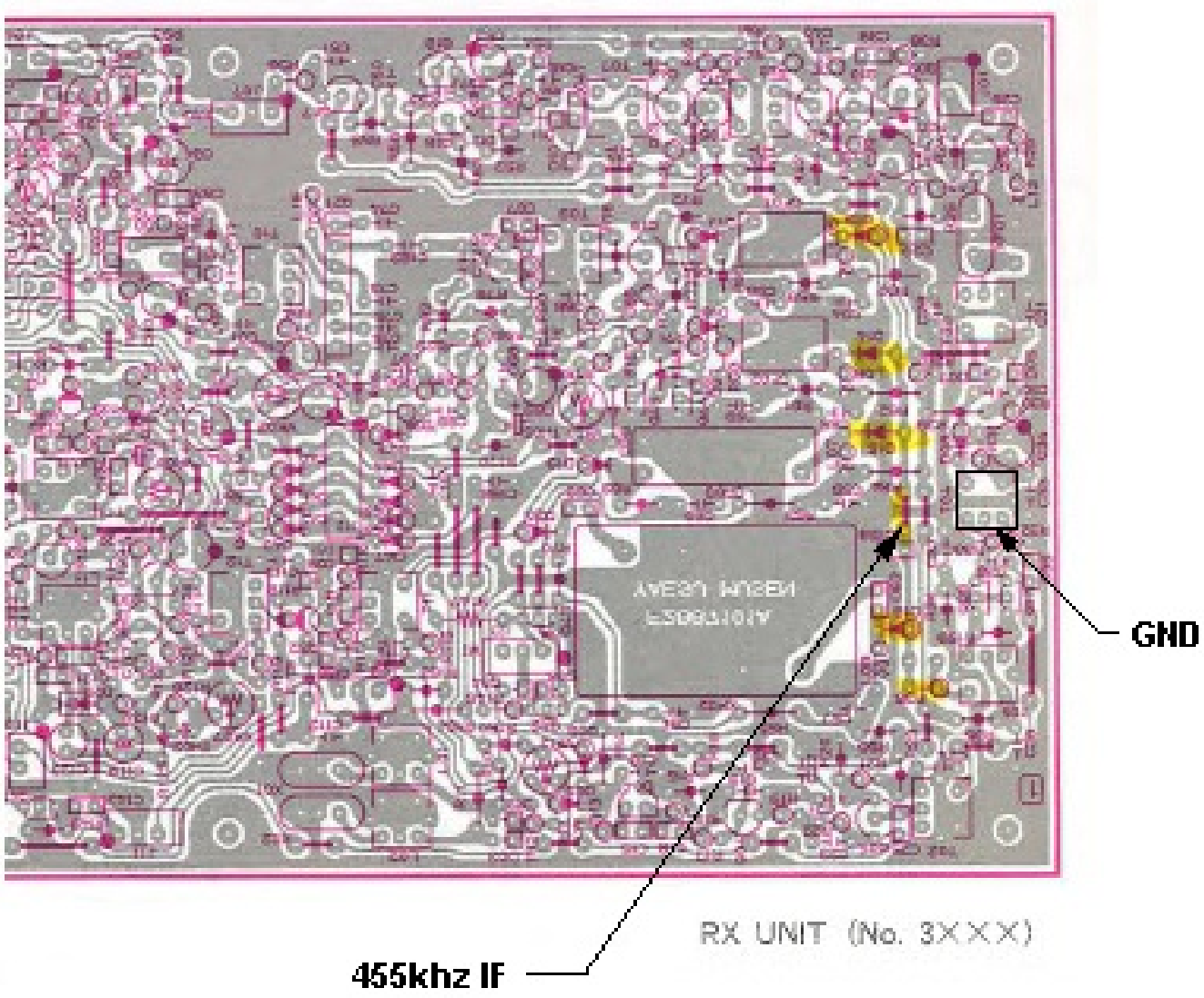
Installation of the LIF board inside a Yaseu 736R

The LIF 2012 board can be made to fit inside a Yaesu 736R, and an external connector for the low frequency IF can be added to the rear panel. This requires some radio modification, and the IF itself must be tapped off the receive PCboard itself, but all can be done with normal tools and patient work.

