



MOTOROLA INC.
Communications
Sector

DRIVER POWER AMPLIFIER DECK (DPA)

MODEL TTF1242B (928-944 MHz)

MODEL TTF1243A (944-960 MHz)

1. GENERAL

The *PURC 5000* Driver Power Amplifier (DPA) is designed for continuous duty operation over the full -30°C to +60°C range of ambient temperatures. The amplifier employs ceramic hybrid modules with 50-ohm interfaces between all stages. Figure 1 shows a typical Driver Power Amplifier Deck and its input/output cabling. Figure 2 shows the components mounted to the heat sink.

2. THEORY OF OPERATION

2.1 The input signal to the DPA comes from the IPA. Under nominal operating conditions, the input level of the DPA is 1 to 4 W. The predriver stage (Q501) amplifies the input signal to a level of 11 to 15 W. The signal at the output of the driver stage (Q511) is then amplified to a 35 to 40 W level. At this point, the signal is split three ways and applied to the three output stage amplifier modules. After combining the output of the three output stages, a power of 80 to 100 W is delivered to the output cable. A directional coupler/power detector for power control and sensing output power is included on the combiner board.

2.2 Isolation resistors (TRN9064A) under the splitter and combiner boards minimize the interaction between the three output stage modules. In the event of a module failure or degradation, the resulting mismatch is isolated from the other output stage modules by the isolation resistors. See paragraph 3.9 for testing procedure.

2.3 Operating temperature of the DPA is sensed by a thermistor located under the combiner board. The thermistor (RT501) senses the air temperature directly above the heat sink backplane. The temperature information is used by the power control circuit to control the station power output under elevated ambient temperatures.

3. SERVICING

3.1 GENERAL

3.1.1 Repair of the *PURC 5000* microstrip ceramic substrates is not recommended and should be avoided. The *PURC 5000* modules are built and tested at the factory employing special fixtures and processes to ensure proper operation. The repair procedure consists of replacing a defective module rather than components on the module.

IMPORTANT

All six cover screws must be tight to ensure optimum performance.

3.1.2 Under normal operation, the transmitter shutdown circuit signals the station control to turn off the transmitter when power control cannot level power. It may be necessary to defeat the transmitter shutdown section of the power control circuitry during transmitter servicing to isolate faults. Transmitter shutdown is prevented by installation of service jumper JU1, on the Station Control board. This allows the serviceman to make measurements in the areas of power control, IPA, and both power amplifier decks regardless of conditions in the transmitter.

CAUTION

Installation of JU1 allows the transmitter to continue to operate, although a potentially damaging condition may exist. Therefore, key the transmitter for only short periods during servicing. Refer to the troubleshooting chart for fault isolation.

3.1.3 Care should be exercised in removal of the "Omega" straps between modules and their reinstallation. Care should be exercised when soldering the "Omega" strap interconnects. The "Omega" straps (Motorola p/n 42-84510M04) absorb mechanical

technical writing services

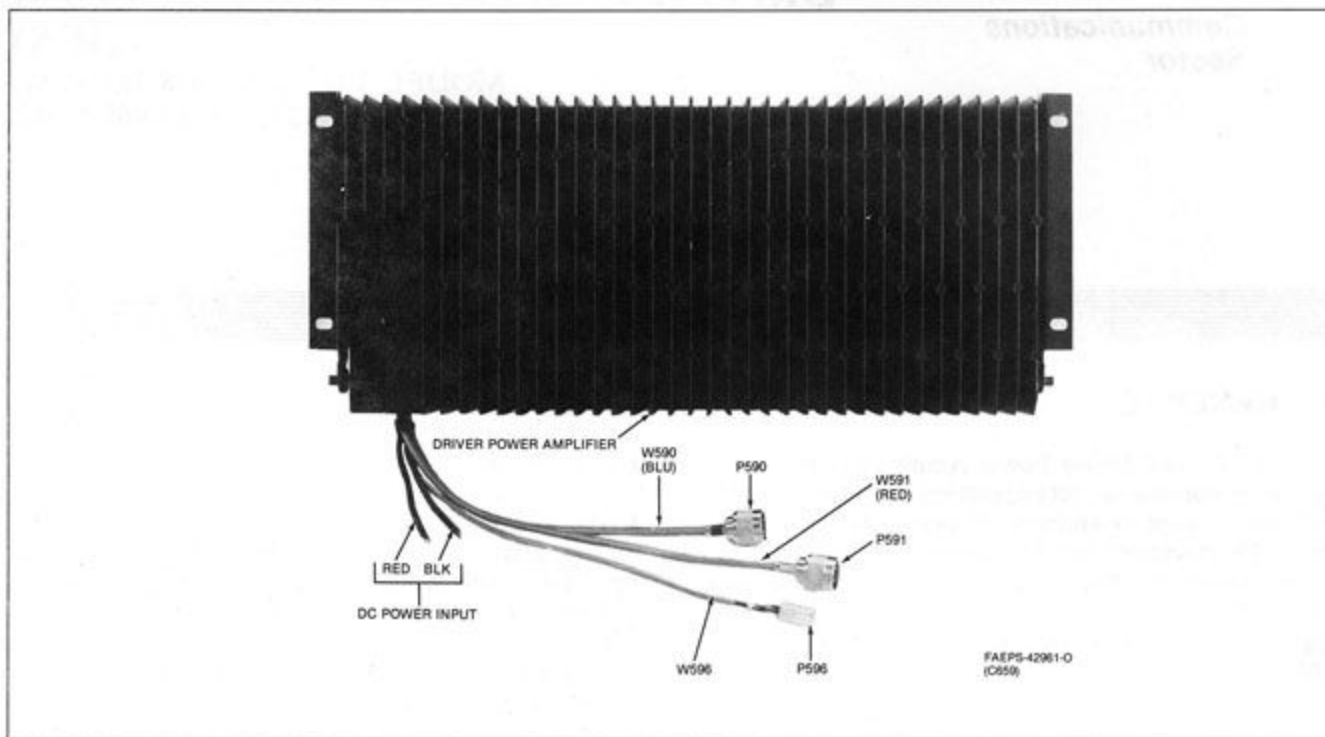


Figure 1.
Front View of Driver Power Amplifier Deck

stresses caused during temperature excursions of the station and therefore must remain flexible after installation. When soldering these connections, do not allow solder to bridge over the top or to fill the underside of the "Omega" strap. Figure 3a shows how a correctly soldered "Omega" strap should look. Incorrect soldering is shown in Figure 3b. Furthermore, do not substitute any rigid material or attempt to replace an "Omega" strap by "solder bridging". If proper soldering techniques are not observed during installation of "Omega" straps, premature failure of the hybrid module can result.

IMPORTANT

Power measurements of the individual "output stage" amplifier modules should *not* be attempted. The splitter and combiner circuits serve to prevent imbalances in drive and output of the final amplifier stages. If input or output connections to the individual final modules are broken, power measurements will be incorrect.

3.2 MODULE REPLACEMENT PROCEDURE

The *PURC 5000* rf power modules consist of an rf power transistor and associated circuits bonded to a copper heat spreader.

Step 1. Locate defective module (see power amplifier deck troubleshooting procedures in the Transmitter Introduction section, 68P81072E33).

Step 2. Disconnect power from deck to be repaired.

Step 3. Unsolder all seven "Omega" straps on module to be replaced from adjacent circuit boards.

Step 4. Remove the two screws holding the module to the heat sink.

Step 5. Remove module. Thermal compound between module and heat sink may cause module to stick to heat sink. A gentle "rocking" force is usually sufficient to free a stuck module.

Step 6. Clean old thermal compound from heat sink surface.

Step 7. Apply a *thin* film of new thermal compound to heat sink in module location.

Step 8. Position new module on heat sink, checking for proper orientation of module ("O" on module goes to Output port on adjacent circuit board; "I" on module goes to Input port on opposite circuit board).

Step 9. Carefully screw down module to heat sink.

