

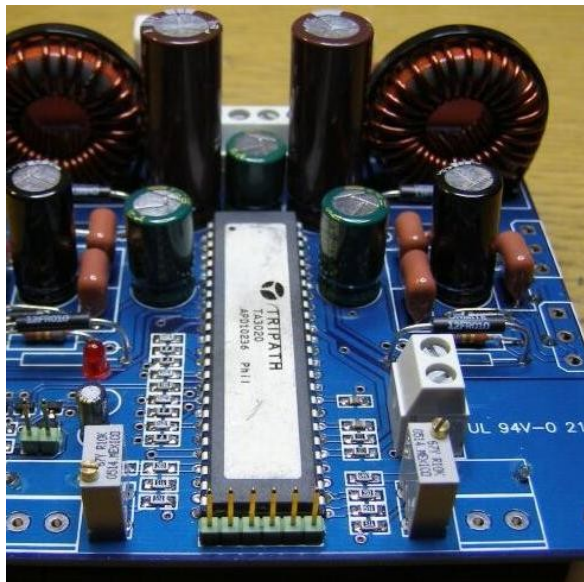
Assembly Instructions

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**THE TRUEPATH DESIGN:**

- Greatly enhanced suppression of electromagnetic interference.
- Optimized lead pattern with very short switching leads, to reduce loop areas.
- Matched impedance gate drive leads.
- Well separated power- and low-level signal sections.
- Completely separated analogue and digital power-domains.
- 4-layer PCB and double weight copper allows, well shielded, heavy duty traces to deliver high currents at lower temperature.
- The board is 100mm wide and 110mm deep. The chip is hole mount while many resistors and capacitors are in 0805 surface mount size.

TA3020 FEATURES

- Class-T architecture
- Proprietary Digital Power Processing technology
- "Audiophile" Sound Quality
- 0.02% THD+N @ 50W, 8Ω
- 0.03% IHF-IM @ 30W, 8Ω
- High Efficiency
- 95% @ 150W @ 8Ω
- 90% @ 275W @ 4Ω
- Supports wide range of output power levels
- Up to 300W/channel (4Ω), single-ended outputs
- Up to 1000W (4Ω), bridged outputs
- Output over-current protection
- Over- and under-voltage protection
- Thermally Enhanced 48-pin DIP (dual-inline package)

Truepath Assembly Instructions

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The Truepath is an advanced high power amplifier. Building this amplifier is not for beginners. It is assumed that you have through knowledge about electronics and building electrical and electronic devices.

WARNING: The voltages and currents involved can be lethal if not handled properly. If you do not have sufficient knowledge, do not proceed in building and using this kit. 41hz Audio can in no way be held responsible for the consequences of the use of the kit.

Thank you for choosing an audio kit from 41hz.com!

On delivery, check that all components have been included. If something is missing, let us know immediately. A bill of material (BOM) should have been included with your delivery and is downloadable from the web site.

Download the data sheet for the Tripath TA3020 reference board, as the schematic and layout of Truepath is similar. However, component specifications and values may differ. Generally, better components are delivered with the Truepath kit than specified for the reference board. The data sheet for the TA3020 is another useful source of information.

Seven steps to mount components

Assembly Instructions have been organized in 7 steps to mount components on the Truepath PCB. For each step is provided a picture, with the schematic of the circuit part to be mounted and the indication of the components placement on the PCB.

Each step is about a "logic" part of the circuit as a whole. So you don't mount components in the usual way, placing lower profile components first, and so on, but for each part are soldered all resistors, caps and IC and even connectors.

