(Includes Addendums 1 thru 4)

MAINTENANCE MANUAL
138-174 MHz, 100/110 WATT POWER AMPLIFIER
19D424583G4 MOBILE "M" SERIES & INTERMITTENT DUTY STATION
19D424583G8 MOBILE "E" SERIES
19D424786G4 CONTINUOUS DUTY STATION
19D424786G7,G8 & G9 CONTINUOUS DUTY DUPLEX

TABLE OF CONTENTS

DESCRIPTION

The modularized 110 Watt PA assembly contains a 10 watt driver module A201, a 110 Watt PA module A206, power control circuitry and low pass filter. A total of five transistors, two in the 10-watt driver and three in the 110-watt PA, are used to provide 110 watts RF power for MASTR® II applications and 100-watts for MASTR® Executive II. The output power is adjustable from 20 watts to rated output power and is held constant for normal variations in temperature and voltage. For combining applications PA module A207 is used in place of A206. This increases power to 130 watts.

CAUTION

Mobile and Station Power Amplifier Assemblies ARE NOT interchangeable due to different chassis grounding requirements.

However, the individual driver and power amplifier board may be interchanged between mobiles and stations.

Supply voltage for the PA is connected through power leads (from the system-audio-squelch board (SAS) on MASTR Executive II and from the system board on MASTR II) to feedthrough capacitors C297 and C298 on the bottom of the PA assembly. C297, C298, C299, L201 and L202 prevent RF from getting on the power leads. Diode CR295 will cause the main fuse in the fuse assembly to blow if the polarity of the power leads is reversed, providing reverse voltage protection for the radio.

The PA assembly is insulated from vehicle ground to permit operation in positive or negative ground vehicles.

NOTE

In positive ground vehicles, A - is "hot" with respect to vehicle ground. Shorting the transmitter PA printed wiring board ground pattern to the radio case may cause one of the in-line fuses to blow.

Centralized metering jacks J205 and J210 are provided for use with GE Test Set Model 4EX3A11 or Test Kit 4EX8K12. The Test Set, when connected to J205, meters the Ampl-1 drive (exciter output), power control voltage, Ampl-2 current, and driver current. PA current is metered at J210.

CIRCUIT ANALYSIS

10 WATT DRIVER A201

The exciter output is coupled through an RF cable to PA input jack J201. The RF is coupled through a matching network to the base of Class C amplifier Q1. The network matches the 50 ohm input to the base of Q1 and consists of A201-T1, CA, C5 and C39. R3, C3, R13 and L1 are stablizing networks in the base circuit of Q1.

Part of the RF input is rectified by CR1 and is applied to voltage divider R1 and R2. The voltage is divided to activate the Power Control circuits and for metering the Ampl-1 drive at J205.

GENERAL ELECTRIC

Collector voltage to Q1 and Q2 is controlled by the Power Control circuit, and is applied to Q1 through collector stabilizing network L4 and R4 and collector feed network L3 and C6. The collector voltage is metered through R7 at J205-3 (Pos. C).

The output of Q1 is coupled to the base of the second class C amplifier Q2 through a matching network consisting of C10 through C14 and L5 through L7. Collector voltage to Q2 is applied through collector stabilizing network L11 and R6 and collector feed network L8 and C15.

The output of the 10 watt driver is taken from the collector of Q2 and applied to the base of PA driver A206-Q1 on the 110 watt PA module through an impedance network, two 50 ohm microstrips, W30, and a second impedance matching network.

The collector impedance matching network for A201-Q2 (L9, L10, C20 and C21), matches the output of Q2 to 50 ohm microstrip A201W2. C22 is a DC blocking capacitor. W30 interconnects the output of the 10 watt driver (A201-W2) to the input (50 ohm microstrip A206-W1) of the 110 watt PA module.

NOTE

For MASTR II® High Power Solid State applications where "Combining" is used a new Power Amplifier, A207, (19D424786G8) has been added. The new PA does not use 10 watt driver A201 or driver Q203 as in A206. Two new PA's are used in conjunction with a combiner panel to sum the power output of each PA.

PA MODULE A206/A207

The base impedance matching network (L1-L3, C1-C4 and R1) matches the 50 ohm input impedance to the base of Q1. Collector voltage is coupled through collector stabilizing network Z1 and collector feed network L5 and C5.

Collector current for Q1 is metered across tapped manganin resistor R15 at J205 (Driver Current). The reading is taken on the one-volt scale with the High Sensitivity button pressed and read as 10 amperes full scale.

Following Q1 is a matching network (L4, L21, C7, C57 and C61) that matches the output of Q1 to 50 ohm microstrip W2. The RF energy is then coupled to power divider L6, L7 and Z4 through W2, 50 ohm microstrip W9 and impedance matching network L22, C6 and C62.

The power amplifier stages consist of two identical paralleled Class C PA circuits Q2 and Q3. The output of power divider provides drive for PA transistors Q2 and Q3.

One output of the power divider is applied to the base of Q2 through impedance matching network C8 through (C11 and L23). L25, L8, C13 and R3 comprise a stabilizing network in the base of Q2. Supply voltage for Q2 is coupled through collector stabilizing network Z2 and collector feed network L10 and C12.

Collector current for Q2 and Q3 is metered across paralleled tapped manganin resistors R12 and R13. The reading is taken on the one-volt scale with the High Sensitivity button pressed, and read as 30 amperes full scale.

The output of Q2 is coupled through matching network L9, L11, C28 and C14-C16 and added to the output of Q3 by power combiner Z5, L12 and L13. The combined output is applied to 50 ohm microstrip W6 through T1 and C56 and is coupled through a low pass filter to the antenna. Capacitors A206-C43 through C54 and A201-C30 through C34 provided isolation for ± ground operation.

WARNING

The RF Power Transistors used in the transmitter contain Beryillium Oxide, a TOXIC substance. If the ceramic, or other encapsulation is opened, crushed, broken or abraded, the dust may be hazardous if inhaled. Use care in replacing transistors of this type.

POWER CONTROL CIRCUIT

The power control circuit, located on the 10 watt driver module and PA Assembly, consists of power control IC A201-U1, thermistor RT201, power adjust A201-R8, pass transistor Q215 and the directional coupler. The power control IC senses the presence of drive power from the exciter, the heat sink temperature, power level, reflected power, and input voltage to provide automatic power leveling across the frequency band.

When the transmitter is keyed, rectified RF from A201-CR1 is applied to pin 10 of U1, turning it on. U1 supplies a reference voltage through pin 4 to power adjust potentiometer A201-R8. The voltage appearing at the arm of R8 is applied back to pin 2 of U1. This voltage determines the base voltage of Q215. The conduction of Q215 sets the collector voltage for 10 watt drivers A201-Q1 and Q2, thereby controlling the RF drive to the PA. The RF output power varies in direct proportion to the RF drive applied to the PA and can be adjusted from approximately 22 to 100 watts for MASTR Executive II and 22 to 110 watts for MASTR II.

CAUTION

Due to the reduced heat dissipation capability of the MASTR Executive II heat sink assembly, the MASTR Executive II transmitter should not be adjusted above 100 watts RF output.

Once the power is set to the desired level, U1 compares the setting of power adjust control R8 to the actual output power flowing through the directional coupler and adjusts the collector voltage on the 10 watt driver transistors accordingly. A206-CR1 rectifies the sensed forward power from the directional coupler and A206-R6 sets the forward power reference voltage applied to pin of U1.

Reflected power is sensed by the directional coupler and rectified by A206-CR2. When the reflected power exceeds a preset level established by A206-R7, a DC voltage proportional to the reflected power is applied to pin 3 of U1. U1 lowers the base voltage of Q215, which in turn lowers the collector voltage of the 10 watt driver transistors, thereby reducing transmitter output power.

Temperature protection is provided by U1 and thermistor RT201. RT201 is mounted on the heat sink assembly. Under normal operating conditions, the temperature sensing circuit is inactive. When the heat sink temperature reaches approximately 100°C, the resistance of RT101 decreases, decreasing the base voltage of Q215. This in turn reduces the collector voltage applied to the 10 watt driver transistors, reducing the transmitter output until at approximately 125°C the output is almost zero. As the temperature of the heat sink descreases the output power increases until full power returns at approximately 100°C.

Overvoltage protection for the RF transistors is also provided by U1. Should the supply voltage exceed approximately 18 volts, U1 will switch off the collector voltage to the driver transistors, turning them off. The IC will hold the driver transistors off until the supply voltage is reduced to a safe level.