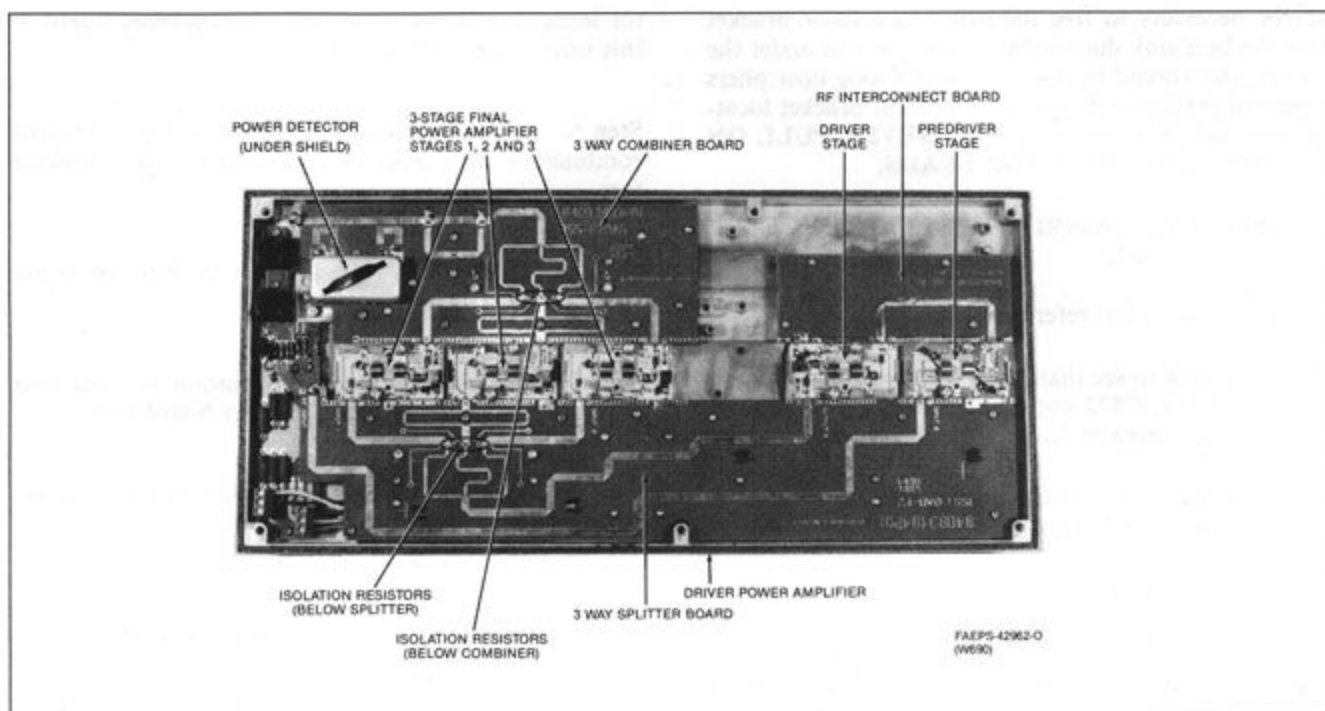


Figure 2.
Rear View (Cover Removed) of Driver Power Amplifier Deck

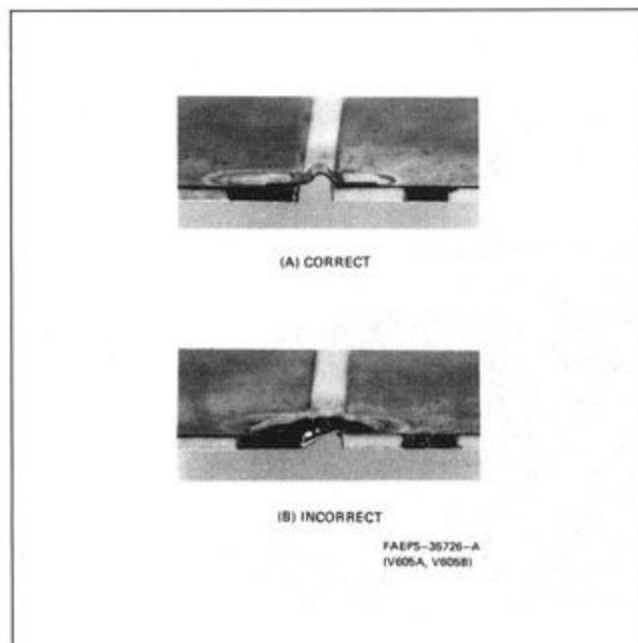


Figure 3.
"Omega" Strap Replacement Soldering Technique

Step 10. Solder all seven "Omega" straps to adjacent circuit boards. See paragraph 3.1.3 on proper "Omega" strap soldering technique.

Step 11. Reconnect power to deck.

3.3 COMBINER BOARD REMOVAL PROCEDURE

Refer to Figure 4 for major component locations.

Step 1. Remove the DPA deck cover (6 screws).

Step 2. Remove power detector shield.

Step 3. **IMPORTANT** — Unsolder isolation resistor leads from combiner board (3 places). At this time, isolation resistor should be checked for resistance value — approximately 100 ohms between *any* two leads. Defective units should be replaced.

Step 4. Unsolder power amplifier output cable (2 ground straps and center conductor) from the combiner board.

Step 5. Unsolder all "Omega" strap connections between combiner board and all modules (9 places).

Step 6. Unsolder feedthru capacitors in power detector area from combiner board (4 places).

Step 7. Unscrew isolation resistor bracket from heat sink (2 screws).

Step 8. Unscrew combiner board from heat sink (11 screws).

Step 9. Remove combiner board from heat sink with isolation resistors suspended below the board by the isolation resistor bracket locating pins (see Figure 6). It

may be necessary to free the isolation resistor bracket from the heat sink due to thermal compound under the bracket; this should be done by using a long nose pliers to pull up gently on the isolation resistor bracket locating pins until the bracket is free. **NEVER PULL ON THE ISOLATION RESISTOR LEADS.**

3.4 COMBINER BOARD INSTALLATION PROCEDURE

Refer to Figure 4 for reference.

Step 1. Check to see that ferrite beads are on feedthru capacitors C571, C572 and C573 (*not* on C574) in interconnect pocket area of heat sink.

Step 2. Clean old thermal compound off heat sink surface in isolation resistor location.

Step 3. Apply a *thin* film of new thermal compound to heat sink in isolation resistor location.

Step 4. Suspend isolation resistor beneath combiner board by the isolation load resistor bracket locating pins, with the isolation resistor leads protruding thru the appropriate holes in the combiner board. Isolation resis-

tor leads should *not* be soldered to combiner board at this time. Refer to Figure 6.

Step 5. Slip the combiner board/isolation resistor combination into position on the heat sink, checking for:

- all module "Omega" straps (3 per module) lie on top of combiner board.
- all isolation resistor leads and bracket locating pins protrude through proper combiner board holes.
- all four feedthru capacitor terminals in power detector area protrude through proper holes in combiner board.
- output cable is properly positioned in slot at end of combiner board.

Step 6. After proper positioning of combiner board, screw board down to heat sink (11 screws).

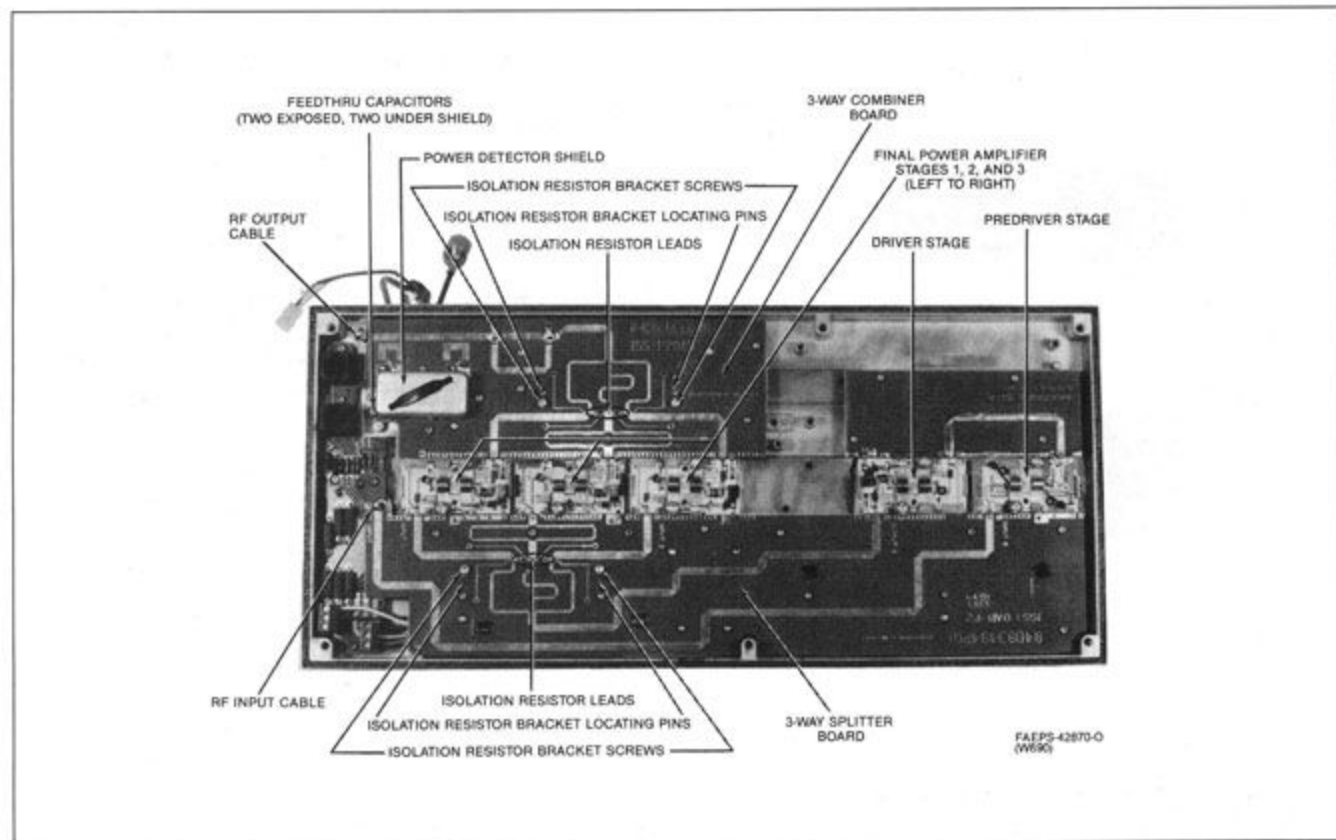


Figure 4.
Rear View (Cover Removed) of Driver Power Amplifier Deck

Step 7. Solder four feedthru capacitors in power detector area to combiner board.

Step 8. Solder power amplifier output cable to combiner board (2 ground straps and center conductor).

Step 9. Solder all "Omega" straps from modules to combiner board (3 per module). See paragraph 3.1.3 for proper "Omega" strap soldering technique.

Step 10. **IMPORTANT** — Screw isolation resistor brackets to heat sink before proceeding to next step (2 screws).

Step 11. Solder all isolation resistor leads to combiner board (3 places).

Step 12. Reinstall power detector shield.

Step 13. Reinstall the DPA deck cover (6 screws).

3.5 SPLITTER BOARD REMOVAL PROCEDURE

Refer to Figure 4 for reference.

Step 1. Remove the DPA deck cover (6 screws).

IMPORTANT

Unsolder isolation resistor leads from splitter board (3 places).

Step 2. At this time, isolation resistor should be checked for resistance value — approximately 100 ohms between *any* two leads. Defective units should be replaced.

Step 3. Unsolder the power amplifier input cable from the splitter board (2 ground straps and center conductor).

Step 4. Unsolder all "Omega" strap connections between splitter board and all modules (19 places).

Step 5. Remove dc feed wires from J506 and J507 on dc distribution board (screwdriver required).

Step 6. Unscrew isolation resistor bracket from heat sink (2 screws).

Step 7. Unscrew splitter board from heat sink (17 screws).

Step 8. Remove splitter board/wire harness assembly from heat sink with isolation resistor suspended below the board by the isolation resistor bracket locating pins (see Figure 6). It may be necessary to free the isolation resistor bracket from the heat sink due to thermal compound under the bracket; this should be done by using a

long nose pliers to pull up gently on the isolation resistor bracket locating pins until the bracket is free. **NEVER PULL ON THE ISOLATION RESISTOR LEADS.**

3.6 SPLITTER BOARD INSTALLATION PROCEDURE

Refer to Figure 4 for reference.

Step 1. Properly dress all dc feed wires in their harnesses and route individual wires through isolation resistor bracket where required. Refer to Figure 5.

Step 2. Clean old thermal compound off of heat sink surface in isolation resistor location.

Step 3. Apply a *thin* film of new thermal compound to heat sink in isolation resistor location.

Step 4. Suspend isolation resistor beneath splitter board by the isolation resistor bracket locating pins, with the isolation resistor leads protruding through the appropriate holes in the splitter board. Isolation resistor leads should *not* be soldered to the splitter board at this time. Refer to Figure 6.

Step 5. Slip the splitter board/isolation resistor/dc wire harness combination into position on the heat sink, checking for:

- all module "Omega" straps (4 per module except 3 for module in position #5) lie on top of splitter board.
- all isolation resistor leads and bracket locating pins protrude through proper holes in splitter board.
- all dc feed wires are properly positioned and clear of heat sink standoffs and bottom side of isolation resistor bracket so as not to get pinched when assembly is screwed to heat sink.
- input cable is properly positioned in slot at end of splitter board.

Step 6. After proper positioning of splitter board assembly, screw board down to heat sink (17 screws).

Step 7. **IMPORTANT** — Screw isolation resistor bracket to heat sink before proceeding further (2 screws).