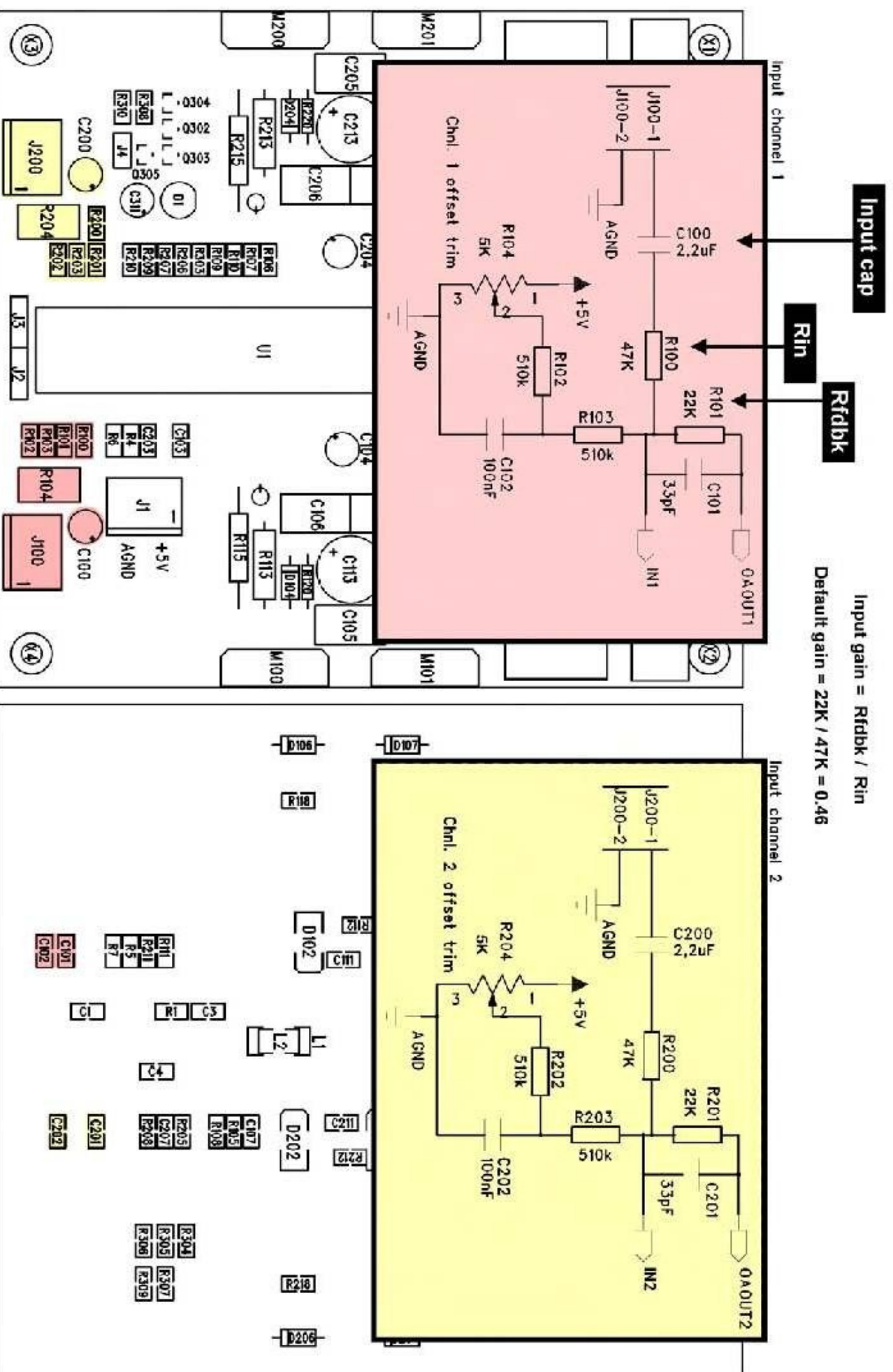
The reason for this method is that the secret for building success is to avoid mistakes placing components, and check each soldered component with continuity tests, using a simple multimeter. If you solder all smt resistors, then all smt caps, then all small IC, for sure you'll have a 1% error, even if you're an expert: it is enough to fry a chip or spend a week looking for the mistake.

Don't proceed to next step if the previous is not completed. When completed one step, check again components and check again continuity for each component.