The location of the tap point for the 455khz IF is found on the schematic shown in the photos section of the webpage titled ‘LIF in FT-736’. The physical location of the IF is shown below:



The IF is available on the top of the Receive unit PCboard, where the trace for the IF uses a wire jumper. The tap capacitor can be installed easily at this point. A suitable GND is also available nearby, on the housing can used on TO4, seen outlined in the photo. This can connects directly to the board GND.

The view shown appears reversed, but is the actual orientation of the board itself in the unit. To access the receive unit, remove the covers from the 736R as specified in the manual.

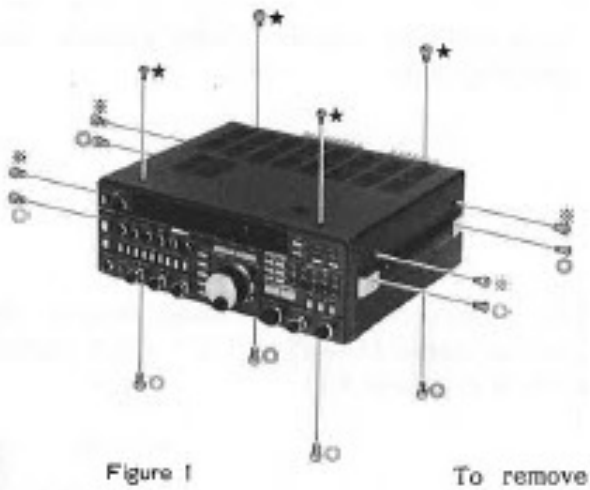


Figure 1

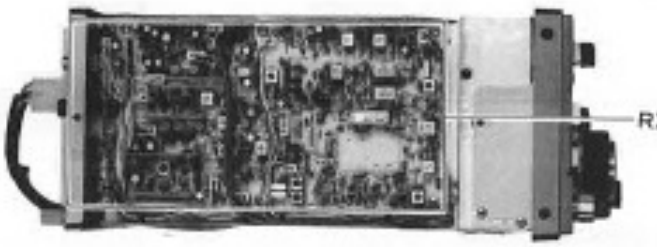
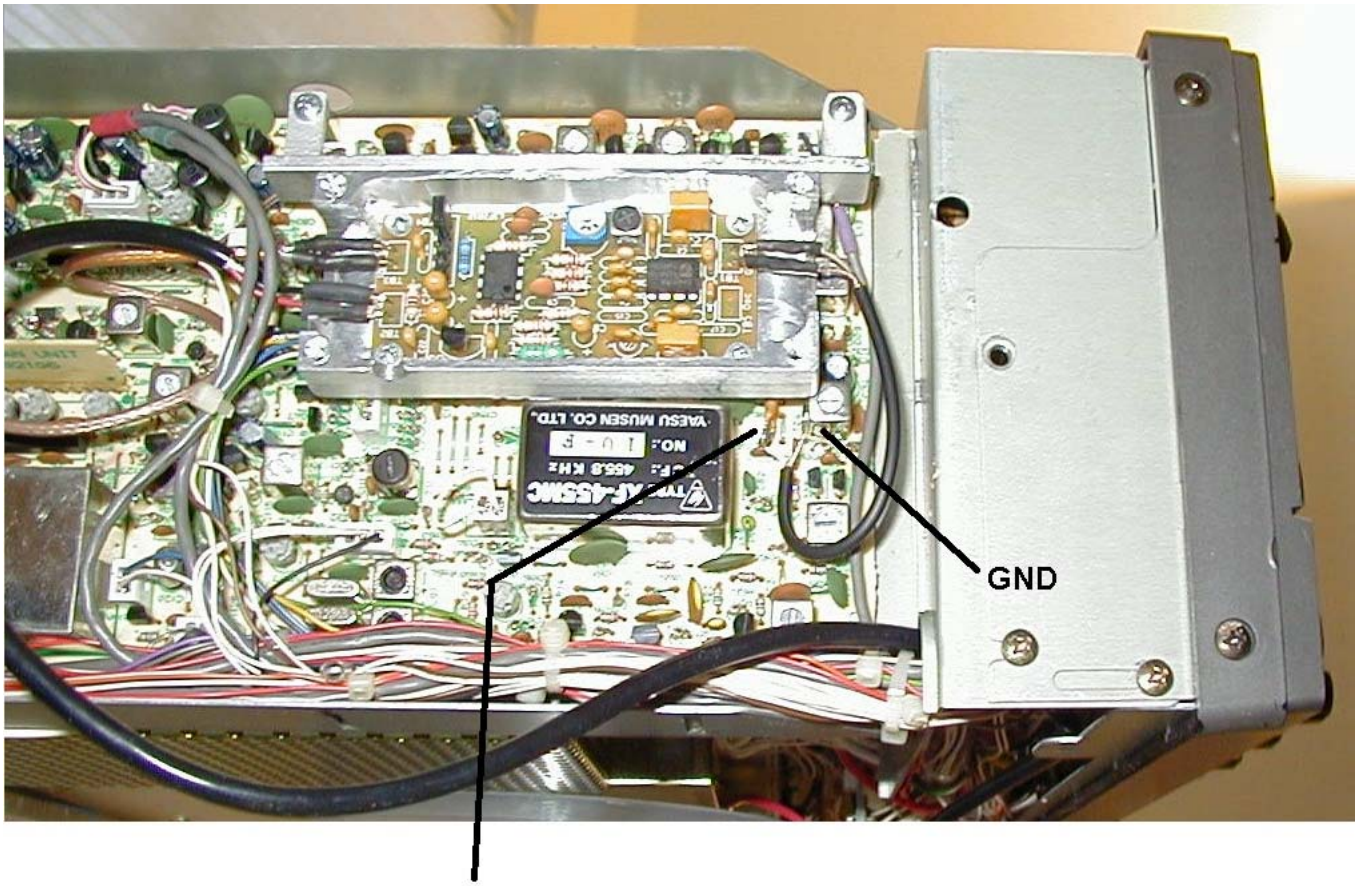


