



FXi-60 to FXi-250 Field Conversion Application Guide

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FXi-60 to FXi-250 Field Conversion Application Guide

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1 FXi-60 to FXi-250 Field Conversion

1.1 Overview of Installing the Conversion Kit.

The conversion of the FXi-60 into an FXi-250 requires the PA to be replaced with a standard FXi-250 PA module, calibration of the unit for 250 watts and replace the name plate.

2 Installation Preparation

2.1 Requirements

It is recommended that your Exciter has the latest software before you perform this conversion. Please check the Support section of the BE website at www.bdcast.com/support

This procedure will detail upgrading the exciter. However if you will be using the exciter in a new application or different transmitter there are additional items to consider; mute jumper position, and for IBOC applications U41 may have to be changed for the different transmitter tables.

2.2 Overview / Estimated Completion Time For the conversion

The FXi Field Conversion will take about 30 minutes to complete.

2.3 Items / Tools required for the Conversion Process

- #2 Philips Screwdriver
- 9/16" nut driver or wrench
- 3/4" nut driver or wrench
- 979-9250-001; KIT, FIELD CONVERSION, FXI-60 TO FXI-250
- Computer with "Hyper-Terminal"
- Bird Wattmeter Model 4421 or equivalent
- Digital Volt Meter
- 50 Ω Dummy load (>300W power handling capability)
- Utility knife

3 Remove and replace the PA Module



WARNING: ENSURE ALL PRIMARY POWER IS DISCONNECTED BEFORE PROCEEDING

1. Once the Exciter is removed from service and placed on the bench, remove the top cover, set aside and retain hardware.