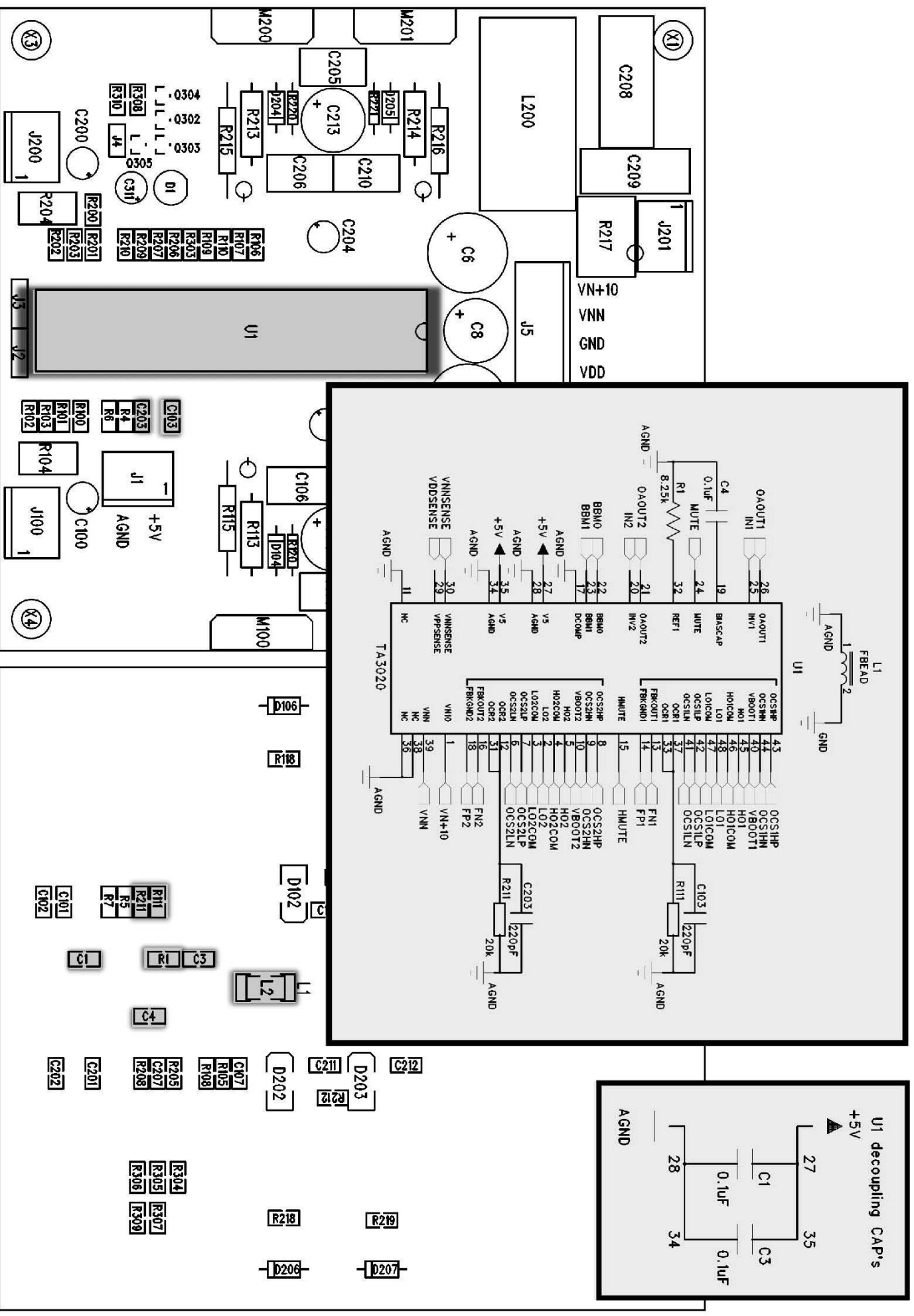
Other useful documents and information

- Truepath Schematic
- Truepath BOM
- Component placement printouts
- TA3020 datasheet
- TA3020 reference board

