Chapter 6: Replacement and Repair

This chapter describes the procedures used for replacement and repair of the Mini Telemetry service parts. After any replacement and repair procedures, perform checkout procedures, as described in Chapter 3. Always read all the warnings, cautions, notes, and other information provided in the Important Safety Information section before starting any replacement or repair. All replacement and repair procedures shall be performed by authorized service personnel only.

NOTE: Standard service tools (3mm hex key, T10 and T15 Torx screwdriver, Phillips screw driver, small wrenches or nut drivers and ESD toolkit) are required to perform repair procedures.

CAUTION:
Servicing of this product in accordance with this service manual should never be undertaken in the absence of proper tools, test equipment and the most recent revision to this service manual which is clearly and thoroughly understood.

CAUTION:
Genuine replacement parts manufactured or sold by GE Healthcare must be used for all repairs. Read completely through each step in every procedure in this manual before starting the procedure; any exceptions may result in a failure to properly and safely complete the attempted procedure.

WARNING:

Electrical shock hazard: Always disconnect from wall power to eliminate hazard.

SENSTIVE TO ELECTROSTATIC DISCHARGE CAUTION
Mini-telemetry system contains ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

6.1 Replacement Procedures

6.1.1 Transmitter Battery Replacement

SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Use a T10 Torx screwdriver to remove the battery compartment screw and washer.

2. Slide the battery cover out.

3. Move the battery out and disconnect the battery wire from the Mini Telemetry electronic board to remove the battery.

NOTE: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

6.1.2 Transmitter Bottom Cover Replacement

SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Remove the transmitter battery as instructed in section 6.1.1.

2. Remove the transmitter carrying strap.

3. Use a T10 Torx screw driver to remove the two screws on the side of the transmitter case and remove the bottom cover.

4. The speaker cable is connected from the bottom cover to the electronic board. Pull the connector gently to disengage it from the board.

NOTE: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

NOTE: For traceability purposes, make sure to transfer the unit serial number and the channel number and apply them to new bottom cover in the spaces provided.

6.1.3 Transmitter Top Cover Replacement

SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Remove the bottom cover as illustrated in Section 6.1.2.

2. Use a Phillips screw driver to remove the 2 screws which fix the transmitter electronic board to the top cover.

3. Slowly slide the electronic board out.

NOTE: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

6.1.4 Power Adaptor Plug Replacement

1. Press and hold the Release button and rotate the plug counter-clockwise to release the plug attachment from the adaptor.

2. Place the desired plug attachment on the adaptor. Press and hold the Release button and rotate clockwise to attach the plug to the adaptor.

6.1.5 Receiver Top Cover Replacement

1. Ensure that the receiver unit power cord is unplugged from the power outlet. Use a small screw driver to remove the screw caps on the front panel and sides of the receiver top cover.

2. Use a T15 Torx screwdriver to remove the two screws on the front panel and the two screw on the sides of the top cover.

3. Slide the top cover to remove it.

NOTE: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

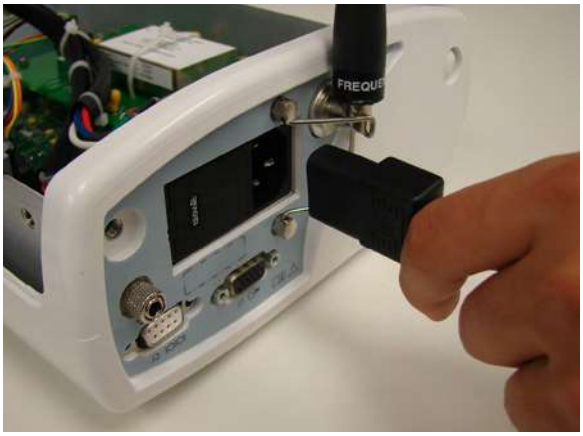
NOTE: For traceability purposes, make sure to transfer the unit channel number and apply it to new top cover in the space provided.