CAUTION

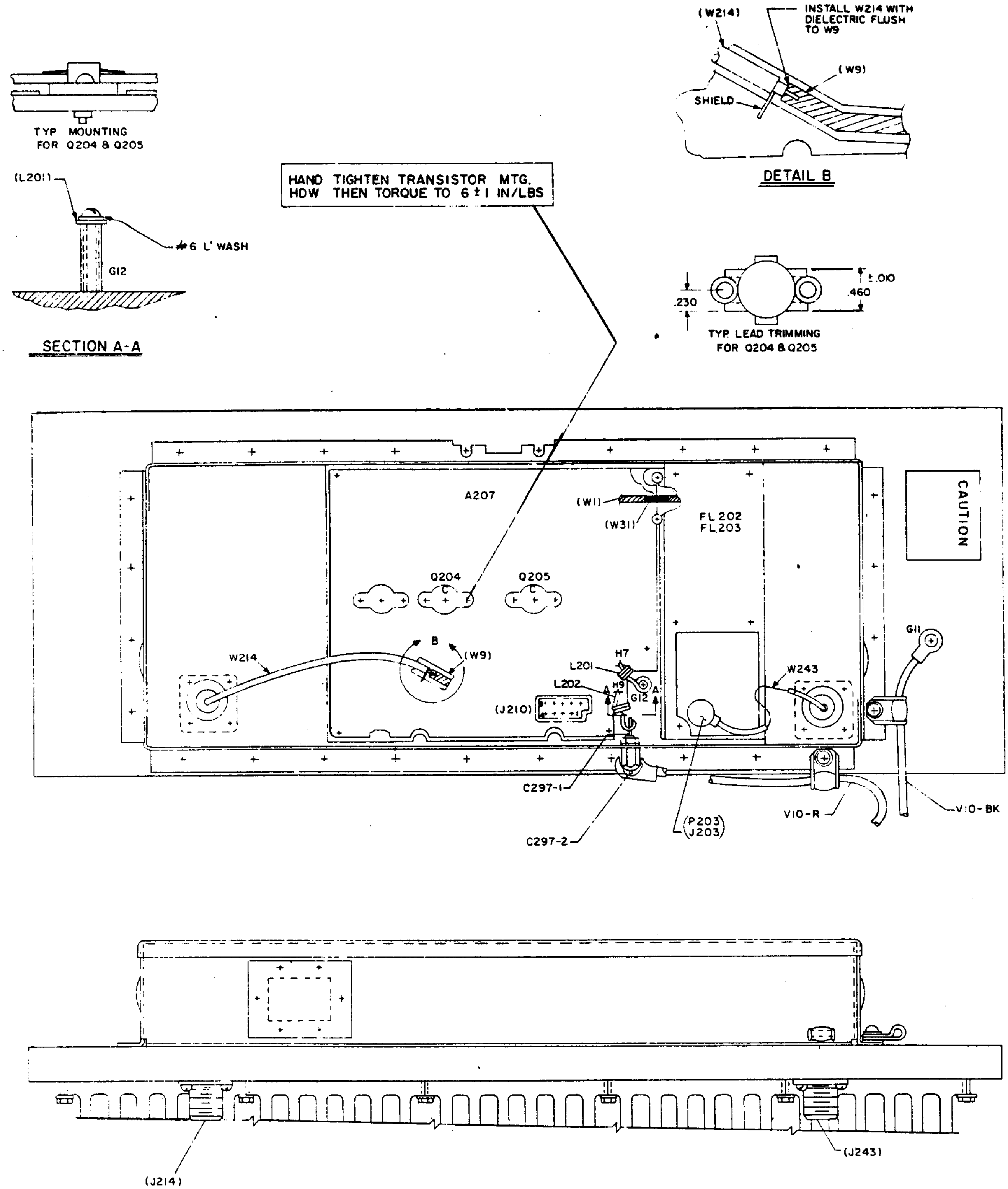
U1 may be damaged if output terminals 12 or 14 are shorted to ground. Use extreme caution when servicing the power control circuit.

ANTENNA MATCHING UNIT

The Antenna Matching Unit is used only in continuous duty duplex stations to optimize impedance matching between the power amplifier and the load. It consists of a Pi network (C2-C5 and L1) and a reverse directional coupler. RF from the low pass filter is applied to the Pi network through the reverse directional coupler and then to the duplexer load. The reverse directional coupler permits monitoring the reflected power by connecting a DC voltmeter across TP1 (+) and ground (-). C2 and C4 are tuned for minimum DC voltage which represents minimum reflected power. The turns of L1 may also be spread or compressed to further reduce the DC voltage. C2, C4, and L1 should be alternately tuned until an absolute minimum voltage reading is obtained. The residual voltage reading after tuning may vary from one transmitter to the next depending on output power level, operating frequency and the load.

GENERAL ELECTRIC COMPANY• MOBILE COMMUNICATIONS DIVISION
WORLD HEADQUARTERS• LYNCHBURG, VIRGINIA 24502 U.S.A.

GENERAL ELECTRIC*
U.S.A.

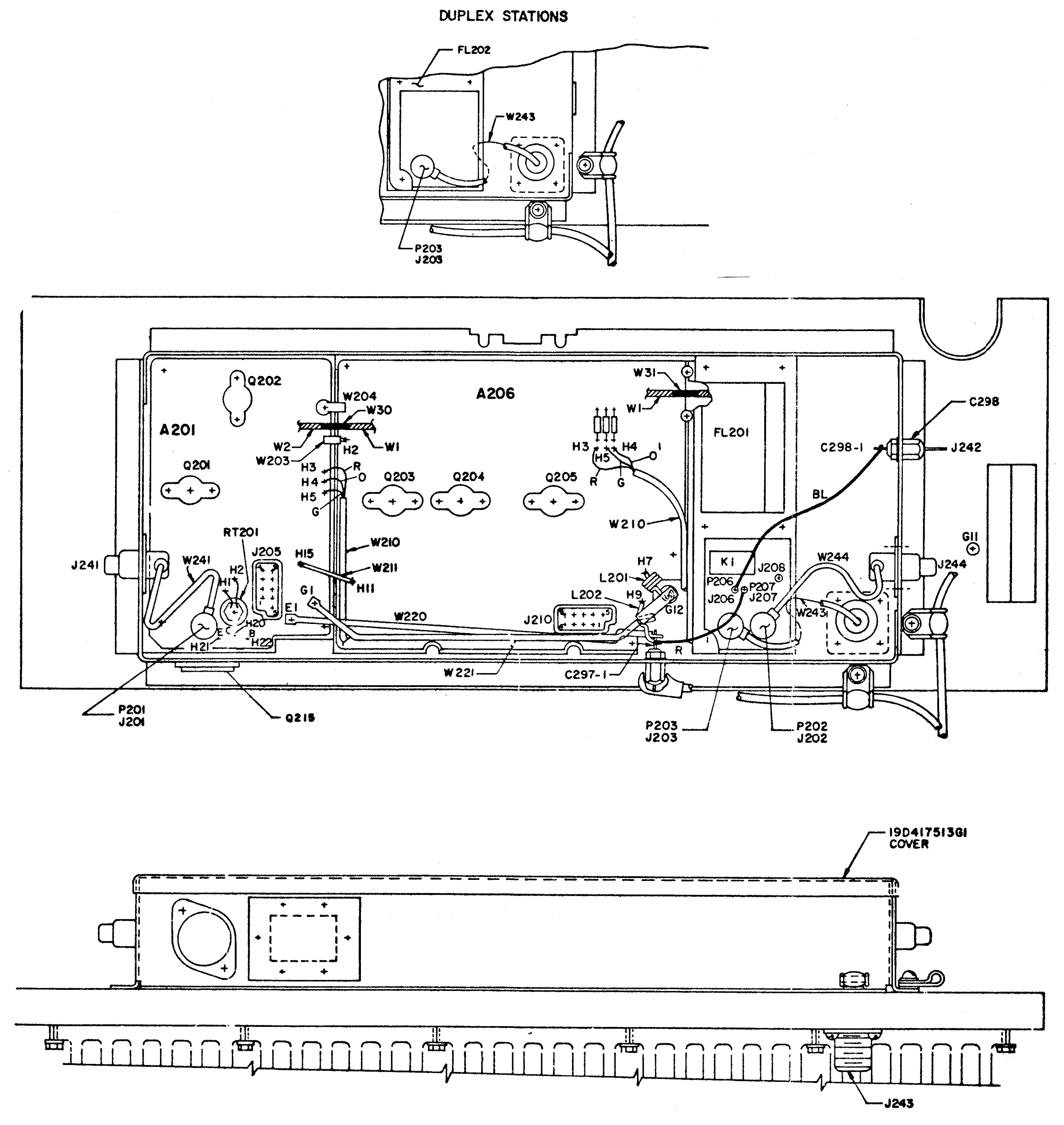


(19D433141, Rev. 1)

OUTLINE DIAGRAM

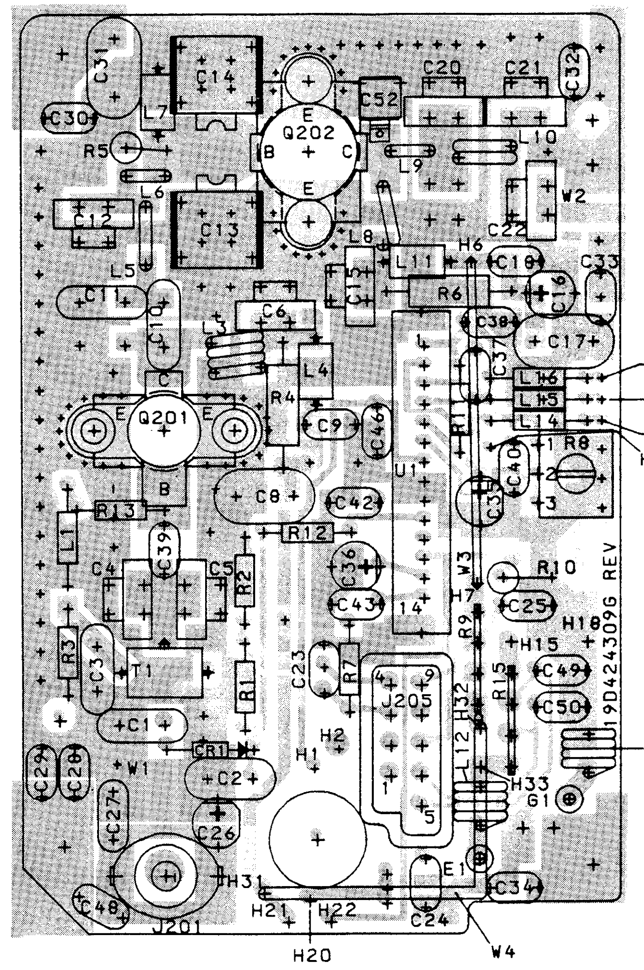
POWER AMPLIFIER 19D424786G8, G9
USED FOR COMBINING

