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|-----------------------------------------------|-------------------------|--------------------------|--------------------------|-----------------------|--------------|
| Production procedure                          |                         |                          | <i>DATARADIO Inc.</i>    |                       | Page 1 of 14 |
| Authors: N. Savard                            | Validated:<br>M. Martin | Approved:<br>PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0     |
| Radio Interface Bulletin                      |                         |                          |                          |                       |              |
| Tait 800 & 900 MHz Base Series II (diversity) |                         |                          |                          |                       |              |

This procedure describes the steps needed to interface the 800 and 900 MHz Paragon radio using Tait base station Series II radios (half & full channels) with the D212 BDLC.

**Radio:** 800 & 900 MHz T800 Tait Series II Base Station (800-960 MHz)

**Interface type:** Data only; DBA/ DSP

**Product:** Paragon/PD

**Channel Type:** Full and half Channels

|                                                               |          |
|---------------------------------------------------------------|----------|
| <b>1 PART LIST .....</b>                                      | <b>2</b> |
| <b>2 INTERFACE.....</b>                                       | <b>3</b> |
| 2.1 T800-50-0001 BACKPLANE PCB MODIFICATION AND SETTING ..... | 3        |
| 2.2 T807-10-01CA AND T808-10-01CA POWER SUPPLY MODULE.....    | 3        |
| 2.3 T885 MODULE MODIFICATION (RECEIVER).....                  | 4        |
| 2.4 T881 MODULE MODIFICATION (TRANSMITTER).....               | 4        |
| FIGURE 1 - BACKPLANE, LINKS LOCATIONS T800-50-0001 .....      | 5        |
| FIGURE 2 - T885 RECEIVER PCB LAYOUT - TOP SIDE .....          | 6        |
| FIGURE 3 - T885 PCB LAYOUT, BOTTOM SIDE .....                 | 7        |
| FIGURE 4 - T881 PCB LAYOUT, TOP SIDE.....                     | 8        |
| FIGURE 5 - T881 PCB LAYOUT, BOTTOM SIDE .....                 | 9        |
| FIGURE 6 - PARAGON/PD ASSEMBLY (FRONT) .....                  | 10       |
| FIGURE 7 - PARAGON/PD ASSEMBLY (REAR).....                    | 11       |
| FIGURE 8 - INTERCONNECTION AND RIC SCHEMATIC.....             | 12       |
| FIGURE 9 - RECEIVER INTERFACE SCHEMATIC.....                  | 13       |
| FIGURE 10 - TRANSMITTER INTERFACE SCHEMATIC.....              | 14       |

|                                               |                         |                          |                          |                       |              |
|-----------------------------------------------|-------------------------|--------------------------|--------------------------|-----------------------|--------------|
| Production procedure                          |                         |                          | <i>DATARADIO Inc.</i>    |                       | Page 2 of 14 |
| Authors: N. Savard                            | Validated:<br>M. Martin | Approved:<br>PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0     |
| Radio Interface Bulletin                      |                         |                          |                          |                       |              |
| Tait 800 & 900 MHz Base Series II (diversity) |                         |                          |                          |                       |              |

## History

### Version 1.0 March 30, 2001

- First release, version 1.0

|                                               |                         |                          |                          |                       |              |
|-----------------------------------------------|-------------------------|--------------------------|--------------------------|-----------------------|--------------|
| Production procedure                          |                         |                          | <i>DATARADIO Inc.</i>    |                       | Page 3 of 14 |
| Authors: N. Savard                            | Validated:<br>M. Martin | Approved:<br>PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0     |
| Radio Interface Bulletin                      |                         |                          |                          |                       |              |
| Tait 800 & 900 MHz Base Series II (diversity) |                         |                          |                          |                       |              |

## 1 Part List

The following test equipment is required:

- 1x Paragon<sup>PD</sup> Radio Interface cable p/n 730-03374-102.
- 1x piece of wire: gauge 26, 3.5" long
- 1x piece of wire: gauge 26, 2.5" long
- 1x piece of wire: gauge 26, 1.75" long
- 1x piece of wire: gauge 26, 1.25" long
- 3x EEPROM modules (050-03375-000)
- Pozidriv screwdrivers #1 and # 2.
- Torx screwdrivers #T-10 and #T-20
- Paragon Radio Programming procedure 20160-54.00

Tait 800 & 900 MHz T800 series II base station should contain:

- 2x T885-10-0000 or T855-15-0000 Receiver-PCBs, rev.220-01595-(02,03)
- 1x T881-10-0000 or T881-15-0000 Transmitter-PCB rev. 220-01575-02
- 1x T889 90W PA (available only in the 800-870 MHz band)
- 2x T800-50-0001 Backplanes
- 1x T800-22-0000 Rack Frame
- TCXO Freq. stability: 1.5 ppm

