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Author: N. Savard	Validated: M. Martin	Approved:	Procedure: 1640006-41_10	Rev. date: 2002-05-15	
Radio Interface Bulletin					
Tait VHF Base Series II (diversity)					

Radio: VHF T800 Tait Series II Base Station (148-174MHz)

Interface type: Data only; DBA/DSP

Product: Paragon^{PD}

Channel Type: Half & full Channels

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History

Version 1.0, May 15, 2002

- Initial release

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1 Part List

- 1x piece of wire: gauge 26, 1.5" long
- 1x piece of wire: gauge 26, 1.75" long
- 1x piece of wire: gauge 26, 2.25" long
- 1x piece of wire: gauge 26, 2.75" long
- 3x EEPROM module (Dataradio 050-03375-000)
- 1x IF filter CFWS455DY (Murata): Full channel ONLY.
- Pozidriv screwdriver #1 and # 2.
- Torx screwdriver T-10 and T-20

2 Mechanical & Electrical Interface

Tait VHF T800 series II base station should content:

- 2x T835-10 (136-156 MHz) or T835-20 (148-174 MHz) (25KHz channel) or T835-15 (136-156 MHz) or T835-25 (148-174 MHz) (12.5KHz channel) Receiver PCB rev 220-01394-02-02B
- 1x T837 Exciter 220-01390-02 02A or 220-01390-03
- 1x T839 100W PA T839-10 (136-156 MHz) and T839-20 (148-174 MHz)
- 1x T800-22-0000 Rack Frame
- TCXO Freq. stability: 2.5 ppm

2.1 T800-50-0001 Backplane PCB Modification and Setting

Refer to page Figure 1 page 6 for jumper location

1. Remove jumpers at LN1; LN4; LN5; LN6; LN8; LN9; LN13
2. Verify presence of jumper: LN2 left pin and LN3 left pin; they must be linked together by a jumper.
3. Verify presence of jumper: LN2 right pin and LN3 right pin; they must be linked together by jumper.
4. Verify presence of jumper: LN10 pins 2 and 3; they must have a jumper between them.
5. Verify presence of jumper at: LN7; LN11 and LN12 pins 1 and 2; they each must have a jumper

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2.2 T807-10-01CA and T808-10-01CA Power supply module

1. Solder the extremity of any wire that connects to the power supply SK terminal block. See Figure 8 page 13 for location.
2. Attach to the relevant terminal. Screw tightly, tug on the wire to make certain it holds securely

2.3 T835 Module Modification (receiver)

This modification must be apply for both receiver unit

1. Unscrew Pozidriv screws #1 on the front panel to slide out the module
 2. On each side of the module, unscrew the 14 screws using Pozidriv #2 or Torx T-20 and remove both covers.
 3. On the top side (handle side), locate and remove transformer T210 from the audio processor circuit. Refer to Figure 2 page 7
 4. Place and solder the EEPROM board at the same location of T210. Make sure not to invert the PCB position.
 5. For Full channel RX (T835-10):
Remove the IF filter &XF340 (CFW455E) and replace it with a CFWS455DY (Murata).
Refer to Figure 2 page 7
For Half channel RX (T855-35):
Do NOT replace the IF filter. Keep the original one (i.e. CFW455G)
 6. On the bottom side, cut the trace between pin 5 of T210 and the pad going to pin 4 of DRANGE connector (PL100) Refer to Figure 3 page 8
 7. Solder a 1.75" wire (26AWG) from the +9 volt feedthrough (pad 201) to pin 5 of T210. Refer to Figure 3 page 8
 8. Remove %R223, a 10 ohm resistor (T-835 Audio Processor section). Refer to Figure 3 page 8
 9. Remove %R338, a 100 ohm resistor (T-835 IF section). Normally not installed. Refer to Figure 3 page 8
 10. Solder a wire gauge 26, 1.5" long in feedthrough connected to P207 to feedthrough on the audio trace **(It strongly recommended to see Figure 3 to locate this point).**
 11. Re-align according to the Paragon production procedure.
 12. Reinstall cover and screws (note cover screws should be not torque over to 12lb-in).
- The wide band audio o/p (RXA) will then be available at "Audio 1" connected to PL100 pin 6 DB-15 (connector).

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2.4 T837 Module Modification (Exciter module)

1. Unscrew Pozidriv screws #1 on the front panel to slide out the module
2. On each side of the module, unscrew the 14 screws using Pozidriv #2 or Torx T-20 and remove both covers.
3. On the top side (handle side), locate and remove transformer T210 from the audio processor circuit. Refer to Figure 4 page 9.
4. Place and solder the EEPROM board at the same location of T210. Make sure not to invert the PCB position.
5. Remove R291 (0 ohm res.), R259 (22K res.) and C265 (4u7 cap) (T-837 Audio Processor section). Refer to Figure 4 page 9
6. On the bottom side, cut the trace between pin 1 of T210 and the pad going to pin 4 of DRANGE connector (PL100) Refer to Figure 5 page 10.
7. Solder a 2.25" wire (26AWG) from the +9 volt feedthrough (pad 230) to pin 1 of T210. Refer to Figure 5 page 10.
8. Solder a short wire (gauge 26, 2.75" long) from feedthrough connected to P271(Buff-in) to C265 negative side pad. Refer to Figure 5 page 10.
9. Set the Exciter to the Fast Transmit Turnon mode (Fast TX Key) by soldering a zero ohm resistor at SL501. Refer to Figure 6 page 11
10. Re-align according to the Paragon production procedure.
11. Reinstall the covers and screws (note cover screws should be not torque over to 12lb-in).

