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Manual D'verb 3 with the Belton BTDR-3 Modul

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Thank you for choosing a kit from our company. The kit has been compiled with all diligence for you and tested. However, should any deficiencies occur with respect to the quality or errors in the description, we would ask you to inform us of this [mailto:\(info@uk-electronic.de\)](mailto:info@uk-electronic.de)

Short circuit description :

In the below-described kit it comes to building a digital reverb pedal, which is used as a basis, the BTDR-3 module (successor of BTDR-2) of Belton / Accutronic. The module used is equipped with connections for a decay function, which allows the chip with different reverb times use.

The heart of the circuit is the BDTR-3 module which contains all of the components, such as A / D converter, delay, and D / A converter incl. The associated filter. (3xPT2399). The module has as its predecessor 2 separate audio outputs, one of which is a sound Regleung (tone control) is used. The module requires only a voltage of + 5V that is generated on the circuit board by a 78L05 from the 9V supply voltage.

The only active components, a dual TL072 op amp is used, which amplifies the input signal by a factor of 2 and summed at the output with the original signal.

As controls 3 potentiometers are used, which the reverb level (Mix), the tone and the length of the reverb will definitely come.

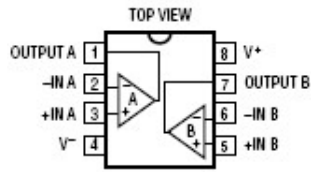
Switching the effect on/off with a hardware True bypass using a 3PDT switch and LED indicator.

Due to the compact double side through-hole board, the structure is relatively simple and is described on the following pages. A little more attention should be paid during the construction of the wiring of the potentiometer, since 9mm miniature potentiometer is used so that this circuit we place in a moderate-1590B enclosure mates.

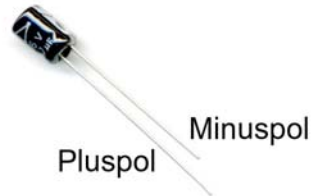
These potentiometers are already wired and then soldered the wires to the board.

Some connection of components

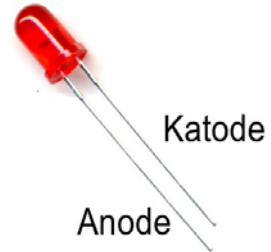
TL072



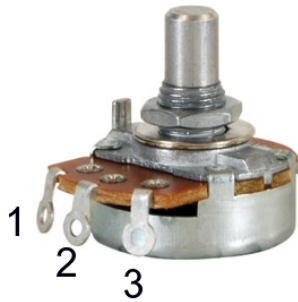
Elektrolytkondensator



Leuchtdiode (LED)



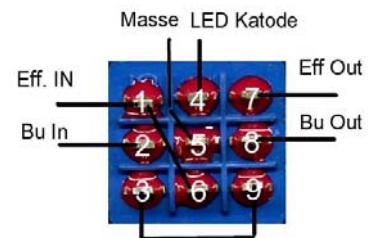
Standard Potentiometer



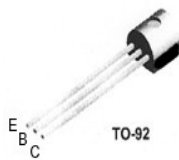
Widerstand



DPDT Schalter






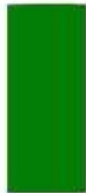






BC 549C



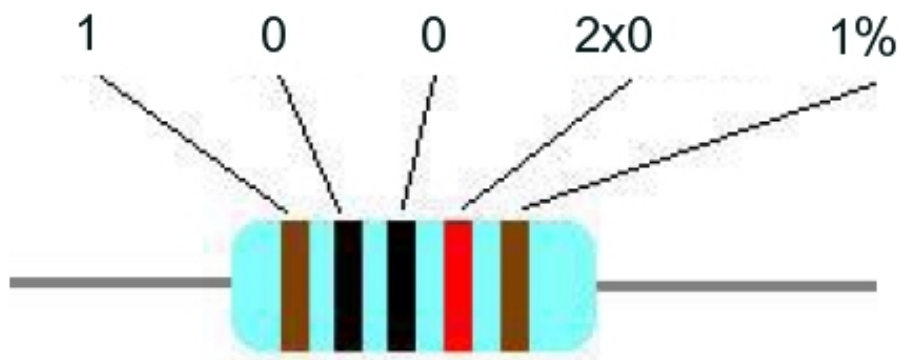
Color table for resistors MF207 FTE52 1% and a example