## 2 Interface

### 2.1 T800-50-0001 Backplane PCB Modification and Setting

**Refer to Figure 1 page 5 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.

### 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 7 page 11 for location.
2. Attach to the relevant terminal. Screw tightly, tug on the wire to make certain it holds securely.

|                                               |                         |                          |                              |                       |              |
|-----------------------------------------------|-------------------------|--------------------------|------------------------------|-----------------------|--------------|
| Production procedure                          |                         |                          | <b><i>DATARADIO Inc.</i></b> |                       | Page 4 of 14 |
| Authors: N. Savard                            | Validated:<br>M. Martin | Approved:<br>PRELIMINARY | Procedure: 164-20006-051     | Rev. date: 2001-03-30 | Rev: 1.0     |
| Radio Interface Bulletin                      |                         |                          |                              |                       |              |
| Tait 800 & 900 MHz Base Series II (diversity) |                         |                          |                              |                       |              |

### **2.3 T885 Module Modification (receiver)**

***This modification must be apply for both receiver unit***

1. Unscrew the two Torx screws on the front panel and slide the T-885(-10,-15) out of the rack frame.
2. Unscrew the 14 pozidriv screws (# 2) on both sides and remove the covers.
3. On the top side (handle side), remove %R223, a 10-ohm resistor and T210 (line-match potcore) (T-885 Audio Processor section). See Figure 2 page 6.
4. On the topside (handle side), place and solder the EEPROM board at the same location as T210. Make sure not to invert the PCB position. See Figure 2 page 6
5. On the bottom side, solder a short wire (gauge 26 AWG, 1.25" long) from the +9 volt feedthrough (P204) and %R263 feedthrough (close to T210 pin 5). See Figure 3 page 7.
6. On the bottom side, solder a short wire (gauge 26 AWG, 1.75" long) from feedthrough connected to P249 and P207. See Figure 3 page 7.
7. Cut the line between T210 pin 5 and connector PL100 pin 4. See Figure 3 page 7
8. Re-align according to the Paragon<sup>PD</sup> production procedure.
9. Reinstall cover and screws (note cover screws should not be torqued over 12 lb.-in).

The wide band audio o/p (RXA) will then be available at "Audio 1" connected to PL100 pin 6 DB-15 (connector).

### **2.4 T881 Module Modification (Transmitter)**

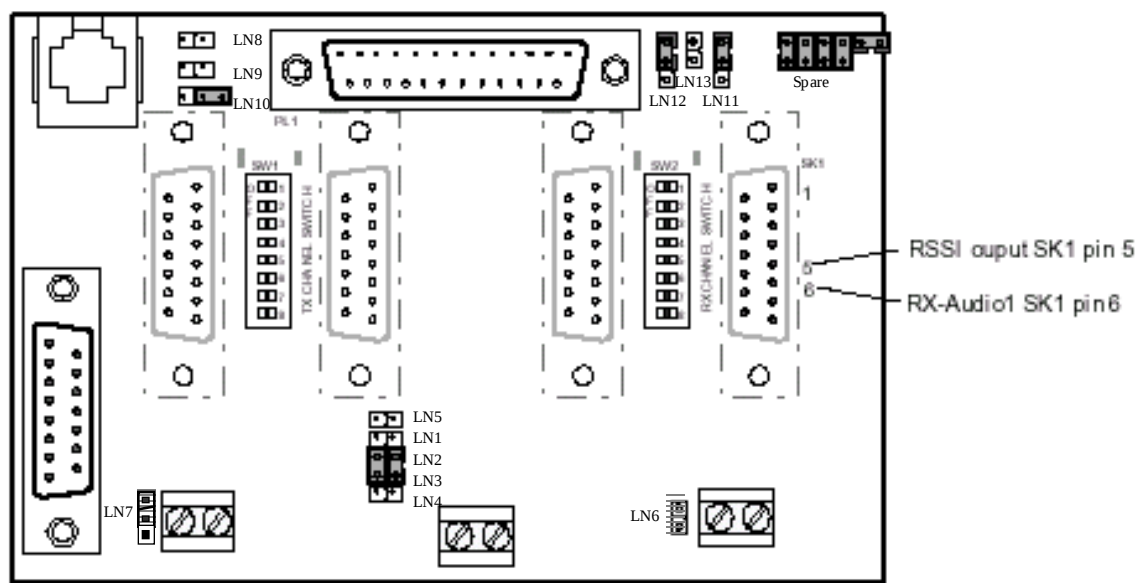
1. Unscrew the two Torx screws on the front panel and slide the T-881-(10,15) out of the rack frame.
2. Unscrew the 14 pozidriv screws (# 2) on both side and remove the covers.
3. On the top side (handle side), remove R291 (0 ohm res.), R259 (22K res.), C265 (4u7 cap), C201 (4u7 cap) and T210 (line match potcore) (T881 Audio Processor section). See Figure 4 page 8.
4. On the topside (handle side), place and solder the EEPROM board at the same location of T210. Make sure not to invert the PCB position See Figure 4 page 8
5. On the topside (handle side), set the Exciter to the Fast Transmit Turnon mode (Fast-Key option) by soldering a zero ohm resistor at SL345. See Figure 4 page 8.
6. On the bottom side, solder a short wire (gauge 26, 2.5" long) from +9 volt feedthrough P230 and %R200 feedthrough (close to T210 pin 1). See Figure 5 page 9
7. On the bottom side, solder a short wire (gauge 26, 3.5" long) from feedthrough connected to P271 (Buff-in i/o pad) to P255 (CTCSS i/o pad). See Figure 5 page 9.
8. Cut the line between T210 pin 1 and connector PL100 pin 4. See Figure 5 page 9
9. Re-align according to the Paragon<sup>PD</sup> production procedure.
10. Reinstall the covers and screws (note cover screws should not be torqued over 12 lb-in).