The wide band audio i/p (TXA) will then be available at "CTCSS" connected to PL100 pin 8 (DB-15 connector).

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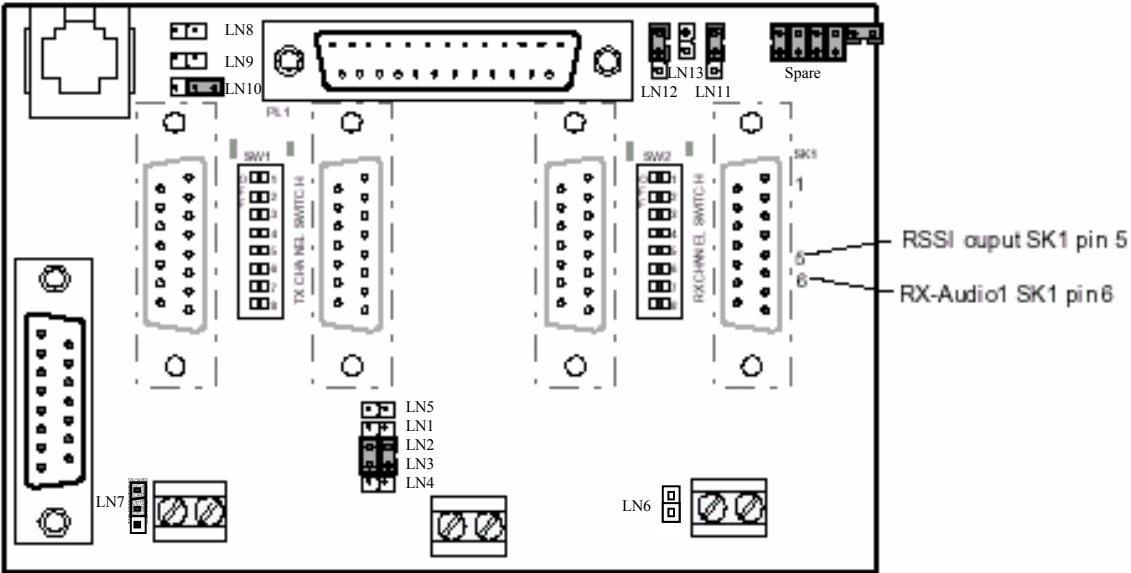


Figure 1 Backplaine, links locations T800-50-0001

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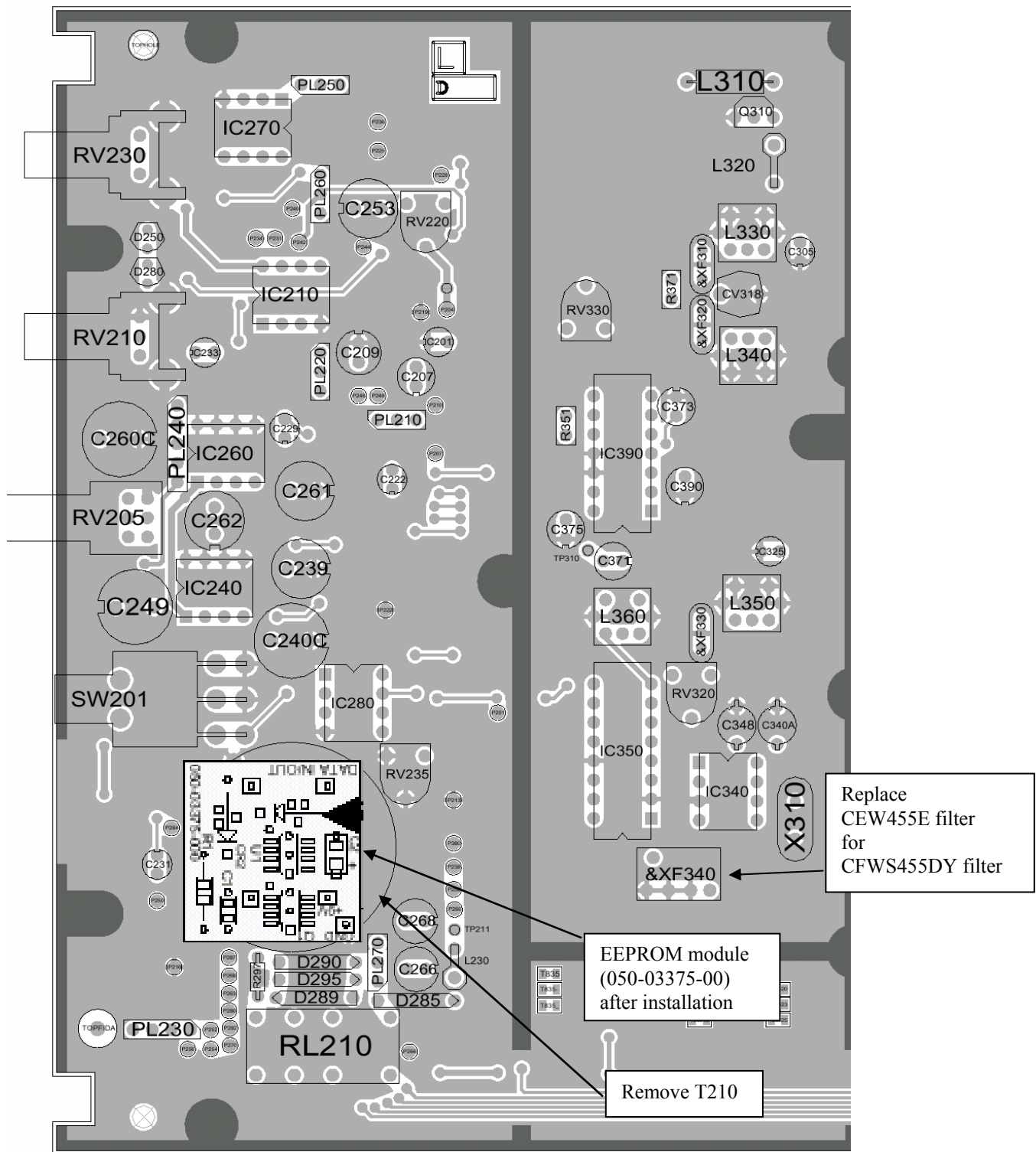


