PS2 Assembly guide

⚡	**Safety warning**

THIS KIT IS NOT FOR BEGINNERS !
This kit is main powered and use potentially lethal voltages. Under no circumstance should someone undertake the realisation of this kit unless he has full knowledge about safely handling main powered devices.

Please read the "DIY guide" before beginning.

Print or open the following documents :

• PS2 Schematic

• PS2 Components layout

• PS2 Parts list

• PS2 Setup guide

Follow this guide from item number 1 till the end, in this order. The assembly order is based on components height, from low to high profile, in order to ease the soldering process : The component you are soldering is always taller than the previously assembled ones and it is pressing nicely against the work area foam.

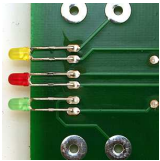| PS2 Assembly guide	
	1. Diodes Add D1, D3, D5, D6, D7, D8, D9, D10. Use a lead forming tool to cleanly bend the leads at 0.4". **Warning** : Make sure to respect the direction of the diodes which is marked by a ring on the component and a double line on the PCB marking. **Warning** : The PCB silkscreen has an error for D3. The cathode (ring) should be pointing down towards LPC2 as shown in ps2-layout.pdf.
	2. Resistors Add R1 to R6. Control the resistor values with a digital multimeter. Bend the leads at 0.4" with a lead forming tool.
	3. Ceramic capacitors Add C9, C11, C12 and C13. **Warning**: C9 was initially an electrolytic capacitor but it has been replaced by a ceramic. The PCB silkscreen still shows a polarized cap.
	4. Ferrite beads Add L5, L6 and L7.

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5. Test pins

Solder the 4 test pins GND, +30V, -30V, +48V.

6. Leds

Bottom view
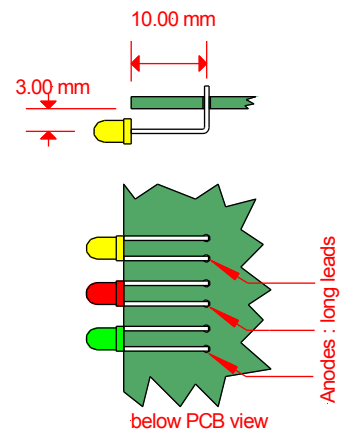
Add D2, D4, D11. The LED's are installed below the PCB.

Bend the leads at 10mm from the body taking care of the anode position (the longest lead).

Warning : it is easy to bend the leads in the wrong direction !

Solder the LED at 3mm from the board. Start by soldering one lead, adjust the position, then solder the second lead.

10.00 mm

3.00 mm

Anodes : long leads

below PCB view

7. DC/DC converter

Add the DC/DC converter.

8. Trimmer potentiometer

Add P1. Solder one pin, check verticality then solder the other pins.

9. Fuse holder

Add the fuse holder.

10. Screw terminals

Add CN2. Screw the terminals all the way down before soldering.
Warning : the wire apertures should point towards the LED's.

11. Small electrolytic capacitors

Add C1, C6, C7, C8, C9.
Solder one lead first, adjust verticality then solder the second lead.
Warning : The +lead must go into the +hole. Do not reverse (they may explode !)

12. Filter

Insert and solder the line filter.
Warning : Make sure to trim the leads as short as possible, after soldering. They will carry mains voltage and must not stick out of the board.

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13. Regulator

Add U1. Insert as far down as possible, solder one pin, adjust the verticality, then solder the two other pins.

Warning : Watch out the direction, the metal tab at the back of the device is symbolized by a double line on the PCB marking.

14. Large electrolytics

Add C2, C3, C4, C5, C10.
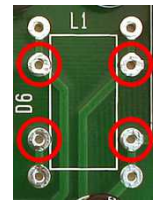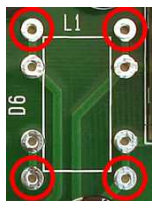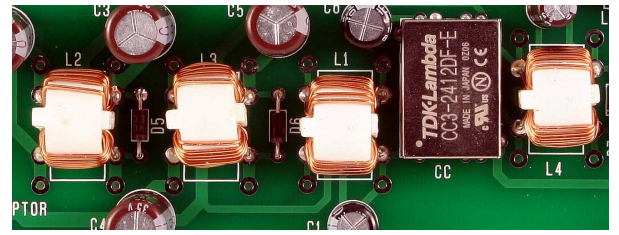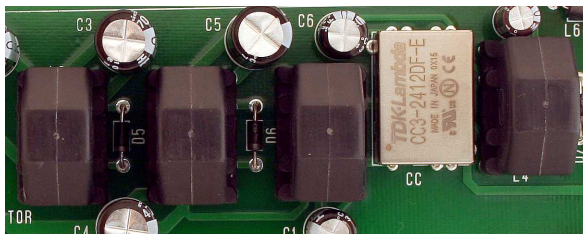Solder one lead first, adjust verticality then solder the second lead.
Warning : The +lead must go into the +hole. Do not reverse (they will explode !)

