

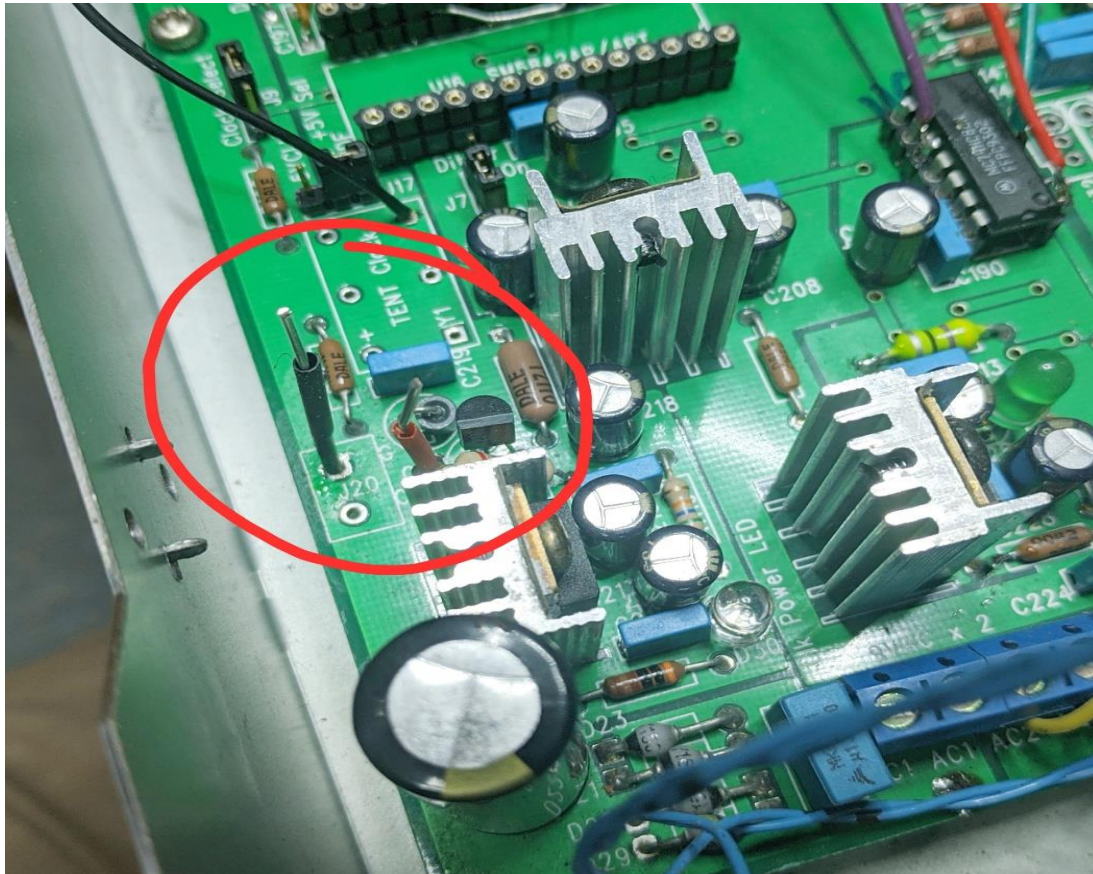
Conversion of a Pass D1 clone to USB input

For a long time I have moved away from CDs as a primary means of listening to music. Over the last few years, I have found my SPDIF input DACs relegated to the storage shelf, as I experimented with USB and SD card sources. While doing some tidying up recently, I came across my old Pass D1 clone which I bought back in 2010 from a DIY audio member who had got it from Spencer. I remembered how nice it sounded, and thought it was such a pity that it was sitting on a shelf, with all those nice K grade PCM63 chips and many 2SK170 and 2SJ74 on the board. So I thought about some means to connect a usb convertor to the DAC.

