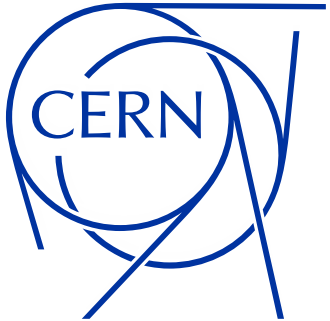


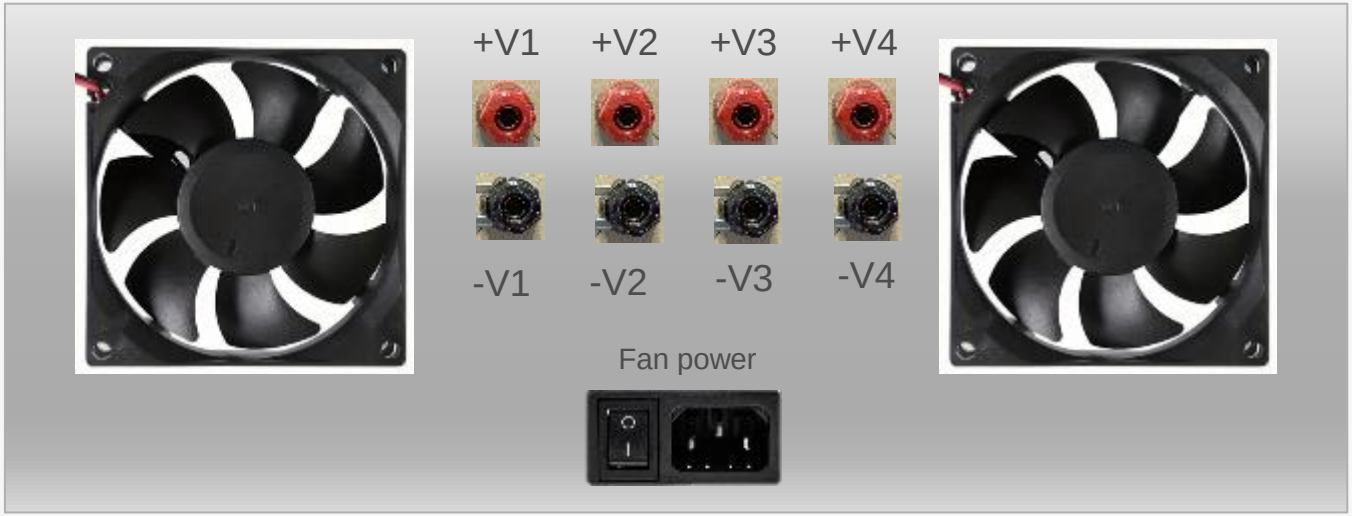
High speed PA testbench: mechanical design

Marta Alfonso

07-03-2024

Back panel

1/2 Connectors for 4 power supplies. It is preferable to use this kind of banana panel connector in which a wire can also be connected in between the two parts



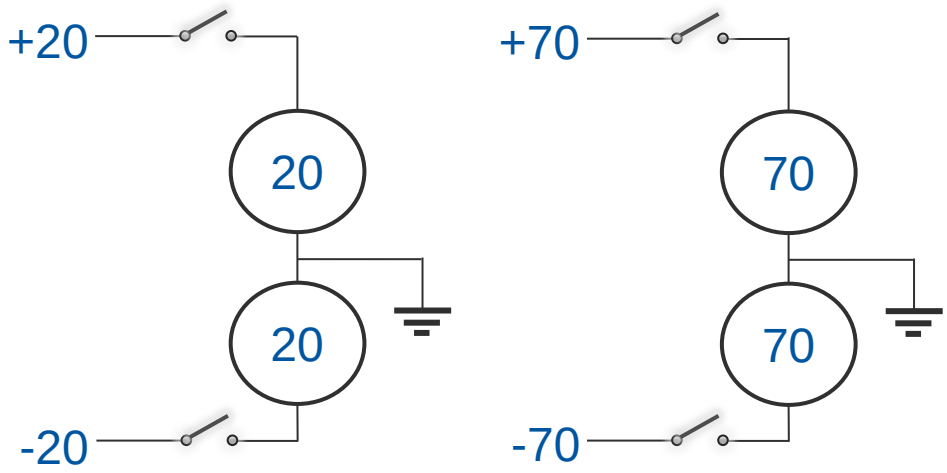
2/2 Powerful ventilation is needed, since the PCBs get very hot under operation. For the back, two 230 VAC fans will be needed. Would be good to wire them in parallel inside the box to IEC panel connector so the user can connect one single IEC cable.

