MOBILE RADIO

MAINTENANCE MANUAL

406—512 MHz, 40 WATT POWER AMPLIFIER ASSEMBLY

I9D424888G5-8, G22-25 AND G35, G36 (MOBILE & STATION)

I9D424895G5-8, G22-25 AND G36, G37 (CONTINUOUS DUTY STATION)

TABLE OF CONTENTS

DESCRIPTION

The PA assembly uses four RF power transistors to provide rated output power. R213, located on the PA module, is used to adjust the output power over a range of 12 Watts to rated output power. The power control circuit consists of R213, Q215, and Power Control IC (U201). Included in the PA assembly, is a Low Pass Filter/Antenna Switch module used to suppress undesired harmonic frequency components and provide antenna switching for the receiver and the transmitter.

SUPPLY VOLTAGE

Supply voltage for the PA is connected through power leads from the system board to feed through capacitors C297 and C298 on the bottom of the PA assembly (See Schematic Diagram). C297, C298, and C299 prevent RF from getting on the power leads. Diode CR295 will cause the main 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 on of the in-line fuses to blow.

Centralized metering jack J205 is provided for use with GE Test Set Model 4EX3A11 or Test Kit 4EX8K12. The Test Set meters the Ampl-1 drive (exciter output), power control voltage, PA current and PA voltage.

CIRCUIT ANALYSIS

RF POWER AMPLIFIER ASSEMBLY

The exciter output is coupled through a 50-ohm RF cable to the PA module input jack J201. The 50-ohm RF input is coupled through a matching network comprised of C206, C207, C208 and W202 to the base of power amplifier Q201.

Part of the RF input is rectified by CR201 and metered at J205-4 through resistor R201. The rectified RF is also applied to the power contol IC (U201).

Collector voltage for Q201 is applied direct from the DC power input through collector stabilizing network R205 and L202 and collector feed network L203 and C210.

The 500 milliwatt, 50-ohm output of Q201 is coupled to the base of a second power amplifier Q202 through a matching network consisting of T201, C214, C215, C216 and L204.

Collector voltage to Q202 is controlled by power control IC (U201), Q215 and R213 and is applied through a collector stabilizing network L206 and R206 and collector feed network L205 and C218.

The 6 Watt, 50-ohm output of Q202 is coupled to the base of Driver Amplifier

Q203 through C219 and the matching network of T202, C222, C224, C225 and L207. The collector voltage to Q203 is coupled through collector stabilizing network L209 and R214 and collector feed network L208 and C228.

The 20 Watt output of Q203 is coupled through an impedance matching network (C229, C230, C233 and T203) that matches the output impedance of Q203 to the input impedance of power amplifier Q204 through a 50-ohm micro strip (W204) and input impedance matching network T204, C234, C235 and C236.

The collector voltage for Q204 is coupled through collector stabilizing network L212 and R208 and collctor feed network C239 and L211. Supply voltage is measured in position F on the 15 volt range with the polarity switch in the (-) position (read as 15 Volts full scale).

Collector current for Q204 is metered across taped manganin resistor R212. The reading taken in position F on the 15 Volt scale with the High Sensitivity button pressed and read as 0-15 amperes full scale.

Following power amplifier Q204 to the 50-ohm input of the Low Pass Filter Module through 50-ohm micro stip W205 and a 50-ohm cable W218.

The input to the Low Pass Filter to the antenna switch K201 is coupled through the 50-ohm micro stirp W4280. The output is applied to the antenna at J203.

WARNING

The RF Power Transistor used in the transmitter contains Beryllium 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 PA module, consists of CR201, Power Control IC (U201), RT201, Q215 and R213.

When the transmitter is keyed, rectified RF from CR201 is applied to Switch Q1 of Power Control IC (U201), turning it on (See Figure 1). Turning on Q1 turns on voltage regulator Q2, supplying a constant voltage via Pin 14 to Power Adjust potentiometer R213. R213 through Pin 12 connect to the base of Q5. Q5. Q6 and Q215 operate as an amplifier chain to supply voltage to the collector of Q202 (Ampl-2). The setting of R213 determines the voltage applied to the base of Q5. The higher the voltage at the base of Q5, the harder the amplifiers conduct, supplying more collector voltage to Q202. The lower the voltage at the base of Q5, the less collector voltage is supplied to Q202. Reducing the supply voltage to Q202 reduces the drive to Q203 and Q204, thereby reducing the power output of the PA. The power output can be adjusted by R213 from 12 Watts to rated power output.

Temperature protection is provided by Q3, Q4 in IC U201 and thermistor RT201 which is mounted on the PA heatsink. Under normal operating conditions, the circuit is inactive (Q3 is on and Q4 is off). When the heatsink temperature reaches approximately 115°C the resistance of RT201 decreases. This increases the base voltage applied to Q3, turning it off. Turning off Q3 allows Q4 to turn on, decreasing the voltage at Power Adjust potentiometer R213. This reduces the base voltage to Q5 which causes Q6 and Q215 to conduct less, reducing the collector voltage to Q202 (Ampl-2). This reduces the transmitter output power, keeping the heatsink at a maximum of approximately 115°C. When the heatsink temperature decreases below 115°C, the temperature control circuit turns off, allowing the normal transmitter power output.

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 reflected Power. L1 may also be pushed toward or away from the filter cover wall 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.

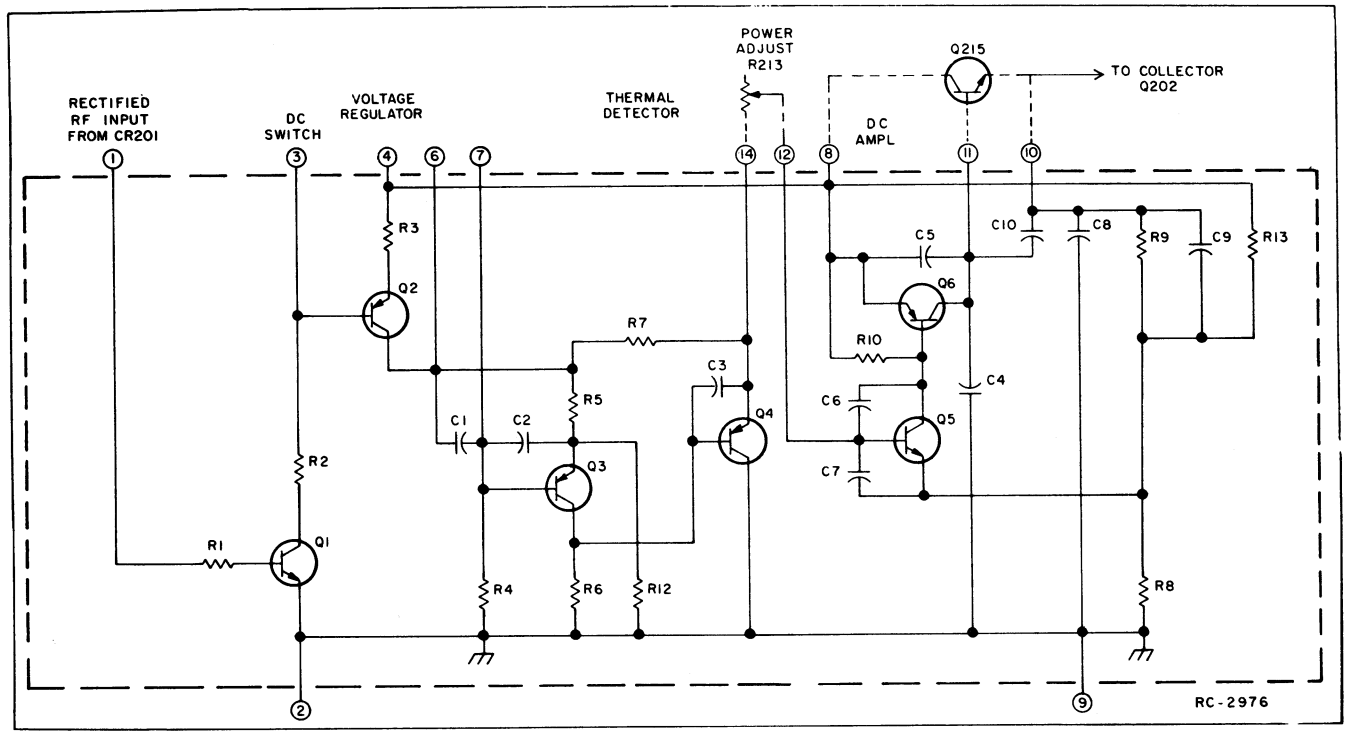
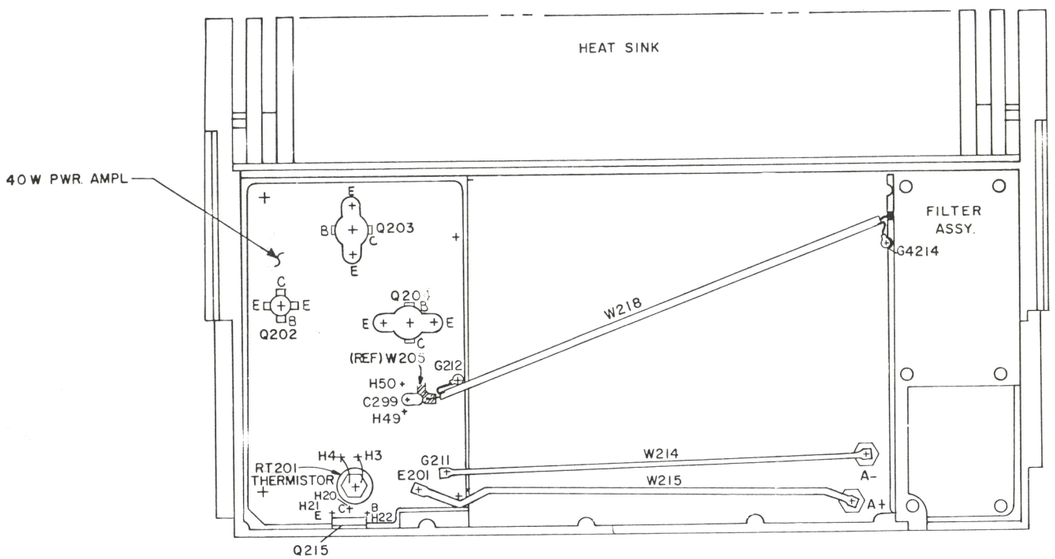


