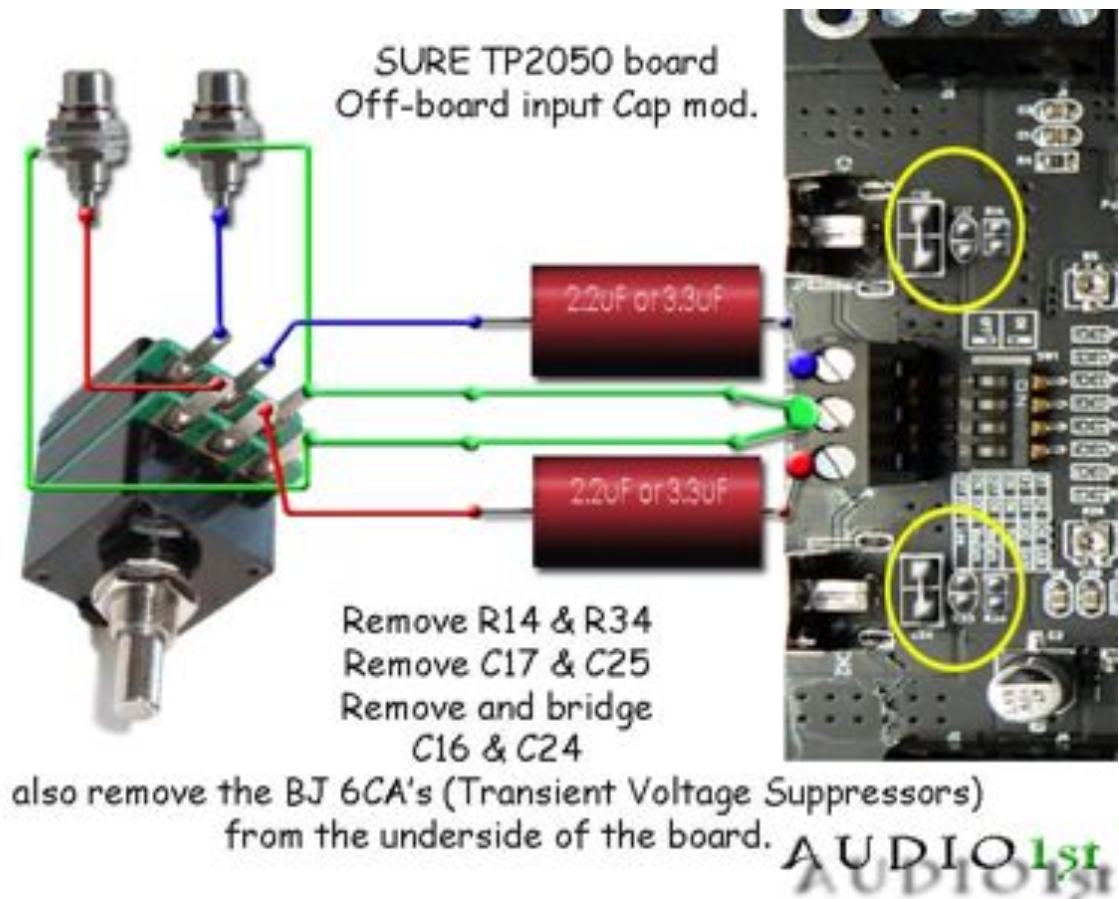
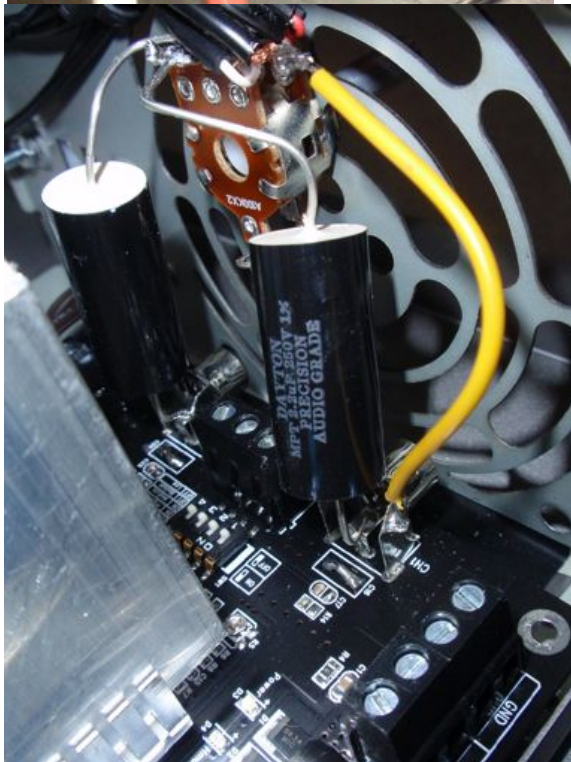
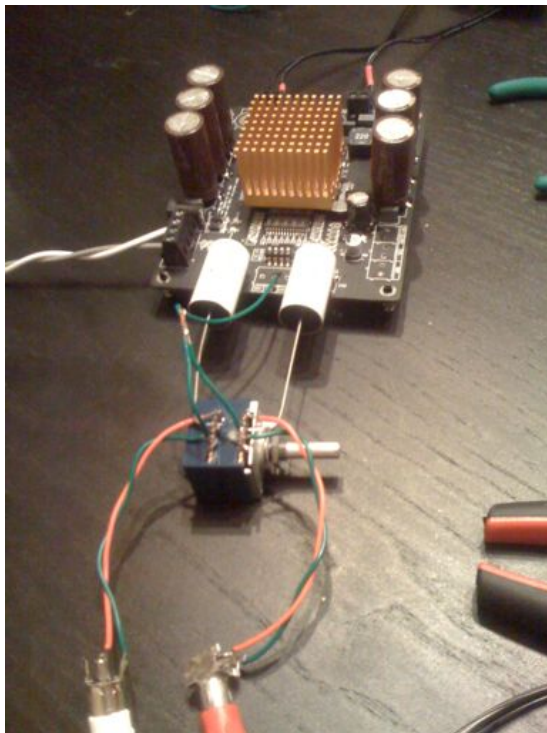


