

Part I Using T850 Series II Equipment In A Series I Rack Frame

This part of the manual describes how to modify T850 Series II equipment for operation in a T800 Series I rack frame.

Section	Title	Page
1	Tools Required	1.1
2	T855/856/857 SII - SI Conversion	2.1
2.1	Introduction	2.1
2.2	Method	2.2
3	T858/859 SII - SI Conversion	3.1
3.1	T858/859 Without RF Power Modules	3.1
3.1.1	Introduction	3.1
3.1.2	Method	3.2
3.2	T858/859 With RF Power Modules	3.5
3.2.1	Introduction	3.5
3.2.2	Method	3.6

Figure	Title	Page
2.1	T855 Component Changes	2.3
2.2	T856/857 Component Changes	2.5
2.3	T857 RF Output Coax Routing	2.7
3.1	T858/859 Without RF Power Modules T858/859 Front RF Input Coax Routing	3.3
3.2	T858/859 With RF Power Modules T858/859 Component Changes	3.7
3.3	T858 Front RF Input Coax Routing	3.8
3.4	T859 Front RF Input Coax Routing	3.8

1 Tools Required

Tool	Size
Allen Head Screwdriver	2mm AF
Flat Blade Screwdriver	3mm AF
Pozidriv Screwdrivers	No. 1 for M3 screws No. 2 for M4 screws
Torx Screwdrivers	T10 for M3 screws T20 for M4 screws
Spanners	1/4" AF for D-range locating pins 5.5mm AF for M3 nuts ^a 6mm AF for SMC connector 7mm AF for M4 nuts
Solder	
Soldering Iron	

- a. If you do not have a 5.5mm spanner, you can use long-nosed pliers to carefully grip the M3 nuts on the D-range securing screws and locating pins.

2 T855/856/857 SII - SI Conversion

2.1 Introduction

You must make a number of modifications to enable a T850 Series II receiver, exciter or transmitter to operate in a Series I rack frame. These changes can be split into two groups, mechanical and electrical, as described below.

Mechanical	<p>These changes involve:</p> <ul style="list-style-type: none"> • putting on a new front panel because of the differences in height and width between a Series II and Series I panel; • adding D-range locating pins as the Series I rack requires them for alignment.
Electrical	<p>These changes involve:</p> <ul style="list-style-type: none"> • making sure there is pin compatibility for D-range 1 pin 7 between the Series II module and the Series I rack frame; in Series I, pin 7 is allocated to audio 1 for the transmitter/exciter, and audio 2 for the receiver; • converting the exciter from rear RF output to front RF output; • disabling cyclic keying in the exciter.

This procedure assumes you have already purchased the appropriate Series I conversion kit:

- T855 - T800-70-0055
- T856 - T800-70-0056
- T857 - T800-70-0057.

If not, you should purchase one from your nearest Tait Dealer or Customer Service Organisation before beginning the procedure.

It should take approximately 15-20 minutes per module to perform these steps.

2.2 Method

Step	Action
1	Remove the Series II front panel from the module as follows: <ul style="list-style-type: none">• remove the volume knob (T855 only);• remove the four screws using a Torx screwdriver;• push the LEDs from the front of the panel to remove them from their grommets.
2	Remove both covers from the module.
3	Remove the M3 screws, spring washers, and M3 nuts from D-range 1. Note: If you have a chassis with threaded holes, you will need to remove only the M3 screws and spring washers.
4	Replace the M3 screws with locating pins, M3 spring washers (and nuts if necessary).
5	If you are modifying a T855, follow this step; otherwise go to Step 6. Remove R808 (10 Ω), as shown in Figure 2.1 . Ensure that R160 (10 Ω) is placed, as shown in Figure 2.1 . This will convert D-range 1 pin 7 from serial com to audio 2. Go to Step 8.