2. From inside the Exciter, remove the 3 Philips screws from the divider wall in the exciter.

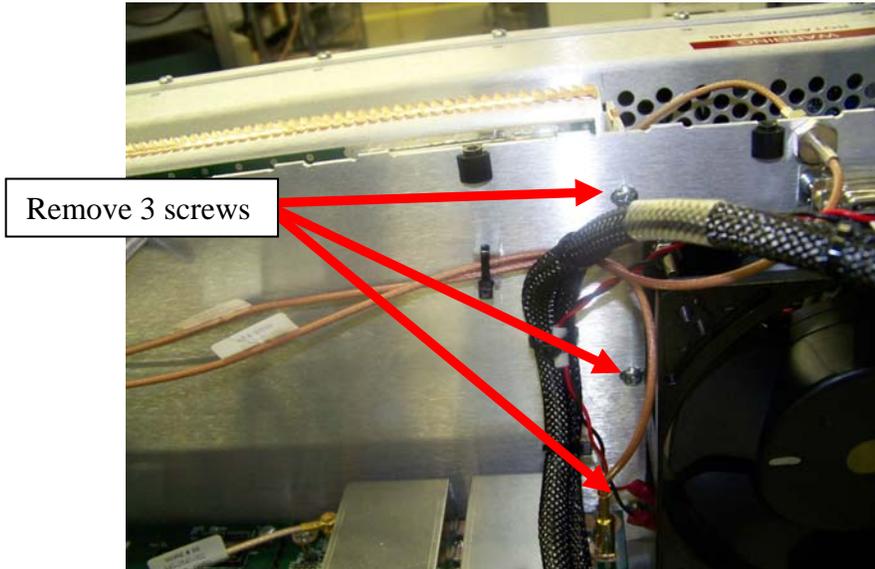


Figure 1. Remove screws

3. Remove 5 screws from the rear panel and the nuts on the BNC and N connector.

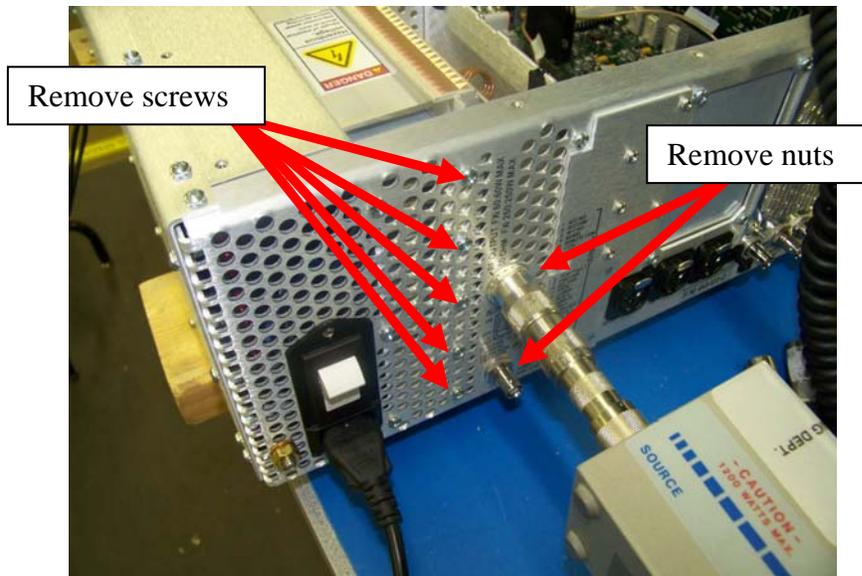


Figure 2. Remove rear hardware.

4. Start to lift the PA module out of the chassis by tilting up and forward until the cable connectors clear the chassis. This will allow room to disconnect the cables from the module.

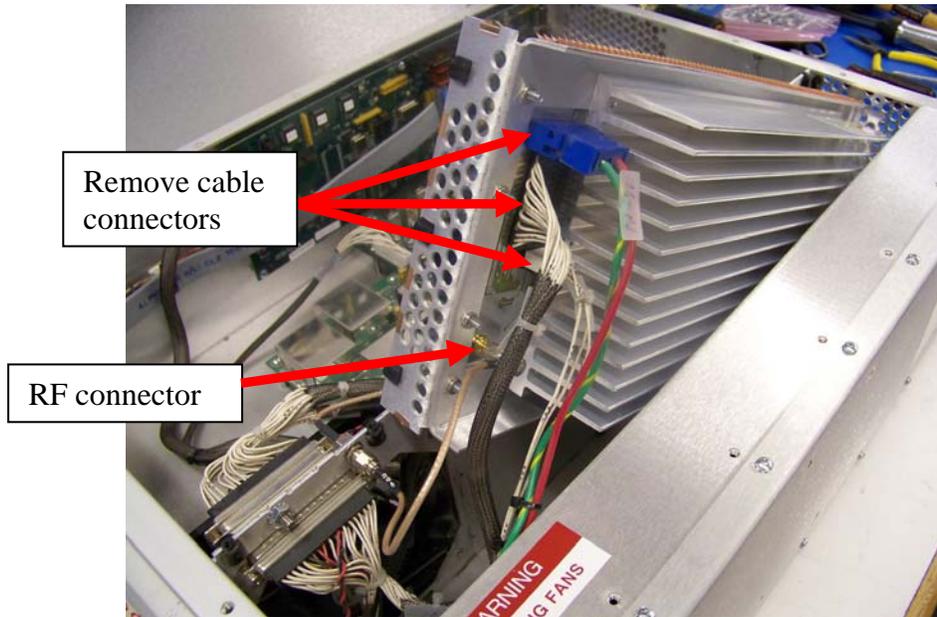


Figure 3. PA module connections.

5. Completely remove the PA from the chassis.
6. To install the new 250 watt PA, reverse the order of the previous steps.
7. Remove the FXi nameplate for the front panel with the utility knife and affix the new label in the same location.