Figure 2 T835 PCB Layout -Top side

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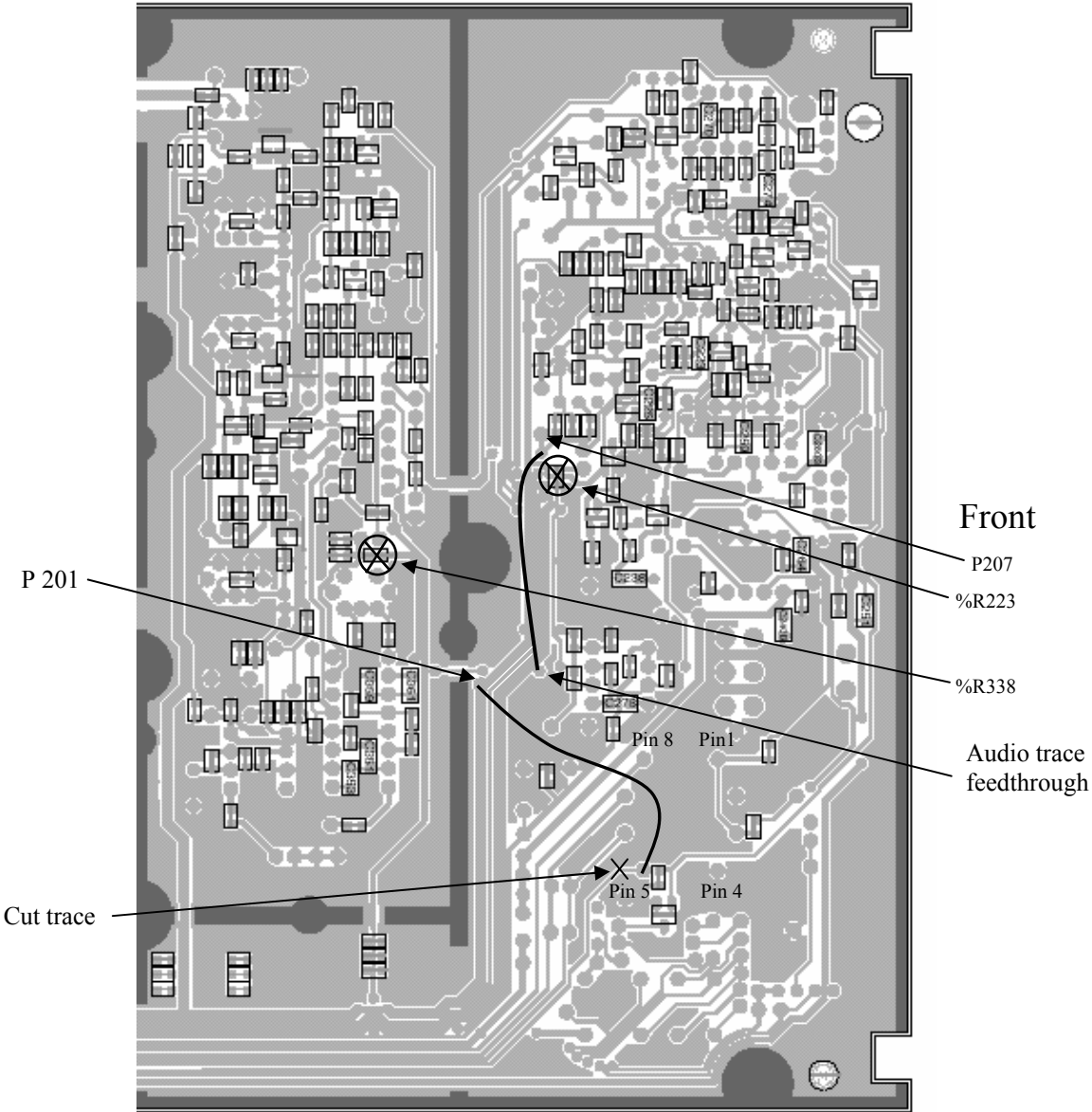