Figure 2

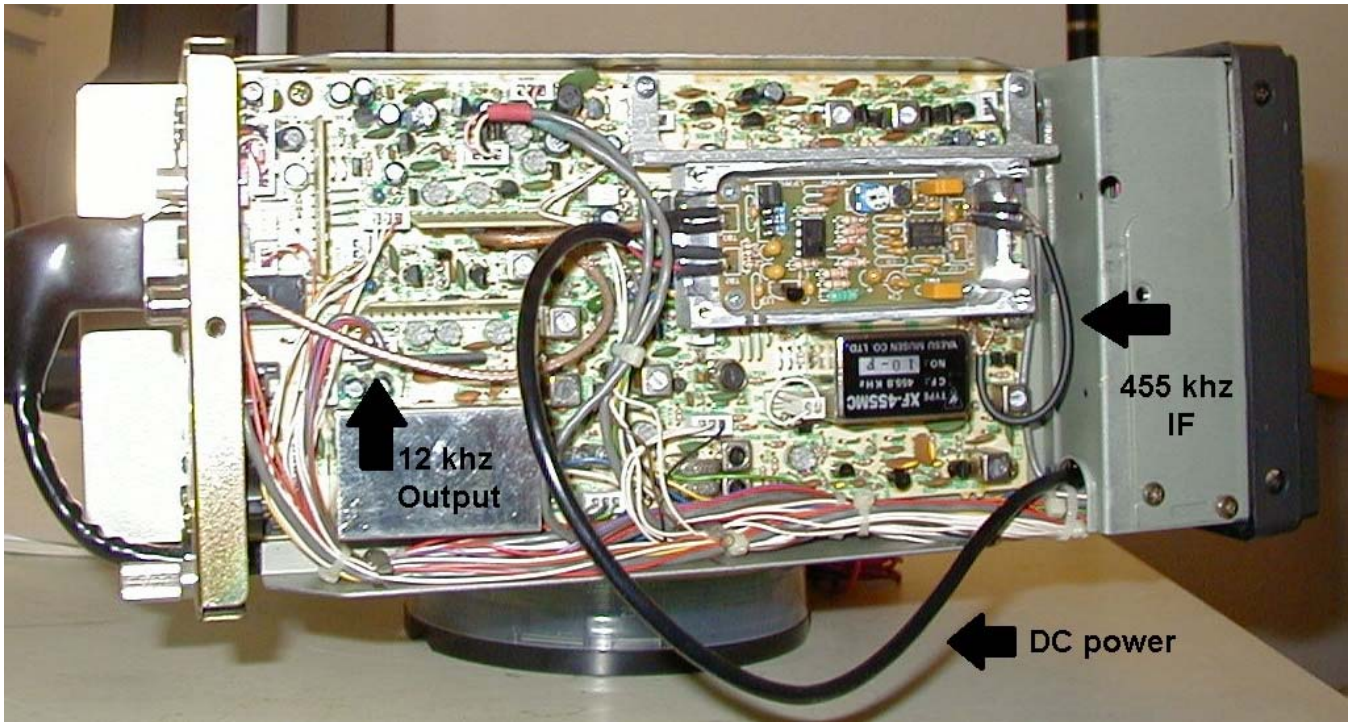
To remove the top cover, remove the eight screws (4 each marked " ★ " or " ※ ") in Figure 1). Then lift the cover off slowly so as not to stress the loudspeaker wires. Unplug these wires from J3016 on the RX Unit before pulling the cover away.

Note the warning about the speaker cable! I have ignored that more than once, and jerk to a halt each time I forget about it. The receive unit is on the left side of the 736R as shown. The IF tap point is in the upper right quadrant of the board.



The LIF board can fit on top of the receive unit as shown, but fit indeed is tight. When assembling the LIF board, make sure to install all components as low to the board as possible, and plan to trim the leads on the back to a minimum length. The tallest components on the board are the crystal and OSC, but even the adjustable POT and inductor are tall. The inductor increases in height when tuned, as the slug extends up out of the can when tuning the filter circuit. Try to keep everything as short as possible as this will help when building a mounting box for the unit (if the plan is to install the unit entirely inside the 736R).

The LIF can fit as shown. Suitable brackets connect its housing to the mounting screws of the receive board. The receive boards mounting screws have been replaced with Hex standoffs in two locations, to allow for easier mounting of the bracket. This allows the bracket to be simpler, and remain away from board components.