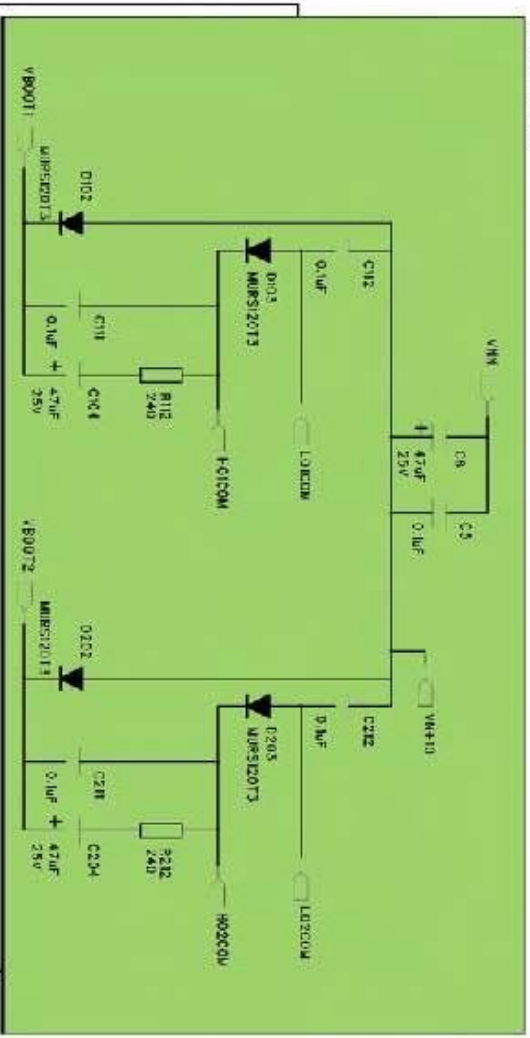
Step 1 - Input channels



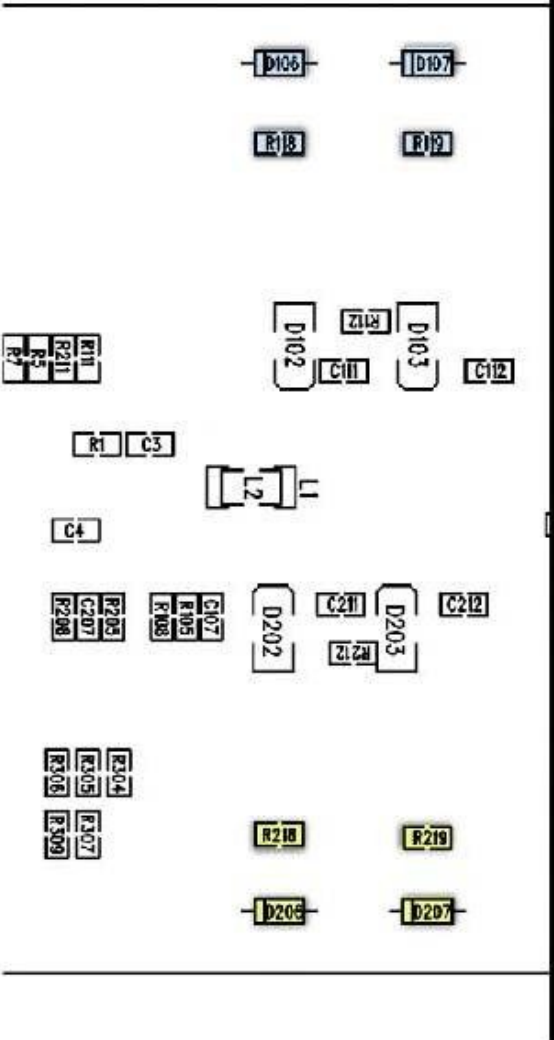
