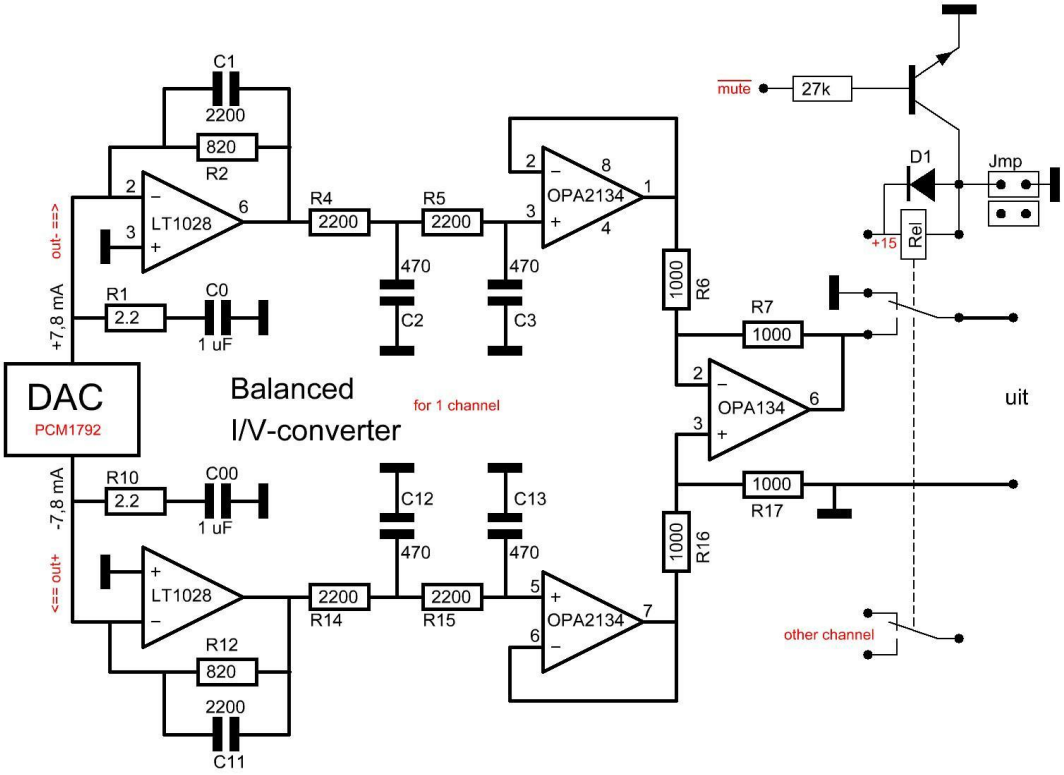
The Balanced I/V-converter for PCM1792/5

The balanced I/V-converter has been built up from two ‘mature I/V-converters’ in the previous chapter on this site in the form of an instrumentation amplifier.



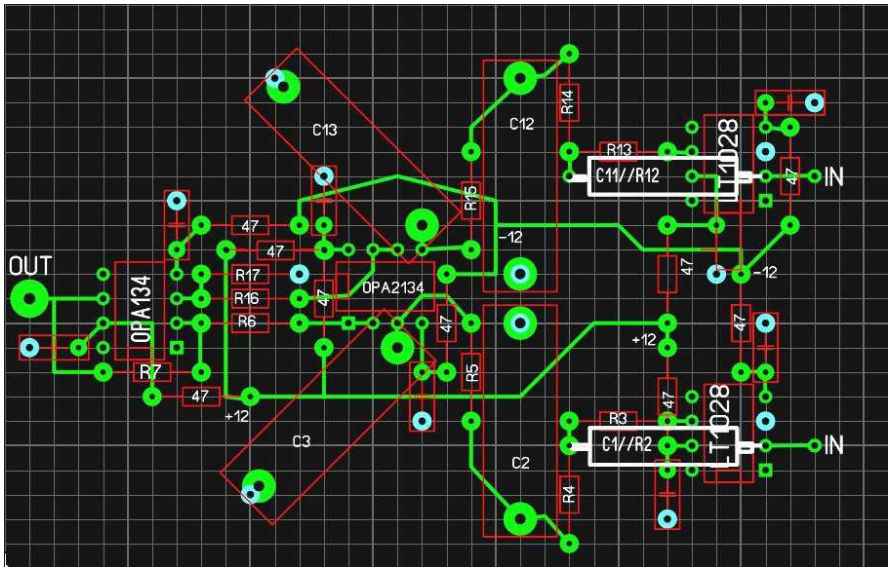
The DACs PCM1792 and PCM1795 do have a balanced output. There are several good reasons to use this option.

