

# Section 1

## Radio Disassembly/Assembly

### Overview

This section explains, step-by-step, how to disassemble and reassemble the M1225 radio.

### Disassemble Radio

#### IMPORTANT

Before disassembling and reassembling the radio, wear a conducting wrist strap to prevent damage to any component on the main board from electrostatic discharge.

### Remove Housing Cover

1. Pull volume control knob straight off.
2. Remove housing cover by sliding a flat bladed screwdriver under cover latch (located bottom of radio) and gently pry upward until latch disengages. (Figure 1-1.)
3. Slide housing cover off of heatsink rails.

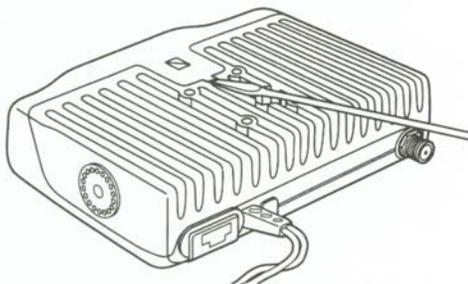


Figure 1-1. Remove Housing

### Remove Front Panel Display Board

1. Disconnect flex connector cable from black header on main board by gently lifting upwards.
2. Remove display board by tilting forward slightly and gently lifting upwards.

### Remove Mechanical Components from Main Board

Refer to Figure 1-2 for steps 1 through 8 for the removal of the mechanical components from the main board. Refer to the exploded mechanical view diagram for more details.

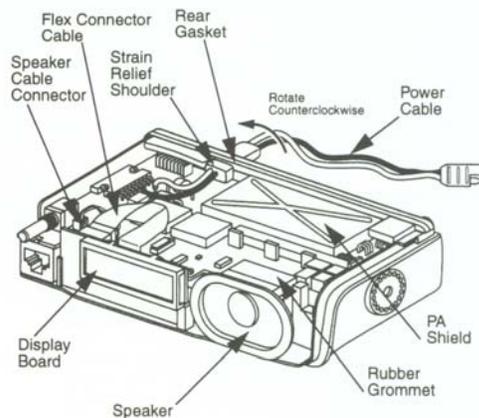


Figure 1-2. Mechanical Components

1. Pull 2-pin speaker cable connector upwards to disconnect from main board.

#### CAUTION

In order to avoid damage to the speaker, *Do Not* grasp the speaker cone when removing rubber gasket/speaker from heatsink.

2. Grasp speaker at edges and slide rubber grommet/speaker upwards to remove from heatsink.
3. Pry plug, on rear gasket, out of square pocket on rear of heatsink.
4. Lift accessory connector flap located on rear of heatsink.
5. Lift and peel off rear gasket from heatsink.
6. Disengage power cable, from double-D slot of heatsink, by grasping and rotating the strain

## Reassemble Radio

relief shoulder away from PA shield (counterclockwise) and sliding upwards.

- Remove shroud by unsnapping catch-tabs, located on inside heatsink wall, using a flat bladed screwdriver and firmly pulling shroud away from heatsink.
- Pry off PA shield cover using a flat bladed screwdriver.

**Remove Main Board**

- Remove hex nut from underside of heatsink with a 5/16" nut driver.
- Remove all 14 mounting screws from main board using a T10 Torx® driver, being careful not to lose the display board support.
- Loosen antenna connection using a 1/2" nut driver.
- Remove main board; using thumb and forefingers of both hands, grasp edge of main board, antenna connector, microphone connector, and the 16-pin accessory connector and lift upwards and away from heatsink.

**CAUTION**

Make sure to avoid damaging the PA stud on the underside of the main board when lifting upwards and away from the heatsink.

**Reassemble Radio****Replace Main Board**

- Carefully place main board into heatsink, making sure that the PA stud clears the hole on the underside of the main board.

**NOTE**

Make sure that the internal tooth washer and nut of the mini-U connector are on the outside of the heatsink wall.

