

Picture 2: T1 and T2 – modified

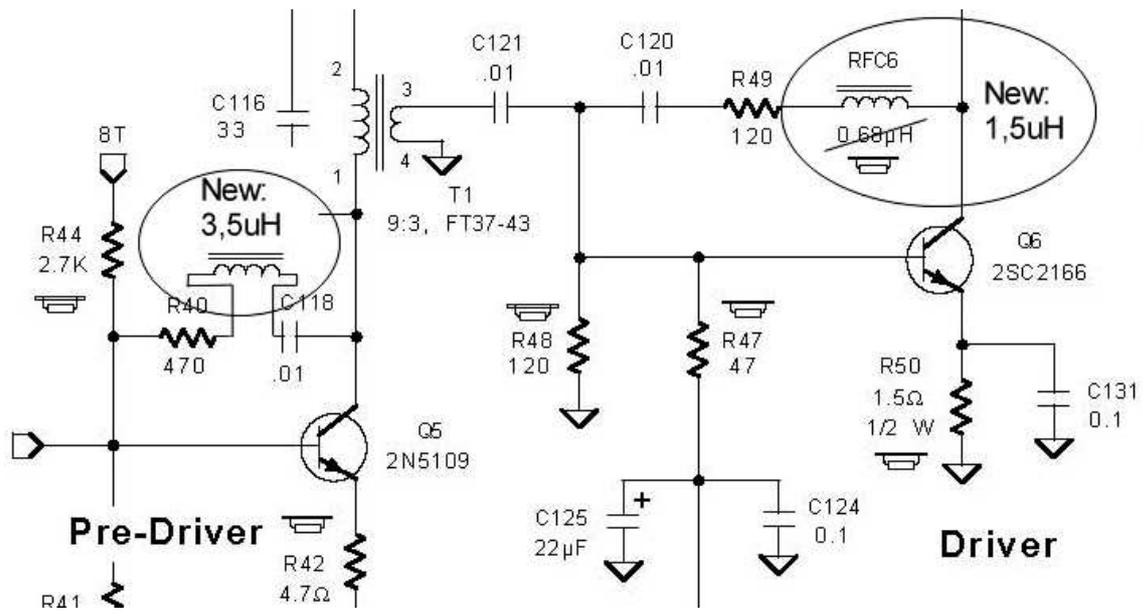
2. Driver & Predriver

With my Scope I measured the HF-voltage at the Collector of Q6 and found, that this driver was not sufficiently driven by the predriver Q5. Therefore the PA is also not sufficiently driven. (The voltage-swing at the collector of Q5 should be 24V peak-peak).

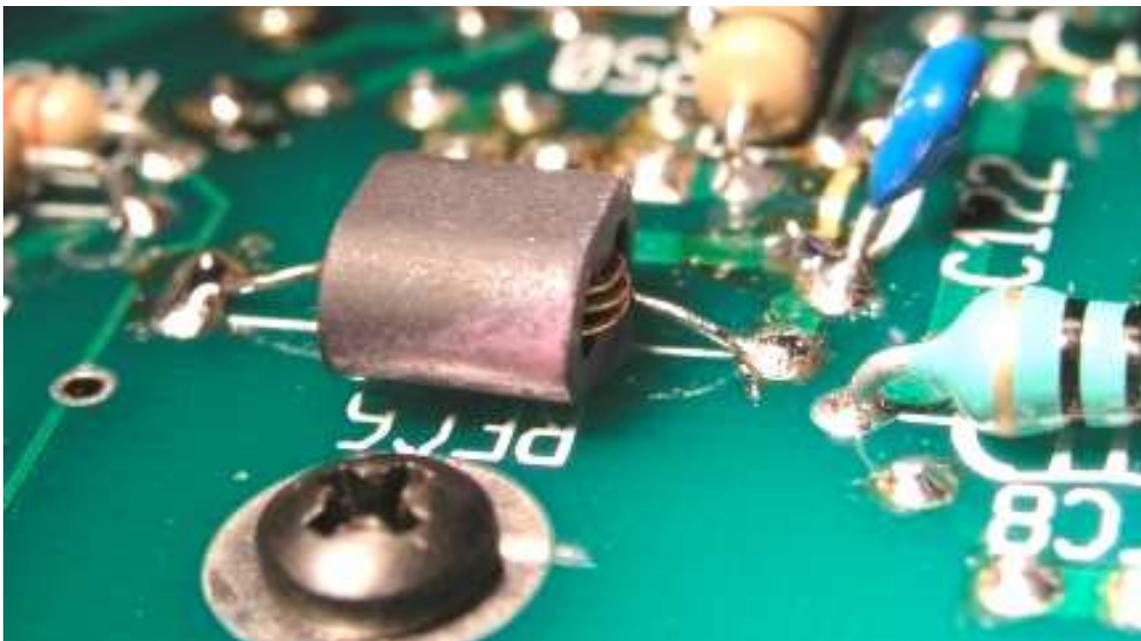
The solution was to increase the gain of Q5 and Q6 a little bit. (The way from 8W to 10W is only 1,25 in power or 1.12 in voltage - so I needed 12% more gain). This can easily be achieved by increasing the value of RFC6 from 0,68uH to app. 1.5uH and adding a new choke of app. 3.5uH in the feedback-path of Q5 (see pict.3). RFC6 can easily be replaced by a new choke (pict. 4). The additional choke at Q5 should be placed on the top of the pcb by lifting up R40 at one end and adding the new choke (pict. 5).

