

## DAFC „deLuxe“ for Drake TR7 and RV7

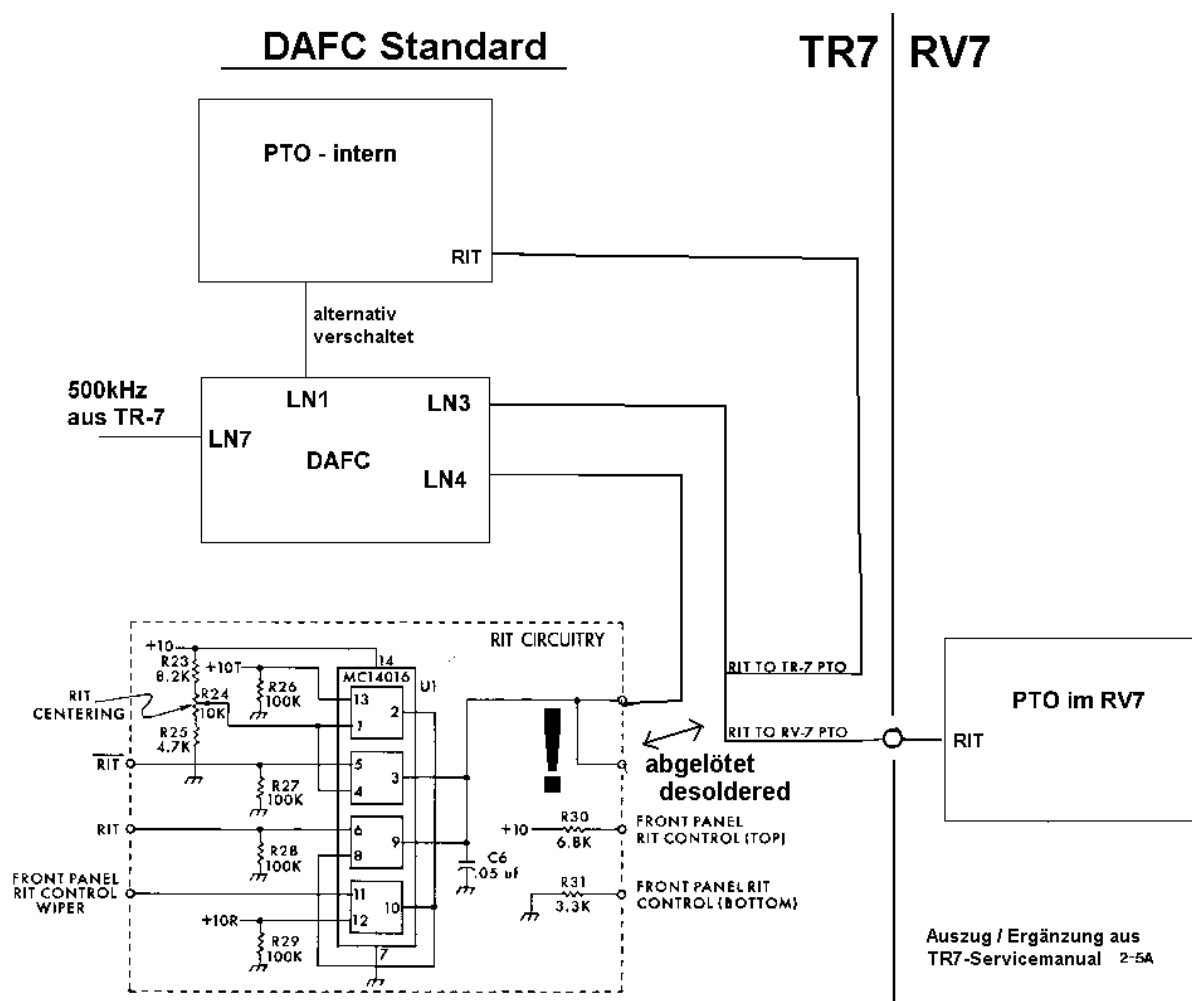
### Introduction

In my TR7 i installed a DAFC, designed by Conny, DL1SDQ.