6.1.6 Receiver Bottom Cover Replacement

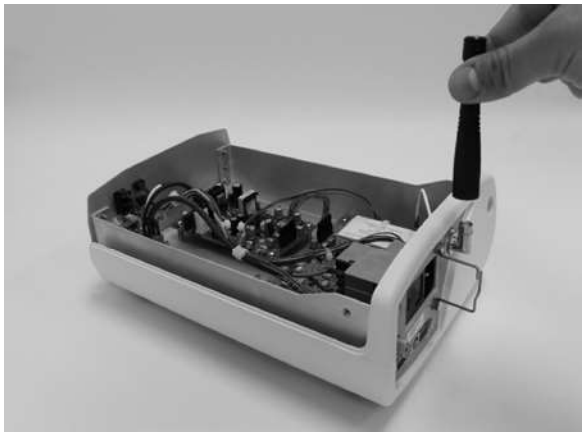
SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Ensure that the receiver unit power cord is unplugged from the power outlet. Remove the top cover as instructed in section 6.1.5.

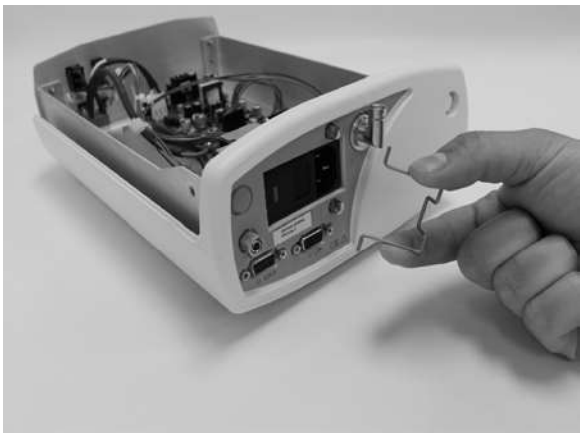
2. Disconnect the receiver power cord from the wall outlet and the receiver unit.



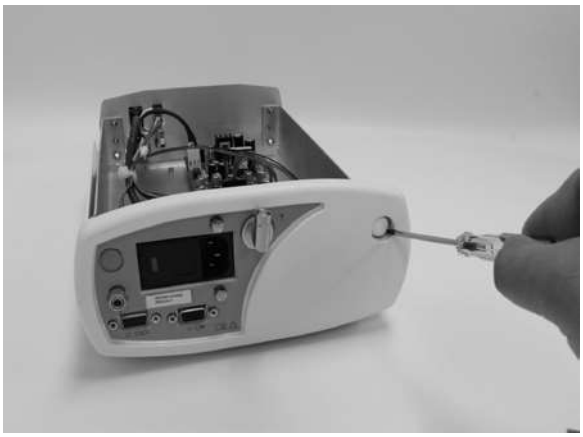
3. Disengage the receiver antenna from antenna connector and put it aside.



4. Press on the sides of the power cord holder clamp to remove it.



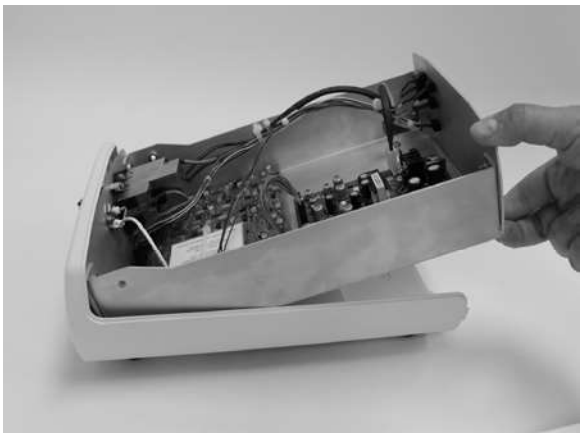
5. Use a small screw driver to remove the screw caps on the bottom cover at the rear side of the unit.