Front panel


Ventilation holes for letting air come in
HIGH SPEED PIEZO TESTBENCH
In CH1
In CH2
Power supply
OUT
OUT Monitor
For these BNCs, OUT monitor needs to be short-circuited to the OUT signal. The OUT cables need to be terminated with a 4 mm ring terminal
For these BNCs, internal 0,5m panel-to-BCN cables are needed
4-pole switch to cut the supply of the 4 PSUs. Min power rating: 1500 W

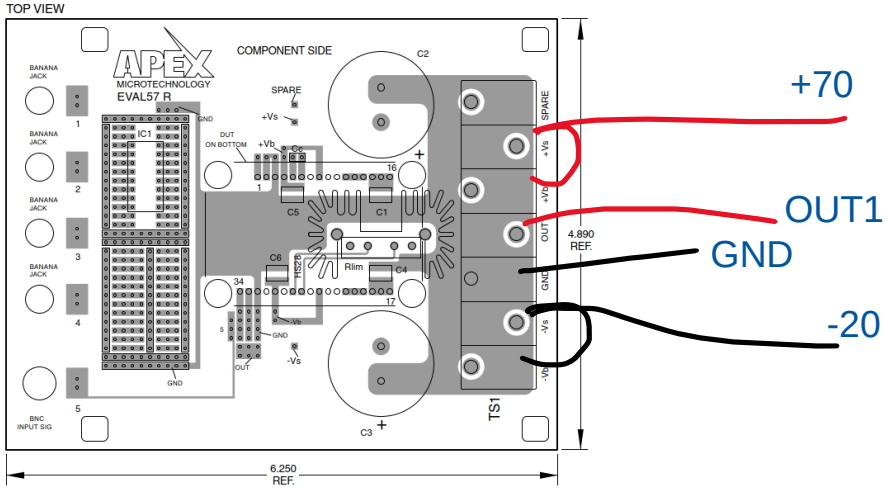
Power wiring

Wiring of the four-pole switch:

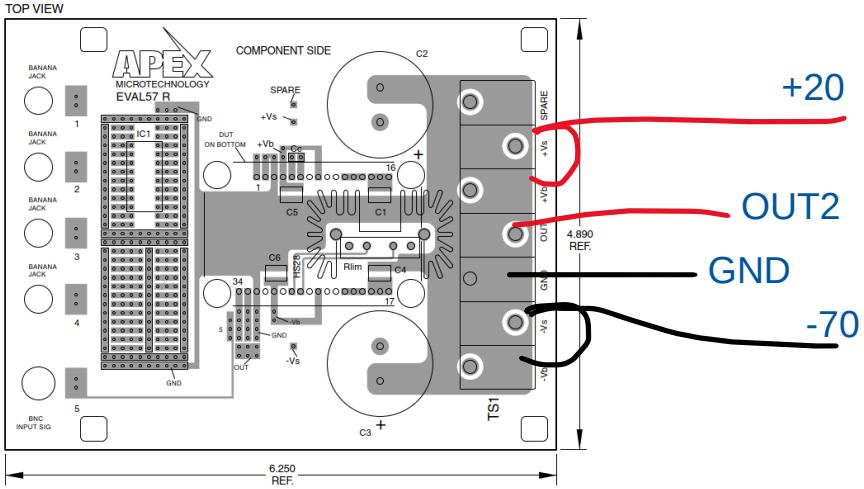


OPAMP wiring

Wiring of the power opamps:



OPAMP1

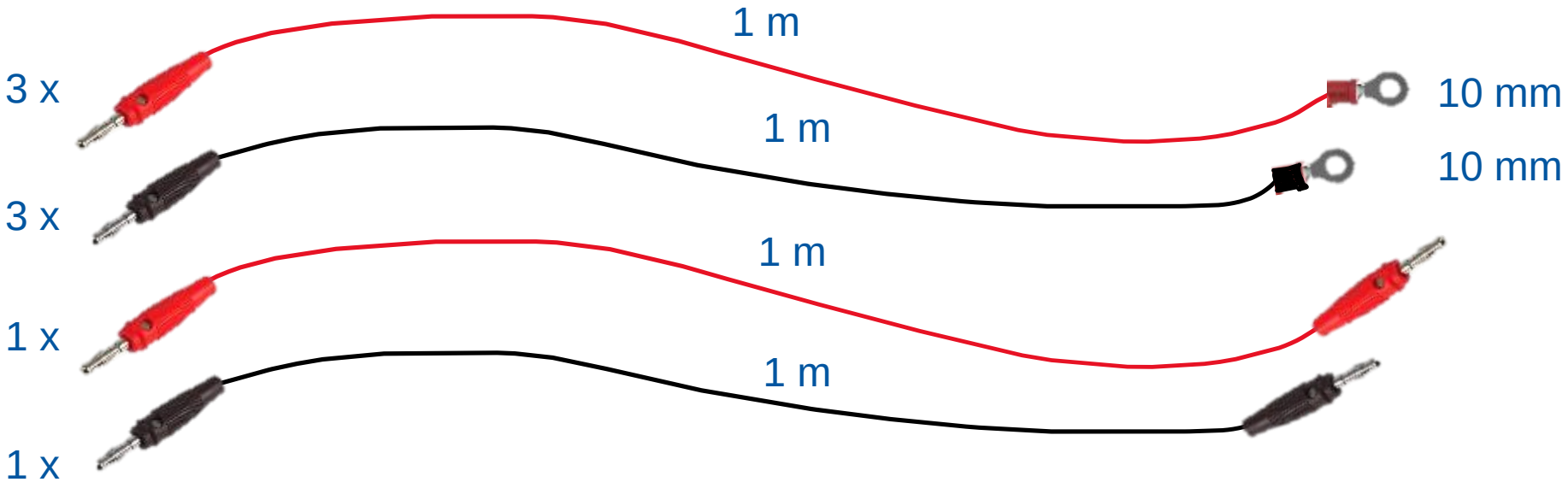


OPAMP2

There is only one GND. The one coming from the PSUs goes to both OPAMPs and is also the GND going to OUT

