

Installing a LIF port into the BCD996Px scanner

Introduction

This document describes the procedure for installing a LIF (Low Intermediate Frequency [9 – 18 kHz]) port into the BCD996Px scanner. This procedure requires a level of expertise sufficient to dismantle the scanner and to solder. Nonetheless, the installation is straightforward and should not cause any difficulties for an electronics technician.

It is important to unplug all connectors and power before working on any electronic equipment. It is also important to be grounded to avoid static discharges.

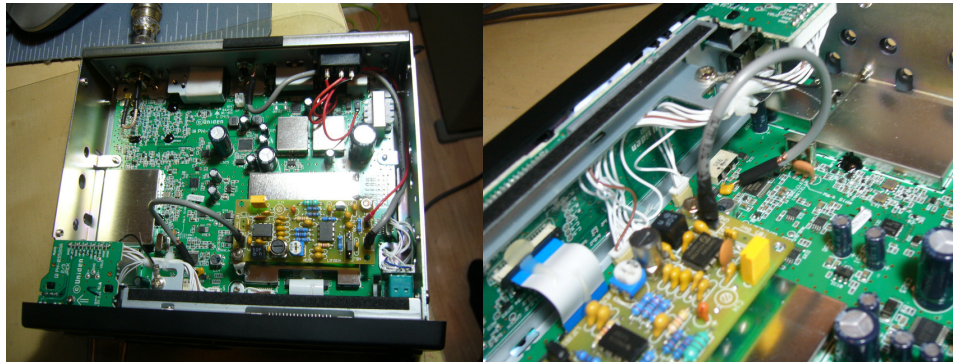
Please note: No responsibility or liability will be taken by the author of this document for any damage or malfunction caused by user modifications.

LIF port installation

Dismantling the Scanner

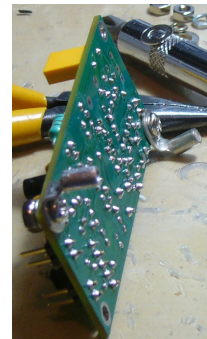
The black outer shell of the radio must be removed. There are 4 screws in the back that need to be unscrewed and then the shell will become loose and slides backwards. Now the silver inner enclosure is exposed. Next is to remove the bottom cover with the speaker. There are 4 screws, 2 on each side. Remove the lid carefully; the speaker cable will still be connected to the circuit board. Unplug the speaker.

Mounting and wiring the LIF inside the scanner



There is a lot of empty space in the scanner and the LIF PCB can be mounted inside. Terminal lugs are mounted on the PCB mounting holes and then bent 90°. Now the PCB is soldered onto the big metal shield, using the lugs as standoffs.

- A short piece of coaxial cable connects the IF input of the LIF to the left side of the white 450 kHz IF filter. The yellow 10nF capacitor decouples the filter from the LIF circuit.



- Power is provided through the red cable that solders on to the cathode side of the input power reverse current protector diode.
- The center hole on the back enclosure is drilled to 1/4" (~7mm) to provide the mounting location for the 12 kHz LIF connector. (This threaded hole is provided to allow mounting the scanner to the rear of the vehicle radio adaptor. If it is used for this purpose, the LIF connector must be placed elsewhere.) Gray shielded cable is used to connect the LIF output to the connector.

Back view of the "new" LIF output

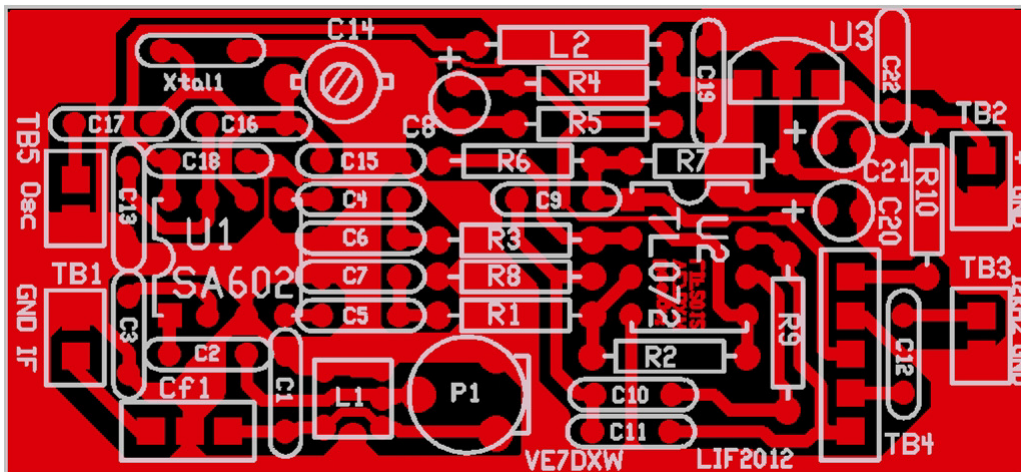
The RCA female connector in the back of the unit can now be plugged into the sound card of the computer.



Reassembly of the scanner

Before mounting the bottom lid, the speaker has to be plugged in again. Next step is to replace the side screws. Now the black cover sides over the enclosure and is tightened with four screws on the back.

LIF PCB Assembly



Setup of the CAT interface

The MDSR software controls the transceiver via the CAT port. The connector cable is standard accessory cable that plugs into the front of the radio and the USB port of the computer.

Bearcat996Px Rig Control file

As of this point Omni Rig does not distribute the "Bearcat996Px.ini" file that is required to control the scanner. This file has to be downloaded from the group and then placed into the "Rigs" file folder.

c:\Program Files(x86)\Afreed\OmniRig\Rigs

Once the file is in this directory it becomes selectable in the OmniRig Settings window.

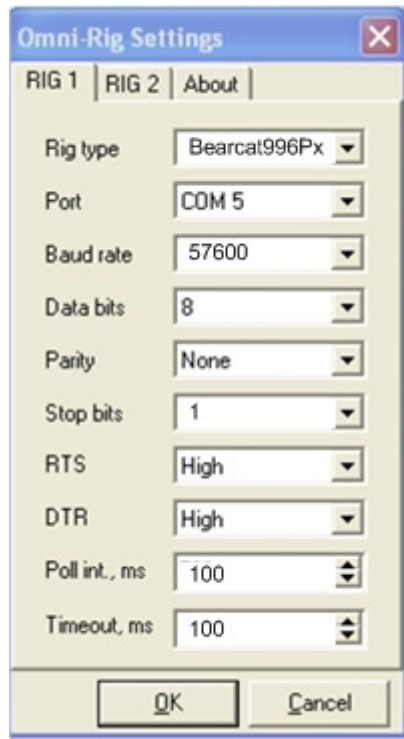
Using the Bearcat Scanner with the MDSR software

The MDSR software can be configured to work with the BCD996Px scanners with some limitations.

- The frequencies are channelized in the scanner and not all frequencies that can be selected in the MDSR will be accepted by the CAT control. (lowest step rate is 5kHz, depending on setup)
- The local oscillator of the BCD996Px is noisy, and will impair the reception of SSB signals through the MDSR.

OmniRig Setup for the BCD996Px series Scanners

To enter the 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 (Bearcat996Px).
- 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.
- **Note:** The Com port exists only if the USB cable between the scanner and the computer is installed and plugged in.
- The Baud Rate has to match the setting in the scanner. The default setting for the BCD996P is 57600. It can be changed to a higher speed if needed (see scanner manual).
- All the other settings should be as displayed here.

That completes the installation of the LIF port of the BCD996Px. 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 450kHz IF.