6. Use a T15 torx screw driver to remove the two screw on the rear panel.

7. Use a 3mm hex key to remove the four screws on the bottom side of the receiver.

8. Grab and tilt the front panel side of the metal chassis upward to release the antenna connector from the bottom cover and remove the cover.



NOTE: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

NOTE: For traceability purposes, make sure to transfer the unit serial number and apply it to new bottom cover in the space provided.

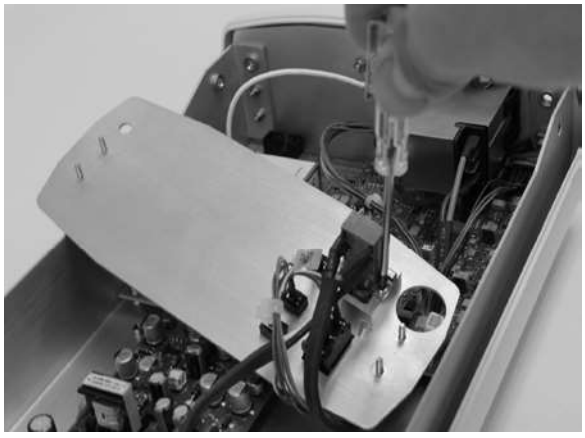
6.1.7 Receiver Front Panel Replacement

SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

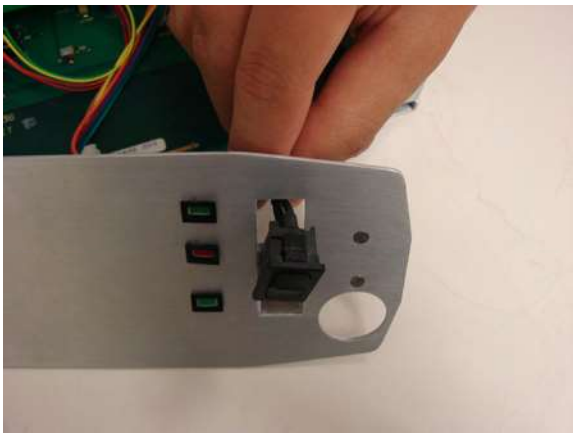
1. Remove the receiver top cover as instructed in section 6.1.5.

2. Use a small wrench or nut driver to remove the 4 nuts fixing the front panel to the chassis.

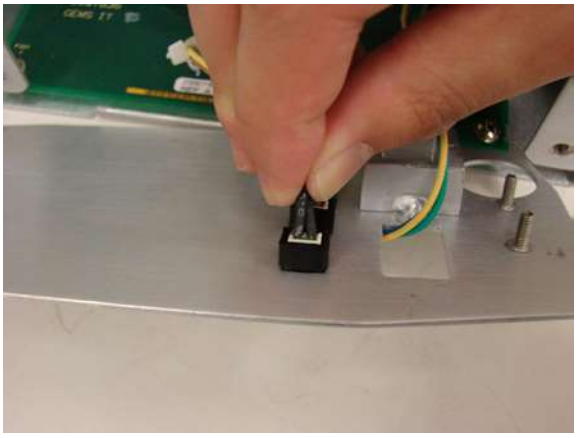
3. Use a small Phillips screw driver to remove the two screws attaching the power switch to the panel to release the power switch.



4. Disconnect the UA mode select switch wire from the electronic board. Press on the sides of the UA mode select switch on the back of the front panel and push it outward to remove the switch. Take note of the switch orientation in terms of its wires colors to prevent incorrect switch orientation at the time of re-installation.



5. Use a small screwdriver to press on the sides of the grommet collars on the back side of the panel and pull the grommets out to release the LED's.