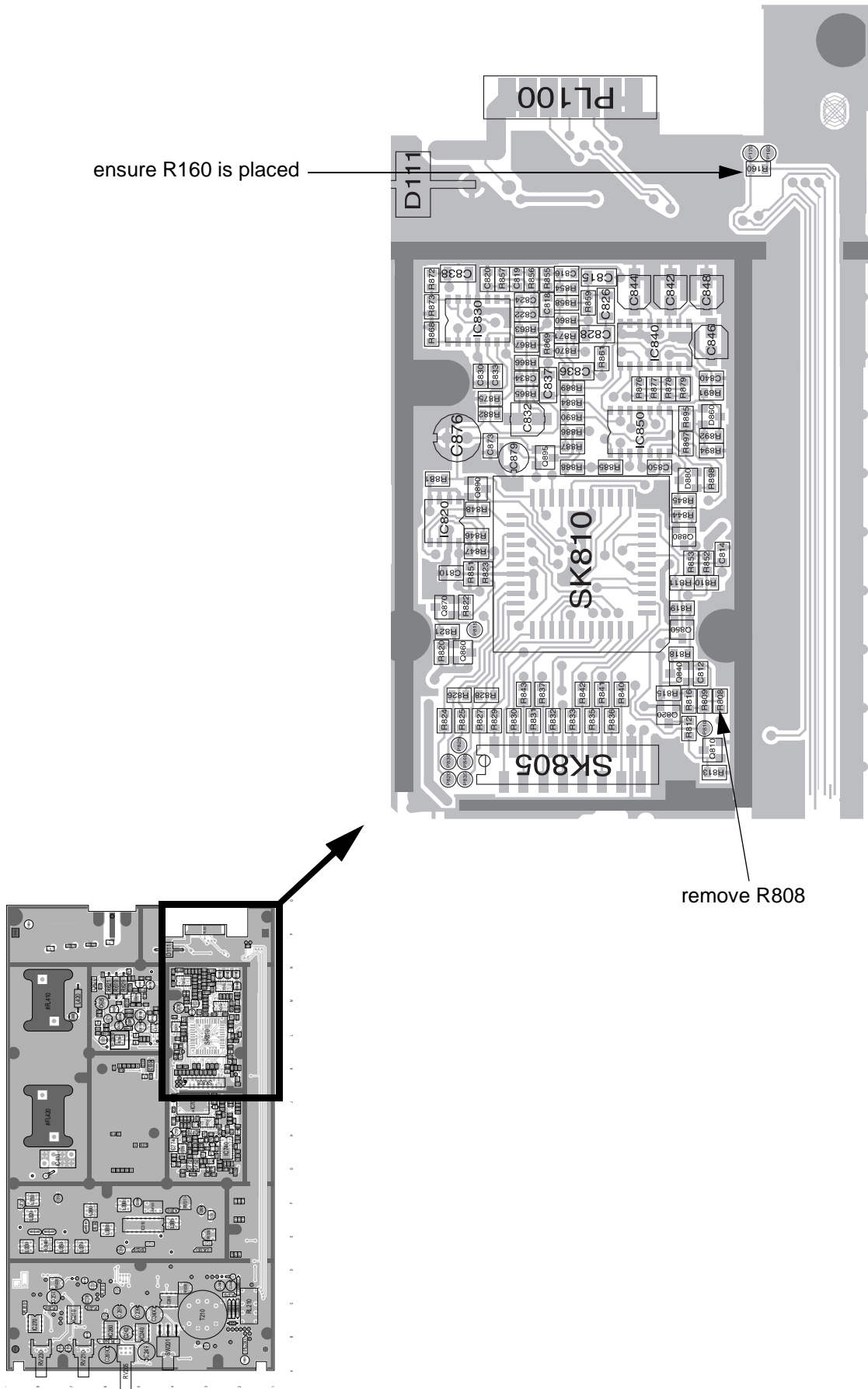


Figure 2.1 T855 Component Changes

Step	Action
6	<p>If you are modifying a T856, follow these steps (refer to Figure 2.2):</p> <ul style="list-style-type: none"> • remove R808 (10Ω) • remove R160 (10Ω) • place %R150 (10Ω). <p style="margin-left: 150px;">} converts D-range 1 pin 7 from serial com to audio 1</p> <p>Continue with Step 8.</p> <p>If you are modifying a T857, follow these steps (refer to Figure 2.2):</p> <ul style="list-style-type: none"> • remove R808 (10Ω) • remove R160 (10Ω) • place %R150 (10Ω) • remove L314; this will disable cyclic keying to enable the T857 to work with a Series I PA. <p>Continue with Step 7.</p>