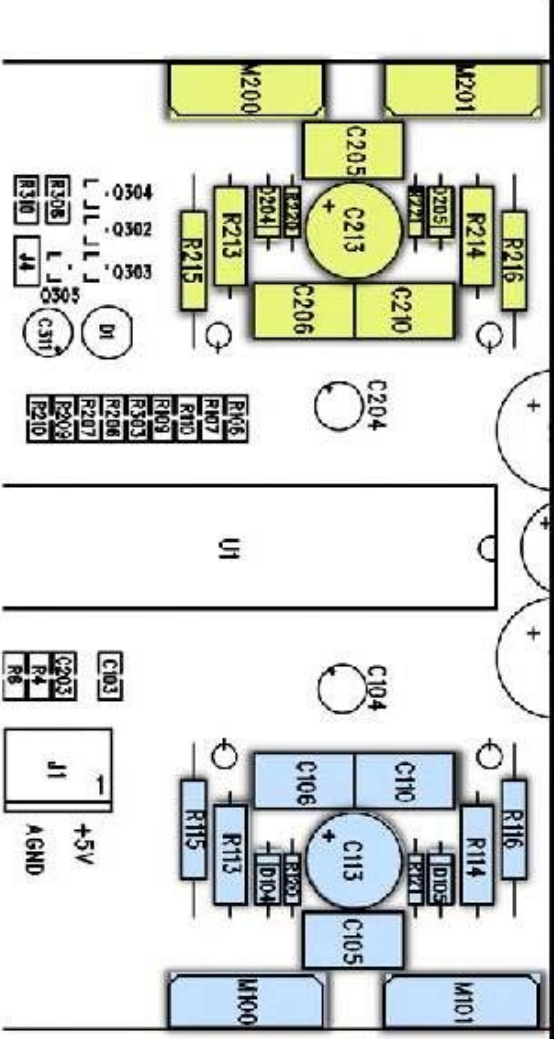
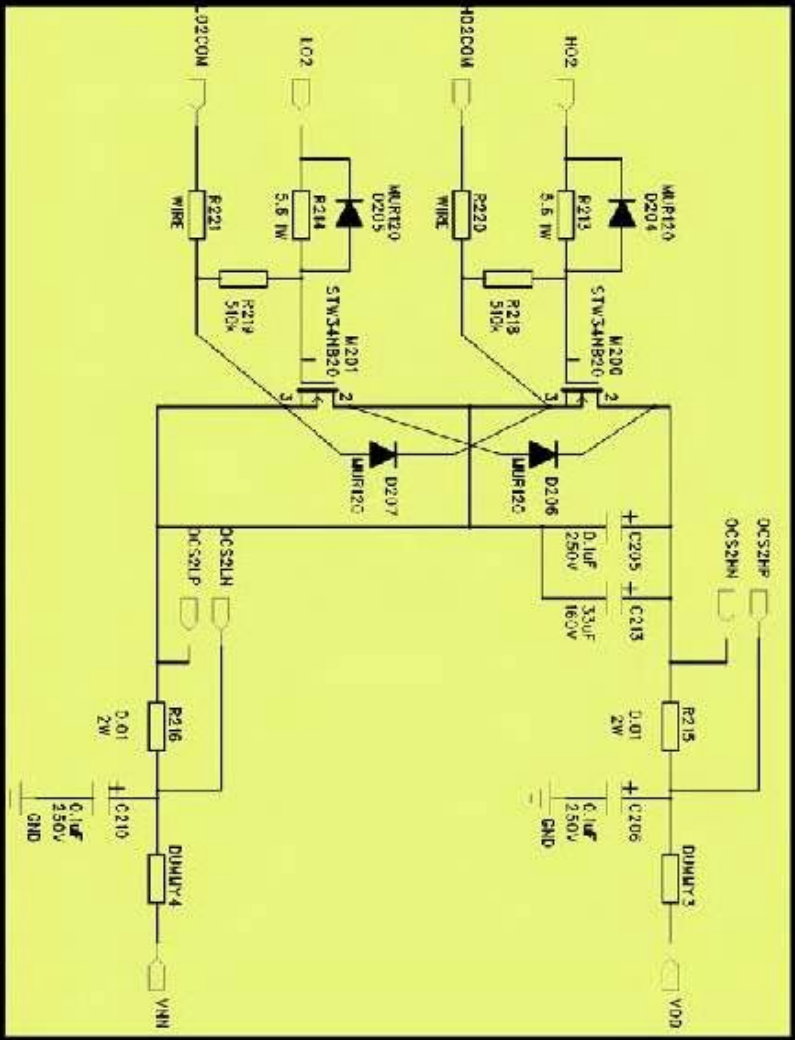
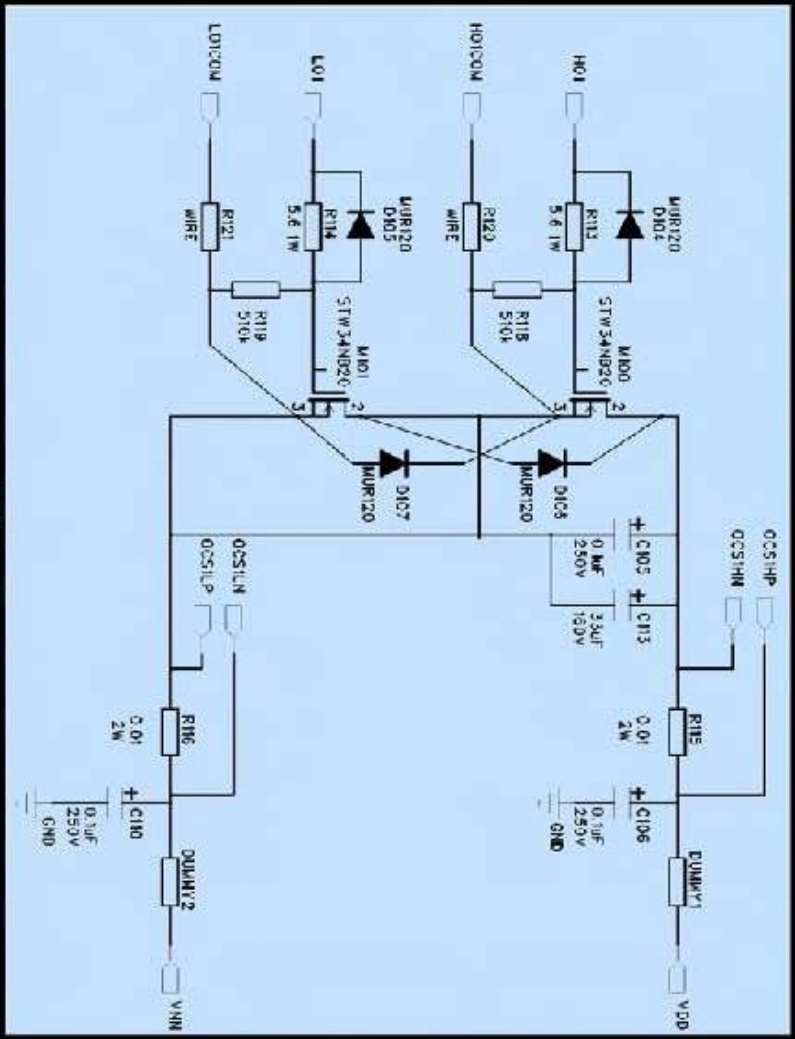
Step 3 - TA3020 Chip