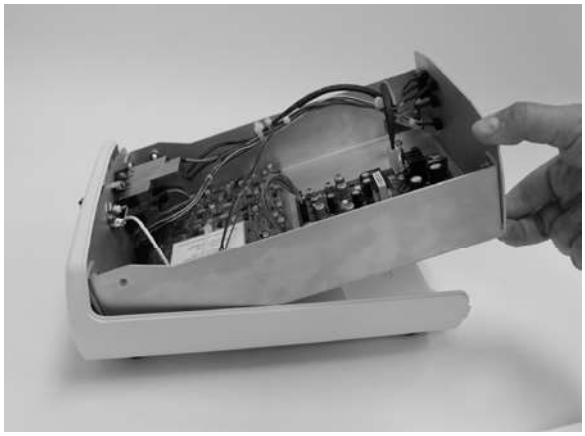


Note: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

6.1.8 Receiver Rear Panel Replacement

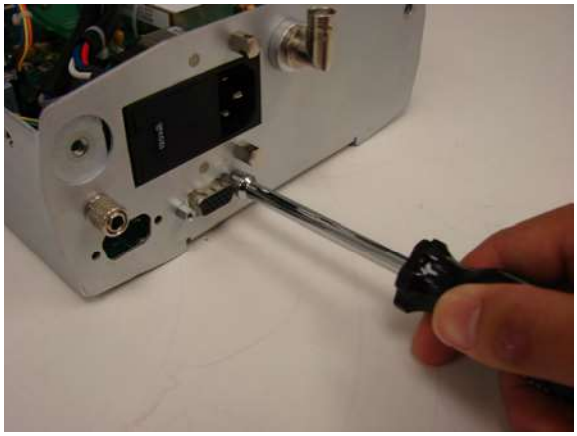
SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Remove the receiver bottom cover as instructed in section 6.1.6.

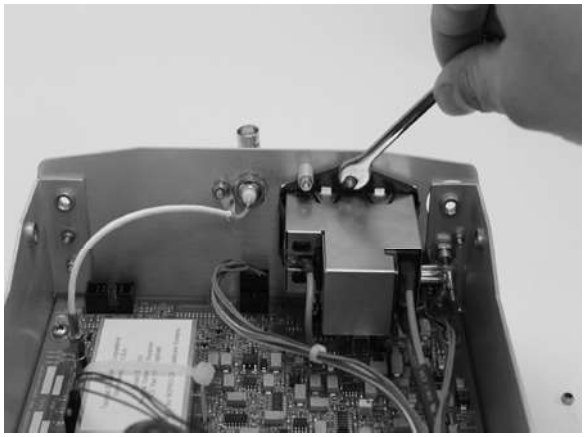


2. Use a small nutdriver to remove the 3 nuts fixing the rear panel to the chassis.

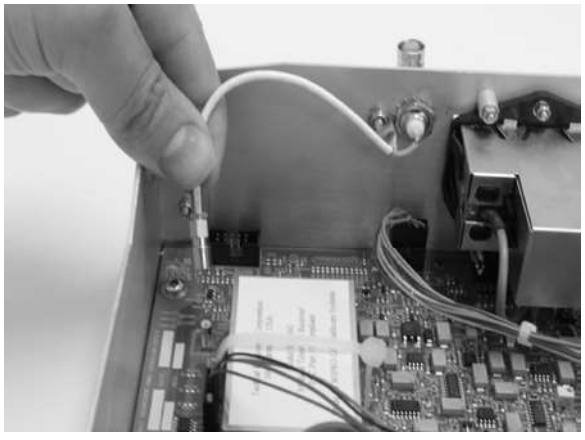
3. Use a 5mm nut driver to remove the hex screws attaching the D9 connectors (J1, J2) to the rear panel.