15. Common mode coils

Two types of coils are available: the boxed type or the open type. Please check the picture corresponding to your type.
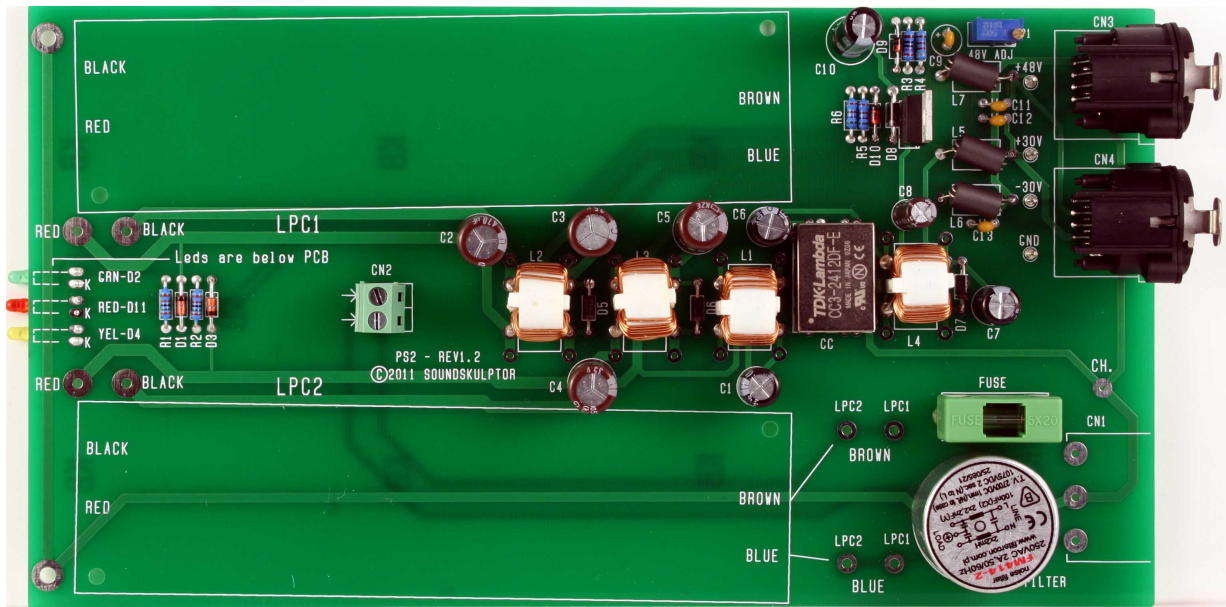Add L1, L2, L3, L4.

16. XLR Sockets

Add CN3 and CN4. The position of the sockets is critical for a good backplate matching. They must sit flat on the PCB. Press firmly the socket on the PCB and solder two opposite pins. Check position then solder the other pins.

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17. LPC1

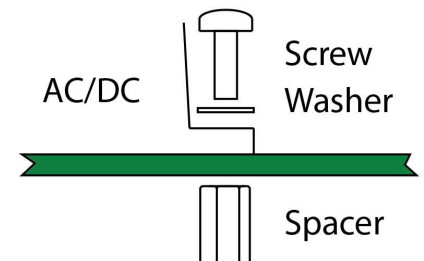Cut the wires to the following lengths:
Red: 5cm
Black: 7cm
Brown: 11cm
Blue: 13cm
Strip the four wires on 5mm and twist the threads.

Install the block on the PCB at the place marked LPC1 and attach it with two M3x10 pan head screw, one metal washer and one 8mm spacer (the spacer is placed under the PCB).

Insert the wires into the corresponding PCB holes, flatten the wire threads against the pad, cut off all threads going beyond the pad and solder.

