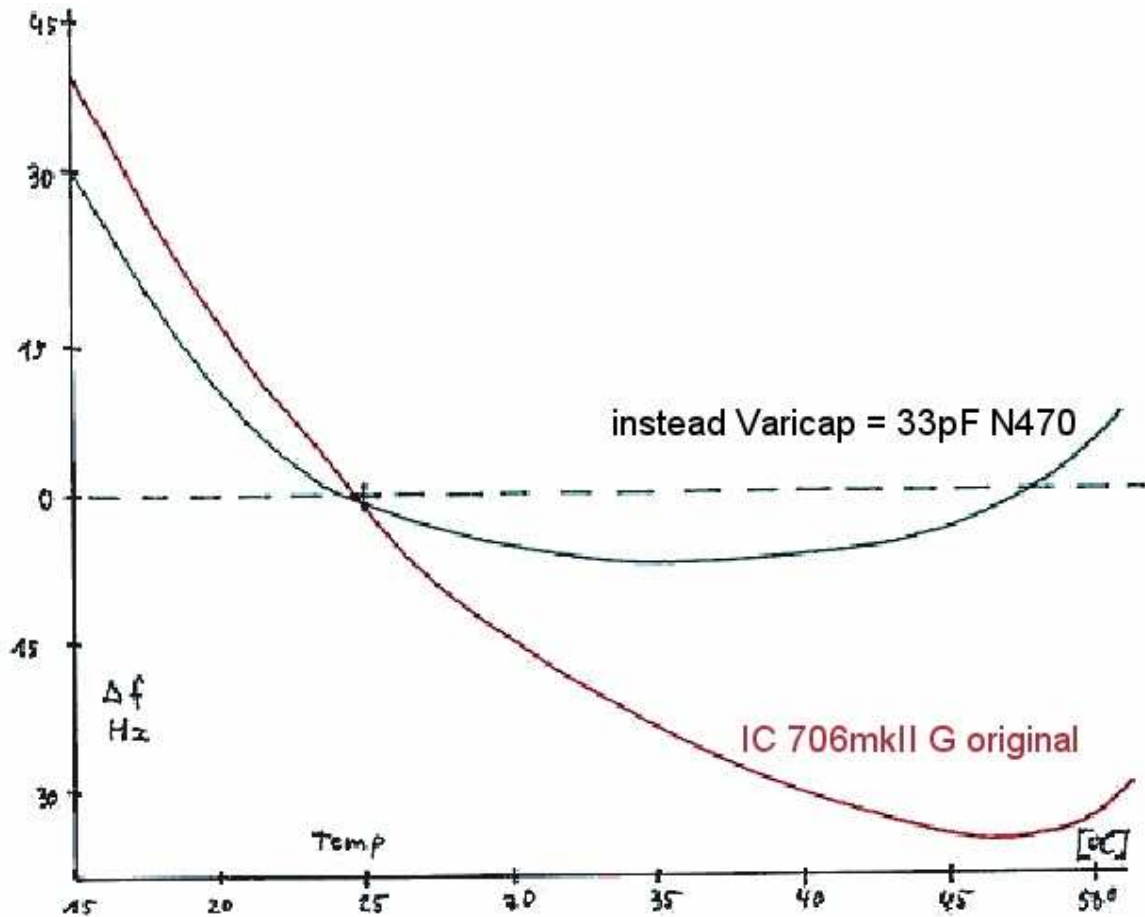


Better frequency stability for IC-706MKIIG

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It should be well known, that the IC-706mkIIG does not offer the best frequency stability. You might have already recognized this if you ever used your 706 for modes like JT65. For these modes it is very important to have a very low frequency drift. Unfortunately, the TCXO (CR-282) doesn't really help in this case. It does improve the stability but not really the drift during the first minute which is the most important one in WSJT since the TX-time is less than a minute. This modification consists of two things, replacing a varicap-diode by a capacitor and giving the fan some power so it runs even in receive mode. Once this modification is done, the frequency stability is improved a lot as seen in picture 1.



Picture 1: frequency drift vs. temperature

Just a few steps to improve the frequency stability of your IC-706mkIIIG:

1. Remove the lid on the back, then remove the little lid of the XO (as shown in picture 2).



Picture 2: open the lid of the XO

2. Locate the little varicap-diode right next to the L601 (picture 3). Remove this diode.



Picture 3: diode is right next to the L601

3. Now replace this diode by a 33pF ceramic capacity (N470). The one leg to the upper solder pad where the diode was, the other to ground. Ground can be easily found at the metal shielding.

4. As you know, the radio gets very hot just by receiving because the fan does not work if you do not transmit. The fan should run all the time. This can be done by simply inserting a 100Ohm resistor (or two 56Ohm, +- Watt in serie) between the red fan wire and the top of the inductivity as shown in picture 4. The fan runs now very slowly all the time.



Picture 4: Position of resistor

5. You may now let the radio run for about 20minutes. Tune to 50MHz and check the frequency by transmitting. If the frequency does not match, adjust it by tuning carefully with L601.

This modification has been done on several radios. It always worked very good but I cannot give a guarantee. I am not responsible for any damages on your radio.