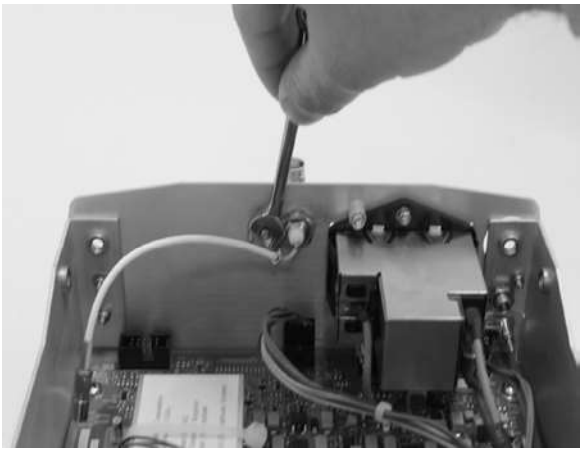
4. Use a small wrench or nut driver to remove the 4 screws attaching the power module to the rear panel to release the power module. Use a nut driver to remove the nut attaching the equipotential lug to panel to release the lug.



5. Disconnect the antenna wire connector from the main board by firmly holding the connector end of the wire and pulling it upward.



6. Use a small wrench to remove the nut that fixes the antenna connector to the rear panel to remove the connector.

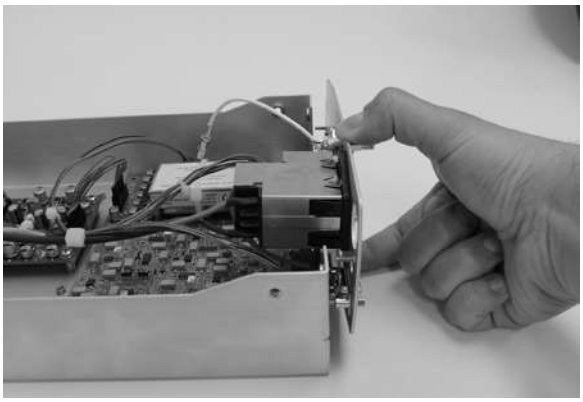


Note: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

6.1.9 Receiver Power Inlet Module Replacement

SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

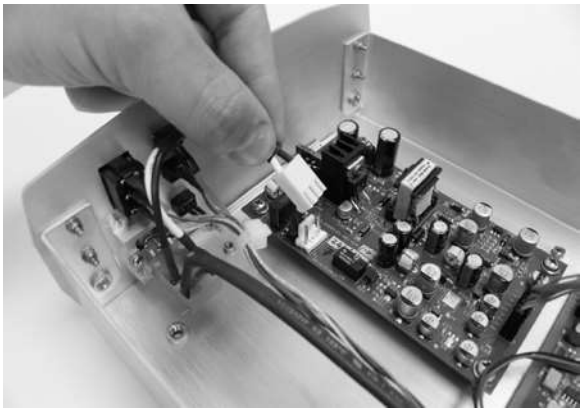
1. Remove the receiver rear panel and detach the power module from the rear panel as instructed in section 6.1.8.



2. Use a wire cutter to cut the power cable tie and release the power cable.

3. Use a small Phillips screwdriver to remove the two small screws attaching the ON/OFF power switch to the front panel to release the switch.

4. Disconnect the power connector going to the power supply board to remove the power module assembly.



Note: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

Note: Upon reinstallation, make sure the AC voltage selector on the power inlet module is set to the correct country-specific voltage before turning on the receiver unit.

6.1.10 Receiver Fuses Replacement

SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Disconnect the receiver power cord from the receiver power module and the outlet.

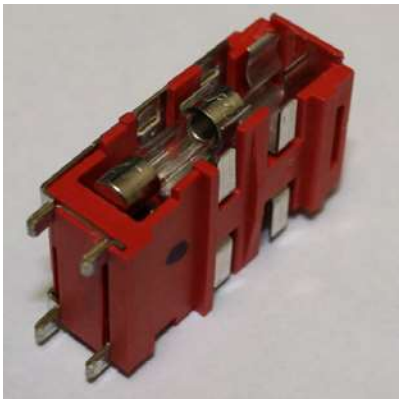
2. Use a small screw driver to open the fuse holder compartment of the power module on the rear panel of the receiver.

3. Use a small screwdriver to slide the fuse holder out and replace the fuses.

Note: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

Note: Upon reinstallation, make sure the AC voltage selector on the power inlet module is set to the correct country-specific voltage before turning on the receiver unit.