This DAFC uses the RIT-wire to stabilise the PTO, similar to the concepts of other designers.

But there is a small disadvantage:

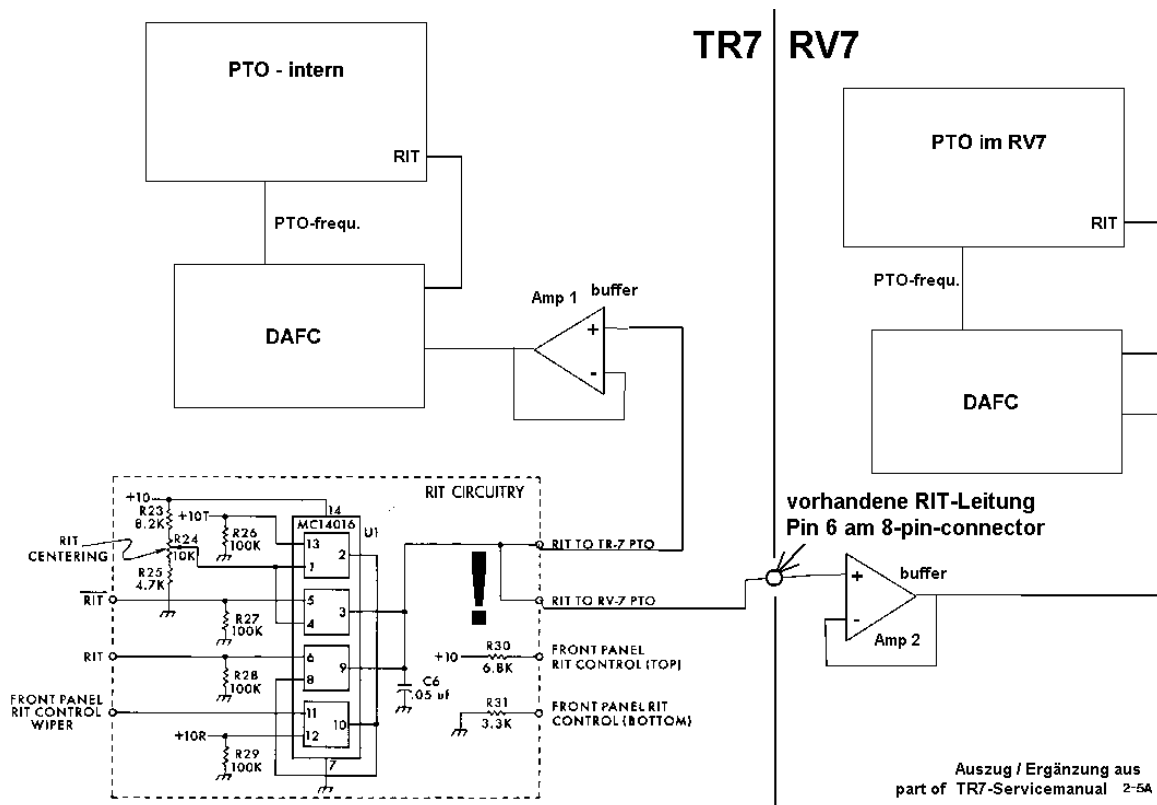
The optional external VFO type RV7 is also connected to this RIT-wire by the VFO-connector; therefore the stabilisation of the internal PTO in the TR7 influences also the PTO in the external VFO (picture 1).



Picture 1 Standard-DAFC with one DAFC

## DAFC „deLuxe“

One DAFC can stabilise simultaneously only one PTO. When using the RV7, a second DAFC for optimum stabilisation is necessary, which stabilises the RV7 independent from the TR7 (picture 2).