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

***Note: See next pages for modification location details:***

|                                               |                      |                       |                          |                       |              |
|-----------------------------------------------|----------------------|-----------------------|--------------------------|-----------------------|--------------|
| Production procedure                          |                      |                       | DATARADIO Inc.           |                       | Page 5 of 14 |
| Authors: N. Savard                            | Validated: M. Martin | Approved: PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0     |
| Radio Interface Bulletin                      |                      |                       |                          |                       |              |
| Tait 800 & 900 MHz Base Series II (diversity) |                      |                       |                          |                       |              |

Figure 1 - Backplane, links locations T800-50-0001





|                                               |                      |                       |                          |                       |              |
|-----------------------------------------------|----------------------|-----------------------|--------------------------|-----------------------|--------------|
| Production procedure                          |                      |                       | <i>DATARADIO Inc.</i>    |                       | Page 7 of 14 |
| Authors: N. Savard                            | Validated: M. Martin | Approved: PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0     |
| Radio Interface Bulletin                      |                      |                       |                          |                       |              |
| Tait 800 & 900 MHz Base Series II (diversity) |                      |                       |                          |                       |              |

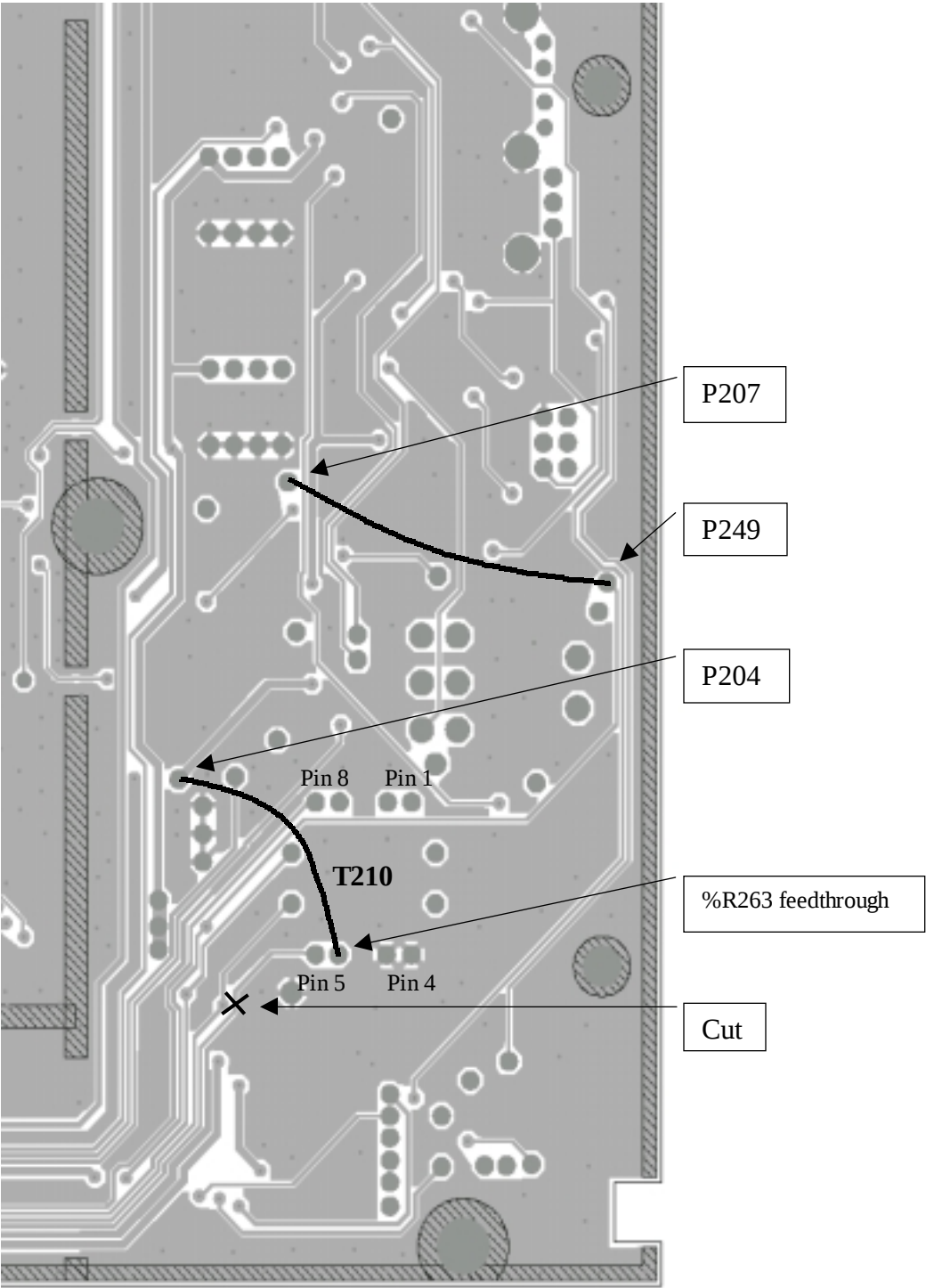
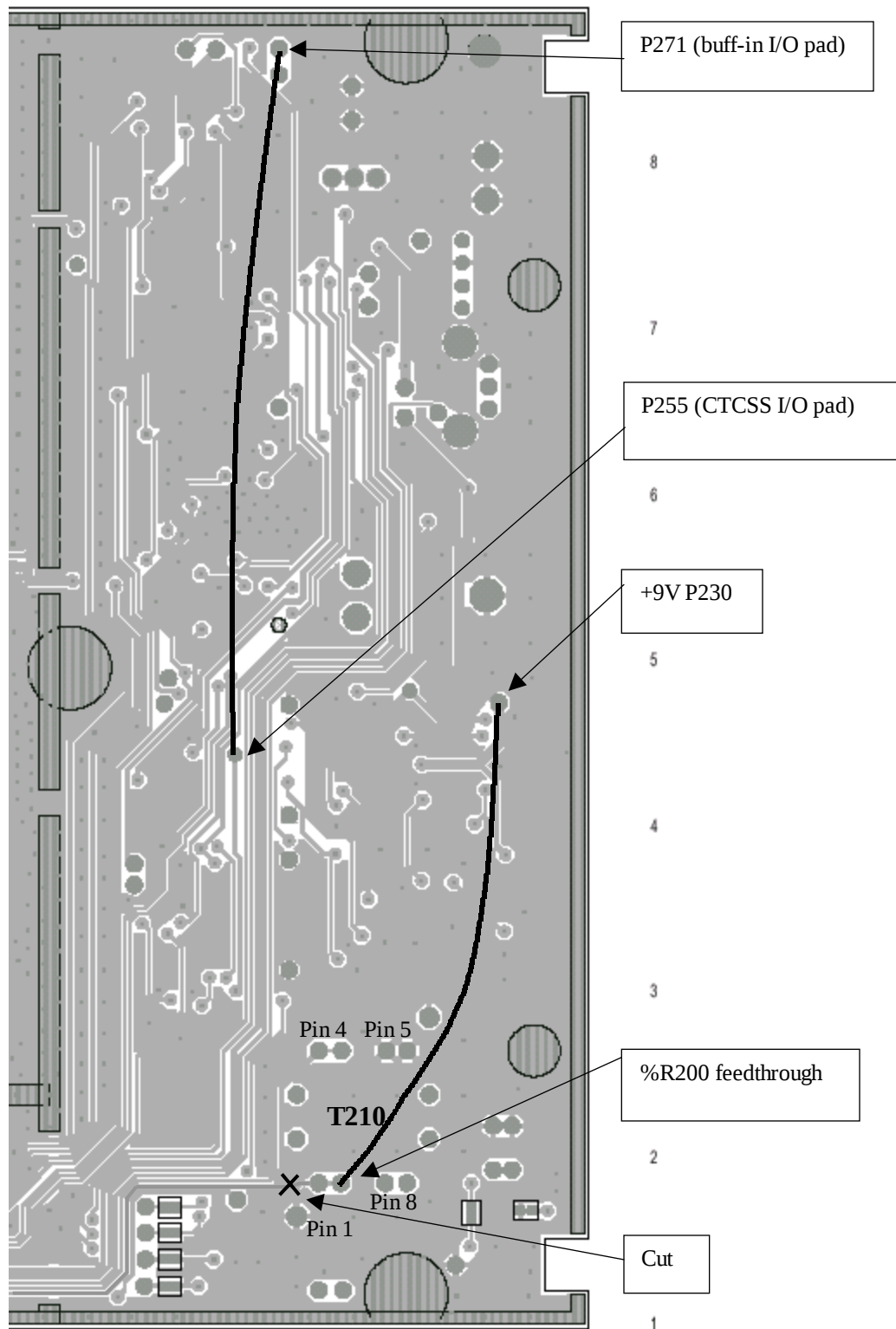


