

Leadership by tradition.



**USER
MANUAL
RXR SERIES
RF POWER
AMPLIFIERS**

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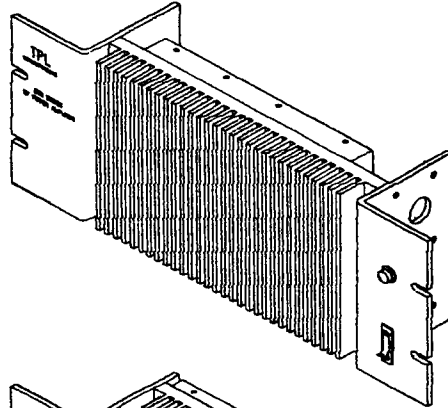
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PRODUCT DESCRIPTION

The **RXR** series of **TPL** Power Amplifiers are intended for use in base station or repeater applications. They are all medium power units (100 watt range) and in various configurations will cover the frequency range extending from Low Band VHF to 960 MHz. An **RXR** amplifier is a self-contained unit which is designed to be installed in a 19-inch rack. Four options are available, depending upon the customer's primary power and cooling requirements. The following illustrations depict the three basic **RXR** configurations.

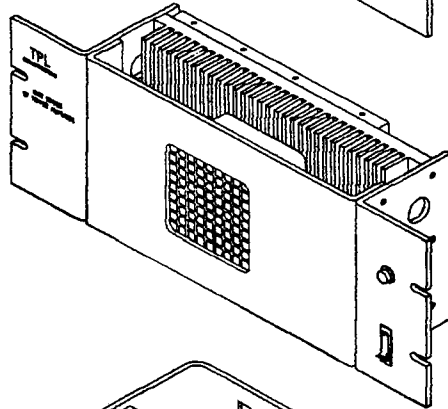
RXR

Extruded aluminum heat sink. No fan needed.



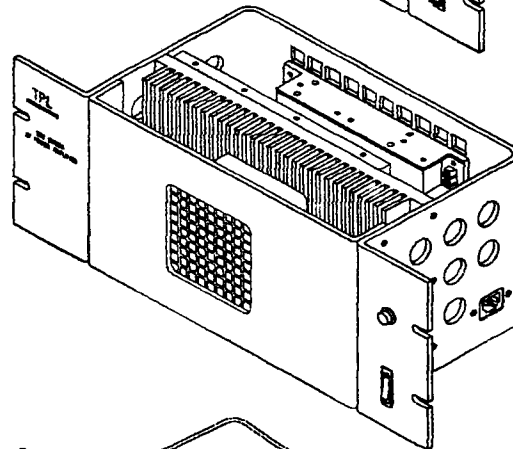
RXRF

Same as "RXR," but with a 13.8 VDC cooling fan.



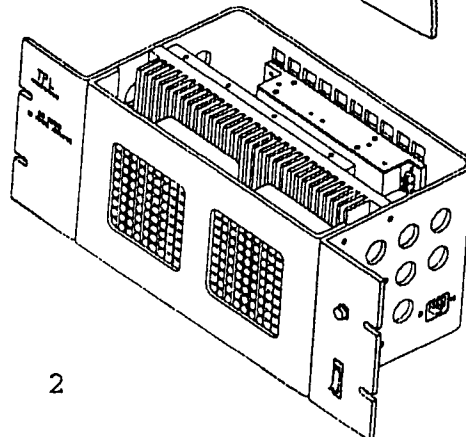
RXRFPS

Same as "RXRF," but with a 13.8 VDC power supply.



RXRF2PS

Same as "RXRFPS," but with two 13.8 VDC cooling fans.



GENERAL SPECIFICATIONS

FREQUENCY RANGE: 35 - 50 MHz

Operating Bandwidth ± 1 MHz

MODEL	POWER INPUT	NOMINAL POWER OUT
PA1-1AE-RXRF	1-4 W	80-120 W
PA1-1CF-RXRF	5-15 W	80-120 W
PA1-1FE-RXRF	15-30 W	80-120 W

FREQUENCY RANGE: 66 - 88 MHz (For export only - not type accepted)

Operating Bandwidth ± 2 MHz

MODEL	POWER INPUT	NOMINAL POWER OUT
PA2-1AD-RXRF	1-4 W	60-100 W
PA2-1CD-RXRF	5-25 W	40-100 W

FREQUENCY RANGE: 136 - 174 MHz

MODEL	POWER INPUT	NOMINAL POWER OUT
PA3-1EE-RXRF	100-250 mW	90-150 W
PA3-1AE-RXRF	1-2.5 W	80-150 W
PA3-1AE3-RXRF	2.5-5 W	80-150 W
PA3-1DE-RXRF	8-15 W	80-150 W
PA3-1FE-RXRF	15-25 W	80-150 W
PA3-1FE3-RXRF	25-50 W	80-150 W

FREQUENCY RANGE: 400 - 512 MHz

MODEL	POWER INPUT	NOMINAL POWER OUT
PA6-1EE-RXRF	75-150 mW	70-100 W
PA6-1AE-RXRF	1-4 W	70-100 W
PA6-1BE-RXRF	8-15 W	70-100 W
PA6-1FE-RXRF	25-40 W	60-100 W

FREQUENCY RANGE: 806-894 MHz

MODEL	POWER INPUT	NOMINAL POWER OUT
PA8-1ED-RXRF	50-150 mW	60- 80 W
PA8-1AC-RXRF	1-5 W	35-75 W
PA8-1DD-RXRF	5-15 W	60-80 W
PA8-1FD-RXRF	20-40 W	60-80 W

GENERAL SPECIFICATIONS (continued)

OPERATING MODE:

FM / CW

OPERATING VOLTAGE:

13.8 VDC or with 110 VAC / 220 VAC power supplies available if required.
(PS option).

EIA DUTY CYCLE:

100% / Continuous

HARMONIC & SPURIOUS ATTENUATION:

Meets or exceeds FCC Type Acceptance requirements.

IN/OUT IMPEDANCE:

50 Ohms.

IN/OUT RF CONNECTORS:

Type "N"

RECEIVER PATH INSERTION LOSS:

1 dB maximum when the optional Carrier Operated Relay (COR) is specified.

CONFIGURATION:

Repeater configuration is standard and it is supplied without a COR. Base station configuration is optional and it is supplied with COR.