I changed the power supply caps to Elna Silmic II 470uF 50v and the 5v reg cap a Pany FM 330uF 25v. The input caps are 2.2uF Sonicaps.

[Link](#)



I have a few things to report. This is in reference to the 2\*100Watt from Sure electronics module I bought recently.1. After the item arrived I burned in the unit(unmodified) for a few days by playing music and I had been listening to music over this period. I powered it from a Laptop smps, 19.6VDC.The sound quality was not very impressive, even when compared to the chipamp. Very opaque and dull.2. Then I changed the power supply to battery(4 units,each 12V DC connected in series and parallel) to give me 24V DC. The sound now was much better cleaner and less opaque.Overall some improvement. I liked to report that I had been using the unit with the battery units for over 10 hours and the voltage dropped marginally from 25.2V to now 24V Dc after more than 10 hours usage. I had a charging circuit in preparation to charge it up once it dropped below 23.5V.3. Now all the components to modify the circuit had arrived.

I changed the following:

- a. input caps to Sonic caps, 2.2uF in parallel with 0.1uF, removed the existing caps(1.0uF and 0.1uF) as specified by Audio1st and also the input 22K resistor. More importantly the input suppressor? located underneath the board, this suppressor must be removed for the unit to work properly.
- b. removed all the 6 power caps(220uF each) there were very light indeed, replaced them with panasonic 2\*1500uF(one in each rail) used by Audiosector.
- c. Used a 50k pot from gigaworks similar to the one ordered by Col. It was a SMD resistors connected and make it into a audio log pot.

The bottom line is it sounded like a different amp., very clean and open airy, throws a large sound stage. I own many amps before, inclu. chipamp(LM3886 and 3875) and tubes and solid state. This one sounded very good indeed comparable if not better. If I add up the costs, it will not be over US\$100 parts incl. Sure unit, battery, caps and pot. A bargain.