CONTINUOUS DUTY & DUPLEX STATION



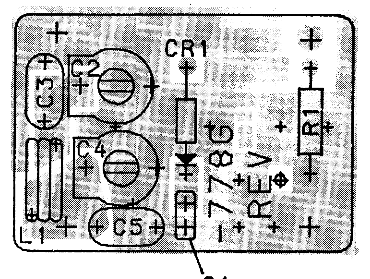
(19D429710, Rev. 2)

10-WATT DRIVER A201



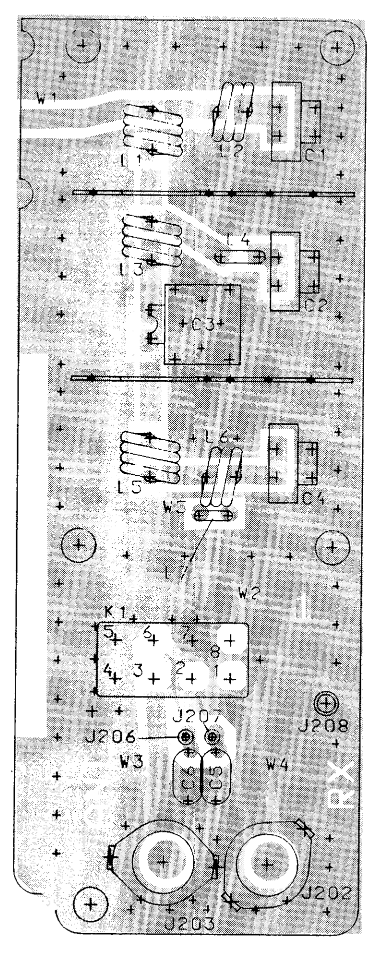
(19D424879, Rev. 12)
(19B227634, Sh. 1, Rev. 5)
(19B227634, Sh. 2, Rev. 4)

ANTENNA MATCHING UNIT



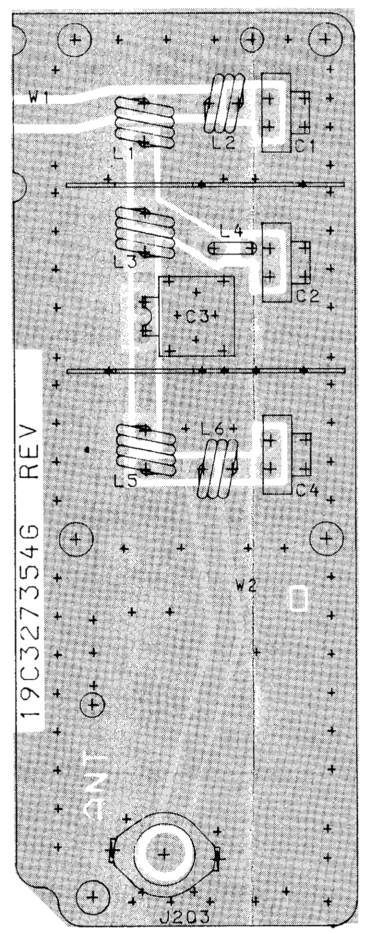
(19B233800, Rev. 0)
(19A143200, Sh. 1, Rev. 0)
(19A143200, Sh. 2, Rev. 0)

FL201



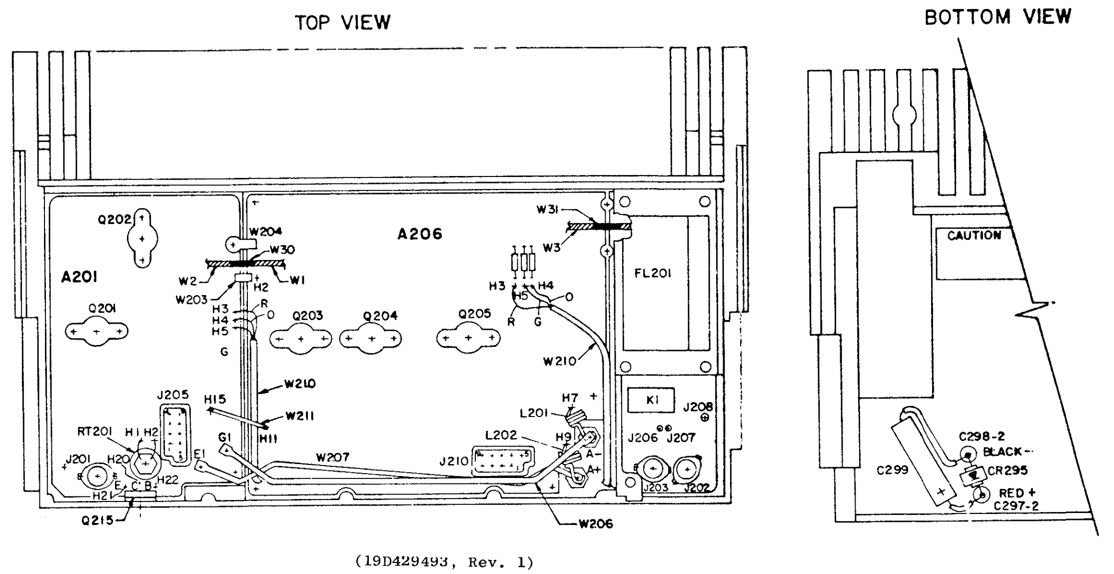
(19C327842, Rev. 1)
(19B227645, Sh. 1, Rev. 1)
(19B227645, Sh. 2, Rev. 0)

FL202



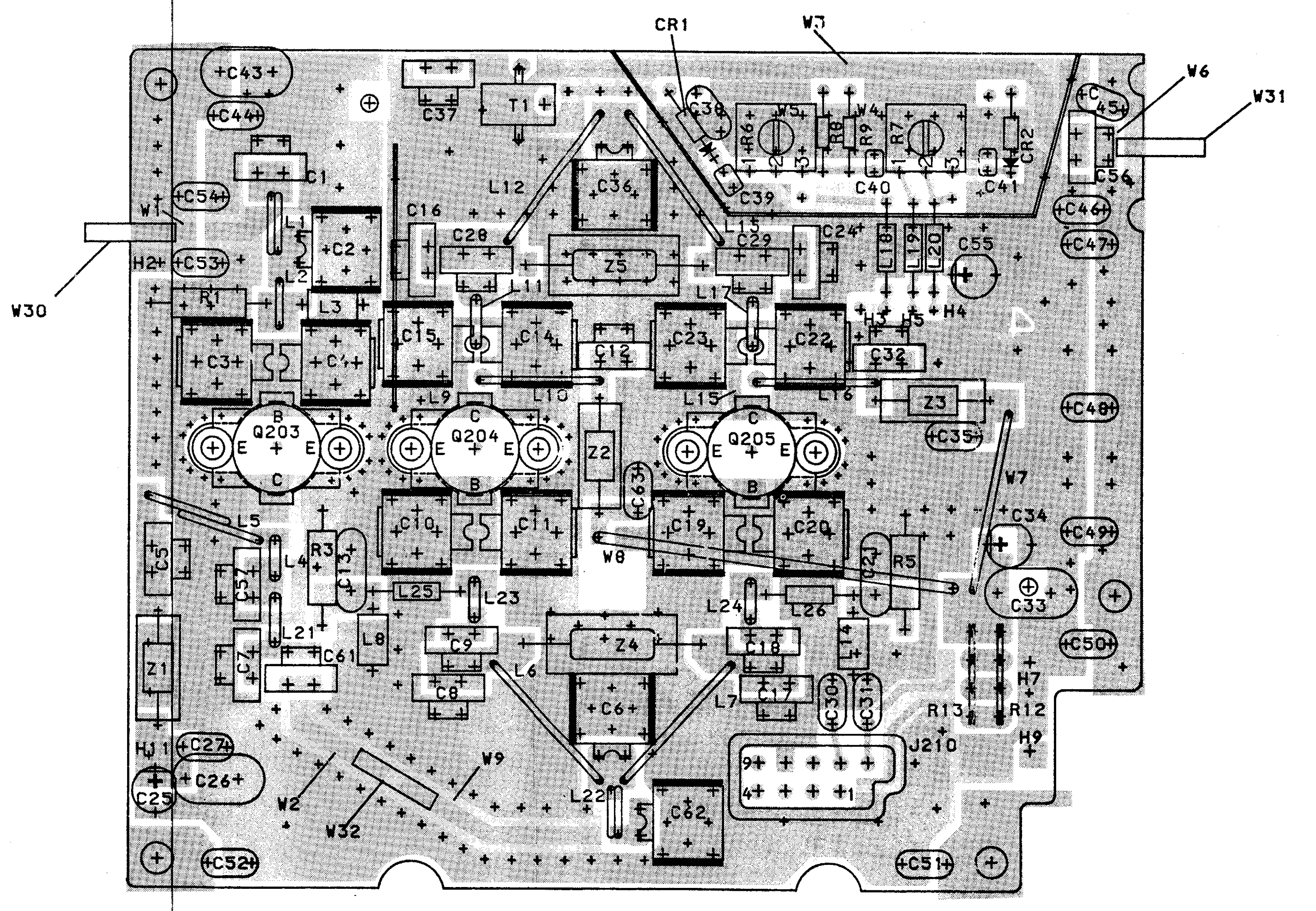
(19C327841, Rev. 1)
(19B227651, Sh. 1, Rev. 0)
(19B227651, Sh. 2, Rev. 0)