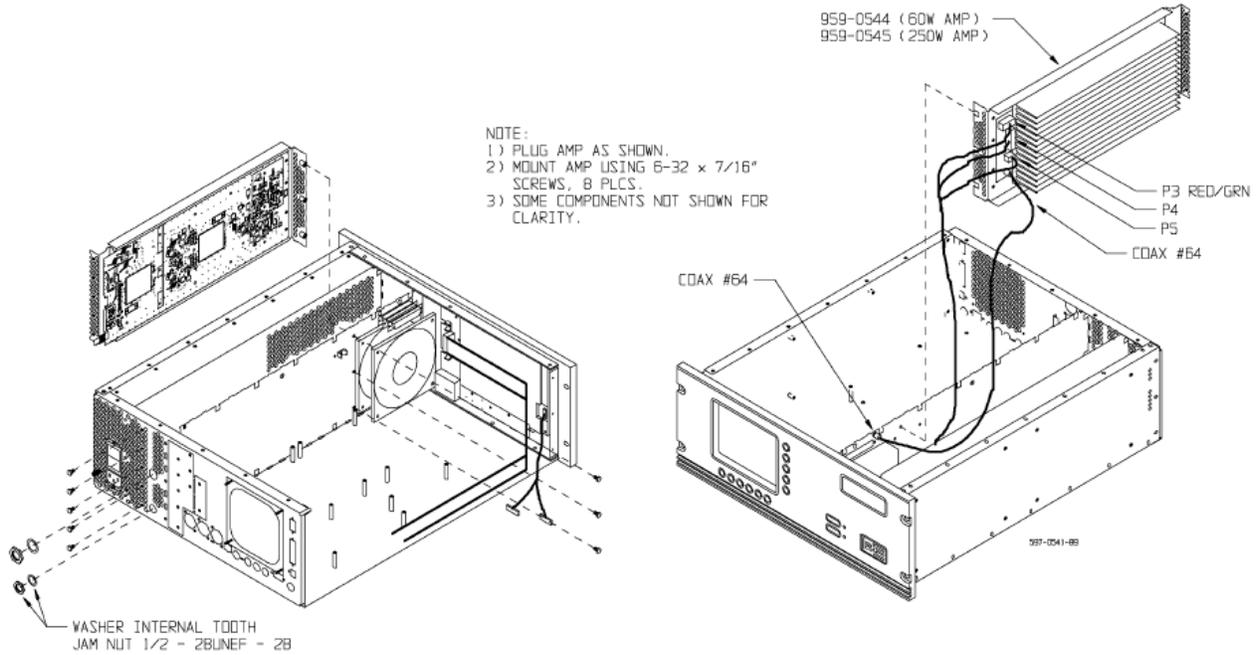


Figure 4. PA Module removal drawing.

4 Calibration

It will be necessary to calibrate the FXi exciter to the new PA module.

4.1 Forward Power Calibration

1. Connect the Bird Wattmeter to the output of the exciter and connect a 50 Ω dummy load to the output of the wattmeter.
2. Turn ON the exciter with the power switch on rear panel.
3. Un-mute the exciter by installing a jumper on the Remote connector J3 on the rear of the exciter between pins 6 and 14.

4. On the front panel display select "PA/POWER."

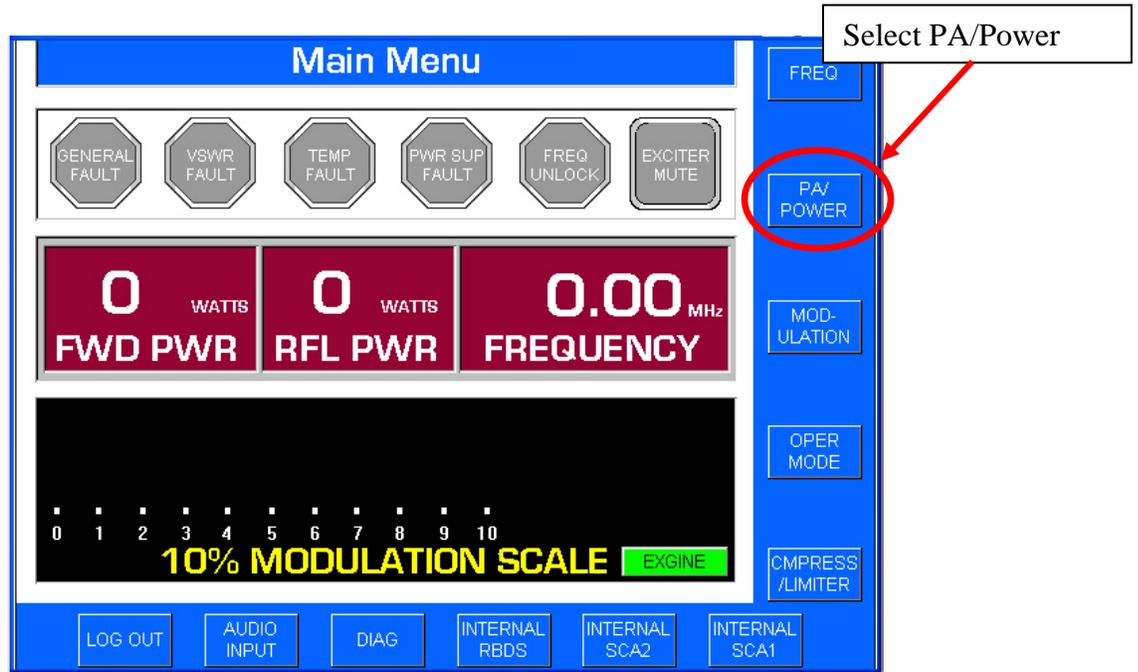


Figure 5. Fxi Main Menu

5. Connect computer to exciter using a null modem cable and open hyperterminal.

4.1.1 Connecting Null modem cable

- a) Connect a null modem cable from a PC to the Exciter's Serial Port J10.