Figure 3 T835 PCB Layout- bottom side

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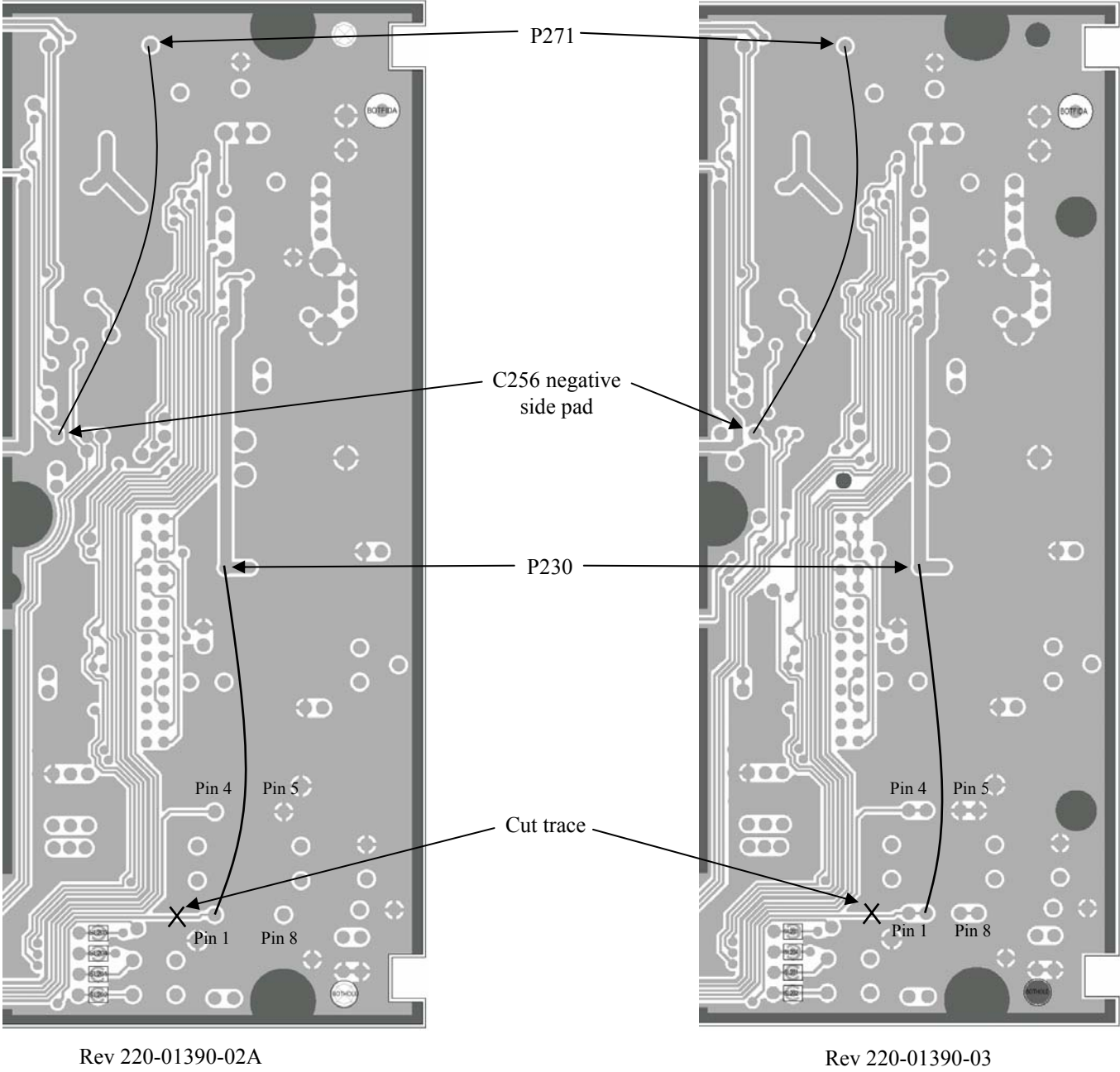


Figure 5 T837 PCB Layout Bottom Side 1/2

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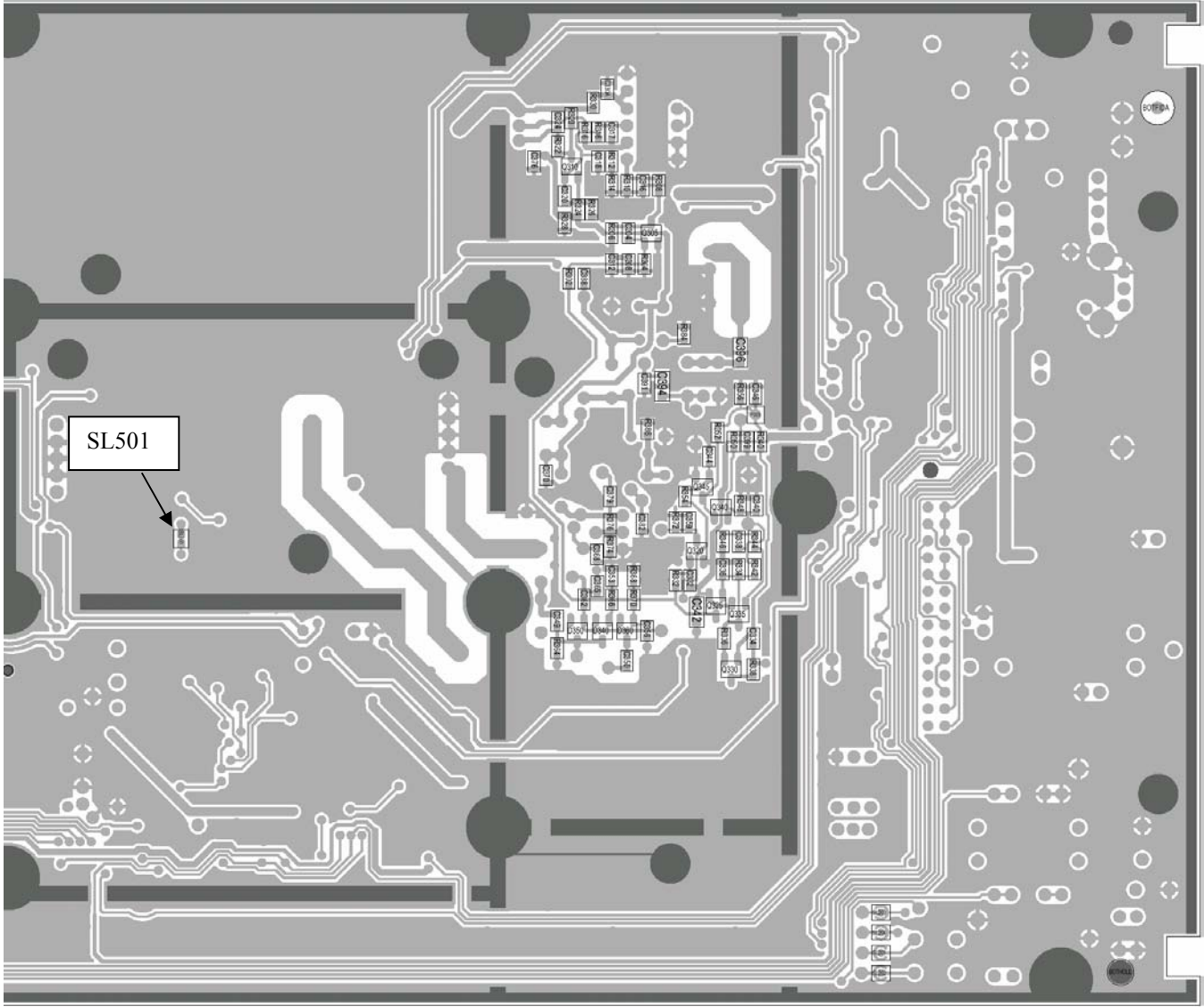