Note: When re-installing the fuses, make sure both fuses are inserted in their proper locations in the fuse holder as shown in the image below.

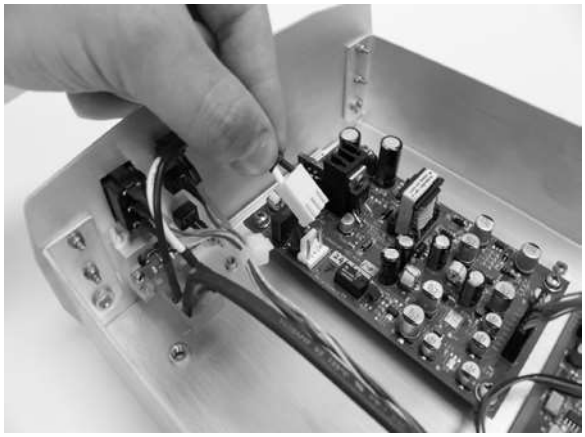


6.1.11 Receiver Power Supply Board Replacement

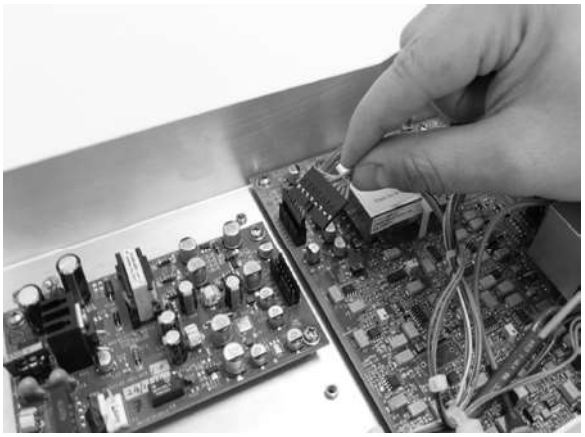
SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Ensure that the receiver unit power cord is unplugged from the power outlet. Remove the top cover as instructed in section 6.1.5.

2. Disconnect the input power connector going from the power switch to the power supply board.



3. Disconnect the output power header connector from P2 connector on the power supply board.



4. Use a Phillips screw driver to remove the four screws attaching the power supply board to the chassis and then remove the board.

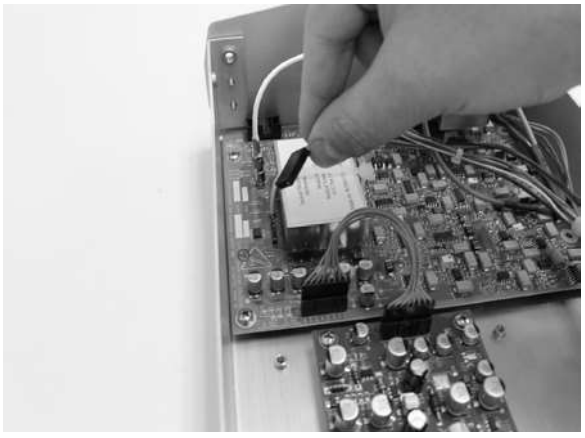
NOTE: Reverse steps to reinstall. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)

6.1.12 Receiver Main Board Replacement

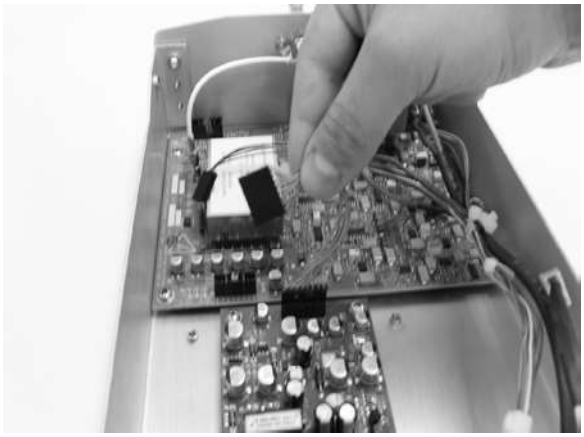
SENSITIVE TO ELECTROSTATIC DISCHARGE CAUTION
This procedure involves handling of ESD sensitive parts. ESD control guidelines must be followed during this procedure to ensure that static charges are safely conducted to the ground and not through the sensitive device, to prevent damage to the equipment.

