

FIELD ADVISORY

FA#95-007 Revised
August 15, 1995

**THIS DOCUMENT IS INFORMATIONAL ONLY
*IT IS NOT A NOTICE OF WARRANTY AUTHORIZATION***

**TO: ALL LAND MOBILE SERVICE CENTERS
ATTENTION: SERVICE MANAGER**

SUBJECT: 86XX DESENSE AND MICROPHONICS

This is a revision to FA95-007, dated June 28, 1995. Please note that step seven of the microphonic procedure on the following page has been changed to only apply to 8605/06/10/15/16/21/22 model radios. It does not apply to 8600/01/02/04/22/25/30/40/44/55 radios. Please discard FA95-007 and replace it with this document.

This advisory provides suggested solutions for older 86XX units that experience a desense or microphonic condition. A common cause for these conditions is excessive oxidation on some of the contact points between the zinc bottom shield and the main radio PC board. While most radios do not experience this condition, this phenomenon can occur under certain environmental conditions as the radio ages. These procedures should only be performed on an as-needed basis. Those radios that do not experience problems do not require these changes.

The following two sections address the desense and microphonics subjects separately. Refer to Figures 1, 2 and 3 on the attached page when following these procedures.

Desense - 8601/02, 8622 & 8625 Full Duplex Mobiles

1. Remove the radio covers.
2. Remove the bottom shield on the main board.
3. Thoroughly clean all teeth and screw hole areas of the shield that contact the main board with a soft wire brush or an ink eraser. When properly cleaned, these areas should appear shiny.
4. Thoroughly clean all points on the main board that make contact with the bottom shield (teeth and screw hole contact points). Remove any excess solder and solder resist that may interfere with the contact between the shield and the main board. See Figure 1.
5. Inspect the shield for signs of warpage that prevent the teeth from making firm contact with the main board. This is accomplished by placing the shield on a flat surface with the teeth down to see if it lays flat. If no evidence of warpage exists, skip step 6 and go to step 7. If the teeth are not making proper contact due to shield warpage, perform step 6.
6. If the shield is found to be warped in an area involving teeth, elevate the shield above the work surface with two small blocks. Place the blocks under screw holes on each side of the affected teeth. With the affected area of the shield elevated on the blocks, lightly tap on the flat side of the shield over the affected teeth area (the handle end of a screw driver should work sufficiently). If the shield requires replacement, see the part number list on the next page for the appropriate information.
7. Solder the Z200 ground bracket tab nearest to the wall of the radio to its ground trace located near the edge of the bottom side of the main board if required. Remove the solder resist if necessary. See Figure 1.
8. Apply a thin layer of contact lube to the teeth and screw hole contact points on either the main board or the bottom shield itself. See Figure 1.

9. Re-install the bottom shield onto the main board. Make sure all screws are tight (don't over-tighten).
10. Remove the radio logic board and the VCO shield on the top side of the radio to reveal the top side RF circuitry of the main board. Those radios that use the small VCO shield do not need to have their shield removed. If not present, install three ground clips around front end filter Z200. The ground clip material (p.n. 537-5001-005) is sold in one foot strips. The three ground clips will need to be cut to length from the one foot strip. Inspection of the ground clip material reveals it has "fins" on one side. Cut two strips ten "fins" in length (about 1.6") and one strip three "fins" in length (about .5"). Peel the back off the three ground clips to expose the sticky side. Install the two longer clips along the long sides of the filter and install the short clip on the interior end of the filter. They should be installed so that the "fins" point up. Work them into place between the filter ground bracket and the radio casting with a narrow device such as a small piece of card board or a credit card. The clips need to be worked into place evenly or the sticky back may prematurely adhere the clip to the radio casting while it is still in an undesirable position. Once the clips adhere, damage can result to them if you attempt to force them down further. See Figure 3 for a diagram on the proper placement of the clips.
11. Install the VCO shield and reconnect the logic board.
12. Do a full radio performance test and align as necessary following the procedures listed in the radio's respective service manual.
13. Re-assemble the radio making sure the bottom shield, the top VCO shield and the logic board screws are all tight (do not over-tighten). Install the radio covers.

Please note that resistor R222 is now a factory selectable resistor. It may not be installed in some radios. Installing R222 in a radio that did not previously have it or removing R222 from a radio that did have it, may cause the radio to desense. *It is recommended to not change the status of R222.*

Microphonics

1. Follow steps 1 through 8 in the Desense section of this field advisory.
2. Install iso-damp material on the inside side of the bottom shield as shown in Figure 2. On the newer 1-piece bottom shield (p.n. 015-0920-118) trim the one iso-damp piece shown to fit in the cavity and around the notch.
4. Install three one inch strips of poron rubber as shown in Figure 2.
5. Re-install the main board bottom shield. Be sure the shield screws are tight (don't over-tighten).
6. Perform a full radio performance test and alignment paying special attention to the synthesizer modulation balance, data modulation, audio modulation and VCO test point voltage as specified in the radio's service manual.
7. In severe cases with 8605/06/10/15/16/20/21 radios, remove C915 and install a poron rubber strip across the top of the TCXO. If this is done, check, and adjust if necessary, the VCO test voltage at TP801 or TP802 per the synthesizer alignment procedure in the service manual. This may involve the cutting or adding of jumpers on the VCO microstrip. ***This does not apply to 8600/01/02/04/22/25/30/40/44/55 model radios.***
8. Re-install the radio covers.