Resistor color code

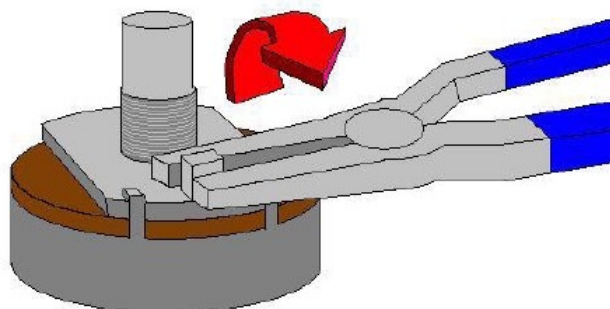
									
0	1	2	3	4	5	6	7	8	9

Example: Resistor MF207 10K 1%

Value: 10000 Ohm = 10KOhm



Breaking nose at the potentiometer
Nase am Poti mit einer Flachzange abbrechen



Bill of material

Quantity	Description
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Resistors

1	22R (red/red/black/gold/brown)
1	1K (brown/black/black/brown/brown)
1	2K2 (red/red/black/brown/brown)
1	5K1 (green/brown/black/black/brown)
3	10K (brown/black/black/red/brown)
1	20K (red/black/black/red/brown)
1	22K (red/red/black/red/brown)
2	100K (brown/black/black/orange/brown)
1	200K (red/black/black/orange/brown)
1	2M2 (red/red/black/yellow/brown)
1	Trim pot CA6V 10K

Capacitors

1	Ceramic capacitor 47pF (47)
1	Ceramic capacitor 100pF (101)
1	MKT 0.022μF = 22nF (223)
1	MKT 0.15μF = 150nF (154) – C2
2	MKT 1μF = 1000nF (105)
2	Elektrolytic capacitor RASM 47μF/16V
1	Elektrolytic capacitor RASM 100μF/16

Diodes

1	Shottky-Diode 1N5718 or 5718 (Cathode = line)
1	LED 3mm Red Low current

Schaltkreise

1	Reverb Modul Belton BTDR-3
1	Voltage regulator 78L05- 5V/100mA
1	Dual OPV TL072

Potentiometer

1	9mm Potentiometer 5K-B (linear) – Ton –
1	9mm Potentiometer 50K-B (linear) – Reverb
1	9mm Dual Potentiometer 2x100K-B (linear) - Decay