Picture 2 DAFC „deLuxe“ with 2xDAFC, blockdiagram

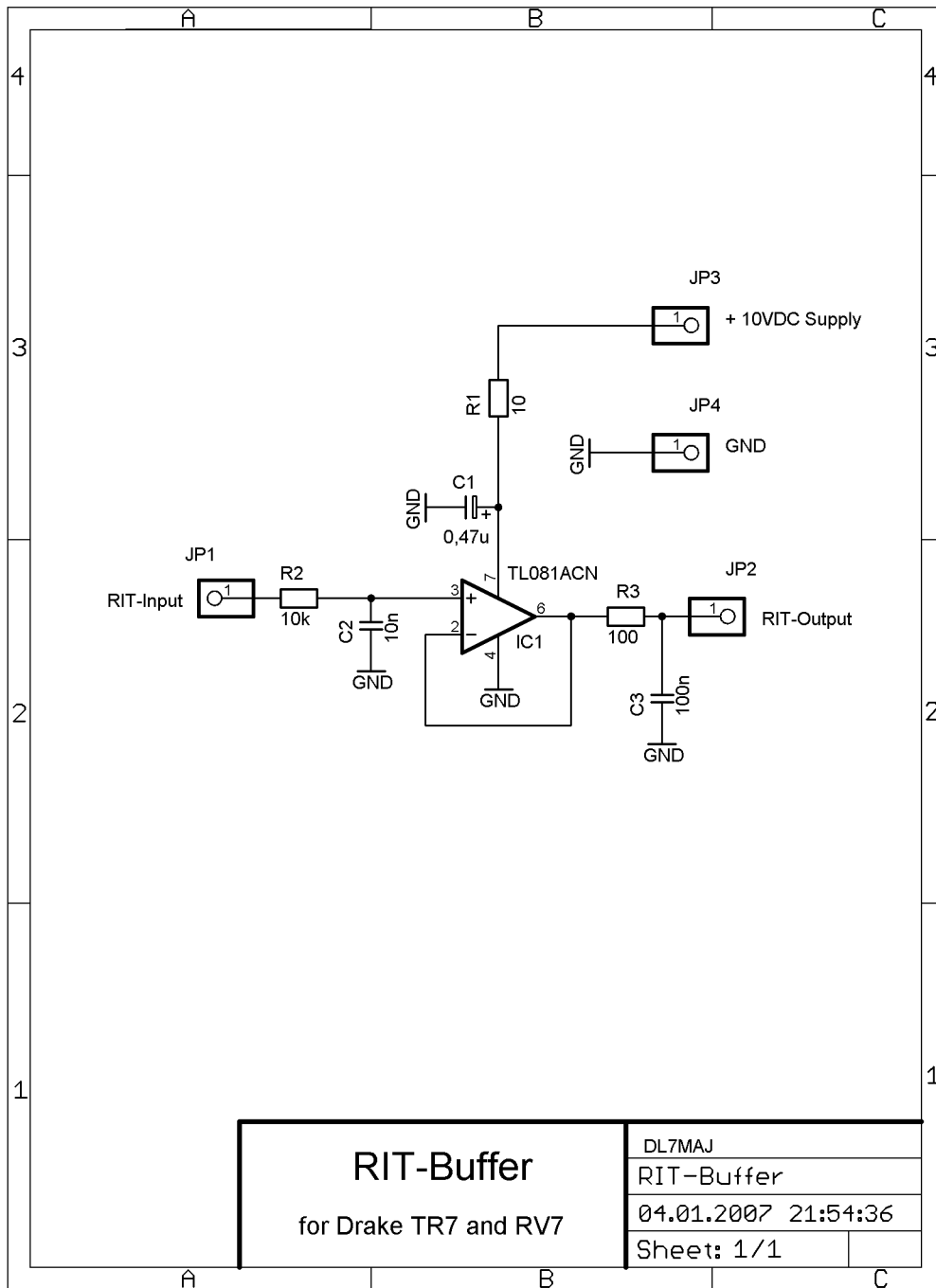
Decoupling with two buffers (impedance-converter, gain = 1) is necessary.

These buffers may be built with OP-Amps according picture 3.