Step 8. Reconnect dc feed wires to J506 and J507 on dc distribution board, following color code shown on board legend (screwdriver required).

Step 9. Solder all isolation resistor leads to splitter board (3 places).

Step 10. Solder input cable to the splitter board (2 ground straps and center conductor).

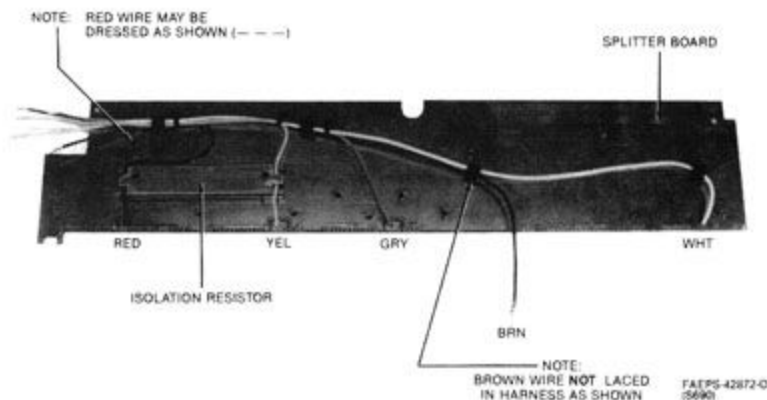


Figure 5. Splitter Board Wiring Harness Dress

Step 11. Solder all "Omega" straps from all modules to splitter board (19 places).

Step 12. Reinstall the DPA deck cover (6 screws).

3.7 POWER AMPLIFIER THERMISTOR REPLACEMENT

Step 1. Remove combiner board to expose thermistor board.

Step 2. Unscrew thermistor board from heat sink.

Step 3. Replace thermistor and trim leads on back of board as short as possible to prevent shorting to heat sink.

Step 4. Screw thermistor board to heat sink, taking care to dress brown wire properly. (See Figure 7.)

Step 5. Reinstall combiner board.

3.8 ISOLATION RESISTOR REPLACEMENT PROCEDURE

Refer to Figure 6 for reference.

Step 1. Remove appropriate splitter or combiner board.

Step 2. Remove defective isolation resistor from board by disengaging isolation resistor bracket locating pins from holes in board. No unsoldering should be required if proper board removal procedure was followed.

Step 3. Insert new isolation load resistor into board by routing isolation resistor leads and isolation resistor bracket locating pins into appropriate holes in board. Bend the tip of each isolation resistor bracket locating pin at a right angle (90°) at the indent near the tip of the locating pin (use a long nose pliers). The isolation resistor should hang freely from the board by the isolation resistor bracket locating pins.

Step 4. If isolation resistor is under the splitter board, properly dress dc feed wires through isolation resistor bracket as required (refer to Figure 5).

Step 5. Install splitter or combiner board.

3.9 ISOLATION RESISTOR CHECKING PROCEDURE

A defective isolation resistor can usually be found by performing the following tests.

3.9.1 Intermittent Isolation Resistor Test

Step 1. Connect meter cable to J504.

Step 2. While monitoring meters 1, 2 and 3 with the transmitter keyed, perform the following procedure. Using an **insulated** tuning tool, apply downward pressure on the splitter or combiner board directly above the isolation resistor. The insulated end of the tuning tool should contact the board **between** rf runners. Any change in meters 1, 2 or 3 greater than 3 μ A as pressure is applied and relieved is indicative of a defective isolation resistor which should be replaced.

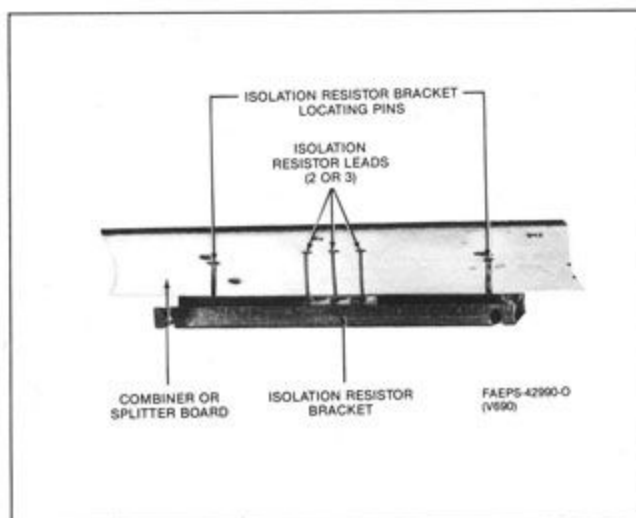


Figure 6.
Isolation Resistor-Splitter/Combiner Interface

3.9.1 Intermittent Isolation Resistor Test

Step 1. Connect meter cable to J504.

Step 2. While monitoring meters 1, 2 and 3 with the transmitter keyed, perform the following procedure. Using an **insulated** tuning tool, apply downward pressure on the splitter or combiner board directly above the

isolation resistor. The insulated end of the tuning tool should contact the board **between** rf runners. Any change in meters 1, 2 or 3 greater than 3 μ A as pressure is applied and relieved is indicative of a defective isolation resistor which should be replaced.

CAUTION

Use only an **insulated** probe to apply pressure to the splitter or combiner board. Under **no** circumstances should any metallic object directly contact the splitter or combiner board during this procedure.

3.9.2 Defective Isolation Resistor Test

Step 1. Unsolder all leads of the isolation resistor to be tested from the splitter or combiner board.

Step 2. Measure the resistance between all combinations of any two leads of the isolation resistor (three measurements on 3-way resistor TRN9064A). Resistance should measure between 90 ohms and 110 ohms in all cases. Any resistance outside of this range is indicative of a defective isolation resistor.

Step 3. Resolder isolation resistor to board if it is not found to be defective, otherwise replace.

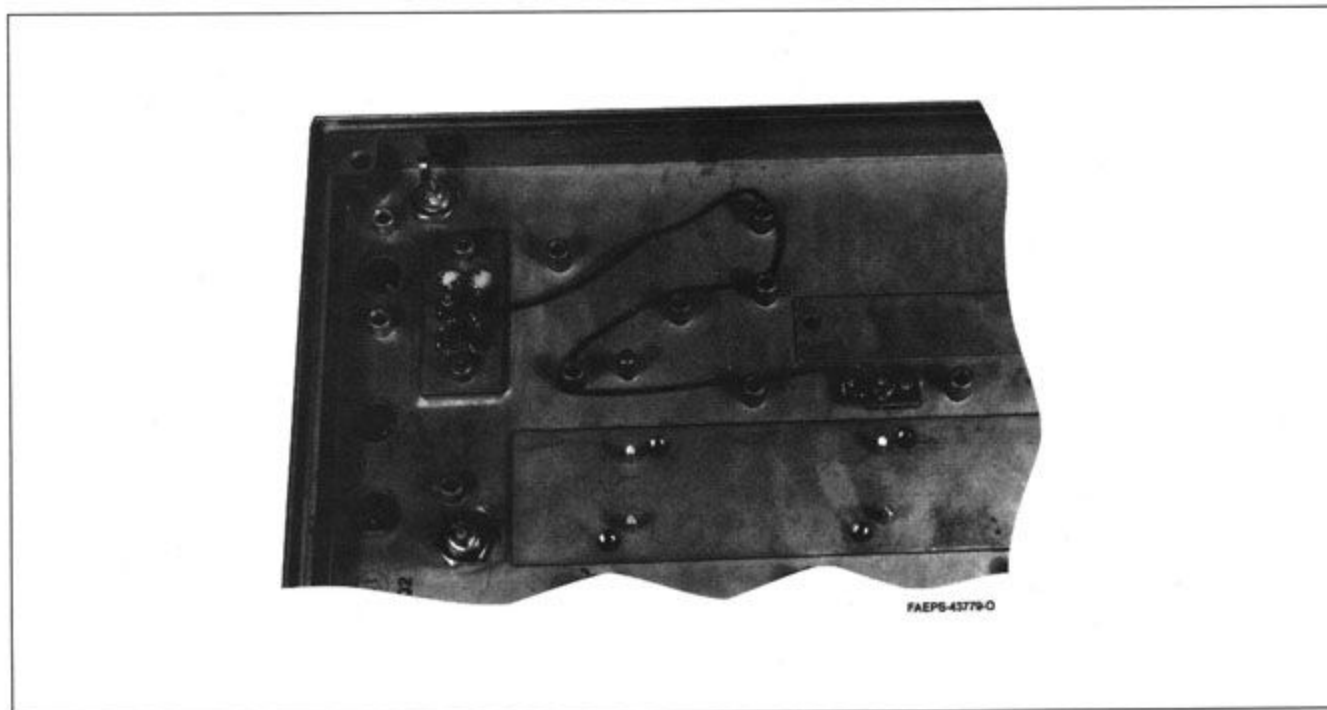


Figure 7. DPA Route of Thermistor Board Output Wire

TROUBLESHOOTING PREREQUISITES

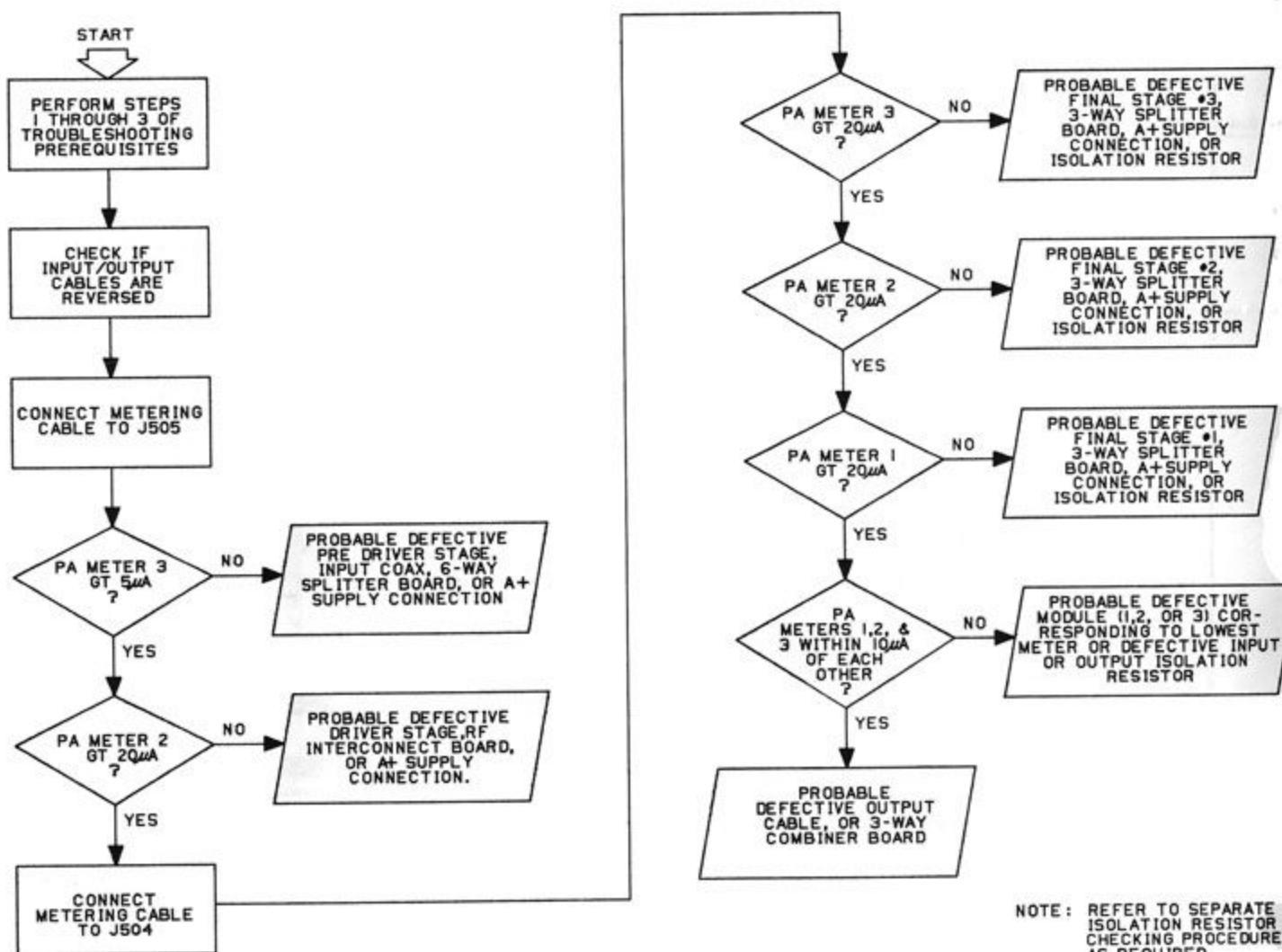
Step 1. Install station control board service jumper (JU1) onto its service installation position.