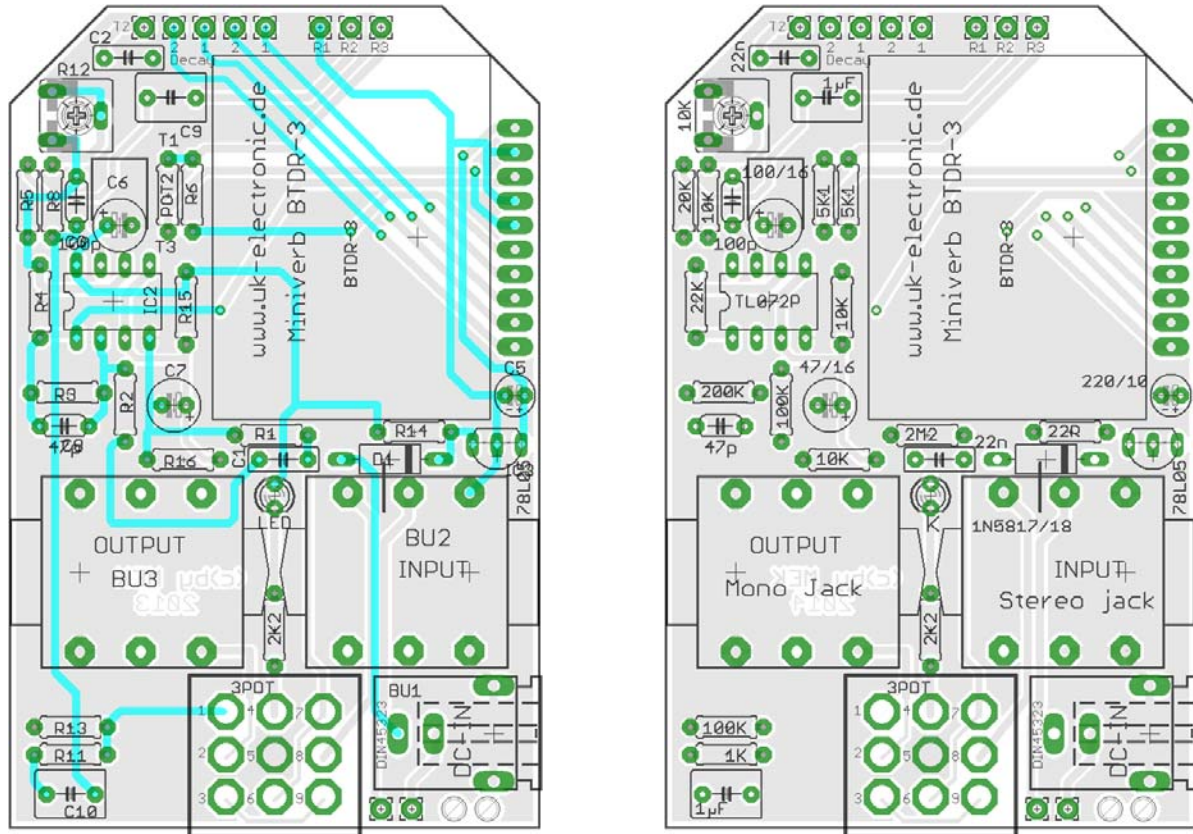
Mechanic

1	Printboard D'verb 3 DKL
2	Audio jack PCB-version (Mono- Output/Stereo- Input)
1	3PDT Switch Standard SL
1	DC-jack ROKA isolated pcb-version
1	LED spacer 17mm
1	Some coloured wire/ isolated hose/ heat shrink
1	Battery connector soft
1	Socket LC 08

Soldering tin is not part of delivery

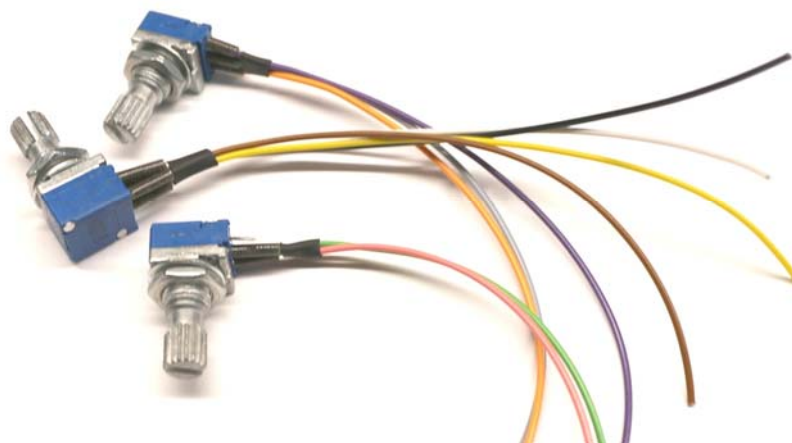
Soldering the Printboard

Back to the top you should start with the lowest components to be fitted, ie first, the resistors then the capacitors. In the next level then the IC sockets, the voltage regulator. The BTDR-3 module at the last (component side). Left are the names of the components, on the right picture the values.