Figure 3 - T885 PCB layout, bottom side



|                                               |                      |                       |                          |                       |              |
|-----------------------------------------------|----------------------|-----------------------|--------------------------|-----------------------|--------------|
| Production procedure                          |                      |                       | <i>DATARADIO Inc.</i>    |                       | Page 9 of 14 |
| Authors: N. Savard                            | Validated: M. Martin | Approved: PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0     |
| Radio Interface Bulletin                      |                      |                       |                          |                       |              |
| Tait 800 & 900 MHz Base Series II (diversity) |                      |                       |                          |                       |              |



**Figure 5 - T881 PCB layout, bottom side**

|                                               |                      |                       |                          |                       |               |
|-----------------------------------------------|----------------------|-----------------------|--------------------------|-----------------------|---------------|
| Production procedure                          |                      |                       | DATARADIO Inc.           |                       | Page 10 of 14 |
| Authors: N. Savard                            | Validated: M. Martin | Approved: PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0      |
| Radio Interface Bulletin                      |                      |                       |                          |                       |               |
| Tait 800 & 900 MHz Base Series II (diversity) |                      |                       |                          |                       |               |

FRONT VIEW

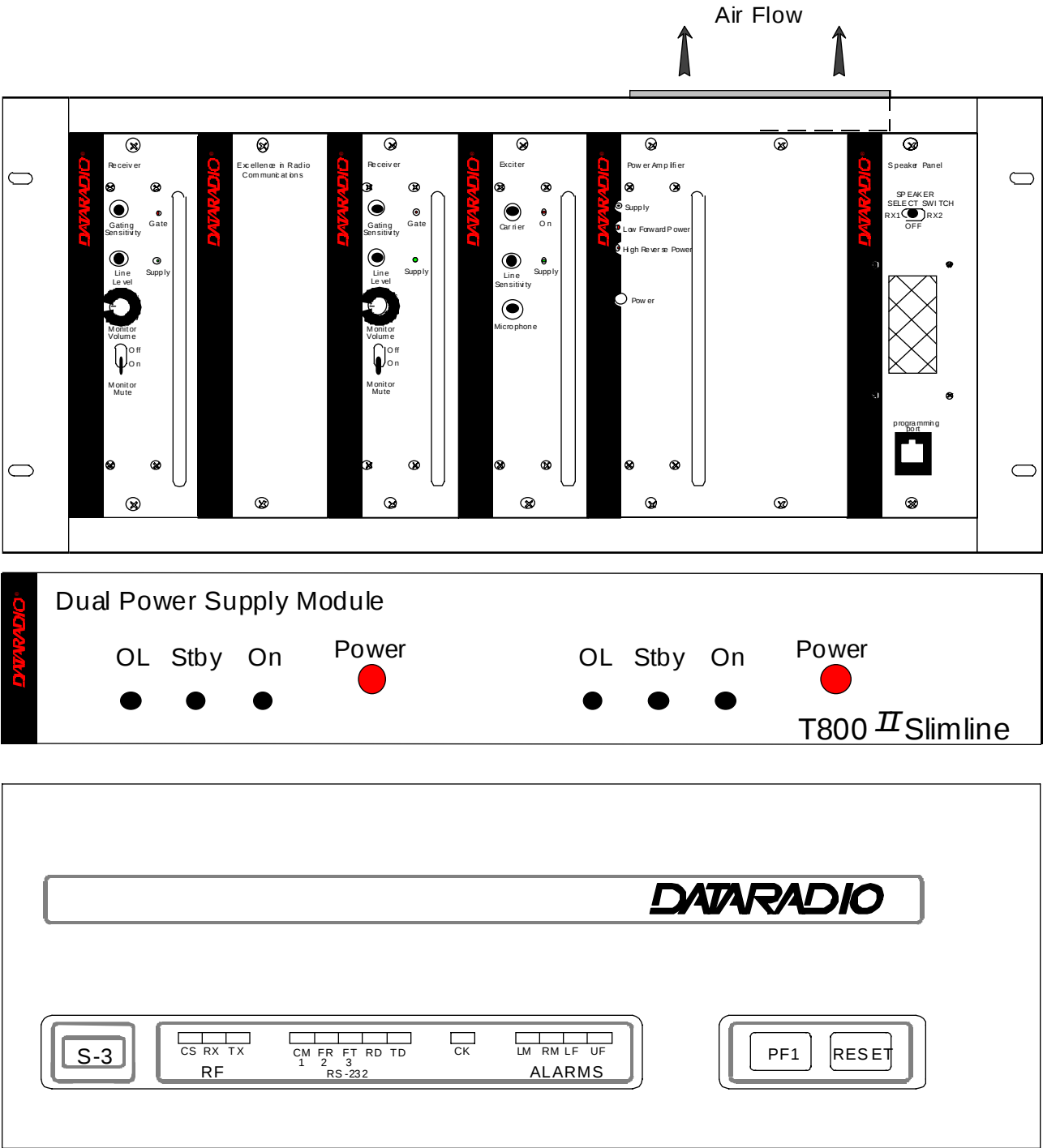


Figure 6 - Paragon/PD assembly (front)

|                                               |                      |                       |                          |                       |               |
|-----------------------------------------------|----------------------|-----------------------|--------------------------|-----------------------|---------------|
| Production procedure                          |                      |                       | DATARADIO Inc.           |                       | Page 11 of 14 |
| Authors: N. Savard                            | Validated: M. Martin | Approved: PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0      |
| Radio Interface Bulletin                      |                      |                       |                          |                       |               |
| Tait 800 & 900 MHz Base Series II (diversity) |                      |                       |                          |                       |               |

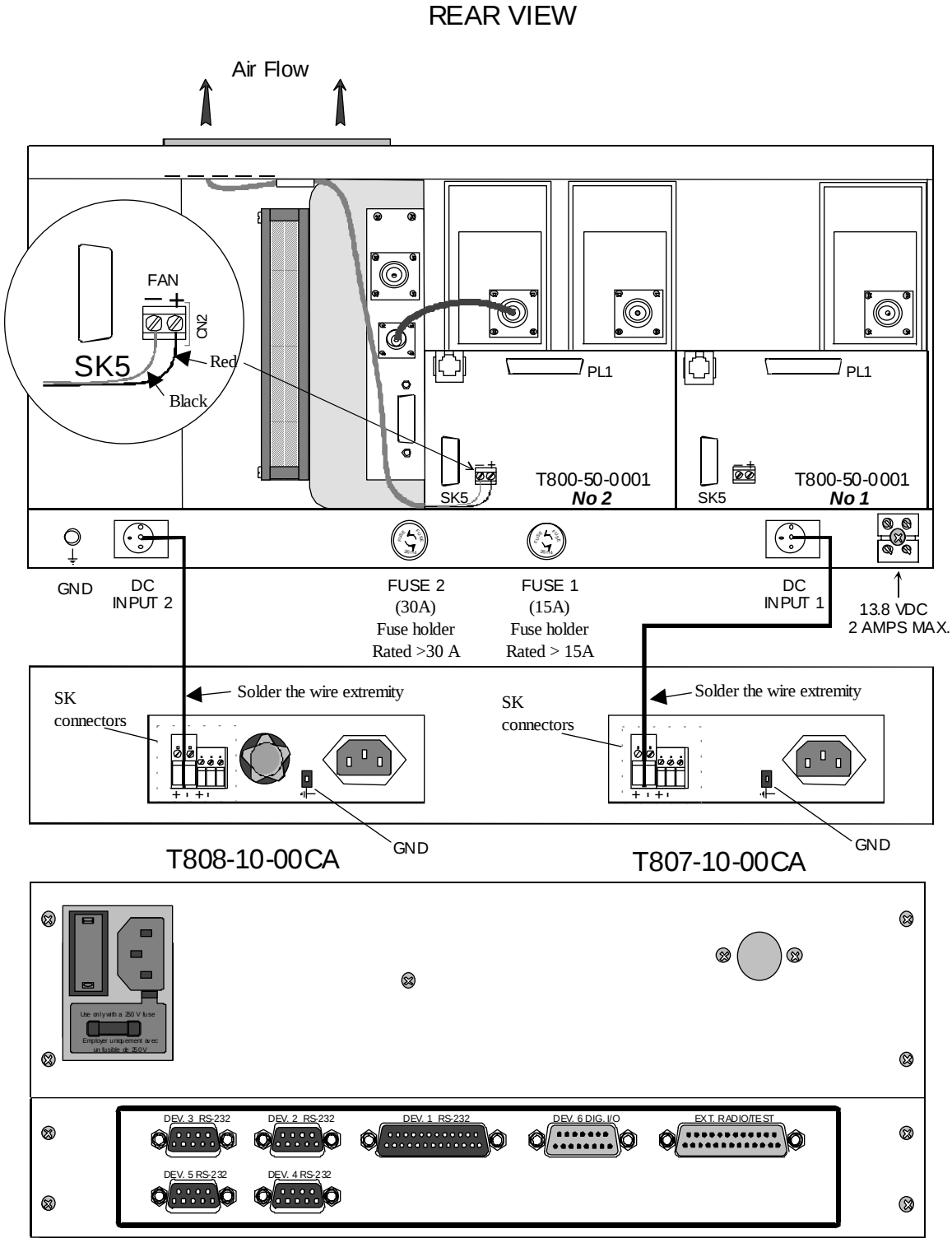
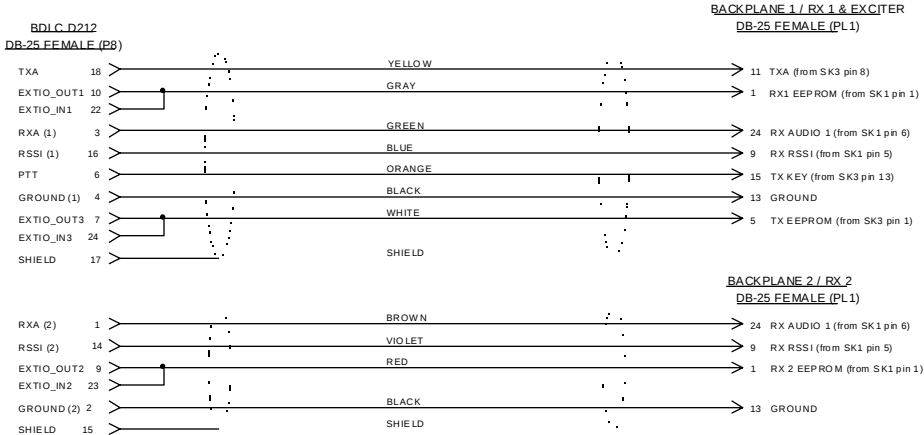
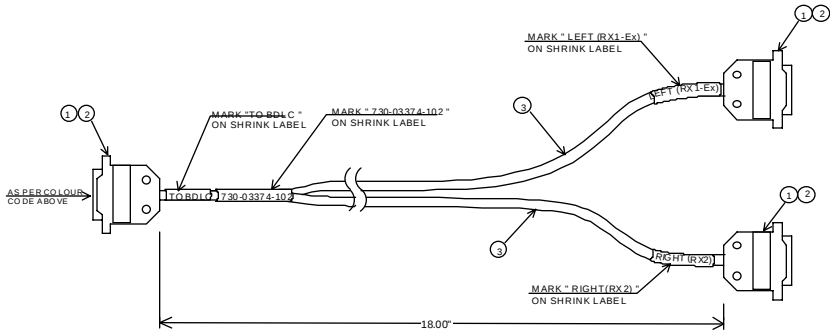