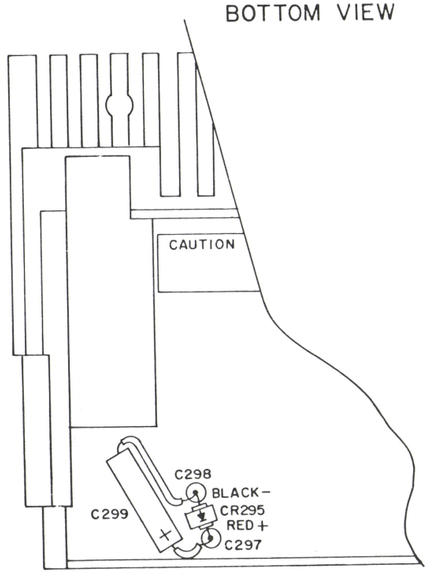
Figure 1 - Power Control IC - U201

PA ASSEMBLY

TOP VIEW



BOTTOM VIEW



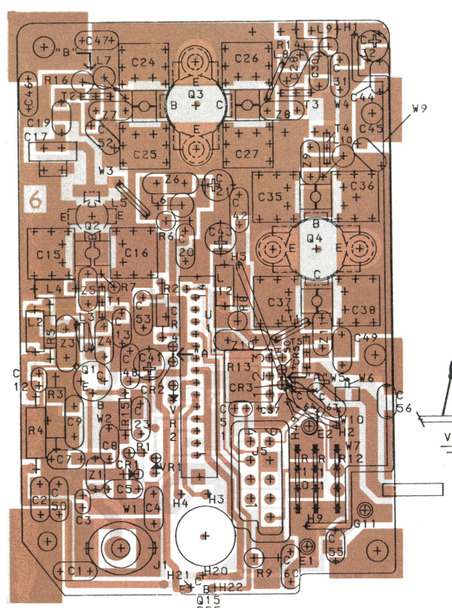
OUTLINE DIAGRAM

(19D424207, Rev. 3)

40 WATT POWER AMPLIFIER

40 WATT PA MODULE

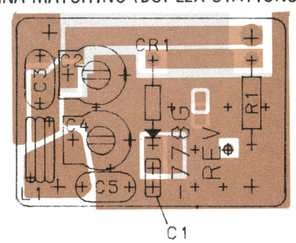
TOP



NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN.FOR COMPLETE DESIGNATION, PREFIX WITH 200 SERIES.EXAMPLE: C1-C201, R1-R201, ETC.
2. C9 USED IN GROUP 5 ONLY. DA JUMPER IN C9 MTG HOLESFOR GROUP 6, 7 & 8.
3. Q2,Q3 AND Q4 ARE PART OF HIGHER ASM (PA).

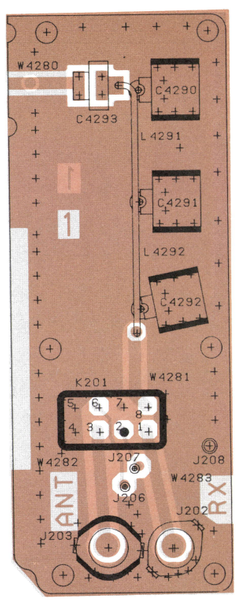
(19C327332, Rev. 14)
(19B226633, Sh. 1, Rev. 6)
(19B226633, Sh. 2, Rev. 3)

ANTENNA MATCHING (DUPLEX STATIONS) UNIT

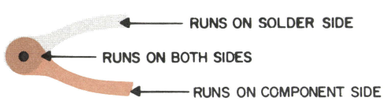


(19B233800, Rev. 0)
(19A143200, Sh. 1, Rev. 0)
(19A143200, Sh. 2, Rev. 0)

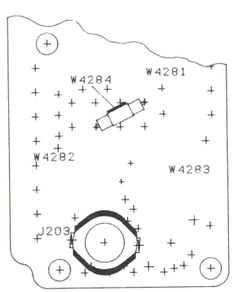
MOBILE & STATION FILTER BOARD



(19C327643, Rev. 1)
(19B227265, Sh. 1, Rev. 1)
(19B227265, Sh. 2, Rev. 1)

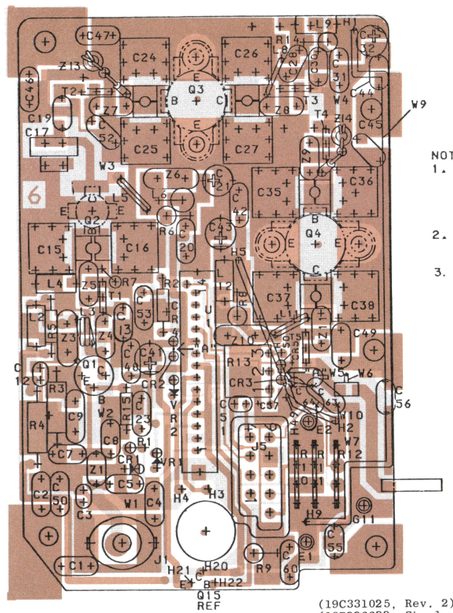


DUPLEX STATION FILTER BOARD

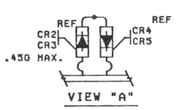


40 WATT PA MODULE

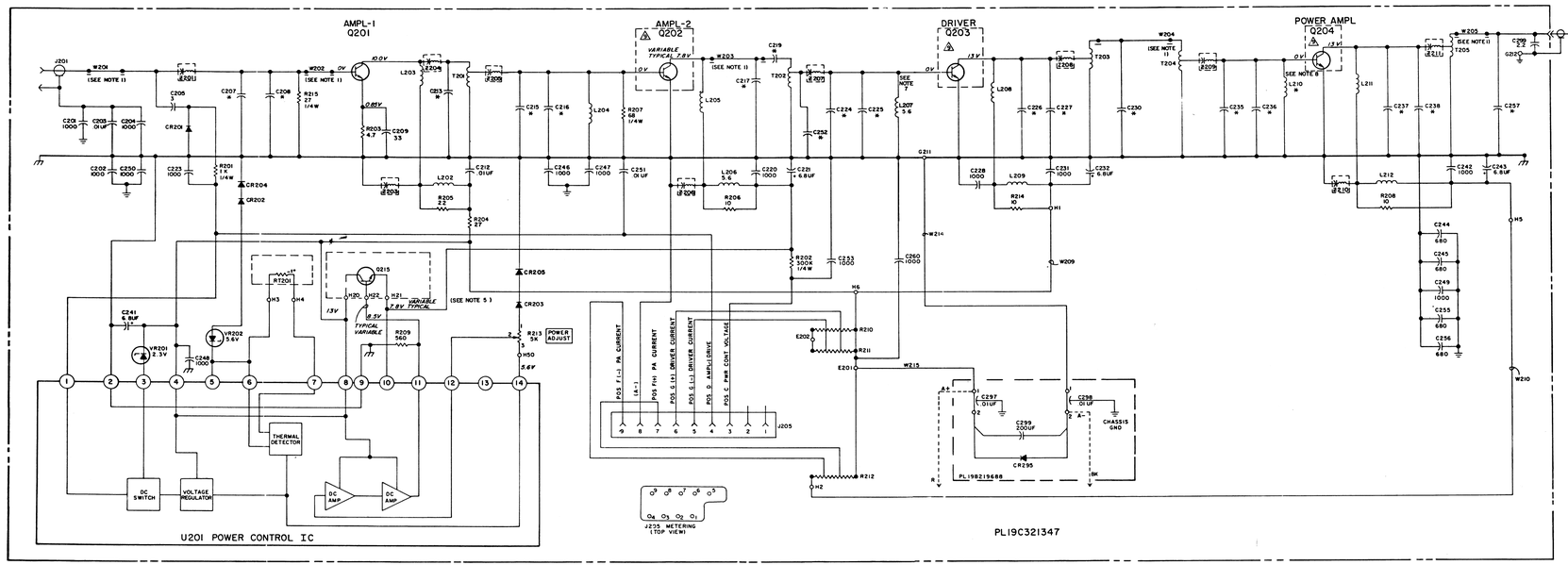
TOP



NOTES:
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN.FOR COMPLETE DESIGNATION, PREFIX WITH 200 SERIES.EXAMPLE: C1-C201, R1-R201, ETC.
2. C9 USED IN GROUP 5 ONLY. DA JUMPER IN C9 MTG HOLESFOR GROUP 6, 7 & 8.
3. Q2,Q3 & Q4 ARE PART OF NEXT HIGHER ASSEMBLY (PA).



(19C331025, Rev. 2)
(19B226633, Sh. 1, Rev. 6)
(19B226633, Sh. 2, Rev. 3)



NOTE:
CHANGES TO THIS DIAG MAY AFFECT 19R622150, 19R622152 19R622153, 19R622185, 19R622186, 19R622187, 19R622188.