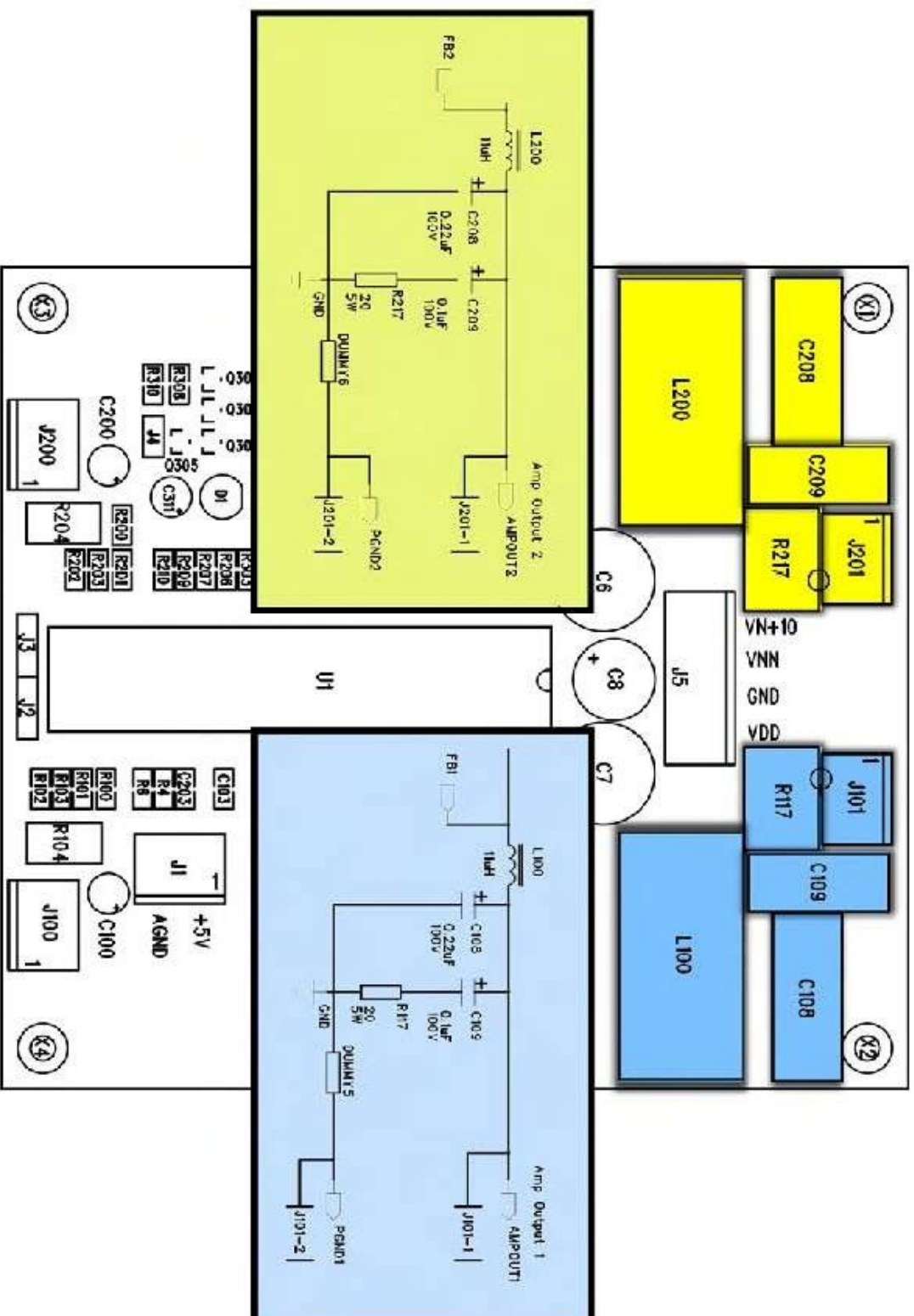
Wboul circuit



Step 6 - Power stage



Step 7 - Output Stage





Insurance against fireworks

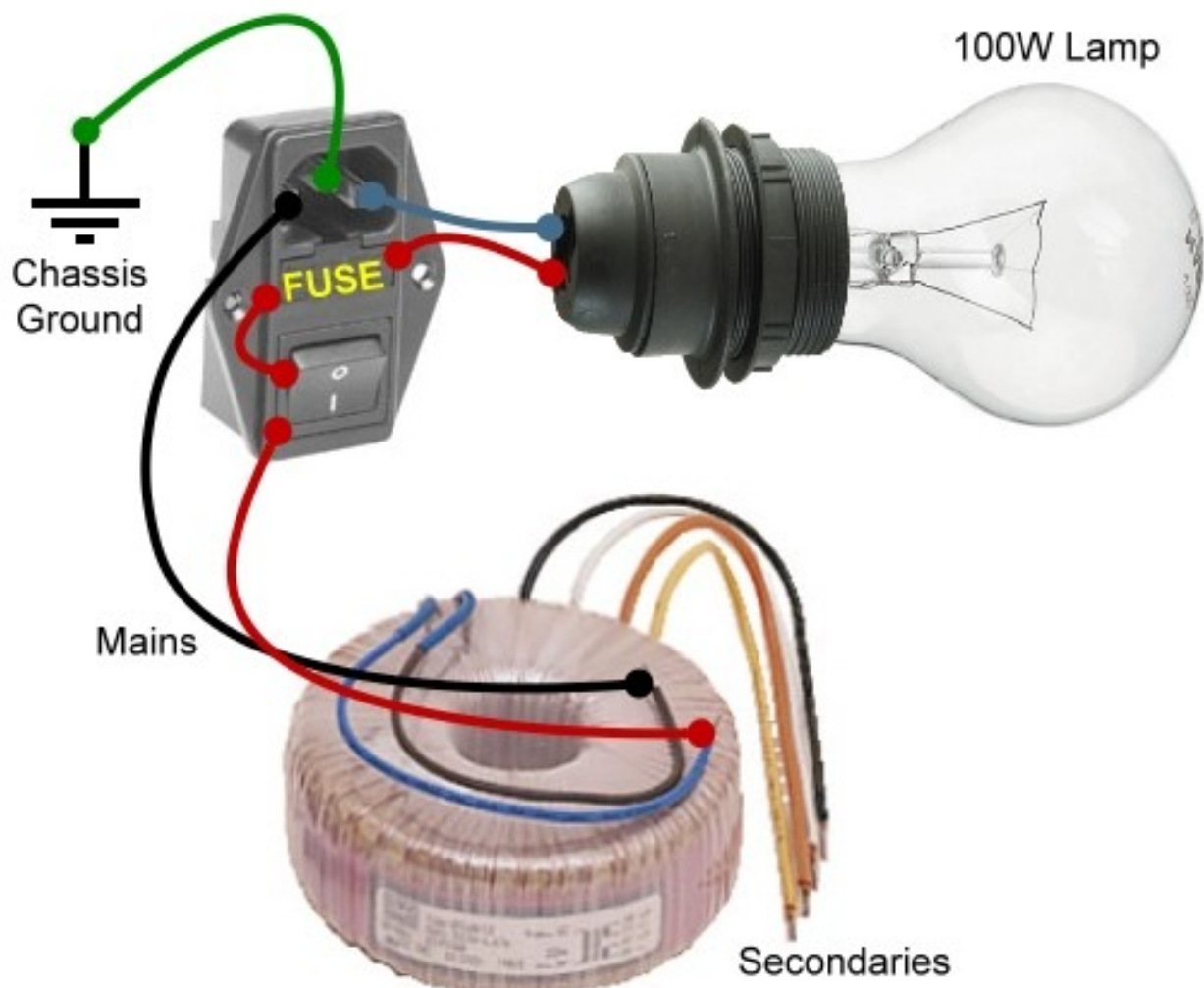
This simple circuit is recommended before you power the Truepath for the first time. The principle is simple, the bulb will draw all the current if there is a short circuit on the board.