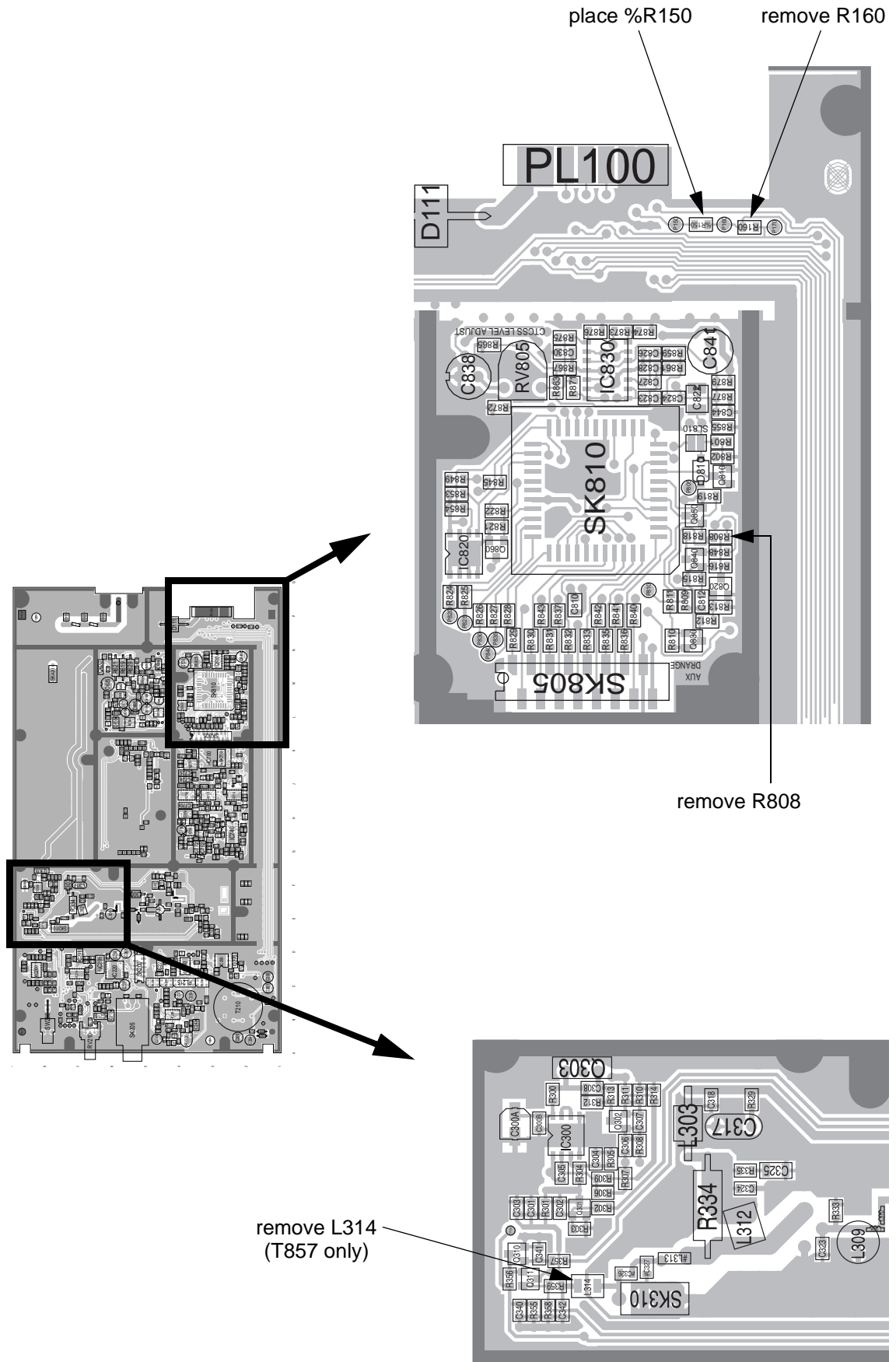


Figure 2.2 T856/857 Component Changes

Step	Action
7	<p>Converting the T857 from rear panel RF output to front panel RF output.</p> <p>Desolder, unscrew and remove the rear panel N-type connector.</p> <p>Fit the blanking plate over the hole in the chassis from which the N-type connector has been removed.</p> <p>Unplug the existing coax from SK310 and SK420, retaining the spring clip for the new coax cable.</p> <p>Fit the front panel SMC connector:</p> <ul style="list-style-type: none"> • insert the coax fitted with the brass SMC connector through the hole in the front of the chassis and secure with the brass nut and washer; • connect the coax from the SMC connector into SK310, securing the coax in the groove provided in the chassis wall with the spring clip (refer to Figure 2.3).
8	<p>Fit all parts of the Series I front panel, following Step 1 in reverse order.</p> <p>Note: If you have difficulty refitting the LEDs, try pushing the body of the LED back into the grommet with a thin screwdriver or spike. Be very careful while doing this as the legs of the LED are very easy to break.</p>
9	<p>Replace the covers.</p>
10	<p>Programming</p> <p>Once you have carried out this conversion procedure, you will no longer be able to program the T850 Series II module via D-range 1.</p> <p>In order to program the module now, you will need to use a programming module interface, such as the T800-01-0004. This device is fitted with a programming socket and can be connected to the module via SK805 in the microcontroller section. You will have to remove the top cover (closest to the handle) to gain access to SK805.</p> <p>Note: You may still be able to program the module by connecting the T800-01-0004 to a T800-03-0000 auxiliary D-range fitted as D-range 2, but only if pins 8 (ground) and 12 (serial com) of D-range 2 are not used in the Series I configuration.</p>