* COMPONENT VALUES AS FOLLOWS

COMP IDENT	LL 406-450 MHZ	L 450-470 MHZ	M 470-494 MHZ	H 494-512 MHZ
C207	8	9	7	6
C208	8			
C215	5			
C215	47	47	43	43
C216	51	43	43	39
C217	18	16	15	13
C219	680	680	680	680
C224	41	35	35	32
C225	43	35	33	32
C226	47	43	37	35
C227	45	37	37	35
C236	47	39	33	33
C230	7	4	3	3
C235	47	37	35	33
C237	47	39	37	35
C238	47	43	43	39
C252	9	7	4	3
C257	5			
C4290	10	9	9	9
C4291	20	18	18	18
C4292	13	12	12	12
L210	15	5.6	5.6	5.6
Z205	X	X	X	X
Z 204	X	X	X	X
Z205	X	X	X	X
Z207	X	X	X	X
Z 208	X	X	X	X
Z209	X	X	X	X
Z210	X	X	X	X
Z211	X	X	X	X
Z213	X			
Z214	X			

PA ASSEMBLY		REV LTR	HEAT SINK ASM	REV LTR
STD PWB	PL19D424888G5	A	PL19B219688G7	
	PL19D424888G6	B	PL19B219688G7	
	PL19D424888G7	A	PL19B219688G7	
	PL19D424888G8	A	PL19B219688G7	
	PL19D424888G35	-	PL19B219688G7	
SYSTEM PWB	PL19D424888G22	A	PL19B219688G19	
	PL19D424888G23	B	PL19B219688G19	
	PL19D424888G24	A	PL19B219688G19	
	PL19D424888G25	A	PL19B219688G19	
	PL19D424888G36		PL19B219688G19	

40 WATT MODULE	REV LTR	FILTER MODULE	REV LTR	FREQUENCY	
PL19C321347G5	N	PL19C327024G1		406-420 MHZ	STD PWB
PL19C321347G6	M	PL19C327024G2		450-470 MHZ	
PL19C321347G7	H	PL19C327024G2		470-494 MHZ	
PL19C321347G8	H	PL19C327024G2		494-512 MHZ	
PL19C321347G9	F	PL19C327024G1		420-450 MHZ	SYSTEM PWB
PL19C321347G5	N	PL19C327024G1		406-420 MHZ	
PL19C321347G6	M	PL19C327024G2		450-470 MHZ	
PL19C321347G7	H	PL19C327024G2		470-494 MHZ	
PL19C321347G8	H	PL19C327024G2		494-512 MHZ	
PL19C321347G9	F	PL19C327024G1		420-450 MHZ	

ALL RESISTORS ARE 1/2 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.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

VOLTAGE READINGS

VOLTAGE READINGS ARE TYPICAL READINGS MADE WITH 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 Q202 COLLECTOR AND IN THE POWER CONTROL CIRCUIT WERE TAKEN WITH THE TRANSMITTER ADJUSTED FOR 40 WATTS OUTPUT. THESE READINGS WILL VARY DEPENDING ON THE SETTING OF POWER ADJUST CONTROL R213.

NOTES:
1. MICROSTRIP PART OF PWB.
2. ALL COMPONENTS MARKED WITH (M) ASTERISK, SEE COMPONENT VALUE TABLE.
3. INDICATES A-
   INDICATES VEHICLE GROUND.
4.
5. R216 USED ONLY IN 450-470MHZ RANGE.
6. C252 NOT USED IN PL19C321347G9.

Z. ON PL19C321347G5 DELETE L207 & ADD Z213.
B. ON PL19C321347G9 DELETE L210 & ADD Z214.
A PART OF NEXT LEVEL HIGHER ASM. (PA)

SCHEMATIC DIAGRAM

40 WATT POWER AMPLIFIER

PARTS LIST

LBI30214H

406-512 MHz, 40 WATT POWER AMPLIFIER
19D424888G5-G8, G35 ("M" SERIES MOBILE, INT. DUTY STATION)
19D424888G22-G25, G36 ("E" SERIES MOBILE)

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C299*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Added to G6 & G23 by REV B.
		- - - - - - - - - - TERMINALS - - - - - - - - - -
G212	7878455P2	Solderless terminal.
G4214	7878455P2	Solderless terminal.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q202	19A134164P2	Silicon, NPN; sim to Type 2N5945.
Q203LL	19A134239P3	Silicon, NPN.
Q203L	19A134239P1	Silicon, NPN.
Q203M	19A134239P1	Silicon, NPN.
Q203H	19A134239P1	Silicon, NPN.
Q204LL	19A134242P3	Silicon, NPN.
Q204L	19A134242P3	Silicon, NPN.
Q204H	19A134242P4	Silicon, NPN; 50 Watt.
Q215	19A116753P1	Silicon, NPN.
		- - - - - - - - - - THERMISTORS - - - - - - - - - -
RT201	19A129379G1	Thermistor: 40K ohms ±20%, color code white; sim to Carborundum Type M0806J-5.
		- - - - - - - - - - CABLES - - - - - - - - - -
W214	19B226725G1	Jumper.
W215	19B227074G1	Jumper.
W218	19A130552G1	Jumper.
		40 WATT MODULE 19C321347G5 406-420 MHz (LL) 19C321347G6 450-470 MHz (L) 19C321347G7 470-494 MHz (M) 19C321347G8 494-512 MHz (H) 19C321347G9 420-450 MHz (LL)
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C201 and C202	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C203	19A116192P1	Ceramic: 0.01 uF ±20%, 50 VDCW; sim to Erie 8121 SPECIAL.
C204	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C205	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C206*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G5 by REV L. Deleted in G6 by REV K. Delted in G7, G8 by REV H. Deleted in G9 by REV D.
		In 19C321347G5 off REV E & earlier: In 19C321347G6,G7,G8 REV C & earlier:
	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C207LL	19A116656P8J0	Ceramic disc: 8 pF ±0.5 pF, 500 VDCW; temp coef 0 PPM.
C207L*	19A116656P9J0	Ceramic disc: 9 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV D & earlier:
	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C207M*	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV E & earlier:
	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C207H	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C208LL	19A116656P8J0	Ceramic disc: 8 pF ±0.5 pF, 500 VDCW; temp coef 0 PPM.
C208L*	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV E.
C208M*	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV F.
C208H*	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV F.
C209*	19A116656P33J0	Ceramic disc: 33 pF ±5%, 500 VDCW, temp coef 0 PPM. Added to G5 by REV G, G6 by REV E, G7 & G8 by REV F.
C209LL*	7489162P15	Silver mica: 33 pF ±5%, 500 VDCW; sim. to Sprague Type 118. Deleted by REV C. Added by REV D. Deleted by REV G.
C209L*	7489162P11	Silver mica: 22 pF ±5%, 500 VDCW; sim to Sprague Type 118. Deleted by REV C.
C209M*	7489162P11	Silver mica: 22 pF ±5%, 500 VDCW; sim to Sprague Type 118. Deleted by REV C.
C209H*	7489162P13	Silver mica: 27 pF ±5%, 500 VDCW; sim. to Sprague Type 118. Deleted by REV C.
C210LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C210L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C210M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C210H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C211LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C211L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C211M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C211H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C212	19A116192P1	Ceramic: 0.01 uF ±20%, 50 VDCW; sim to Erie 8121 SPECIAL.
C213*	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV B.
C213LL*	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Added by REV E. Deleted by REV M. Added by REV N.
C214LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C214L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C214M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C214H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C215LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C215L	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C215M	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C215H	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C216LL	19A700131P51	Metallized teflon: 51 pF ±2%, 250 VDCW, temp coef -130 PPM
C216L	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C216M	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C216H	19A700131P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
C217LL	19A116679P18D	Metallized teflon: 18 pF ±0.5 pF, 250 VDCW.
C217L	19A116679P16D	Metallized teflon: 16 pF ±0.5 pF, 250 VDCW.
C217M	19A116679P15D	Metallized teflon: 15 pF ±0.5 pF, 250 VDCW.
C217H	19A116679P13D	Metallized teflon: 13 pF ±0.5 pF, 250 VDCW.
C218*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G5 by REV L. Deleted in G6 by REV K. Deleted in G7, G8 by REV H. Deleted in G9 by REV D.
C219*	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap. Deleted in G6 by REV J. Addeed to G6 by REV M.
C219L*	19A116656P24J0	Ceramic disc: 24 pF ±5%, 500 VDCW, temp coef 0 PPM. Added to G6 by REV J. Deleted in G6 by REV M.
C220	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C221	19B209723P4	Tantalum: 6.8 uF ±20%, 35 VDCW.
C222LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C222L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C222M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C222H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C223	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C224LL	19A700131P41	Metallized teflon: 41 pF ±2%, 250 VDCW, temp coef 0 -130 PPM.
C224L	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C224M	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C224H	19A700131P32	Metallized teflon: 32 pF ±2%, 250 VDCW.
C225LL	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C225L	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C225M	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C225H	19A700131P32	Metallized teflon: 32 pF ±2%, 250 VDCW.
C226LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C226L	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C226M	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C226H	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C227LL	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C227L	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C227M	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C227H	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C228	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C229LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C229L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C229M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C229H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C230LL*	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In G5 of REV M & earlier: In G9 of REV E & earlier:
	19A116656P8J0	Ceramic disc: 8 pF ±0.5 pF, 500 VDCW; temp coef 0 PPM.
C230L*	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV L.
C230M	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C230H	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C231	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C232	19B209723P4	Tantalum: 6.8 uF ±20%, 35 VDCW.
C233L*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Deleted by REV B.
C233H*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Deleted by REV B.
C234LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C234L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C234M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C234H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C235LL*	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
		In G5 of REV M & earlier: In G9 of REV E & earlier:
	19A116952P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C235L	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C235M	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C235H	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C236LL*	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
		In G5 of REV M & earlier: In G9 of REV E & earlier:
	19A116952P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
C236L	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C236M	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C236H	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C237LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C237L*	19A700131P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
		In REV K & earlier:
	19A116952P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C237M	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C237H*	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
		In REV D & earlier:
	19A116952P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C238LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C238L	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C238M*	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
		In REV D & earlier:
	19A116952P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C238H*	19A700131P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
		In REV D & earlier:
	19A116952P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C239*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted from G5 by REV H.
C239LL*	7489162P13	Silver mica: 27 pF ±5%, 500 VDCW; sim. to Sprague Type 118. Added to G5 by REV H. Deleted in G5 by REV L. Deleted in G9 by REV D.
C240LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C240L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C240M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C240H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C241	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C242	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C243	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C244 and C245	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C246 thru C250	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C251	19A116192P1	Ceramic: 0.01 uF ±20%, 50 VDCW; sim to Erie 8121 SPECIAL.
C252LL*	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV H-L:
	19A116656P9J0	Ceramic disc: 9 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV B-G.
	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV A & earlier:
	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C252L*	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV L:
	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV J-K:
	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV B-H:
	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C252M*	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Added by REV B.
C252H*	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Added by REV B.
C253	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C255 and C256	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C257LL*	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV M:
	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV L & earlier:
	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C257L*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Deleted by REV B.
C257M*	19A134100P19	Ceramic disc: 1 pF ±0.1 pF, temp coef 0 ±250 PPM. Deleted by REV B.
C257H*	19A134100P19	Ceramic disc: 1 pF ±0.1 pF, temp coef 0 ±250 PPM. Deleted by REV B.
C260	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C262*	19A116114P2044	Ceramic: 27 pF ±5%, 100 VDCW; temp coef -80 PPM. Added to G6 by REV F. Deleted by REV G.
C263* and C264*	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap. Added to G5 by REV K. Added to G6 by REV H. Added to G7 & G* by REV G. Added to G9 by REV C.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR201	19A116052P1	Silicon, hot carrier: Fwd drop .350 volts max.
CR202 thru CR205	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - - - - - - TERMINALS - - - - - - - - - -
E201 and E202	19A134263P1	Contact, electrical: sim to Selectro 229-1082-00-0-590.
G211	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 - - - - - - - - - -
L202	19A701091G1	Coil.
L203	19A129774P1	Coil.
L204	19A701091G1	Coil.
L205	19B219457P6	Coil.
L206	19A700000P120	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4422-1K.
L207*	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K. Deleted in G5 by REV M, G9 by REV E.
L208LL	19B219457P6	Coil.
L208L	19A130650P1	Coil.
L208M	19A130650P1	Coil.
L208H	19A130650P1	Coil.
L209	19A701091G1	Coil.
L210LL*	19A700000P25	Coil, RF: 15 uH ±10%; sim to Jeffers 4421-9K. Deleted by REV M.
L210L	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K.
L210M	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K.
L210H	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K.
L211	19B219457P6	Coil.
L212	19A701091G1	Coil.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q201	19A134237P1	Silicon, NPN.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R201	19A700106P63	Composition: 1K ohms ±5%, 1/4 w.
R202	3R152P304J	Composition: 300K ohms ±5%, 1/4 w.
R203*	19A700113P7	Composition: 4.7 ohms ±5%, 1/2 w. Deleted by REV C. Added by REV D.
R204*	19A700113P25	Composition: 27 ohms ±5%, 1/2 w.
		In REV B & earlier:
	3R77P220J	Composition: 22 ohms ±5%, 1/2 w.
R205	19A700106P23	Composition: 22 ohms ±5%, 1/4 w.
R206	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R207	19A700106P35	Composition: 68 ohms ±5%, 1/4 w.
R208	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R209	19A700113P57	Composition: 560 ohms ±5%, 1/2 w.
R210 thru R212	19C850605P1	Shunt resistor.
R213	19A116559P102	Variable cermet: 5000 ohms ±20%, 1/2 w; sim to CTS Series 360.
R214	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R215	19A700106P25	Composition: 27 ohms ±5%, 1/4 w.
R216*	19A700113P15	Composition: 10 ohms ±5%, 1/2 w. Added to G6 by REV F. Deleted by REV L.
		- - - - - - - - - - TRANSFORMERS - - - - - - - - - -
T201 thru T205	19A130446G1	Coil.
		- - - - - - - - - INTEGRATED CIRCUITS - - - - - - -
U201	19D423127G1	Power Control.
		- - - - - - - - VOLTAGE REGULATORS - - - - - - -
VR201	4036887P1	Zener: 500 mW, 2.3 v. nominal.
VR202	4036887P5	Zener: 500 mW, 5.4 v. nominal.
		- - - - - - - - - - - CABLES - - - - - - - - - -
W201 thru W205		(Part of printed board 19D423005P1).
W206	19A701093P1	Strap.
W209	19B226733G1	Jumper.
W210	19B226734G1	Jumper.
		- - - - - - - - - - - NETWORKS - - - - - - - - -
Z201*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z203LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z203L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z203M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z203H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z204LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z204L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z204M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z204H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z205LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z205L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z205M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z205H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z206*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z207LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G6 by REV L. Added to G9 by REV D.
Z207L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z207M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z207H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z208LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z208L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z208M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z208H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z209LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z209L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z209M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z209H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z210*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z211LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z211L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z211M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z211H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z212*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z213* and Z214*		NETWORK ASSEMBLY 19A143581G1 (Added to G5 by REV M, G9 by REV E)
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A700024P1	Coil, RF: 100 nH ±10%, 0.08 ohms DC res max, 100 v.
L2	19A701091G2	Coil.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	19A700106P15	Composition: 10 ohms ±5%, 1/4 w.
		LOW PASS FILTER 19C327024G1 406-450 MHz (LL) 19C327024G2 450-512 MHz (H) (Added to 190424888 by REV A)
K201	19A116722P1	- - - - - - - - - - RELAYS - - - - - - - - - - Hermetic sealed: 125 ohms ±20%, 1 form C contact, 9.6 to 15.8 VDC (over the temp range indicated). (Includes J206 & J207).
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C4290LL	19A700014P4	Metallized teflon: 10 pF ±5%, 250 VDCW.
C4290H	19A700131P9	Metallized teflon: 9 pF ±0.5 pF, 250 VDCW.
C4291LL	19A700131P20	Metallized teflon: 20 pF ±0.5 pF, 100 VDCW.
C4291H	19A700131P18	Metallized teflon: 18 pF ±0.5 pF, 250 VDCW.
C4292LL	19A700131P13	Metallized teflon: 13 pF ±0.5 pF, 250 VDCW.
C4292H	19A700131P12	Teflon: 12 pF ±0.5 pF, 250 VDCW.
C4293	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C297 and C298	19A116708P1	Ceramic, feed-thru: 0.01 uF +100%-0%; sim to Erie Style 327050E+80103P.
C299	19A115686P10	Electrolytic: 220 uF +150%-10%, 18 VDCW; sim to Mallory Type TTX.
		- - - - - - - - - - DIODES AND RECTIFIERS - - - - - - - - - -
CR295	19A116783P1	Rectifier, silicon: 100 VDC blocking, 6 amps.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	5492178P2	Washer, spring tension: sim to Wallace Barnes 375-20. (Used with Q202).
	19A702182P1	Spacer. (Used with Q202).
	19A703792P5	Nut, hex, brass: No. 8-32. (Used with Q202).
	R449P010C8	Machine screw: No. 4-40 x 5/8. (Used with Q203, Q204).
	19A700068P1	Insulator, bushing. (Used with Q215).
	19A116023P1	Insulator, plate. (Used with Q215).
	19B201074P312	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/4. (Secures Mobile Filter Assembly).
	19B201074P306	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/8. (Secures Filter Board).
	19C321441P1	Insulator. (Located under 40 watt Module).
	19D416732G7	Heat sink. ("M" SERIES).
	19D417100G7	Heat sink. ("E" SERIES).
	19A139639P1	Cover, Heat Sink Assembly. ("E" SERIES).
	19A701332P4	Insulator, washer: nylon. (Used with Q201).
	N8OP9006C6	Machine screw: No. 4-40 x 3/8. (Secures Q215 in Mobile).
	7141225D2	Hex nut: No. 4-40. (Secures Q215).
	N403P35C6	Washer, steel: No. 4. (Secures Q215).
	N8OP13010C6	Machine screw: No. 6-32 x 5/8. (Secures Mobile 40 Watt Module).

