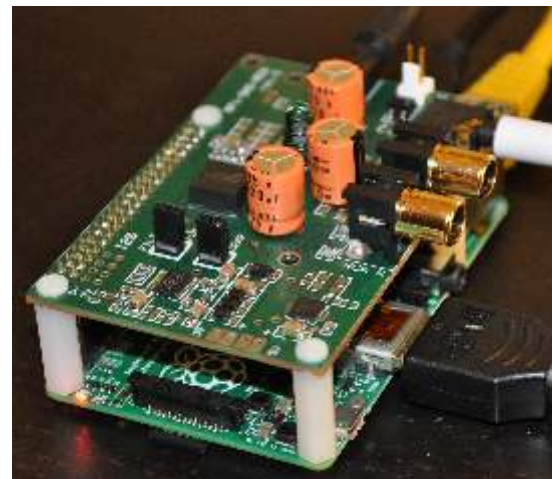


# RPi-DAC-RCA Bplus

RPi-DAC-RCA for Raspberry Pi B and B+



Option A:  
RPi-DAC-RCA below RPi

**just for experts:** needs soldering of header extension pins

Option B:  
RPi-DAC-RCA on top of RPi

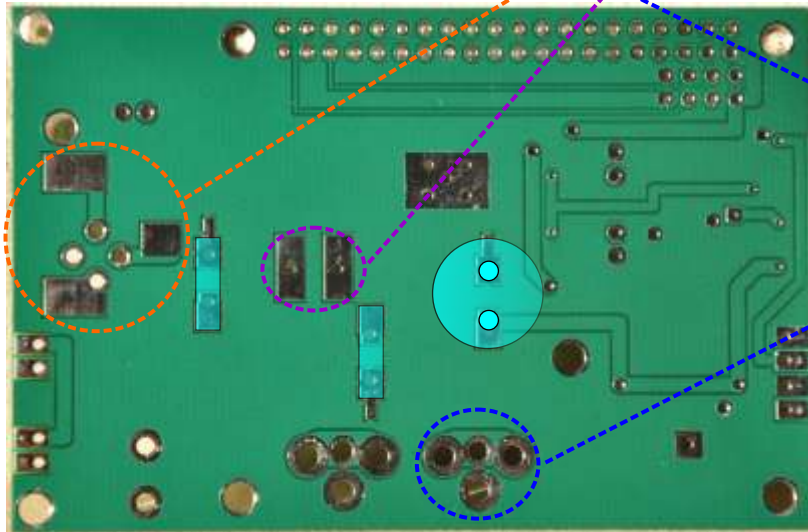
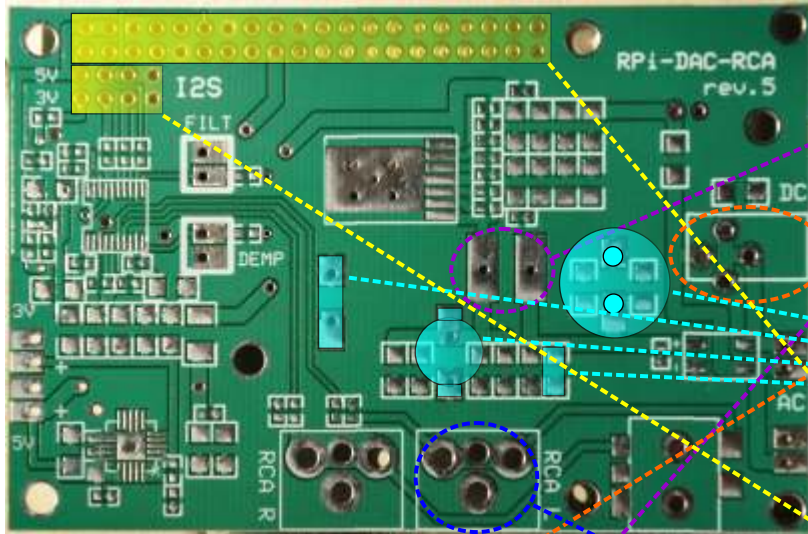
preferred: no soldering by customer, needs 2x20 pin female with **long legs**

### PCB options:

- supports **RPi B** as well as **B+** (both headers possible)
- soldering options for:
- Option A: with LDO, no SPS
- Option B: with SPS, no LDO
- Option AB: with SPS and LDO
- Option C: with 3.5mm and RCA connectors
- standoff holes for **RPi B** as well as **B+**

### PCB soldering (part) options:

- different types of DC plug: on top or bottom side (through hole or SMT)
- through hole caps for rectification, or SMT tantalum (both on top or bottom side), or ceramic caps
- power inductor as SMT (both sides) or as self-made (toroid ring with wire)
- RCA connectors: two different types (both sides)



power inductor (top or bottom, or self-made)