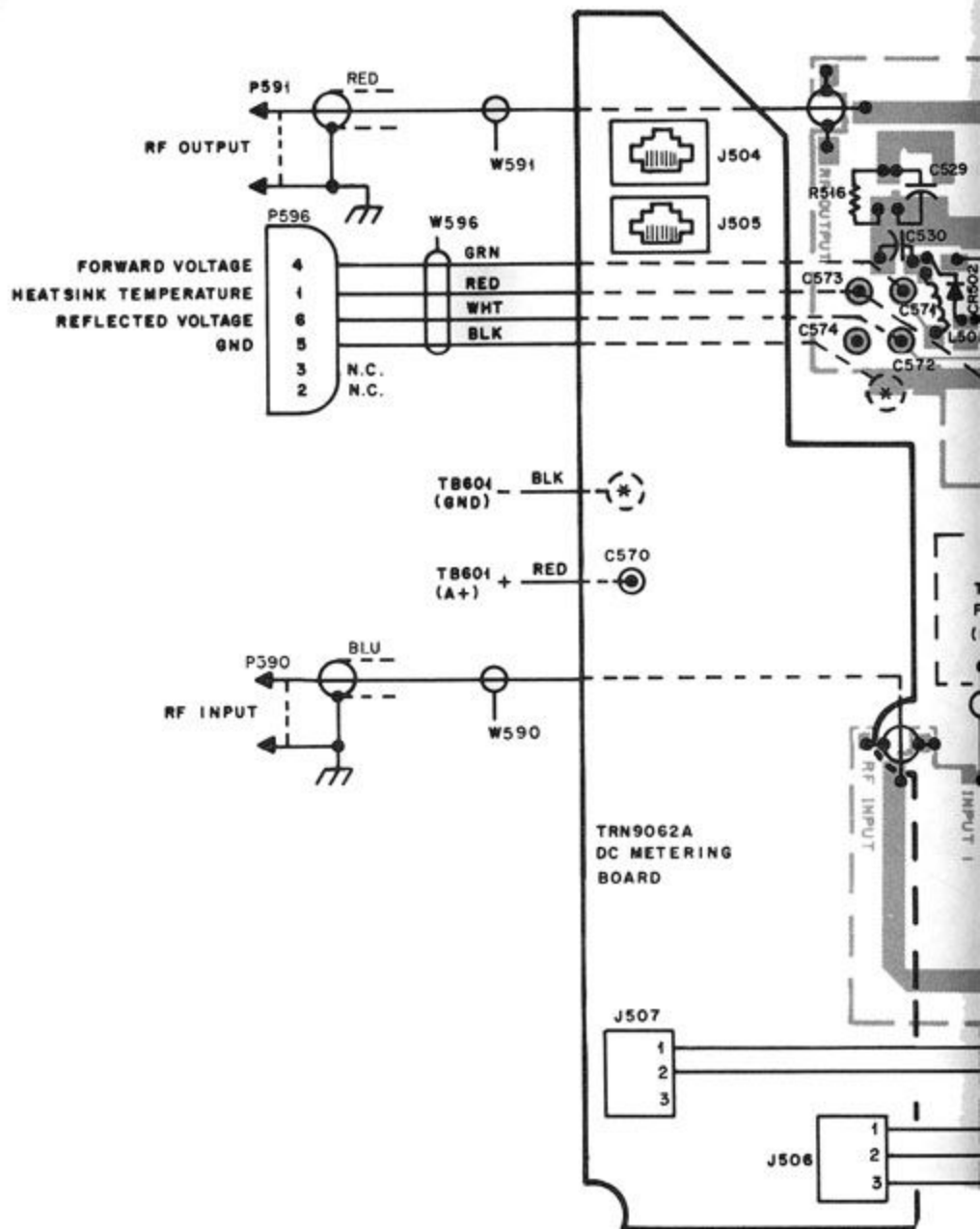
IMPORTANT

When troubleshooting is completed, return JU1 to its original position.

Step 2. Disconnect the Driver Power Amplifier (DPA) output cable by unscrewing P591 from the Final Power Amplifier (FPA) input cable.

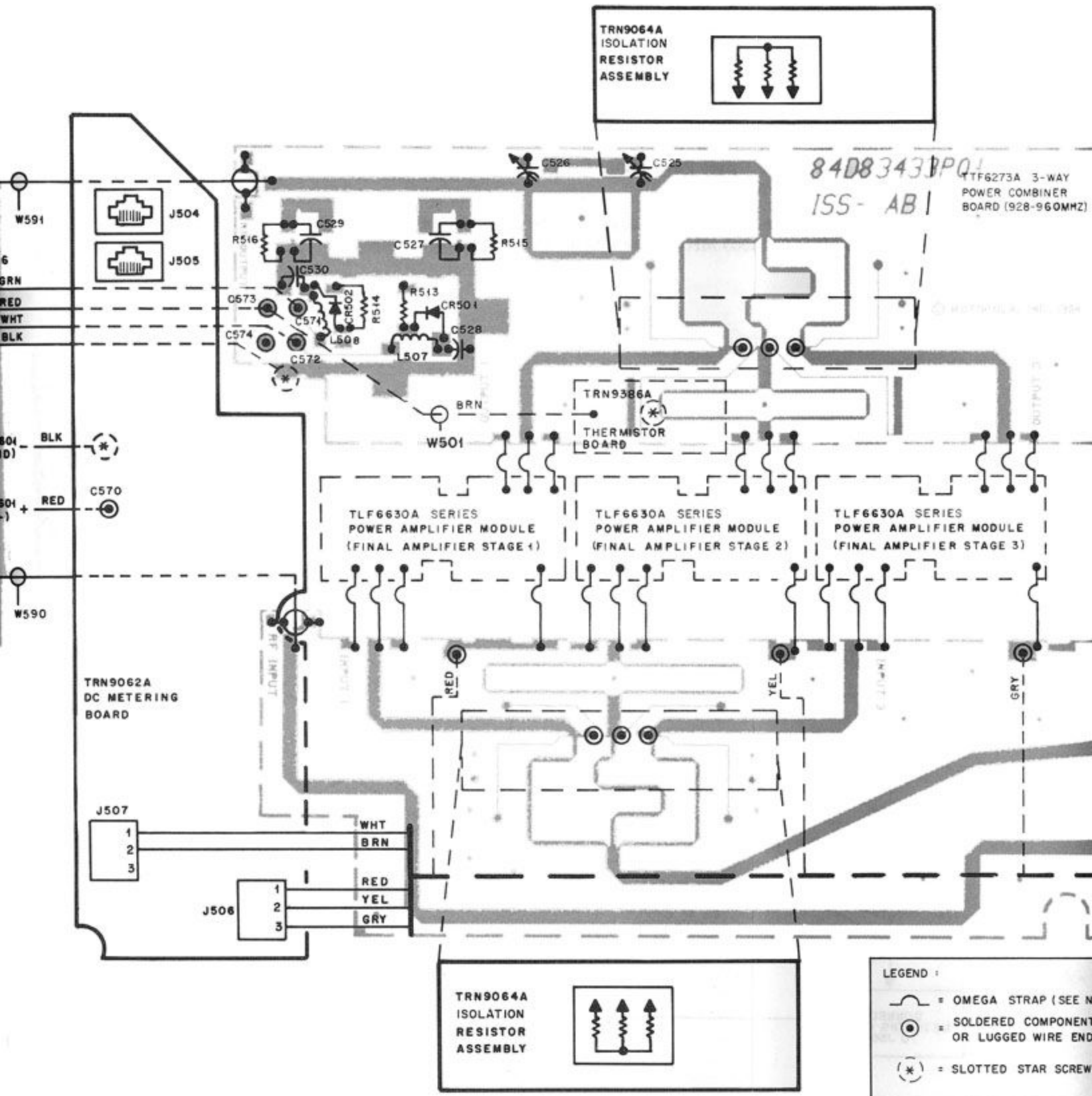
Step 3. Connect the DPA output cable to a wattmeter terminated in a 50-ohm load. Be sure the wattmeter and load are rated for use at 900-1000 MHz. Make sure the load can handle at least 150 W.