SYMBOL	GE PART NO.	DESCRIPTION
J206 and J207		(Part of K201).
J208 *	4033513P4	Contact, electrical: sim to Bead Chain LS3-3.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K201	19A116722P1	Hermetic sealed: 125 ohms ±20%, 1 form C contact, 9.6 to 15.8 VDC (over the temp range indicated). (Includes J206 & J207).
		- - - - - - - - - - CABLES - - - - - - - - - -
W4280 thru W4283		(Part of printed board 19D423381P1).
		HEAT SINK 19D219698G7 "M" SERIES 19D219698G19 "E" SERIES
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C297 and C298	19A116708P1	Ceramic, feed-thru: 0.01 uF +100%-0%; sim to Erie Style 327050E+80103P.
C299	19A115686P10	Electrolytic: 220 uF +150%-10%, 18 VDCW; sim to Mallory Type TTX.
		- - - - - - - - - - DIODES AND RECTIFIERS - - - - - - - - - -
CR295	19A116783P1	Rectifier, silicon: 100 VDC blocking, 6 amps.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	5492178P2	Washer, spring tension: sim to Wallace Barnes 375-20. (Used with Q202).
	19A702182P1	Spacer. (Used with Q202).
	19A703792P5	Nut, hex, brass: No. 8-32. (Used with Q202).
	R449P010C8	Machine screw: No. 4-40 x 5/8. (Used with Q203, Q204).
	19A700068P1	Insulator, bushing. (Used with Q215).
	19A116023P1	Insulator, plate. (Used with Q215).
	19B201074P312	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/4. (Secures Mobile Filter Assembly).
	19B201074P306	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/8. (Secures Filter Board).
	19C321441P1	Insulator. (Located under 40 watt Module).
	19D416732G7	Heat sink. ("M" SERIES).
	19D417100G7	Heat sink. ("E" SERIES).
	19A139639P1	Cover, Heat Sink Assembly. ("E" SERIES).
	19A701332P4	Insulator, washer: nylon. (Used with Q201).
	N8OP9006C6	Machine screw: No. 4-40 x 3/8. (Secures Q215 in Mobile).
	7141225D2	Hex nut: No. 4-40. (Secures Q215).
	N403P35C6	Washer, steel: No. 4. (Secures Q215).
	N8OP13010C6	Machine screw: No. 6-32 x 5/8. (Secures Mobile 40 Watt Module).
		LOW PASS FILTER MODULE 19C321424G1 450-450 MHZ (LL) 19C321424G2 450-512 MHZ (H) (Deleted on 190424888 by REV A)
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C4280LL	19A700014P4	Metallized teflon: 10 pF ±5%, 250 VDCW.
C4280H	19A700131P9	Metallized teflon: 9 pF ±0.5 pF, 250 VDCW.
C4281LL	19A700131P20	Metallized teflon: 20 pF ±0.5 pF, 100 VDCW.
C4281H	19A700131P18	Metallized teflon: 18 pF ±0.5 pF, 250 VDCW.
C4282LL	19A700131P13	Metallized teflon: 13 pF ±0.5 pF, 250 VDCW.
C4282H	19A700131P12	Teflon: 12 pF ±0.5 pF, 250 VDCW.
C4283LL	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
C4283H	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L4281	19B209709G1	Jumper. (450-512 MHz).
L4282	19B209709G2	Jumper. (406-450 MHz).
		- - - - - - - - - - JACKS AND RECEPTACLES - - - - - - - - - -
J202 and J203	19A700049P2	Connector, receptacle; 500 VDCW maximum; sim to NTTP-1058.