18. LPC2

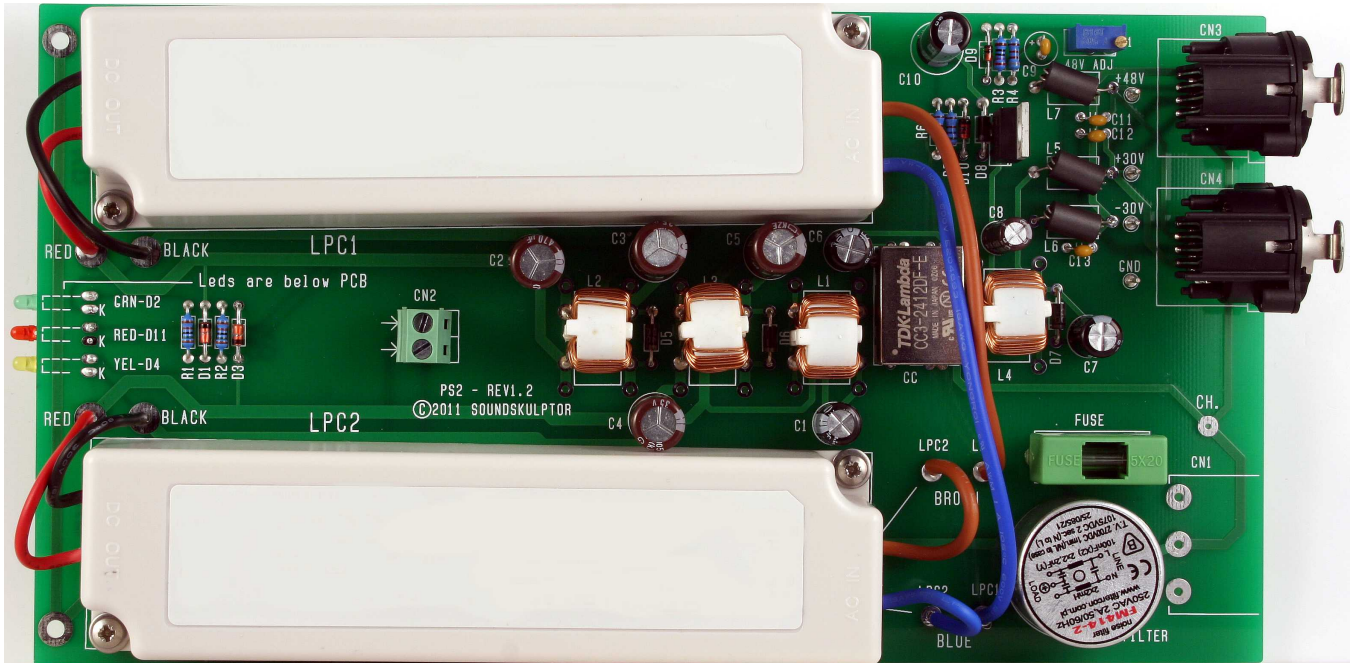Cut the wires to the following lengths:
Red: 6cm
Black: 6cm
Brown: 5cm
Blue: 5cm

Repeat operations as for LPC1.

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19. Board inspection

Brush the solder side of the board with a hard tooth brush to remove any remaining solder bits.
Make a full visual check. Any missing component on the board ? Any remaining component in the box ?

When everything is correct move forward with the case assembly.

20. IEC connector assembly

Remove the plastic protection skin from the back
plate and snap the IEC connector in place.

21. Case connection

Insert an M3x10 countersunk screw into the backplate. Add a
shakeproof washer, a solder tag and finally a self locking nut. Tighten
together.

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22. Backplate mounting

Put the backplate in place, by inserting the IEC connector pins into the PCB and by fitting the XLR's into the plate cutout. Secure the XLR with four 2.9x9.5 self taping screws.

Solder the IEC connector pins after checking that the PCB if perfectly parallel to the backplate long side.
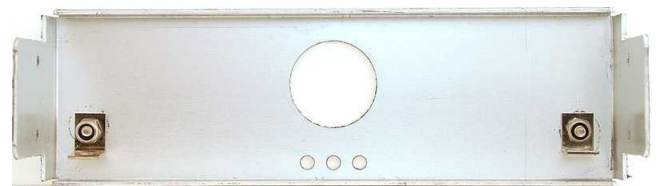
23. Earth connection

Use the 0,9mm tined wire to make the connection between the solder tag and the PCB

24. Front plate assembly

Attach the two metal brackets to the front plate with two M3x6 countersunk screws and two self locking nuts.

25. Switch wiring

Cut two 8cm long pieced of brown wire, remaining from one of the LPC blocks. Strip 5mm out of one end and solder to the power switch.
Insert two 10mm pieces of heatshrink tube on the wires.
Shrink the tubes on the switch pins with a heat gun.
Strip 5mm out of the other end of the wires.