- Replace the 14 mounting screws and display board support (refer to Figure 1-3) into main board using a T10 Torx driver. Torque the 2 screws on the audio PA and the 2 screws on the transistor and regulator at 6-8 in-lbs. Torque the remaining 10 screws at 8-10 in-lbs.
- Press down on antenna connection and tighten using a 1/2" nut driver and torque at 20-24 in-lbs..

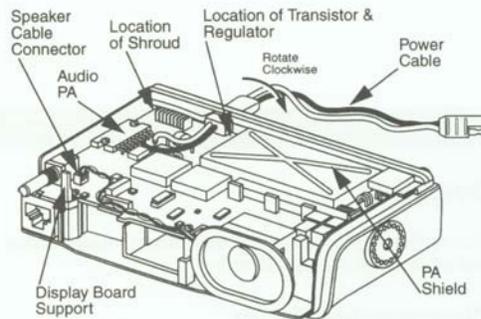


Figure 1-3. Position of Speaker Cable

**Replace Mechanical Components to Main Board**

- Rotate the strain relief shoulder away from PA shield and insert into double-D slot on heatsink
- Press strain relief shoulder downward, and rotate (clockwise) toward PA shield until fully seated.

**CAUTION**

Power cable should be routed around component properly and gently pressed into position (Figure 1-3).

- Insert shroud into heatsink and press catch-tabs onto snaps.
- Place rear gasket onto heatsink, making sure it fits between wall of heatsink and PA frame, while firmly pressing the five ribs into the five teardrop indentations on heatsink.
- Press plug of rear gasket into square pocket at rear of heatsink.
- Attach hex nut to underside of heatsink with a 5/16" nut driver and torque to 5 in-lbs.
- Snap PA shield cover into place on PA shield frame making sure not to pinch rear gasket.
- Slide rubber grommet/speaker downwards onto the posts on the heatsink with the word TOP facing up.

**CAUTION**

Speaker cable should be routed in front of the 10-position black header on the main board to prevent the housing's rear hook from dislodging and damaging the speaker connector when replacing the housing (Figure 1-3).

9. Connect speaker connector straight into the 2-pin jack on main board.

### Replace Front Panel Display Board

1. Insert display board into slide rails while gently tilting slightly forward and gently push down until fully seated.

#### NOTE

Check that tab on main board is locked into slot on display board.

2. Connect flex connector cable to black header on main board.

### Replace Housing Cover

1. Insert keypad into housing and press as shown in Figure 1-4. Check to see that all five buttons on keypad are secured and protruding properly through the housing.

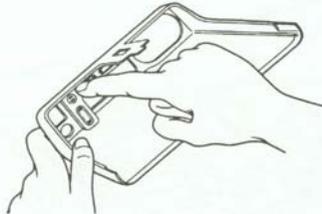


Figure 1-4. Insert Keypad

2. With radio on flat surface, place housing approximately halfway on heatsink rails (Figure 1-5).

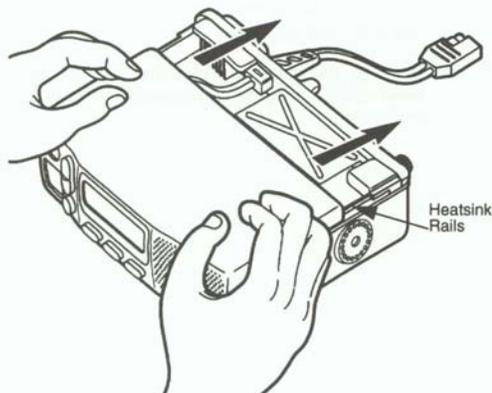


Figure 1-5. Align Housing Cover to Heatsink Rails

### Install an Advantage™ Board into the AdvantagePort™

3. Using both hands, press down on either side of housing to assure heatsink and housing rails are aligned (Figure 1-5).

#### NOTE

Do not press on keypad when sliding housing onto heatsink.

