As I got my FT-847 (serial 8F043xxx) I recognized the chattering relays after a short time of usage. I'm not using a switching power supply cause of some interferences or noise levels of this. I'm using a MANSON EP-925 regulated power supply with 3-15 Volts / 25-30 amp.

So the "chattering relay fault" is definitely not cause of the usage of switching power supplies or cause of RF feedback like published in this forum before. I had the same bad effects on the dummy load too. Hmm, so the fault must be on another side....

I disconnected the vhf/uhf pa module. The effect gets better but still was there. I disconnected the hf pa module. And the effect has gone !!! So the fault must be in the hf pa module !
Now I did some tests of connecting/disconnecting the pluspole of the hf pa module cable while the FT-847 was running. And I saw a small flash everytime I connected the cable to the pa module !!

So overvoltage on switching on the FT-847 was the fault ! And a lot of DC power supplies have a build-in overvoltage protection too. So when the FT-847 has the short overvoltage, the DC power supply reduces its voltage output too, the FT-847 internal overvoltage relay RL1001 goes off cause of the reduced DC input, and then the DC of the power supply can go up again, a overvoltage peak in the FT-847 is the result, RL1001 goes off again,....

...and we just have the loop ! RL1001 on the AF-CNTL-Unit is chattering.

Here's the fix:

Maybe this mod could be risky if you would really have a overvoltage from your DC supply. The internal reaction time of the FT-847 would be longer ! So do it on your own risk !!!

1. None, really none of the bandpass switching relays on the PA-UNIT have a antiparallel over-voltage protection diode (suppression diode !??) !
   So I soldered 1N4148 diodes parallel to each relay coil of the PA-UNIT. So that means parallel to RL5001 - RL5015. Only the HF output relay RL5016 has a overvoltage diode (D5005). The cathode is on the pluspole of the relay coil, the anode is on the ground side.
   So these diodes don't have any action on normal use, but when the relays go off their coil is producing a overvoltage peak. These suppression diodes eliminate these peaks.

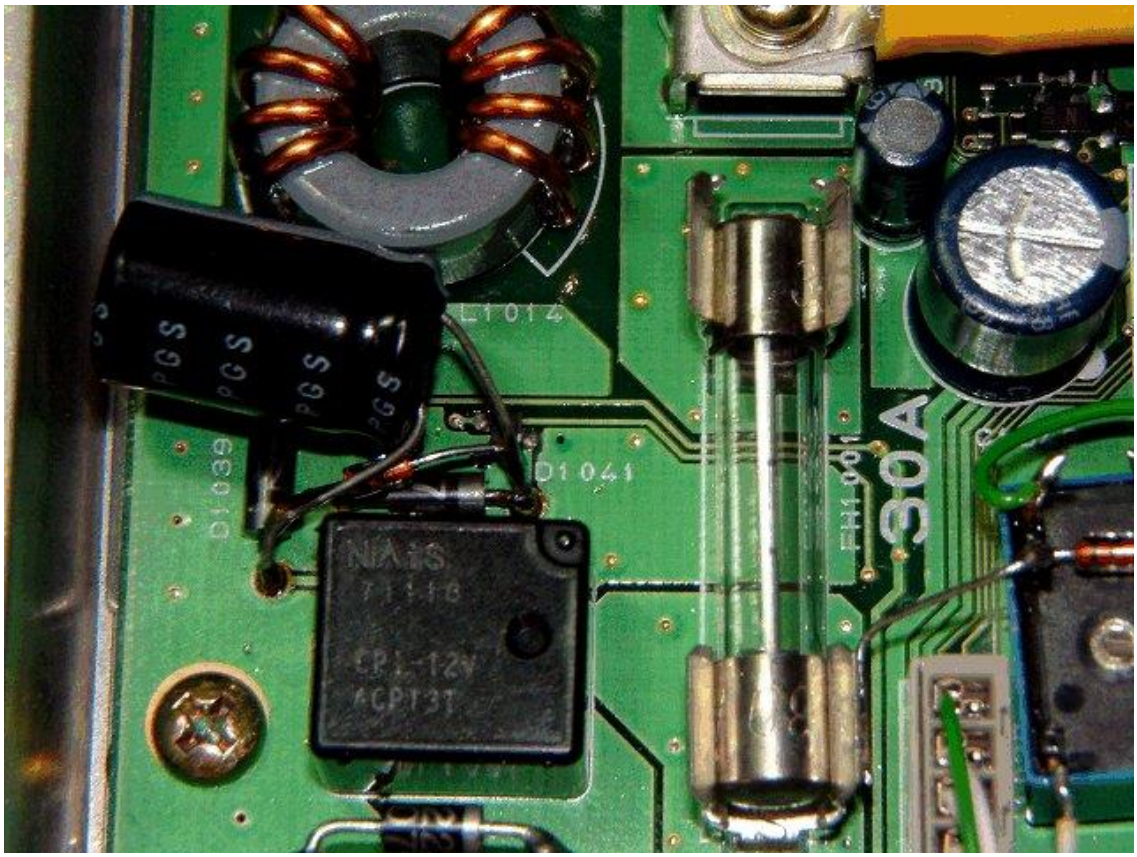
   The chattering got a little better, and had sometimes gone, but this wasn't the real fault. So these diodes are useful, but don't solve the problem on most cases.

2. Now I gave the FT-847 internal overvoltage protection circuit (consisting of Q1118/Q1122/RL1001) a longer reaction delay. It's a real simple mod and works fine without any problems till yet ! You can solder very easily cause the neccessary parts have enough room for this mod and you don't need to remove the AF-CNTL-UNIT.

AF-CNTL-UNIT:

- 1N4148 supression diode parallel to coil of RL1001.
  I soldered it from D1039 to D1041 like in the picture.

- Adding a 470µF (0.47mF) electrolyt capacitor across this supression diode. This cap is parallel to the relay RL1001 and gives it the needed fallback-delay. The pluspole of the cap is looking toward D1039, the minuspole toward D1041.



Since this mod I really can enjoy my FT-847.

73,
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