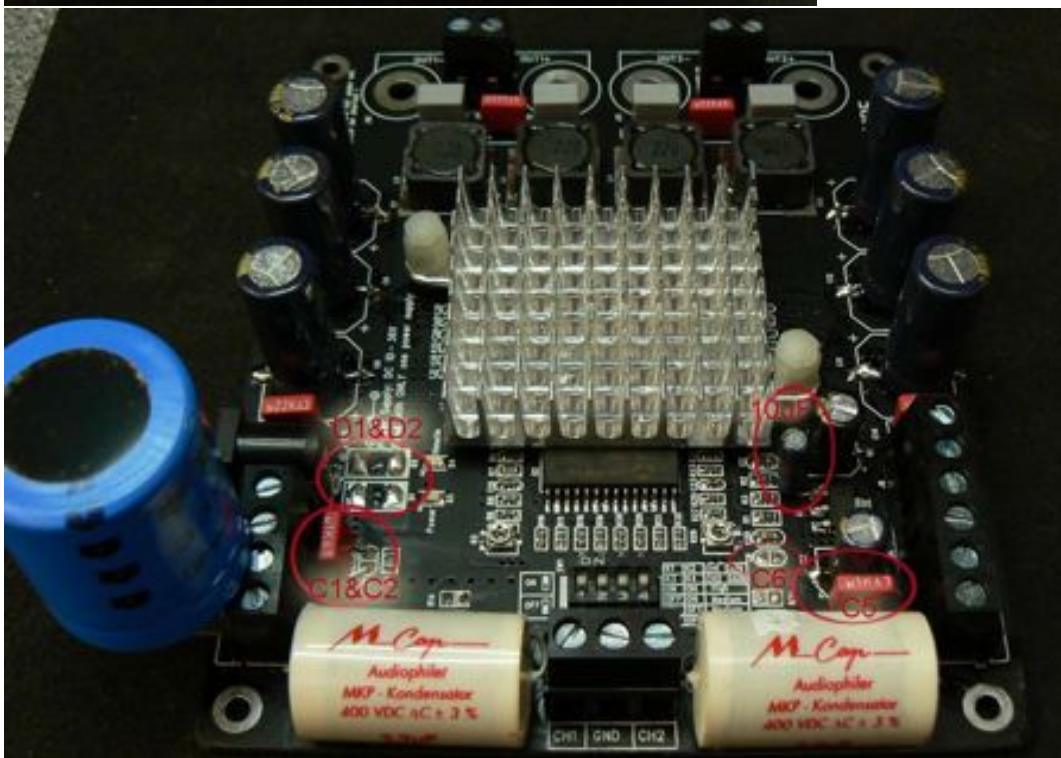