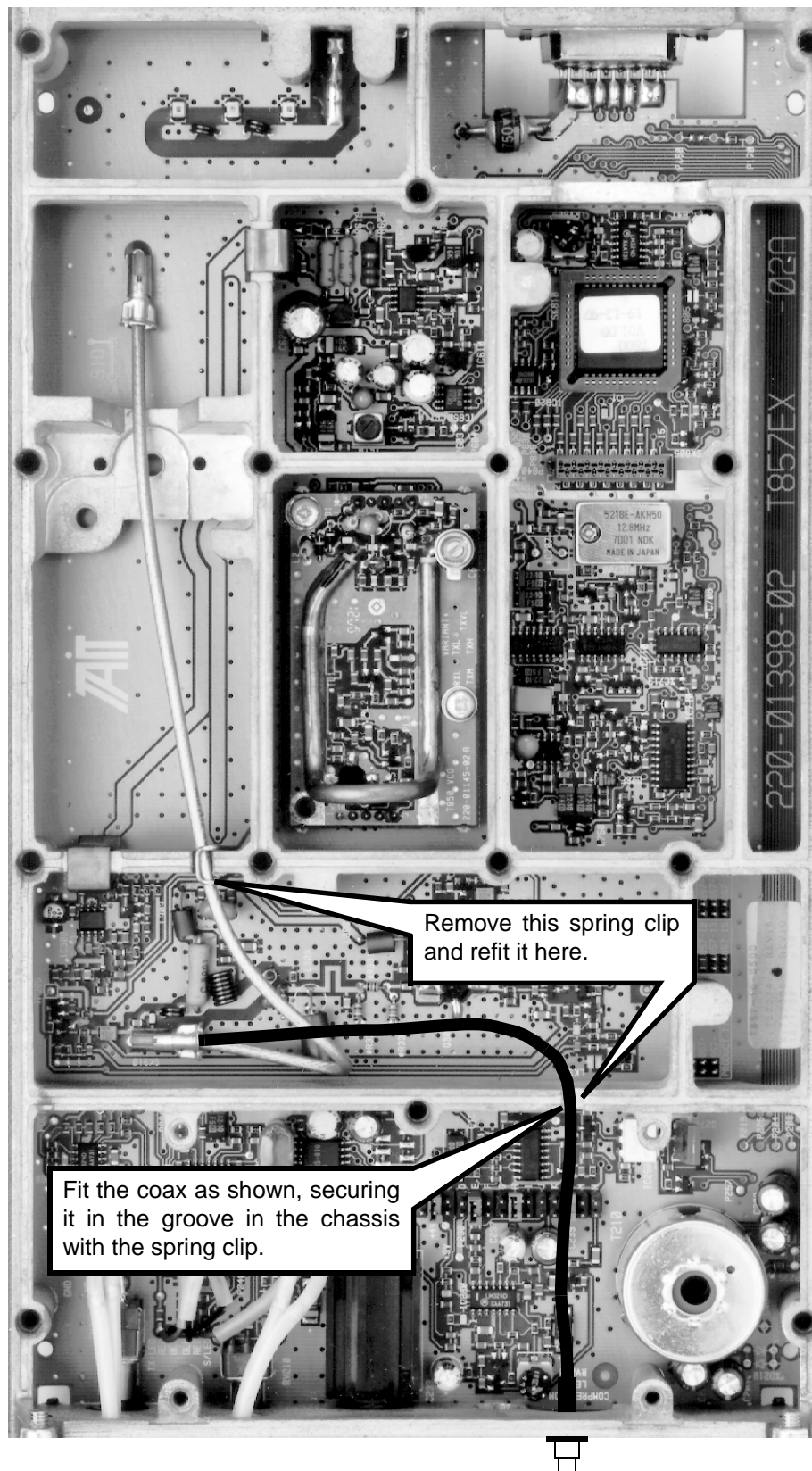


Figure 2.3 T857 RF Output Coax Routing

3 T858/859 SII - SI Conversion

Section 3.1 describes the older design T858/859 without RF power modules, while Section 3.2 describes the newer design T858/859 with RF power modules. Figure 1.1 shows how to identify your PA design without having to remove the side cover.

3.1 T858/859 Without RF Power Modules

3.1.1 Introduction

You must make a number of modifications to enable a T850 Series II PA without RF power modules to operate in a Series I rack frame. These changes can be split into two groups, mechanical and electrical, as described below.

Mechanical	These changes involve putting on a new front panel because of the differences in height and width between a Series II and Series I panel.
Electrical	These changes involve converting the PA from rear RF input to front RF input.

This procedure assumes you have already purchased the appropriate Series I conversion kit:

- T858 - T800-70-0058
- T859 - T800-70-0059.

If not, you should purchase one from your nearest Tait Dealer or Customer Service Organisation before beginning the procedure.

It should take approximately 15-20 minutes per module to perform these steps.