CIRCUIT PROTECTION:

Provided by a circuit breaker with model-dependant current rating.

OPERATING TEMPERATURE RANGE:

-20° to +50° Celsius.

GENERAL SPECIFICATIONS (continued)

STORAGE TEMPERATURE:

-40° to +85° Celsius.

OPERATING HUMIDITY:

0% - 85% RH (non-condensing).

STORAGE HUMIDITY:

0% - 95% RH (non-condensing).

OPTIONS

TPL Communications' RXR Series Power Amplifiers are available with several options: input, output, voltage, frequency ranges, and configurations, special logos, etc., when specified at the time of order. We work closely with you, our customer, to develop products that are in complete compliance with your needs and specifications.

PACKAGE OPTIONS:

- RXR:** Extruded aluminum heat sink. No fan needed.
- RXRPS:** Same as "RXR," but with integral 25 Ampere power supply.
- RXRF:** Same as "RXR," but with a 13.8 VDC cooling fan.
- RXRF2:** Same as "RXR," but with two 13.8 VDC cooling fans.
- RXRFPs:** Same as "RXRPS", but with a 13.8 VDC cooling fan.
- RXRF2PS:** Same as "RXRPS," but with two 13.8 VDC cooling fans.

*Other variations and options are available; contact **TPL** for further information.

NOTE: All **TPL** standard **RXR** series amplifiers are factory-tuned to the frequency specified at the time of order and will operate within minimum ± 10 MHz of that frequency unless otherwise specified. Many models are available with lower input drive level. Contact Manufacturer for details.

CAUTION!

Inspect the amplifier thoroughly upon receipt for visible damage. If any is noticed, please call **TPL Communications** at **800 HI POWER** to request an **RMA** (Return Material Authorization) number. If purchased through a dealer or distributor, ask them to also follow this procedure for best results.

EXPENSIVE COMPONENTS MAY BE DESTROYED IF THE AMPLIFIER IS TURNED ON IN A DAMAGED CONDITION.

SERVICE MANUAL

UHF RF POWER AMPLIFIERS

TPL COMMUNICATIONS

3370 SAN FERNANDO ROAD, UNIT 206
LOS ANGELES, CALIFORNIA 90065

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GENERAL SPECIFICATIONS

FREQUENCY RANGE: 400 - 512 MHz

BANDWIDTH: ± 7 MHz

OPERATING MODE : FM

MODEL	POWER INPUT	POWER OUTPUT	NOMINAL CURRENT DRAIN	FUSE
PA6-1AC	1-4W	25-50W	8 AMPS	15 AMPS
PA6-1AC-2	3-6W	25-50W	8 AMPS	15 AMPS
PA6-1AE	1-4W	70-100W	20 AMPS	25 AMPS
PA6-1AE-2	3-6W	70-100W	20 AMPS	25 AMPS
PA6-1BC	8-15W	25-50W	7 AMPS	10 AMPS
PA6-1BE	8-15W	70-100W	16 AMPS	20 AMPS
PA6-1FE-3	20-40W	70-100W	15 AMPS	20 AMPS
PA6-1BEE	10W	200W		
PA6-1AEE	5W	250W, 280MHz		

NOTE: 100 WATTS MINIMUM OUTPUT AVAILABLE IF SPECIFIED

OPERATING TEMPERATURE RANGE: -30° to +50° Celsius

OPERATING VOLTAGE: Minimum 11 VDC, maximum 14 VDC, as measured at the DC input connector. Rated voltage is 13.8 Volts and all specifications are given at 13.8 Volts. Reduced DC voltage will result in a decrease in power output and efficiency.

EIA DUTY CYCLE: 100%

RECEIVER INSERTION LOSS: 1 dB maximum (400-512 MHz), when optional receive relay is specified.

HARMONIC ATTENUATION: All harmonics -56dB minimum at 20 watts rising to -67dB minimum at 250 watts.

CONNECTORS: TYPE N Female on RF input and output. DC input is a two terminal barrier strip unless unit is supplied with AC power supply.

OPTIONS:

TPL model PA6 UHF power amplifiers are available in several options and configurations, when specified at the time of order.

Repeater Configuration (standard):

Supplied without a carrier operated relay (COR).

Base Station Configuration:

Supplied with a COR.

MOUNTING OPTIONS:

Suffix:

-R Extruded aluminum heat sink/panel. Only available with PA6-1AB or PA6-1BC. It allows 100% duty cycle operation.

19" (W) x 5.5" (H) x 3" (D). Weighs 8 lbs.

-RF Same as "R", with a 13.8 VDC cooling fan. Allows 100% duty cycle for all standard models.

19" (W) x 5.5" (H) x 4.25" (D). Weighs 10 lbs.

-RFPS Same as "RF" with integral 20 Ampere power supply.

19" (W) x 5.5" (H) x 8" (D). Weighs 36 lbs.

-RXR Extruded aluminum heat sink/panel. No fan needed for 100% duty cycle operation with PA6 standard amplifiers.

19" (W) x 7" (H) x 3" (D). Weighs 10 lbs.

-RXRPS Same as "RX", with integral 20 Ampere power supply.

19" (W) x 7" (H) x 8.5" (D). Weighs 35 lbs.

-RXL 19" (W) x 14" (H) x 4.25" (D). Contains integral cooling fan

SOLID STATE COR OPTION -SSR-

A solid state carrier operated relay is available on some models if specified.

NOTE:

This amplifier has been factory-tuned to the frequency specified at the time of order and will operate within ± 7 MHz of that frequency. For operation at any other frequency, see the Tune Up Instructions section.

CAUTION!

Check the amplifier upon receipt for visible damage. If any is noticed, please call TPL at 800 HI POWER to request a RMA number (Return Material Authorization). If purchased through a dealer, ask them to follow this procedure for best results.

EXPENSIVE COMPONENTS MAY BE DESTROYED IF THE AMPLIFIER IS TURNED ON IN A DAMAGED CONDITION.

UHF POWER AMPLIFIERS

Model	Type Acceptance No.
PA6-1AC	72UA009
PA6-1AC-2	72UA009
PA6-1AE	74A20A
PA6-1AE-2	74A20A
PA6-1BC	72UA001
PA6-1BE	74A19
PA6-1FE	74UA21

OPERATING PRECAUTIONS

CAUTION: This amplifier produces RF voltages that can cause painful and dangerous RF burns. Use caution! Connect and disconnect all RF connections with the DC power and drive power off.