MOBILE & INT. DUTY STATION



(19D429493, Rev. 1)

110-WATT PA A206



(19C327814, Rev. 5)
(19B227604, Sh. 1, Rev. 3)
(19B227604, Sh. 2, Rev. 4)

RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON COMPONENT SIDE

OUTLINE DIAGRAMS

138—174 MHz POWER AMPLIFIER ASSEMBLIES MOBILE & STATION

VOLTAGE READINGS

VOLTAGE READINGS ARE TYPICAL READINGS MADE WITH THE TRANSMITTER KEYED, AND MEASURED WITH A 20,000 OHMS-PER-VOLT METER WITH REFERENCE TO A- AND NOT CHASSIS GROUND. AN RF CHOKE (25-50 MICROHENRYS) IS USED IN THE HOT METER LEAD TO AVOID DETUNING RF CIRCUITS. NOTE: READINGS AT Q215 COLLECTOR AND IN THE POWER CONTROL CIRCUIT WERE TAKEN WITH THE TRANSMITTER ADJUSTED FOR 110 WATTS OUTPUT. THESE READINGS WILL VARY DEPENDING ON THE SETTING OF POWER ADJUST CONTROL A201-R8.

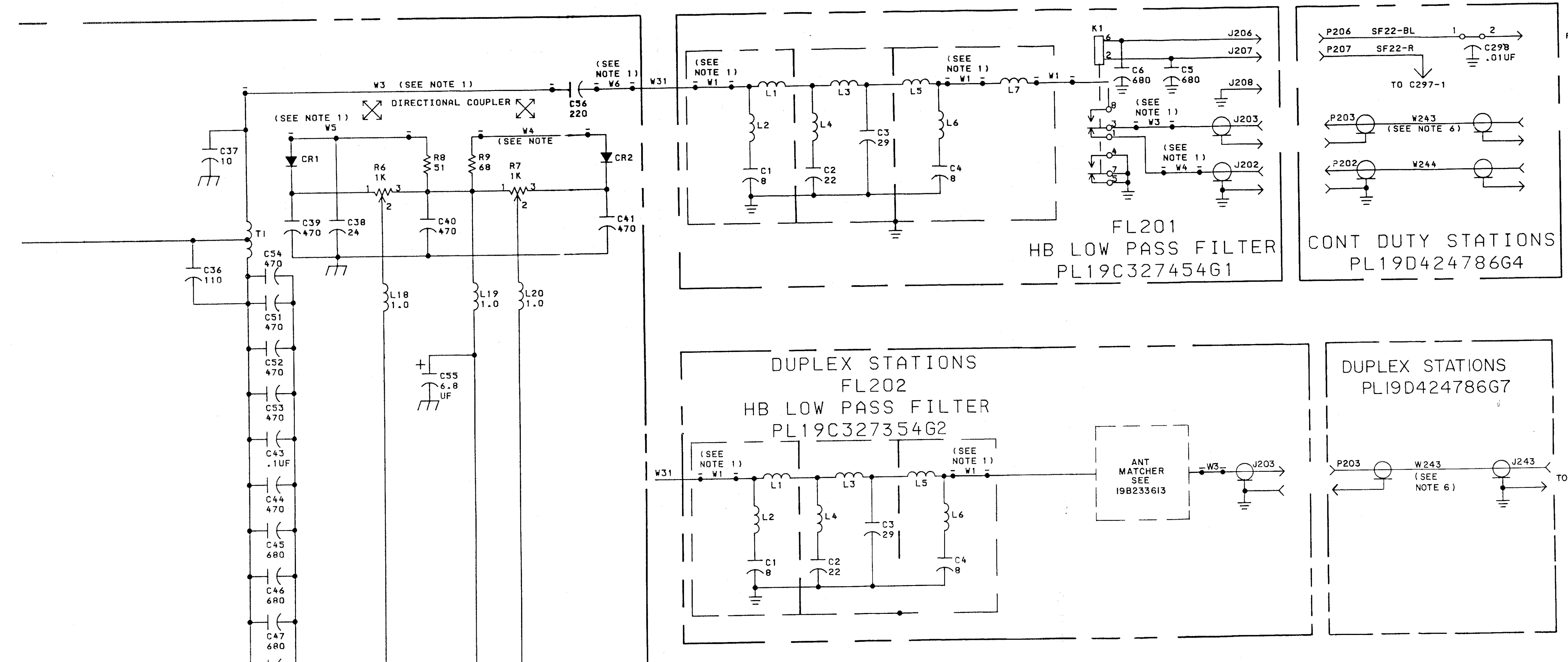
ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF=MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH=MILLIHENRYS OR H=HENRYS.

SCHEMATIC DIAGRAM

138—174 MHz, 110-WATT POWER AMPLIFIER
MOBILE AND STATION

(19R622291, Rev. 18)

Issue 6

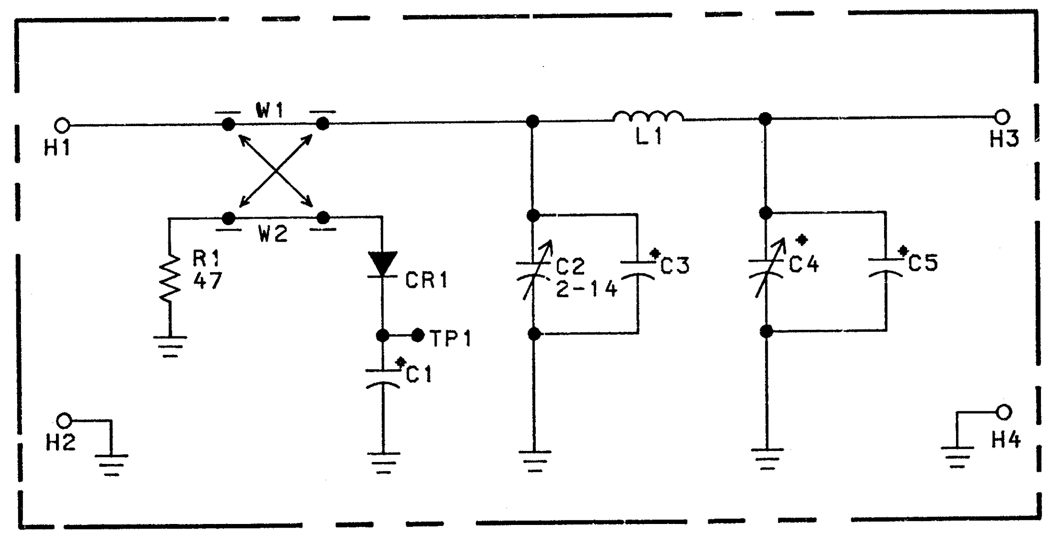


NOTES:
1. MICROSTRIP PART OF PCB.
2.
3. INDICATES A-.
INDICATES VEHICLE GROUND.
4. CALLED FOR ON 19D417526.
5. CALLED FOR ON 19R423340.
6. ALL COMPONENTS MARKED ARE PART OF PL19D424583 OR PL19D424786.

DESCRIPTION	PA ASSEMBLY	REV. LTR.	10 WATT DRIVER	REV. LTR.	110 WATT PA	REV. LTR.	LOW PASS FILTER	REV. LTR.
INT. DUTY STA "M" SERIES MOB.	19D424583G4		19D424309G1	H	19D424266G1	B	19C327454G1	
INT. DUTY STA "E" SERIES MOB.	19D424583G8		19D424309G1	H	19D424266G1	B	19C327454G1	
CONT. DUTY STATION	19D424786G4	A	19D424309G1	H	19D424266G1	B	19C327454G1	
CONT. DUTY DUPLEX	19D424786G7	B	19D424309G1	H	19D424266G1	B	19C327354G1	

(19R622291, Rev. 18)

ANTENNA MATCHING UNIT



ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K-1000 OHMS OR MEG-1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF-MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH-MILLIHENRYS OR H-HENRYS.