The OPA2134 in the circuit of the balanced I/V-converter could be omitted, but ‘divide and conquer’ is my motto.

Balanced I/V-converter layout

Because I have no plans to produce this circuit in amounts, I did not prepare an SMD-board. The layout below has been fixed on a 0.1” through hole breadboard-board with ground layer. The blue pads (gold on the photo view) are connected to ground.

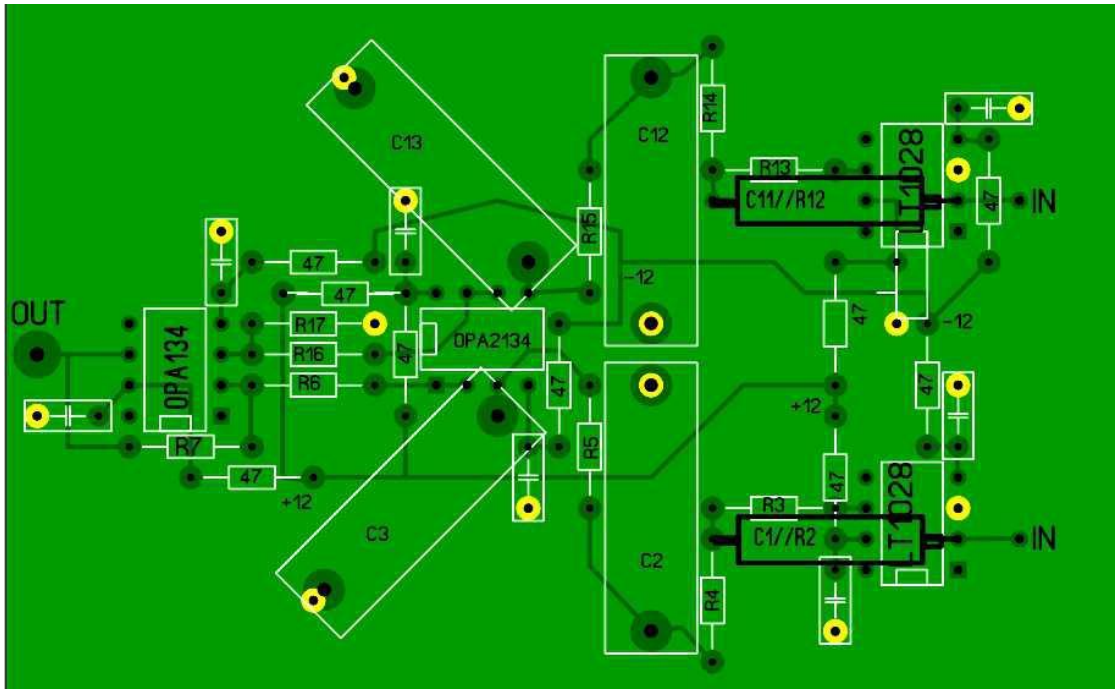
The +/-15 volt supply has been distributed via 47 Ω resistors. The decoupling to ground near the op amps has been done with 0.1 µF. The tracks are performed with wire.



MIN -- from pin 18(R) or 26(L) of the PCM1792

PLUS + from pin 17(R) or 25(L) of the PCM 1792.