1. Ensure that the receiver unit power cord is unplugged from the power outlet. Remove the top cover as instructed in section 6.1.5.

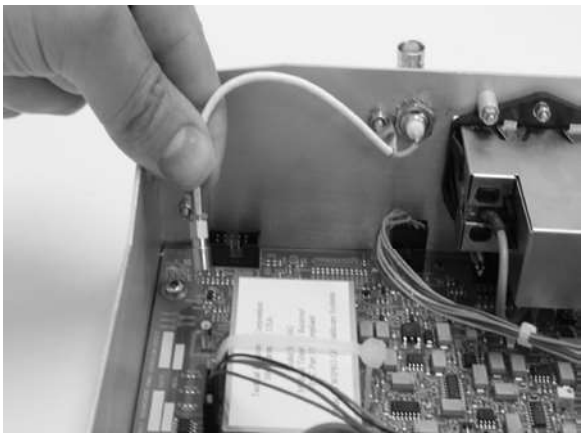
2. Disconnect the programming header connector from J302 connector on the main board.



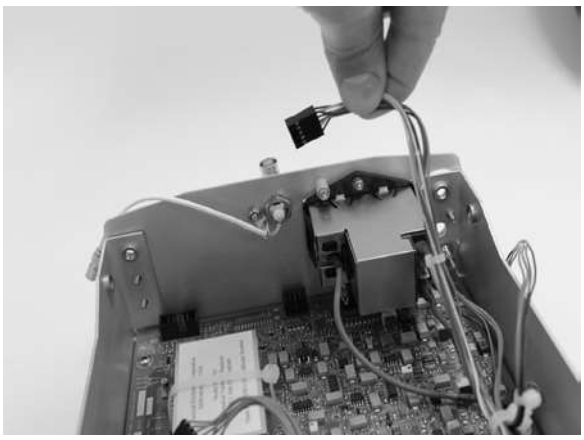
3. Disconnect the power header connector from J1102 connector on the main board.



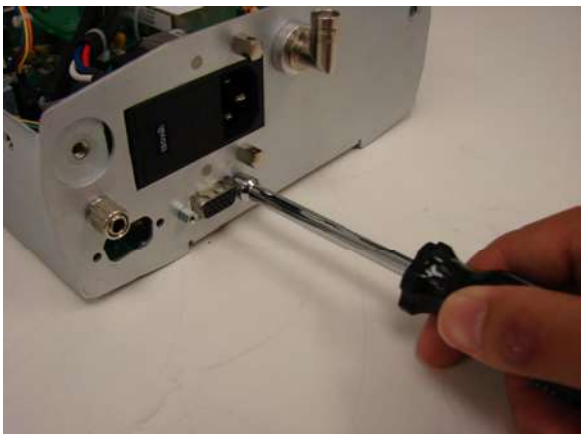
4. Disconnect the antenna wire connector from the main board by firmly holding the connector end of the wire and pulling it upward.



5. Disconnect the UA switch / LED wire connector from from the main board.



6. Use a 5mm nut driver to remove the hex screws attaching the D9 connector J1 to the rear panel.



7. Use a Phillips screw driver to remove the four screws attaching the main board to the chassis and then remove the board.

8. Cut the tie wrap attaching the radio module to the main board and pull out the radio module to disconnect it from the main board.

NOTE: Reverse steps to reinstall. Make sure to attach the radio module to the new main board using a tie wrap. After reinstallation, perform checkout procedures. (Refer to Chapter 3.)