Remove the plastic protection skin from the front plate and insert the switch into the hole.

26. Case assembly

Insert the PCB on the 2 brackets of the front plate, locking it between the bracket and the nut. Make sure the LED's fit into the front plat holes.
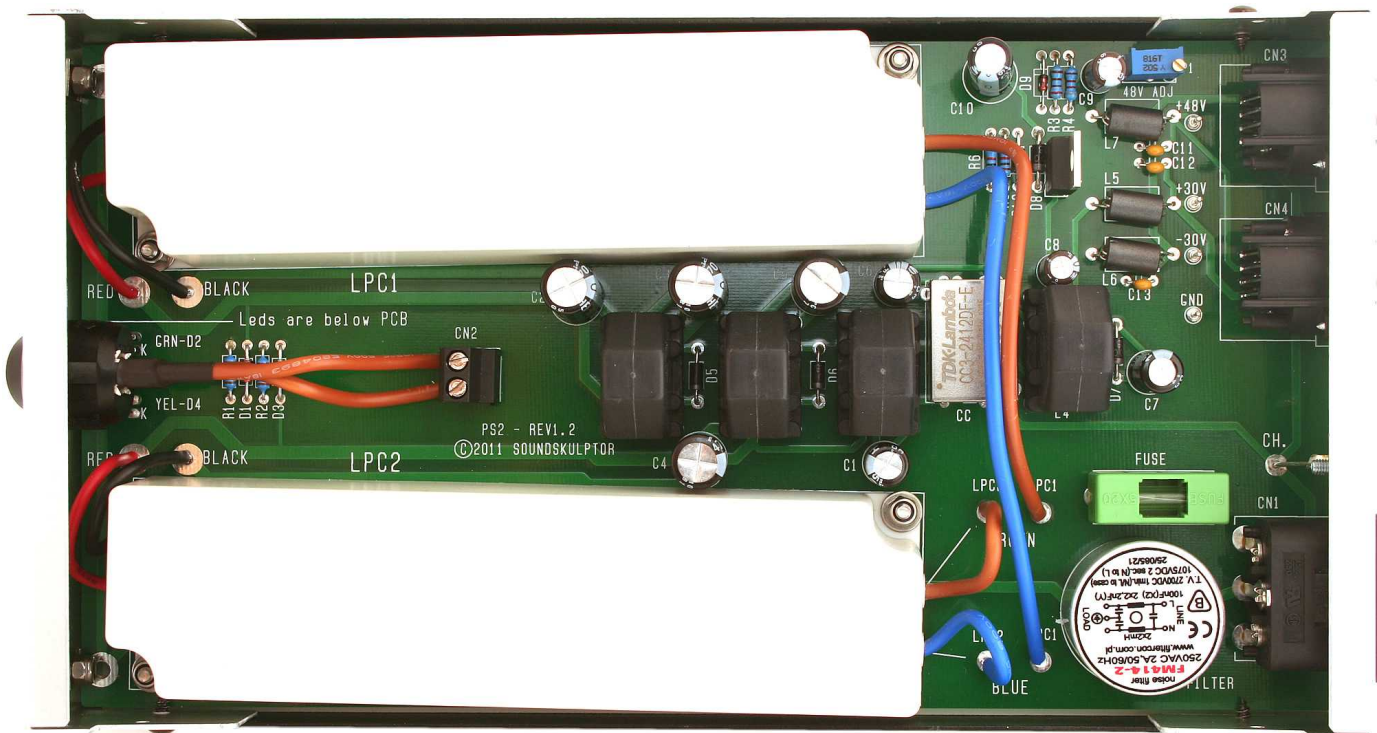
Insert the cardboard insulating sheet below the PCB and place the assembly on the case bottom. Secure the front plate with 2 self taping screw and 2 black shakeproof washers. Do the same on the back plate. The washers will ensure a good electrical connection between the case parts.

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27. Switch connection

Connect the 2 wires from the switch to the terminal block.

28. Setup

Follow the instructions of the PS2 Setup Guide.

29. Closing the case

Place the top cover and secure it with 4 self taping screws plus black shakeproof washers.

Stick four self adhesive rubber feet on the bottom of the case.

30. Labels

Stick the "DANGER" label to the case bottom.
Stick the "Sound Skulptor PS2" label to the front plate.

31. Congratulations, you're done !