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 - PA Assembly 190424888G5-G8, G23-G35
To incorporate new low-pass filter. Deleted 19C321424, Added 19C327024.

REV. A - 40 Watt Module 19C321347G5-G8
To improve power output at cold temperatures. Added CR204 & CR205.

REV. B - 40 Watt Module 19C321347G5-G8
To improve operation.
In 19C321347G5: deleted C213 and changed C232LLB.
In 19C321347G6: deleted C233L, C237L and added C232LB.
In 19C321347G7: deleted C237H and added C232HB.
In 19C321347G8: deleted C233H, C237H and added C232HB.

REV. C - 40 Watt Module 19C321347G5-G8
To improve operation. Deleted C209 and R203. Changed R204.

REV. D - 40 Watt Module 19C321347G5
To improve operation. Added C209 and R203.

REV. E - 40 Watt Module 19C321347G5
To improve station operation. Added C213.

REV. D - 40 Watt Module 19C321347G6-G8
To improve operation. Changed C206.

REV. F - 40 Watt Module 19C321347G5
To improve operation. Changed C206.

REV. E - 40 Watt Module 19C321347G7, G8
To improve RF output and efficiency. Changed C237 (Group 8) and C238 (Groups 7 & 8).

REV. G - 40 Watt Module 19C321347G5
REV. E - 40 Watt Module 19C321347G6

REV. F - 40 Watt Module 19C321347G7, G8
To decrease spurious outputs. Changed C207L, M and C209. Deleted C206L, M, H. Added R203 to Groups 6, 7 and 8.

REV. H - 40 Watt Module 19C321347G5
To increase output at 406 MHz. Changed C232LLB. Deleted C239. Added C239LLB.

REV. J - To improve stability. Changed Q203LL.

REV. F - 40 Watt Module 19C321347G6
To improve stability. Added R216 and C262.

REV. G - To improve operation. Deleted C262.

REV. A - 40 Watt Module 19C321347G9
To improve operation. Added C240LL.

REV. B - To improve stability. Changed Q203LL.

REV. K - 40 Watt Module 19C321347G5
REV. H - 40 Watt Module 19C321347G6
REV. G - 40 Watt Module 19C321347G7
REV. G - 40 Watt Module 19C321347G8

REV. C - 40 Watt Module 19C321347G9
To improve operation of power regulator circuit when used as driver for 100 Watt PA. Added C240 and CR44.

REV. J - 40 Watt Module 19C321347G6
To increase output power at low end of 450-470 MHz range. Changed C232.

REV. L - 40 Watt Module 19C321347G5
REV. K - 40 Watt Module 19C321347G6
REV. H - 40 Watt Module 19C321347G7
REV. H - 40 Watt Module 19C321347G8
REV. D - 40 Watt Module 19C321347G9
To incorporate new nomenclature for frequency selection networks.

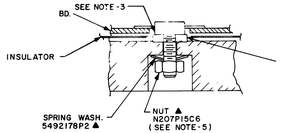
REV. B - PA Assembly 190424895G6, G23
To improve power output. Added C299.

REV. M - 40-Watt Module 19C321347G5
REV. E - 40-Watt Module 19C321347G6
To improve power output across the board. Deleted C213LL, L207, and L210LL. Added 2213 and 2214. Changed C297LL, C252LLB (Group 5 only), and Q203LLB.

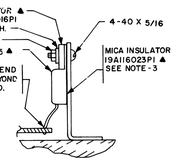
REV. N - 40-Watt Module 19C321347G5
REV. F - 40-Watt Module 19C321347G6
To improve power output. Changed C230LL, C235LL, C236LL and C297LL. Added C213LL.

REV. L - 40-Watt Module 19C321347G6
To increase power output. Changed C252LB and C237. Deleted R216 and C230.

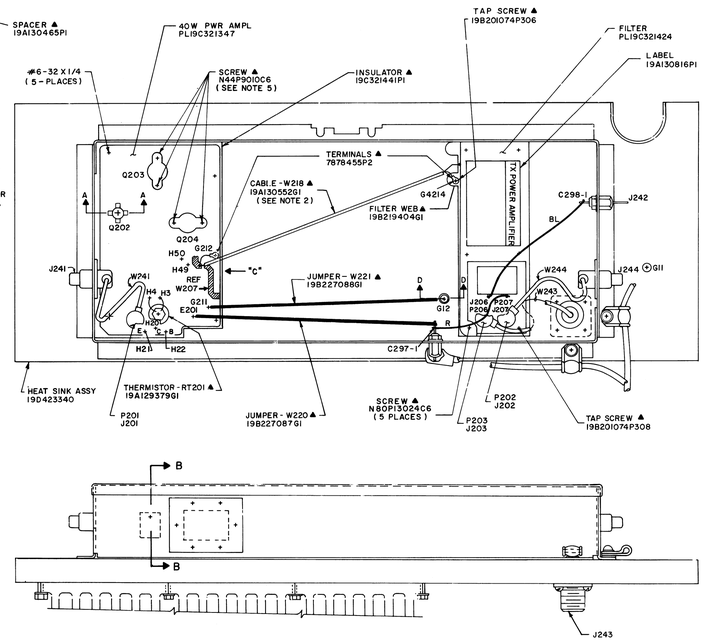
REV. M - 40-Watt Module 19C321347G6
To improve power output over the 450-470 MHz range. Changed C219L and C252L.



SECTION A-A
TYP MTG FOR Q202
(SEE NOTE 3)



SECTION B-B



(190423350, Sh. 2, Rev. 5)

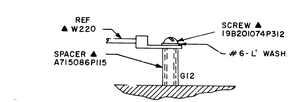
LBI30213

40W UHF PA

NOTES:

1. ▲ PART OF KIT 19A130484.
2. CENTER CONDUCTOR OF W218 MUST BE SOLDERED TO W205 IN AREA INDICATED. NOTE: GROUND BRAID OF W218 MUST NOT TOUCH GROUND ON 40W MODULE (19C321347).
3. APPLY SILICONE GREASE TO BOTH SURFACES OF TRANSISTOR INSULATOR (19A116023P1), BETWEEN BOTH MTG SURFACES OF SPACER (19A130465P1) & BETWEEN MTG. SURFACE OF RT201 Q203, Q204 & HEAT SINK PER CPD PROCESS P6A-EA111. CARE MUST BE USED SO THAT NO GREASE IS APPLIED TO THE THREADED PORTION OF THE MTG. STUD OF Q202.
4. SOLDER ALL ELECTRICAL CONNECTIONS.
5. TIGHTEN TRANSISTOR MTG. HARDWARE TO WITHIN 8 ± 1 IN-LBS. FOR #8 HARDWARE & 6 ± 1 IN. LBS. FOR #4 HARDWARE.
6. RECOMMENDED INSTALLATION PROCEDURE OF 40 WATT MODULE (19C321347) IS: ASSEMBLE ALL HARDWARE LOOSE THEN TORQUE Q202, THEN TORQUE Q203 AND Q204 THEN TIGHTEN MOUNTING HARDWARE.
7. SEE INTERCONNECTION DIAG 19B622186.

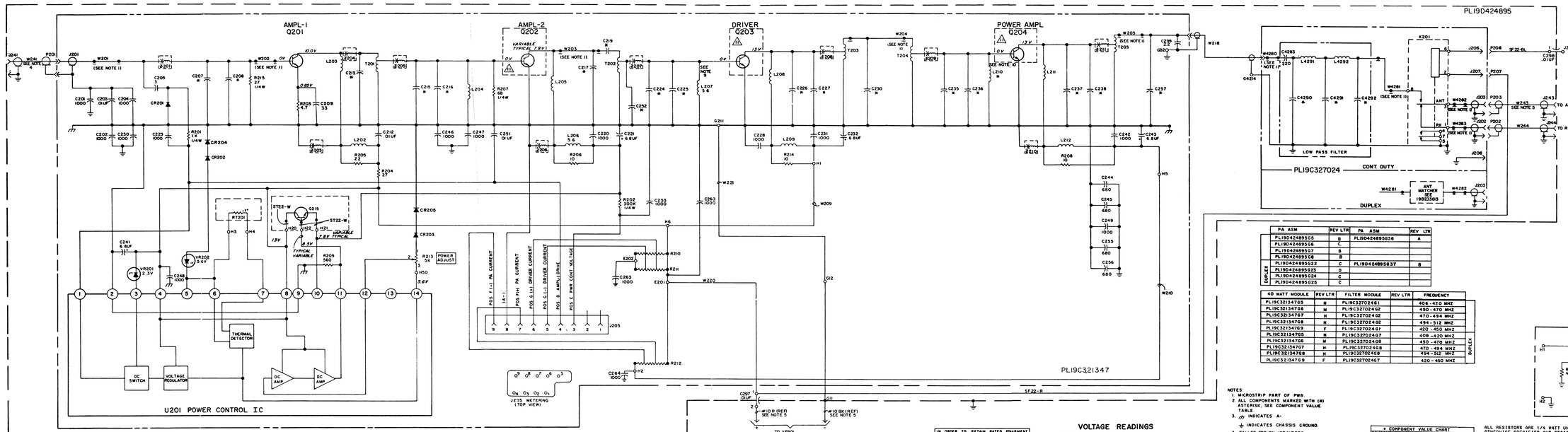
VIEW "C"



SECTION D-D

OUTLINE DIAGRAM

CONTINUOUS DUTY STATION POWER AMPLIFIER AND ANTENNA MATCHING UNIT



SCHEMATIC DIAGRAM

CONTINUOUS DUTY STATION POWER AMPLIFIER
AND ANTENNA MATCHING UNIT

(198622186, Rev. 34)

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

ALL RESISTORS ARE 1/8 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.