3.1.2 Method

Step	Action
1	<p>Remove the Series II front panel from the PA as follows:</p> <ul style="list-style-type: none"> • remove the four screws using a Torx screwdriver; • push the LEDs from the front of the panel to remove them from their grommets.
2	Remove the side cover.
3	<p>Remove the rear panel BNC connector:</p> <ul style="list-style-type: none"> • unplug the RF input coax from the socket on the PCB; • unscrew the BNC connector from the chassis; • carefully withdraw the coax from the PA through the hole in the rear of the chassis (cutting cable ties as required); • fit the blanking plate over the hole in the chassis from which the BNC connector has been removed; • replace any cable ties previously cut and ensure the wiring is secured under the restraints provided. <p>Fit the front panel SMC connector:</p> <ul style="list-style-type: none"> • insert the coax fitted with the brass SMC connector through the hole in the front of the chassis and secure with the brass nut and washer; • connect the coax from the SMC connector into SK1, feeding it over RV63 and under the LED legs and cable restraint, as shown in Figure 3.1.
4	Refit the side cover.
5	<p>Fit all parts of the Series I front panel, following Step 1 in reverse order.</p> <p>Note: If you have difficulty refitting the LEDs, try pushing the body of the LED back into the grommet with a thin screwdriver or spike. Be very careful while doing this as the legs of the LED are very easy to break.</p>

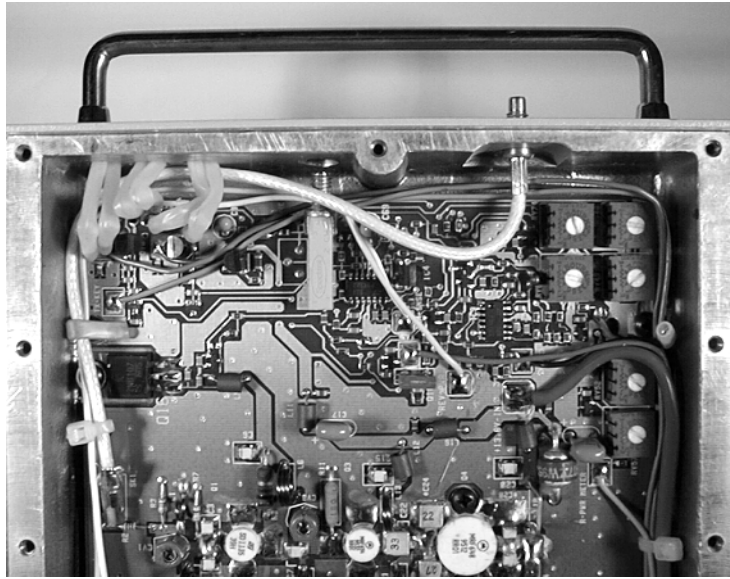


Figure 3.1 T858/859 Front RF Input Coax Routing (T859 Shown)

3.2 T858/859 With RF Power Modules

3.2.1 Introduction

You must make a number of modifications to enable a T850 Series II PA with RF power modules to operate in a Series I rack frame. These changes can be split into two groups, mechanical and electrical, as described below.

Mechanical	These changes involve putting on a new front panel because of the differences in height and width between a Series II and Series I panel.
Electrical	<p>These changes involve converting the PA from rear RF input to front RF input, and modifying the circuitry to:</p> <ul style="list-style-type: none"> • ensure the power alarms operate correctly in a T800 Series I system; • key the PA from the Tx-Key line; • disable cyclic keying.

This procedure assumes you have already purchased the appropriate Series I conversion kit:

- T858 - T800-70-0058
- T859 - T800-70-0059.

If not, you should purchase one from your nearest Tait Dealer or Customer Service Organisation before beginning the procedure.

It should take approximately 15-20 minutes per module to perform these steps.

3.2.2 Method

Note: Where the same component has different circuit references in the T858 and T859, in this section the T858 circuit reference is given first, followed by the T859 circuit reference in brackets, e.g. Q137 [Q128].

