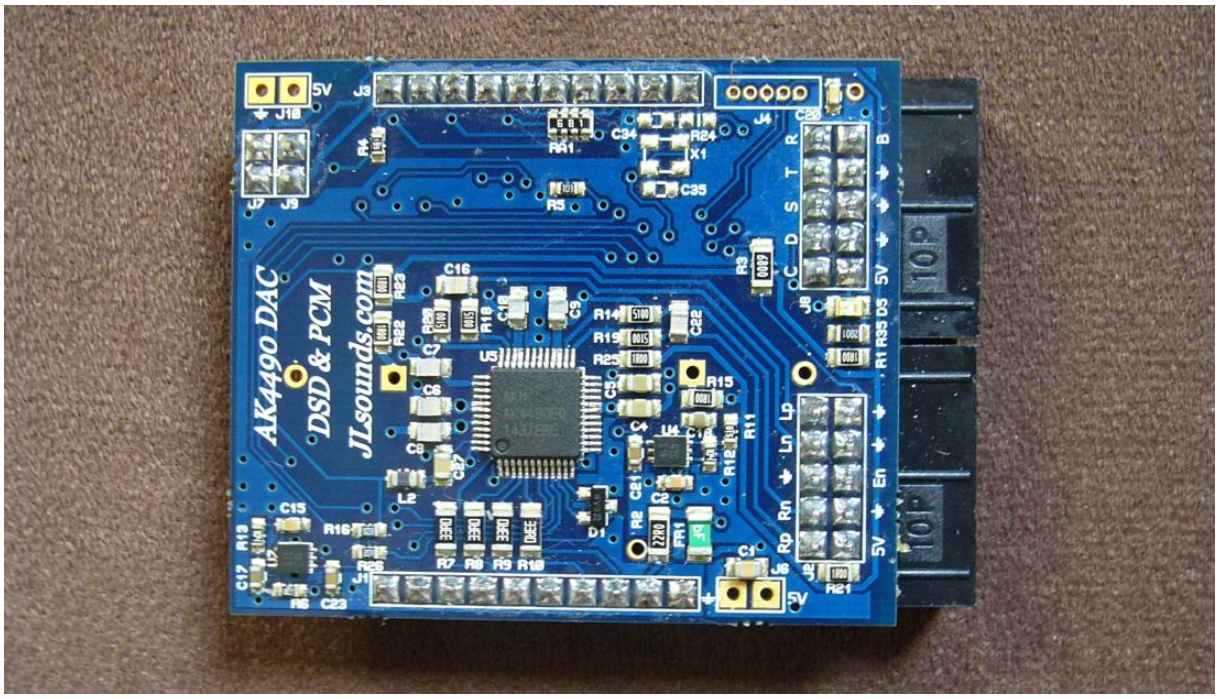
AK4490 board



J6, I/O interface – external power supply input for the AK4490 DAC, oscillators and reclock on the I2SoverUSB board 5.2V 0.2A.

J10, I/O interface – external power supply input for the USB part of I2SoverUSB board 3.8V to 5.0V/0.4A.

J2, O interface

Pin #	Signal
Rp	Right Channel Positive Analog DAC Output Pin
Rn	Right Channel Negative Analog DAC Output Pin
GND	GND
Ln	Left Channel Negative Analog DAC Output Pin
Lp	Left Channel Positive Analog DAC Output Pin
5V	5V
GND	GND
EN	Mute output. *work – 3.3V; mute – 0V*
GND	GND
GND	GND

Configuration jumpers – If jumpers are installed, the board is USB powered. If jumpers are open then you must provide external stabilized power supply on **J6**.

Our recommendation is to use external power supply on J6 for better sound quality.

Analog outputs are 2.8Vpp (5V power supply).

Configuration from PCM to DSD data format and back, is done by microcontroller, which 0.5sec after his work is done, is putted on sleep mode not to insert disturbances.