DC plug (for AC/DC) (top two options, bottom as SMT)

Caps for rectification:

- as through hole electrolytes (radial, 5mm lead spacing)
- as tantalum SMT
- as SMT electrolyte
- as ceramic caps 1206 through hole, SMT tantalum on both sides

2x20 header **for B+** (GPIO, female), or 2x4 header **for B** (P5, female, RPi on top)

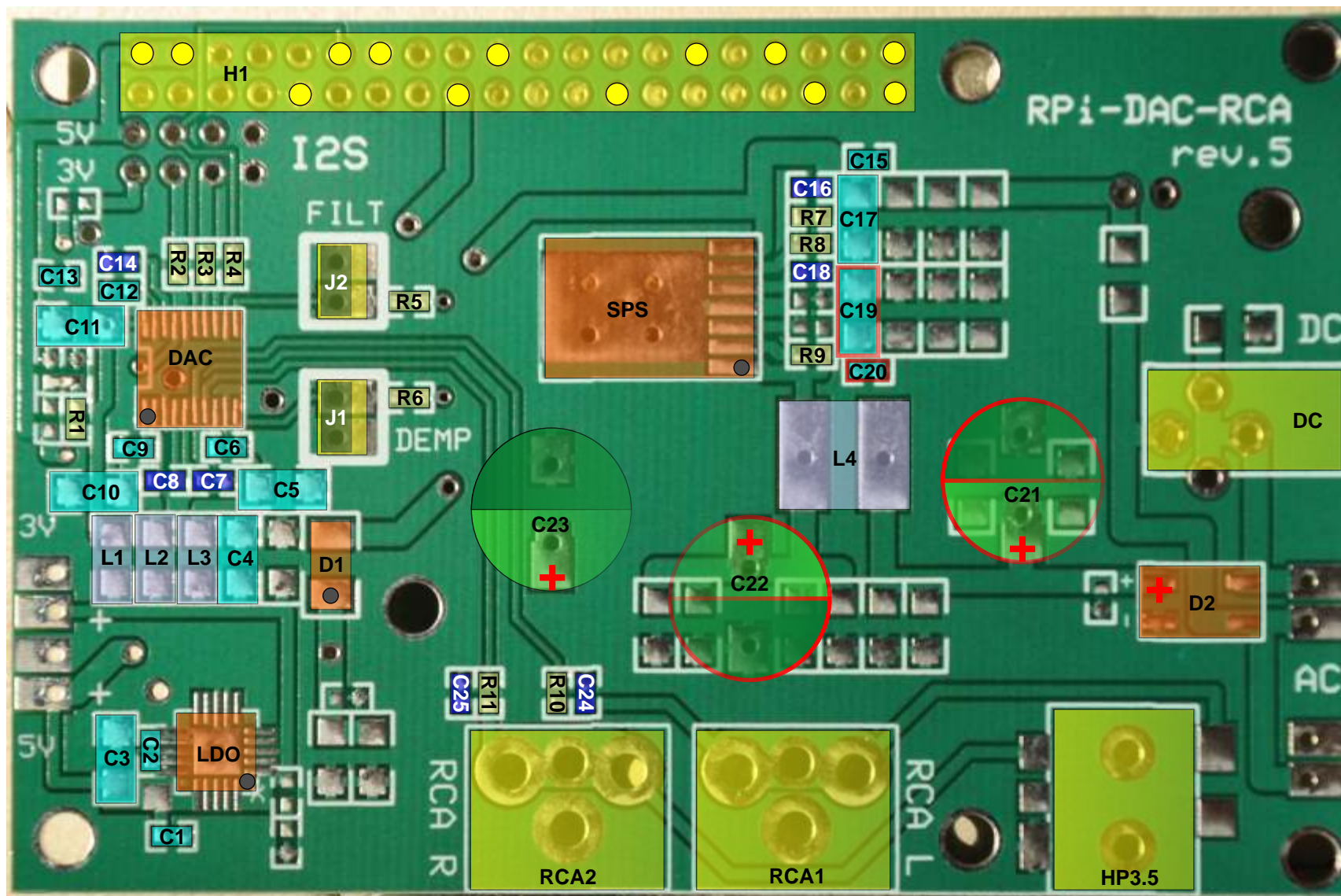
RCA on top or bottom side

### PCB improvements:

- select the final DC plug or as SMT on top as option
- increase size for power inductor (more options then)
- make 3.5mm also available on bottom side
- increase pad width for tantalum caps