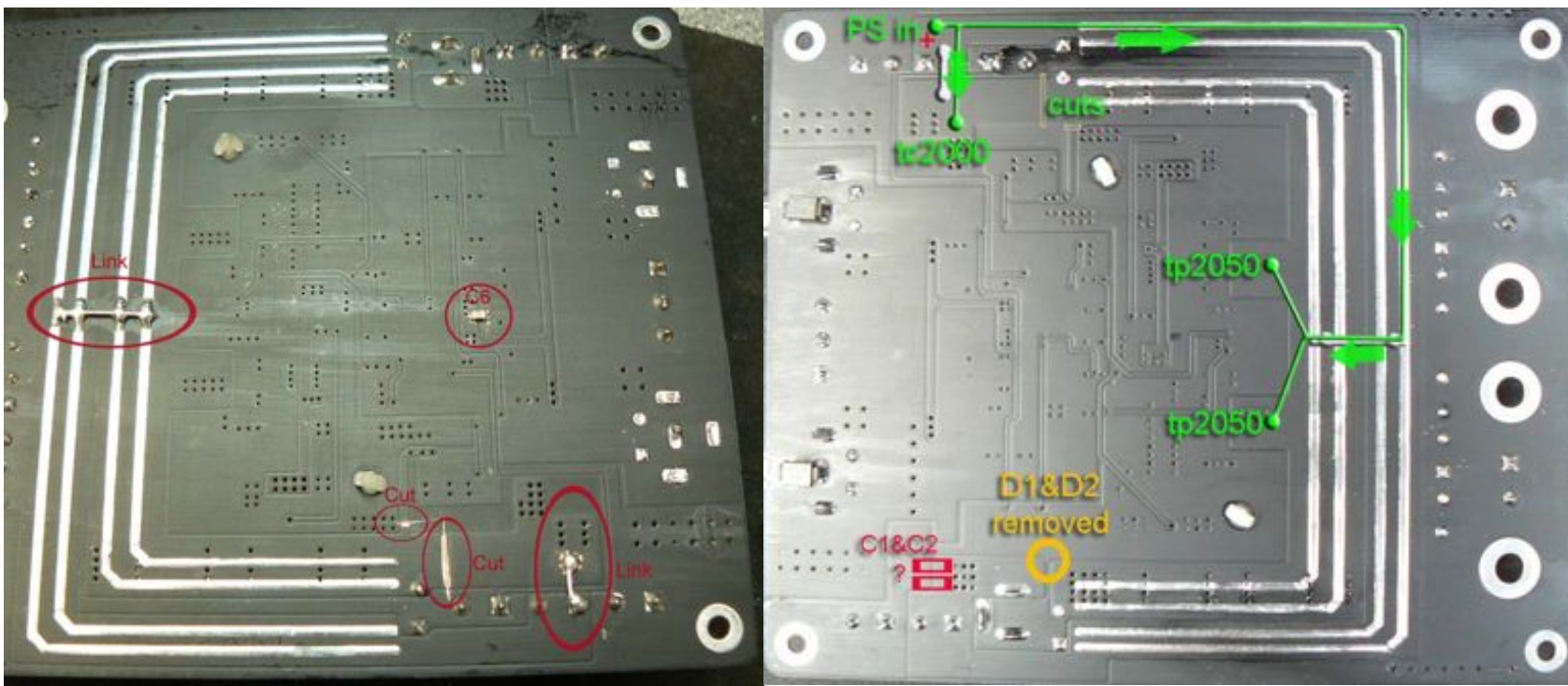
Zalman NB-47J

