Internal Bluetooth interface for miniVNA version 2.0

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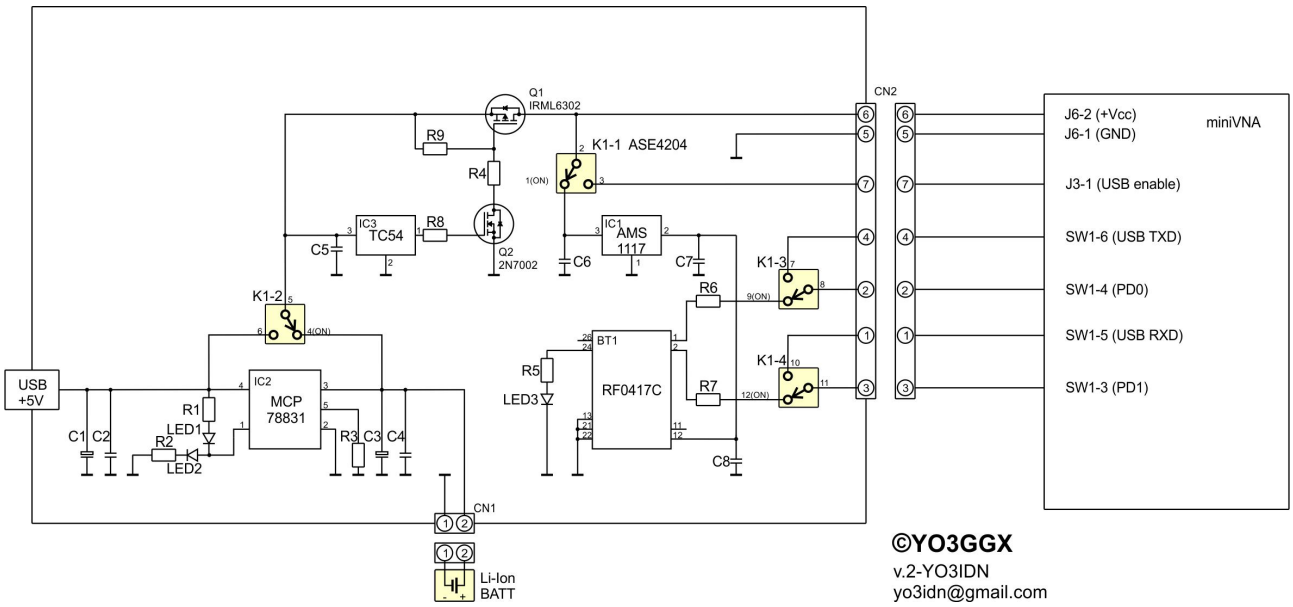
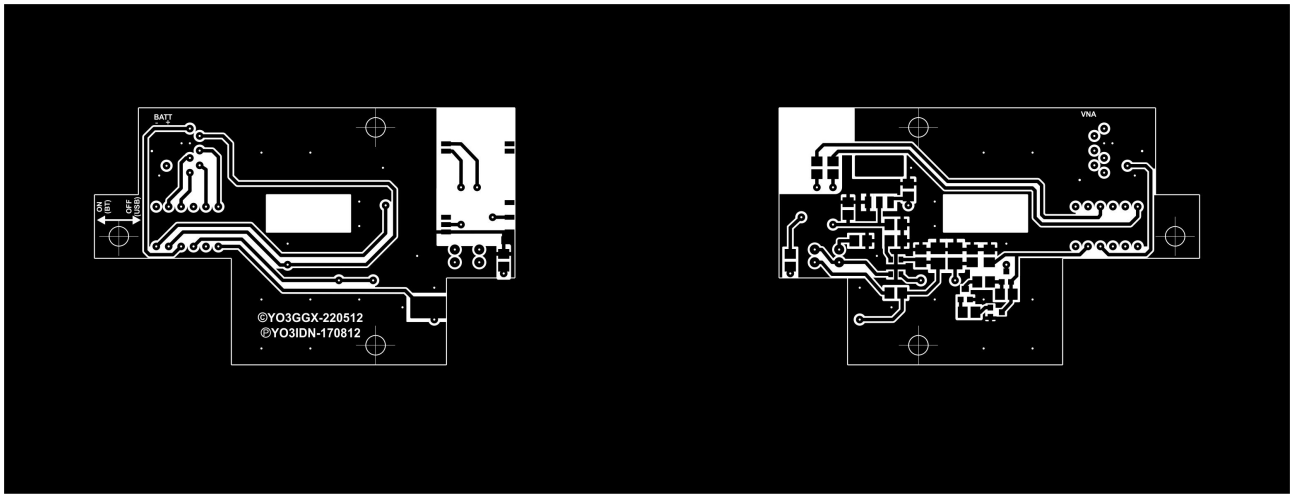
Following the document Dan Toma – YO3GGX published on his site (http://www.yo3ggx.ro/minivna/miniVNA_BT_akk_v1.0.pdf) as well as on yahoo.groups (http://groups.yahoo.com/group/analyzer_iw3hev/message/6183) (you'll need to read that one first), I came up with slightly different approach: I wanted to keep the original ability to connect the miniVNA via USB cable just in case, so I had to make some minor modifications to Dan's schematic, adding a 4 sections/2 pos. slide switch (http://elcodis.com/parts/1816975/ASE4204_p6.html#datasheet) in order to manage power supply, enable/disable the on-board USB/serial converter and switch the RX/TX signals. I also aimed for a neat appearance so I ran all connections between mini-VNA and the BT module thru a 7-pin connector and a 2-pin connector for the battery, both harvested from a dead Canon printer.