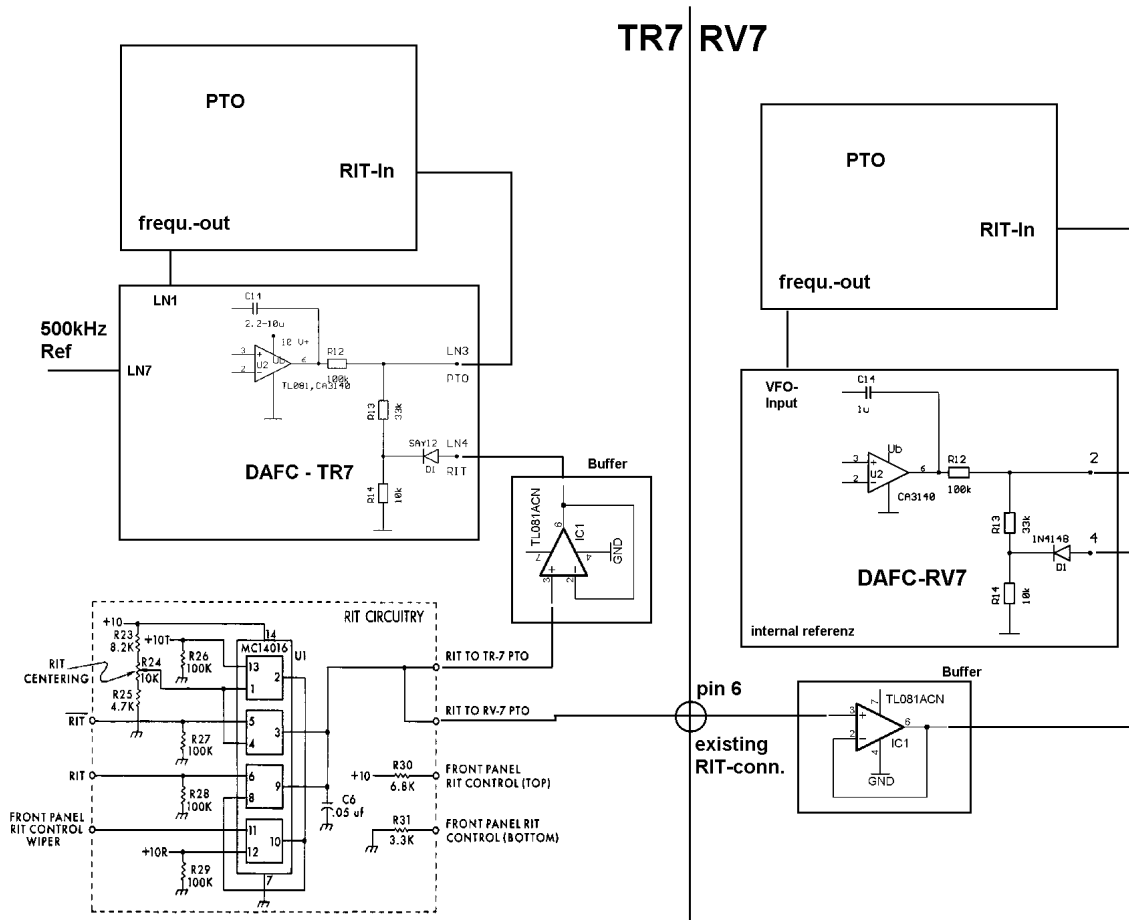
The connection of the two DAFC's and buffers are shown in picture 4, pictures 5 to 8 show the installation and connection of the DAFC's in the TR7 and RV7.

### Hints:

1. The DAFC in the RV7 requires an internal reference, because the 500kHz of the TR7 are not available in the RV7.
2. The DAFC's may be supplied by the unstabilised 13,8VDC because of their own internal stabilisation.
3. The buffers may also be supplied by the unstabilised 13,8VDC because of their strong negative feedback (gain=1).