- I. Must Do's: swap out input caps, upgrade signal path resistors,*
- II. Worth Doing for Better Sound: swap out stock inductors for toroids, etc.*
- III. Might Be Worth Doing: battery PS*

my take:

- I. - Input caps- tank caps (and thus depending on your PSU also a soft start)
- II. Input and feedback resistors
- III. output filter incl. toroids- voltage regulator - re-route power rails on PCB and remove diodes (amp likes every bit of voltage)
- IV. Might not be worth doing- re-wiring pins 24 on both TP2050s to 21,22 (Vdd) instead of gnd- exchange C22&27 for 470pF as per the TC2000 data sheet





Changed all the lytic's for Pany FC's,  
changed all the film caps, better quality,  
same values.

Removed C1 and C2 and replaced with a  
single 100nF Wima film cap.

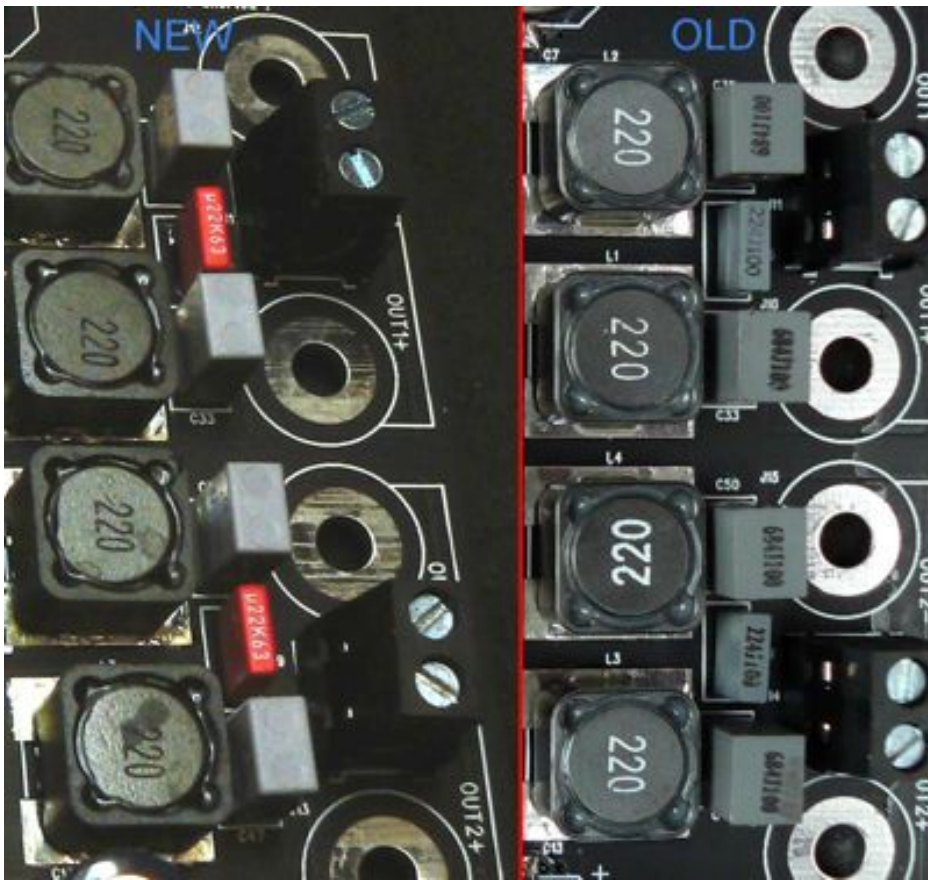
Moved C6 to underside of board.

Replaced C5 with a 100nF Wima film cap.

Added a 10uF Pany to the adjust leg of the  
5V reg.

Removed D1 and D2 and re-routed the  
power supply.

[link](#)



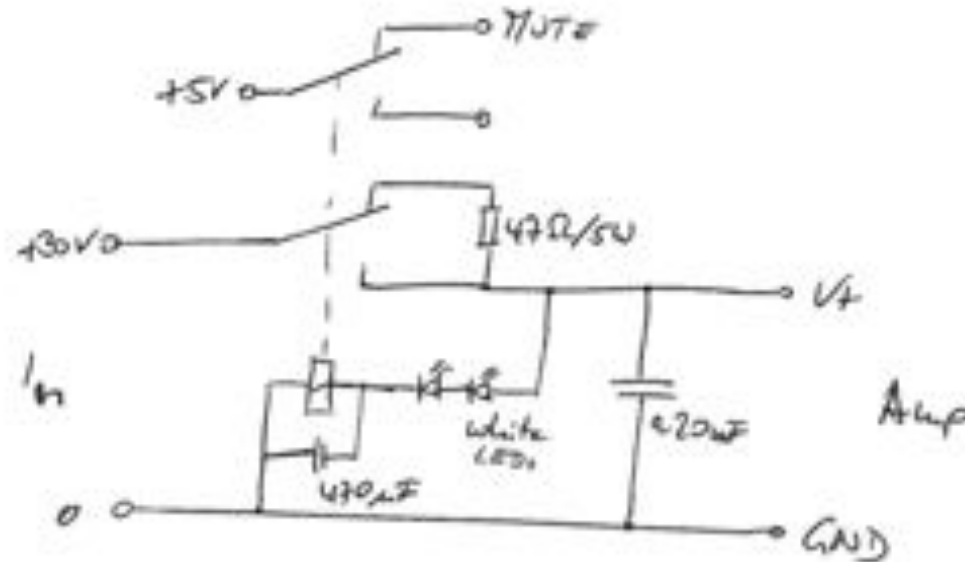
*I'll second that - great job Audio1st. A couple followup questions:*

