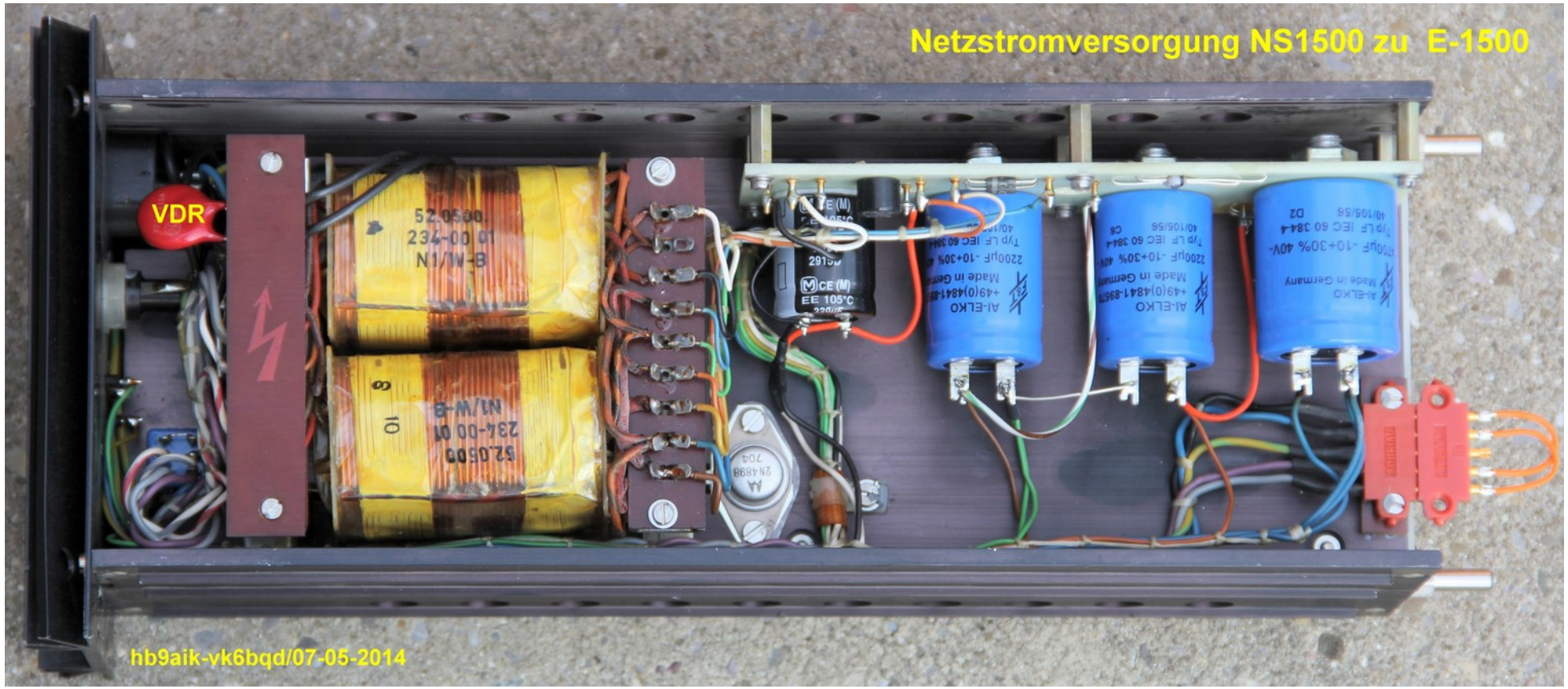
Overhaul of Power Supply:

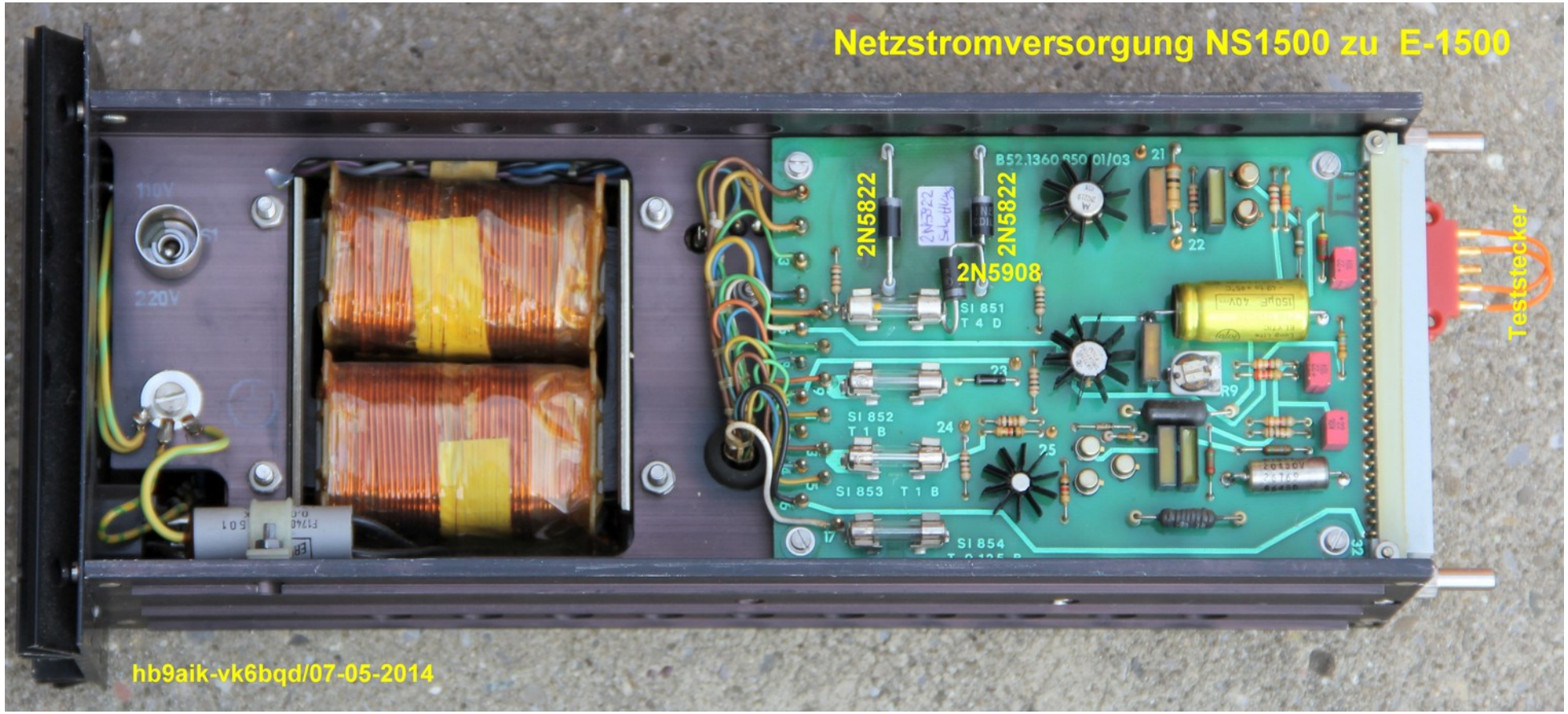
The power supply gets quite hot. New low ESR industrial grade 105° Al-electrolytics installed, VDR across the 230VAC line added.



Three new suitable capacitors with mounting studs were available, but the leftmost (for the +5V supply) had to be a snap-in version. Here glued to the support using soft doublesided heavy duty tape. Note the test connector on the right replacing the front panel power switch.

Power Supply NS1500 Telefunken E-1500/1501 Receiver

Aluminum electrolytics on the circuit board replaced. New on the +5VDC supply Schottky diodes installed to reduce heat on the board (it will now be dissipated by the transistor on the heat sink) and an overvoltage protection diode added to the +5V line.



Notes on Later Events

After several weeks of casual operation the refurbished power supply failed. The cause was determined to be the +12VDC supply 2N3055 pass transistor. As this voltage serves as reference for the +5 and -12 circuits these were shut down as well.

As mentioned at the beginning, the supply gets very hot (rear heatsink above 50°C at 25°C ambient) and the pass transistors are installed using an intermediate metal contact plate, a mica washer and no white heat sink compound. It was also found that the bolts were no longer tight, adding to an unsatisfactory heat transfer - perhaps causing the failure of the 2N3055.

It is recommended to reinstall the pass transistors using heat transfer compound and tighten the M3 bolts, perhaps adding a suitable spring washer.

Optional Changes

On another power supply additional changes were made: replacement of the +12VDC circuit by a single LM7812K (complete with 1N4002 reverse protection diode and two 6.8uF/35V metal tantalum capacitors on input and output directly on the heatsink) as well as replacement of the +5VDC circuit by a single LM350K (same diode and caps as above) installing the adjustment resistors 150 ohms and 500 ohm ten-turn trimmer on the pc board starting from the pins on the connector. Installing a small fan on top of the LM350K the heatsink temperature could be lowered to about 42°C with 25°C ambient. Unused components were, with the exception of the 723 IC and the trimmer, removed.