MODEL NO.	REV. LETTER
19C330778G1	
19C330778G2	
19C330778G3	

* COMPONENT VALUE CHART		
COMPONENT DESIGNATION	A 138-174MHZ	B 406-512MHZ
C1	1000	470
C4	2-14	2-10
C3	15	
C5	10	

(19B233613, Rev. 1)

PARTS LIST

138-174 MHz POWER AMPLIFIER ASSEMBLIES
19D424583G1 25 WATT "M" SERIES MARINE
19D424583G2 40 WATT "M" SERIES MOBILE & INT. DUTY STATION
19D424583G3 65 WATT "M" SERIES MOBILE & INT. DUTY STATION
19D424583G4 110 WATT "M" SERIES MOBILE & INT. DUTY STATION
19D424583G5 25 WATT "E" SERIES MARINE
19D424583G6 40 WATT "E" SERIES MOBILE
19D424583G7 65 WATT "E" SERIES MOBILE
19D424583G8 110 WATT "E" SERIES MOBILE
ISSUE 9

SYMBOL	GE PART NO.	DESCRIPTION
A201	19D424309G1	10 Watt Driver. (Used with 19D424583G2, G4, G6 & G8).
A202	19D424309G3	25 Watt Driver/PA. (Used with 19D424583G1, G3, G5, & G7).
A203	19D424328G1	Coupler. (Used with 19D424583G1, G5).
A204	19D424872G1	40 Watt Power Amplifier. (Used with 19D424583G2, G6).
A205	19D424872G2	65 Watt Power Amplifier. (Used with 19D424583G3, G7).
A206	19D424266G1	110 Watt Power Amplifier. (Used with 19D424583G4, G8).
		- - - - - - FILTERS - - - - - -
FL201		COMPONENT BOARD 19C327454G1
		- - - - - - CAPACITORS - - - - - -
C1	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
C2	19A700015P12	Teflon/Mica: 22 pF ±5%, 250 VDCW.
C3	19A116795P29J	Teflon: 29 pF ±5%, 250 VDCW.
C4	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
C5 and C6	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
		- - - - - - JACKS AND RECEPTACLES - - - - - -
J202 and J203	19A700049P2	Connector, receptacle: 500 VDCW maximum; sim to NTTF-1058.
J206 and J207	19A134263P2	Contact, electrical: sim to Selectro 229-1071.
J208	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - RELAYS - - - - - -
K1	19A700061P1	Hermetic sealed: 180 to 341 ohms coil res, 8-16.3 VDC; sim to GE 3SAV1760A2, CPClare HFW-1201558, or Potter-Brumfield HCM6160.
		- - - - - - INDUCTORS - - - - - -
L1	19A129569P1	Coil.
L2	19A701418P1	Coil.
L3	19A129569P1	Coil.
L4	19A701420P5	Coil.
L5	19A129569P1	Coil.
L6	19A701418P1	Coil.
L7	19A136907P1	Coil.
		- - - - - - CABLES - - - - - -
W1 thru W5		(Part of printed board 19D424357P1).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - INDUCTORS - - - - - -
L201 and L202	19A129562P1	Coil.
		- - - - - - TRANSISTORS - - - - - -
Q201	19A134340P1	Silicon, NPN: VHF Amplifier, 4 watts, 12.5 v.
Q202A	19A134340P3	Silicon, NPN: VHF Amplifier, 12 watts.
Q202B	19A134340P2	Silicon, NPN: NHF Amplifier, 25 watts, 12.5 v.
Q203A	19A134340P4	Silicon, NPN, VHF Amplifier: 45 w.
Q203B	19A134387P1	Silicon, NPN.
Q204 and Q205	19A134387P1	Silicon, NPN.
Q215	19A116742P1	Silicon, NPN.
		- - - - - - THERMISTORS - - - - - -
RT201	19A129379G1	Thermistor: 40K ohms ±20%, color code white; sim to Carborundum Type M0806J-5.
		- - - - - - CABLES - - - - - -
W203	19A136942P1	Strap.
W204	7878455P1	Lug terminal; sim to GE89473.
W205	19B227912P1	Jumper.
W206	19B227931G3	Jumper.
W207	19B227931G1	Jumper.
W208	19B227074G1	Jumper. 6 inches long.
W209	19B226725G1	Jumper. 5-3/4 inches long.
W210	19B227934G1	Cable: approx 13 inches long.
W211	19A137006P2	Jumper.
		HEAT SINK ASSEMBLY 19B219688G7 "M" SERIES 19B219688G19 "E" SERIES
		- - - - - - CAPACITORS - - - - - -
C297 and C298	19A116708P1	Ceramic: 0.01 uF -0 +100%, 500 VDCW, rated 20 amps; sim to Erie 327050X5W0103P.
C299	19A115680P10	Electrolytic: 200 uF +150-10%, 18 VDCW; sim to Mallory Type TTX.
		- - - - - - DIODES AND RECTIFIERS - - - - - -
CR295	19A116783P1	Rectifier, silicon: 100 VDC blocking, 6 amp; sim to MR751.
		- - - - - - MISCELLANEOUS - - - - - -
	19D416732G7	Heat sink. ("M" SERIES).
	19D417105G7	Heat sink. ("E" SERIES).
	19A700068P1	Insulator, bushing. (Used with Q215).
	19A700115P3	Insulator, plate. (Used with Q215).
	19C321982P1	Insulator. (Located under A201, A202).
	19C321442P1	Insulator. (Located under A203-A206).
	NP280427	Nameplate. (25, 40, 65 Watt - Located on FL201).
	NP280428	Nameplate. (110 Watt - Located on FL201).
	19B201074P306	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/8. (Located between FL201 cover and A203-A206 - Quantity 2).
	N404P13C6	Lockwasher, internal tooth: No. 6. (Located between FL201 cover and A203-A206).
	19B201074P312	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/4. (Secures FL201 cover).
	N44P9010B6	Machine screw: No. 4-40 x 5/8. (Secures Q1 & Q2 on A201, A202; Q1 on A204, A2095, Q1-Q3 on A206).

SYMBOL	GE PART NO.	DESCRIPTION
	N80P13006C6	Machine screw, phillips head: No. 6-32 x 3/8. (Secures A201-A206 boards).
	N80P9006C6	Machine screw: No. 4-40 x 3/8. (Used with Q215 mounting).
	N402P5C6	Flatwasher, steel: No. 4. (Used with Q215 mounting).
	7141225P2	Hex nut: No. 4-40. (Used with Q215 mounting).
	19A129434P1	Washer, fiber. (Used with C297 & C298).
	19B219929P1	Support, heat sink.
	19A148393P306	Tap screw, TORZ®Drive: No. 632 x 3/8. (Secures support to heat sink - Quantity 3).
	19A129639P1	Cover, heat sink.
	19B201074P305	Tap screw, Phillips POZIDRIV®: No. 6-32 x 5/16. (Secures heat sink cover).
	19D416275P2	Filter casting. (FL201).

SCHEMATIC DIAGRAM

138—174 MHz, 110-WATT POWER AMPLIFIER MOBILE AND STATION

PARTS LIST

A201
138-174 MHz, 10 WATT DRIVER
19D424309G1
ISSUE 7

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1A	19A700105P8	Mica: 12 pF ±5%, 500 VDCW.
C2	7489162P39	Silver mica: 330 pF ±5%, 500 VDCW; sim to Sprague Type 118.
C3	19A700105P28	Mica: 56 pF ±5%, 500 VDCW.
C4A	19A700015P23	Teflon/Mica: 56 pF ±5%, 250 VDCW.
C5A	19A700015P23	Teflon/Mica: 56 pF ±5%, 250 VDCW.
C6	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C8	19A116080P107	Polyester: 0.1 uF ±10%, 50 VDCW.
C9	19A116655P8	Ceramic disc: 150 pF ±10%, 1000 VDCW; sim. to RMC Type JF Discap.
C10A	19A700105P30	Mica: 68 pF ±5%, 500 VDCW.
C11A*	7489162P101	Silver mica: 5 pF ±10%, 500 VDCW; sim to Sprague Type 118. Deleted by REV A or B. Added by REV C.
C12	19A700015P30	Silver mica: 110 pF ±5%, 250 VDCW.
C13A	19A700014P33	Metallized teflon: 150 pF ±5%, 250 VDCW.
C14A	19A700014P33	Metallized teflon: 150 pF ±5%, 250 VDCW.
C15	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C16	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C17	19A116080P107	Polyester: 0.1 uF ±10%, 50 VDCW.
C18	19A116655P8	Ceramic disc: 150 pF ±10%, 1000 VDCW; sim. to RMC Type JF Discap.
C20A	19A700015P27	Silver mica: 82 pF ±5%, 250 VDCW.
C21A	19A700015P16	Teflon/Mica: 30 pF ±5%, 250 VDCW.
C22B	19A700015P25	Silver mica: 68 pF ±5%, 250 VDCW.
C23 thru C25	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C26	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C27	19A116655P19	Ceramic disc: 1000 pF ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C28	19A116655P8	Ceramic disc: 150 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C29 and C30	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C31	19A116080P107	Polyester: 0.1 uF ±10%, 50 VDCW.
C32 thru C34	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C35	19A134202P6	Tantalum: 22 uF ±20%, 15 VDCW.
C36	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C37 and C38	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C39*	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap. Deleted by REV A or B.
C40	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C42 and C43	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C46	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C48 thru C50	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C51*	19B208723P5	Tantalum: 6.8 uF ±20%, 20 VDCW. Added by REV E. Deleted by REV F.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - - - - - - - TERMINALS - - - - - - - - - -
E1	19A134263P1	Contact, electrical: sim to Selectro 229-1082-00-0-590.
G1	19A134263P1	Contact, electrical: sim to Selectro 229-1082-00-0-590.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J201	19A700049P2	Connector, receptacle; 500 VDCW maximum; sim to NTTF-1058.
J205	19B219374G1	Connector: 9 contacts.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A700024P25	Coil, RF: 10.0 uH ±10%, 3.70 ohms DC res max.
L2*	19A137270P2	Coil. Added by REV A or B. Deleted by REV C.
L3A	19A136530P1	Coil.
L4	19A701091G1	Coil.
L5A	19A136532P2	Coil.
L6	19A701420P5	Coil.
L7	19A701091G1	Coil.
L8A	19A129561P1	Coil.
L9A	19A701420P3	Coil.
L10A	19A129561P1	Coil.
L11	19A701091G1	Coil.
L12	19A129569P1	Coil.
L13	19A701419P3	Coil.
L14 thru L16	19A700024P25	Coil, RF: 10.0 uH ±10%, 3.70 ohms DC res max.
		- - - - - - - - - - - RESISTORS - - - - - - - - - -
R1	19A700106P67	Composition: 1.5K ohms ±5%, 1/4 w.
R2	3R152P241J	Composition: 240 ohms ±5%, 1/4 w.
R3	19A700106P32	Composition: 51 ohms ±5%, 1/4 w.
R4	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R5*	3R77P100J	Composition: 10 ohms ±5%, 1/2 w. Deleted by REV D.
R5A*	19A700113P32	Composition: 51 ohms ±5%, 1/2 w. Added by REV D.
R6	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R7	3R152P274J	Composition: 270K ohms ±5%, 1/4 w.
R8A	19A116559P106	Variable cermet: 10K ohms ±20%, 1/2 w; sim to CTS Series 360.
R9	19C850605P2	Shunt resistor.
R10	19A700113P51	Composition: 330 ohms ±5%, 1/2 w.
R11	3R152P564J	Composition: 560K ohms ±5%, 1/4 w.
R12	19A700106P75	Composition: 3.3K ohms ±5%, 1/4 w.
R13	H212CRP910C	Deposited carbon: 1.0 ohms ±5%, 1/4 w.
R15	19C850605P2	Shunt resistor.
		- - - - - - - - - - TRANSFORMERS - - - - - - - - -
T1	19A129564G1	Coil.
		- - - - - - - - - INTEGRATED CIRCUITS - - - - - - -
U1*	19D429709G3	IC, Power Control.
		In REV E & earlier:
	19D429709G1	IC, Power Control.
		- - - - - - - - - - - - - CABLES - - - - - - - - - - -
W1 and W2		(Part of printed board 19D424308P10.
W3	19B227912P1	Jumper.
W4	19B227912P2	Jumper.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A701093P2	Strap. (Solders to W2).