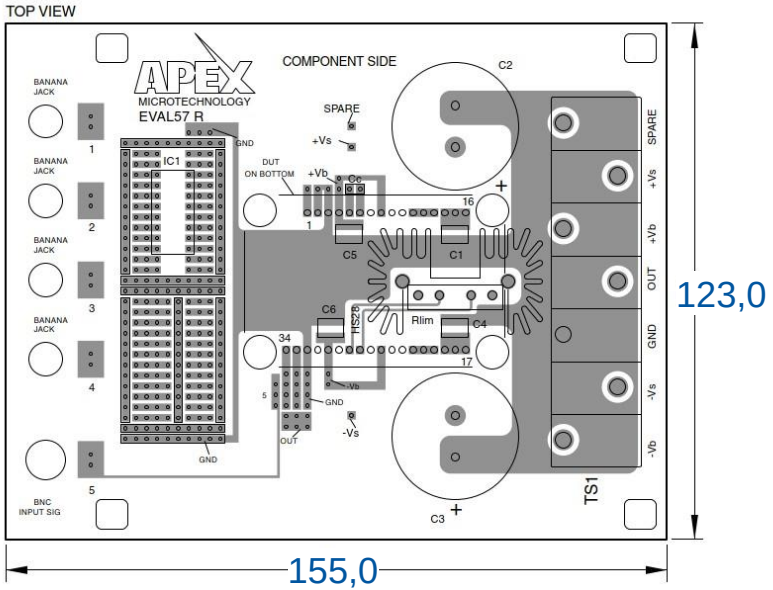
External cabling

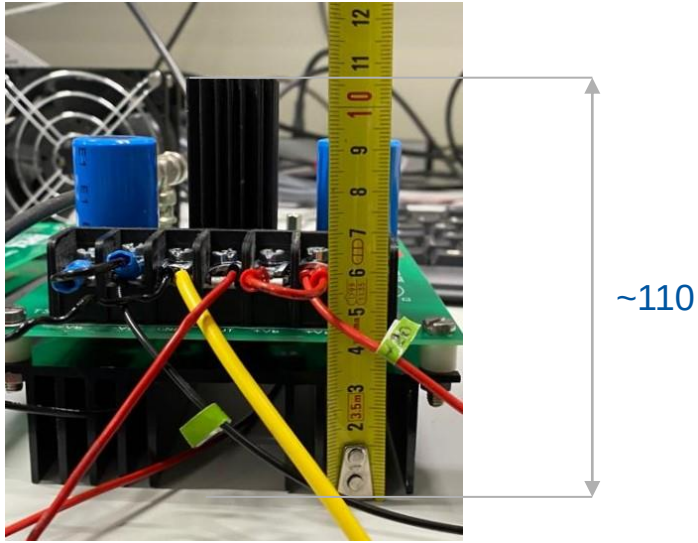
The back panel interfaces four power supplies. For connecting the banana connectors to the PSUs, these cables are needed:



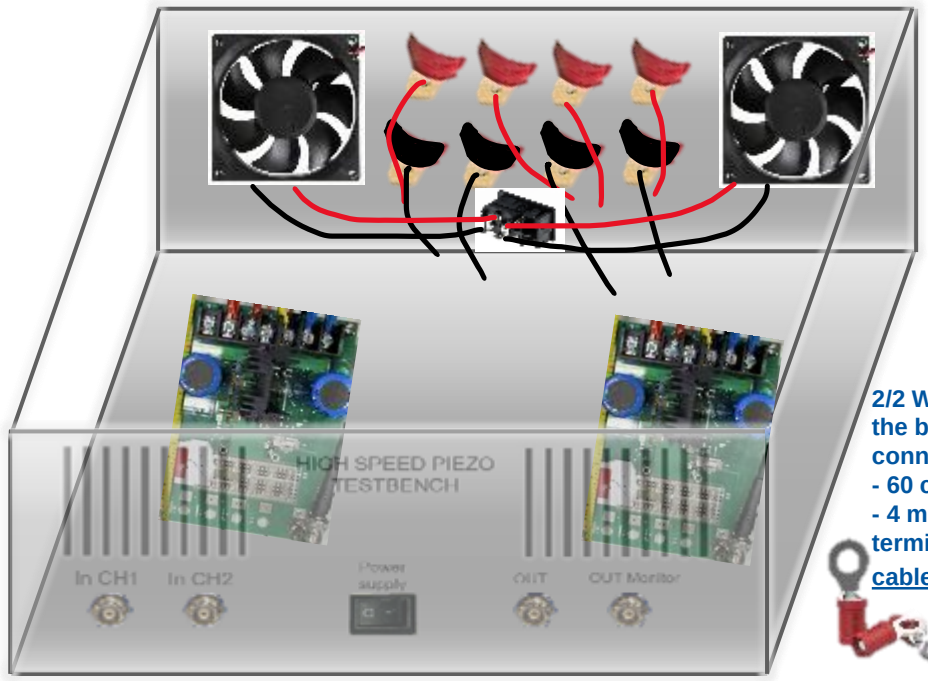
Devices

- We find two power opamps:



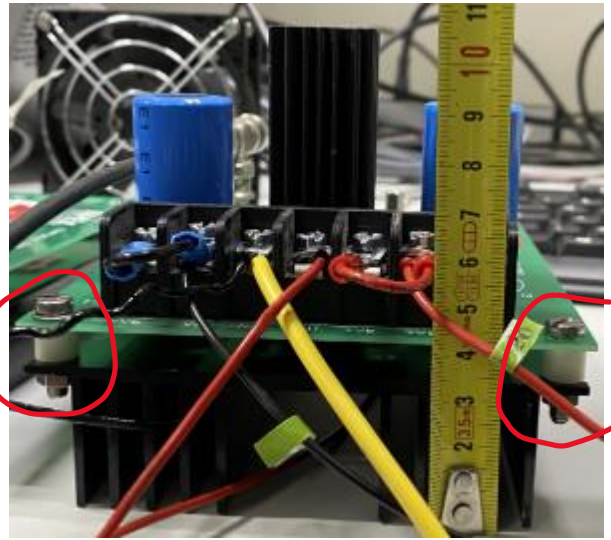


Interior



1/2 A way to fix the two boards inside the box is needed, and in this orientation to improve ventilation

Both the board and the heatsink have 4 mm holes for screws



2/2 Wires soldered in the banana connectors:
- 60 cm length
- 4 mm diameter ring terminal in the red cables only


CERN