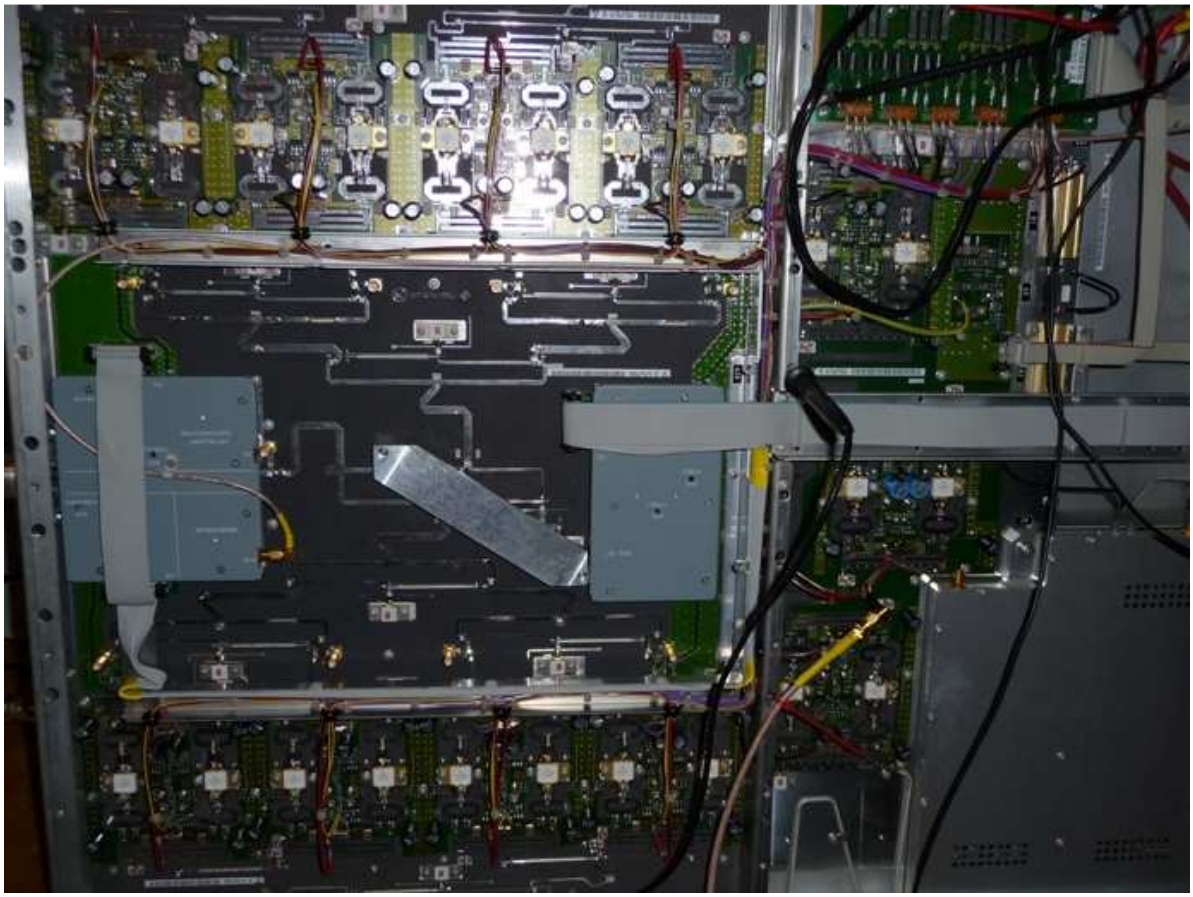
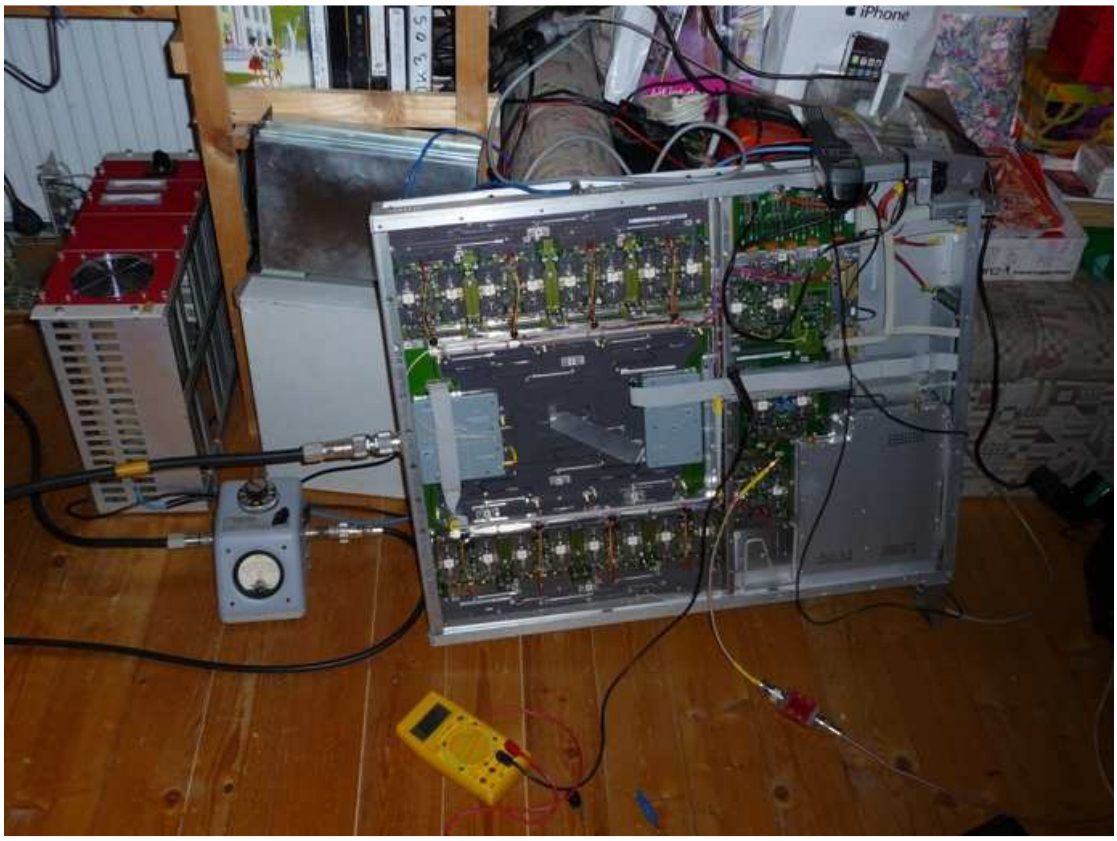
Experiments with a TV- amplifier on 432 MHz