VOLTAGE READINGS

VOLTAGE READINGS ARE TYPICAL READINGS MADE WITH TRANSMITTER KEYED AND MEASURED WITH A 20,000 OHMS-PER-VOLT METER WITH REFERENCE TO A- AND NOT CHASSIS GROUND AN RF CHOKE (125-150 MICROHENRYS) IS USED IN THE HOT METER LEAD TO AVOID DETUNING RF CIRCUITS. NOTE READINGS AT Q202 COLLECTOR AND IN THE POWER CONTROL CIRCUIT WERE TAKEN WITH THE TRANSMITTER ADJUSTED FOR 40 WATT OUTPUT. THESE READINGS WILL VARY DEPENDING ON THE SETTING OF POWER ADJUST CONTROL R213.

※COMPONENT VALUES AS FOLLOWS

COMP IDENT	LL 406-450 MHZ	L 450-470 MHZ	M 470-494 MHZ	H 494-512 MHZ
C207	8	9	7	6
C208	8			
C213	5			
C215	47	47	43	43
C216	51	43	43	39
C217	18	18	15	12
C219	680	680	680	680
C224	41	35	35	32
C225	43	35	33	32
C226	47	43	37	35
C227	43	37	37	35
C230	7		4	3
C235	47	37	35	33
C236	47	35	33	33
C237	47	39	37	35
C238	47	43	43	39
C252	9	7	4	3
C257	5			
C4290	10	9	9	9
C4291	20	18	18	18
C4292	13	12	12	12
L210	15	5.6	5.6	5.6
#203	X	X	X	X
#204	X	X	X	X
#205	X	X	X	X
#207	X	X	X	X
#208	X	X	X	X
#209	X	X	X	X
#210	X	X	X	X
#211	X	X	X	X
#213	X			
#214	X			

	PA ASM	REV LTR	PA ASM	REV LTR
	PLI9D424895G5	B	PLI9D424895G36	A
	PLI9D424895G6	C		
	PLI9D424895G7	B		
	PLI9D424895G8	B		
DUPLEX	PLI9D424895G22	C	PLI9D424895G37	B
	PLI9D424895G23	D		
	PLI9D424895G24	C		
	PLI9D424895G25	C		

40 WATT MODULE	REV LTR	FILTER MODULE	REV LTR	FREQUENCY	
PLI9C321347G5	N	PLI9C327024G1		406-420 MHZ	
PLI9C321347G6	M	PLI9C327024G2		450-470 MHZ	
PLI9C321347G7	H	PLI9C327024G2		470-494 MHZ	
PLI9C321347G8	H	PLI9C327024G2		494-512 MHZ	
PLI9C321347G9	F	PLI9C327024G7		420-450 MHZ	
PLI9C321347G5	N	PLI9C327024G7		406-420 MHZ	DUPLEX
PLI9C321347G6	M	PLI9C327024G8		450-470 MHZ	
PLI9C321347G7	H	PLI9C327024G8		470-494 MHZ	
PLI9C321347G8	H	PLI9C327024G9		494-512 MHZ	
PLI9C321347G9	F	PLI9C327024G7		420-450 MHZ	

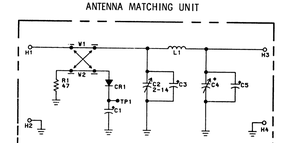
NOTES:
1. MICROSTRIP PART OF PWB.
2. ALL COMPONENTS MARKED WITH (※) ASTERISK, SEE COMPONENT VALUE TABLE.
3. ⏚ INDICATES A-
   ⏚ INDICATES CHASSIS GROUND.
4. CALLED FOR ON 19D417526.
5. CALLED FOR ON 19D424895.
6. —
7. R275 USED ONLY 494 450-470 MHZ RANGE.
8. C252 NOT USED IN PLI9C321347G9
9. ON PLI9C321347G5 DELETE L207 & ADD R213.
10. ON PLI9C321347G9 DELETE L210 & ADD R214.
⚠ PART OF NEXT LEVEL HIGHER ASM (PA)

※ COMPONENT VALUE CHART		
COMPONENT DESIGNATION	A 138-174MHZ	B 406-512MHZ
C1	100P	47P
C4	2-15	2-10
C5	10	
C6	10	

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.

(19B233613, Rev. 1)

ANTENNA MATCHING UNIT



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

PARTS LIST

LBI30594G

406-512 MHz, 40 WATT POWER AMPLIFIER
19D424895G5-G8, G36 (CONTINUOUS DUTY)
19D424895G22-G25, G37 (CONTINUOUS DUTY - DUPLEX)