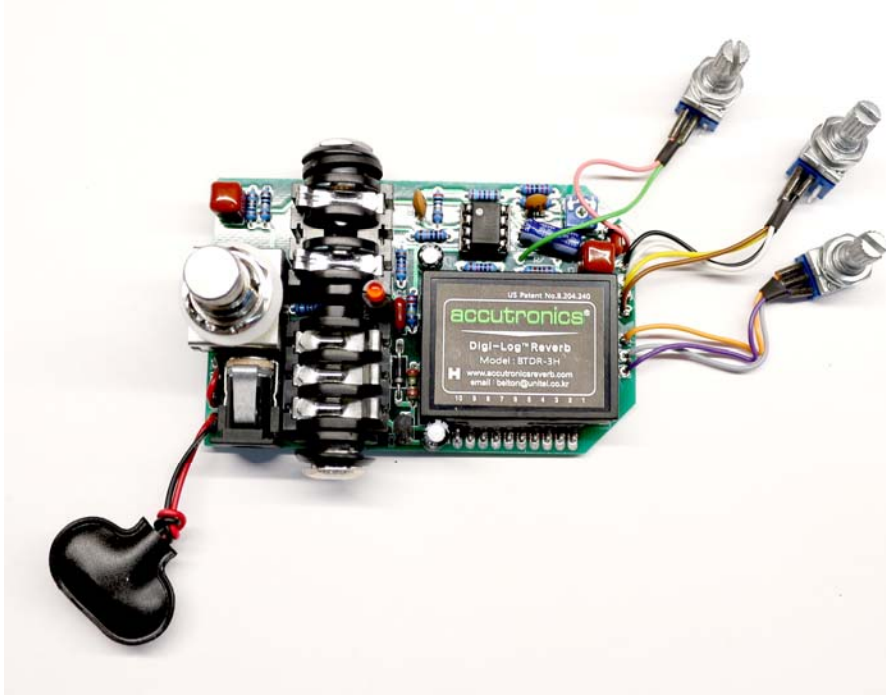


One should make things quiet and rather even look because it is not as easy for inexperienced to switch to a through-hole printed circuit board, a component.

The 3 potentiometers are wired as shown in the figure and summarized the respective lines. The strands should be about 5 to 6cm long. The picture is still missing one wire at a potentiometer.



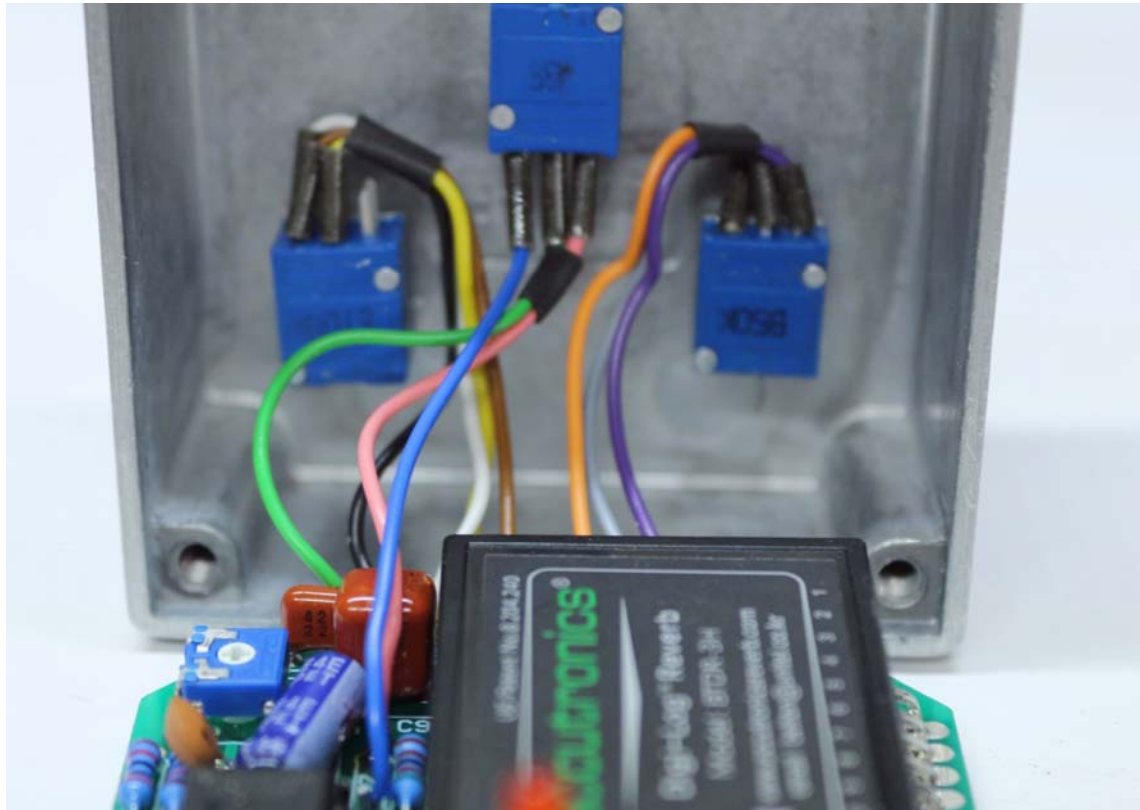
If everything is assembled and the potentiometer wired, they are soldered into the PCB only a.