Picture 3 RIT-buffer

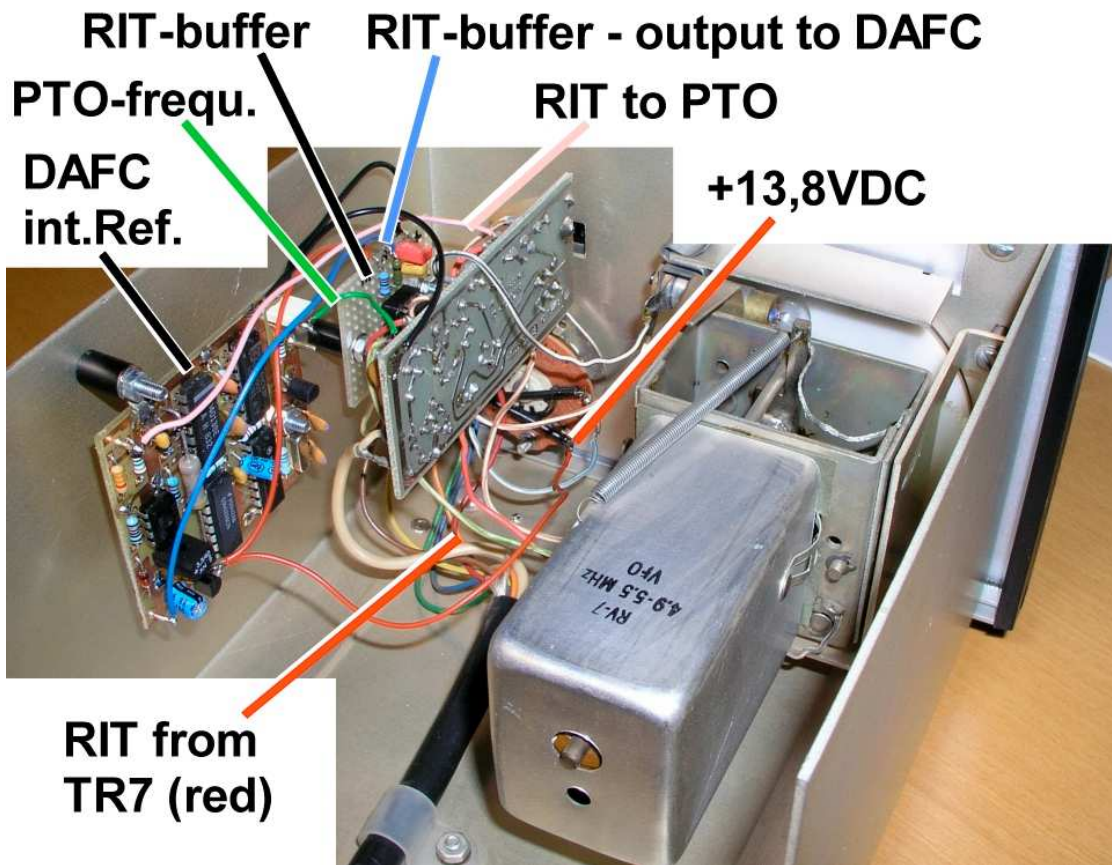


Picture 4 DAFC „deLuxe“ with 2xDAFC, schematic

Use the manuals of the TR7 and the RV7 to check the versions of your rig.

Alignment is NOT necessary!