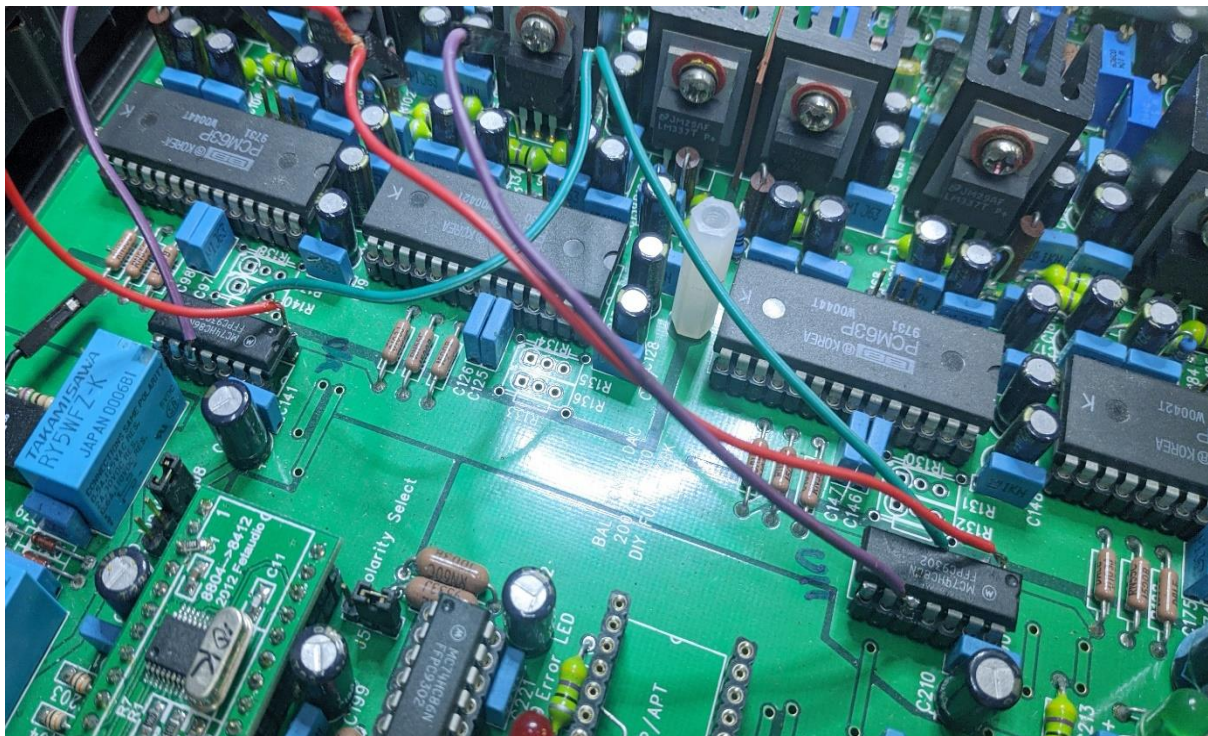
The board version I had was not the newest (see here <http://www.fetaudio.com/archives/23>) and I had to go back to look at the datasheet to realise that these chips do not take i2s in the way more modern DACs do. This stumped me, so I went to diy audio for some help. Members there pointed me towards the excellent Jlsounds i2soverusb board which can output signal in many configurations. After some experimenting, no sound tests and so on, its now working and sounding very fine indeed.

If anyone who has one of these DACs would like to try this out all you need to do is buy the i2soverusb board, and for best results have 2 local power supplies for this board. In the photos here you will see I tapped power from an unused supply on the board, and used some cheap LM2596 regulators. I will likely change these for better low noise supplies in time.

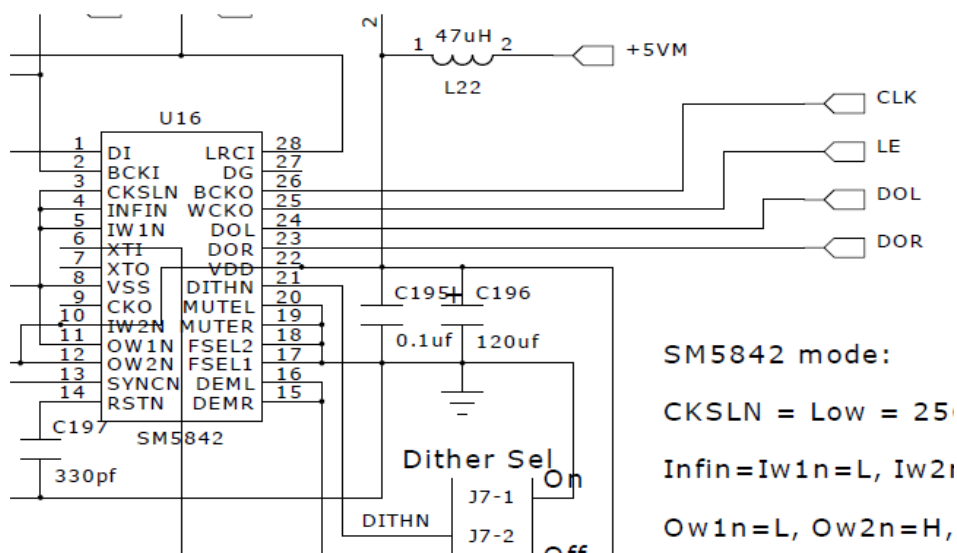
First up the location to tap power. I had connected up 2 x 9VAC supply for both digital supply and tent clock supply, but the last one was never fitted to this board, and if you are going to do this modification, you don't need it anyway. The photo below shows how I brought the power supply from an unused cap location and ground point on the board.

