

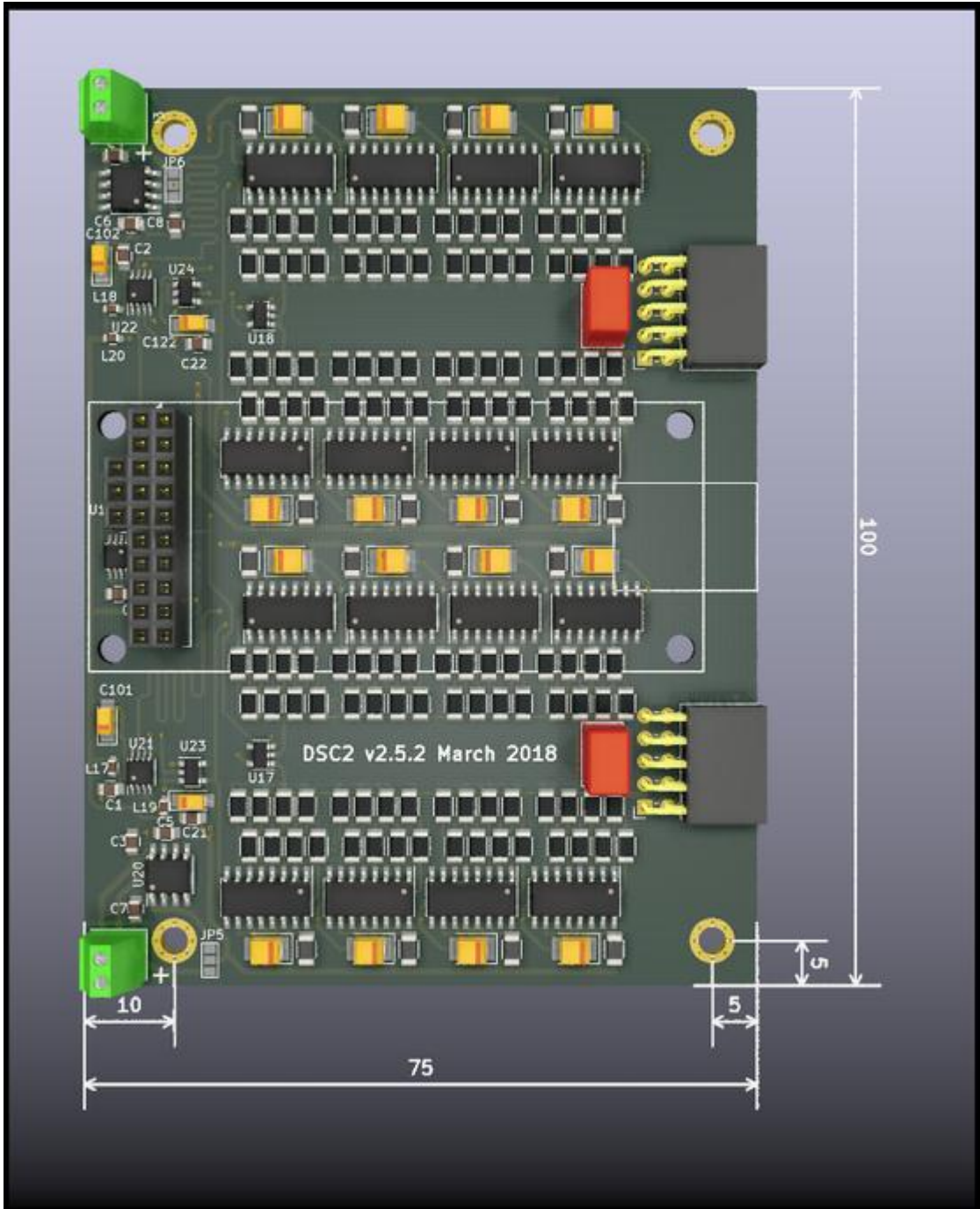
# DSC v2.5.2 USER GUIDE

Revision 1.2, may 2018

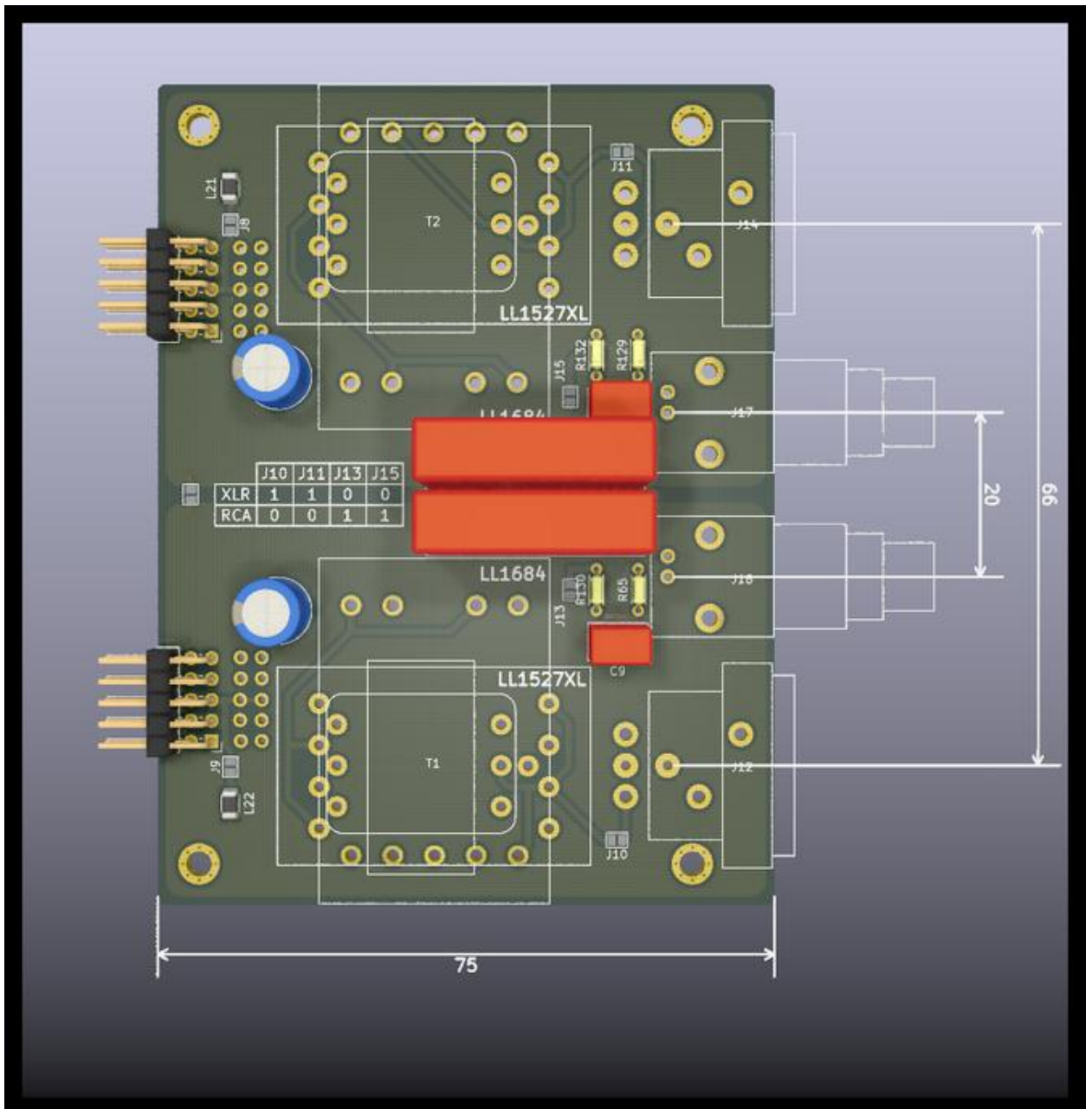
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# 1. PHYSICAL DIMENSIONS

Main board:



Output board:



Mounting holes diameter – 3mm.

## 2. POWER SUPPLY

DSC v2.5.2 has preinstalled LDO ADP7118ARDZ.

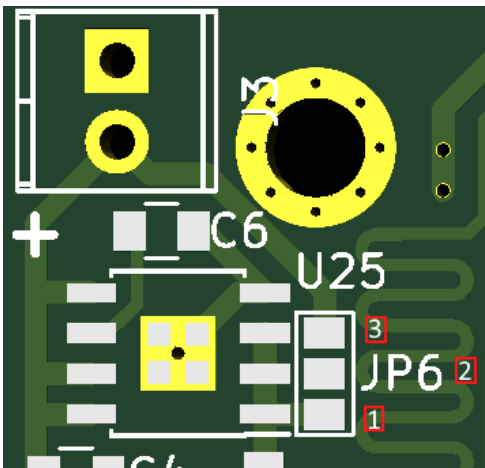
Power transformer with two secondary from 6V to 7V AC each and Rectifier Bridge with capacitors are recommended.