Note: The sound Poti still missing wire and the wiring is not quite true. For those who solder for photos, what you should not necessarily make. Authoritative always the placement and wiring diagrams.

Thus, the majority would already be done. Who has opted for a pre-drilled housing needs now just mount the Potentiometer and place the board about it. When the board you have to press a bit, and before the strands sort something neatly under the board, since it at the point where the dual potentiometer sits but is relatively scarce. In any case, the board must sit so that when you screw the peripheral groove does not touch any pins on the board.





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The following drill diameter should be used:

Potentiometer: 7 to 8mm

Jacks: 10mm

3PDT switch 13 to 14mm, making it possible to better fit the board if the holes of the jack bushes not agree 100%.

DC jack: 10mm

LED: 3mm

As knobs which are used for 18-tooth split shaft or 6mm with set screw with a max. Diameter of 20mm.

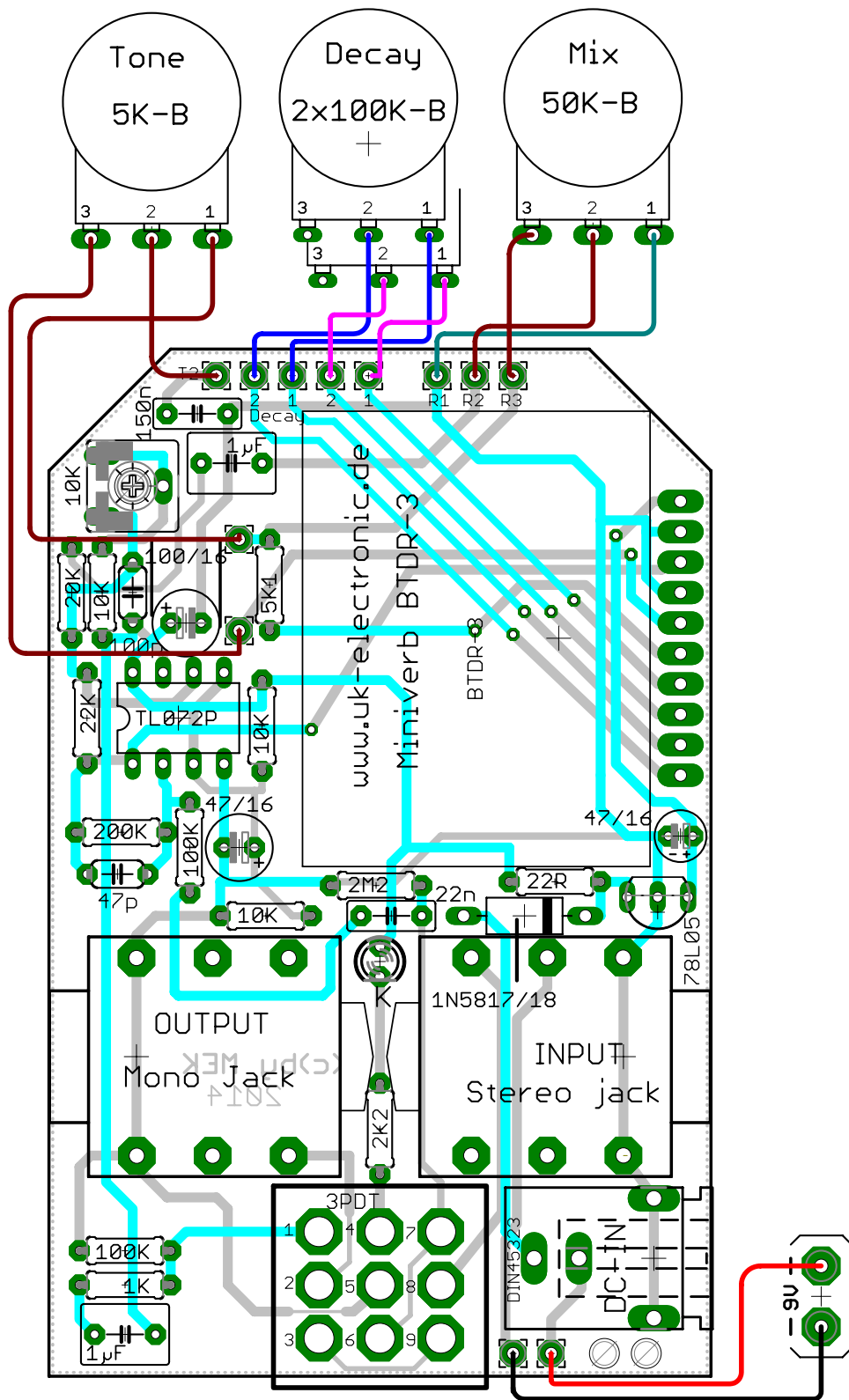
The trimmer potentiometer (10K) is used to balance the volume between the original signal and reverberated signal. Through the hole in the board is accessible after installation of the board with a small Phillips screwdriver.