Step	Action
1	Remove the Series II front panel from the PA as follows: <ul style="list-style-type: none"> • remove the four screws using a Torx screwdriver; • push the LEDs from the front of the panel to remove them from their grommets.
2	Remove the side cover.
3	Remove the rear panel BNC connector: <ul style="list-style-type: none"> • disconnect the D-range PCB loom from the main PCB; • unplug the RF input coax from the socket on the PCB; • unscrew the BNC connector from the chassis; • carefully withdraw the coax from the PA through the hole in the rear of the chassis; • fit the blanking plate over the hole in the chassis from which the BNC connector has been removed; • reconnect the D-range PCB loom to the main PCB.
4	Remove %L213 to disable cyclic keying (refer to Figure 3.2).
5	Fit the following zero Ω resistors (refer to Figure 3.2): <ul style="list-style-type: none"> • %R120 [%R174] (PA is now keyed from the Tx-key line); • %R140 [%R108] • %R147 [%R110] } enables the power alarms to operate correctly in a T800 Series I system
6	Fit the front panel SMC connector: <ul style="list-style-type: none"> • insert the coax fitted with the brass SMC connector through the hole in the front of the chassis and secure with the brass nut and washer; • connect the coax from the SMC connector into SK201, as shown in Figure 3.3 and Figure 3.4.
6	Refit the side cover.
7	Fit all parts of the Series I front panel, following Step 1 in reverse order. <p>Note: If you have difficulty refitting the LEDs, try pushing the body of the LED back into the grommet with a thin screwdriver or spike. Be very careful while doing this as the legs of the LED are very easy to break.</p>