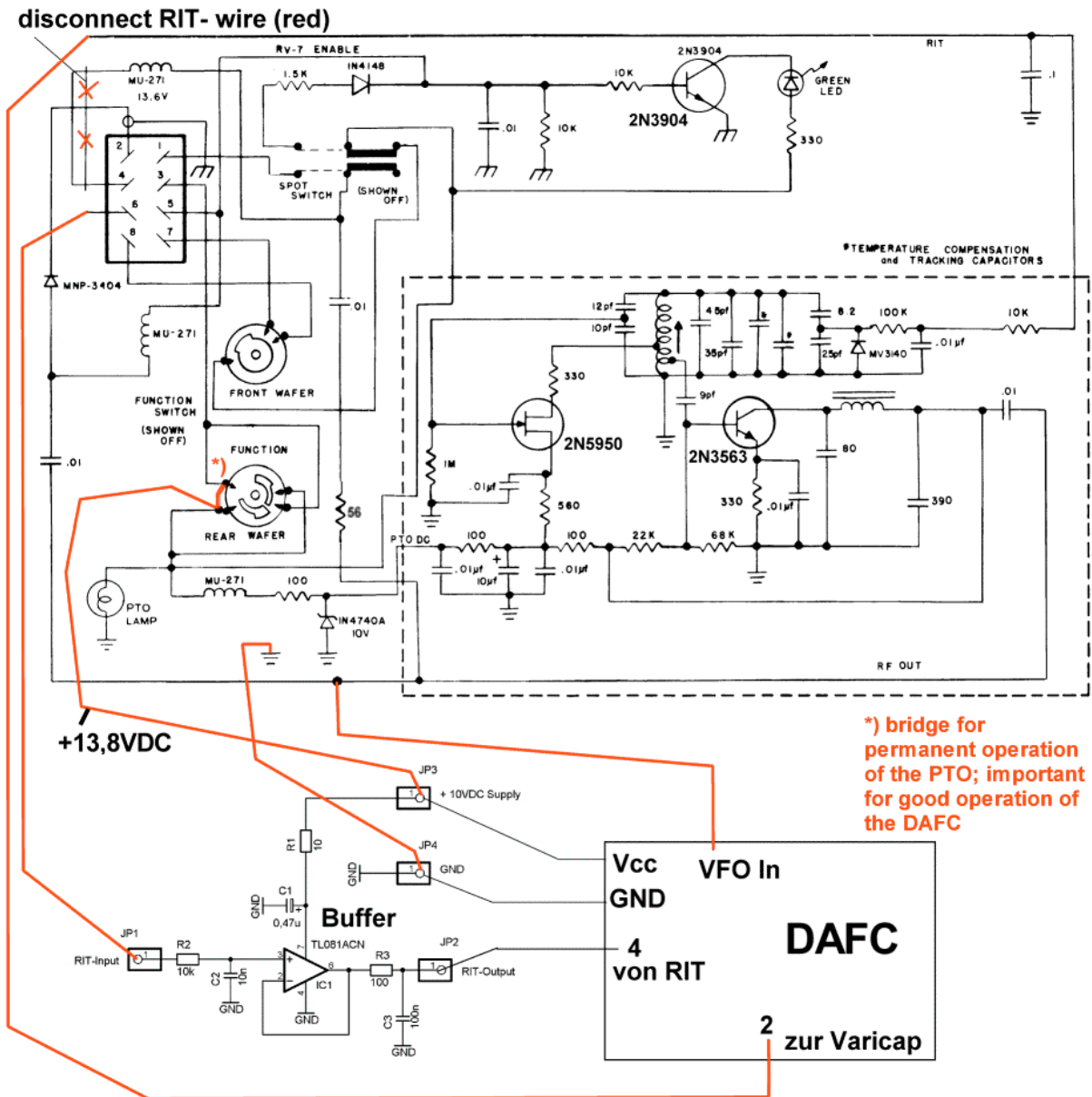
If the TR7 and the RV7 operated well before the installation of the DAFC's, they will operate well also after the installation (if you did everything right – but who makes errors?)



