Installing a LIF port into the FT-857/897 transceiver

Introduction

This document describes the procedure for installing a LIF (Low Intermediate Frequency [9 – 18kHz]) port into the FT-857/897 transceiver. This procedure requires a level of expertise sufficient to dismantle the transceiver and to solder. Nonetheless, the installation is straight forward and should not cause any difficulties for the experienced radio amateur.
It is important to unplug all connectors and power before working on any transceiver. It is also important to be grounded to avoid static discharges.
Please note: no responsibility or liability will be taken by the author of this document for any damage or malfunction caused by user modifications.

LIF port installation

Dismantling the Transceiver

The top cover of the radio must be removed. There are 7 screws that need to be removed and then the lid will become loose; there are 3 screws on the top cover and 2 on each side. Remove the lid carefully; the speaker cable will still be connected to the circuit board. Unplug the speaker.

Connecting the RG174 cable to the PCB

Solder the ground shield of the RG174 to the first 3 pins of J23. This will also make the option filter 1 selectable in the radio's menu. Pin 4 is the RF and it needs to be connected to the center of the RG174 coaxial cable and to the input of the 455kHz filter. The center pin of the filter is connected to pin 2 of J24 and the output is connected to pin 3. The filter is secured on the PCB with double sticky tape. The filter will keep the AGC function

working. The audio of the radio has to be turned off. Pin 1 of J24 stays empty.
Note: The bridging filter is optional and is not supplied with the kit.
Note: Option filter 1 has to be selected for RX to route IF to the LIF.

Routing the cable and reassembling of the transceiver

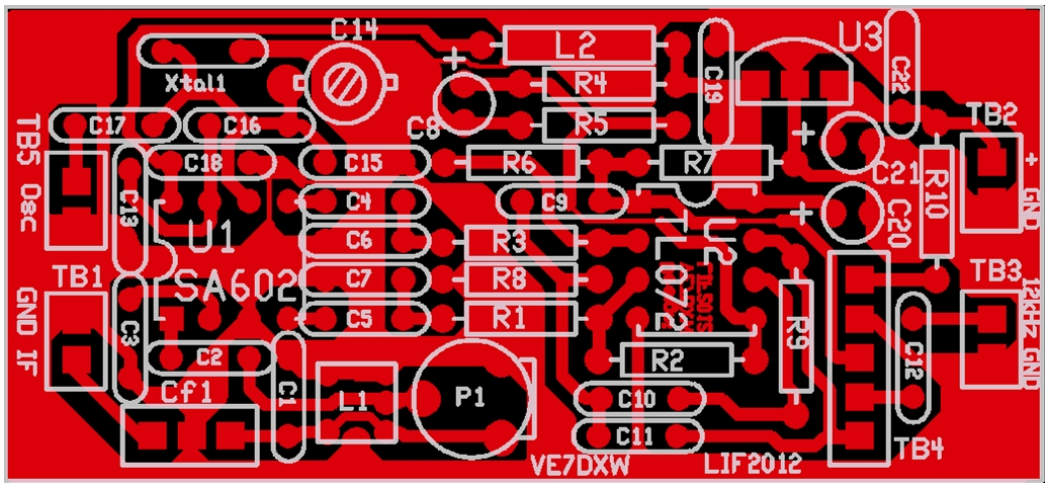
The best routing of the RG174 is shown below for the FT-857. The coaxial cable is secured with a tie-wrap to the power cable. The LIF PCB has to be mounted outside of the transceiver.

The best routing of the RG174 is shown below for the FT-897. The LIF PCB can be mounted inside the transceiver. The PCB has to be made slightly smaller to fit into the gap, as shown, with sand paper. Power is provided though the regulator IC on the upper PCB. Use the +12V side of the regulator IC. The LIF PCB has its own regulator.

Connection of the LIF converter (RX-only)

The LIF RX output of the transceiver connects to the IN port (TB1) of the LIF assembly and the audio Line out (TB3) connects to the tip line-in of the sound card. TB2 provides power (+12V). TB5 is not used for the RX-only version. A jumper has to be placed on TB4 between 3-4 to by pass the 7kHz high pass filter or between 4-5 to enable it.

Note: The transmit audio is still filtered with the existing filter inside the FT-857/897. If the MDSR is properly configured the standard microphone can be used to transmit, while the RX is processed through the computer. For more details see “Lock to TXCR” the MDSR help menu.

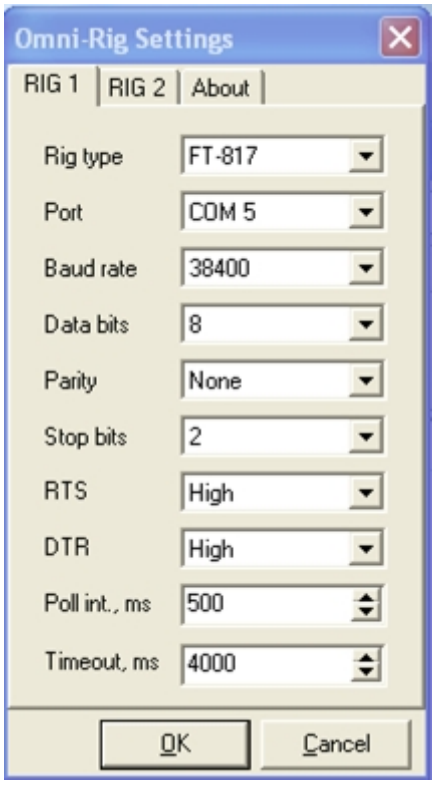


Setup of the CAT interface

The MDSR software controls the transceiver via the CAT port. The connector cable CT-62 is the Vertex Standard version of the interface cable that plugs into the back of the radio and the RS-232 port of the computer. There are also virtual RS-232 cables available that connect via the USB bus to the computer.

OmniRig Setup for the FT-8x7 series transceivers

To enter setup menu in MDSR-SA select the tool icon at the bottom right and select “OmniRig Configuration & Status”, select the key icon “Configure OmniRig”. Only configure RIG 1.



- Select the transceiver to be controlled from the drop down menu (FT-857 or FT-897).
- Select the port of the computer. If the Com port is not known go to the “Device Manager” and select the ports icon. The port number should be listed there.
- The Baud Rate has to match the setting in the Transceiver. The default setting for the FT-857/897 is 4800. It can be changed to a higher performance if needed (see transceiver manual).
- All the other settings should be as displayed here.

That completes the installation of the LIF port of the FT-950. The MDSR team wishes you all the best. If you like the performance of the MDSR software please tell all your friends about it.

73

The MDSR development team

To order the PCB kit or for more information please go to;
Note: if you are interested in the TX – BiLiF option contact VE7DXW directly.
http://users.skynet.be/myspace/mdsr
specify 455kHz IF