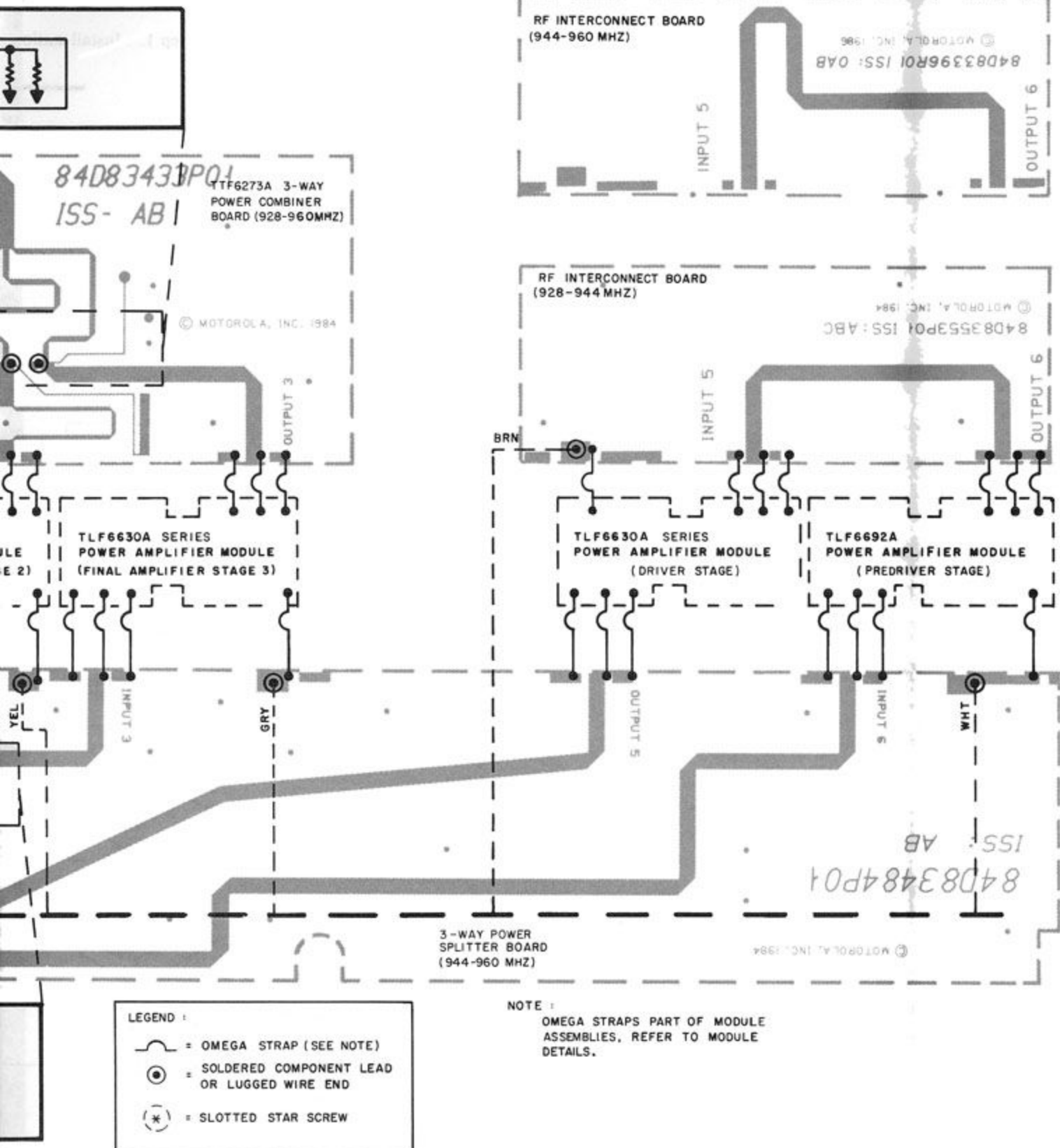


Driver Power Amplifier Deck
Circuit Board Details
Motorola No. PEPS-42965-B
(Sheet 1 of 3)

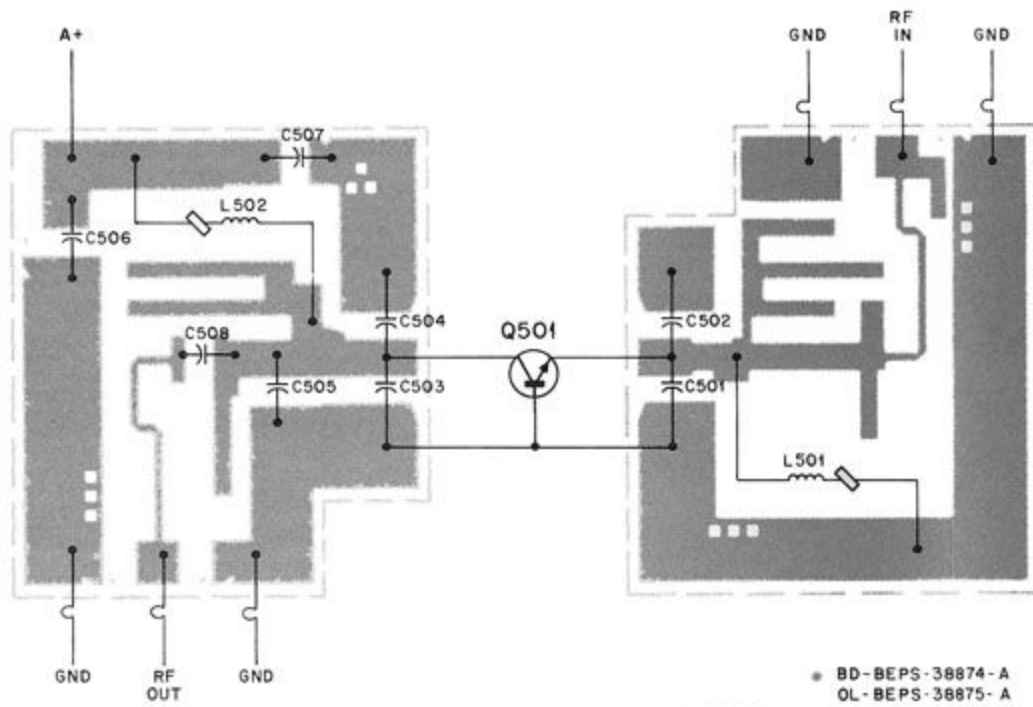
DRIVER POWER AMPLIFIER DECK



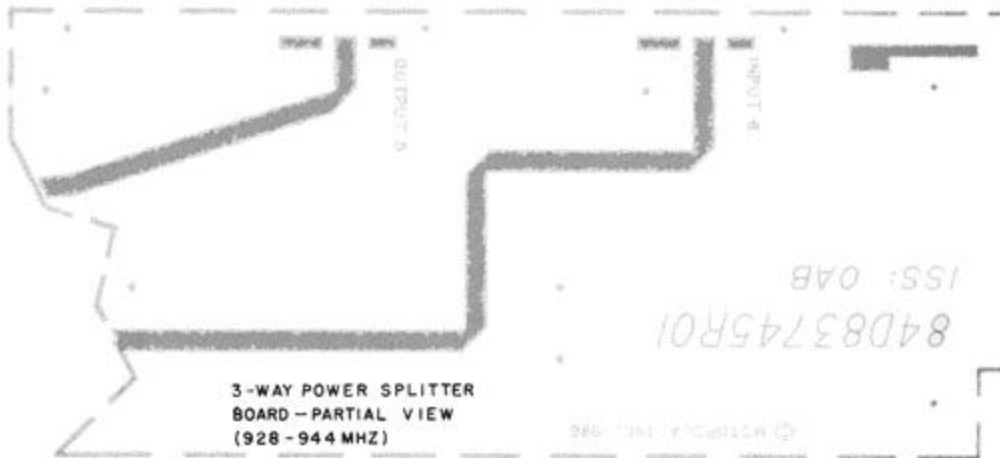
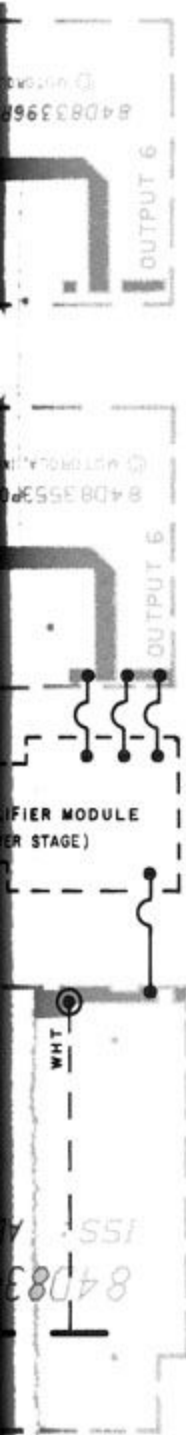
VER POWER AMPLIFIER DECK