DRIVE POWER: RF power transistors, although quite rugged in most respects, are easily damaged by overdrive. Be careful not to overdrive this amplifier, even for an instant. Higher than rated drive power may destroy the transistors and **VOID ANY WARRANTY.**

SUPPLY VOLTAGE; The maximum operating voltage is 14 Volts. When using an AC power supply make sure the voltage cannot be adjusted above 14 Volts. If it is possible for the voltage to go above 14 Volts for any reason, including failure of the power supply, install a "Crowbar" unit to prevent damage to the amplifier in the event of excess voltage.

TERMINATIONS: The efficiency of this amplifier will degrade if it is operated into anything but a 50 Ohm load. Lowered efficiency may mean any, or all, of the following; lower power output, increased current drain, higher operating temperature, and reduced life.

INSTALLATION: This amplifier is designed for mounting in a standard 19" rack. When picking a location in the rack, consideration must be given to DC power and RF power output cable lengths, as well as cooling considerations.

Mount the amplifier where dust and other debris are not likely to clog the cooling fins. Avoid mounting the amplifier directly above hot pieces of equipment that could artificially raise the amplifier temperature.

Connect the radio transmitter to the "RF INPUT" terminal and the antenna to the "RF OUTPUT" terminal on the amplifier, with 50 Ohm coaxial cable and TYPE N plugs. TYPE N plug assembly is shown on the following pages.

For options with an internal power supply. Plug the AC line cord into the system AC power receptacle.

For options without an internal power supply, connect the DC input with the red lead to the positive terminal of a 13.8 volt power supply, and the black lead to the negative terminal. Use #12 AWG or greater.

For safety, make sure the rack and all equipment connecting to the amplifier have proper AC grounds. Do not rely on coaxial cable shields for AC grounding.

Assure the installation has proper lightning protection.

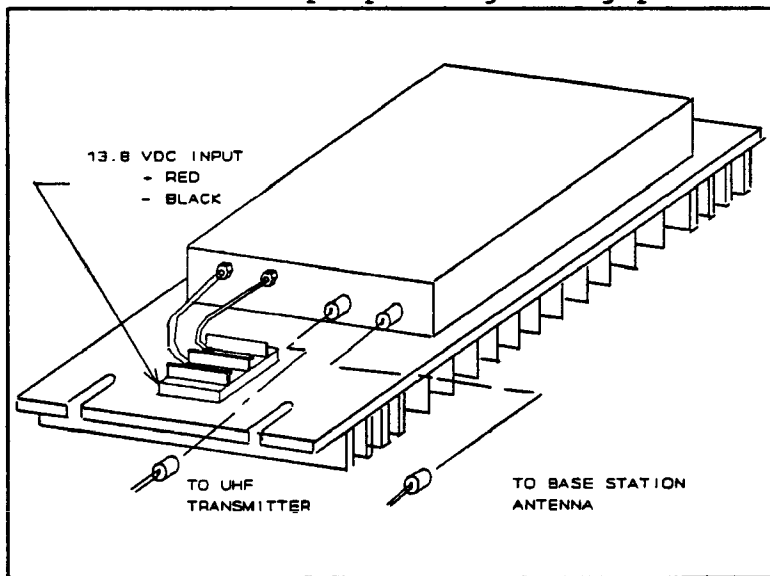


FIGURE 1
AMPLIFIER INSTALLATION
MODELS WITH RXR OPTION



NUT



GASKET



CLAMP



MALE CONTACT



PLUG BODY



Place nut & gasket over cable, groove in gasket should face away from nut.
Cut off jacket 1/32" from end.



Come out braid as shown.
Cut off cable dielectric 1/8" from end of jacket.
Make sure cut is square and center conductor is not nicked.



Pull braid wires forward and tape toward center conductor.
Place clamp over braid and push back against cable jacket.



Fold back braid wires as shown, trim to proper length, and form over clamp as shown.
Solder contact to center conductor.
Do not use excessive solder or contact wire not fit in connector body.



Insert cable and parts into connector body.
Make sure sharp edge of clamp seats properly in gasket.
Tighten nut to a snug fit.

FIGURE 2
CONNECTOR ASSEMBLY

TUNE UP INSTRUCTIONS

This amplifier comes factory pre-tuned to the customer's requested frequency. However, should it be necessary to change operating frequencies, or should tuning be necessary, the following procedure is recommended:

- (1) Set the transmitter to the center of the desired frequency range.
- (2) Adjust the power amplifier in a test set-up similar to that shown.
- (3) The following equipment will be needed for proper alignment:
 - a. Bird 43 thru line watt meter (2)
 - b. Plug in elements covering proper frequency and power ranges.
 - c. Regulated power supply.
 - d. Insulated tuning tool
 - e. Dummy load

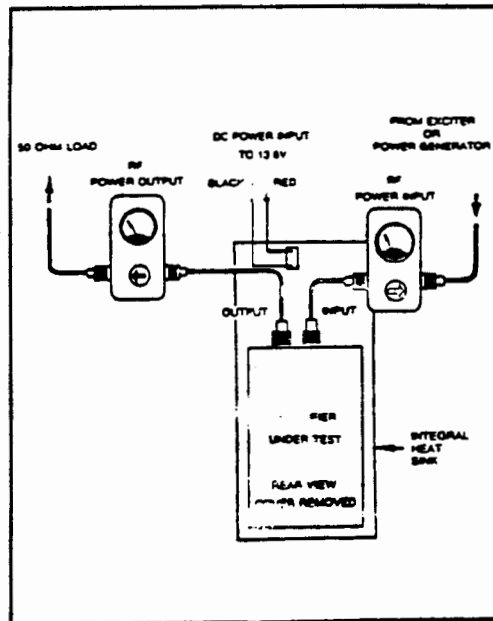


FIGURE 3
TEST SET-UP

**TUNE UP
INSTRUCTIONS
MODEL PA6-1AE PA6-1AE-2**

STEP	ADJUST	FUNCTION	INSTRUCTIONS
1.	Set up amplifier in accordance with appropriate test set up diagram. Apply DC voltage and minimum specified RF drive at the desired frequency.		
2.	C1 C11 Left Final Board	Output Tuning	Tune for maximum power out.
3.	C1 C11 Right Final Board	Output Tuning	Tune for maximum power out.
4.			Repeat steps 2 & 3.
5.	C11 Driver Board	Output Tuning	Tune for maximum power out
6.	C1 Driver Board	Input tuning	Tune for maximum power out.
7.	C11 Pre-Driver Board	Output Tuning	Tune for maximum power out.
8.	C1 Pre-Driver Board	Input Tuning	Tune for minimum input reflected power.
9.	Adjust input drive to actual operating power and repeat steps 2-8 for max. power out and min. current.		
10.	C11 Driver Board	Power Adjust	If necessary to reduce output power level, turn in the direction of min. capacitance.