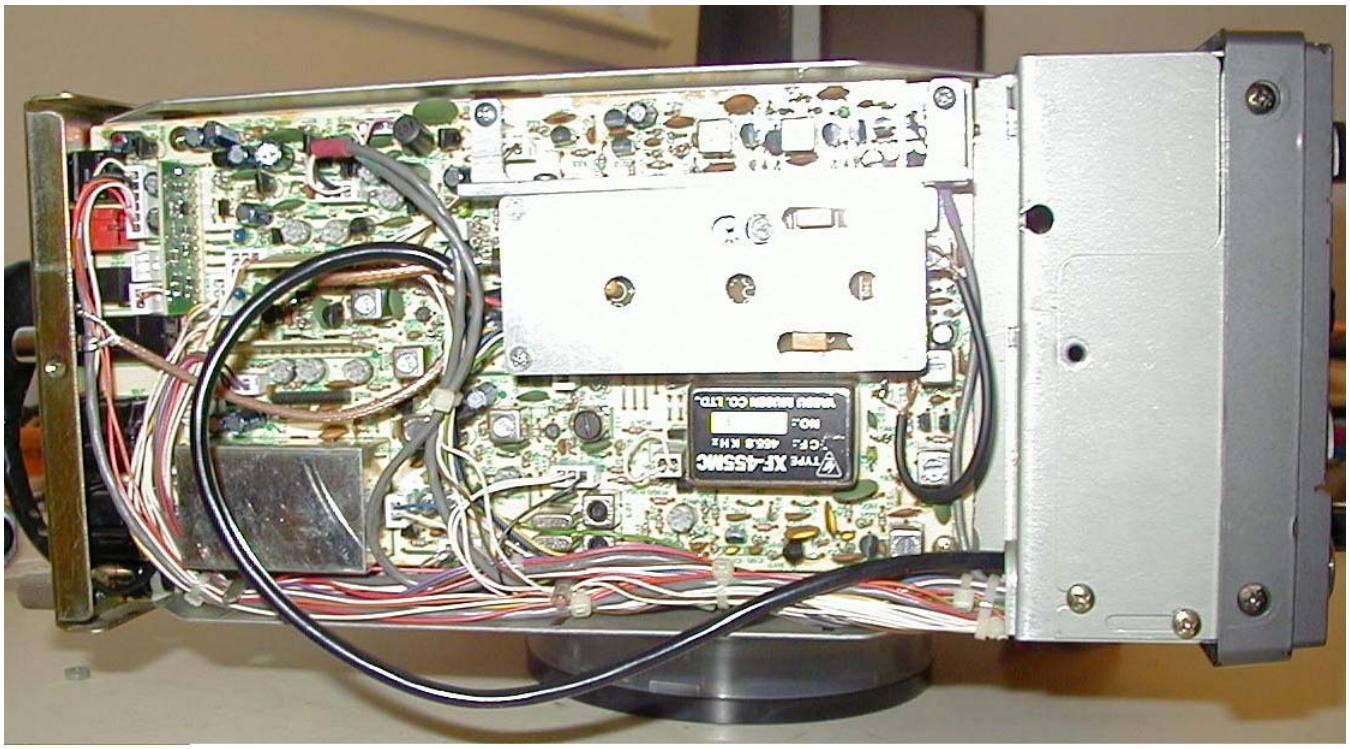


Note: the mounting box should be shielded, but also should be insulated on its underside. I accomplished this by installing a thin plastic sheet to the underside of the mounting box with adhesive. A similar plastic sheet is used INSIDE the mounting box under the LIF board itself, to avoid shorting of the board pins to the box.

Three wires are shown:
- 455khz IF Tap wiring (black mini coax).
- 12khz output (gold mini coax)
- DC power cable (black somewhat large cable…)