4. Slide housing forward on heatsink rails, using both hands, making sure that power cord and rear gasket clear the housing, until housing is flush with rear of heatsink.
5. Firmly press housing cover and heatsink together until cover latch snaps into place (refer to Figure 1-6).

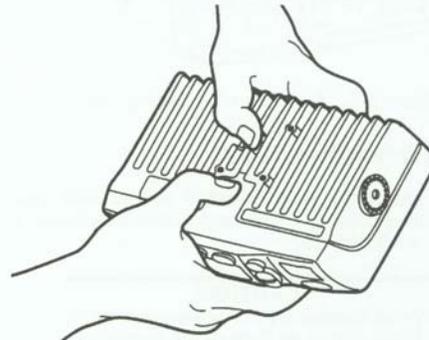


Figure 1-6. Lock Housing Cover into Place

#### NOTE

Verify that outside corners of gasket are properly inserted and aligned with corners of housing.

6. Insert volume control knob by aligning "D" shaft, pushing inward, and twisting onto volume control shaft.

### Install an Advantage™ Board into the AdvantagePort™

The M1225 radio has been designed with an AdvantagePort interface that allows compatible Advantage Boards to be field installed.

#### IMPORTANT

Before disassembling and reassembling the radio, wear a conducting wrist strap to prevent damage to any component on the main board from electrostatic discharge.

## Install an Advantage™ Board into the AdvantagePort™

**Disassemble Radio**

1. Refer to the "Remove Cover Housing" segment of this chapter to remove the cover housing.
2. Remove the three mounting screws from main board using a T10 Torx driver (Figure 1-7).

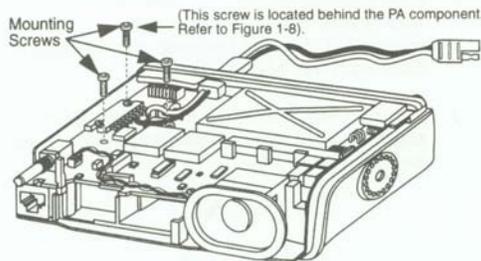


Figure 1-7. Location of Mounting Screws

**Insert Advantage Board**

1. Insert the three standoff screws into main board using a 5mm nut driver and torque at 4.5-5.5 in.-lbs.

**CAUTION**

Avoid excessive force when opening or closing the cover flaps of the 16-pin connectors on both the option and main boards. Damage to the connector's could result!

2. Locate the 16-pin connector on the Advantage Board and gently lift cover flap.
3. Locate the 16-pin connector on main board and gently lift cover flap.
4. With the component side of the option board facing up, insert and properly align folded end (blue side up) of flex connector cable into the 16-pin connector on the Advantage Board.

5. While holding flex connector cable in place, gently close cover flap.
6. Insert and properly align the other end (blue side up) of flex connector cable into the 16-pin connector on main board
7. While holding flex connector cable in place, gently close cover flap.
8. Align the power cables, over main board, so they lay flat.
9. With the component side of the option board facing down, position the holes of the Advantage Board over the standoff screws on main board (Figure 1-8).

**NOTE**

Make sure the flex connector cable of front panel display board is underneath the Advantage Board.

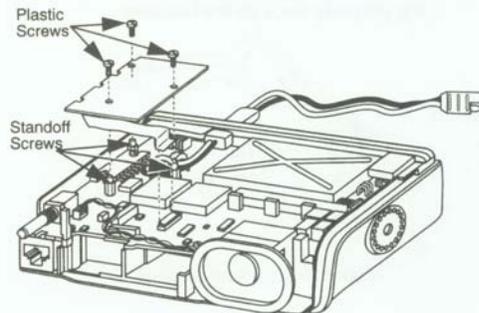


Figure 1-8. Position of Advantage Board

10. Insert the three plastic screws into the Advantage Board using a straight edge screwdriver and torque at 0.7-0.9 in.-lbs.
11. Refer to the "Replace Housing Cover" segment of this chapter to reassemble the housing cover.