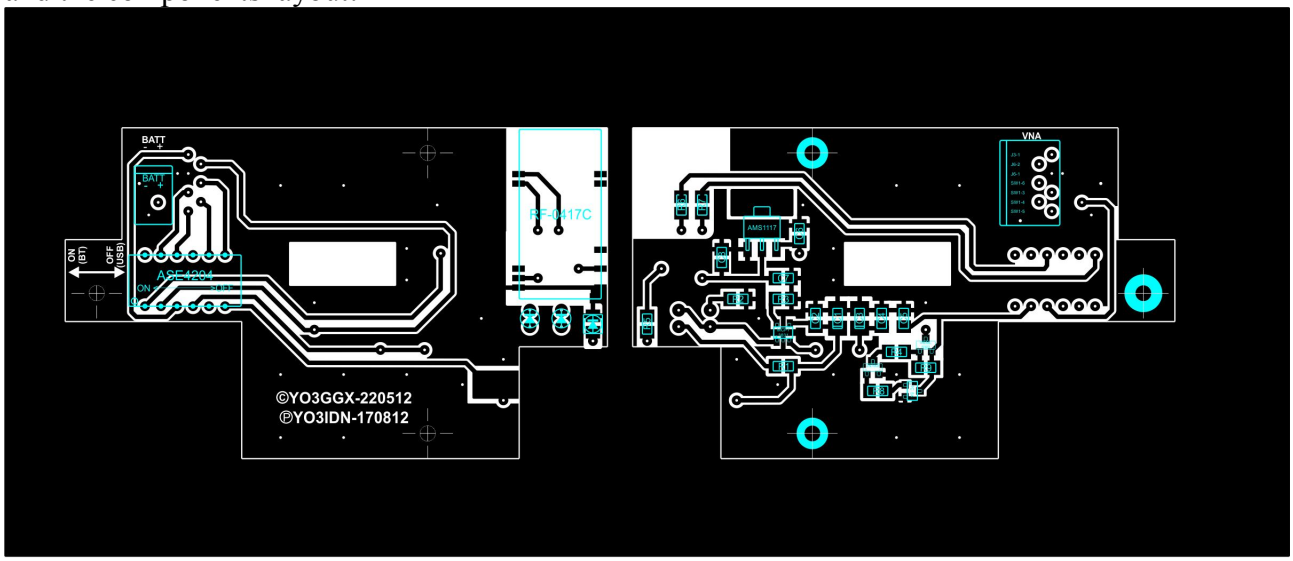
The modified schematic is shown here:



I made modifications to the PCB as well in order to make room for the connectors and the slightly larger battery I'm intending to use - 1500 mAh (http://www.dealextreme.com/p/replacement-3-7v-1500mah-rechargeable-lithium-battery-for-samsung-galaxy-s-mini-5570-5750-57908) and came up with the layout shown below:



and the components layout:



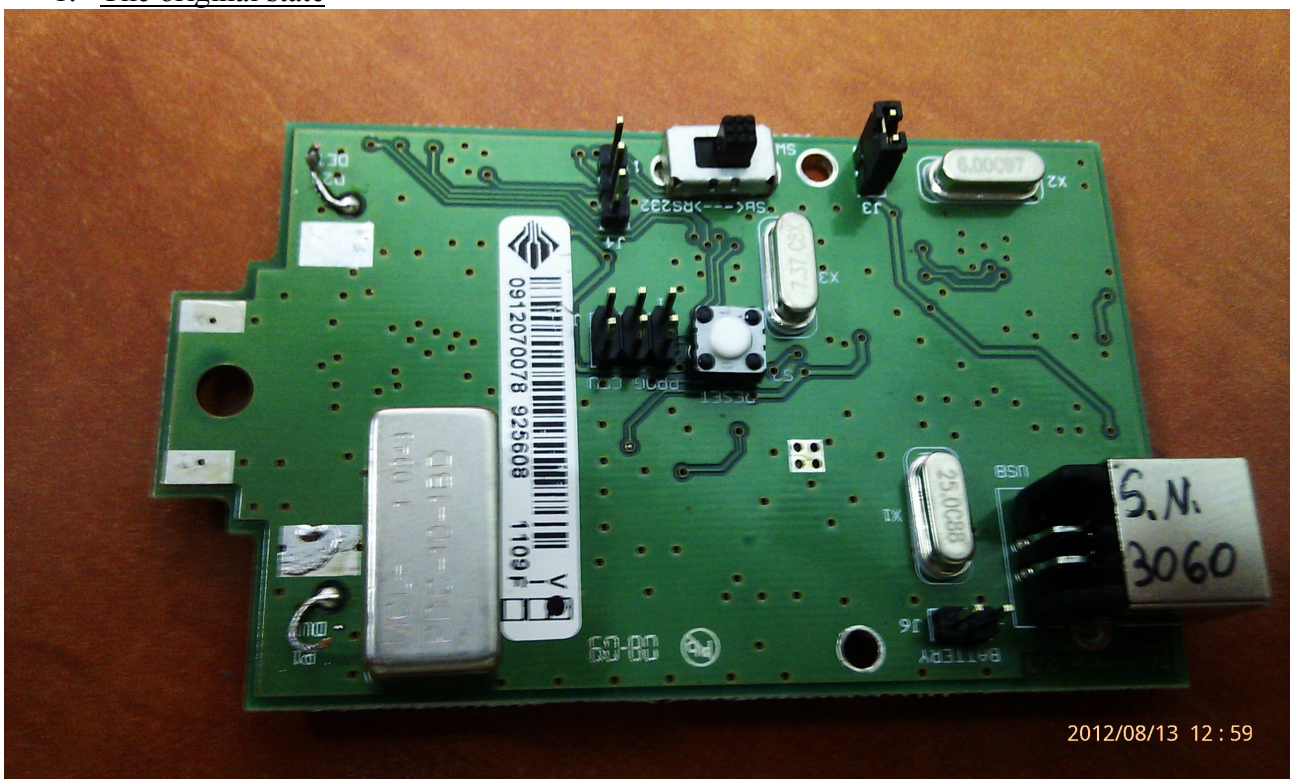
Components layout - Side A

Components layout - Side B

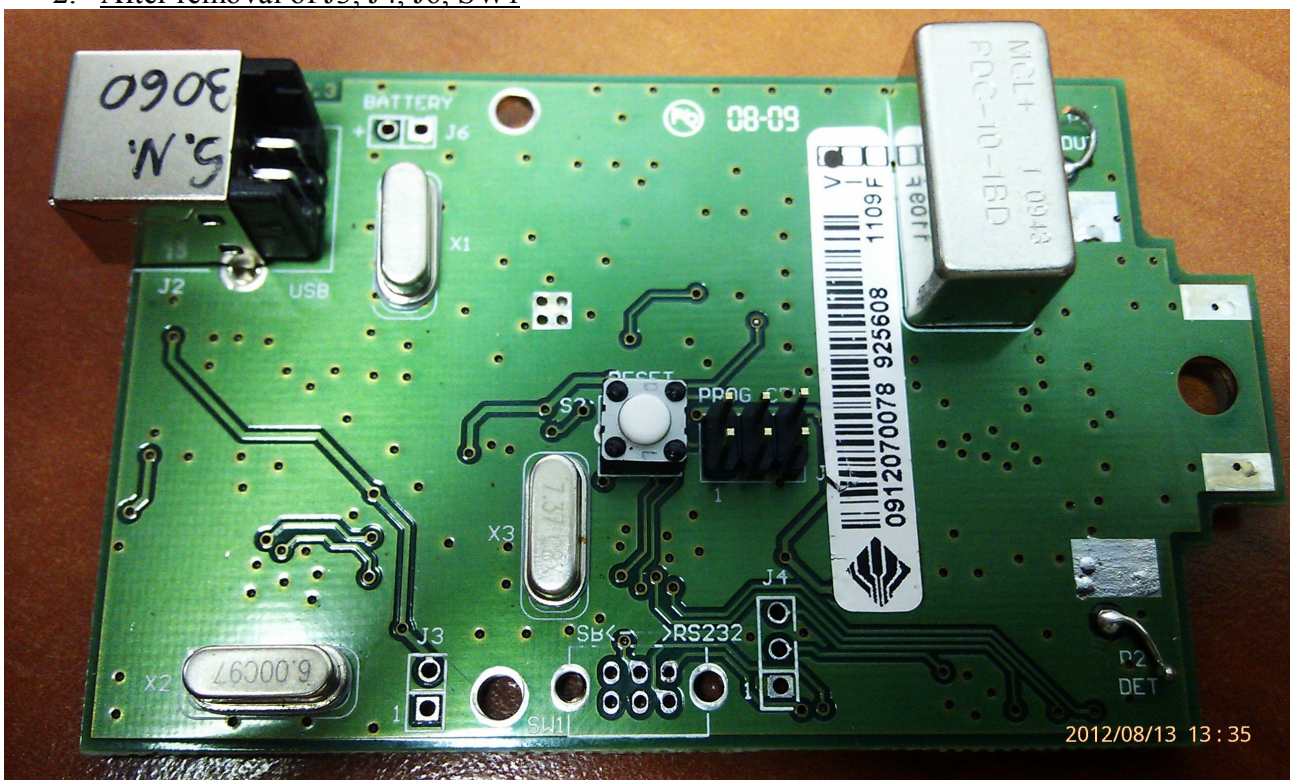
I used the double-sided PCB board 1,5 mm thick with factory-applied fotoresist and film printed image of the layout.

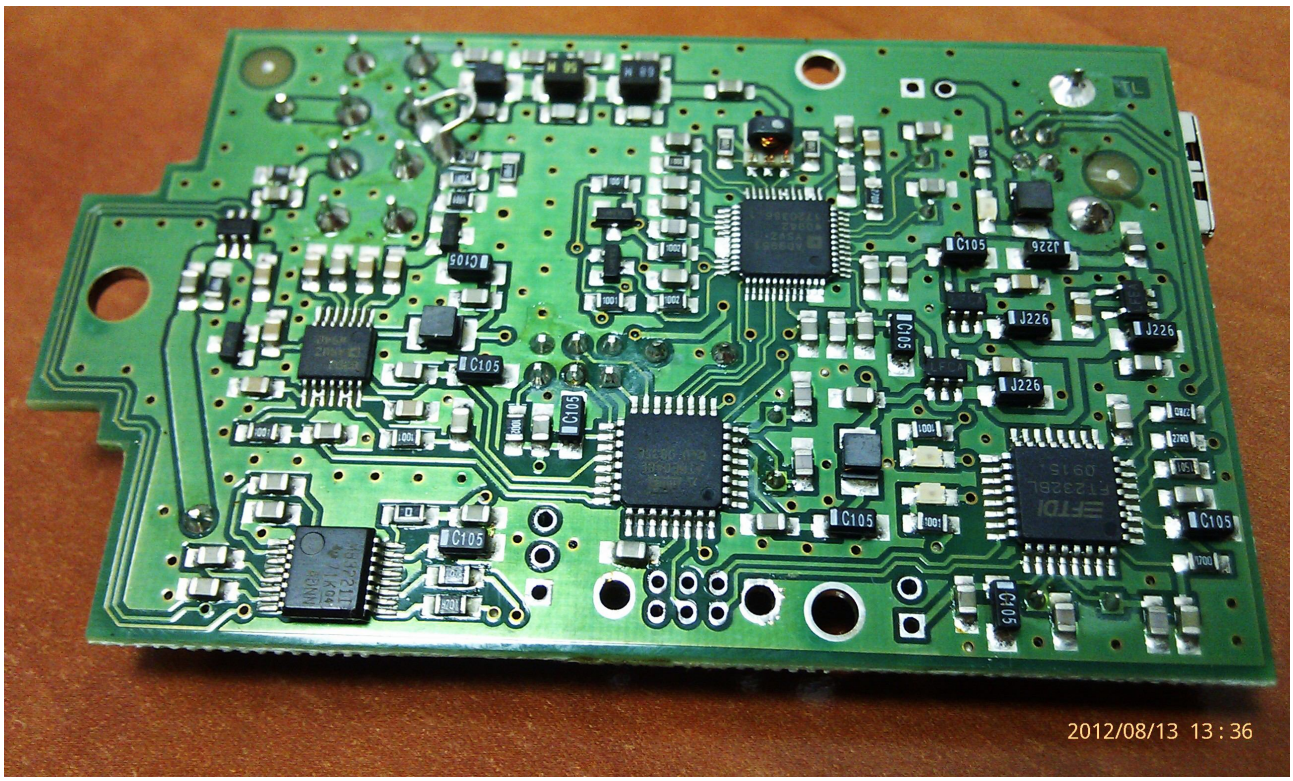
Below you can see photos taken during the assembly:

1. The original state

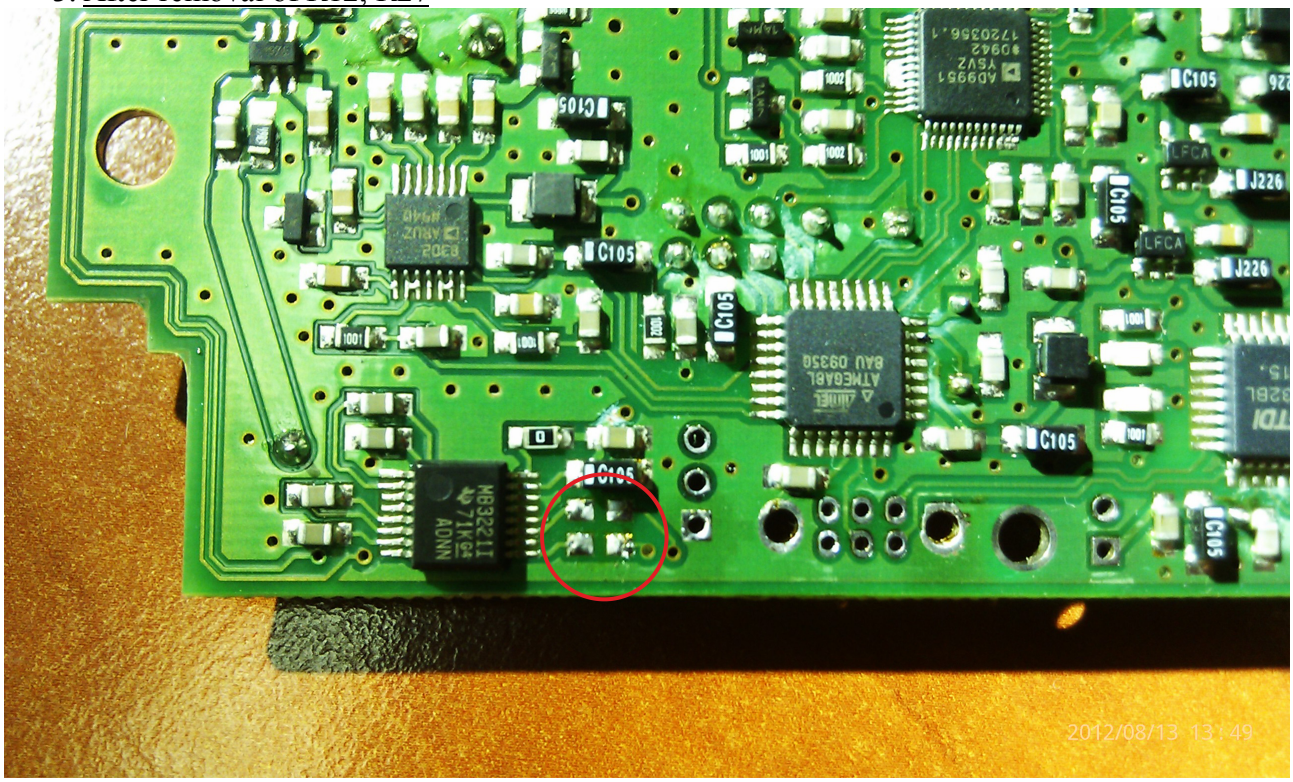


2. After removal of J3, J4, J6, SW1

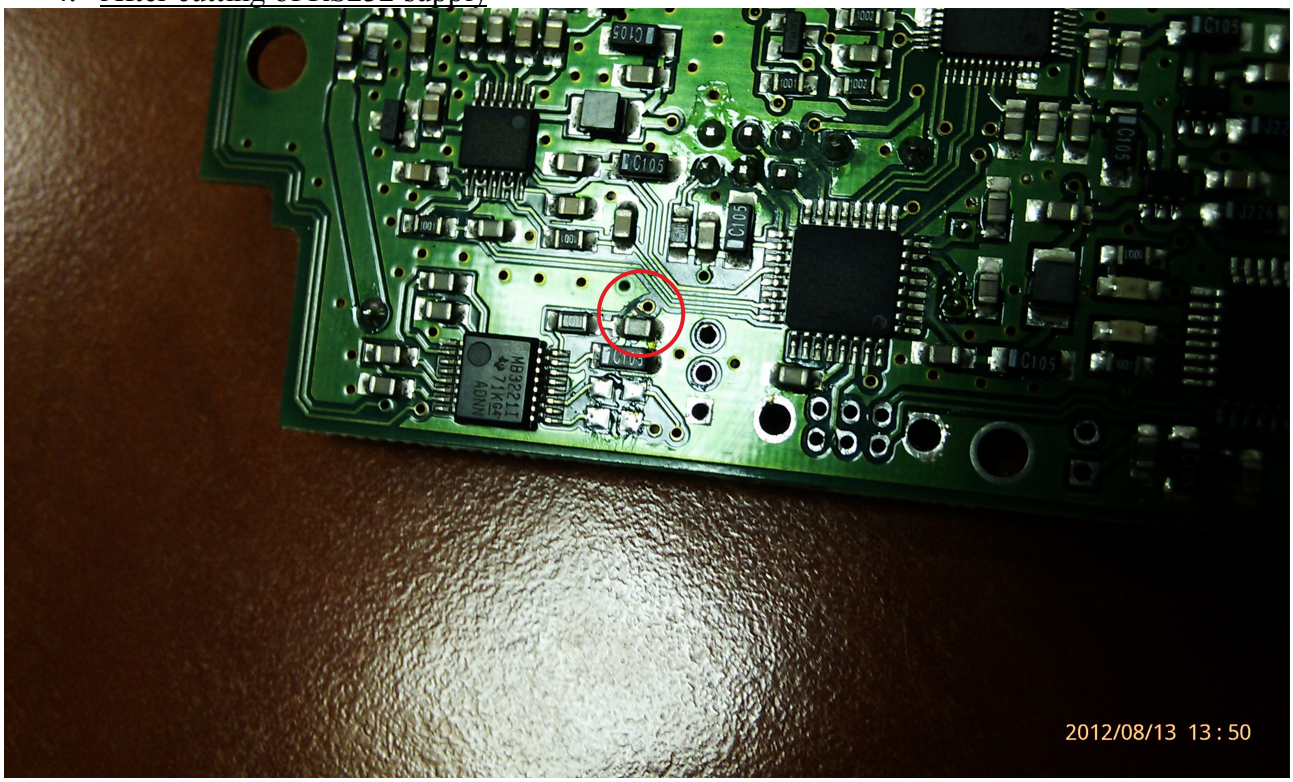




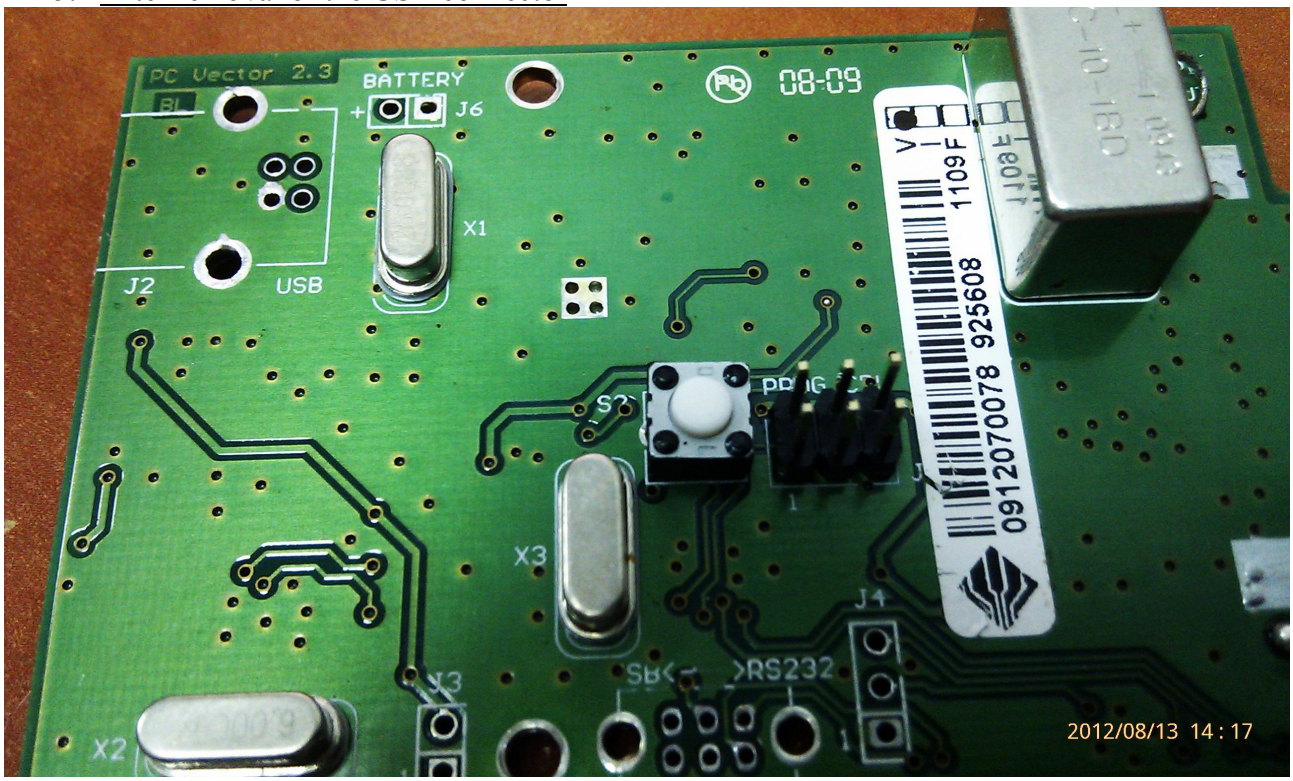
3. After removal of R12, R27

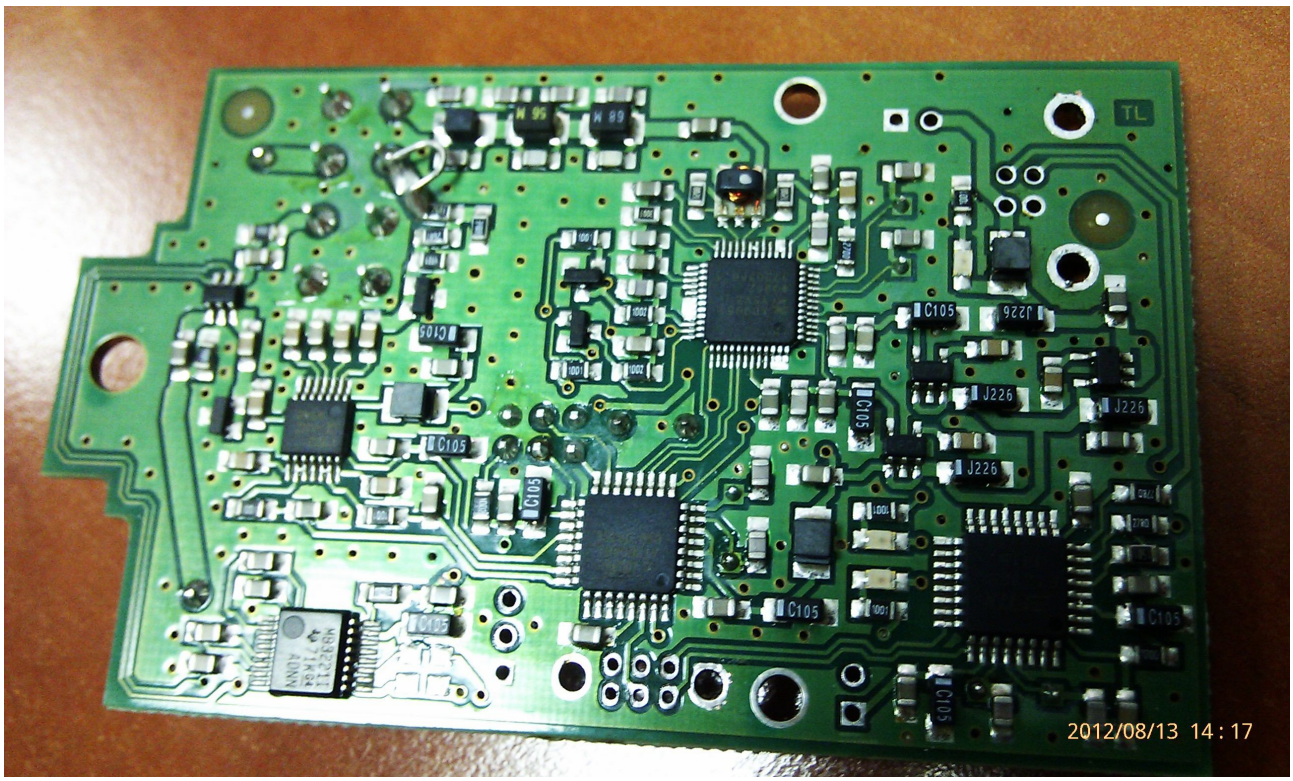