# Soldering parts on PCB, top side



C1,C2,C6,C9,C12,C13,C15 : 1n<sup>6V</sup>, 0603

C3,C4,C5,C10,C11,C17 : 22..47..100n<sup>6V</sup>, 1206

C19 : 10..47n<sup>25V</sup>, 1206

C20 : 1n<sup>25V</sup>, 0603

C21,C22,C23 : electrolyte 220..470n<sup>25V</sup>, through hole

C7,C8 : 2.2n<sup>6V</sup>, 0603

C14 : 0.1n<sup>6V</sup>, 0603

C16 : 22n, 0603

C18 : 4.7n, 0603

C20 : 1n<sup>25V</sup>, 0603

C24,C25 : 2.2n<sup>6V</sup>, 0603

R1,R5,R6 : 8..10..12K, 0603

R2,R3,R4 : 22..33..47R, 0603

R7 : 34K, 0603

R8 : 6.19K, 0603

R9 : 94..100..110K, 0603

R10,R11 : 420..470..520R, 0603

D1 : 2A

D2 : bridge rectifier, 2A/25..V

L1,L2,L3 : 47..100nH/50..150mA

L4 : 47..100nH/1.5..2A

LDO : TPS7A4700

DAC : PCM5102A

SPS : LMZ14202H

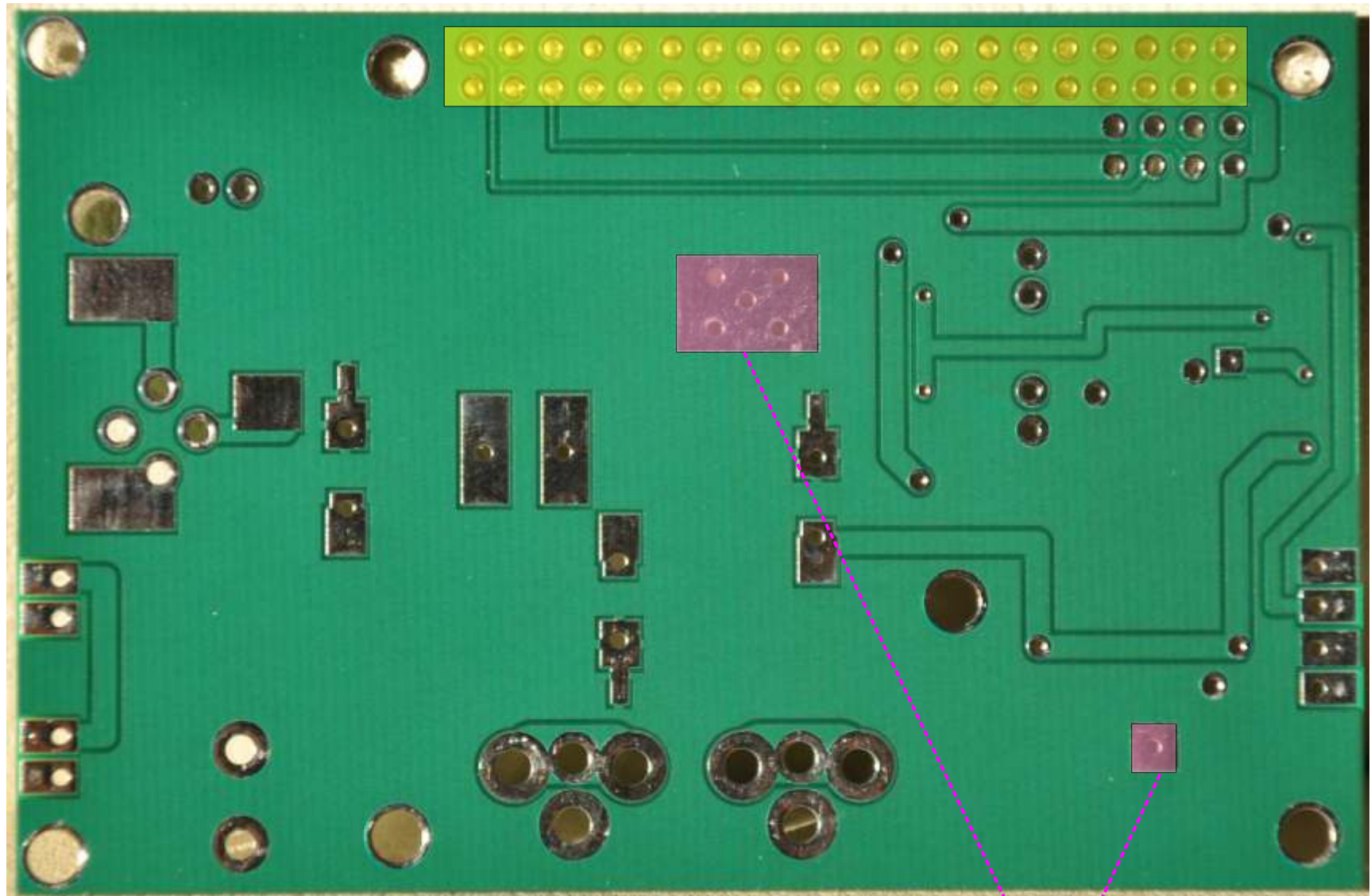
H1 : 2x20 female, long legs, from bottom side