Picture 5 Installation of DAFC and buffer in the RV7

#### Explanations for picture 5:

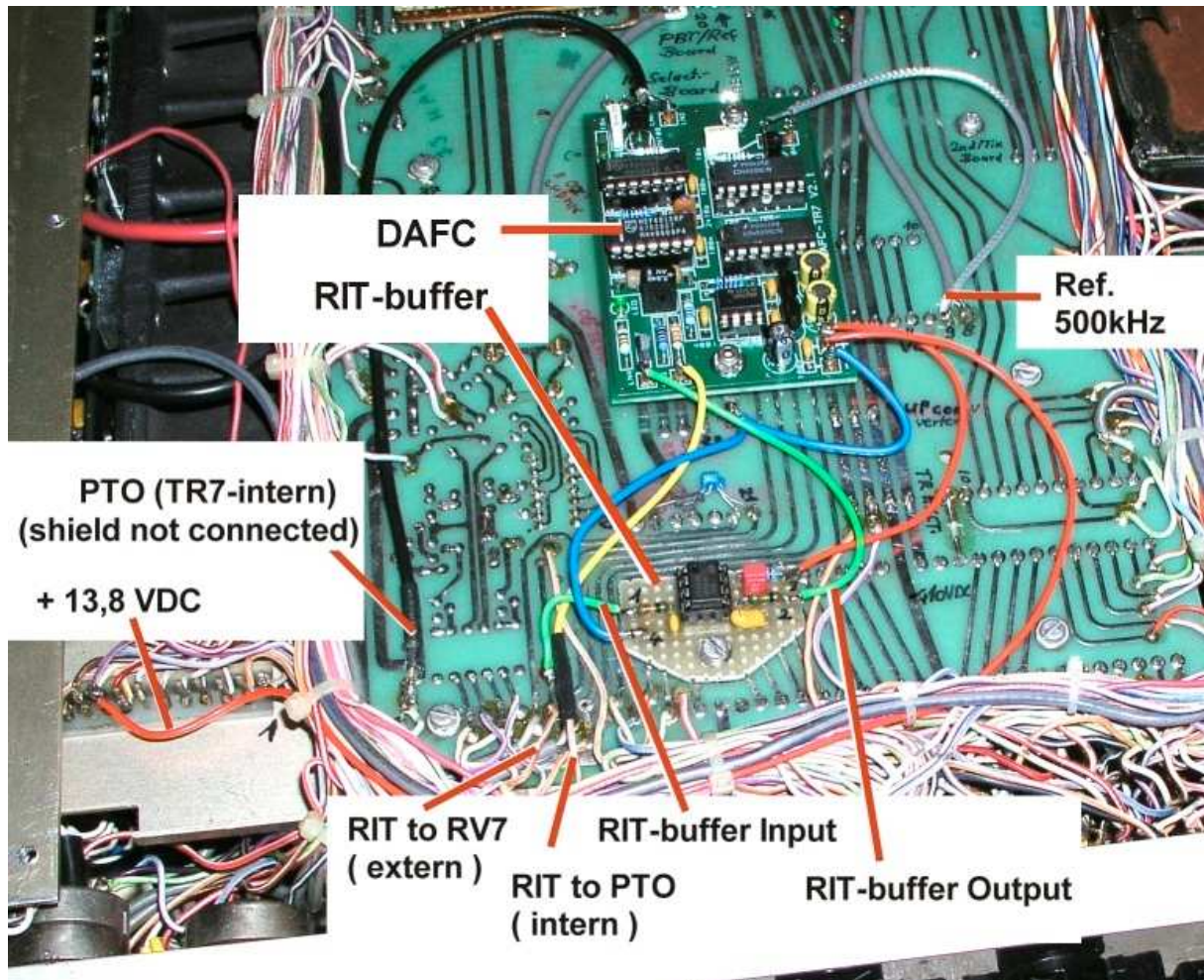
- The VFO-input of the DAFC is connected parallel to the output of the PTO (green wire).
- The RIT-wire from the TR7 (red) is desoldered from the pcb in the RV7 and soldered to the input of the buffer.
- The buffer's output is connected to the RIT-input of the DAFC (blue wire). At the point, where the red RIT-wire from the TR7 was connected, the output of the DAFC is connected (pink wire „RIT to PTO“).
- The +13,8VDC are accessible at the rotary-switch (red wire).



Picture 6 Modifications in the RV7

All modifications in the diagram of the RV7 are shown in picture 6.

The bridge \*) is necessary for permanent operation of the PTO. The DAFC will lock permanently even when the RV7 is switched off.