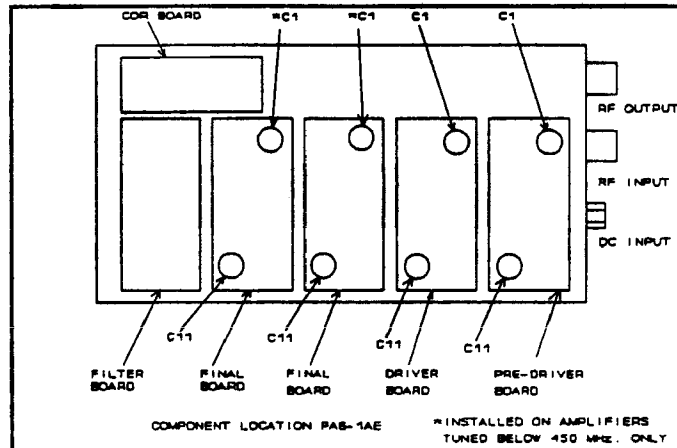


FIGURE 6

**TUNE UP
INSTRUCTIONS
MODEL PA6-1BE**

STEP	ADJUST	FUNCTION	INSTRUCTIONS
1.			Set up amplifier in accordance with appropriate test set up diagram. Apply DC voltage and minimum specified RF drive at the desired frequency.
2.	C1 C11 Left Final Board	Output Tuning	Tune for maximum power out.
3.	C1 C11 Right Final Board	Output Tuning	Tune for maximum power out.
4.			Repeat steps 2 & 3.
5.	C11 Driver Board	Output Tuning	Tune for maximum power out.
6.	C1 Driver Board	Input tuning	Tune for minimum input reflected power.
7.			Adjust input drive to actual operating power and repeat step 2 & 3 for max. power out and min. current.
8.			Repeat steps 5 & 6.
9.	C11 Driver Board	Power Adjust	If necessary to reduce output power level, turn in the direction of min. capacitance.

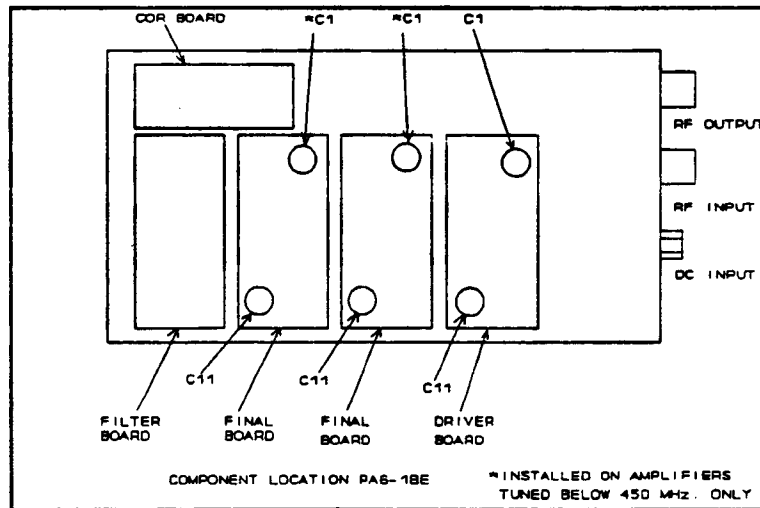


FIGURE 7

**TUNE UP
INSTRUCTIONS
MODEL PA6-1BEE**

STEP	ADJUST	FUNCTION	INSTRUCTIONS
1.			Set up amplifier in accordance with test set-up diagram. minimum specified RF power at the desired frequency.
2.	C11 Final Boards	Output Tuning	Adjust for maximum power out.
3.	C1 Final Boards	Input Tuning	Adjust for maximum power out.
4.		Overall tuning	Adjust input drive to actual operating power and repeat all steps for optimum performance.

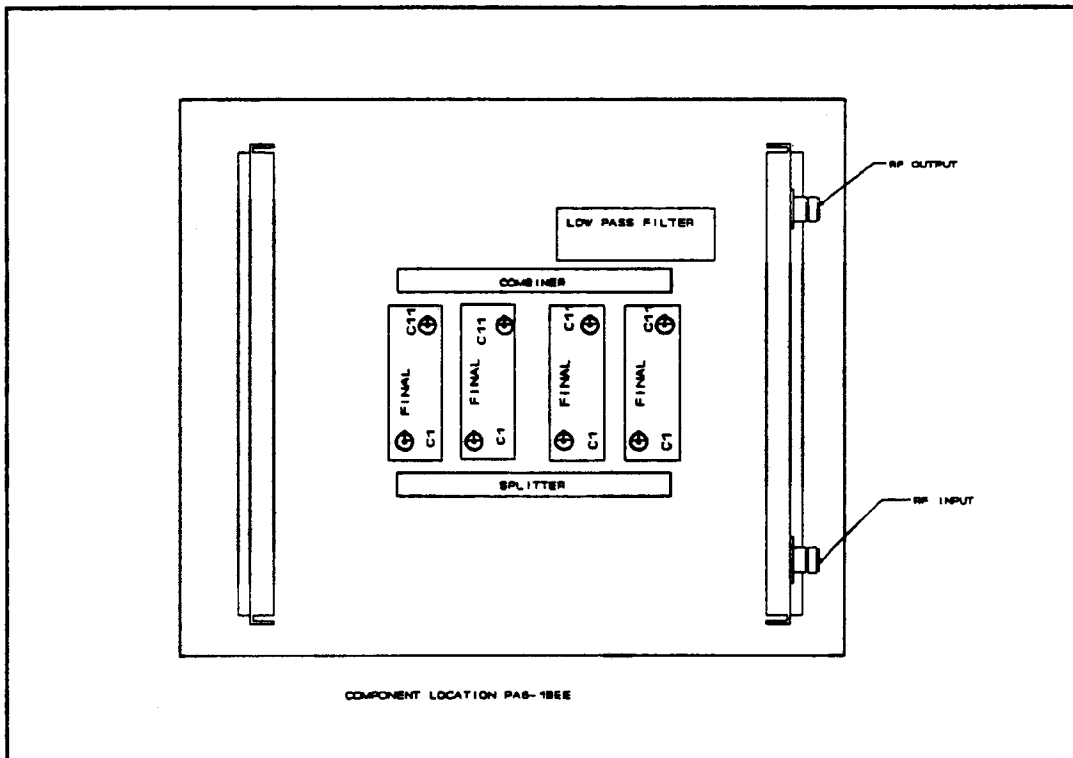


FIGURE 10

CIRCUIT DESCRIPTIONS

The UHF power amplifiers are comprised of a group of 50 Ohm modular building blocks - a brief description of each follows:

PA Predriver P/N 1002 (Power output 15 watts maximum)

This stage provides approximately 6dB gain utilizing a common emitter transistor. Input matching to Q1 is accomplished through the combination of C1,C2,C3,C4, and L1. Output matching is accomplished through L4,C10,C11 and C13. DC isolation is accomplished through L3, & L5 and C5,C6,C7,C8 and C9. Input and output impedances are 50 ohms.

Driver and Finals P/N 1003 (Power output 50 watts minimum)

This stage provides approximately 5 dB gain utilizing a common emitter transistor. Input matching to Q1 is accomplished through the combination of C1, C2, C3, C4, and L1. Output matching is accomplished through L4, C12, C13 and C11. DC isolation is accomplished through L3, L5 and C6, C7, C8, and C9. Input and output impedances are 50 ohms.

Combiners P/N 100237-2.

Models with parallel output power stages use an input combiner and an output combiner. The input combiner is a two way power hybrid divider that splits the driving power equally to the two the inputs of the output stages. The output combiner, a two way power hybrid divider, sums the outputs of the final stages.

Combiners P/N 100249

Models with four parallel output power stages use an input combiner and an output combiner. The input combiner is a four way power hybrid divider that splits the driving power equally to the four inputs of the output stages. The output combiner, a four way power hybrid divider, sums the outputs of the final stages.

Low Pass Filter P/N 101383.

This is a seven pole low pass filter providing 45-55 dB of attenuation of frequencies at the 2nd harmonic and above.

Antenna Switch P/N 100816 (mechanical) or 101371 (solid state).

This relay antenna switch is activated by RF input from the transmitter. It switches RF through the power amplifier during transmit and around it during receive. The antenna switch also provides bias for the power amplifiers on some models when an RF input from the transmitter is applied. When specified, the relay

may be configured to bypass the amplifier in case of input AC or DC power failure.

The above building blocks are combined in various ways to make up the different models. For any particular model, see the appropriate component location drawings and block diagram.