**INPUT POWER:** 7 - 9V DC (polarity is shown on the PCB).

**For using ADP7118ARDZ:**

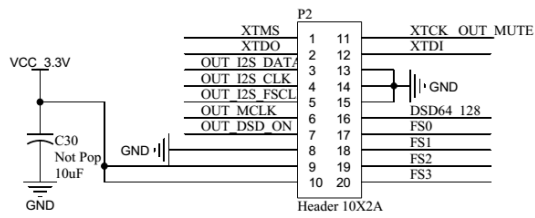
- **JP-5 and JP-6** 1 – 2 must be soldered, 2 -3 not soldered. **It is default configuration.**

**If you want to use external power supply (5V, > 150mA per channel) desolder 1-2 and solder 2-3 (JP-5 and JP-6).** Place external power supply as close as possible to power connectors.

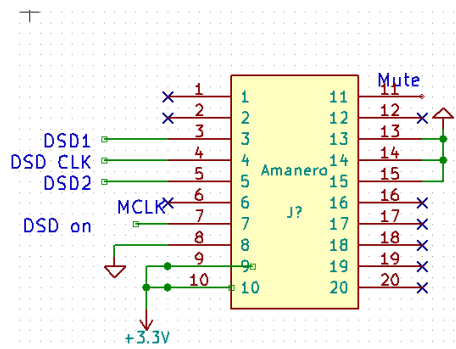


### 3. AMANERO USB CONNECTION

Standard Amanero pinout (Amanero board is not included):



DSC digital input pinout (PIN1 marked on PCB)



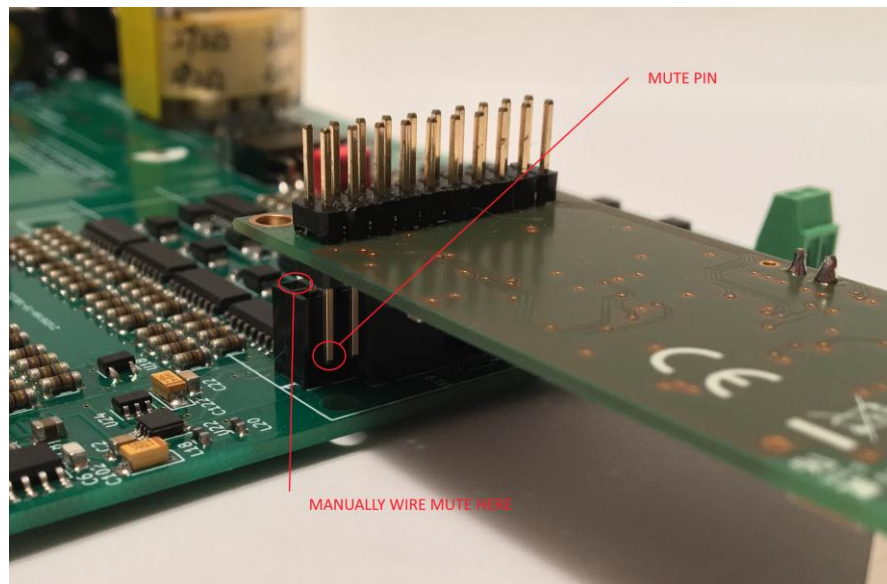
1. **The default placement** is above DSC v2.5.2 board (USB connector in the direction of output board). Just insert Amanero like in the photo below and it will work.



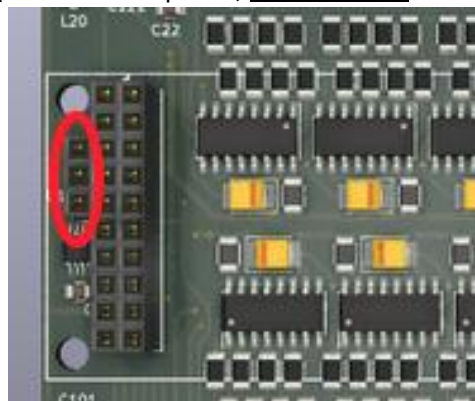
2. **Stacked configuration.** Like №1, but Amanero board is below DSC main board. If you decide to use this option and place output board below Amanero you need 4 spacers 27mm long (not included) for stock and LL1527XL transformers (not LL1684).



3. You can use another option:



- solder 3 PIN (GND) header (shown in the photo, not included).