Figure 6 T837 PCB Layout- bottom side 2/2

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Front View

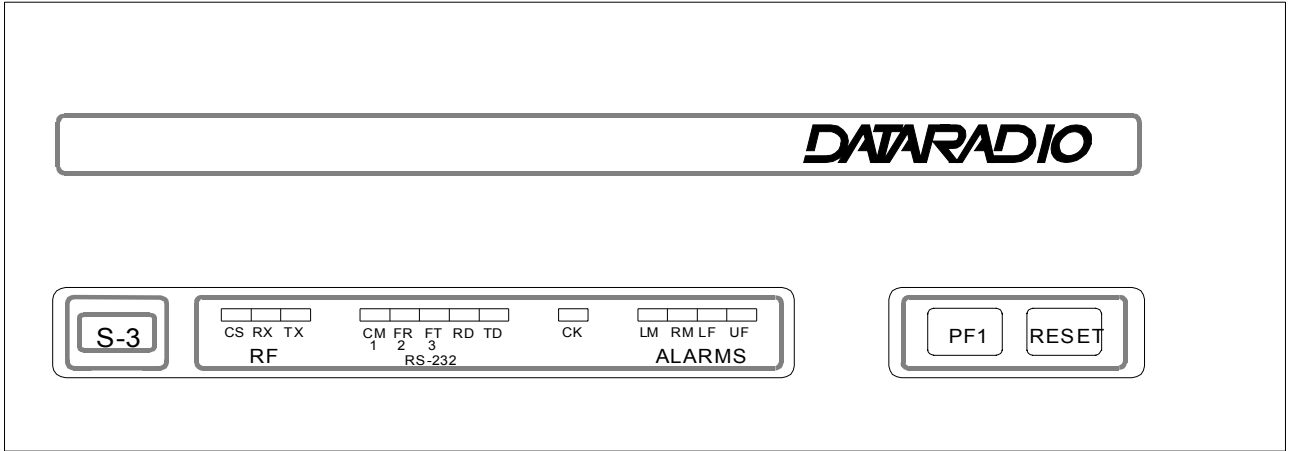
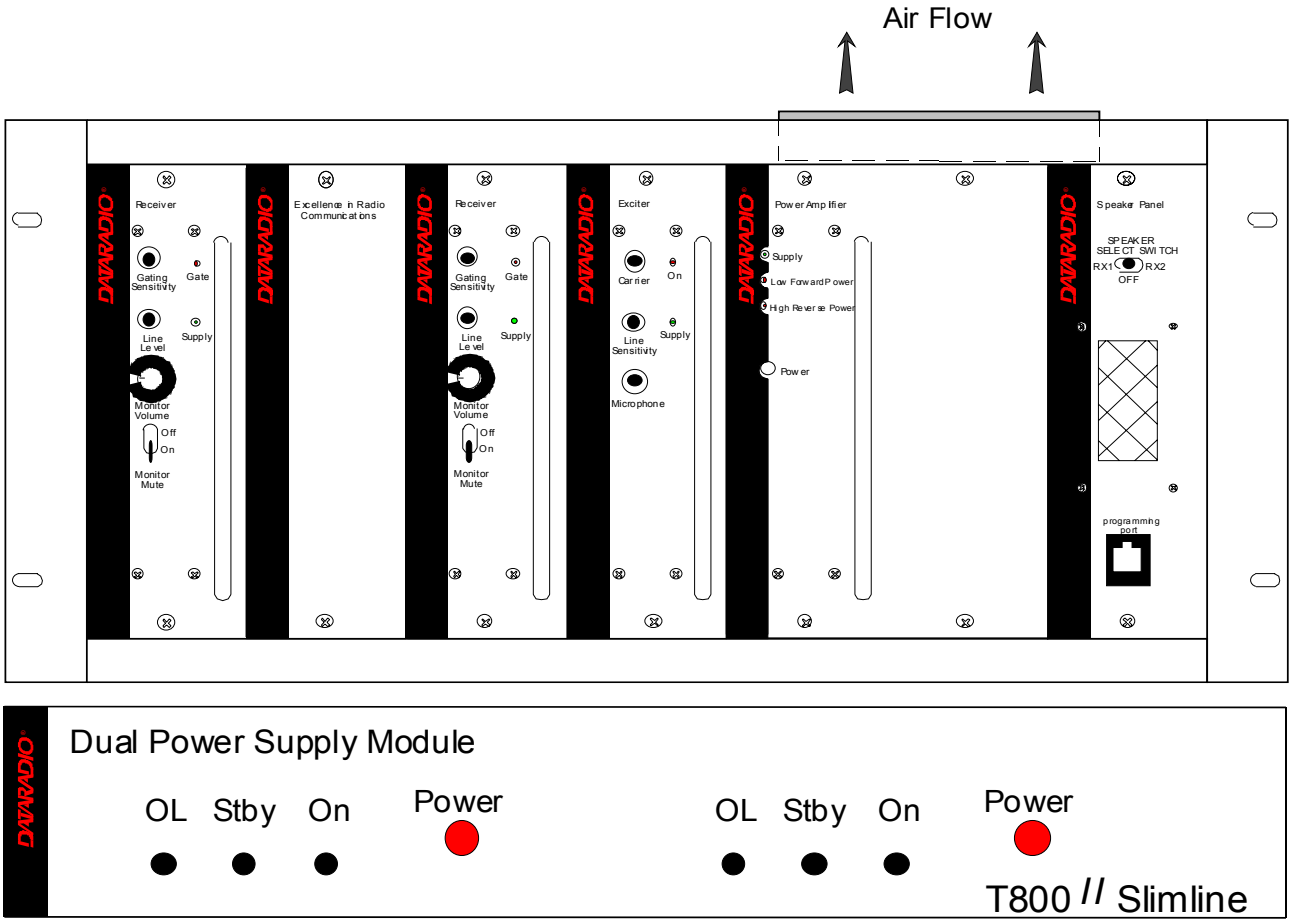