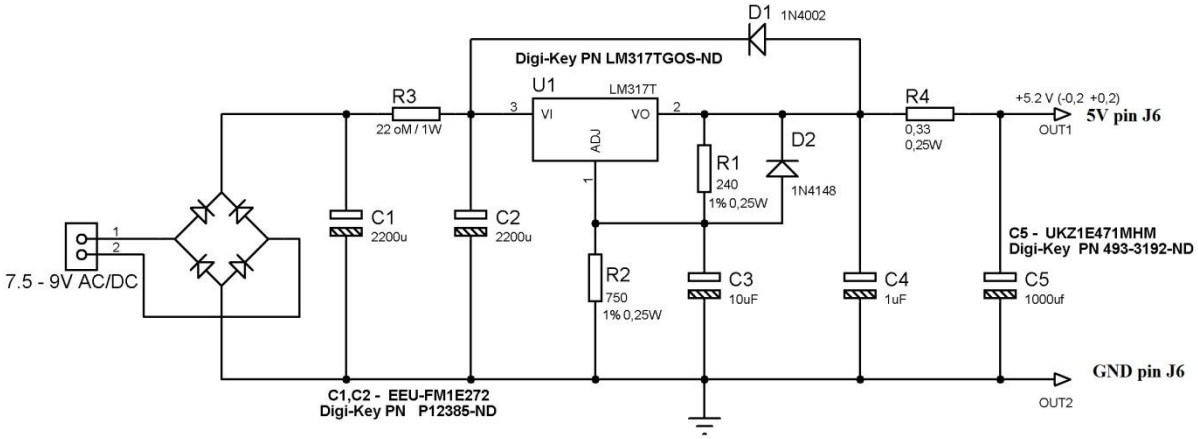
If you use **both** boards together there are three ways for power supply.

1. Two boards are powered from USB bus. Default state. Galvanic isolation is avoided (on I2SoverUSB board, USB jumper is installed and on AK4490 board, configuration jumpers are installed).

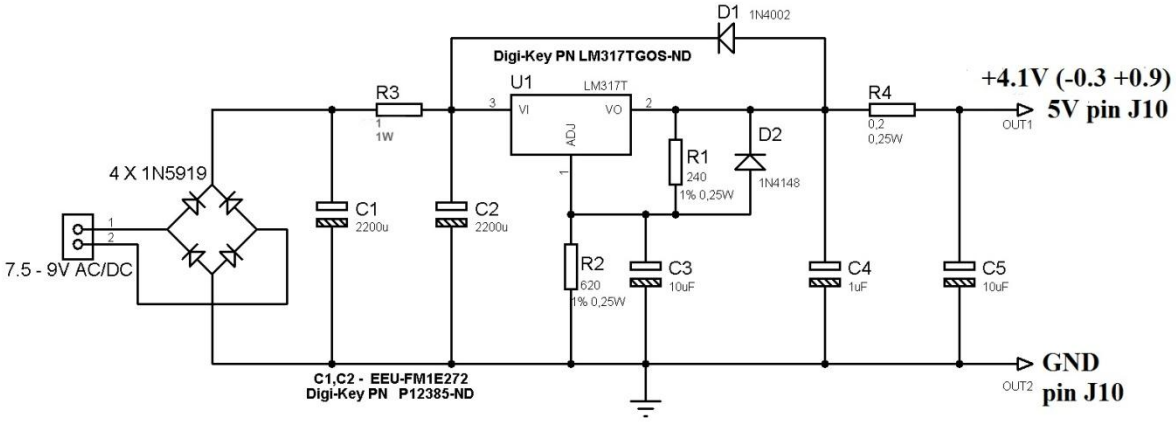
2. External power supply for the AK4490 board: **5.2V/0.2A** on J6. This power supply is feeding AK4490 and generators and reclock on I2SoverUSB board. On the I2SoverUSB board, USB jumper is installed and on AK4490 board, configuration jumpers are opened.

3. External power supply for the AK4490 board: **5.2V/0.2A** on J6. This power supply is feeding AK4490 and generators and reclock on I2SoverUSB board. External power supply for USB part **3.8V** to **5.0V/0.4A** on J10. On I2SoverUSB board, USB jumper is opened and on AK4490 board, configuration jumpers are opened. In this way I2SoverUSB board consumes less than 10mA from USB host.

Recommended minimum requirement schemes of external power supplies



External power supply for AK4490 and generators and reclock on I2SoverUSB board.



External power supply for USB part.

If the two boards are powered from USB bus and the voltage from the USB host drops below 4.8V, 352.8kHz, 384kHz and DSD128 might not work (allowable minimum power supply for AK4490 is 4.75V). The solution is to use external power supply for the AK4490 board, oscillators and reclock (J6).

For the AK4490 board, we highly recommend external power supply for high quality sound.