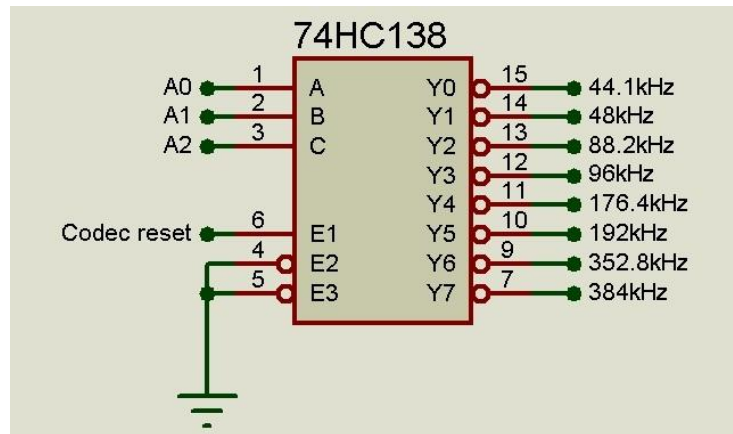


Pin #	Signal
1	If USB jumper is installed this is +5V output; if USB jumper is open this is an input for external stabilized power supply +5V/0.4A for USB input part
2	GND
3	Right justified data (tied to pin2) or I2S data (No connect)
4	A0 / output for selecting external master clock 0V – 45.158MHz; 3.3V – 49.152MHz
5	A1
6	A2
7	CODEC RESET
8	DATA FLAG – +3.3V – DSD data; 0V – PCM data
9	No connect
10	GND
-----GALVANIC BARRIER-----	
11	GND
12	Input +5V stabilized external power supply for generators and the reclock*
13	LRCK I2S / DATAR DSD
14	DATA I2S / DATAL DSD
15	BCLK I2S / CLK DSD
16	S/PDIF output for direct control of TOTX, use at least 12MBPS
17	MCLK – 22.5792MHz / 24.576MHz
18	MCLK2 – 45.158MHz / 49.152MHz
19	Eternal master clock input
20	No connect

\* This external power supply is needed if you do not use PCM5102 board.

A0, A1 and A2 outputs are binary code for controlling 74HC138 for indicating receiving sampling frequency. In order not to blink LEDs when they determine, codec reset must be used to 74HC138.

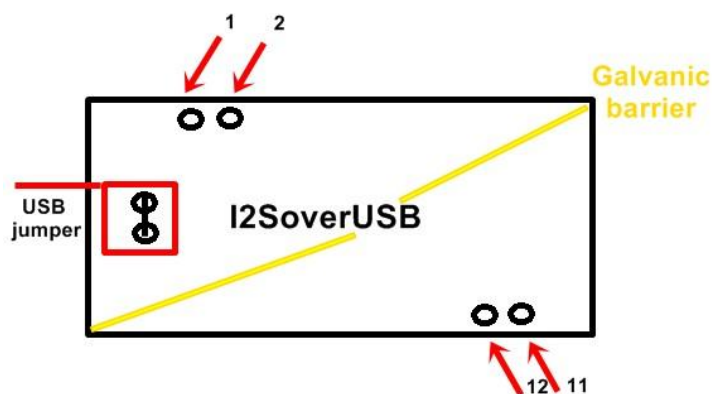


Pins from 11 to 20 are galvanic isolated from all others. They are 3.3V level. One TTL load.

If you want to use external master clock you have to cut “External clock” jumper. External master clock should be 45.158MHz or 49.152MHz (there is an output (pin 4, this pin is not galvanic isolated, recommend to use optocoupler) for selecting between different master clocks).

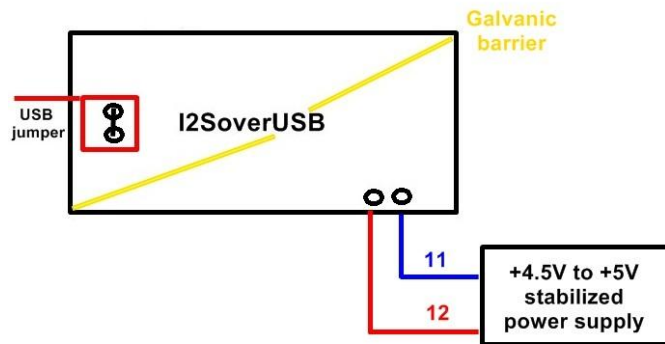
Different ways to power the I2SoverUSB board:

1. The board is powered only from USB bus. Galvanic isolation is avoided.

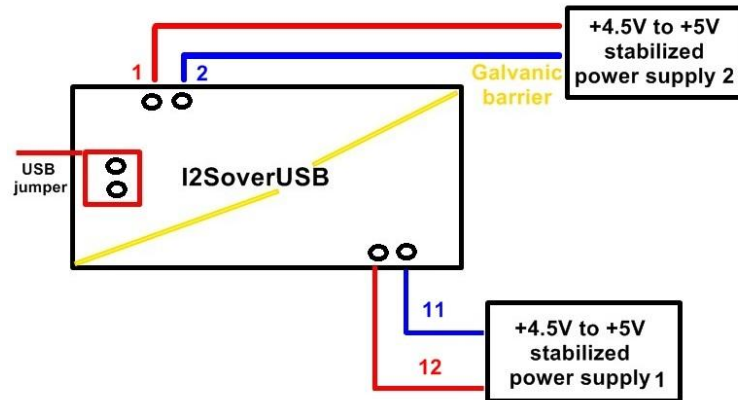


Pin 1 have to be tied to pin 12 and pin 2 (GND) have to be tied to pin 11 (GND).