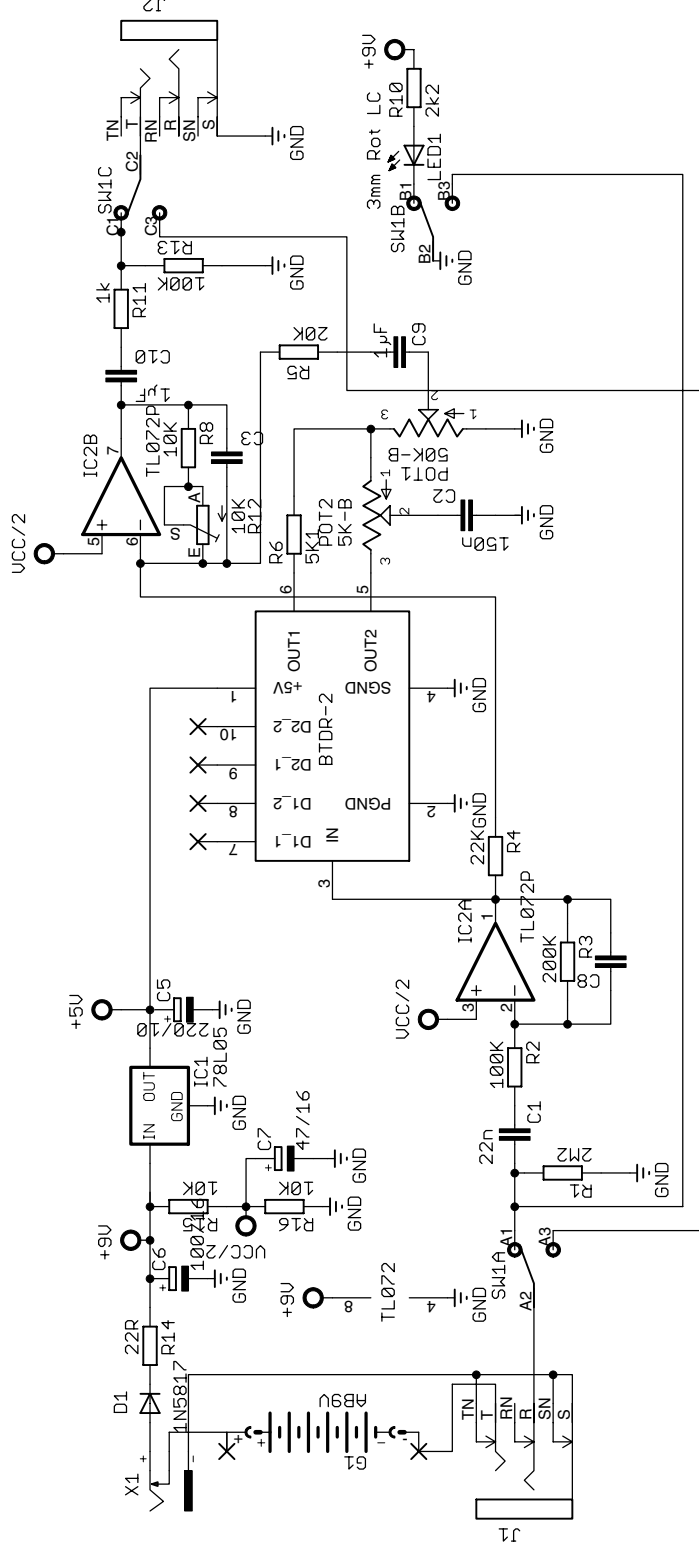
The holes for the jacks are 13mm from the bottom edge, 12 mm for the DC jack. The distance audio jack → DC jack is 18.5mm.

Technical design subject changes!

C2 changed from 22nF to 150nF (Damping Capacitor)!!!

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