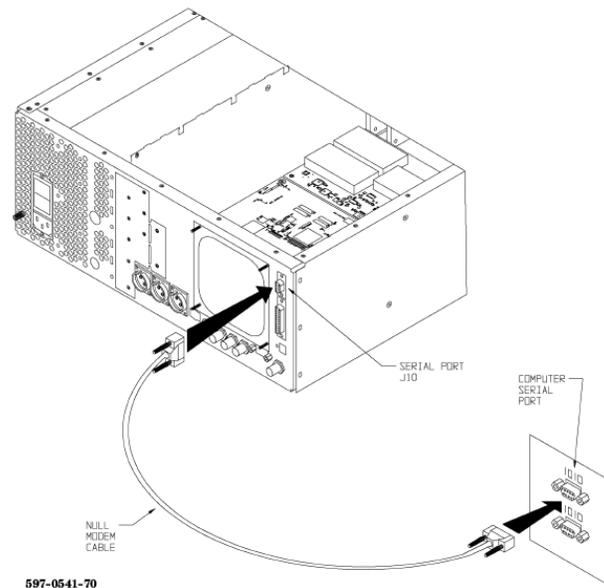


Figure 5 – PC to Fxi Serial Port Null Modem Cable Connection

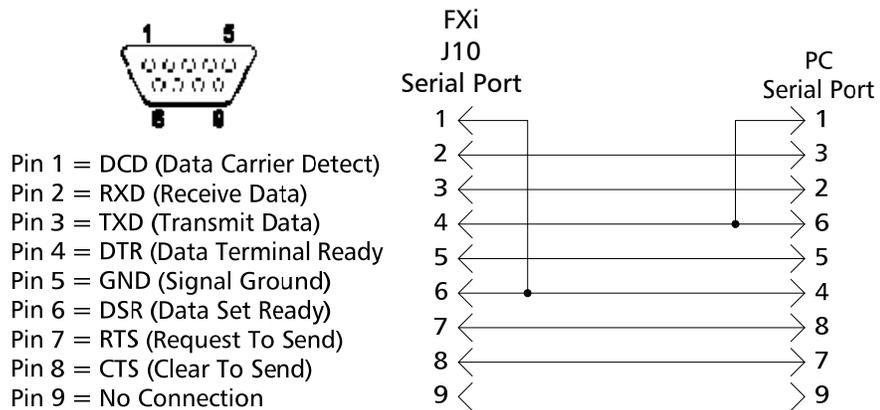


Figure 6 – Serial Cable / Null Modem Adapter Pinout

- b) From the Desktop go to: **START-> ALL PROGRAMS-> ACCESSORIES-> COMMUNICATION-> HYPERTERMINAL** and click the mouse.
- c) The HyperTerminal dialog box should now be displayed. In the **CONNECTION DESCRIPTION** box, enter the name of the shortcut that you want to be created such as *Fxi Connection*.
- d) Select and click **OK**.
- e) The **CONNECT TO** dialog box will now appear. In the **CONNECT USING** dialog box, ensure that the correct COM Port is selected (typically **COM 1** is used) and then click **OK**.
- f) The **COM1 PROPERTIES** dialog box will appear. Move the cursor to the **BITS PER SECOND** dialog box and select **19200**.
- g) Move the cursor to the **DATA BITS** dialog box and select **8**.
- h) Move the cursor to the **PARITY** dialog box and select **NONE**.
- i) Move the cursor to the **STOP BITS** dialog box and select **1**.
- j) Move the cursor to the **FLOW CONTROL** dialog box and select **NONE**.
- k) Select **OK** and the HyperTerminal communication window will appear.
- l) Type **"?"** and the **Supplemental Command Menu** will then appear..