Figure 7 Typical radio and power supplies assembly front view

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REAR VIEW

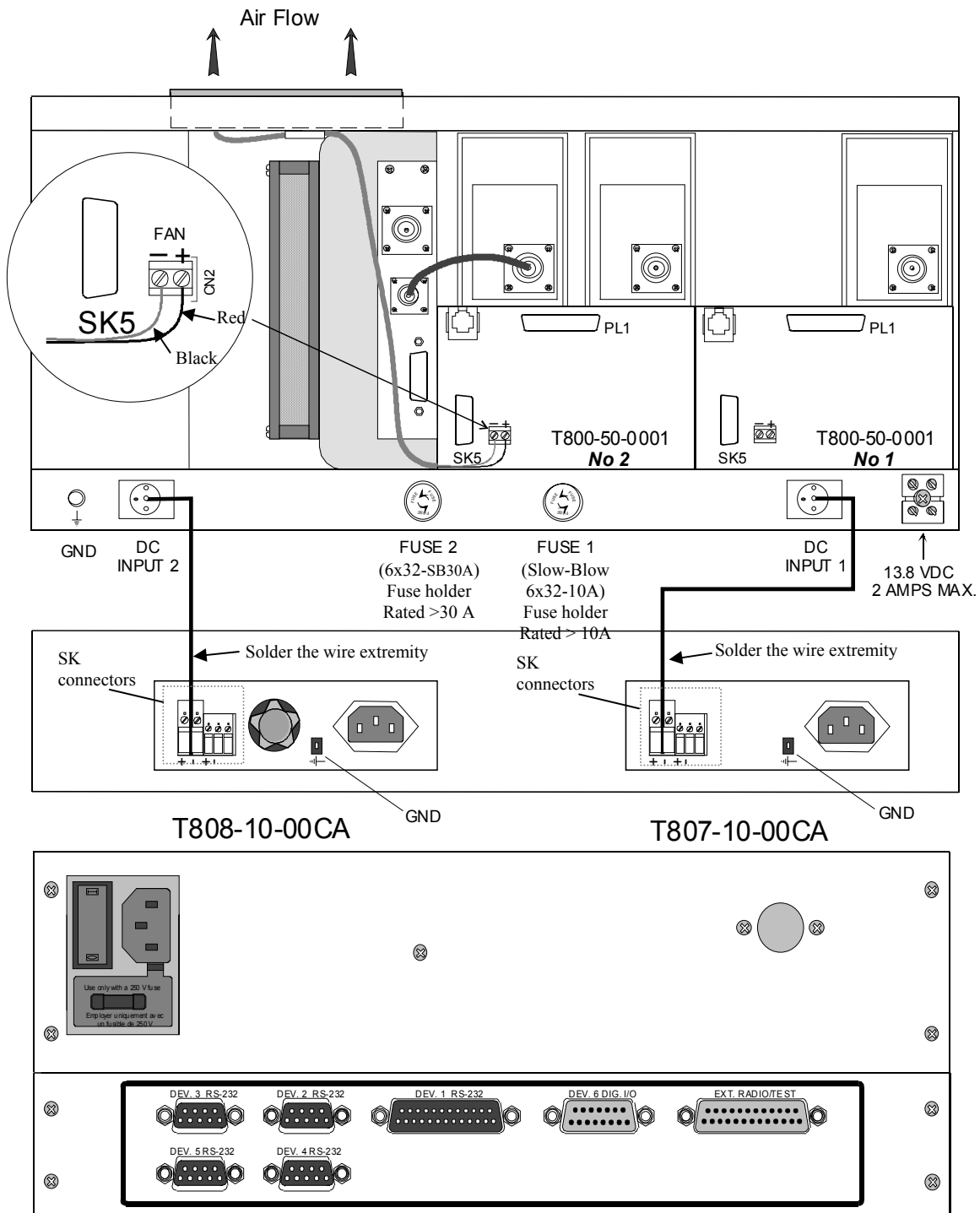
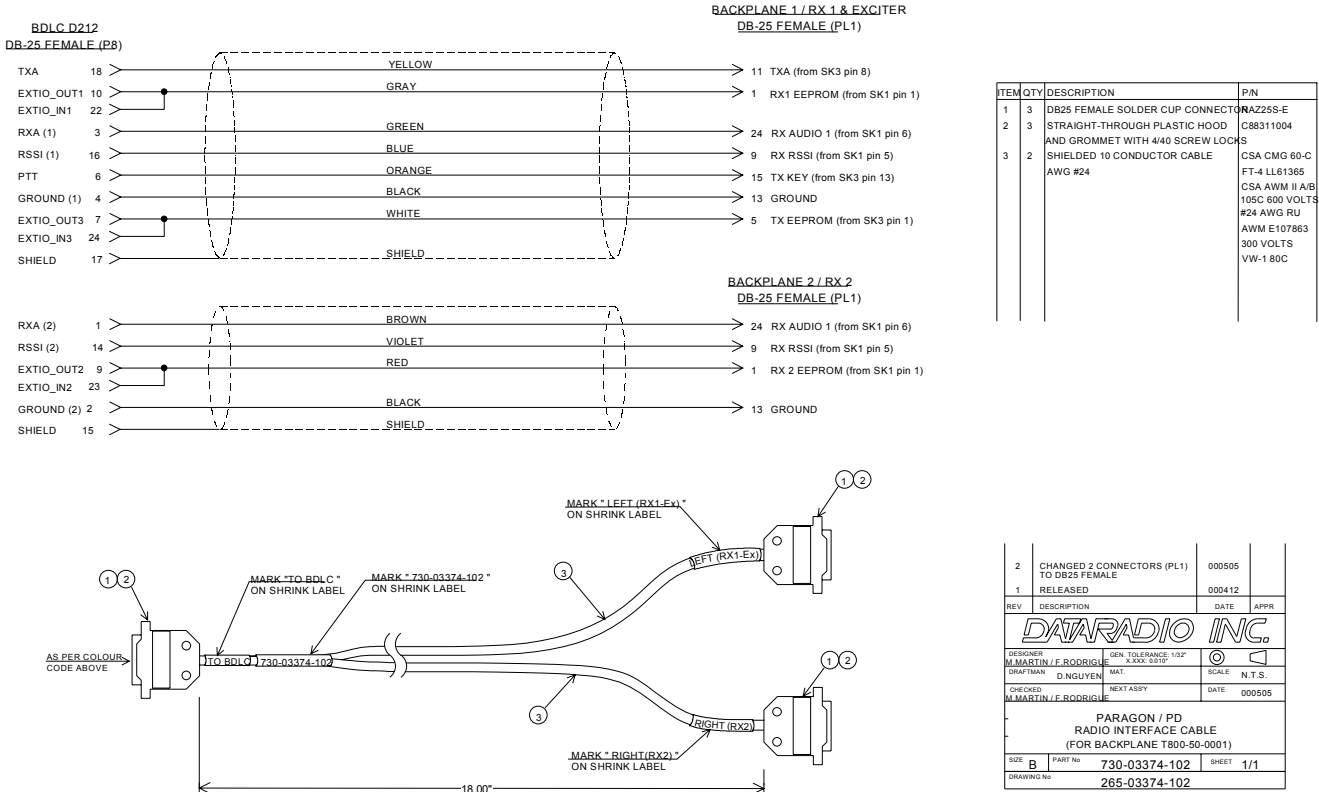