Accidental I got some power amplifiers from R + S which were determined for a Band IV- Television transmitter.

This afternoon I fetched one out of my garage and tried to see how they perform at the 432MHz- amateur-band. Some weeks ago I got from Karl, DF3RU a description how to tune it at the right frequency. It is very simple, only few capacitors are necessary. Opposite to the description I got further improvement (better gain) when I made also some modifications at the input network. As I am not owner of a network-analyzer, I will not give a cookery- book which modifications will deliver the best results. I played the whole afternoon, now I will report about the results, because I am sure some similar amplifiers will come to the surplus- marked next time.

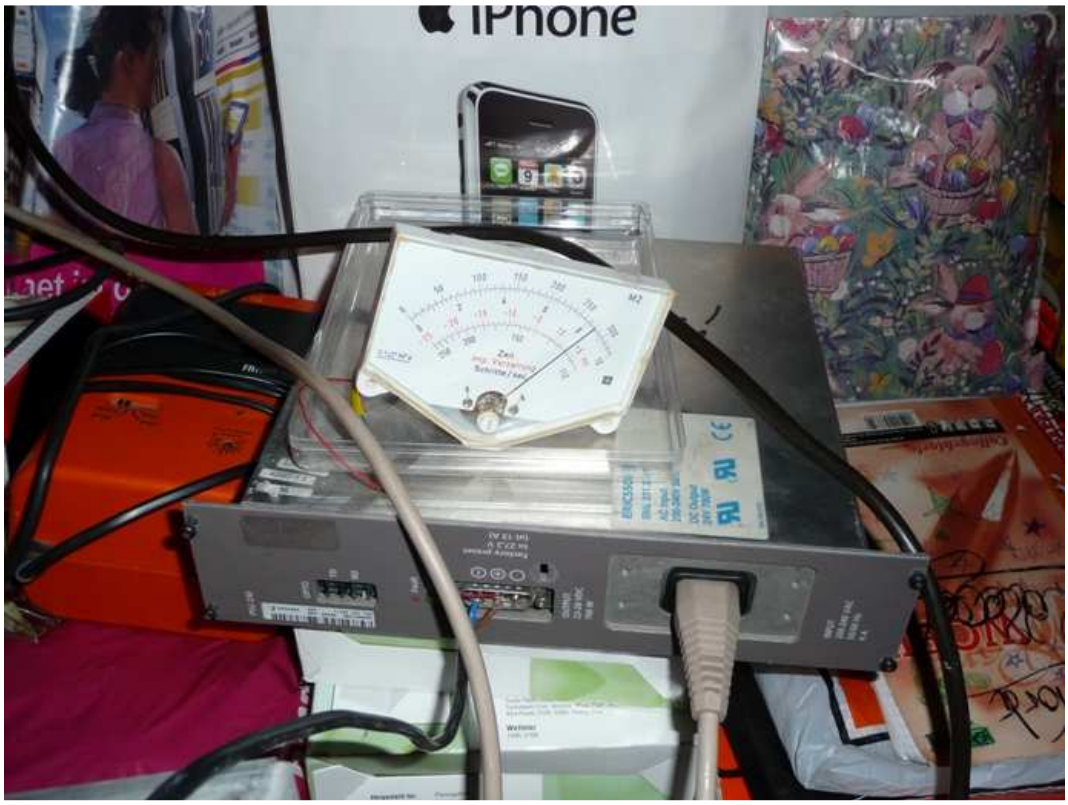


The amplifier consists of a pre- pre driver (the box at the right end of the picture), a pre- driver, a driver, the amplifier, power splitters and combiners and some directional- couplers for controlling power- output and SWR.



This picture shows the amplifier and my power meter during my tests.

The red coloured box at the left side is a 28V power supply which should deliver about 100 amperes, unfortunately the over current protection switches off by 80 amperes, so I could not check the full output.



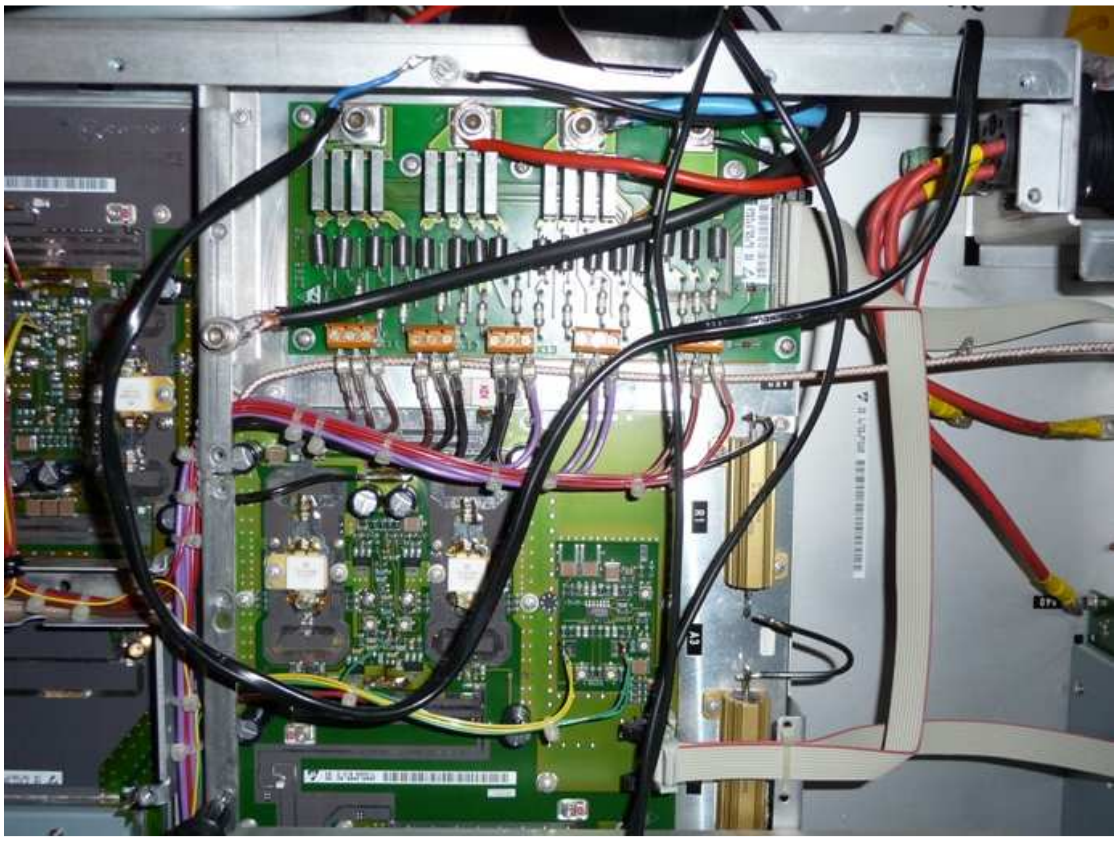
A second power supply from Ericsson was responsible for the pre- driver and the driver. It is necessary that this PS can deliver about 25 amperes running full driving power.