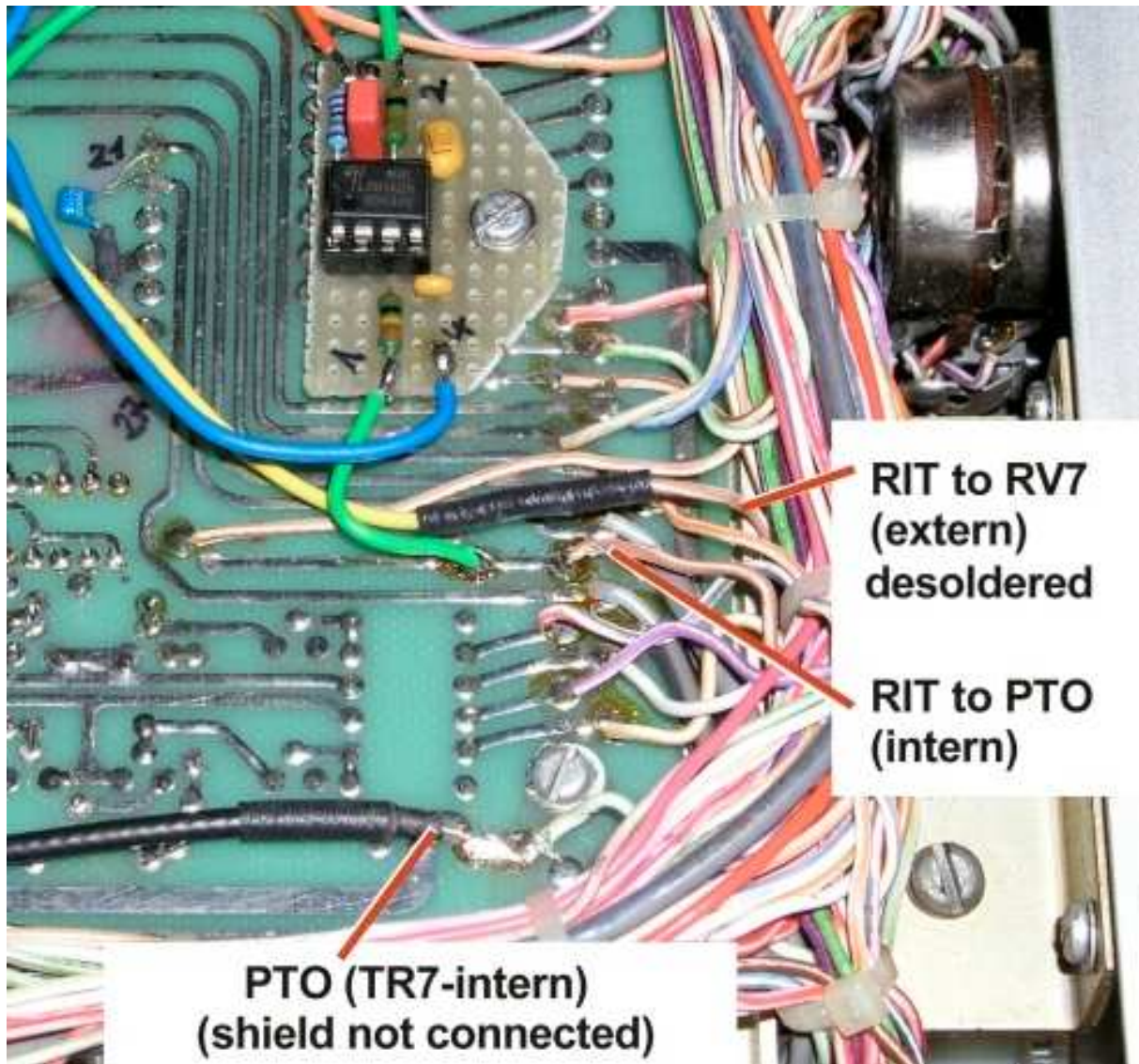
Picture 7 Installation of the DAFC in the TR7

The Installation of the DAFC in the TR7 is made accordingly to the documentation from Conny, DL1SDQ.

For installation of the DAFC and the buffer look at picture 7 and 8.

**HINT:**  
*Screws from SUB-D-connectors may be used as space-holders.*





Picture 8 Installation of the buffer in the TR7

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Reference: [www.conny-d11sdq.de](http://www.conny-d11sdq.de)

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Any questions?  
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