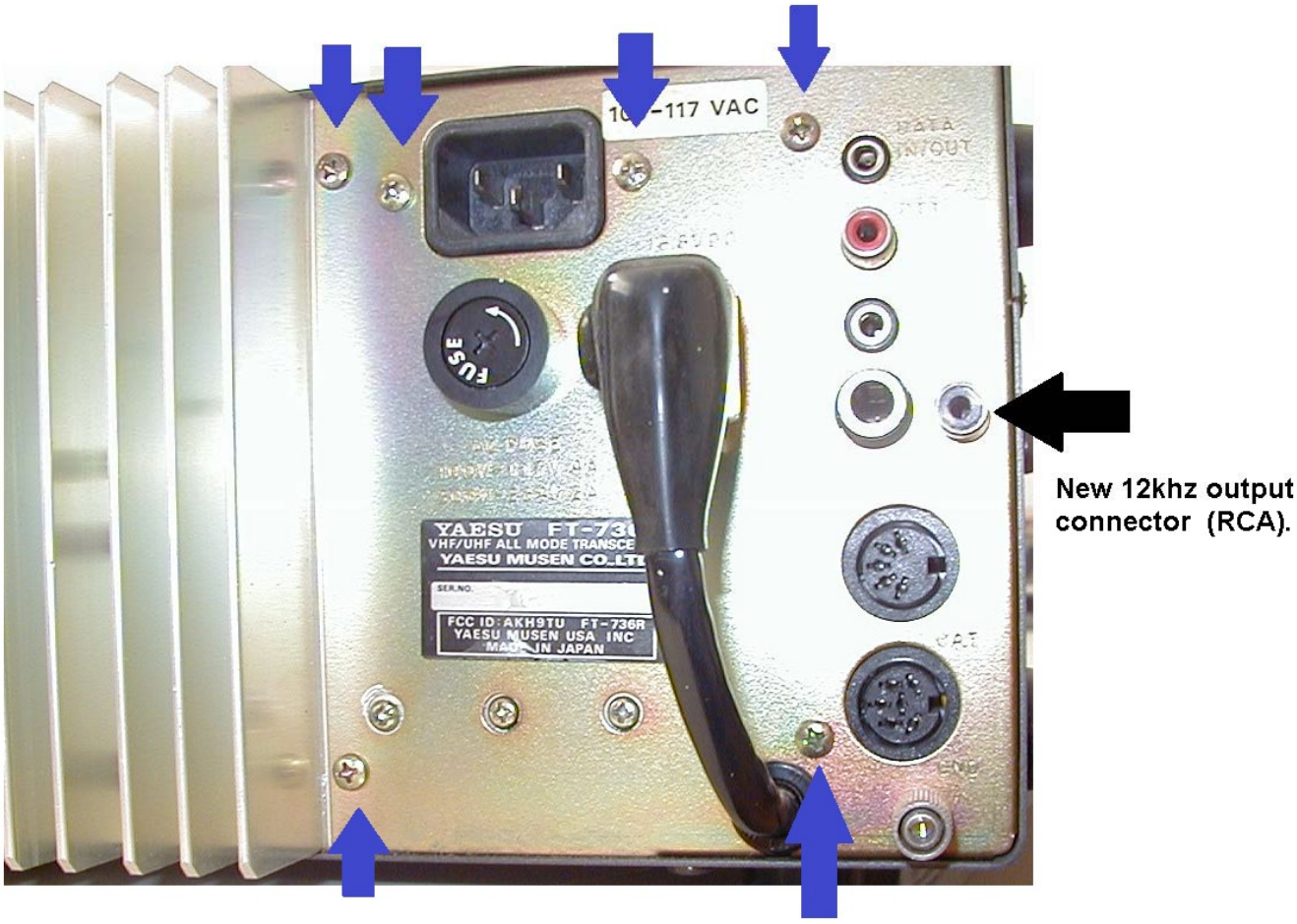
The coax cables should be small enough to be flexible, but there is space for relatively ‘fat’ cables if you can bend them.

The DC cable shown is oversized, but was what I had available. 13v DC power is available on the underside of the unit on the terminal block used for installation of band modules. I obtained power at the point. Using the same tabs Yaesu uses on band modules. GND can be obtained close-by as well, by mounting a similar screw-eye under the screws used to hold the terminal block in place.



Shown above is the final installation with the lid on the LIF boards mounting box. It has a few holes in it for access to the tuning components (POT and variable inductor), and a few holes added for cooling, which may be entirely unnecessary.

All fits well under the covers. The cabling can be allowed to drape freely in this area. Be sure not to pinch any cables as you reinstall the cover panels.



An output port can be installed on the back panel. Shown is an RCA connector, mounted at a convenient location where a cable can come from the LIF box to the back panel.

My installation uses the LIF inside the 736R, but if you chose to use an external box for the LIF, the 455khz Tap point cable can also come external at this point.

Drilling a hole in the back panel can be a concern, but the panel itself can be extended backward off the unit about 1 inch (3cm) after removal of the 6 screws shown.

This allows the panel to extend backward enough to drape a sheet or cloth between panel and unit, and even insert a thin piece or plywood (or similar) between the panel and the radio for drilling of the hole in the panel. The plywood acts as a protector plate, to avoid drilling into something incorrect.

With a cloth of a tight weave draped between the extended back panel and the radio drill chips and particles can be kept safely out of the radio.

I wish you all success!