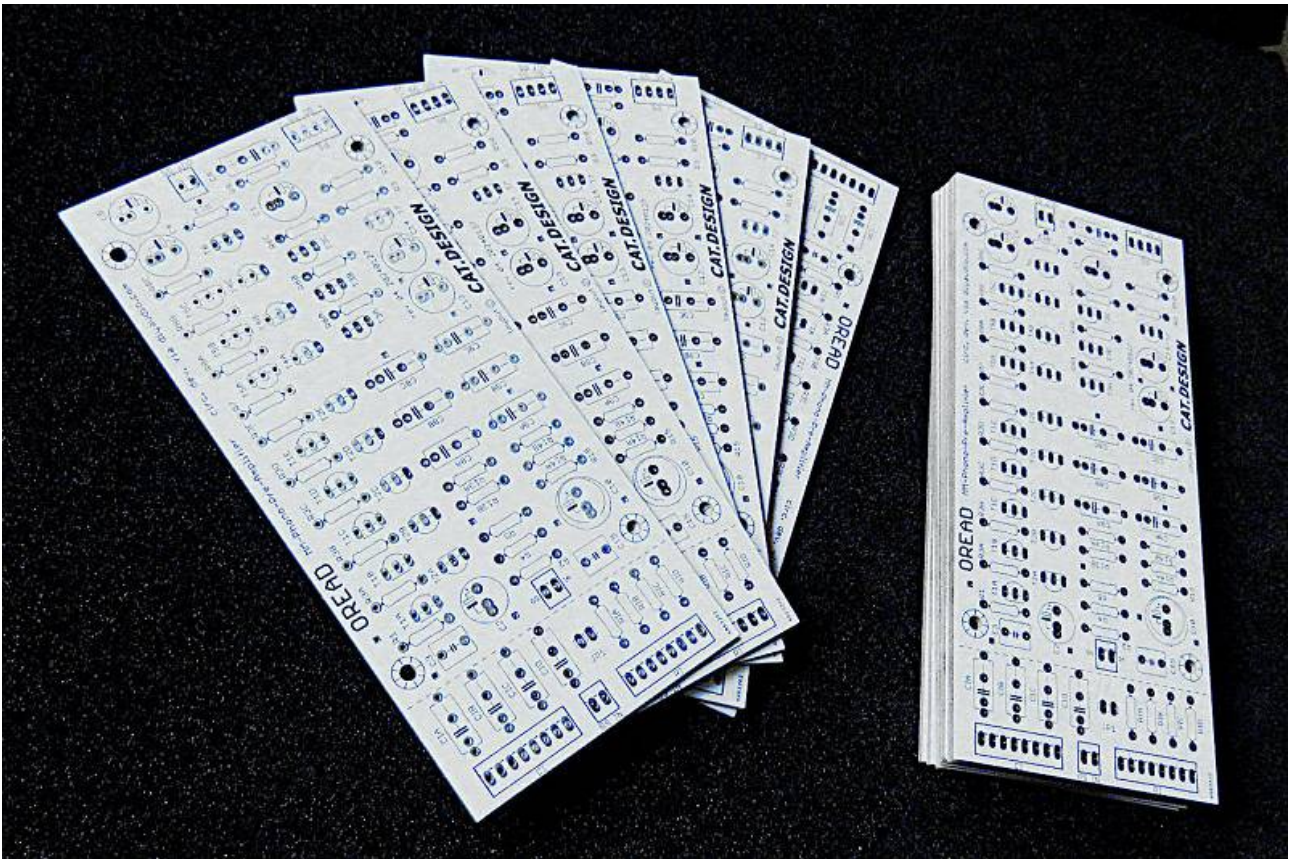
Color ring code:

- 0 black
- 1 brown
- 2 red
- 3 orange
- 4 yellow
- 5 green
- 6 blue
- 7 violet
- 8 gray
- 9 white

An example:

yellow violet black brown brown  
stands for  
 $470 \times 10^1 \pm 1\%$ .