Note:

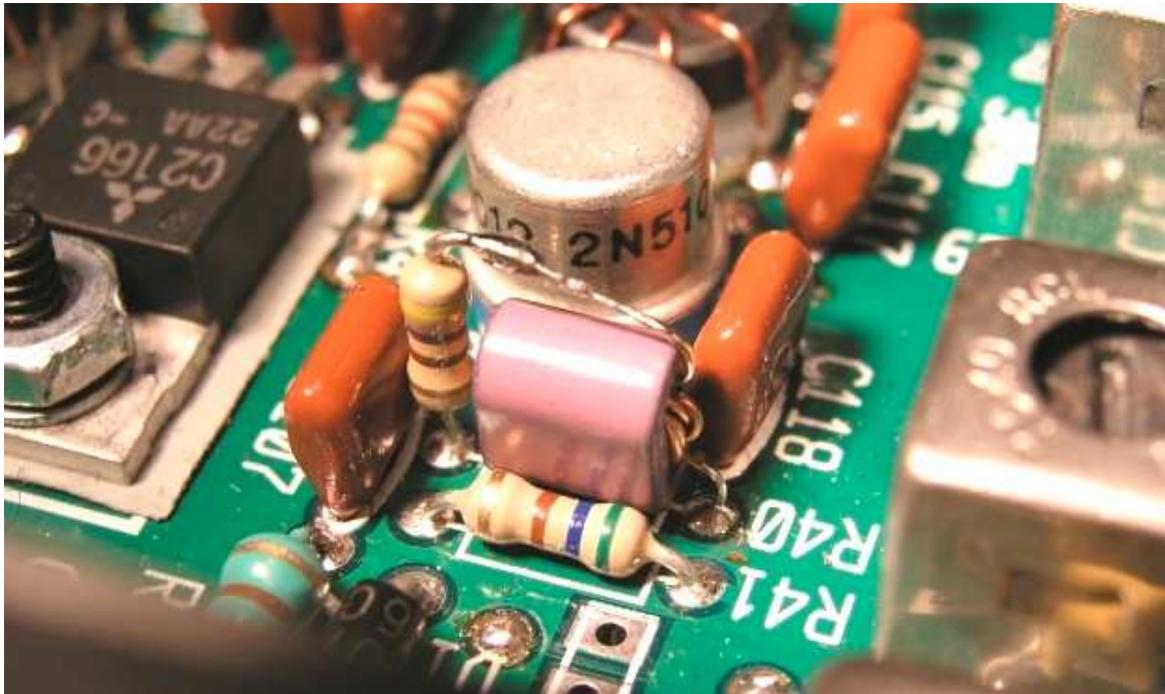
New choke RFC6 with 1.5uH was made with a binocular core with $AL=0,14\mu\text{H}$ and 3.5 turns.
 New choke with 3.5uH was made with a binocular core with $AL=0,14\mu\text{H}$ and 5 turns.
 I used an EPCOS-core type A7-X1, which can be used up to 250MHz.
 But of course you can use readily wound chokes, which can be purchased.



Picture 3: Increased gain of Q5 and Q6



Picture 4: New RFC6



Picture 5: Additional choke at R40

Result:

The output of my K2 on all bands including 10m is more than 10W on CW and SSB peak, when fed by the internal battery.

With an external supply, the output may further rise but take care for the final transistors!

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