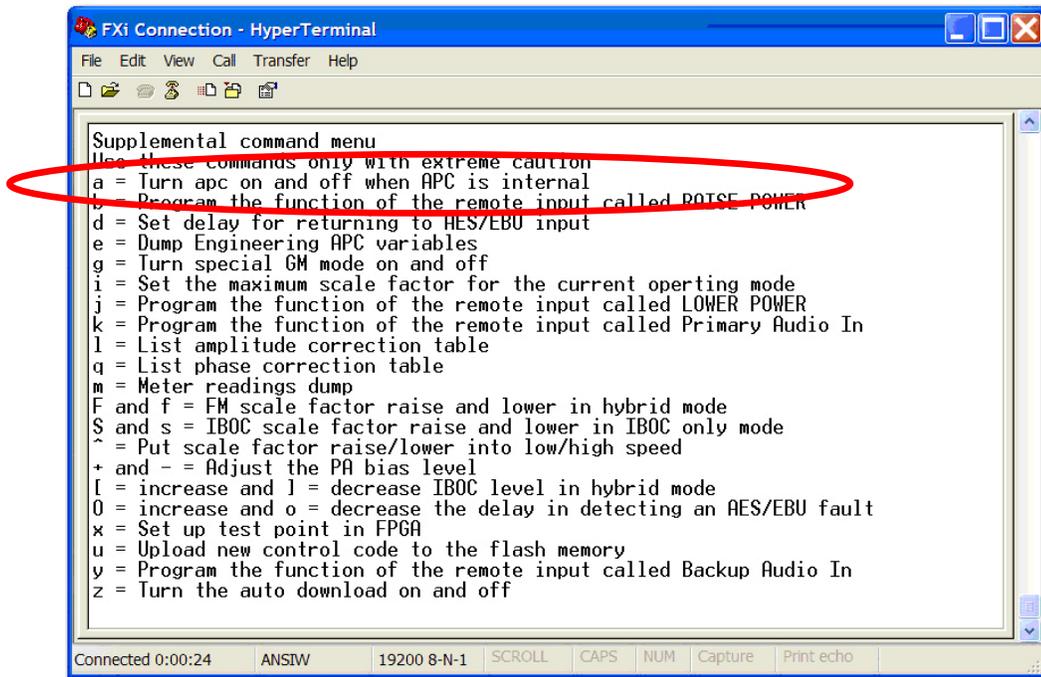


Figure 7 – HyperTerminal Supplemental Command Menu

6. Enter "a" (lower case a) to toggle the APC off.
7. Using the "RAISE/LOWER" power buttons set the power on the external wattmeter to 250 watts.