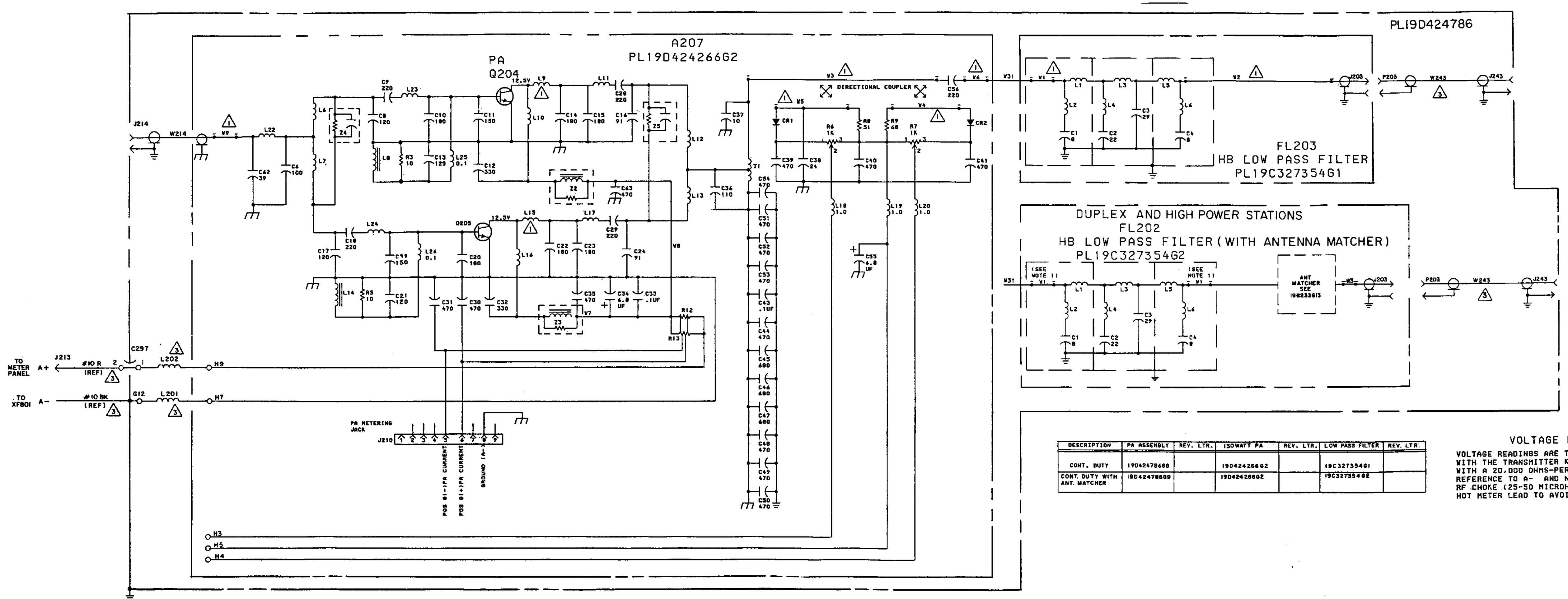
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