Figure 7 - Paragon/PD assembly (rear)

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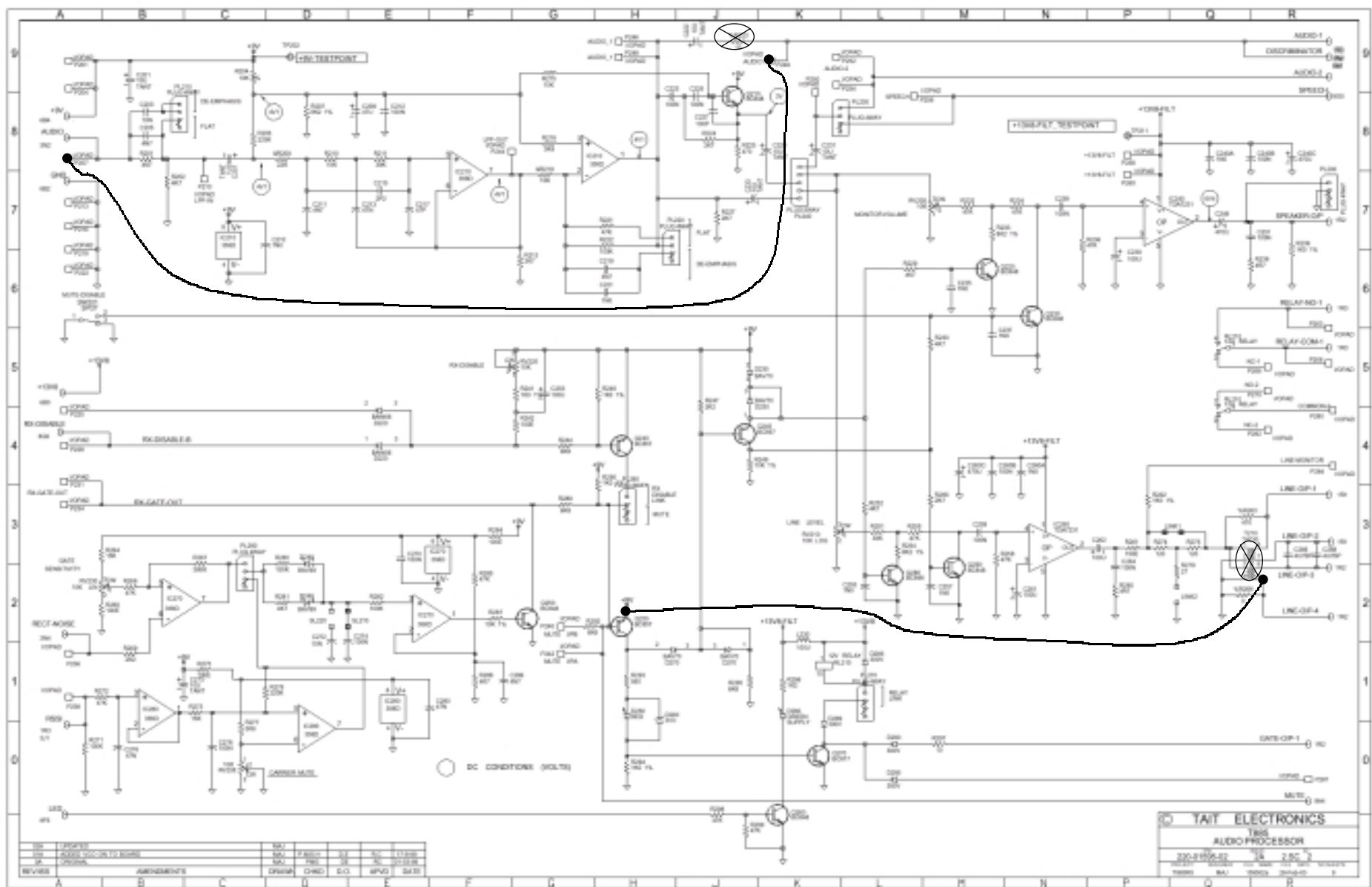
| ITEM | QTY | DESCRIPTION                                                     | P/N                                                                                                                     |
|------|-----|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 1    | 3   | DB25 FEMALE SOLDER CUP CONNECTOR                                | HAZ25S-E                                                                                                                |
| 2    | 3   | STRAIGHT-THROUGH PLASTIC HOOD AND GROMMET WITH 4/40 SCREW LOCKS | C88311004                                                                                                               |
| 3    | 2   | SHIELDED 10 CONDUCTOR CABLE AWG #24                             | CSA CMG 60-C<br>FT-4 LL61365<br>CSA AWM II A/B<br>105C 600 VOLT S<br>#24 AWG RU<br>AWM E107863<br>300 VOLTS<br>VW-1 80C |



|                                                                       |                                           |                      |              |
|-----------------------------------------------------------------------|-------------------------------------------|----------------------|--------------|
| 2                                                                     | CHANGED 2 CONNECTORS (PL1) TO DB25 FEMALE | 000505               |              |
| 1                                                                     | RELEASED                                  | 000412               | APPR         |
| REV                                                                   | DESCRIPTION                               | DATE                 | APPR         |
| DATARADIO INC.                                                        |                                           |                      |              |
| DESIGNER                                                              | M. MARTIN / E. RODRIGUE                   | GEN. TOLERANCE 1/32" | SCALE N.T.S. |
| DRAWN                                                                 | D. NGUYEN                                 | MAT.                 |              |
| CHECKED                                                               | M. MARTIN / E. RODRIGUE                   | NEXT ASBY            | DATE 000505  |