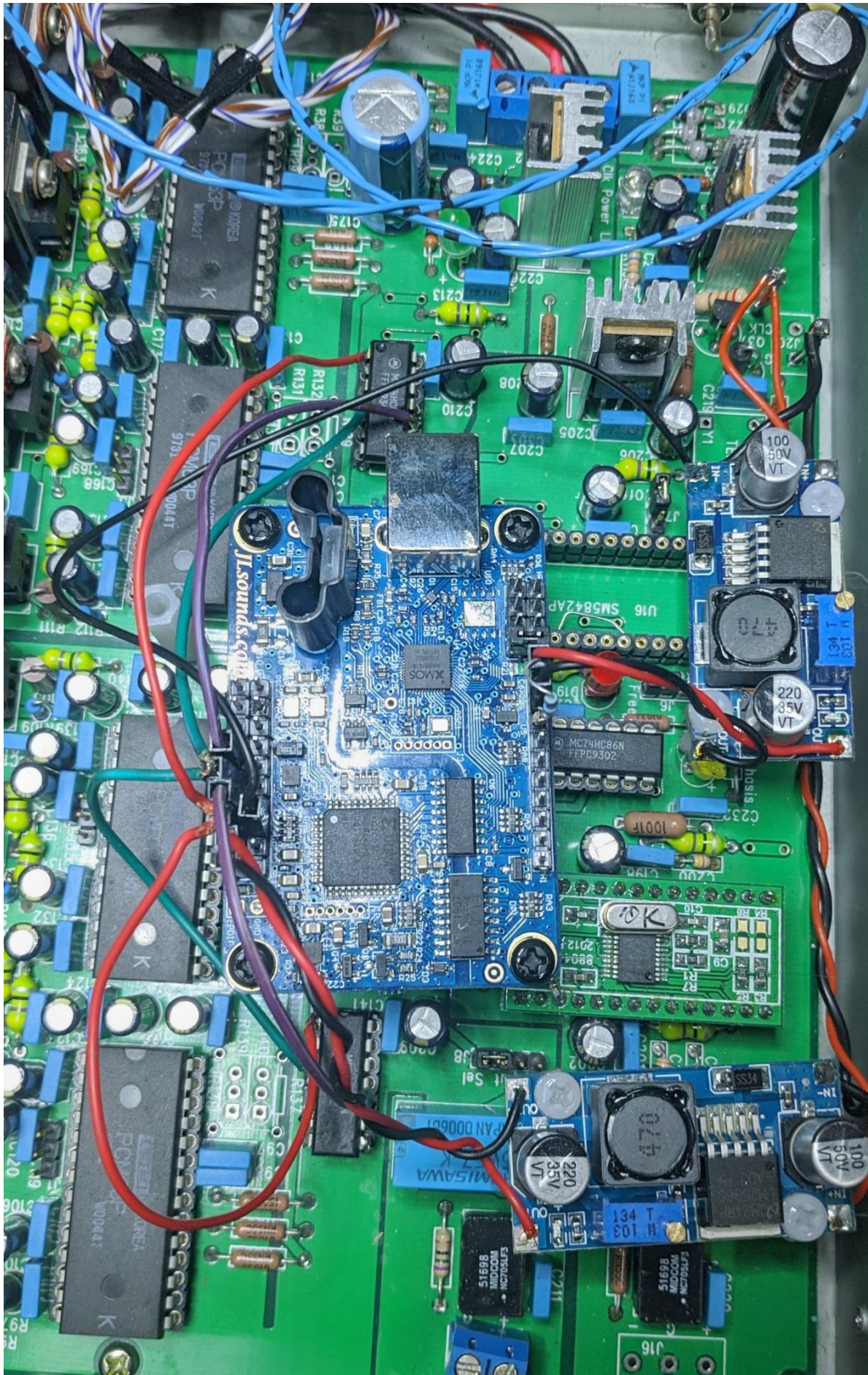


The next thing to do was to set up the i2soverusb board for PCM63 connection. This is very well covered in the instruction manual. Basically, you have to connect 2 pins together on one header with a 4k7 resistor, supply power to both sides of the board (or jump them together as per the manual) and then take the digital outputs to U4 and U11. BCK from the i2soverusb goes to pin1 on U4 and U11, LE goes to pin 4 on U4 and U11, DOR to pin10 (or12) on U11 and DOL to pin 10 (or 12) on U4. Lastly add a ground connection back to the main board. I simply soldered these connections to the legs of U4 and U11, but when I return here to improve the regulators I think I will fit a socket and connect more solidly to the socket and the usb board. I am not a fan of those header pins and flying leads. It works for now, but I don't think it is a long term reliable solution.