Relevant Part Numbers

<u>PART NUMBER</u>	<u>DESCRIPTION</u>
015-0920-118	Current 86XX Bottom Shield (1-piece shield)
015-0920-124	Older 86XX Bottom Shield (Used with older radios that use a 2-piece shield)
018-1134-203	Iso-Damp Pads (1½" X 2")
574-3002-018	Poron Rubber Pad (.125 x .3 x 1.2)
299-0041-017	Contact Lube (3 cc syringe)
537-5001-005	Ground Clip Material (sold by the foot)

For technical questions regarding this field advisory, call 1-800-328-3911, ext. 2.

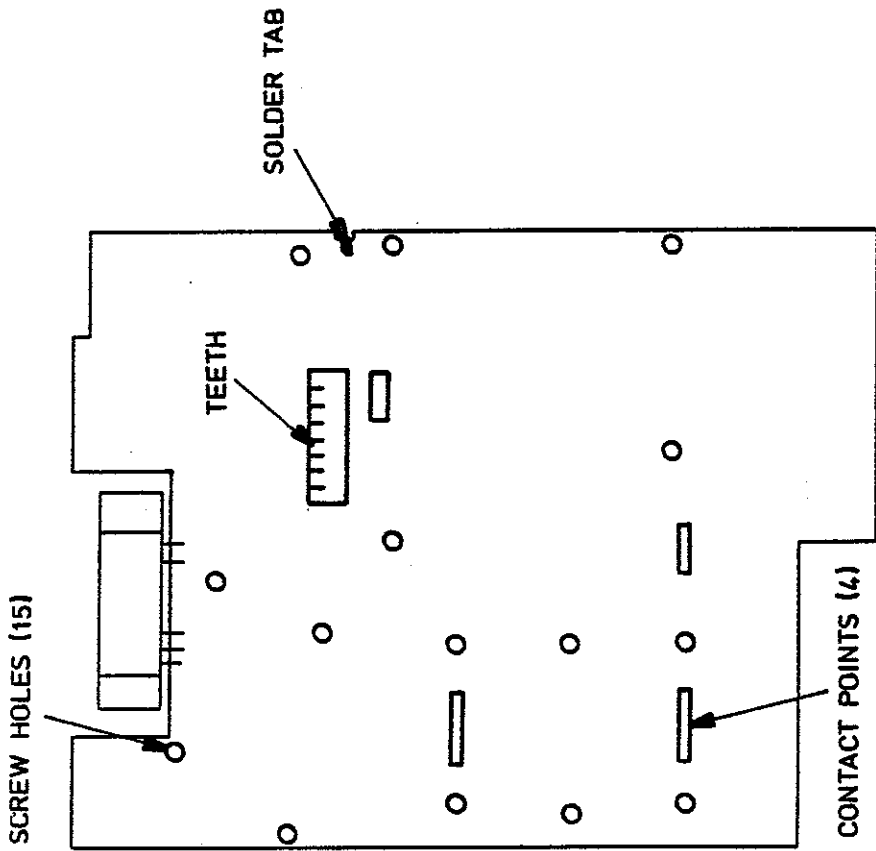


FIGURE 1

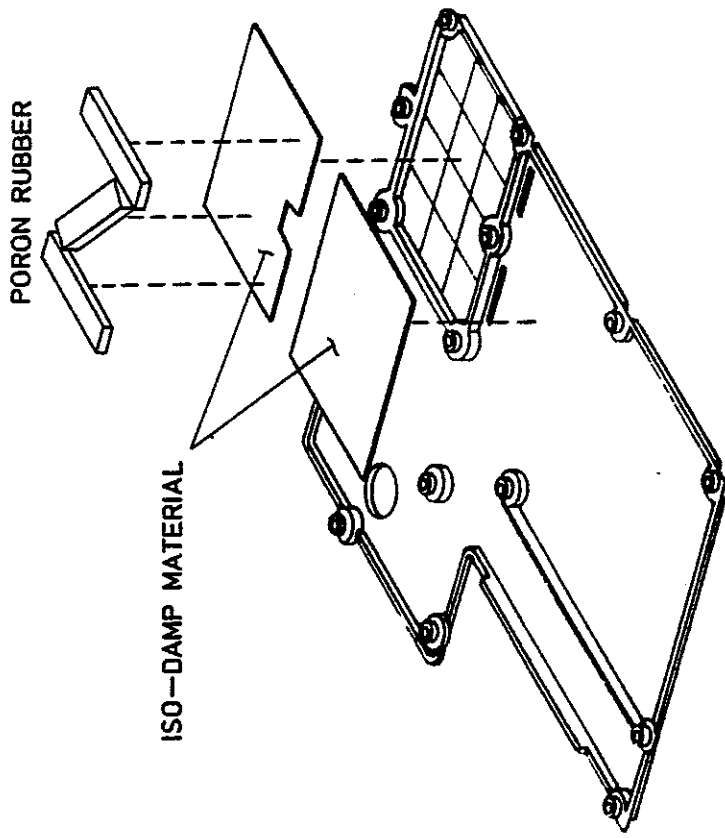
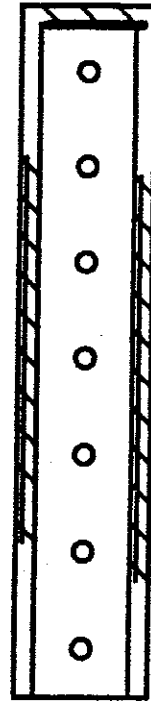


FIGURE 2



Top view of front end ceramic filter with ground straps installed on three sides.
(Fins point up)

FIGURE 3