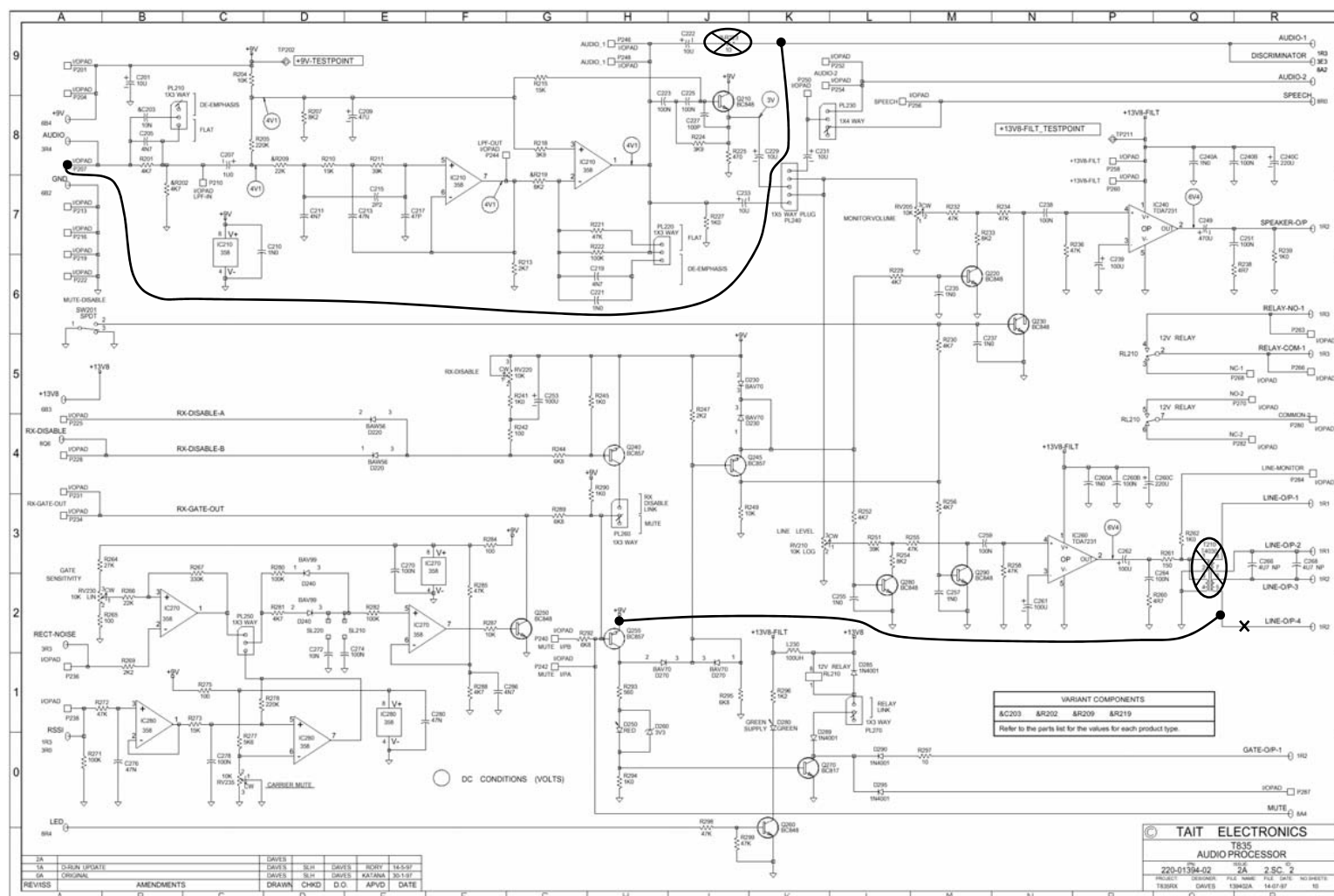
Figure 8 Typical radio and power supplies assembly rear view