4. After cutting of RS232 supply

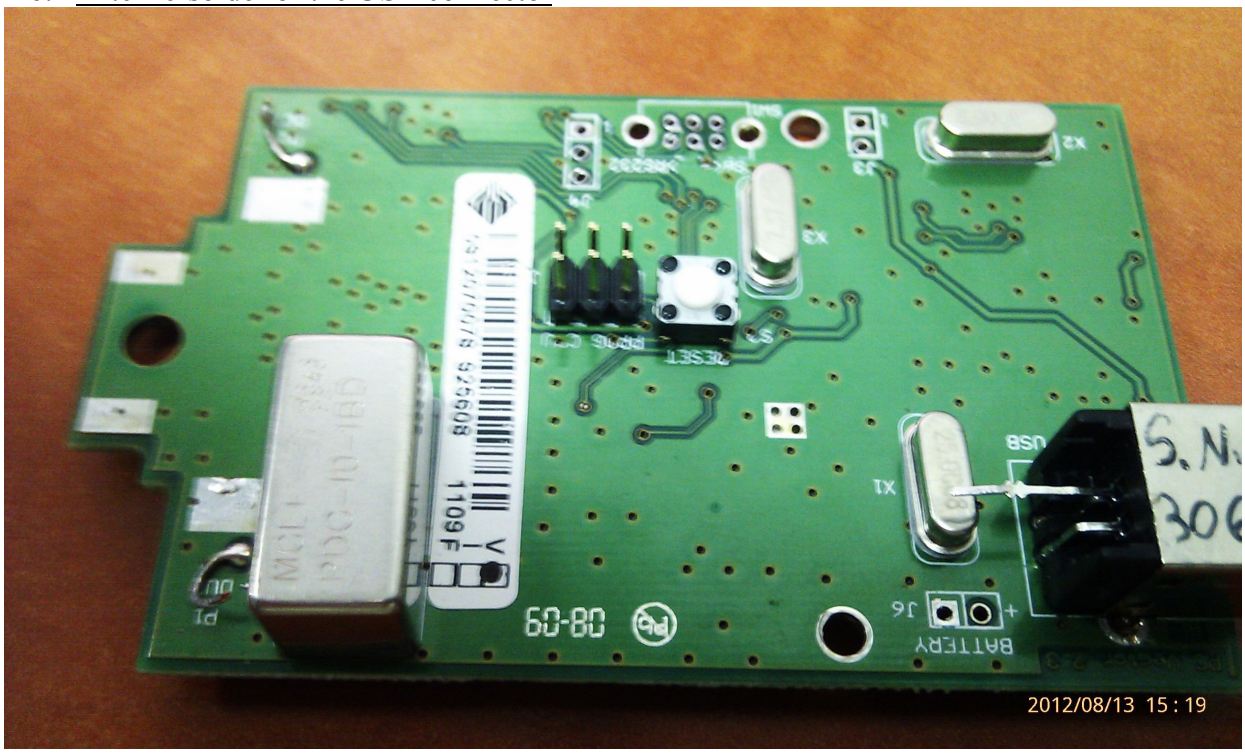


5. After removal of the USB connector

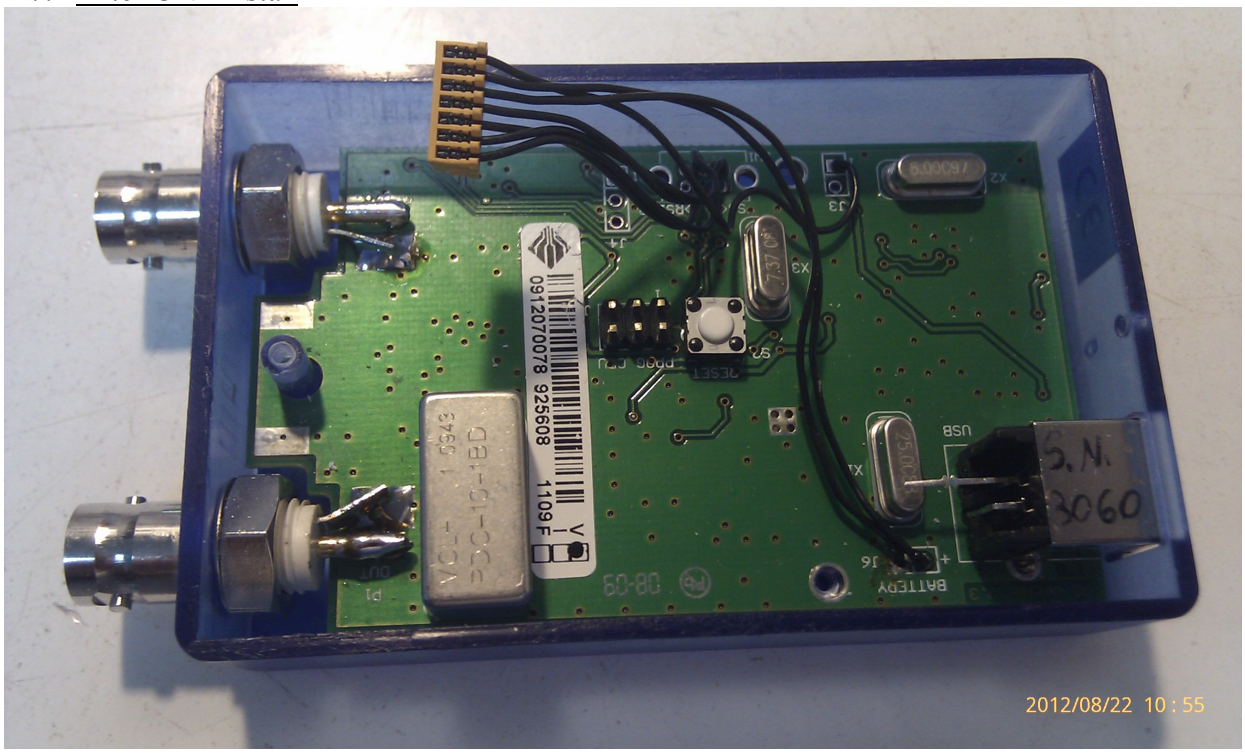




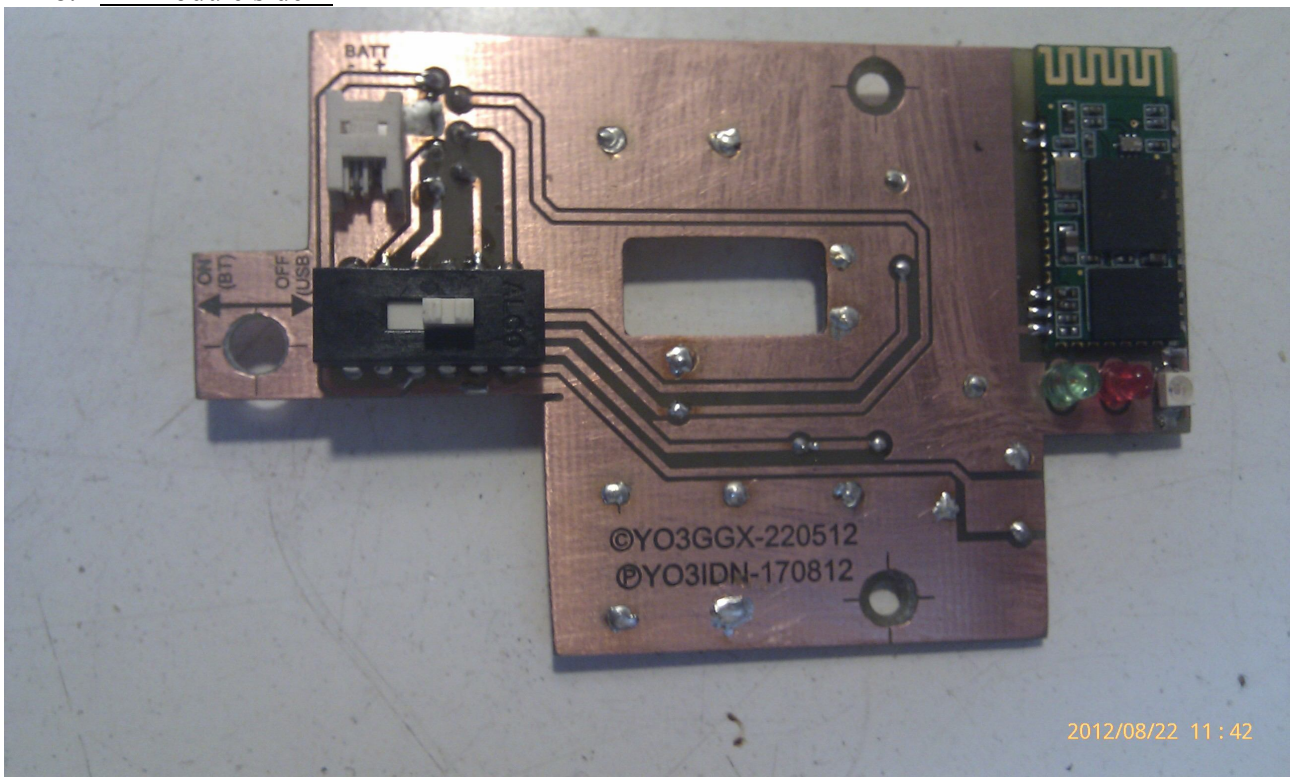
6. After re-solder of the USB connector