138-174 MHz POWER AMPLIFIER ASSEMBLIES
19D424786G2-G9
ISSUE 10

SYMBOL	GE PART NO.	DESCRIPTION
		19D424786G2 40 WATT CONTINUOUS DUTY STATION 19D424786G3 65 WATT CONTINUOUS DUTY STATION 19D424786G4 110 WATT CONTINUOUS DUTY STATION 19D424786G5 40 WATT CONTINUOUS DUTY DUPLEX STA. 19D424786G6 65 WATT CONTINUOUS DUTY DUPLEX STA. 19D424786G7 110 WATT CONTINUOUS DUTY DUPLEX STA. 19D424786G8 130 WATT CONTINUOUS DUTY COMBINING 19D424786G9 130 WATT CONTINUOUS DUTY WITH ANTENNA TUNER
A201	19D424309G1	10 Watt Driver. (Used with 19D424786G2, G4, G5, G7).
A202	19D424309G3	25 Watt Driver. (Used with 19D424786G3, G6).
A204	19D424872G1	40 Watt Power Amplifier. (Used with 19D424786G2, G5).
A205	19D424872G2	65 Watt Power Amplifier. (Used with 19D424786G3, G6).
A206	19D424266G1	110 Watt Power Amplifier. (Used with 19D424786G4, G7).
A207	19D424266G2	130 Watt Power Amplifier. (Used with 19D424786G8, G9).
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C297 and C298	19A116708P1	Ceramic: 0.01 uF -0 +100%, 500 VDCW, rated 20 amps; sim to Erie 327050X5W0103P.
		- - - - - - - - - - - - FILTERS - - - - - - - - - - -
FL201		COMPONENT BOARD 19C327454G1
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
C2	19A700015P12	Teflon/Mica: 22 pF ±5%, 250 VDCW.
C3	19A116795P29J	Teflon: 29 pF ±5%, 250 VDCW.
C4	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
C5 and C6	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J202 and J203	19A700049P2	Connector, receptacle: 500 VDCW maximum; sim to NTTF-1058.
J206 and J207	19A134263P2	Contact, electrical: sim to Selectro 229-1071.
J208	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - - - - - - - RELAYS - - - - - - - - - - -
K1	19A700061P1	Hermetic sealed: 180 to 341 ohms coil res, 8-16.3 VDC; sim to GE 3SAV1760A2, CPClare HFW-1201558, or Potter-Brumfield HCM6160.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A129569P1	Coil.
L2	19A701418P1	Coil.
L3	19A129569P1	Coil.
L4	19A701420P5	Coil.
L5	19A129569P1	Coil.
L6	19A701418P1	Coil.
L7	19A136907P1	Coil.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W1 thru W5		(Part of printed board 19D424357P1).
FL202*		COMPONENT BOARD 19C327354G1 (Deleted by REV. B)
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
C2	19A700015P12	Teflon/Mica: 22 pF ±5%, 250 VDCW.
C3	19A116795P29J	Teflon: 29 pF ±5%, 250 VDCW.
C4	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J203	19A700049P2	Connector, receptacle; 500 VDCW maximum; sim to NTTF-1058.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A129569P1	Coil.
L2	19A701418P1	Coil.
L3	19A129569P1	Coil.
L4	19A701420P5	Coil.
L5	19A129569P1	Coil.
L6	19A701418P1	Coil.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W1 and W2		(Part of printed board 19D424362P1).
FL202*		ANTENNA FILTER W MATCHER 19C327354G2 (Added by REV. B)
		ANTENNA FILTER 19D432248G1
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
C2	19A700015P12	Teflon/Mica: 22 pF ±5%, 250 VDCW.
C3	19A116795P29J	Teflon: 29 pF ±5%, 250 VDCW.
C4	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1 thru J4	19A116364P2	Contact, electrical; sim to AMP 86182-7.
J203	19A700049P2	Connector, receptacle: 500 VDCW maximum; sim to NTTF-1058.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A129569P1	Coil.
L2	19A701418P1	Coil.
L3	19A129569P1	Coil.
L4	19A701420P5	Coil.
L5	19A129569P1	Coil.
L6	19A701418P1	Coil.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W1 thru W3		(Part of printed circuit board 19D432086P1).
FL203		COMPONENT BOARD 19C327354G1
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
C2	19A700015P12	Teflon/Mica: 22 pF ±5%, 250 VDCW.
C3	19A116795P29J	Teflon: 29 pF ±5%, 250 VDCW.
C4	19A116679P8D	Metallized teflon: 8 pF ±0.5 pF, 250 VDCW.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J203	19A700049P2	Connector, receptacle; 500 VDCW maximum; sim to NTTF-1058.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A129569P1	Coil.
L2	19A701418P1	Coil.
L3	19A129569P1	Coil.
L4	19A701420P5	Coil.
L5	19A129569P1	Coil.
L6	19A701418P1	Coil.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W1 and W2		(Part of printed board 19D424362P1).
		ANTENNA MATCHER 19C330778G1
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1A	19A116192P1	Ceramic: 0.01 uF ±20%, 50 VDCW; sim to Erie 8121 Special.
C2	19A700008P2	Variable: 2.28 to 14.13 pF; sim to EF Johnson 187-0109-005.
C3A	19A116656P15J0	Ceramic disc: 15 pF ±5%, 500 VDCW, temp coef 0 PPM.
C4A	19A700008P2	Variable: 2.28 to 14.13 pF; sim to EF Johnson 187-0109-005.
C5A	19A116656P10J0	Ceramic disc: 10 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A700047P3	Silicon: 100 mW; sim to 1N6263.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L1A	19A143343P1	Coil.
		- - - - - - - - - - - RESISTORS - - - - - - - - - -
R1	19A700106P31	Composition: 47 ohms ±5%, 1/4 w.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J213		Consists of:
	19A701869P1	Housing.
	19A701869P2	Contact, electrical.
J214		Part of W214.
J242		Part of C298.
J243		Part of W243.
J244		Part of W244.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L201	19A129562P4	Coil.
L202	19A129562P3	Coil.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - -
P206	4036634P1	Contact, electrical; sim to AMP 42428-2.
		- - - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q201	19A134340P1	Silicon, NPN: VHF Amplifier, 4 watts, 12.5 v.
Q202A	19A134340P3	Silicon, NPN: VHF Amplifier, 12 watts.
Q202B	19A134340P2	Silicon, NPN: NHF Amplifier, 25 watts, 12.5 v.
Q203A	19A134340P4	Silicon, NPN, VHF Amplifier: 45 w.
Q203B	19A134387P1	Silicon, NPN.
Q204 and Q205	19A134387P1	Silicon, NPN.
Q215	19A116753P1	Silicon, NPN; sim to Type 2N5302.
		Earlier than REV A:
	19A116742P1	Silicon, NPN.
		- - - - - - - - - - - THERMISTORS - - - - - - - - - -
RT201	19A129379G1	Thermistor: 40K ohms ±20%, color code white; sim to Carborundum Type M0806J-5.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W203	19A136942P1	Strap.
W204	7878455P1	Lug terminal; sim to GE89473.
W205	19B227912P1	Jumper.
W210	19B227934G1	Cable: approx 13 inches long.
W211	19A137006P2	Jumper.
W214	19A129312G14	Antenna Cable.
W220	19B227931G2	Jumper.
W221	19B227931G4	Jumper.
W243		CABLE ASSEMBLY 19A129312G6
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J203		Connector. Includes:
	19A700067P1	Receptacle, coaxial: sim toAmphenol 83-798.
	4029082P2	Cover.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - -
P203	5491689P108	Plug. (Includes 10 inches of RF cable).
W244	5491689P104	Cable, RF: approx 4 inches long. (Includes J244).
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A134016P1	Insulator, bushing. (Used with Q215). (Not Used).
	19A116023P3	Insulator, plate. (Used with Q215). (Not Used).
	19C321982P1	Insulator. (Located under A201 & A202).
	19C321442P1	Insulator. (Located under A204-A206).
	19B219404G1	Shield electrical. (Located under FL201 casting).
	19D416275P2	Casting. (FL201).
	19D417513G1	PA Cover.
	19B226212G1	Heat sink. (The 3 center heat sinks on 75, 100, 110 WATT & the only 2 heat sinks on the 40, 65 WATT power amplifiers).
	19B226212G2	Heat sink. (Located on J243 end of the 75, 100, 110 WATT Power amplifiers - Quantity 1).
	19B226212G3	Heat sink. (Located on W241 end of the 75, 100, 110 WATT Power amplifiers - Quantity 1).
	7150186P127	Spacer. (Termination for L201 & W221).
	N529P18B6	Plug button. (Used when C298 is not used - Duplex).
	19A701863P13	Cable clip. (Located near J243 - Quantity 2).
	19B209268P113	Terminal, solderless: sim to AMP 2-34835-4. (Solders to C297-2).
	7491823P13	Terminal, solderless. (Used on power ground wire at PA).
	7139898P3	Nut, hex, brass: No. 1/4-28. (Secures C297 & C298).
	N80P13016B6	Machine screw, phillips head: No. 6-32 x 1. (Secures FL201 casting - Quantity 5).
	19B201074P308	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/2. (Located between FL201 casting and A204-A206 - Grounds FL201 shield).
	N44P9010B6	Machine screw: No. 4-40 x 5/8. (Secures Q1, Q2 on A201 & A202, Q1-Q3 on A204-A2060.
	19B201074P320	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1-1/4. (Secures L201 & W221 at spacer).
	19B201074P204	Tap screw, phillips POZIDRIV®: No. 4-40 x 1/4. (Secures J243 & J244).
	19B209103P410	Tap screw, hex head: No. 8-32 x 5/8. (Secures heat sinks).
	19B201074P306	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/8. (Secures cable clip loops and power ground terminal).
	19A134260P1	Insulator cover. (Used with Q215).
	4029974P1	Insulator, plate: aluminum. (Used with Q215).
	19A115222P3	Washer, shield. (Used with Q215).
	4036994P1	Terminal, solderless. (Used with Q215).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



CHANGES TO THIS DRAWING MAY AFFECT 19R622289, 19R622291

NOTES:

1. MICROSTRIP PART OF PCB.
2. INDICATES A-.
   INDICATES STATION GROUND.
3. PART OF PL19D424786.

ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K-1000 OHMS OR MEG-1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF-MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH-MILLIHENRYS OR H-HENRYS.

DESCRIPTION	PA ASSEMBLY	REV. LTR.	130WATT PA	REV. LTR.	LOW PASS FILTER	REV. LTR.
CONT. DUTY	19D424786G8		19D424266G2		19C327354G1	
CONT. DUTY WITH ANT. MATCHER	19D424786G9		19D424266G2		19C327354G2	

VOLTAGE READINGS

VOLTAGE READINGS ARE TYPICAL READINGS MADE WITH THE TRANSMITTER KEYED, AND MEASURED WITH A 20,000 OHMS-PER-VOLT METER WITH REFERENCE TO A- AND NOT CHASSIS GROUND. AN RF CHOKE (25-50 MICROHENRYS) IS USED IN THE HOT METER LEAD TO AVOID DETUNING RF CIRCUITS.

(19R601706, Rev. 1)

SCHEMATIC DIAGRAM

POWER AMPLIFIER 19D424786G8, G9
USED FOR COMBINING

PARTS LIST

138-174 MHz, 110 WATT POWER AMPLIFIER
A206 19D424266G1
A207 19D424266G2
ISSUE 6

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C1	19A700015P17	Teflon/Mica: 33 pF ±5%, 250 VDCW.
C2	19A116795P120J	Mica: 120 pF ±5%, 250 VDCW.
C3 and C4	19A700014P37	Metallized teflon: 220 pF ±5%, 250 VDCW.
C5	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C6	19A116795P100J	Mica: 100 pF ±5%, 250 VDCW.
C7	19A700015P16	Teflon/Mica: 30 pF ±5%, 250 VDCW.
C8	19A700015P31	Teflon/Mica: 120 pF ±5%, 250 VDCW.
C9	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C10	19A700014P35	Metallized teflon: 180 pF ±5%, 250 VDCW.
C11	19A700014P33	Metallized teflon: 150 pF ±5%, 250 VDCW.
C12	19A700015P41	Teflon/Mica: 330 pF ±5%, 250 VDCW.
C13	19A700015P36	Teflon/Mica: 200 pF ±5%, 250 VDCW.
C14 and C15	19A700014P35	Metallized teflon: 180 pF ±5%, 250 VDCW.
C16	19A700015P28	Teflon/Mica: 91 pF ±5%, 250 VDCW.
C17	19A700015P31	Teflon/Mica: 120 pF ±5%, 250 VDCW.
C18	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C19	19A700014P33	Metallized teflon: 150 pF ±5%, 250 VDCW.
C20	19A700014P35	Metallized teflon: 180 pF ±5%, 250 VDCW.
C21	19A700015P36	Teflon/Mica: 200 pF ±5%, 250 VDCW.
C22 and C23	19A700014P35	Metallized teflon: 180 pF ±5%, 250 VDCW.
C24	19A700015P28	Teflon/Mica: 91 pF ±5%, 250 VDCW.
C25	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C26	19A116080P107	Polyester: 0.1 uF ±10%, 50 VDCW.
C27	19A116655P13	Ceramic disc: 470 pF ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C28 and C29	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C30 and C31	19A116655P13	Ceramic disc: 470 pF ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C32	19A700015P41	Teflon/Mica: 330 pF ±5%, 250 VDCW.
C33	19A116080P107	Polyester: 0.1 uF ±10%, 50 VDCW.
C34	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C35	19A116655P13	Ceramic disc: 470 pF ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C36	19A116795P110J	Mica: 110 pF ±5%, 250 VDCW.
C37	19A700015P4	Teflon/Mica: 10 pF ±5%, 250 VDCW.
C38	5496218P648	Ceramic disc: 24 pF ±5%, 500 VDCW, temp. coef -470 PPM.
C39 thru C41	19A116192P2	Ceramic: 470 pF ±20%, 50 VDCW; sim to Erie 811-A050-W5R-471M.
C43	19A116080P107	Polyester: 0.1 uF ±10%, 50 VDCW.
C44	19A116655P13	Ceramic disc: 470 pF ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C45 thru C47	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C48 thru C54	19A116655P13	Ceramic disc: 470 pF ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C55	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C56	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C57	19A700015P32	Teflon/Mica: 130 pF ±5%, 250 VDCW.
C61	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C62	19A116795P39J	Teflon: 39 PF ±5%, 250 VDCW.
C63	19A116655P13	Ceramic disc: 470 pF ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C64*	19B209723P5	Tantalum: 15 uF ±20%, 20 VDCW. Added by REV A. Deleted by REV B.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1 and CR2	19A116052P2	Silicon, fast recovery; sim to Hewlett Packard 5082-2811.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J210	19B219374G1	Connector: 9 contacts.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19B227929P1	Coil.
L2	19A137008P1	Coil.
L3	19A701091G1	Coil.
L4	19A701420P5	Coil.
L5	19A701848P1	Coil.
L6 and L7	19A137007P1	Coil.
L8	19A129773G1	Coil.
L9		(Part of Printed Board 19D424265P1).
L10	19A136716P2	Coil.
L11	19A701420P4	Coil.
L12 and L13	19A137007P1	Coil.
L14	19A701091G1	Coil.
L15		(Part of Printed Board 19D424265P1).
L16	19A136716P2	Coil.
L17	19A701420P4	Coil.
L18 thru L20	19A700024P13	Coil, RF: 1.0 uH ±10%.
L21	19A129561P3	Coil.
L22	19A136533P2	Coil.
L23 and L24	19A701420P3	Coil.
L25 and L26	19B209420P101	Coil, RF: .10 uH ±10%, 0.8 ohms DC res max; sim to Jeffers 4416-1K.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R3	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R5	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R6 and R7	19A700109P1	Variable, cermet: 1K ohms ±20%, 1/4 w.
R8	19A700106P32	Composition: 51 ohms ±5%, 1/4 w.
R9	19A700106P35	Composition: 68 ohms ±5%, 1/4 w.
R12 and R13	19C850605P1	Shunt resistor.
		- - - - - - - - - TRANSFORMERS - - - - - - - - -
T1	19A701878G1	Coil.
		- - - - - - - - - - - CABLES - - - - - - - - - -
W1 thru W6		(Part of Printed Board 19D424265P1).
W7	19A137006P2	Jumper.
W8	19A137006P1	Jumper.
W9		(Part of Printed Board 19D424265P1).
W30 thru W32	19A701093P2	Strap.
		- - - - - - - - - - - NETWORKS - - - - - - - - -
Z1 thru Z3	19A137330G1	Filter. Includes:
L1	19A129773G5	Coil.
R1	3R78P100J	Resistor, composition: 10 ohms ±5%, 1 w.
Z4 and Z5	19A137332G1	Network, load. Includes:
C1	7489162P13	Silver mica: 27 pF ±5%, 500 VDCW; sim. to Sprague Type 118.
R1	3R79P240J	Composition: 24 ohms ±5%, 2 w.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B232325P1	Shield. (Located around R6 & R7).
	19A137331P1	Shield. (Located between C4 & C15).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter," which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