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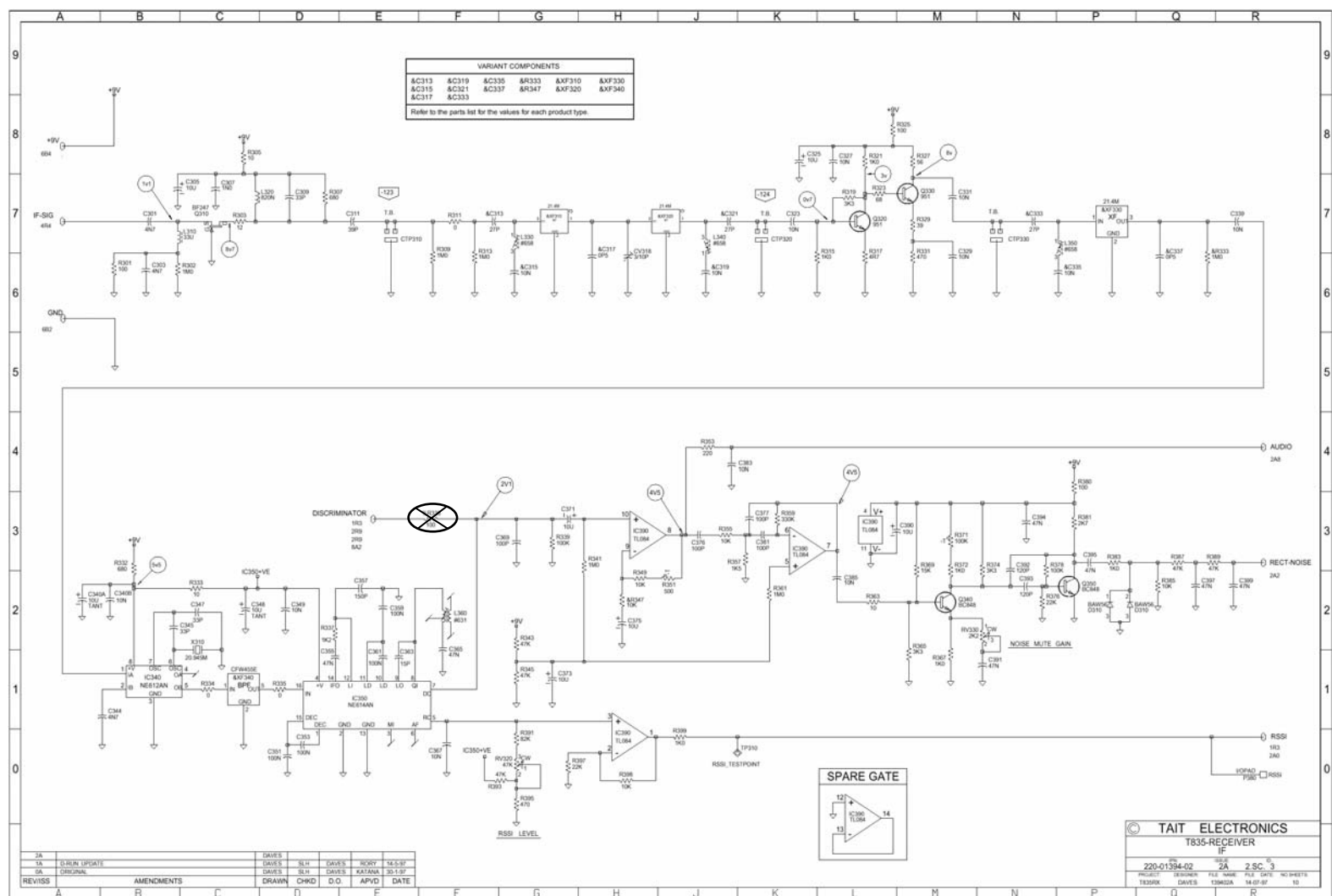
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Appendix 1 - Receivers audio processor interface schematic



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Appendix 2 - Receiver's IF interface schematic



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Appendix 3 - Exciter's audio processor interface schematic