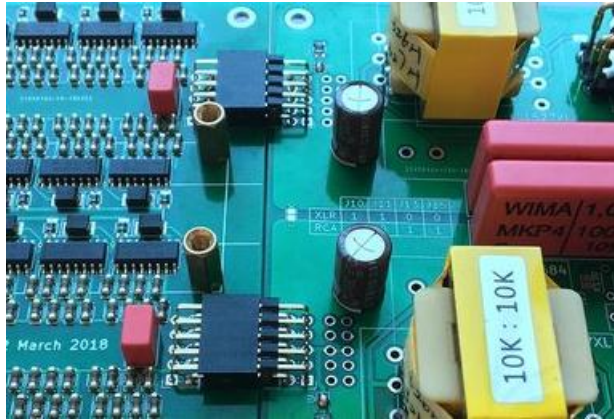
- rotate Amanero board in the direction of power input
- place Amanero at first and second row (first row is 3 PIN (GND) header just soldered)

- MUTE PIN will be floating at this position. You need manually wire MUTE PIN to DSC 2.5.2 board.

**By default – connector's header for Amanero board is included, but not soldered, 3 PIN connector's header not included.**

## 4. CONNECTING OUTPUT BOARD

### 1. Default connection.



### 2. Stacked connection. Output board is below the main board.

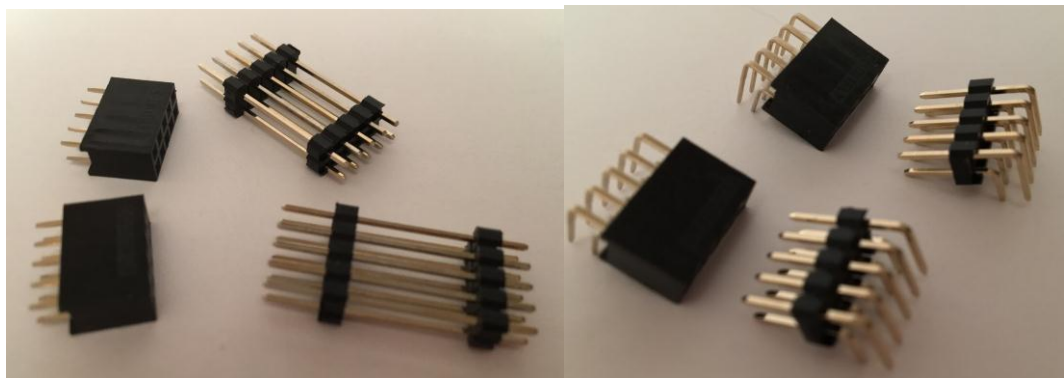
For stock transformers and LL1527XL, LL1684 you need:

- 4 spacers 27mm long. Spacers are not included.
- 4 spacers 11mm long for Amanero board. Spacers are not included.

Note, you can use LL 1684 in this configuration only when place Amanero under the main board.



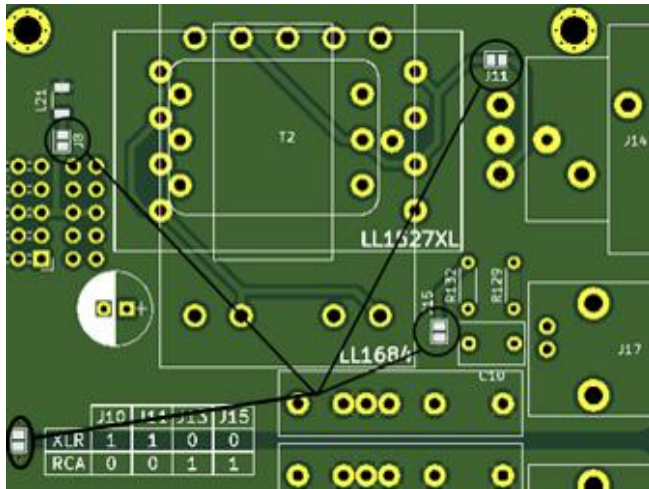
**By default – all connectors for two options included but not soldered. Spacers are not included.**





## 5. OUTPUT BOARD JUMPERS AND TRANSFORMERS

You can find the following jumpers (only part of the board shown):



- **J10, J11, J13, J15** (XLR or RCA connector choice, see table on the PCB),
- **J8 and J9** for connecting Digital and Analog Ground.
- Jumper to the left of the table (XLR/RCA choice) on PCB – for connecting left and right Analog Ground.