TLF6692A PREDRIVER MODULE

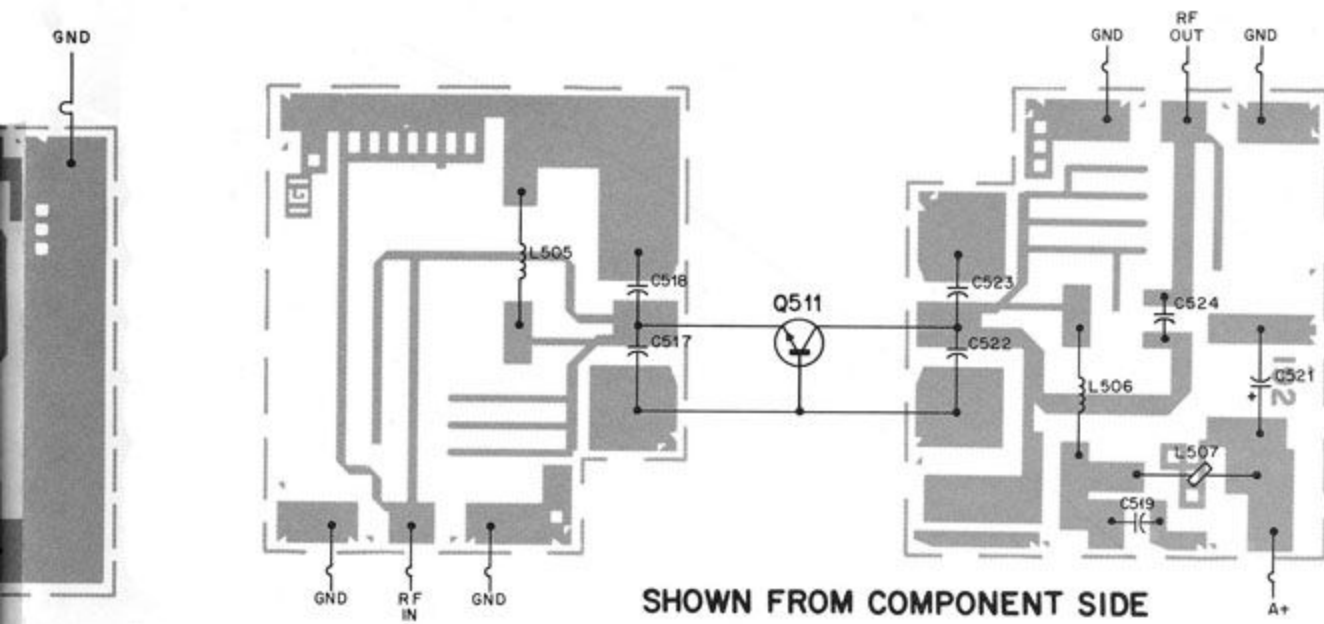


SHOWN FROM COMPONENT SIDE



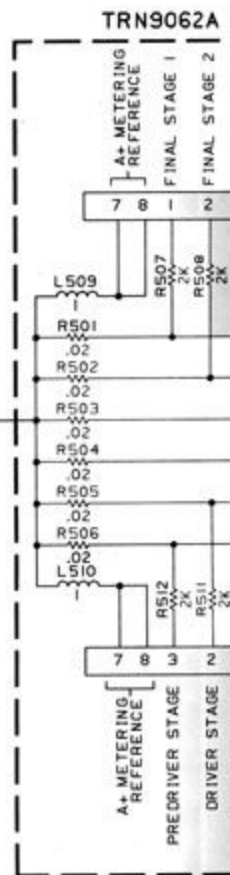
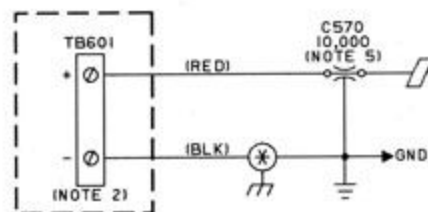
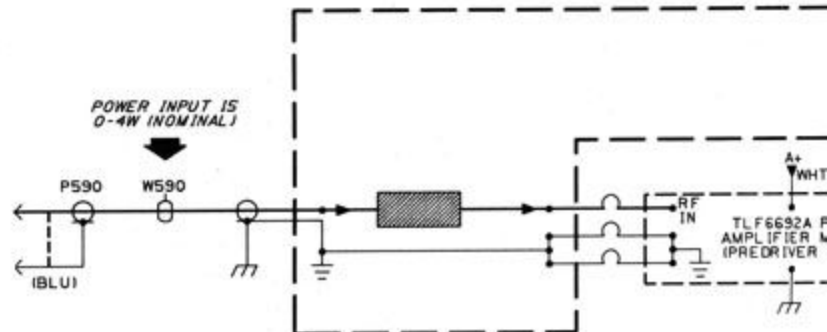
3-WAY POWER SPLITTER
BOARD - PARTIAL VIEW
(928-944 MHz)

TLF6630A SERIES POWER AMPLIFIER MODULE

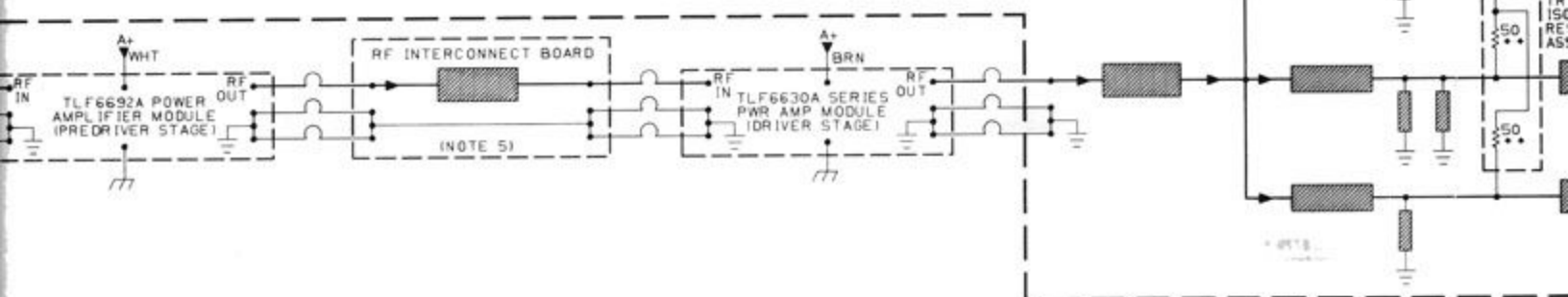


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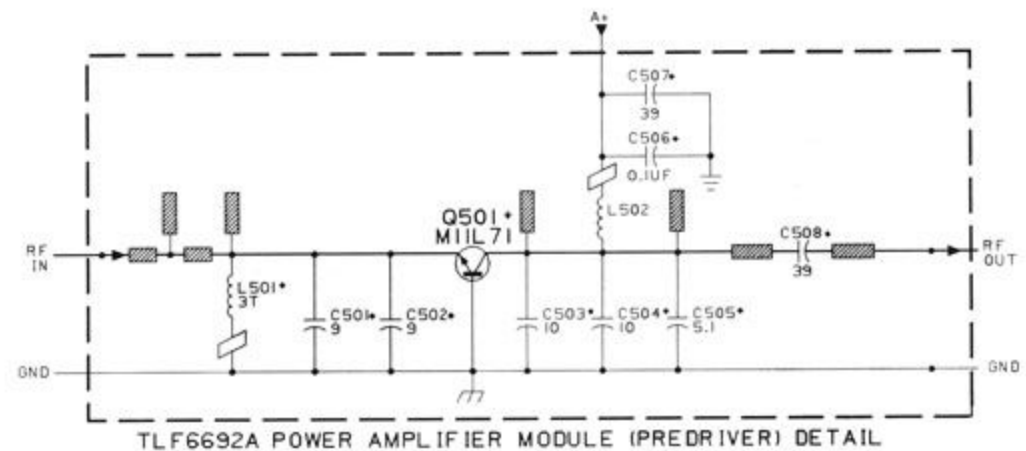
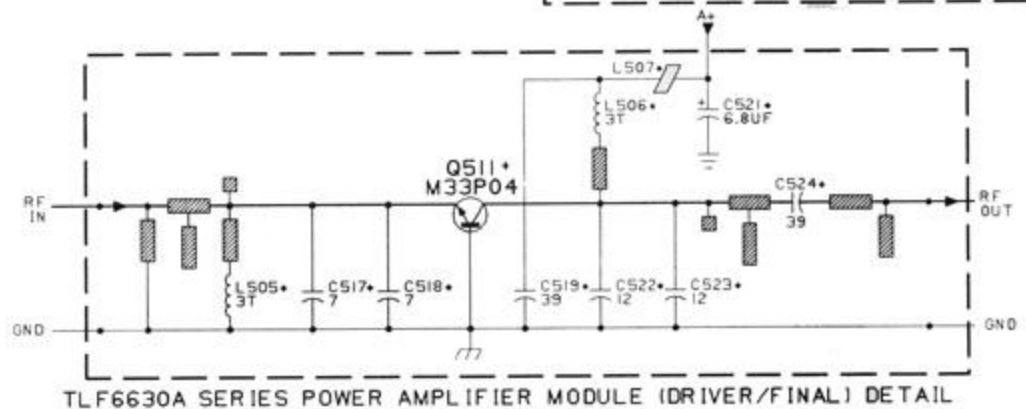
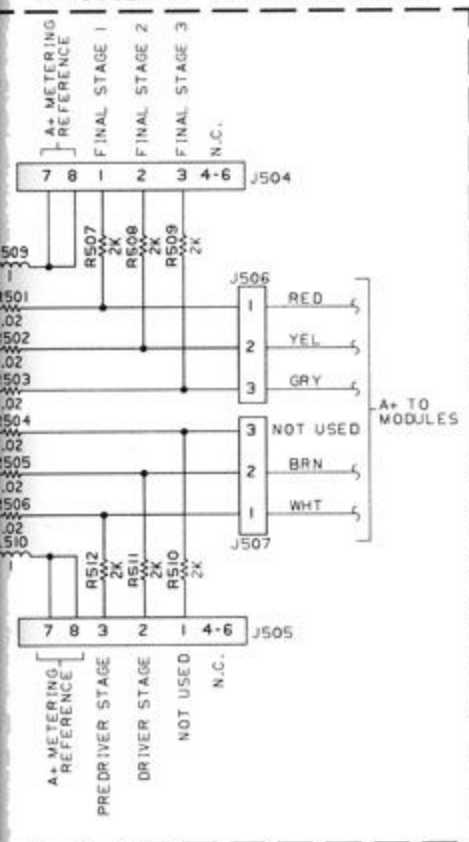
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OL-8EPS-43729-0

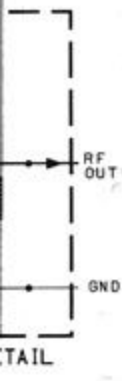
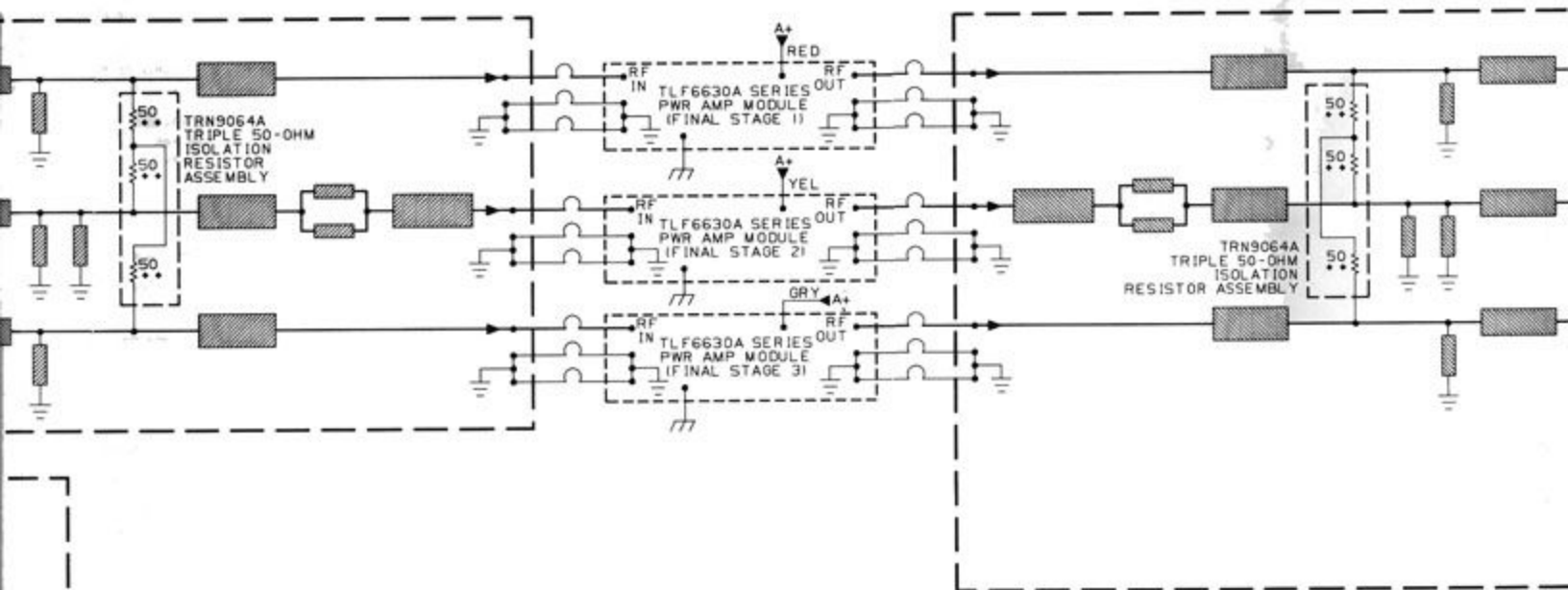