RCA1,RCA2:

DC:

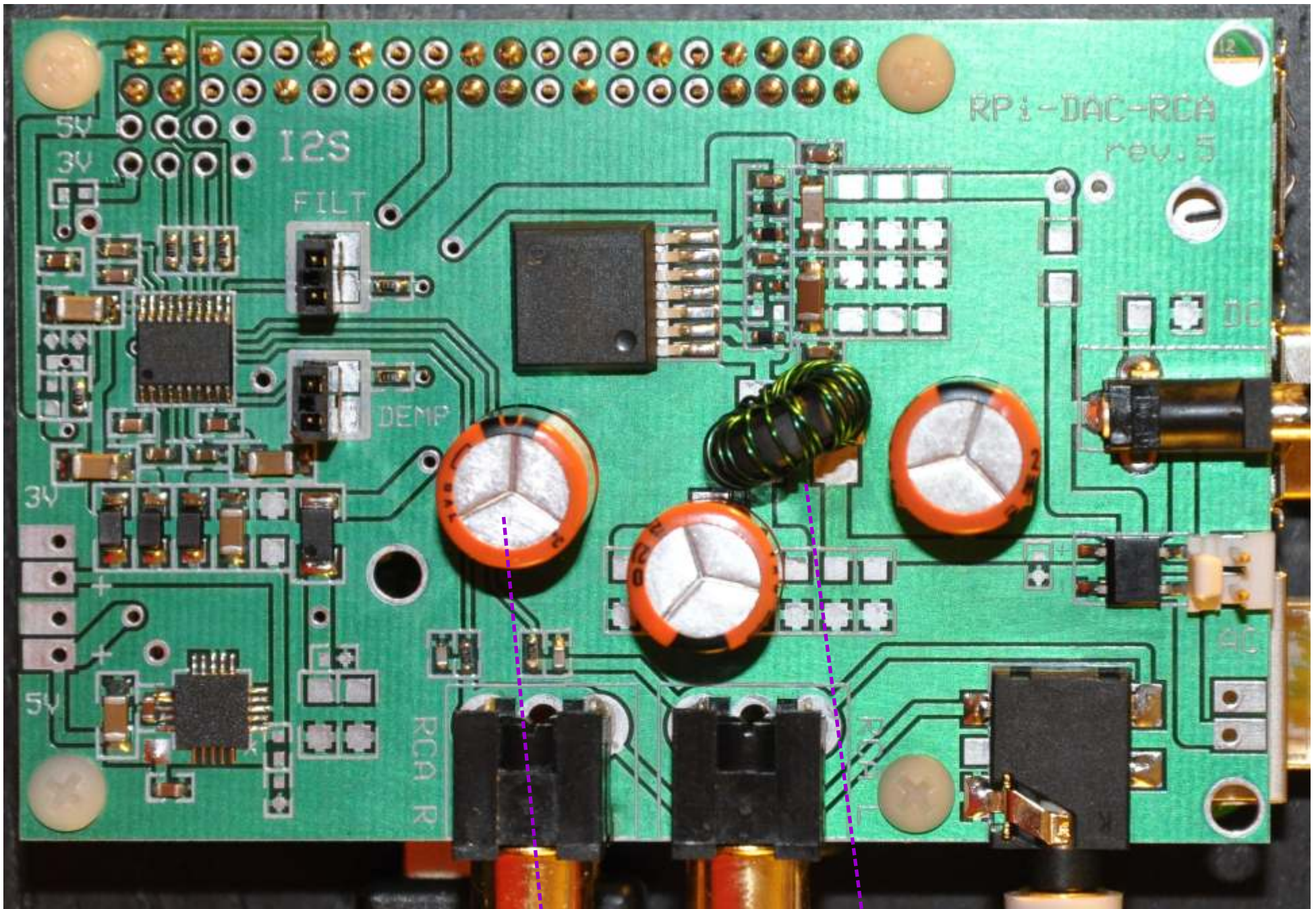
J1,J2 : 1x2, with jumper

# Soldering parts on PCB, bottom side



solder power pad  
when all checked





### RPi\_DAC-RCA Bplus

Option C: with LDO, SPS, RCA and 3.5mmHP

through hole electrolytes,  
5mm lead space, radial  
**same height as RCA !**  
220µF 16..25V

self-made power inductor:  
toroid ring, with isolated copper wire