More simply, if you use this circuit you don't get fireworks and have low probability to fry the chip or burn components. With the bulb nothing too bad can happen.

On turn on, the bulb flashes for less than one second, then go off.

IF THE BULB SHINES WITH BRITE LIGHT YOU HAVE A SHORT CIRCUIT.

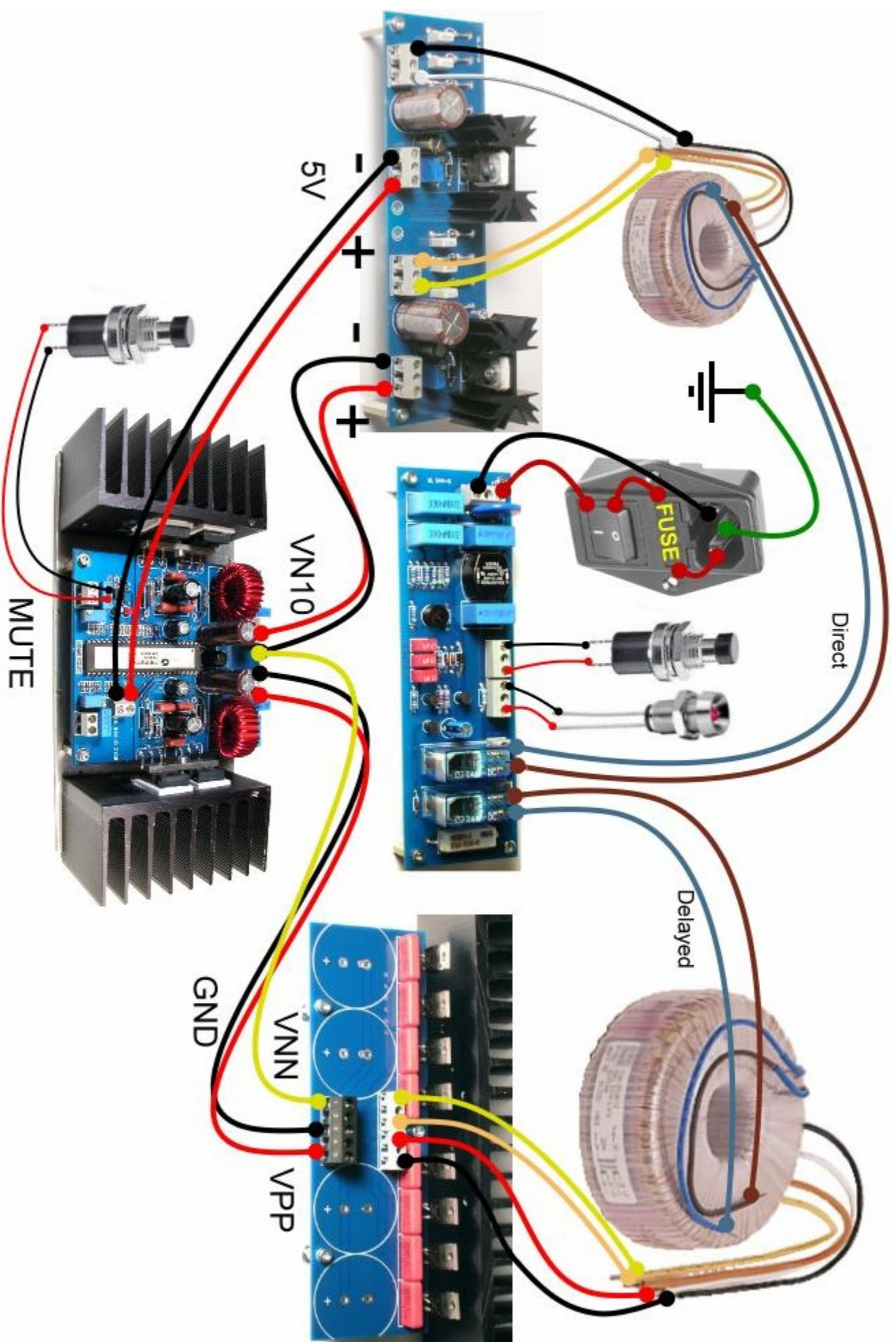
Don't worry. You have still time to make measurements on the PS or elsewhere. Just a few seconds, then turn power off and look the PCB for errors.



Power supplies test



Connecting the boards



First power up