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C297 and C298	19A116708P1	Ceramic: 0.01 uF -0 +100%, 500 VDCW, rated 20 amps; sim to Erie 327050X5W0103P.
C299*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Added to G6 by REV C, G23 by REV D.
		- - - - - - - - - - - TERMINALS - - - - - - - - - - -
G212 and G213	7878455P2	Solderless terminal.
G4214	7878455P2	Solderless terminal.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J243	5491689P108	Connector/cable: approx. 10 inches long.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - - -
P203		Connector. Includes receptacle and adaptor. (Order separately).
	19A700067P1	Receptacle, coax; sim to Amphenol 83-798.
	4029082P2	Adaptor.
		- - - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q202	19A134164P2	Silicon, NPN; sim to Type 2N5945.
Q203LL	19A134239P3	Silicon, NPN.
Q203L	19A134239P1	Silicon, NPN.
Q203M	19A134239P1	Silicon, NPN.
Q203H	19A134239P1	Silicon, NPN.
Q204LL	19A134242P3	Silicon, NPN.
Q204L	19A134242P3	Silicon, NPN.
Q204H	19A134242P4	Silicon, NPN; 50 Watt.
Q215	19A116753P1	Silicon, NPN.
		- - - - - - - - - - - THERMISTORS - - - - - - - - - -
RT201	19A129379G1	Thermistor: 40K ohms ±20%, color code white; sim to Carborundum Type M0806J-5.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W218	19A130552G1	Jumper.
W220	19B227087G1	Jumper: 6 inches long.
W221	19B227088G1	Jumper.
W243	19A129312G6	Antenna cable: approx 10 inches long. (Includes J243 & P203).
W244	5491689P104	Cable, RF: approx 4 inches long, 350 VRMS, 500 VDC operating voltage.
		40 WATT MODULE 19C321347G5 406-420 MHz (LL) 19C321347G6 450-470 MHz (L) 19C321347G7 470-494 MHz (M) 19C321347G8 494-512 MHz (H) 19C321347G9 420-450 MHz (LL)
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C201 and C202	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C203	19A116192P1	Ceramic: 0.01 uF ±20%, 50 VDCW; sim to Erie 8121 SPECIAL.
C204	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C205	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C206*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G5 by REV L. Deleted in G6 by REV K. Deleted in G7, G8 by REV H. Deleted in G9 by REV D.
		In 19C321347G5 off REV E & earlier: In 19C321347G6,G7,G8 REV C & earlier:
	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C207LL	19A116656P8J0	Ceramic disc: 8 pF ±0.5 pF, 500 VDCW; temp coef 0 PPM.
C207L*	19A116656P9J0	Ceramic disc: 9 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV D & earlier:
	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C207M*	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV E & earlier:
	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C207H	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C208LL	19A116656P8J0	Ceramic disc: 8 pF ±0.5 pF, 500 VDCW; temp coef 0 PPM.
C208L*	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV E.
C208M*	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV F.
C208H*	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV F.
C209*	19A116656P33J0	Ceramic disc: 33 pF ±5%, 500 VDCW, temp coef 0 PPM. Added to G5 by REV G, G6 by REV E, G7 & G8 by REV F.
C209LL*	7489162P15	Silver mica: 33 pF ±5%, 500 VDCW; sim. to Sprague Type 118. Deleted by REV C. Added by REV D. Deleted by REV G.
C209L*	7489162P11	Silver mica: 22 pF ±5%, 500 VDCW; sim to Sprague Type 118. Deleted by REV C.
C209M*	7489162P11	Silver mica: 22 pF ±5%, 500 VDCW; sim to Sprague Type 118. Deleted by REV C.
C209H*	7489162P13	Silver mica: 27 pF ±5%, 500 VDCW; sim. to Sprague Type 118. Deleted by REV C.
C210LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C210L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C210M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C210H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C211LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C211L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C211M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C211H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C212	19A116192P1	Ceramic: 0.01 uF ±20%, 50 VDCW; sim to Erie 8121 SPECIAL.
C213*	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV B.
C213LL*	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Added by REV E. Deleted by REV M. Added by REV N.
C214LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C214L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C214M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C214H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C215LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C215L	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C215M	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C215H	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C216LL	19A700131P51	Metallized teflon: 51 pF ±2%, 250 VDCW, temp coef -130 PPM
C216L	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C216M	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C216H	19A700131P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
C217LL	19A116679P18D	Metallized teflon: 18 pF ±0.5 pF, 250 VDCW.
C217L	19A116679P16D	Metallized teflon: 16 pF ±0.5 pF, 250 VDCW.
C217M	19A116679P15D	Metallized teflon: 15 pF ±0.5 pF, 250 VDCW.
C217H	19A116679P13D	Metallized teflon: 13 pF ±0.5 pF, 250 VDCW.
C218*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G5 by REV L. Deleted in G6 by REV K. Deleted in G7, G8 by REV H. Deleted in G9 by REV D.
C219*	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap. Deleted in G6 by REV J. Addeed to G6 by REV M.
C219L*	19A116656P24J0	Ceramic disc: 24 pF ±5%, 500 VDCW, temp coef 0 PPM. Added to G6 by REV J. Deleted in G6 by REV M.
C220	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C221	19B209723P4	Tantalum: 6.8 uF ±20%, 35 VDCW.
C222LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C222L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C222M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C222H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C223	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C224LL	19A700131P41	Metallized teflon: 41 pF ±2%, 250 VDCW, temp coef 0 -130 PPM.
C224L	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C224M	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C224H	19A700131P32	Metallized teflon: 32 pF ±2%, 250 VDCW.
C225LL	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C225L	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C225M	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C225H	19A700131P32	Metallized teflon: 32 pF ±2%, 250 VDCW.
C226LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C226L	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C226M	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C226H	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C227LL	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C227L	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C227M	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C227H	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C228	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C229LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C229L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C229M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C229H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C230LL*	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In G5 of REV M & earlier: In G9 of REV E & earlier:
	19A116656P8J0	Ceramic disc: 8 pF ±0.5 pF, 500 VDCW; temp coef 0 PPM.
C230L*	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Deleted by REV L.
C230M	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C230H	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C231	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C232	19B209723P4	Tantalum: 6.8 uF ±20%, 35 VDCW.
C233L*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Deleted by REV B.
C233H*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Deleted by REV B.
C234LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C234L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C234M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C234H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C235LL*	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
		In G5 of REV M & earlier: In G9 of REV E & earlier:
	19A116952P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C235L	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C235M	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C235H	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C236LL*	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
		In G5 of REV M & earlier: In G9 of REV E & earlier:
	19A116952P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
C236L	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
C236M	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C236H	19A700131P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C237LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C237L*	19A700131P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
		In REV K & earlier:
	19A116952P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C237M	19A700131P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C237H*	19A700131P35	Teflon/mica: 35 pF ±2%, 250 VDCW.
		In REV D & earlier:
	19A116952P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C238LL	19A700131P47	Metallized teflon: 47 pF ±2%, 250 VDCW.
C238L	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
C238M*	19A700131P43	Metallized teflon: 43 pF ±2%, 250 VDCW.
		In REV D & earlier:
	19A116952P37	Metallized teflon: 37 pF ±2%, 250 VDCW.
C238H*	19A700131P39	Metallized teflon: 39 pF ±2%, 250 VDCW.
		In REV D & earlier:
	19A116952P33	Metallized teflon: 33 pF ±2%, 250 VDCW.
C239*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted from G5 by REV H.
C239LL*	7489162P13	Silver mica: 27 pF ±5%, 500 VDCW; sim. to Sprague Type 118. Added to G5 by REV H. Deleted in G5 by REV L. Deleted in G9 by REV D.
C240LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Deleted in G5 by REV L. Deleted in G9 by REV D.
C240L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G6 by REV K.
C240M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G7 by REV H.
C240H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Deleted in G8 by REV H.
C241	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C242	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C243	19A134202P15	Tantalum: 6.8 uF ±20%, 35 VDCW.
C244 and C245	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C246 thru C250	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C251	19A116192P1	Ceramic: 0.01 uF ±20%, 50 VDCW; sim to Erie 8121 SPECIAL.
C252LL*	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV H-L:
	19A116656P9J0	Ceramic disc: 9 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV B-G.
	19A116656P6J0	Ceramic disc: 6 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV A & earlier:
	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C252L*	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV L:
	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV J-K:
	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV B-H:
	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C252M*	19A116656P4J0	Ceramic disc: 4 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Added by REV B.
C252H*	19A116656P3J0	Ceramic disc: 3 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM. Added by REV B.
C253	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C255 and C256	19A116655P18	Ceramic disc: 680 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C257LL*	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV M:
	19A116656P7J0	Ceramic disc: 7 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
		In REV L & earlier:
	19A116656P5J0	Ceramic dis: 5 pF ±0.5 pF, 500 VDCW, temp coef 0 PPM.
C257L*	19A134100P20	Ceramic disc: 2.2 pF ±0.1 pF, temp coef 0 ±120 PPM. Deleted by REV B.
C257M*	19A134100P19	Ceramic disc: 1 pF ±0.1 pF, temp coef 0 ±250 PPM. Deleted by REV B.
C257H*	19A134100P19	Ceramic disc: 1 pF ±0.1 pF, temp coef 0 ±250 PPM. Deleted by REV B.
C260	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap.
C262*	19A116114P2044	Ceramic: 27 pF ±5%, 100 VDCW; temp coef -80 PPM. Added to G6 by REV F. Deleted by REV G.
C263* and C264*	19A116655P20	Ceramic disc: 1000 pF ±10%, 1000 VDCW; sim to RMC Type JF Discap. Added to G5 by REV K. Added to G6 by REV H. Added to G7 & G* by REV G. Added to G9 by REV C.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR201	19A116052P1	Silicon, hot carrier: Fwd drop .350 volts max.
CR202 thru CR205	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - - - - - - - TERMINALS - - - - - - - - - - -
E201 and E202	19A134263P1	Contact, electrical: sim to Selectro 229-1082-00-0-590.
G211	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 - - - - - - - - - - -
L202	19A701091G1	Coil.
L203	19A129774P1	Coil.
L204	19A701091G1	Coil.
L205	19B219457P6	Coil.
L206	19A700000P120	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4422-1K.
L207*	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K. Deleted in G5 by REV M, G9 by REV E.
L208LL	19B219457P6	Coil.
L208L	19A130650P1	Coil.
L208M	19A130650P1	Coil.
L208H	19A130650P1	Coil.
L209	19A701091G1	Coil.
L210LL*	19A700000P25	Coil, RF: 15 uH ±10%; sim to Jeffers 4421-9K. Deleted by REV M.
L210L	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K.
L210M	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K.
L210H	19A700000P20	Coil, RF: 5.6 uH ±10%; sim to Jeffers 4421-4K.
L211	19B219457P6	Coil.
L212	19A701091G1	Coil.
		- - - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q201	19A134237P1	Silicon, NPN.
		- - - - - - - - - - - RESISTORS - - - - - - - - - - -
R201	19A700106P63	Composition: 1K ohms ±5%, 1/4 w.
R202	3R152P304J	Composition: 300K ohms ±5%, 1/4 w.
R203*	19A700113P7	Composition: 4.7 ohms ±5%, 1/2 w. Deleted by REV C. Added by REV D.
R204*	19A700113P25	Composition: 27 ohms ±5%, 1/2 w.
		In REV B & earlier:
	3R77P220J	Composition: 22 ohms ±5%, 1/2 w.
R205	19A700106P23	Composition: 22 ohms ±5%, 1/4 w.
R206	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R207	19A700106P35	Composition: 68 ohms ±5%, 1/4 w.
R208	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R209	19A700113P57	Composition: 560 ohms ±5%, 1/2 w.
R210 thru R212	19C850605P1	Shunt resistor.
R213	19A116559P102	Variable cermet: 5000 ohms ±20%, 1/2 w; sim to CTS Series 360.
R214	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R215	19A700106P25	Composition: 27 ohms ±5%, 1/4 w.
R216*	19A700113P15	Composition: 10 ohms ±5%, 1/2 w. Added to G6 by REV F. Deleted by REV L.
		- - - - - - - - - - TRANSFORMERS - - - - - - - - - -
T201 thru T205	19A130446G1	Coil.
		- - - - - - - - INTEGRATED CIRCUITS - - - - - - - -
U201	19D423127G1	Power Control.
		- - - - - - - - VOLTAGE REGULATORS - - - - - - - -
VR201	4036887P1	Zener: 500 mW, 2.3 v. nominal.
VR202	4036887P5	Zener: 500 mW, 5.4 v. nominal.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W201 thru W205		(Part of printed board 19D423005P1).
W206	19A701093P1	Strap.
W209	19B226733G1	Jumper.
W210	19B226734G1	Jumper.
		- - - - - - - - - - - NETWORKS - - - - - - - - - - -
Z201*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z203LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z203L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z203M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z203H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
Z204LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z204L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z204M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z204H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z205LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z205L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z205M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z205H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z206*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z207LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G6 by REV L. Added to G9 by REV D.
Z207L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z207M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z207H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z208LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z208L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z208M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z208H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z209LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z209L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z209M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z209H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z210*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z211LL*	19A134666P3	Frequency network: selective, 400-500 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:330J:SLAC. Added to G5 by REV L. Added to G9 by REV D.
Z211L*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G6 by REV K.
Z211M*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G7 by REV H.
Z211H*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G8 by REV H.
Z212*	19A134666P1	Frequency network: selective, 470-630 MHz res. freq, 500 VDCW; sim to Dilectron TC501:NPO:240J:SLAC. Added to G5 by REV L. Added to G6 by REV K. Added to G7, G8 by REV H. Added to G9 by REV D.
Z213* and Z214*		NETWORK ASSEMBLY 19A143581G1 (Added to G5 by REV M, G9 by REV E)
		- - - - - - - - - - - INDUCTORS - - - - - - - - - - -
L1	19A700024P1	Coil, RF: 100 nH ±10%, 0.08 ohms DC res max, 100 v.
L2	19A701091G2	Coil.
		- - - - - - - - - - - RESISTORS - - - - - - - - - - -
R1	19A700106P15	Composition: 10 ohms ±5%, 1/4 w.
		LOW PASS FILTER 19C327024G1 406-450 MHz (LL) (Added to 19D424895G5 & G36 by REV A)
		19C327024G2 450-512 MHz (H) (Added to 19D424895G6-G8 by REV A)
		19C327024G7 406-450 MHz (LL) DUPLEX (Added to 19D424895G22 & G37 by REV A) (Deleted in 19D424895G22 by REV C, G37 by REV B)
		19C327024G8 450-512 MHz (H) DUPLEX (Added to 19D424895G23-G25 by REV A) (Deleted by REV C)
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C4290LL	19A700014P4	Metallized teflon: 10 pF ±5%, 250 VDCW.
C4290H	19A700131P9	Metallized teflon: 9 pF ±0.5 pF, 250 VDCW.
C4291LL	19A700131P20	Metallized teflon: 20 pF ±0.5 pF, 100 VDCW.
C4291H	19A700131P18	Metallized teflon: 18 pF ±0.5 pF, 250 VDCW.
C4292LL	19A700131P13	Metallized teflon: 13 pF ±0.5 pF, 250 VDCW.
C4292H	19A700131P12	Teflon: 12 pF ±0.5 pF, 250 VDCW.
C4293	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - - -
L4291LL	19B226709G2	Jumper. (Includes L4292LL).
L4291H	19B226709G1	Jumper. (Includes L4292H).
L4292LL		(Part of L4291LL).
L4292H		(Part of L4291H).
		- - - - - - - - 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 - - - - - - - - - - -
K201	19A700061P1	Hermetic sealed: 180 to 341 ohms coil res, 8-16.3 VDC; sim to GE 3SAV1760A2, CP Clare HFW-1201558, or Potter-Brumfield HCM6160.
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W4280 thru W4283		(Part of printed board 19D423812P1).
W4284	19A130607G3	Cable, RF: approx .7 of an inch.
		LOW PASS FILTER MODULE 19C321424G4 (Deleted from 19D424895 by REV A)
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C4280H	19A116952P9	Metallized teflon: 9 pF + or 0.5 pF, 250 VDCW.
C4281H	19A116952P18	Metallized teflon: 18 pF + 0.5 pF, 250 VDCW.
C4282H	19A116952P12	Metallized teflon: 12 pF ±0.5 pF, 250 VDCW.
C4283H	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - - -
L4281 and L4282	19B226709G1	Jumper.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J202 and J203	19A130924G1	Connector, receptacle: coaxial, jack type; sim to Cinch 14H11613.
J206 and J207		(Part of K201).
J208	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - - - - - - - RELAYS - - - - - - - - - - -
K201	19A116722P1	Hermetic sealed: 125 ohms ±20%, 1 form C contact, 9.6 to 15.8 VDC (over the temp range indicated). (Includes J206 & J207).
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W4280 thru W4283		(Part of printed board 19D423111P1).
		LOW PASS FILTER-DUPLEX W MATCHER 19C327024G11 406-450 MHz (LL) (Added to 19D424895G22 by REV C, G37 by REV B)
		19C327024G12 450-512 MHz (H) (Added to 19D424895G23-G25 by REV C)
		LOW PASS FILTER 19D432247G3 406-450 MHz (LL) STATION 19D432247G4 450-512 MHz (H) STATION
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C4290LL	19A700014P4	Metallized teflon: 10 pF ±5%, 250 VDCW.
C4290H	19A700131P9	Metallized teflon: 9 pF ±0.5 pF, 250 VDCW.
C4291LL	19A700131P20	Metallized teflon: 20 pF ±0.5 pF, 100 VDCW.
C4291H	19A700131P18	Metallized teflon: 18 pF ±0.5 pF, 250 VDCW.
C4292LL	19A700131P13	Metallized teflon: 13 pF ±0.5 pF, 250 VDCW.
C4292H	19A700131P12	Teflon: 12 pF ±0.5 pF, 250 VDCW.
C4293	19A700015P37	Teflon/Mica: 220 pF ±5%, 250 VDCW.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - - -
L4291LL	19B226709G2	Jumper. (Includes L4292LL).
L4291H	19B226709G1	Jumper. (Includes L4292H).
L4292LL		(Part of L4291LL).
L4292H		(Part of L4291H).
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J203	19A700049P2	Connector, receptacle; 500 VDCW maximum; sim to NTTF-1058.
J4201 thru J4204	19A116364P2	Contact, electrical; sim to AMP 86182-7 (LOOSE PIECE).
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W4280 thru W4282		(Part of printed board 19D432087P2).
		ANTENNA MATCHER 19C330778G2
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1B	19A116192P2	Ceramic: 470 pF ±20%, 50 VDCW; sim to Erie 811-A050-W5R-471M.
C2	19A700008P2	Variable: 2.28 to 14.13 pF; sim to EF Johnson 187-0109-005.
C4B	19A700008P1	Variable: 2.04 to 9.9 pF, 250V peak.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - - -
CR1	19A700047P3	Silicon: 100 mW; sim to 1N6263.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - - -
L1B	19A143342P1	Coil.
		- - - - - - - - - - - RESISTORS - - - - - - - - - - -
R1	19A700106P31	Composition: 47 ohms ±5%, 1/4 w.
		FRAME ASSEMBLY 19D417526G3
		- - - - - - - - - - - - CABLES - - - - - - - - - - -
W241	5491689P104	Cable, RF: approx 4 inches long, 350 VRMS, 500 VDC operating voltage.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	5492178P2	Washer, spring tension: sim to Wallace Barnes 375-20. (Used with Q202).
	19A702182P1	Spacer. (Used with Q202).
	19A702782P5	Nut, hex, brass: No. 8-32. (Used with Q202).
	N44P9010C6	Machine screw: No. 4-40 x 5/8. (Used with Q203).
	N80P13016C6	Machine screw, phillips head: No. 6-32 x 1. (Secures Filter Assembly).
	19B201074P306	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/8. (Secures G4214).
	19C321441P1	Insulator. (Located under 40 watt Module).
	19A701332P4	Insulator, washer: nylon. (Used with Q201).
	N210P9C	Hex nut: No. 4-40. (Secures Q215).
	19A115222P3	Insulator, bushing: (Secures Q215).
	N80P9007C6	Machine screw, phillips: No. 4-40 x 7/16. (Secures Q215).
	19B201074P308	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/2. (Secures Filter Board).
	7150186P115	Spacer: No. 6 x 1/2. (Located at junction of W221).
	19B219404G1	Web filter.
	19B201074P312	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/4. (Secures W221 to spacer).
	19B226212G1	Heat sink. (Center sections-Quantity 3).
	19B226212G3	Heat sink. (Caution nameplate end-Quantity 1).
	19D417513G1	Cover, Heat Sink Assembly.
	7139898P3	Nut, hex, brass: No. 1/4-28. (Secures C297).
	19B201074P204	Tap screw, phillips POZIDRIV®: No. 4-40 x 1/4. (Secures W241).
	19A134260P1	Cover, Insulator. (Used with Q215).
	4029974P1	Insulator, plate: aluminum. (Located under Q215).