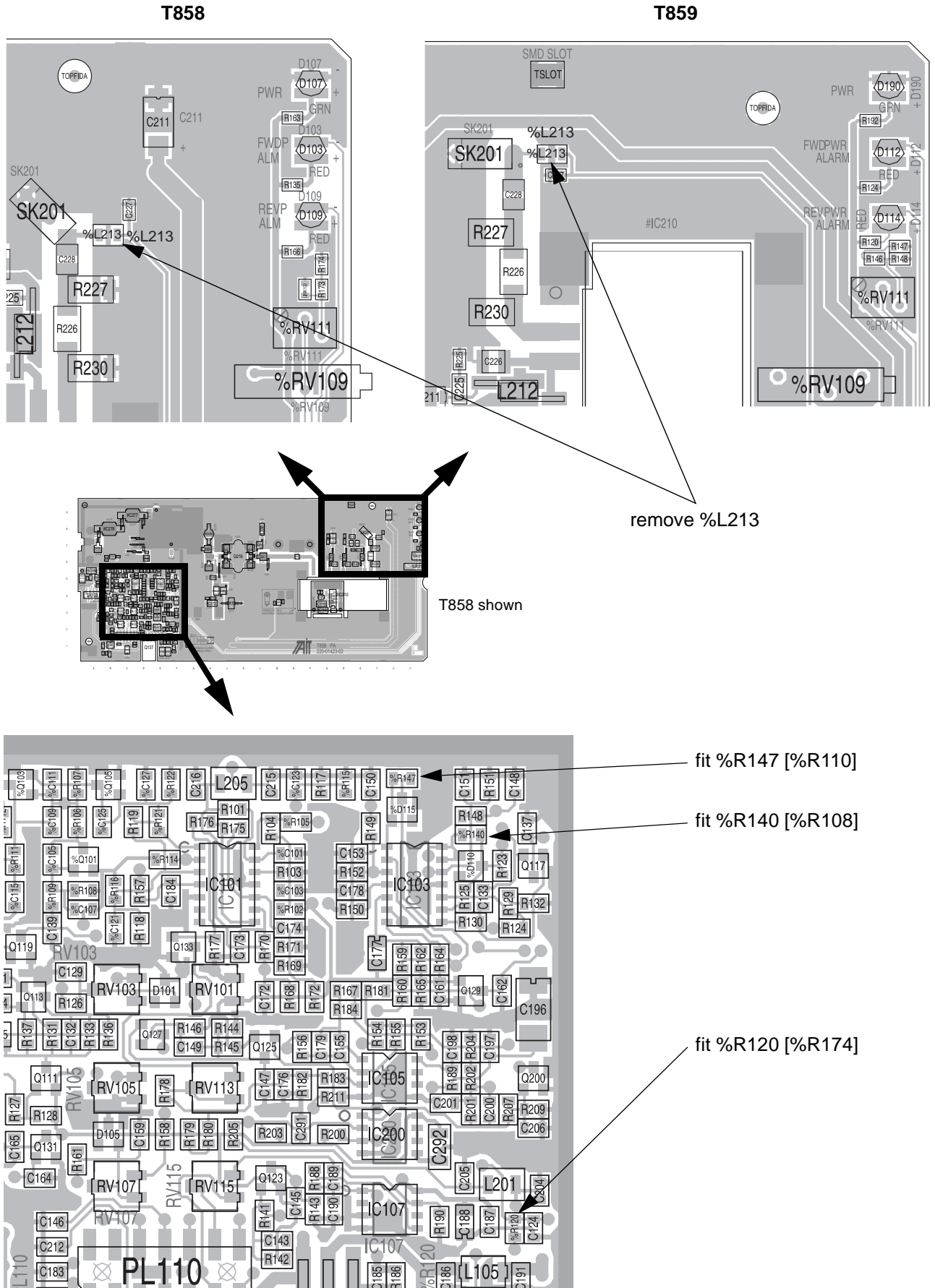


Figure 3.2 T858/859 Component Changes

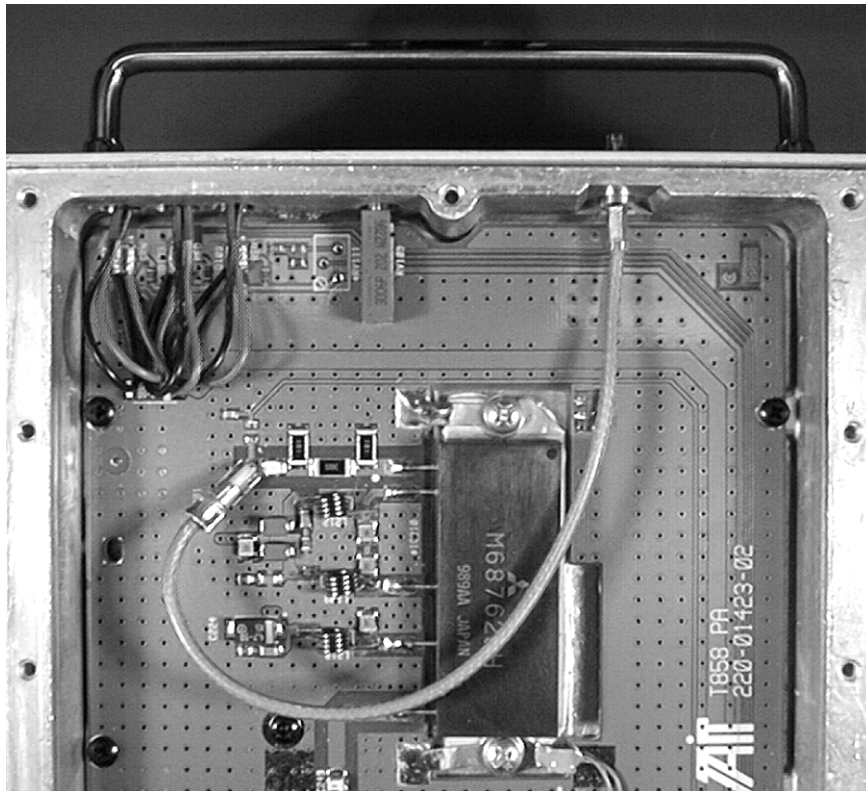


Figure 3.3 T858 Front RF Input Coax Routing



Figure 3.4 T859 Front RF Input Coax Routing