

DIY for repair the FT 817D in fault

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(Extract from E.R.A. Magazine September 2014)

Hi radio friends from all over the world.

I'm Giovanni – I0KQB from Rome.

These are some notes that could help the ones who need to repair the Yaesu FT 817 ND, in case you've bumped into some its well known strange troubleshootings.

Get a look at the snaps at the bottom of the article.

The first fault occurs when the battery pack is inserted and we decide to use an external supply as a power supply or a battery as well.

Surfing on the web , I found and then read carefully what operators from all over the world say about the 817 and its fault , finding some common things among the different stories , i.e. :

1. We had been using 817 with an external voltage supply
2. The 817's battery pack was connected inside the rtx.
3. The battery pack was not completely charged.

Well, my 817 had the same operating conditions and it got the same fault. After a pause between two dx I switched it off and when I tried to switch it on.....Surprise! It didn't work anymore. Gosh!!!

After a technical consulting with the service's technician, the verdict was: Throw it into the wastebasket 'cos the cost of the repairing would be at least the 60% of the rtx's price as a new one! Double gosh!

After have thought that before to waste it there would have been at least another chance , I uploaded into my pc the pdf of the 817's service manual and I read carefully how the supply section has been made.

The 817's supply switch works electronically using some transistors to do it.

REMEMBER THIS PARTICULAR!

I opened my rtx and I found three Schotky diodes praticly exploded, one jaf melted and a 7805 voltage regulator interrupted.

Now, you have to know that the service's technician had asked from me if by chance I had supplied my rtx with 24 volts instead of 12 . Of course I didn't do it.

Then, his question + the vision of the destroyed components, lighted my brain! Do you remember the words I wrote over it? The electronic switcher?

Here it is what probably had happened.

The TR Q1107 has to decide what supply to use by sensing the two different 12 volts line, the one from the battery pack and the other one from the ext. power supply.

Then there is a sort of voltages balance between the two supplies till.....the voltage of the battery goes too low under the minimum useful voltage.

When there are these conditions the TR q1107 electronic switch doesn't choose anymore but, due to the unbalanced voltages situation, it adds in some ways the two lines giving to the rtx a voltage of 20 or 22 volts (it depends of how much battery there is at that moment).

That's probably the reason of all the destroyed components On the web, tens of radio operators describe the same operating conditions before the fault occurred, so.....**BE VERY CAREFUL !!!!**

My suggestion is:

1) if you have decided to operate using the internal battery pack , **DO NOT CONNECT ANY SORT OF EXTERNAL SUPPLY !!!**

2) If you want to use an external supply as a power supply or a battery, **DISCONNECT IN ADVANCE THE INTERNAL BATTERY PACK !!!**

Anyway , after have studied carefully the scheme , I decided to repair the rtx by myself , and I repaired it (what did tell me the technician ????).

Of course, do it by yourself **ONLY IF YOU ARE SKILLED TO DO I!**

To change this parts requires experience, patience, possibly a solderer for smd components (I used a common solderer one , and it was very difficult) a firm hand and good eyes . So, if you like this adventure, try to do it !!!

Here there are the components that were destroyed and needed to be changed:

1. On the main board get a look to the D 1084 and D 1085 (these are Schottky diodes RSX 30-1L-30). They'd probably be exploded! Look at the photo 1.
2. On the main board as well, there is the T 1035 (a little toroid with a double two coils of copper) that I desoldered , cleaned with pure alcohol and then remade using new copper wire . That's very simple to remade by hand.
3. If you have been unlucky , probably you'll need to bypass the F 1001 –a fuse 3.15 A (it permits to the rtx to recharge the battery pack)- it's collocated exactly beneath on the left of the switcher Headphones-Speaker and the C 370 , of course always from the mainboard's point of view. Sorry to say that it's an ultra micro component that's very difficult to replace. I bypassed it and everything is working properly.

Now , having attention to don't cause any damages , unscrew the main board from the chassis , disconnect softly the main controls's flat cable and so reverse always gently the board , so :

4. Get a look(Photo 2 and 3) and test the D 1084 (it's a RSX 30-1L-30 diode as well). Probably it'll be fault. Change it .
5. Test the Q 1108 8 5 volts regulator) and if it needs, change it.
6. That's all for the first trouble. If you were lucky, that was all you needed to change.