NOT USED ON LOW POWER OUTPUT MODELS
 PA6-1AC, PA6-1AC2, & PA6-1BC

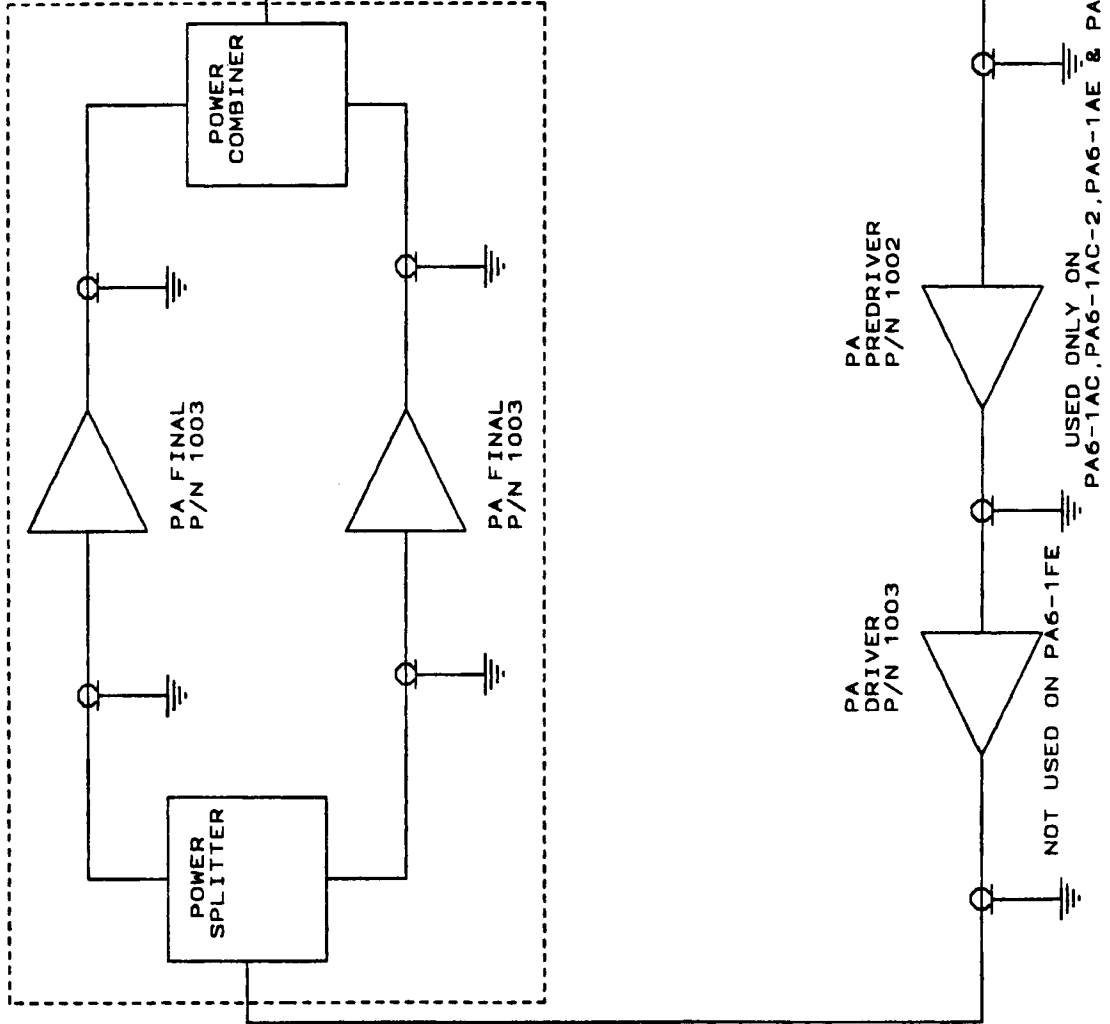


FIGURE 11
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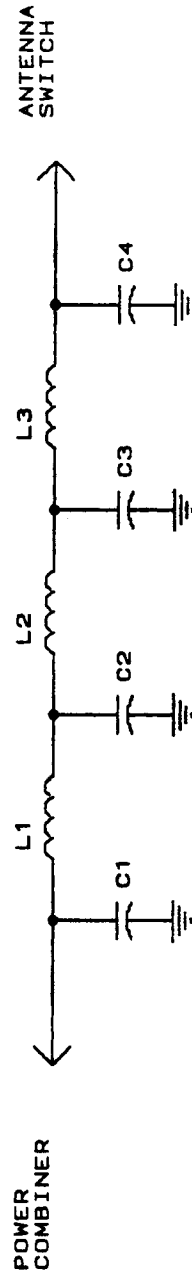


FIGURE 16
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SCHMATIC
LOW PASS FILTER

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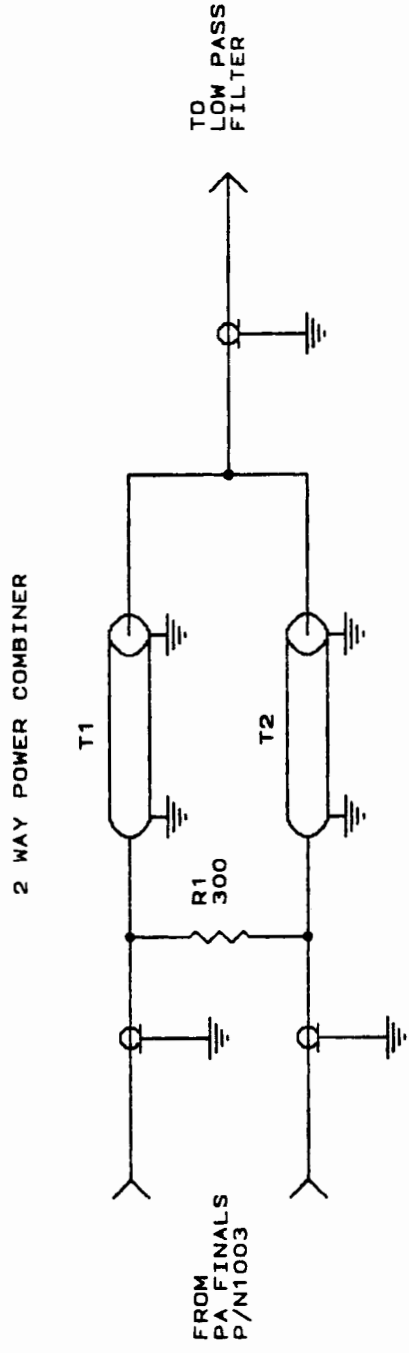
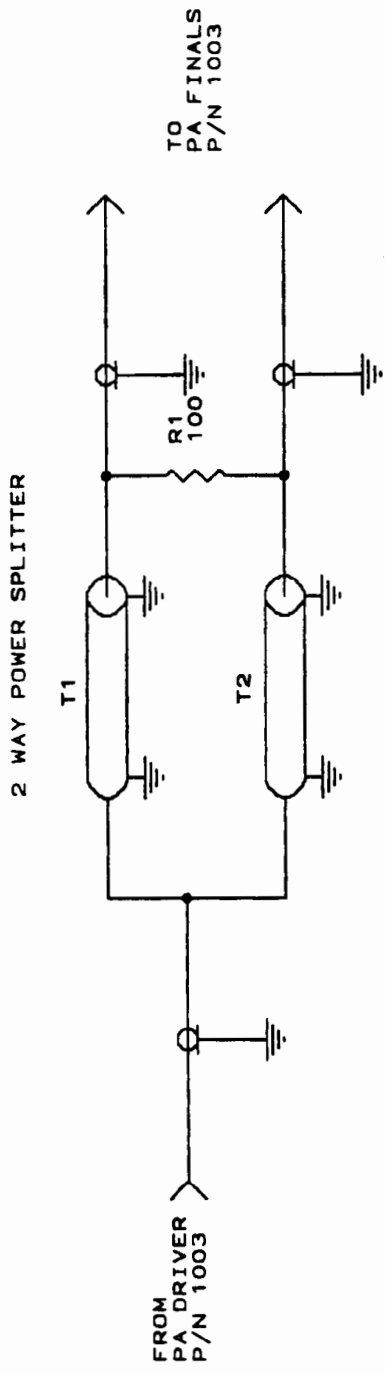
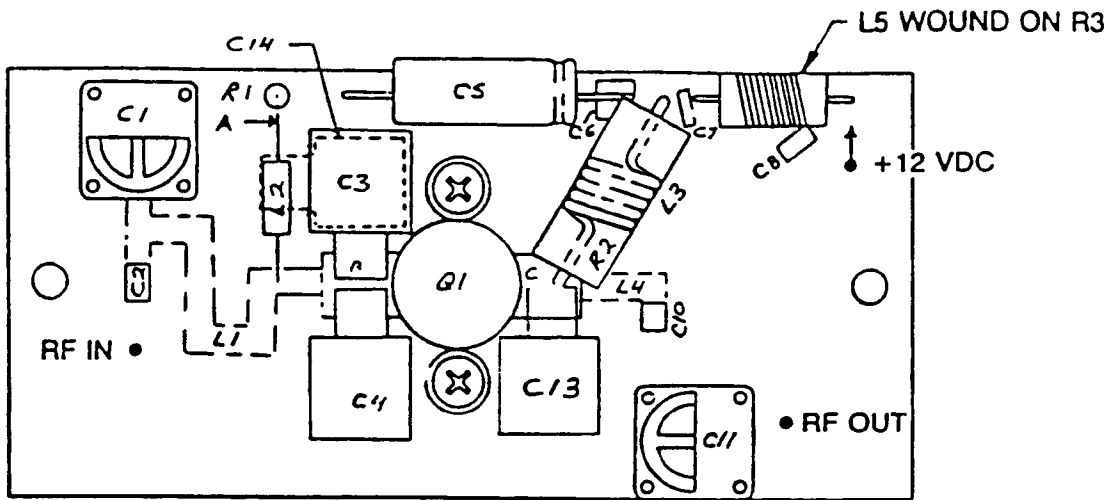