- 1. In the 5V regulator, you put the 10uf cap in parallel with R2, correct?*
- 2. It looks like you'd need to jumper D1 and D2 if removed - I take it your trace cutting and jumpering accomplish that and more?*
- 3. Why move C6 to below the PCB - to get it closer to the chip?*
- 4. You have a large blue PS reservoir cap on the side of your PCB - what value do you suggest? Thanks again. Best regards, Mike*

Hi Mike,

1. Yes, I connected it between the adjust (1) leg and ground side of C4, I may change that to the ground side of C3. Neg to ground.
2. Yes the links bypass these diodes. You could use diodes in place of the links to be safer.
3. Yes, Tripath always state that this cap should be as close to their chips as possible. Short path to ground.
4. I used a 3,300uF, I tried larger but the switch mode PS did not like it. Other PS will behave differently and something up to 20,000uF could work.

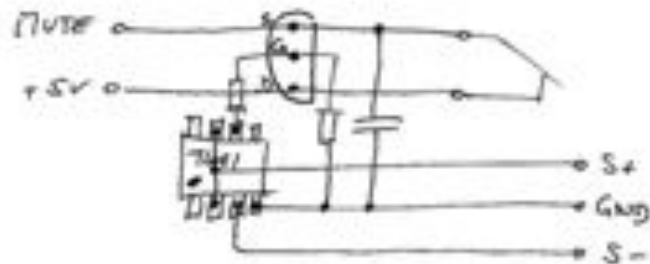
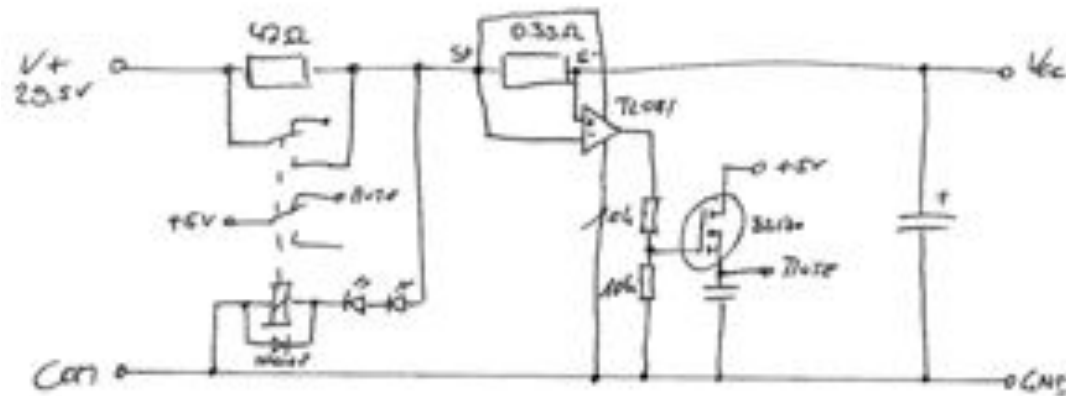




The SMPS sees a short circuit when a large current flows to fill the caps and goes down in safe mode delivering only ~5V. Attached you find a sketch of my poor man's version of a soft start circuit. I use it with the exact Mean Well SMPS and the sure board and it works. I have roughly 20mF near the amp.



## REVERSE CURRENT SENSOR: MUTE ON OFF



### Soft Start/ Mute On Off Circuit

- 24V/0.4W relay 8A 2CO contacts (tyco RT424024)
- 2 white LEDs (~6V drop) in line with coil
- 47 Ohm/ 5W resistor to fill the tank caps up to operating voltage for the relay
- 1N4148 parallel to relay coil
- 0.39 Ohm/5W resistor to filter the power supply and to sense the current
- TL081 as comparator (TL081 can work in high-side applications)
- 2 x 10k voltage divider to drive a
- BS170 that mutes the amp when power is switched off and the tank caps unload via the SMPS and the current sensing resistor
- 100uF btn MUTE and GND to keep the amp mute a little longer
- 3 x 3300uF/35V Yageo SY tank caps- 1800uF/35V Panasonic FM next to output (close to amp power input)





[Link](#)