3-WAY POWER SPLITTER BOARD (NOTE 5, 6)



TRN9062A DC METERING BOARD



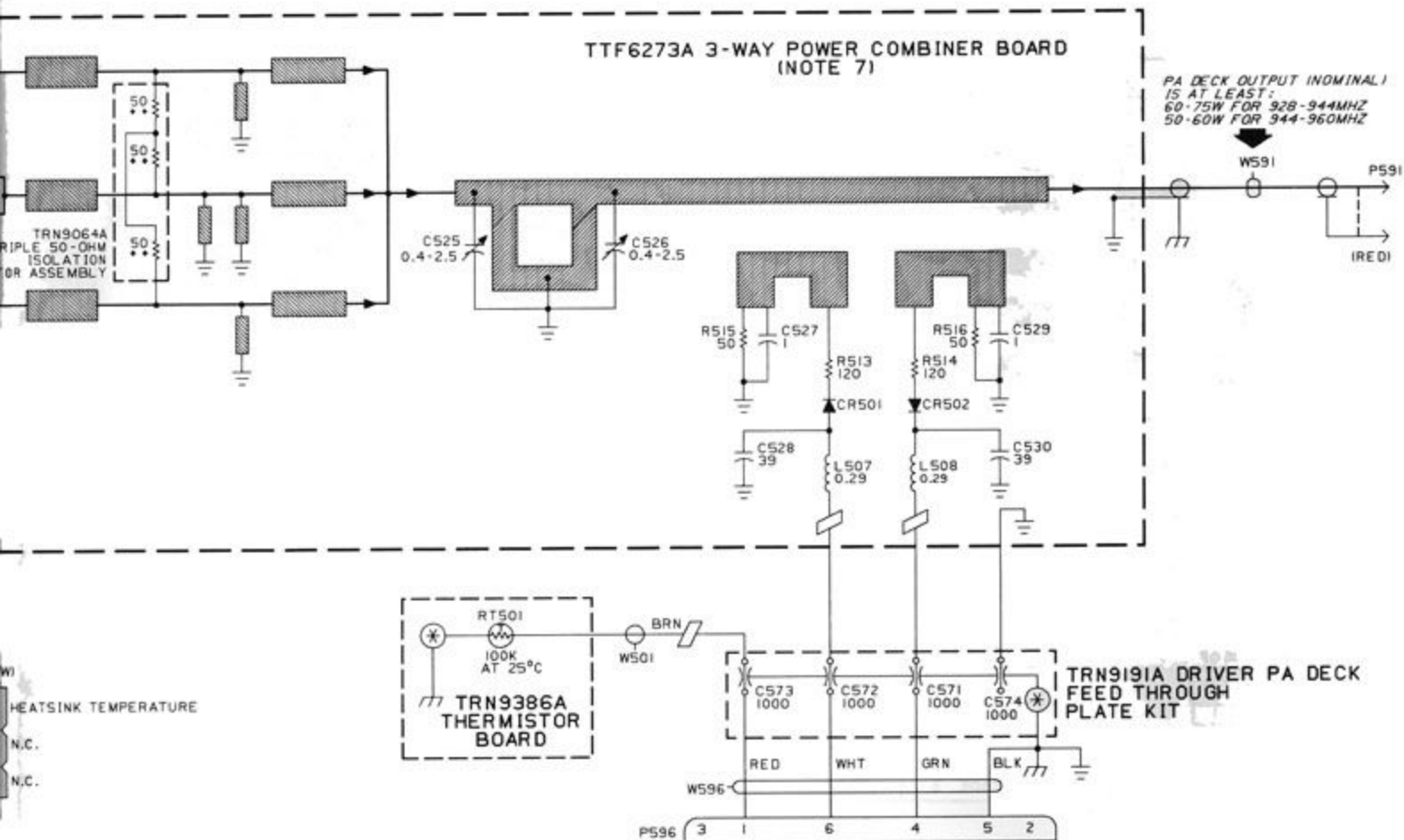


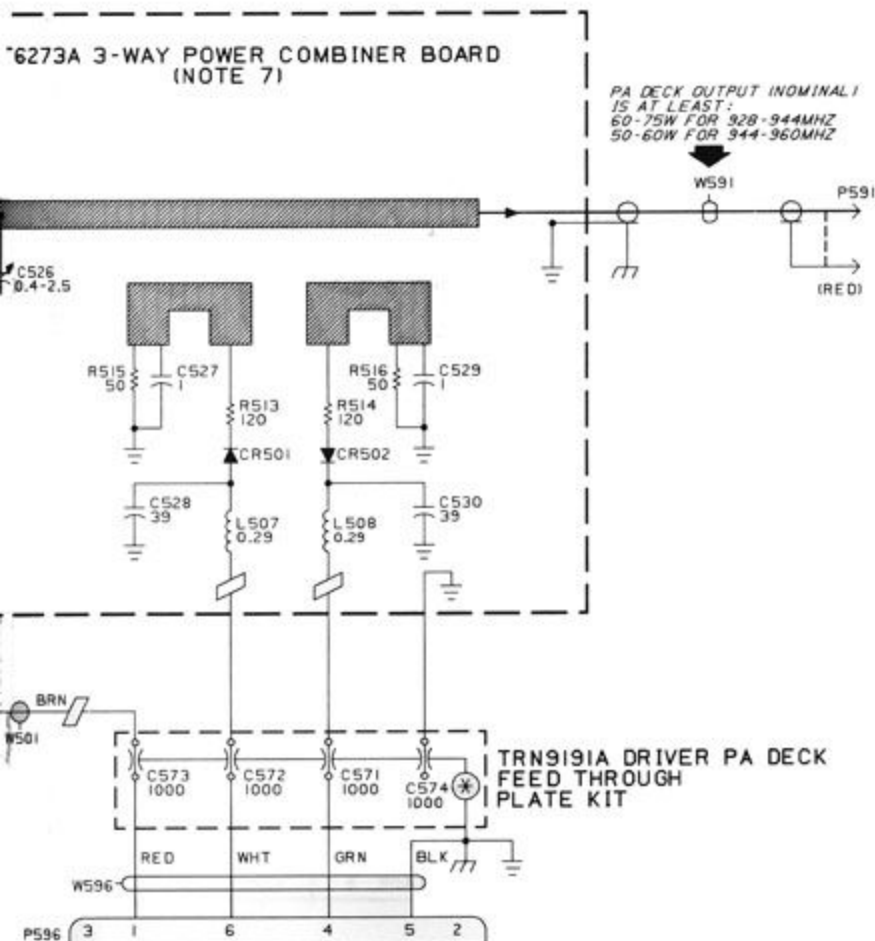
LEGEND:

- THEORY NOTE
- PRIMARY SIGNAL FLOW
- SUBSTRATE GND
- CHASSIS GND
- OMEGA STRAP (NOTE 3)
- FERRITE BEAD
- MICROSTRIP LINE
- NOT REPAIRABLE (NOTE 4)
- THICK FILM RESISTOR

P596
(PIN VIEW)

FORWARD VOLTAGE	4	1	HEATSINK TEMPERATURE
	0	0	
GND	5	2	N.C.
	0	0	
REFLECTED VOLTAGE	6	3	N.C.
	0	0	





EEPS-42465-B

NOTES:

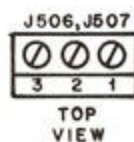
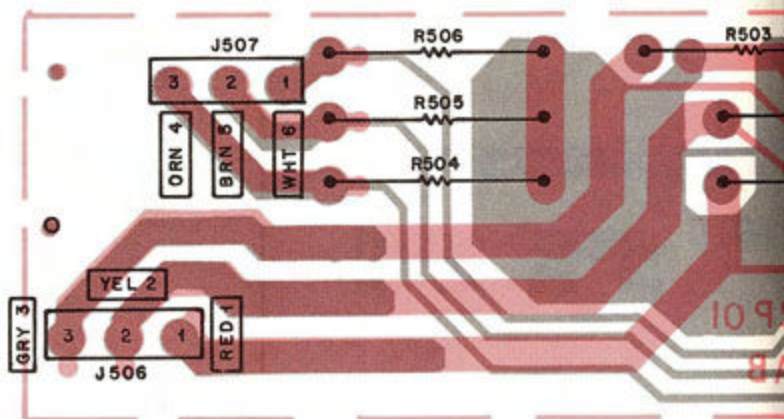
1. Unless otherwise specified, resistor values are in ohms, capacitor values are in picofarads, and inductor values are in microhenries.
2. Terminal board TB601 is located on the power supply and is not part of the power amplifier deck.
3. The Greek symbol Omega denotes an "Omega Strap," which is used to provide circuit connections between the PA substrates, and provide the necessary strain relief for thermal expansion and contraction.
4. COMPONENTS MARKED WITH AN ASTERISK (*) are not repairable and are shown for reference purposes only.
5. Part of Driver PA Hardware Kit.
6. Transmission line lengths between the power splitter stage outputs and final amplifier stages inputs are critical to proper amplifier operation. Do not insert test instruments (wattmeter, load termination, etc.) at those locations.
7. Transmission line lengths between the power combiner stage inputs and final amplifier stages outputs are critical to proper amplifier operation. Do not insert test instruments (wattmeter, load termination, etc.) at these locations.