- The USB part is powered by USB bus, but the generators and the reclock are fed by a separate external power supply



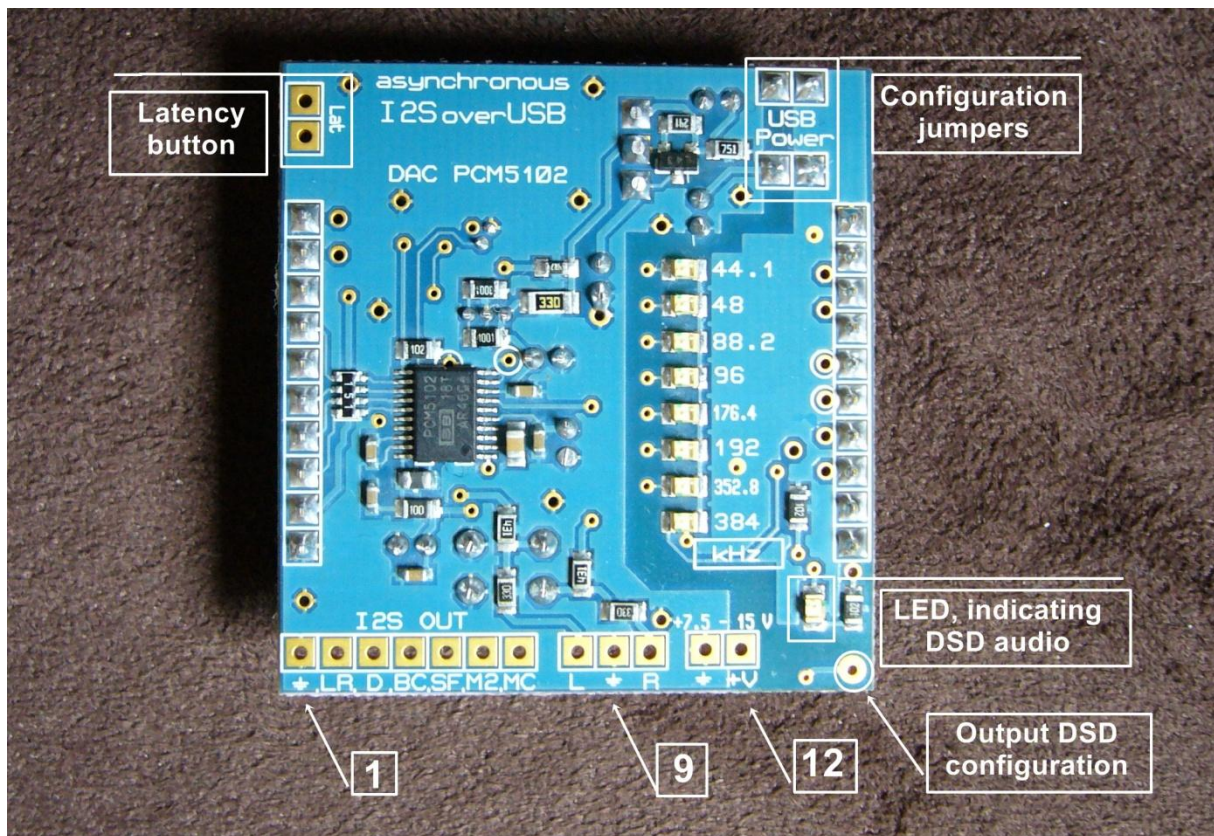
- Both the USB part and the generators with the reclock are fed by two different external power supplies.



**The computer recognizes** the boards only if all power supplies are provided (all three ways to power the board), no matter the order of providing power supplies.

**PCB gets warm** – it's absolutely normal, that's because there are no impulse regulators, but only analogue ones. The aim is lower noise, but the price is greater consumption.

## PCM5102 board



Pin #	Signal
1	GND
2	LRCK
3	DATA
4	BCLK
5	S/PDIF
6	MCLK2
7	MCLK
8	Left analog DAC output
9	GND
10	Right analog DAC output
11	GND
12	Input +7.5V to +9.0V stabilized external power supply. Recommended: +7.5V

Latency button – One can choose between FIR / IIR filters. Default state is is FIR filter.

Output DSD configuration – Open collector output, galvanic isolated by optocoupler for DAC configuration in DSD mode. If output is 0V – DSD data, if output is in high impedance – not DSD data.

Configuration jumpers – If jumpers are installed, the board is USB powered. If jumpers are open then you have to provide external power supply to pin 11→ GND and pin 12 → +7.5V.

**The board is configured to be fed entirely by USB host (default).**

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If you use **both** boards together there are two ways for power supply.

1. Two boards are powered from USB bus. Default state. Galvanic isolation is avoided (on I2SoverUSB board, USB jumper is installed and on PCM5102 board, configuration jumpers are installed).
2. External power supply for the PCM5102 board – +7.5V to +9V on pin 12. This power supply is feeding PCM5102 and generators and reclocks on I2SoverUSB board. On the I2SoverUSB board, USB jumper is installed and on PCM5102 board, configuration jumpers are opened.