

Phil's Cheap AM Filter Mod

VERSION 2.0 (changes are in purple) for the ICOM R75



WARNING: DO NOT perform this mod without some type of **eye protection**.
DISCLAIMER: The author is not responsible for any damage resulting from this mod.

1. Abstract:

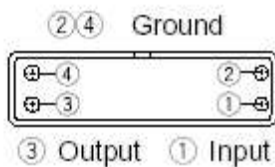
Add a 3.0 kHz AM filter for only \$19; no soldering inside the R75 required!

2. Introduction:

This modification will add a high-performance 15-element ceramic Murata filter (CFS455J) in the (455 kHz IF) optional filter slot inside the R75. This filter has the following characteristics: 3 kHz bandwidth at -6 dB, 9 kHz bandwidth at -80 dB, 8 dB maximum insertion loss, and 2000 ohms input/output impedance.

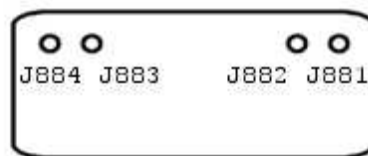
This filter is excellent on AM and is especially nice for MW-tuning in that it does not allow adjacent station bleeding yet sounds better than the narrow 2.4 kHz filters. This filter's mellow sound is apparent more by its shape and ultimate rejection than by its -6 dB bandwidth specification of 3 kHz. Drawbacks: this filter cannot be used with SAM and leaks (flutter noticed) on SSB. Schematics of this filter and the ICOM filter slot are [shown below](#).

MURATA FILTER



PIN-SIDE VIEW

ICOM FILTER SLOT



J881 IF INPUT
J882 GROUND
J883 GROUND
J884 FILTER OUT

FRONT

3. Warnings:

Make sure to unplug the unit before beginning and wear eye protection. Disconnect all cables ESPECIALLY the power supply, and avoid static discharge by grounding yourself.

4. Materials:

To perform this modification you will need the following items:

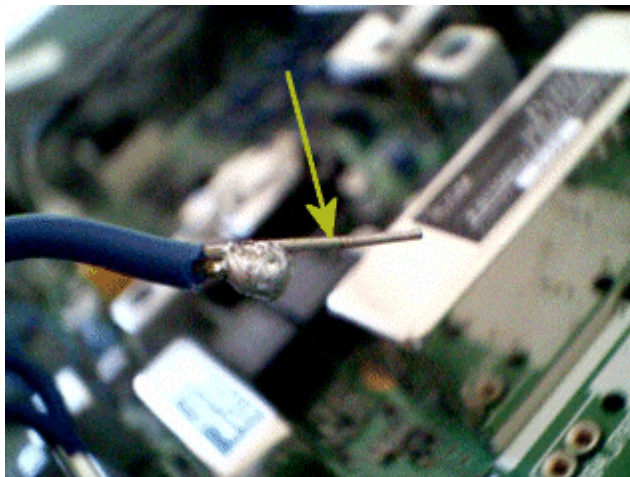
- a Murata filter (see below)
- a resistor (any value, see methods section below)
- a tie-wrap, some wire, electrical tape or heat shrink tubing
- a soldering iron, holder, sponge, and solder
- safety glasses or goggles (please use while soldering)

The Murata filter model CFS455J is available at Surplus Sales of Nebraska for \$7. They have a \$10 minimum so I ordered two and paid \$5 shipping; technically two radios can be done for \$19. Surplus Sales' telephone number is 1-402-346-2939. Their e-mail address is grinnell@surplussales.com. Website and filter links are shown below.