Model Complement of 70 Watt Driver PA Decks

Model	Description
TKN8342B	Driver PA Deck Cabling Kit
TLF6630A Series	Power Amplifier Module (Driver/Final), 4 Used
TLF6692A	Power Amplifier Module (Pre-driver)
TRN9062A	DC Metering Board
TRN9064A	Triple 50-Ohm Isolation Resistor Assembly, 2 Used
TRN9191A	Driver PA Deck Feedthru Plate Kit
TRN9386A	Thermistor Board
TRN9824A	Driver PA Deck Hardware Kit (p/o TTF1243A)
TRN9840A	Driver PA Deck Hardware Kit (p/o TTF1242B)
TTF6273A	3-Way Power Combiner Board

*Driver Power Amplifier Deck
Schematic Diagram
Motorola No. PEPS-42965-B
(Sheet 2 of 3)*

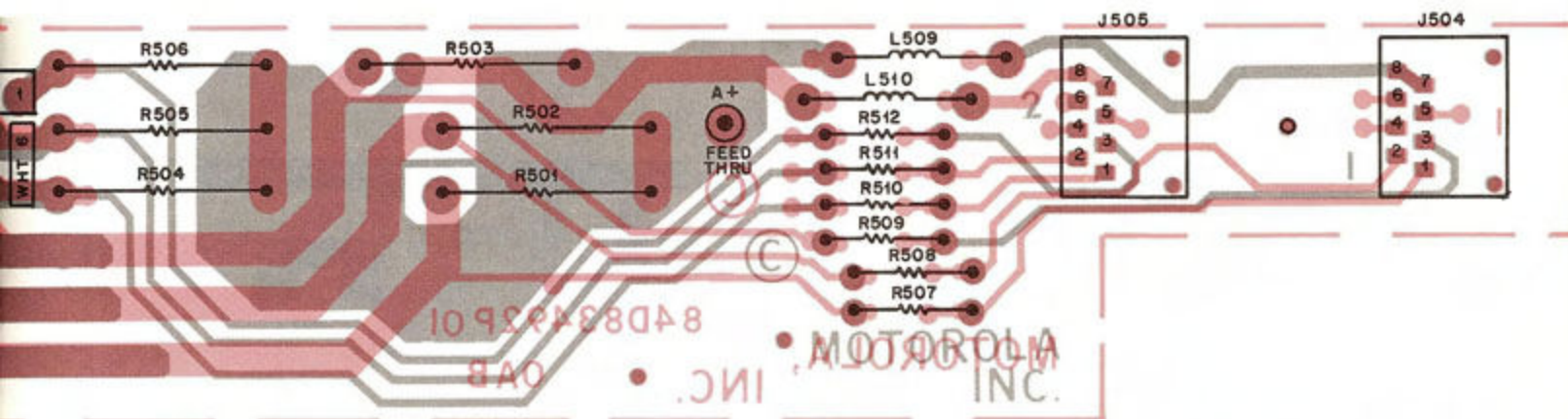
TRN



A + DISTRIBUTION		
PIN	J 506	J507
1	STAGE 1	STAGE 6
2	STAGE 2	STAGE 5
3	STAGE 3	STAGE 4

Driver Power Amplifier Deck
 DC Metering Circuit Board Detail and DPA Parts Lists
 Motorola No. PEPS-42965-B
 (Sheet 3 of 3)

TRN9062A DC METERING BOARD

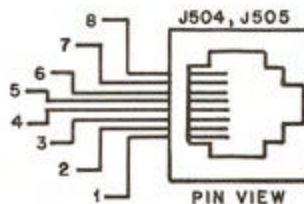


COMPONENT SIDE ● BD-BEPS-42064-0
 SOLDER SIDE ● BD-BEPS-42065-0
 OL-CEPS-42066-0

SHOWN FROM COMPONENT SIDE

A+ DISTRIBUTION

PIN	J506	J507
1	STAGE 1	STAGE 6
2	STAGE 2	STAGE 5
3	STAGE 3	STAGE 4



PA METERING

PIN	J504	
1	STAGE 1	S
2	STAGE 2	S
3	STAGE 3	S
4	NOT USED	N
5	NOT USED	N
6	NOT USED	N
7	A+ REF	A
8	A+ REF	A

parts list

TKN8342B Driver PA Deck Cabling Kit

PL-9776-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
P590, 591	28-84476G01	connector, plug: male; single contact
W590	1-80784D13	cable; assembly: rf input; color coded BLU; includes P590 and
W591	30-84173E01 43-83152N02 1-80705E34	cable, coaxial; 20.5" used bushing, cable rf output; color coded RED; includes P591
	30-84173E01 43-83152N02	cable, coaxial; 13.2" used bushing, cable
non-referenced items		
	1-80781D77 29-82907N05 30-831572	ASSEMBLY, external DC-; includes: terminal, ring; color coded YEL wire, stranded; #10 BLK; 8.5" used
	1-80781D78 29-83897M02 30-813233	ASSEMBLY, external DC +; includes: terminal, receptacle wire, stranded; #10 RED; 9.5" used
	1-80783D66	ASSEMBLY, internal DC distribution; includes:
	29-83818P01 42-35424B01	terminal, plug; wire crimp-on; 5 used tie, cable; 4 used

IMPORTANT

Field repair of this kit is not recommended. It should be replaced in its entirety. The following parts are listed for reference purposes only.

TLF6692A Power Amplifier Module (Pre-driver)

PL-9770-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C501, 502	—	capacitor, fixed: 9 pF \pm 5%; 250 V
C503, 504	—	10 pF \pm 5%; 250 V
C505	—	5.1 pF \pm 0.25 pF; 50 V
C506	—	0.1 μ F \pm 20%; 25 V
C507, 508	—	39 pF \pm 5%; 50 V
L501, 502	—	coil, rf: 3 turns w/bead
Q501	—	transistor: (see note) NPN; type 95P06
mechanical parts		
—	—	SHROUD
—	—	CLIP, 2 used
—	—	STRAP, PA; 7 used
—	—	PLATE

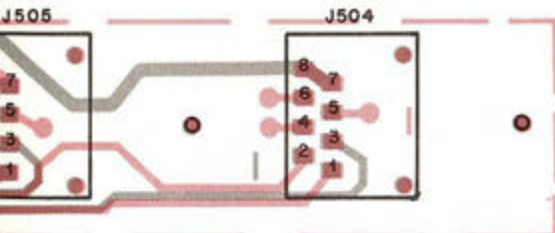
IMPORTANT

Field repair of this kit is not recommended. It should be replaced in its entirety. The following parts are listed for reference purposes only.

TLF6630A Series Power Amplifier Module (Driver/Final)

PL-9771-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C517, 518	—	capacitor, fixed: 7 pF \pm 5%; 250 V
C519	—	39 pF \pm 5%; 50 V
C521	—	6.8 μ F \pm 10%; 35 V
C522, 523	—	12 pF \pm 5%; 250 V
C524	—	39 pF \pm 5%; 50 V
L505, 506	—	coil, rf: 3 turns
L507	—	assembly, wire & bead; includes core, ferrite bead
Q511	—	transistor: NPN; type 95P04
mechanical parts		
—	—	SHROUD
—	—	CLIP, retainer; 2 used
—	—	STRAP, PA; 7 used
—	—	PLATE



FROM COMPONENT SIDE

PA METERING

PIN	J504	J505
1	STAGE 1	STAGE 4
2	STAGE 2	STAGE 5
3	STAGE 3	STAGE 6
4	NOT USED	NOT USED
5	NOT USED	NOT USED
6	NOT USED	NOT USED
7	A+ REF	A+ REF
8	A+ REF	A+ REF



VIEW

TRN9062A DC Metering Board

PL-9772-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J504, 505	9-83365N01	connector, receptacle: female; 8-contact terminal board; 3-position coil, rf: choke; 1 uH (BRN-BLK)
J506, 507	31-84425P01	
L509, 510	24-82835G14	
R501 thru 506	17-82620B04	resistor, fixed: .02 \pm 3%; 3W 2k \pm 5%; 1/4 W
R507 thru 512	6-124A56	

TRN9190A/B Driver PA Hardware Kit (p/o TTF1242A) 928-932 MHz

TRN9824A Driver PA Hardware Kit (p/o TTF1243A) 944-960 MHz

TRN9840A Driver PA Hardware Kit (p/o TTF1242B) 928-944 MHz

PL-9780-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C570	21-84211B01	capacitor: 0.01 uF, GMV; 500V (A + feedthru)
mechanical parts		
	2-8364	NUT, hex: 3/8-32 x 1/2 x 3/32"; 2 used
	2-115968	NUT, hex: 1/4-28 x 3/8 x 1/8"
	3-10943M10	SCREW, tapping: TT3 x 0.5 x 8 mm; 32 used
	3-10943R68	SCREW, tapping: TT4 x 0.7 x 13 mm; 2 used
	3-83498N05	SCREW, tapping: M4 x 0.7 x 12 mm; 9 used
	3-83498N14	SCREW, tapping: M4 x 0.7 x 18 mm; 6 used
	3-83678N03	SCREW, tapping: M3 x 0.5 x 9 mm; 8 used
	3-83812P01	SCREW, shoulder, metric; 10 used
	3-83812P02	SCREW, shoulder, metric; 4 used
	4-7557	WASHER, flat: .172 x .375 x .33"
	4-7607	WASHER, flat: 0.125 x 0.281 x 0.027"
	4-7657	LOCKWASHER, #8; external
	4-7670	LOCKWASHER, 1/4"; internal
	4-7691	LOCKWASHER, 3/8"; internal; 2 used
	4-51143	WASHER, insulator: 3/8 x 0.136 x .022"; 6 used
	4-10058A36	WASHER, insulator; 6 used
	7-83990P01	BRACKET, PA mounting; right hand
	7-83990P02	BRACKET, PA mounting; left hand
	14-84520P01	INSULATOR
	15-83178N02	COVER, PA; interconnect
	15-83684P01	COVER, PA
	26-83400P02	HEAT SINK, PA (TRN9190A)
	26-83400P03	HEAT SINK, PA
	26-84809E01	SHIELD
	32-82796H02	GASKET, 49.25" used
	32-83140N02	GASKET, feedthru; 6-position
	42-10217A04	STRAP, tie
	42-82387D08	CLIP, cable
	42-84430P01	CLIP, board mounting guide; 4 used
	55-84300B03	HANDLE
	76-84069B04	CORE, ferrite bead; 4 used
	84-xxxxxxx	PCB, 3-way power splitter
	84-xxxxxxx	PCB, rf interconnect (freq. dependent)

TRN9064A Triple 50-Ohm Isolation Resistor Assembly

PL-9616-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	7-83683P02	BRACKET, resistor
	7-84102N01	FRAME

TRN9191A Driver PA Deck Feedthru Plate Kit

PL-9791-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C571 thru C574	21-82812H03	capacitor, fixed: 1000 pF + 100-0%; 500 V
P596	— 15-84953L01 29-84706E06	connector, plug consists of: housing, 6-position terminal, crimp socket; 6 used
W596	1-80781D60 30-854104 42-10217A02	cable, assembly: driver control; includes: P596, and cable, 4-conductor; 19" used strap, tie
mechanical parts		
	4-83755H01 29-3046 42-10217A02 64-83542P01	WASHER, shoulder; 4 used LUG, soldering STRAP, tie PLATE, feedthru; 4-position

TTF6273A 3-Way Power Combiner Board

PL-9769-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C525, 526	19-82749G02	capacitor, fixed: pF; 50 V: unless otherwise stated variable: 0.4-2.5 1 \pm 0.25% 39 \pm 5% 1 \pm 0.25% 39 \pm 5%
C527	21-84736E34	
C528	21-84736E12	
C529	21-84736E34	
C530	21-84736E12	
CR501, 502	48-84616A01	diode: (see note) hot carrier
L507, 508	24-82723H40	coil, rf: choke: 0.29 uH (YEL)
R513, 514	6-11009C27	resistor, fixed: 120 \pm 5%; 1/4 W 50 \pm 5%; 35 V (chip)
R515, 516	6-83854P01	

note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

TRN9386A Thermistor Board

PL-9777-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
RT501	6-83600K05	thermistor: 100k @ 25°C
W501	1-80783D63	assembly, wire: sense: 11" used (BRN); includes: RT501, and TERMINAL
	29-82713M01	