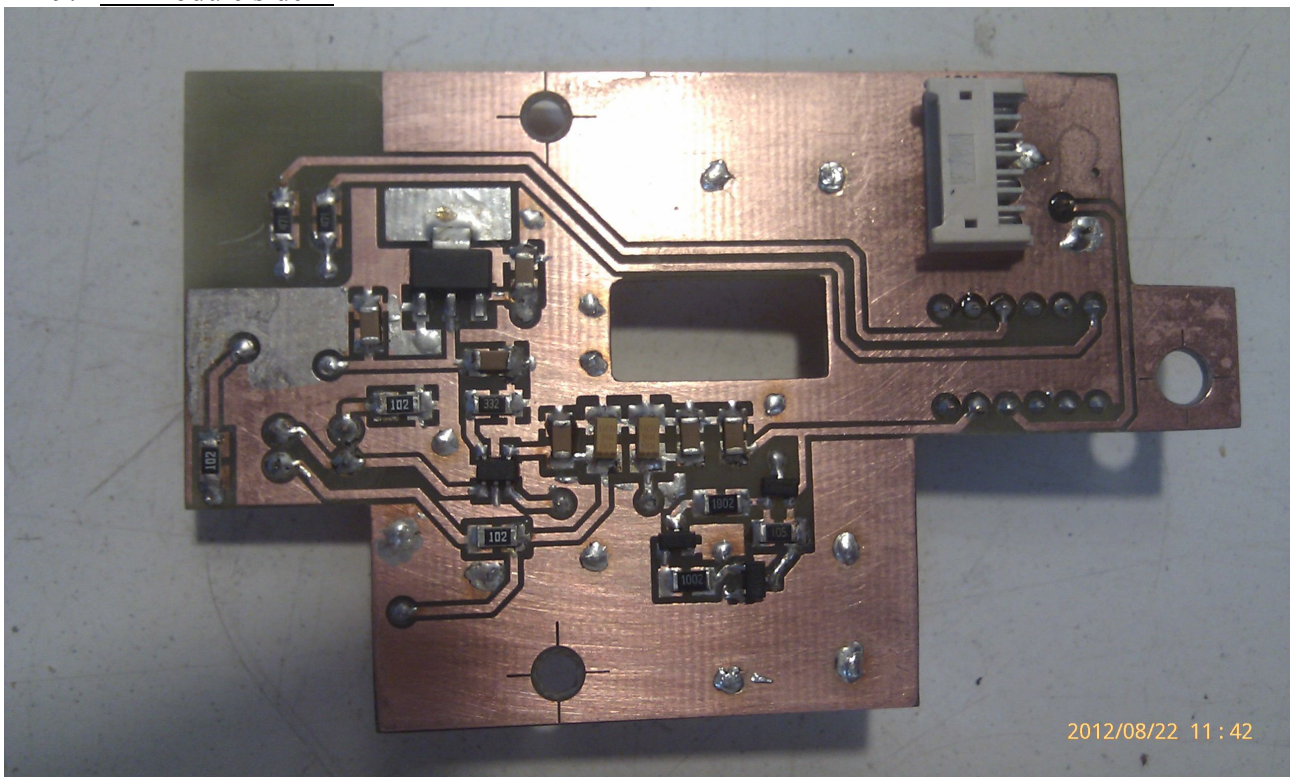
7. After CN2 install



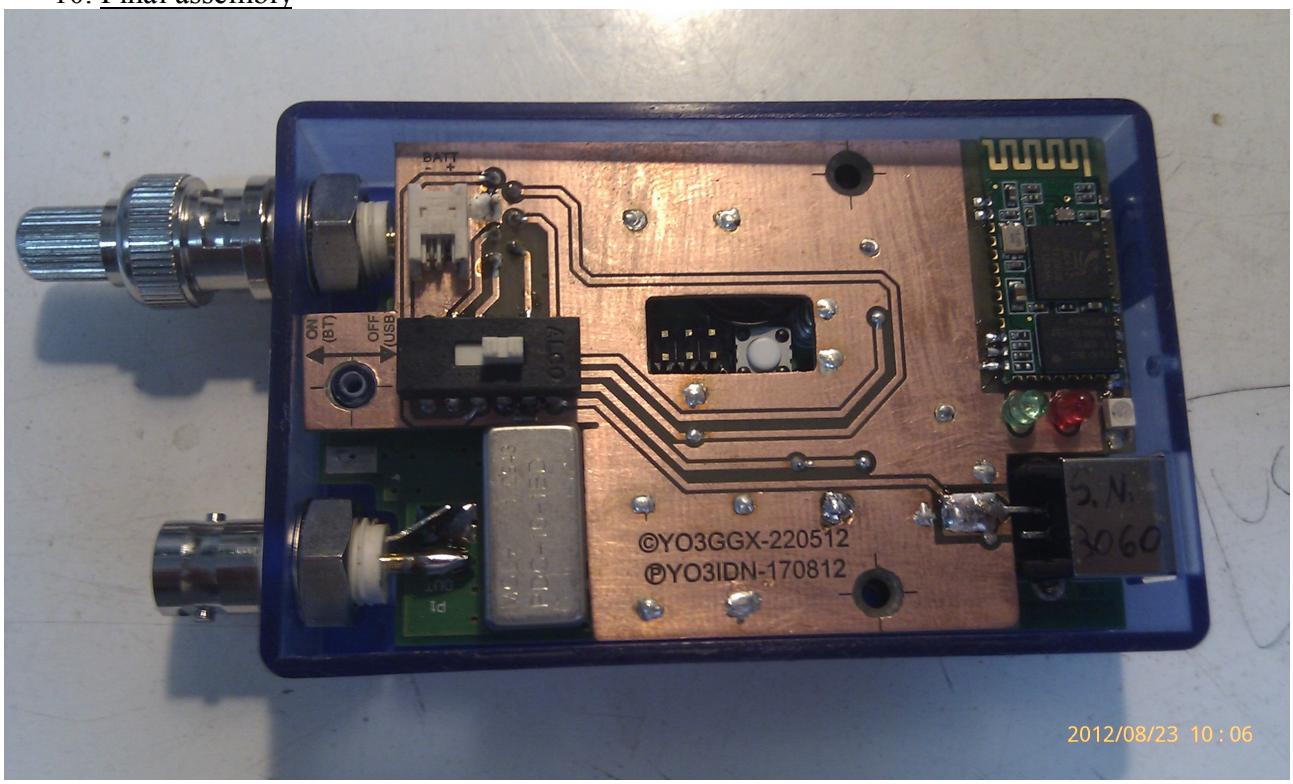
8. BT module side A

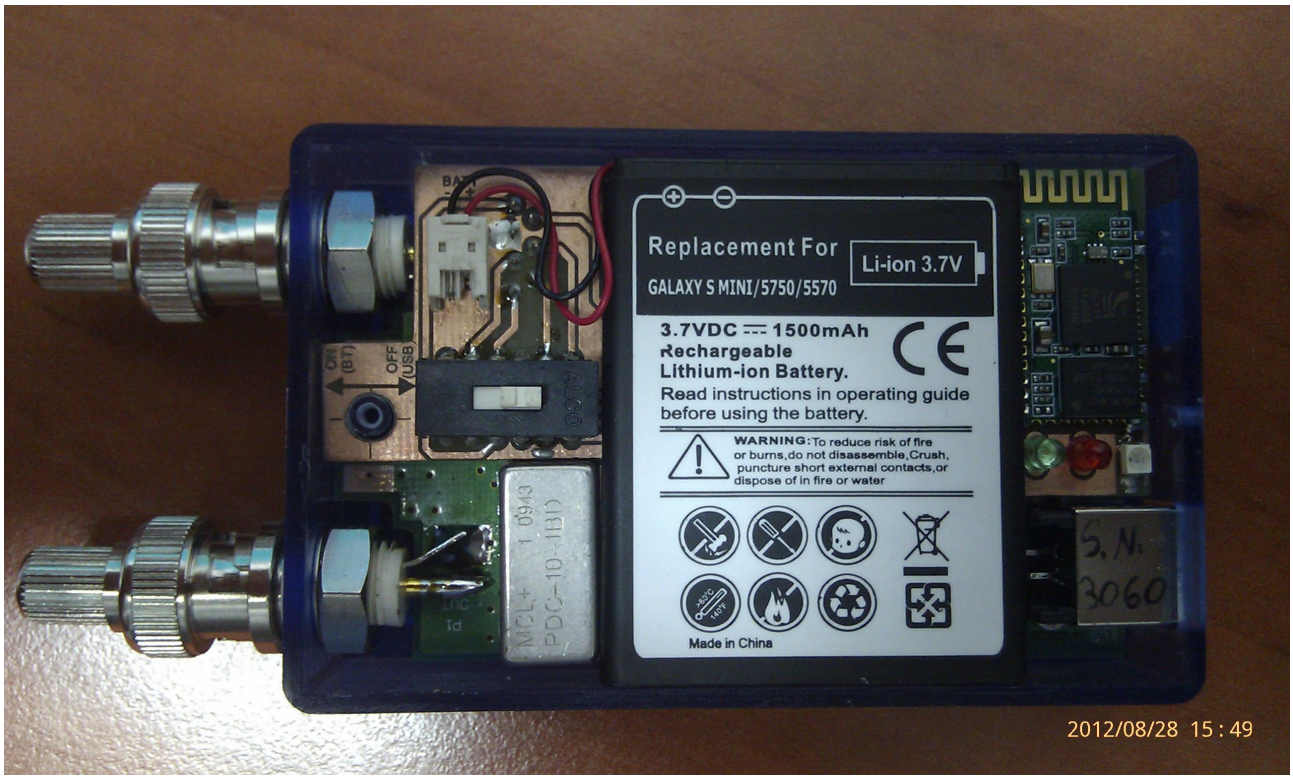


9. BT module side B



10. Final assembly





If you choose to follow the idea, please do not forget to program the bluetooth dongle RF-0417C for baudrate 115200, otherwise it will not communicate with the processor.
The programming procedure and software is described on another of Dan's document, here: http://www.yo3ggx.ro/FT8x7_DIY_Bluetootth_CAT_interface_v1.pdf .

The original schematic and build (version 1.0) is copyright of Dan Toma – YO3GGX – yo3ggx@gmail.com and can be found on his projects site: http://www.yo3ggx.ro.

Thank you Dan for the help and support.