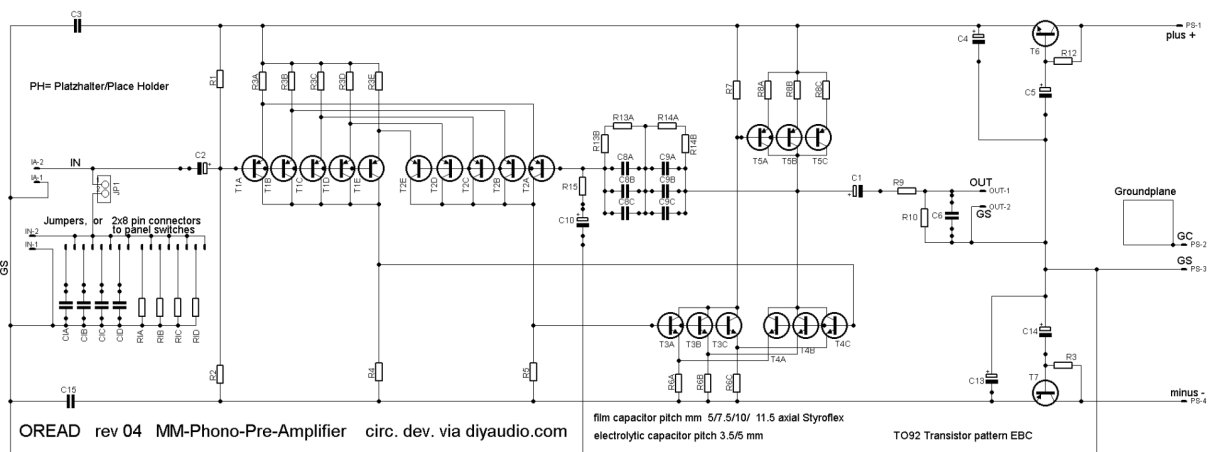
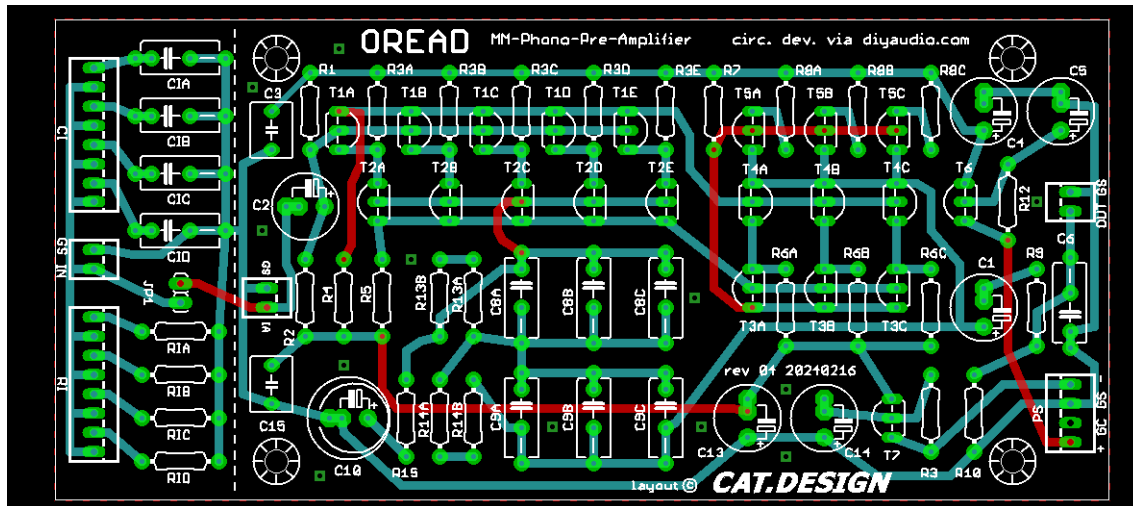




Component values, suggestion, (LTSpice OK tested)  
 (all from the E12 series, at the request of a single gentleman ? )

- R1,2 120k
- R3a...e 82k
- R4,5 8k2
- R6a...c 4k7
- R7 2k2
- R8a...c 4k7
- R9 47
- R10 1M
- R3,12 10k
- R13a 47k
- R13b 8k2
- R14a 4k7
- R14b 0
- R15 82
- 
- C1,2 4 $\mu$ 7
- C3,15 100n
- C4,13 220 $\mu$
- C5,14 22 $\mu$
- C6 2n2
- C8a 47n
- C8b 10n
- C8c 1n
- C9a 15n

- C9b 1n
- C9c -
- C10 1000 $\mu$
- 
- Transistors
- PNP BC560C
- NPN BC550C
- 
- Voltage +/-15V



The circuit/PCB can also simply be used for single supply:

omit C13, C14, C15, T7, R3  
in place C13 install a wire bridge.

PS connector:

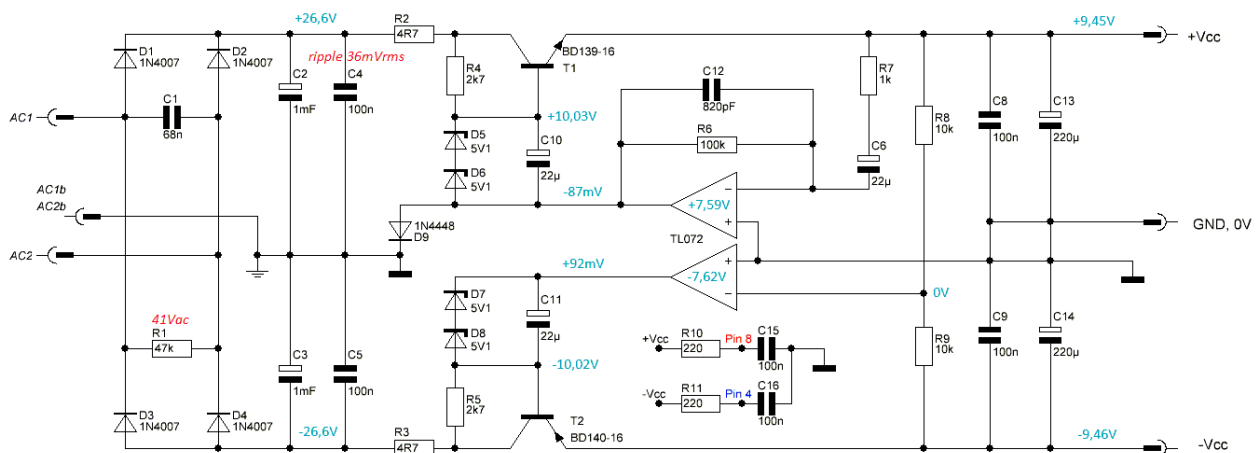
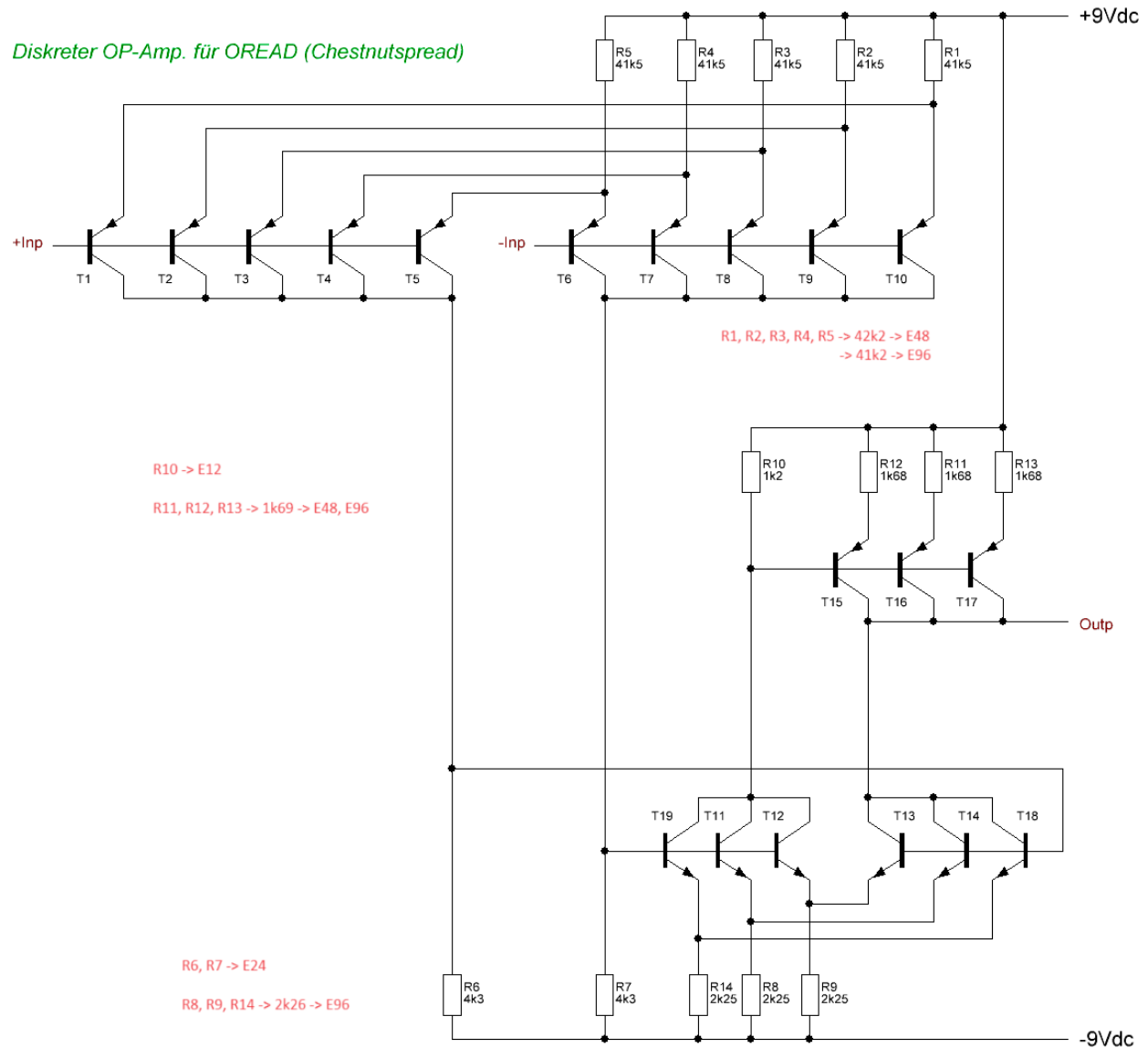
minus (-) Pin unused for single supply  
Supply voltage then between + and GS(-)

GS: signal ground

GC: chassis ground (groundplane)



# Diskreter OP-Amp. für OREAD (Chestnutsread)



thx

to CATD, ALUGNER, hbt.audio ... all at [www.diyaudio.com](http://www.diyaudio.com)