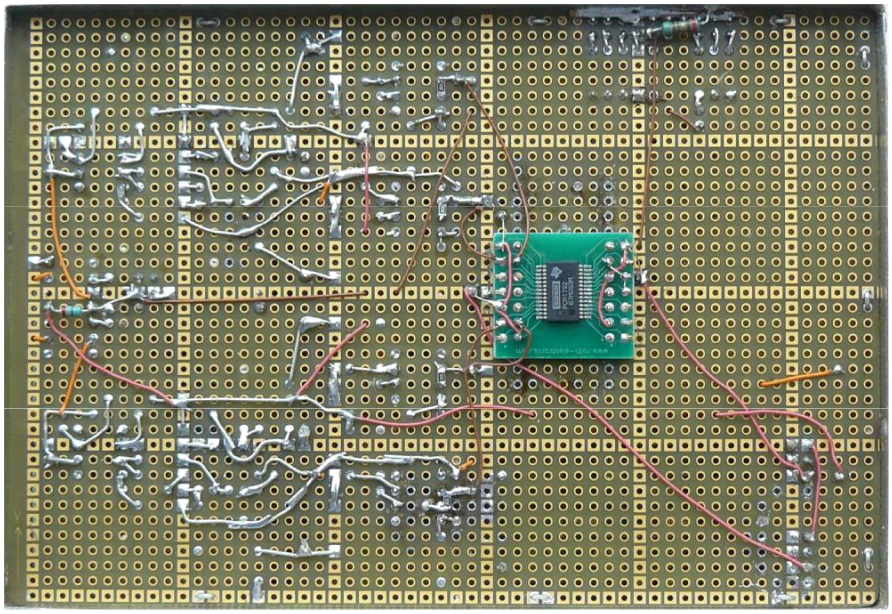
All six filter capacitors are mica capacitors! They are rather spacious but they sound best. C1 and C11, with respectively R2 and R12 ‘on their back’, are planned to be fixed over the LT1028 to keep the connections short for the best HF-performance.
R1, R10, C0 and C00 should be SMD-types directly fixed on the leads 2 & 3 of the LT1028’s. (They are not drawn here.)
For a better readability, also a photo view is provided (below).



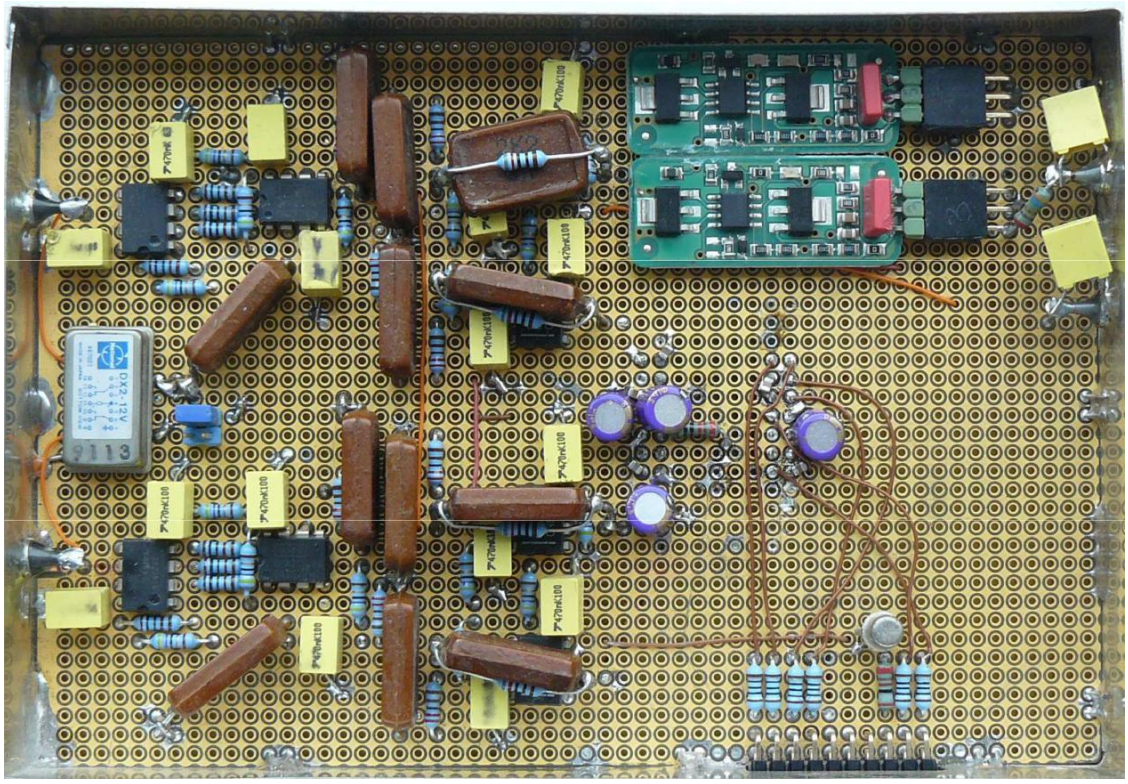
Which could be engineered in this way:

The DAC

The PCM1792 has been fixed on an adapter which has been positioned at the bottom of the board:



The completed board with two TentLabs stabilisers (3 & 5 volt) for the PCM1792 could look like:



To investigate if the absolute fase ‘is right’, the audio output should go negative if the DSD-signal in question is chortcuircuited.
By the way: R3 and R13 are not implemented!