FIGURE 17
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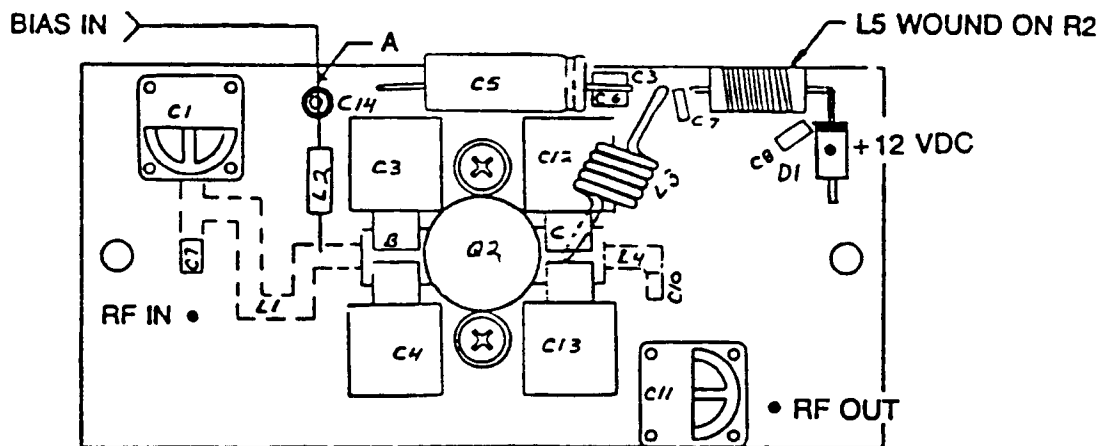
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COMPONENT LAYOUT
FOR PRE-DRIVER, P/N 1002

NOTE:
R1 and C14 used only on PA6-1AE and PA6-1AC
Point A is BIAS IN on PA6-1AC and PA6-1AE



COMPONENT LAYOUT
FOR DRIVER/FINAL, P/N 1003

FIGURE 18

PARTS LIST

UHF PRE-DRIVER, P/N T-100327-P-D-SA (1002)

REF SYMBOL	TPL PART NO.	DESCRIPTION
	T1-100327	PCB UHF
C1, C11	A5-600	1.1 PF-11 PF AIR VARIABLE CAP
C2, C7	A2-172	1000 PF CHIP CAP
C3, C4	A1-104	25 PF METAL CLAD MICA CAP
C5	A4-113	33 UF 35V AXIAL ELECTROLYTIC CAP
C6, C8	A2-188	0.047 UF CHIP CAP
C10	A5-148	100PF CERAMIC DISC CAP
C13	A1-106	50 PF METAL CLAD MICA CAP
C14	A1-113	700 PF METAL CLAD MICA CAP
D1	B3-112	MR751 DIODE 100V, 6 AMP
L2	E1-113	1.0 UH CHOKE 0.25W 10% 700 MA MAX
Q1	B2-127	MRF641 TRANSISTOR
R1	C1-336	33 OHM RES 1/2W 5% C.F.
R2	C1-748	100 OHM RES 2W
R3	C1-548	100 OHM RES 1W M.F.

UHF DRIVER/FINAL, P/N T-100327-D-SA/T-100327-F-SA (1003)

REF SYMBOL	TPL PART NO.	DESCRIPTION
	T1-100327	PCB UHF
C1, C11	A5-600	1.1 PF-11 PF AIR VARIABLE CAP
C2	A5-148	100 CERAMIC DISC CAP
C3, C4	A1-104	25 PF METAL CLAD MICA CAP
C5	A4-113	33 UF 35V AXIAL ELECTROLYTIC CAP
C6, C8	A2-188	0.047 UF CHIP CAP
C7	A2-172	1000 PF CAP
C10	A1-111	300 PF METAL CLAD MICA DISC CAP
C12, C13	A1-105	35 PF METAL CLAD MICA CAP
C14	A1-113	700 PF METAL CLAD MICA CAP
	E1-100	FERRITE BEAD
L2	E1-113	1.0 UH CHOKE 0.25W 10% 700MA MAX
Q2	B2-127	MRF641 TRANSISTOR
R1	C1-548	100 OHM RES 1W M.F.

TWO WAY POWER SPLITTER, P/N 100237-1

R1	C1-758	100 OHM 2W RESISTOR
T1, T2		75 OHM CABLE

TWO WAY POWER COMBINER, P/N 100327-2

R1	C1-759	300 OHM 2W RESISTOR
T1, T2		75 OHM CABLE

UHF CARRIER OPERATED RELAY, P/N 100816

REF SYMBOL	TPL PART NO.	DESCRIPTION
	100816	CIRCUIT BOARD
R1	C1-229	270 OHM 1/4W RESISTOR
R2, R4	C1-220	100K OHM 1/4W RESISTOR
R3	C1-212	47K OHM 1/4W RESISTOR
C1, C2	A5-300	1 PF TUBULAR CAP
C3	A5-244	.01 UF CERAMIC DISC CAP
C4	A4-106	1.0 UF 50V ELECTROLYTIC CAP
C5	A4-117	4.7 UF 25V ELECTROLYTIC CAP
C6, C7, C8	A5-172	.001 UF CERAMIC DISC CAP
D1, D2, D3, D4	B3-110	1N4148 DIODE
Q1	B2-139	MPS-A14 NPN DARLINGTON TRANSISTOR
K1, K2	J1-116	W76URCPCX-34 DPDT RELAY
R5*	C1-376	1.5K OHM 1/2W RESISTOR
R6*	C1-140	47 OHM 1/4W RESISTOR
R7*	C1-172	1.0K OHM 1/4W RESISTOR
R8*	C1-124	10 OHM 1/4W RESISTOR
C9*, C10*, C11*	A5-172	.001 UF CERAMIC DISC CAPACITOR
D5*, D6*	B3-110	1N4148 DIODE
Q2	B2-150	TIP 31 NPN TRANSISTOR