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 - PA Assembly 19D424895G5-G8, G22-G25
To incorporate new low-pass filter. Deleted 19C321424. Added 19C327024.

REV. A - 40 Watt Module 19C321347G5-G8
To improve power output at cold temperatures. Added CR204 & CR205.

REV. B - 40 Watt Module 19C321347G5-G8
To improve operation.
In 19C321347G5: deleted C213 and Changed C252LLB.
In 19C321347G6: deleted C233L, C257L and added C252LB.
In 19C321347G7: deleted C257M and added C252MB.
In 19C321347G8: deleted C233H, C257H and added C252HB.

REV. C - 40 Watt Module 19C321347G5-G8
To improve operation. Deleted C209 and R203. Changed R204.

REV. D - 40 Watt Module 19C321347G5
To improve operation. Added C209 and R203.

REV. E - 40 Watt Module 19C321347G5
To improve station operation. Added C213.

REV. D - 40 Watt Module 19C321347G6-G8
To improve operation. Changed C206.

REV. F - 40 Watt Module 19C321347G5
To improve operation. Changed C206.

REV. E - 40 Watt Module 19C321347G7, G8
To improve RF output & efficiency. Changed C237 (Group 8) and C238 (Groups 7 & 8).

REV. G - 40 Watt Module 19C321347G5
REV. E - 40 Watt Module 19C321347G6
REV. F - 40 Watt Module 19C321347G7, G8
To decrease spurious outputs. Changed C207L, M and C209. Deleted C208L, M, H. Added R203 to Groups 6, 7 and 8.

REV. H - 40 Watt Module 19C321347G5
To increase output at 406 MHz. Changed C252LLB. Deleted C239. Added C239LLB.

REV. J - To improve stability. Changed Q203LL.

REV. F - 40 Watt Module 19C321347G6
To improve stability. Added R216 and C262.

REV. G - To improve operation. Deleted C262.

REV. A - 40 Watt Module 19C321347G9
To improve operation. Added C240LL.

REV. B - To improve stability. Changed Q203LL.

REV. K - 40 Watt Module 19C321347G5
REV. H - 40 Watt Module 19C321347G6
REV. G - 40 Watt Module 19C321347G7
REV. G - 40 Watt Module 19C321347G8
REV. C - 40 Watt Module 19C321347G9
To improve operation of power regulator circuit when used as driver for 100 Watt PA. Added C263 and C264.

REV. J - 40 Watt Module 19C321347G6
To increase output power at low end of 450-470 MHz range. Changed C252.

REV. L - 40 Watt Module 19C321347G5
REV. K - 40 Watt Module 19C321347G6
REV. H - 40 Watt Module 19C321347G7
REV. H - 40 Watt Module 19C321347G8
REV. D - 40 Watt Module 19C321347G9
To incorporate new nomenclature for frequency selection networks.

REV. A - PA Assembly 19D424895G36, G37
REV. B - PA Assembly 19D424895, G5-G8, G22-G25
To improve operation of power control transistor. Changed Q215.

REV. C - PA Assembly 19D424895G6
REV. D - PA Assembly 19D424895G23
To improve power output. Added C299.

REV. C - PA Assembly 19D424895G22-G25
REV. B - PA Assembly 19D424895G37
To improve operation in duplex applications. Changed low pass filters. (Added Antenna Matching Unit).

REV. M - 40-Watt Module 19C321347G5
REV. E - 40-Watt Module 19C321347G9
To improve power output across the board. Deleted C213LL, L207 and L210LL. Added Z213 and Z214. Changed C257LL, C252LLB (Group 5 only), and Q203LLB.

REV. N - 40-Watt Module 19C321347G5
REV. F - 40-Watt Module 19C321347G9
To improve power output. Changed C230LL, C235LL, C236LL and C257LL. Added C213LL.

REV. L - 40-Watt Module 19C321347G6
To increase power output. Changed C252LB and C237. Deleted R216 and C230.

REV. M - 40-Watt Module 19C321347G6
To improve power output over the 450-470 MHz range. Changed C219L and C252L.

PARTS LIST

406 - 512 MHz
UHF ANTENNA MATCHING UNIT
19C330778G2 LOW POWER
19C330778G3 HIGH POWER
ISSUE 1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1B	19A116192P2	Ceramic: 470 pf ±20%, 50 VDCW; sim to Erie 8111-A050-W5R-471M.
C2	19A700008P2	Variable, air: 2.28 to 14.13 pf, 250 v; sim to EF Johnson Type T 187-0109-005.
C4B	19A700008P1	Variable, air: 2.04 to 9.9 pf, 250 v; sim to EF Johnson Type T 187-0106-005.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - - -
CR1	19A700047P3	Diode, silicon: 0.410 volt max.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - - -
L1B	19A143342P1	Coil.
		- - - - - - - - - - - RESISTORS - - - - - - - - - - -
R1	19A700106P31	Composition: 47 ohms ±5%, 1/4 w.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.