Now, let's to speak about the second troubleshoot, I mean the microphone's fuses. Look at the photo 4.

If they are broken, you won't be allowed to switch from RX to TX. Not bad, is it? These are collocated on the main board, exactly where the RJ 45 mike's socket is collocated

Be patience and with the help of your multimeter, test the R 1415, 1416, 1417, 1418. As you can see in my photos and as you'll see by yourself observing your rtx, they are damned little, very little. I bypassed them, using a wire as thin as a single hair, protecting them with very little plastic tubes.

This was my worst electronic nightmare! Good luck!

Finally you have probably a question. How much does the spare parts cost?

Well, I ordered the diodes and the 5 volt regulator from the RS company, spending the amount of 4 Euro! Of course you have to add to it the postage cost. Of course, my rtx is working properly!

Amazing, isn't it?

That's all. I hope that your RTX will never be in troubles.

If by chance it is in trouble, I hope that my experiences would be useful for you.

Good work, good luck an greetings from IØKQB – Giovanni - Rome

Photo 1



Photo 2

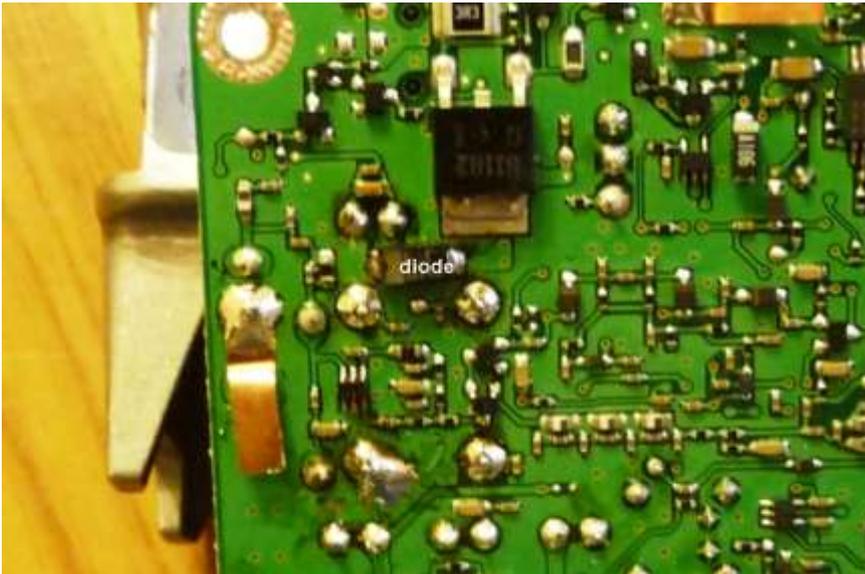


Photo 3

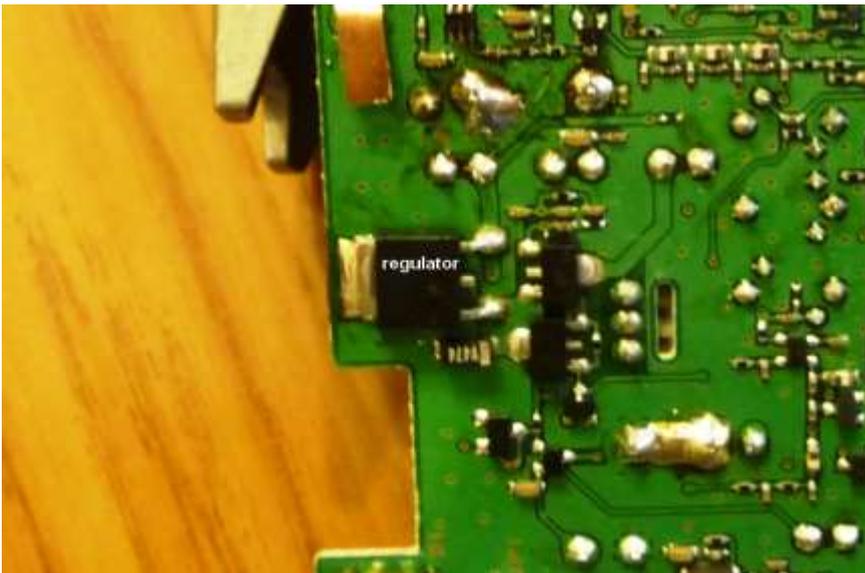


Photo 4