NOTE: *Only used on models with biasing

SOLID STATE CARRIER OPERATED RELAY P/N T-101371-UHF-SA

REF SYMBOL	TPL PART NO.	DESCRIPTION
	T-101369	CIRCUIT BOARD
C1, C7, C9, C10, C11, C12, C13	A2-172	1000 PF CERAMIC DISK CAP
C2	A2-148	100 PF CHIP CAP
C3	A5-107	2 PF CERAMIC DISC CAP
C4, C6	A5-708	EP10 TRIMMER CAP
C5	A8-163	430 PF DIPPED MICA CAP
C14, C15	A2-100A	1 PF CHIP CAP
D1, D2, D4, D5	B3-115A	MA47266 DIODE
D3	B3-118	1N5711 DIODE
L5, L1	E1-111	0.22 UH CHOKE
L2, L3, L4		COIL 3 TURNS #22 AWG
Q1	B2-106	MPS-A64 TRANSISTOR PNP
R1, R2	C1-369	750 OHM RES 1/2W
R3	C1-193	7.5K OHM RES 1/4W
R4	C1-198	12K OHM RES 1/4W

UHF DRIVER, P/N T-100327-UAD-1-SA

REF SYMBOL	TPL PART NO.	DESCRIPTION
	T1-100327	PCB UHF
C1,C11	A5-600	1.1 PF-11 PF AIR VARIABLE CAP
C14	A1-103A	20 PF METAL CLAD MICA CAP
C15	A1-102A	15 PF METAL CLAD MICA CAP
C16	A1-104A	25 PF METAL CLAD MICA CAP
C2	A5-148	100 CERAMIC DISC CAP
C12,C13	A1-106	50 PF METAL CLAD MICA CAP
C3,C4	A1-108	75 PF METAL CLAD MICA CAP
C5	A4-113	33 UF 35V AXIAL ELECTROLYTIC CAP
C6,C8	A2-188	0.047 UF CHIP CAP
C7	A2-172	1000 PF CAP
C10	A1-111	300 PF METAL CLAD MICA DISC CAP
	E1-100	FERRITE BEAD
L1	E1-113	1.0 UH CHOKE 0.25W 10% 700MA MAX
Q1	B2-127	MRF658 TRANSISTOR
R1	C1-548	100 OHM RES 1W M.F.
R2	C1-178	100 OHM RES 2W
R3	C1-754	180 OHM RES 2W

UHF FINAL, P/N T-100327-UFB-SA

REF SYMBOL	TPL PART NO.	DESCRIPTION
	T1-100327	PCB UHF
C1,C11	A5-600	1.1 PF-11 PF AIR VARIABLE CAP
C2	A5-148	100 CERAMIC DISC CAP
C3,C4,C12,C13	A1-105	35 PF METAL CLAD MICA CAP
C5	A4-113	33 UF 35V AXIAL ELECTROLYTIC CAP
C6,C8	A2-188	0.047 UF CHIP CAP
C7	A2-172	1000 PF CAP
C10	A1-111	300 PF METAL CLAD MICA DISC CAP
	E1-100	FERRITE BEAD
L2	E1-113	1.0 UH CHOKE 0.25W 10% 700MA MAX
Q2	B2-127	MRF648 TRANSISTOR
R1	C1-548	100 OHM RES 1W M.F.

UHF FINAL, P/N T-100327-UAF-SA

REF SYMBOL	TPL PART NO.	DESCRIPTION
	T1-100327	PCB UHF
C1,C11	A5-600	1.1 PF-11 PF AIR VARIABLE CAP
C15	A1-102A	15 PF METAL CLAD MICA CAP
C14	A1-104A	25 PF METAL CLAD MICA CAP
C2	A5-148	100 CERAMIC DISC CAP
C12,C13	A1-106	50 PF METAL CLAD MICA CAP
C3,C4	A1-108	75 PF METAL CLAD MICA CAP
C5	A4-113	33 UF 35V AXIAL ELECTROLYTIC CAP
C6,C8	A2-188	0.047 UF CHIP CAP
C7	A2-172	1000 PF CAP
C10	A1-111	300 PF METAL CLAD MICA DISC CAP
	E1-100	FERRITE BEAD
L2	E1-113	1.0 UH CHOKE 0.25W 10% 700MA MAX
Q2	B2-127	MRF658 TRANSISTOR
R1	C1-548	100 OHM RES 1W M.F.

**OUTPUT COMBINER ASSY
T-101249-C/S-SA**

REFERENCE NO.	TPL PART NO.	DESCRIPTION
	T-101249	PCB COMBINER
R1,R2,R3	C2-110	100 OHM FLANGE RESISTOR

SPLITTER T-101249-4R-SA

REFERENCE NO.	TPL PART NO.	DESCRIPTION
	T-101249	PCB COMBINER
R1,R2,R3	C2-106	100 OHM ROD RESISTOR

LOW PASS FILTER P/N T-101383-UB-SA

REFERENCE NO.	TPL PART NUMBER	DESCRIPTION
	T-101383	PCB
	E6-106	1 TURN #16 3/8 ID
	E6-107	1 TURN #16 7/16 ID
C1,C4,C5,C8	A1-100	5 PF SEMCO CAP
C2,C3,C6,C7	A1-101	10 PF SEMCO CAP

LOW PASS FILTER P/N T-101383-UA3-SA

REFERENCE NO.	TPL PART NUMBER	DESCRIPTION
	T-101383	PCB
	E6-112	2 TURN #16 5/16 ID
C1,C4,C5,C8	A1-102	5 PF SEMCO CAP
C2,C3,C6,C7	A1-102	15 PF SEMCO CAP

WARRANTY

TPL COMMUNICATIONS has tested and found this unit to function properly and to operate within the parameters of its stated specifications.

TPL COMMUNICATIONS warrants that this product is free from defects in material and workmanship. If found to be defective within one (1) year from the date of purchase, the factory at its discretion, will either repair or replace the unit at no cost provided the unit is delivered by the owner to the factory intact. Warranty does not apply to any product which has been subjected to misuse, neglect, accident, improper installation or used in violation of instructions furnished by us, nor does it extend to units which have been repaired or altered outside our service department, nor where the serial number has been removed, defaced or changed.

NOTE: For units with internal power supplies (PS option) contact **TPL COMMUNICATIONS** for service on the power supply during the warranty period. Otherwise, contact the power supply manufacturer directly.

SERVICE

For service on this amplifier, contact:

TPL COMMUNICATIONS
Customer Service Department
213 256-3000
800 HI POWER
FAX 213 254-3210