### Jumpers' configuration:

Configuration on delivery:

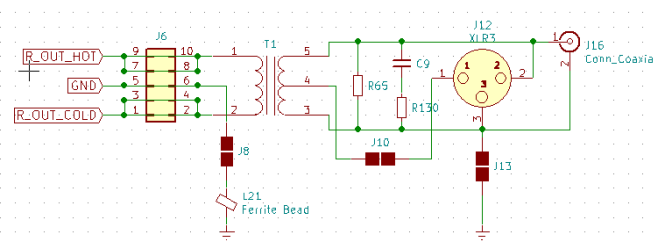
**J10-J11-J13-J15** – open. Choose required configuration - XLR or RCA output and solder jumpers.

**J8-J9** – open, jumper between left and right Analog Ground - open, **Ferrite bead** – not installed/not included.

### Recommendations:

1. Start with: short 8 – 9, jumper between left and right Analog Ground. Short ferrite bead (by wire). It's «common» ground configuration.
2. You can experiment with Digital / Analog (Left and Right) Ground isolation. Just open corresponding jumpers or install any 1206 ferrite bead (for example Murata Electronics BLM31PG500SN1L) instead of wire. The result will depend heavily on your system – choose the best based on the measurements (ground floor of your amp + DSC).

### Default schematic for one channel with stock transformers:



- R65, C9, R130** – not installed, not included.
- RCA and XLR connectors** – not installed, included.
- Transformers** – not installed, included if was ordered.

**R130 and C9** - it's a snubber circuit to reduce oscillations, just for fine tuning. No need to install it if you can't measure oscillations or don't have oscilloscope.

**R65** – can be installed or not. Stock transformers have the best square wave results (according to Pavel Pogodin's measurements) when load to ~ 5K-7K. Load = R65 || input impedance of your amp.

For example, your amp has 100K input impedance and if  $R65 = 6K$ , the load will be  $5,66K$  ( $1/R_{load} = 1/100K + 1/6K$ ). As you can see, it's depends on your amp. We recommend installing it. You can use thin-film resistor, 0,25W.

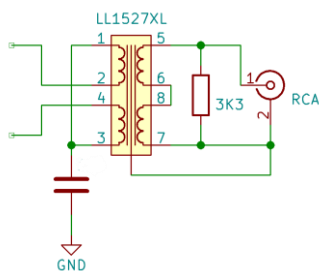
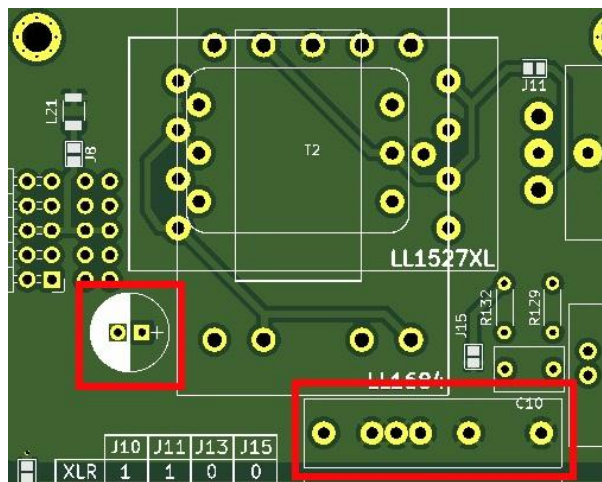
**For stock transformers  $V_{rms} = 1,6V$ ,  $Z_{out} \sim 900 \text{ Ohm}$  (depends on DC resistance primary and secondary winding of transformer, for stock transformers  $300 + 300 \text{ Ohm}$ ).**

**Recommended schematic for LL1527XL/LL1684 (you can use stock transformers in this schematic too).**

**According to datasheet for LL1527XL**  $R65 = 3,3K$ , no need for  $C9$ ,  $R130$ . You may use capacitor in primary winding ( $0,1\mu F - 1\mu F$ ). It's quite subjective, but you may prefer this configuration.

Can be used any film and foil capacitors with pin spacing  $5 \text{ mm} - 22 \text{ mm}$ , or electrolytic capacitors with pin spacing  $2.54 \text{ mm}$ .

These capacitors are not marked on PCB, but their locations are shown in the picture below.



**According to datasheet for LL1684** - the same schematics, as for LL1527XL, but  $R65 = 10K$ ,  $C9 = 3nF$ ,  $R130 = 1K$ . Again, you may use capacitor in primary winding ( $0,1\mu F - 1\mu F$ ).