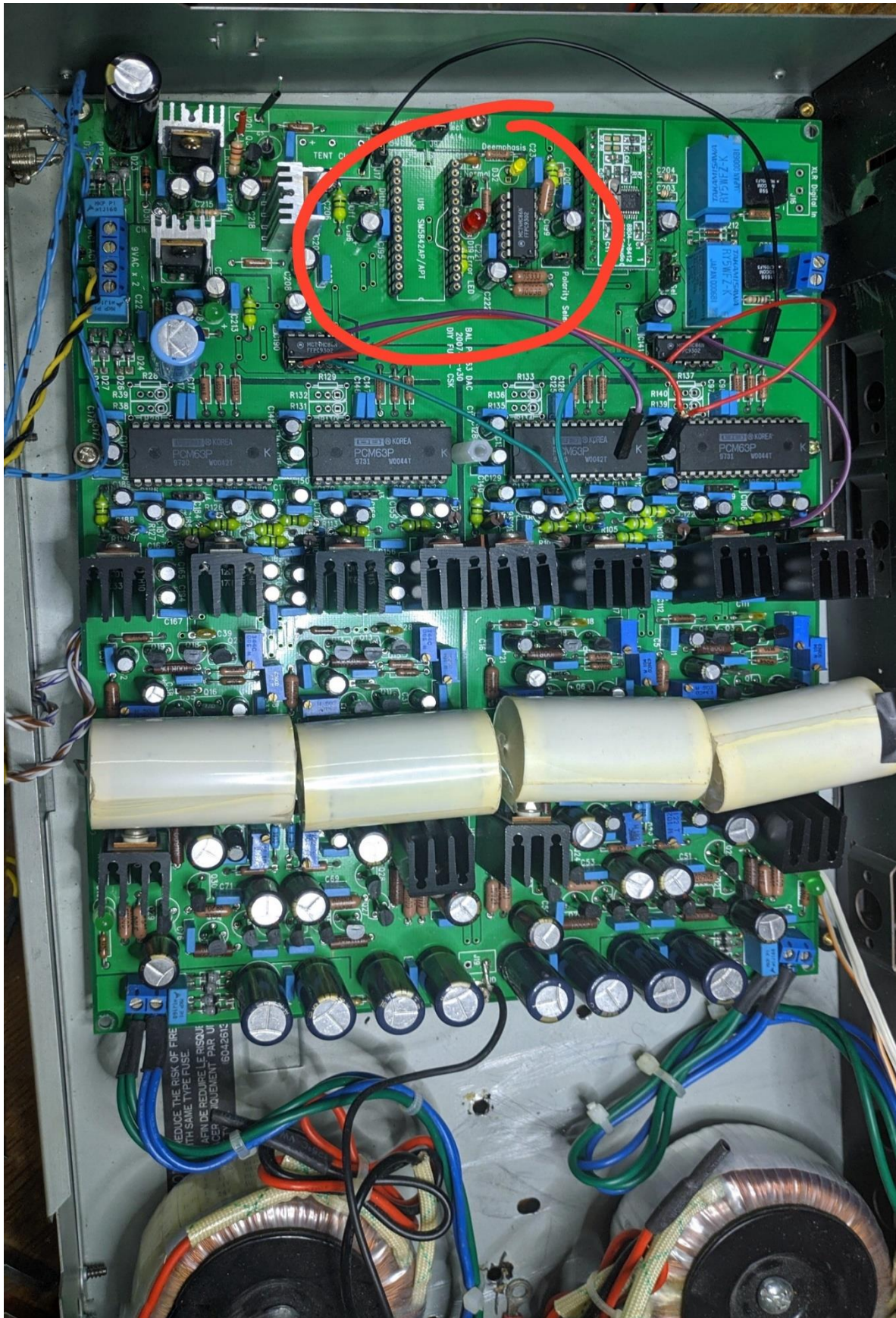


Added by Spencer: Indeed there is no need to solder the wires to the U4 and U11. In the output of the digital filter, can make use of the 4 output pins (23 to 26) and then connect to the output of USB board. See circuit below: Of course you have to remove the digital filter chips first!





The other thing you must do is remove the digital filter chip from its socket and you will be rewarded with very nice sound! All credit here to the help from Spencer and the members on DIYaudio who gave the necessary information to get this singing again.



Here we are an upgraded D1 balance version to USB input. Enjoy the music!