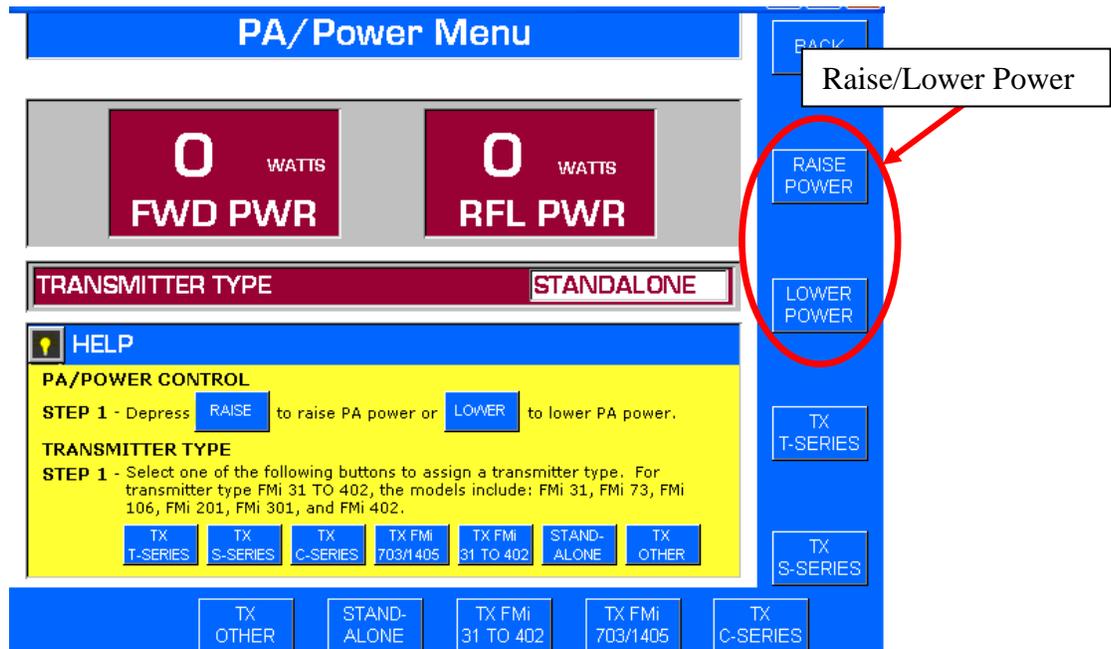


Figure 6. PA/Power menu

- Adjust R40 on the control board for 250 watts on the exciter PA/Power screen.

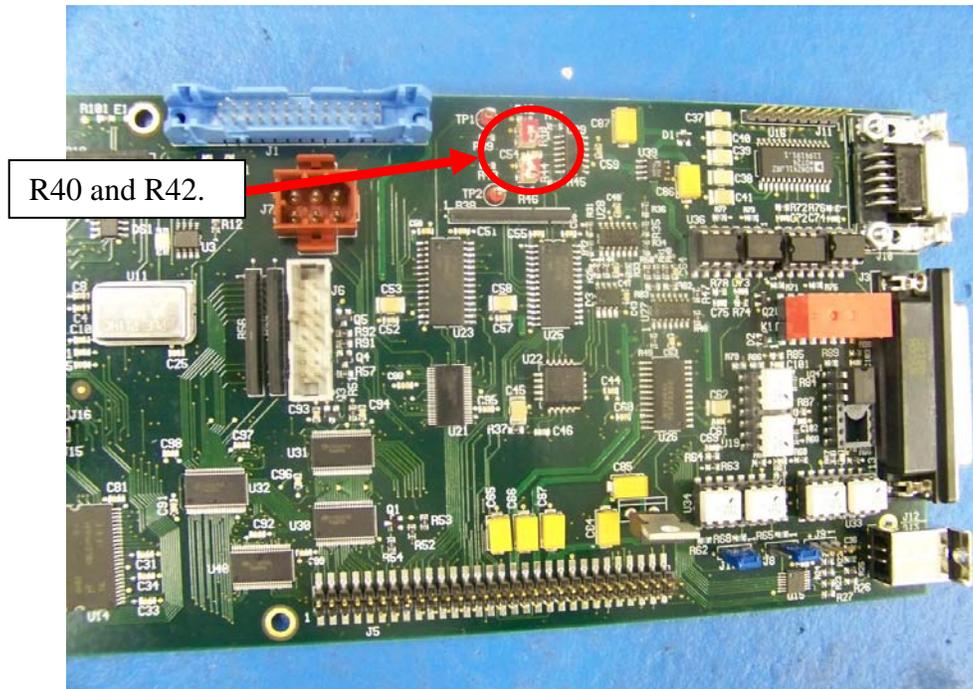


Figure X. FXi controller forward and Reflected cal adjustment

4.2 Reflected Power Calibration and Verification

- Using the "RAISE/LOWER" power buttons set the forward power to 12 watts.
- Mute the exciter by removing the jumper from J3.
- Disconnect the load.
- Un-mute the exciter by installing the jumper on J3 between pin 6 to pin 14.
- Adjust R44 CW so the reflected power on the exciter display reads 12 watts.
- Verify the setting by connecting a digital Volt meter to J3-10 on the rear of the exciter and chassis ground. The voltage should be 2.3 V (+/-0.2V).
- Verify the exciter displays a red "General Fault" on the Main Menu (see figure 5).
- Verify the exciter displays a red "VSWR Fault" on the Main Menu.

5 Completing the setup

- Mute the exciter by removing the jumper from J3.
- Connect the load.
- Un-mute the exciter by installing the jumper on J3 between pin 6 to pin 14.



4. Verify the forward and reflected power on the exciter display corresponds with the external watt meter and that there are no red fault lights illuminated.
5. On the computer "HYPERTERMINAL" press the "a" to turn the APC back on.
6. Turn unit off.
7. Replace all lids and covers with hardware retained from earlier.
8. Return unit to operation.

NOTE: If the exciter is to be used with a different transmitter application, verify the mute jumper is set for the correct transmitter. Also, if used in IBOC applications, U41 may need to be changed to match the new application.

6 RF Technical Services Contact Information

RF Technical Services -

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