| PARAGON / PD<br>RADIO INTERFACE CABLE<br>(FOR BACKPLANE T800-S6-0001) |                                           |                      |              |
| SIZE B                                                                | PART NO 730-03374-102                     | SHEET 1/1            |              |
| DRAWING NO                                                            | 265-03374-102                             |                      |              |

Figure 8 - Interconnection and RIC schematic

|                                               |                      |                       |                          |                       |               |
|-----------------------------------------------|----------------------|-----------------------|--------------------------|-----------------------|---------------|
| Production procedure                          |                      |                       | DATARADIO Inc.           |                       | Page 13 of 14 |
| Authors: N. Savard                            | Validated: M. Martin | Approved: PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0      |
| Radio Interface Bulletin                      |                      |                       |                          |                       |               |
| Tait 800 & 900 MHz Base Series II (diversity) |                      |                       |                          |                       |               |



|                                               |                      |                       |                          |                       |               |
|-----------------------------------------------|----------------------|-----------------------|--------------------------|-----------------------|---------------|
| Production procedure                          |                      |                       | DATARADIO Inc.           |                       | Page 14 of 14 |
| Authors: N. Savard                            | Validated: M. Martin | Approved: PRELIMINARY | Procedure: 164-20006-051 | Rev. date: 2001-03-30 | Rev: 1.0      |
| Radio Interface Bulletin                      |                      |                       |                          |                       |               |
| Tait 800 & 900 MHz Base Series II (diversity) |                      |                       |                          |                       |               |