In my test- configuration I had an IC402 as a driving Transceiver. I did not use the pre- pre- driver. The IC 402 delivers an output from 3Watts by using 13,5Volt.

The current for 8 of the 16 transistors from the final- amplifier (each half part of the final stage has a separate power connection).

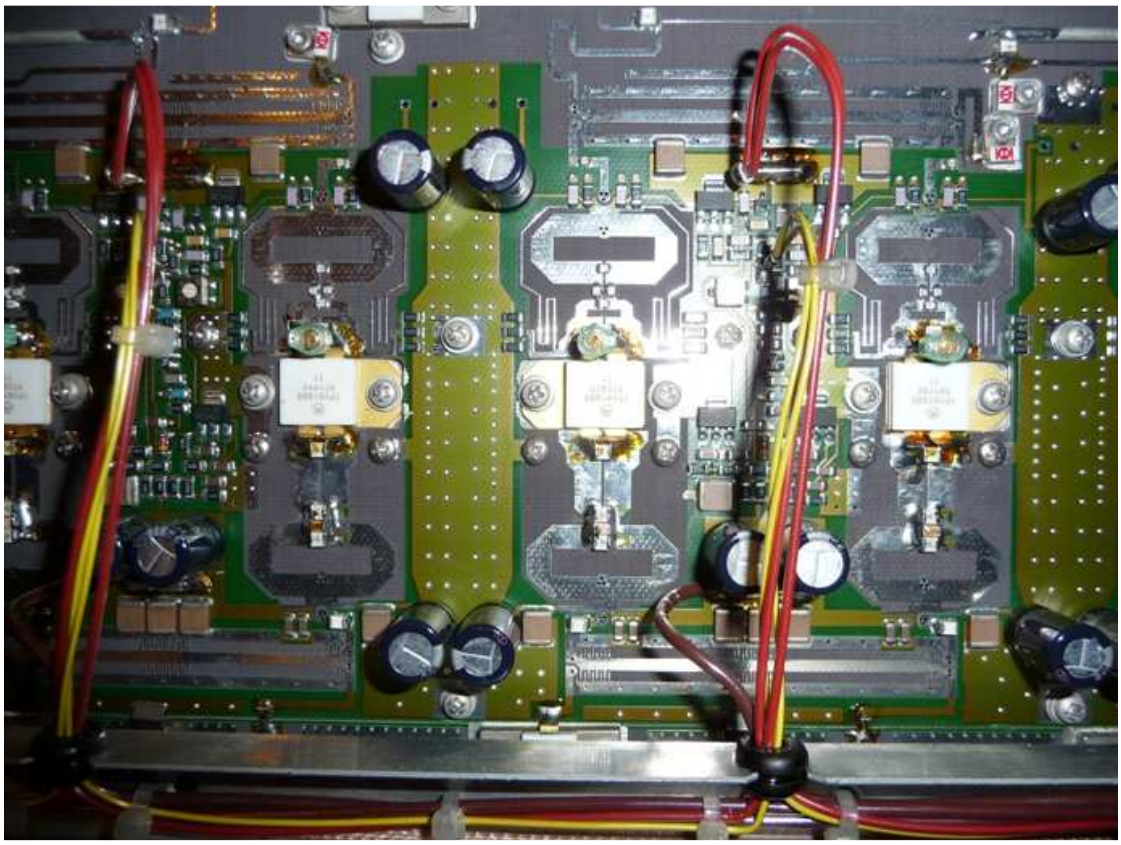
This picture shows the current for the pre- and driver with driving power from about 3Watts.

End of scale of the power- meter. 1KW power output can be very easy reached with 3W driving power!



The temporary connection of the power- supplies to the amplifier.

This picture shows the half part of the final amplifier after doing some modifications.



Detail of the amplifier

I am still looking for a power- supply which is able to deliver 50 amperes by 28Volts. If some one has an idea where I can get one for a good price please let me know it!

I think if the pre- pre driver is also in use there is only 1 Transistor behind a mixer necessary to get the maximum legal power from 750W, because this box includes 4 stages running class A. With 1mW input in got 30 Watts output, but on this low-power stages much more modifications are necessary.

Greetings
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