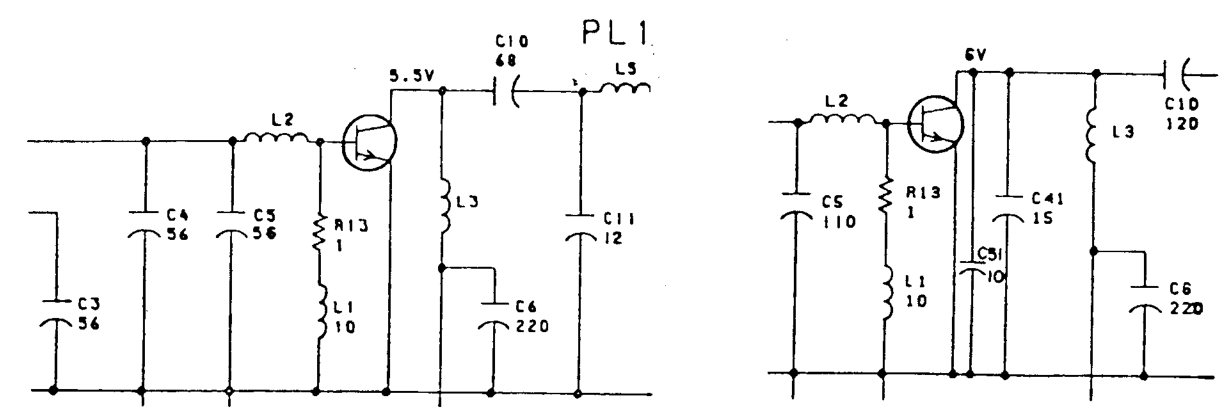
REV. A - 110 Watt Power Amplifier 19D424266G1, A206
To improve operation of power control circuit. Added C64.

REV. B - To delete components not required with improved power control IC. Deleted C64.

REV. A - 10 Watt Driver 19D424309G1
To improve operation when Solid State Scientific, Inc. (SSS) transistors are used for Q201. Delete C39. Change C11 and add L2.

REV. B - To improve operation when Communication Transistor Corp. (CTC) transistors are used for Q201. Delete C39, add L2. Changed C11 and added C51.

REV. C - To improve operation when TRW transistors are used for Q201. Deleted C51 and L2. Added C39 and changed C11.



REV. D - To improve performance. Changed R5.

REV. E - To improve operation of power control circuit. Added C51.

REV. F - To delete components not required with improved Power Control IC. Deleted C51.

REV. G - To connect polarity of C26. Reversed orientation of C26.

This addendum contains revision letter changes that have not yet been incorporated in the maintenance manual. A partial view of the Schematic Diagram incorporating the modification is shown below.

REV.J - <u>10 WATT POWER AMPLIFIER 19D424309G1</u>

To improve operation of power amplifier by modifying power control circuit to eliminate overshoot at key-on. Added one transistor, two resistors and two capacitors as identified below.

C44 - 19A704314P4: electrolytic: 47 µF, -10 +50%, 16 Vdcw.

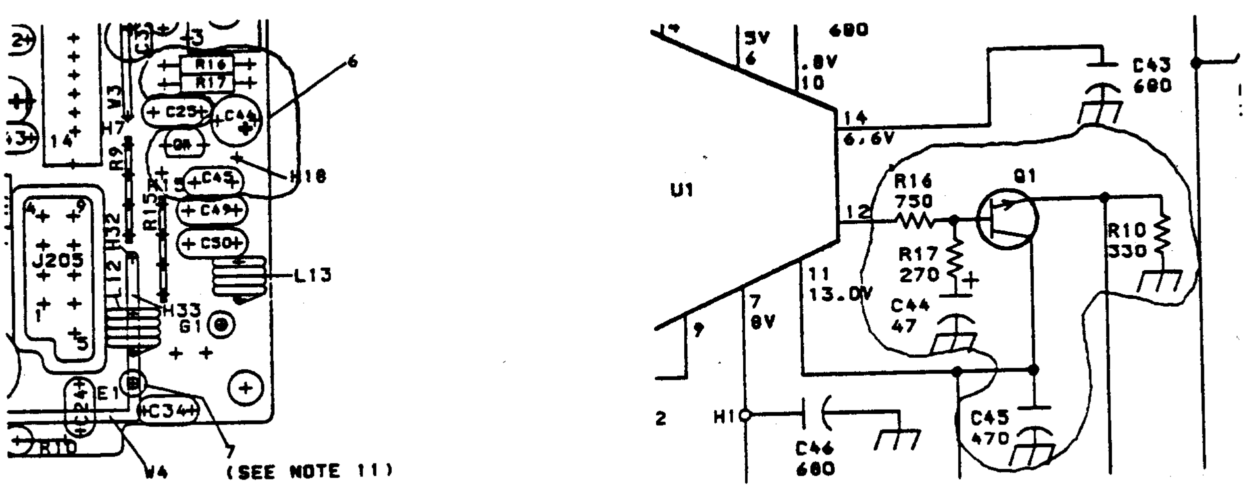
C45 - 19A701602P13: Ceramic: 470 pf ±20%,1000 Vdcw.

Q1 - 19A700023P1: Silicon, NPN; sim to 2N3904.

R16 - 19A700106P61: Composition: 820 ohms ±5%, 1/4 w.

R17 - 19A700106P49: Composition: 270 ohms ±5%, 1/4 w.

OUTLINE/SCHEMATIC DIAGRAM, PARTIAL



ADDENDUM NO 2 TO LBI-30739G
(PC05)
(PC67)

This addendum identifies revision letter changes not previously incorporated in this publication.

REV C - <u>110 WATT POWER AMPLIFIER 19D424266G1,2</u>
To improve reliability, changed Z2 and Z3.

Z2 and Z3 are 19B219649G3 Filter.

ADDENDUM NO. 3 TO LBI-30739G

This addendum incorporates a revision letter change to Power Amplifier Assembly 19D424786 into Maintenance Manual LBI-30739.

Rev. C - Power Amplifier Assembly 19D424786G4
Rev. D - Power Amplifier Assembly 19D424786G7
Rev. A - <u>Power Amplifier Assembly 19D424786G8 & G9</u>
To improve reliability. Changed power amplifier transistors Q204 and Q205 from 19A134387P1 to 19A134387P2

ADDENDUM NO. 4 TO LBI-30739G
(PCS3)
(PC61)

This addendum provides parts list changes that have not been put into the maintenance manual.

POWER AMPLIFIER 19D424786G4, 7, 8, 9

More rugged devices were selected for Q204 and Q205 to improve reliability.

Change from:

Q204 and Q205	19A134387P1	Silicon, NPN.

To:

Q204 and q205	19A134387P2	Silicon, NPN.