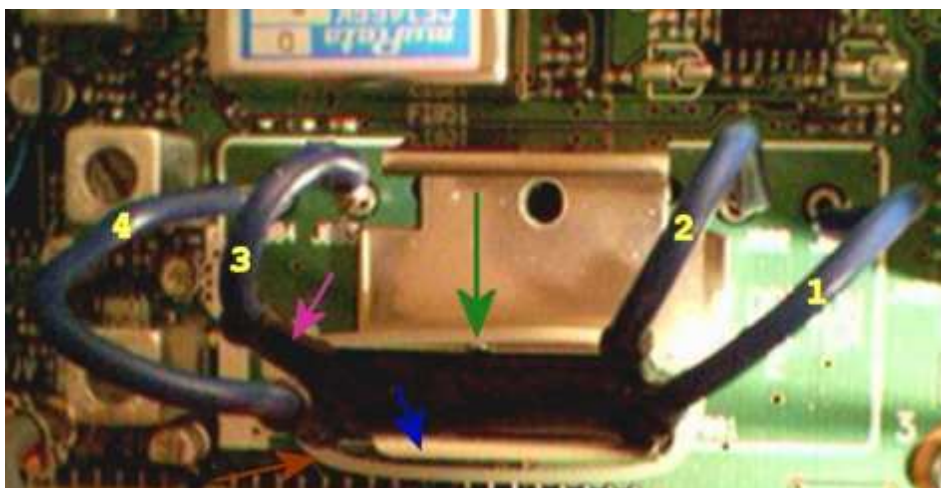
<http://www.surplussales.com/>
<http://www.surplussales.com/Filters/Filters-4.html>

5. Methods:

- Solder short (~3.5 cm) pieces of wire to each of the four filter pin ends. Cover these connections using heat shrink or electrical tape (note purple arrow in second picture below). Terminate the ends of the four pieces of wire with a short (~1 cm) segment of wire cut from a standard resistor (see yellow arrow). Note: use a clean (new) resistor or lightly sand an old one for good electrical contact.



- Take off the top cover by removing eight screws (see user manual for details). Tighten a tie-wrap around the filter (see red arrow) and then slip the R75's metal filter carrier (see blue arrow) between the filter and the tie-wrap until the filter is seated securely. Refer to the diagram below while attaching the filter as follows: The filter's center protruding 'pin' should be facing the back of the receiver (located below at the green arrow's tip). The front left pin goes into the hole marked J884 (refer to the yellow numbers), the rear left pin goes into the hole marked J883, the front right pin goes into the hole marked J881, and the rear right pin goes into the hole marked J882. Make sure the pins are seated tightly in their holes (the hole narrows further down for a snug fit).



- Check the connections, close the unit back up, and connect all cables.

6. Usage:

Enter the filter setup mode by depressing 'FIL' 2 seconds. Using 'UP' find 'Exp OFF' and rotate the tuning knob to the right until 'Exp ON' is displayed. Using 'UP' find 'oP2 No' and rotate the tuning knob to the right until 'oP2 257' is displayed. Now you can set a filter value of '3.3 kHz' (please refer to the Cookbook) for usage. The 'N' stands for 'narrow' and the 'W' stands for 'wide'. Press 'FIL' a final time to exit the filter setup mode.

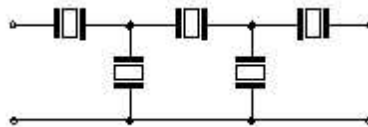
I now use the following (9 MHz & 455 kHz) filter settings on AM:

- AM wide = 15 kHz & 6 kHz
- AM normal = 15 kHz & 3.3 kHz
- AM narrow = 2.4 kHz & 2.4 kHz

7. Conclusion:

Your R75 now has another AM filter! This filter mod is inexpensive, effective, and requires no soldering inside the R75. I can be reached at just_rtfm@yahoo.com with any comments. dr phil :)

8. Credits:



I would like to thank my good friend Ken for his help... this is as much his mod as it is mine. Thank you Enrique for catching my wiring error and Craig for your suggestions. The old version of this document showed the filter input and output switched. My belief is that the Murata 15-element ceramic ladder filter is symmetric (similar to the diagram above) and as such I did not notice the error. I apologize for any inconvenience this error may have caused. The R75 community: our greatest asset.



'I find your lack of faith disturbing.'

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