MAINTENANCE MANUAL

29.7—50 MHz, 50-WATT POWER AMPLIFIER BOARD 19D423356G1-G6

TABLE OF CONTENTS

DESCRIPTION

The 29.7-50 MHz PA assembly for MASTR® Executive II uses three RF power transistors to provide a power output of 50 Watts. The output power is adjustable using power adjust control R14 over a range of 15 to 50 Watts. A single transistor is used in the power adjust circuit.

Supply voltage for the PA is connected through power leads from the system-audio-squelch board (SAS) to feed through capacitors C297 and C298 on the side of the PA assembly. C297, C298, C299, L295 and L296 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 one of the in-line fuses to blow.

The hinged PA heat sink pivots 90° to provide access to the power amplifier board, low pass filter and centralized metering jack J205.

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), Ampl-1 (collector), driver current and PA current.

CIRCUIT ANALYSIS

RF AMPLIFIERS

The exciter output is coupled through cable W216 to PA input jack J201. The RF is coupled through DC blocking capacitor C1 and an impedance matching network to the base of Class C amplifier Q201. The network matches the 50-ohm input to the base of Q201, and consists of C6, C7, C8, L1 and L2. L3 and R1 comprise a stabilizing network in the base circuit of Q201.

Part of the RF input is rectified by CR1 and applied to voltage divider R2 and R3. This voltage is used to meter the AMPL-1 drive at J205.

Collector voltage to Q201 (Ampl-1) is controlled by the power adjust circuit, Q204 and is applied through collector stabilizing network (L15 and R7) and collector feed network L4 and C9. The collector voltage of Q201 is metered through R11 at J205.

The output of Q201 is coupled to the base of Class C driver Q202 through coupling capacitor C10, a matching network consisting of L5, L6, C12 and C13 and a resistive pad consisting of R4, R5 and R6. The output of the resistive pad is applied to the base of driver Q202. The resistive pad lowers the gain of driver Q202. L7 and R8 comprise a stabilizing network in the base circuit of Q202.

Collector voltage to Q202 is applied through collector stabilizing network Z1 and collector feed network L9 and C17.

Collector current for Q202 is metered across tapped manganin resistor R12 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.

The output of Q202 is applied to the base of Class C Power Amplifier Q203 through a matching network (L9, L10, C16 and C19 through C24) that matches the output impedance of driver Q202 with the input impedance of power amplifier Q203. R9, R10 and L11 comprise a stabilizing network in the base circuit of Q203.

Collector voltage to Q203 is coupled through collector stabilizing network Z2 and collector feed network L12 and C27.

Collector current for Q203 is metered across tapped manganin resistor R13. The reading is taken on the one-Volt scale with the High Sensitivity button pressed, and read as 10 amperes full scale.

Following Q203 is a matching network (L13, C25, C26, C29, C31 and L14) that matches the output of Q203 to the 50-ohm microstrip impedance (W1) to the input of low pass filter. Coupling capacitor C30 couples the output of the PA to the low pass filter. It also provides DC isolation between the transmitter and the antenna.

The PA output is coupled through the low-pass filter to the antenna through antenna transfer relay K1901.

Capacitors C34 through C37 provide ground isolation for positive and negative ground operation.

WARNING

The RF Power Transistors used in the transmitter contain 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 ADJUST CIRCUIT

The power adjust circuit consists of R14 and Q204. R14 controls the base voltage and therefore the conduction of Q204. Q204 is connected in series with the collector feed network for Q201 thereby controlling the drive to driver Q202 and the output power. R14 is adjusted to provide the desired output power over a range of 15 to 50 watts.

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

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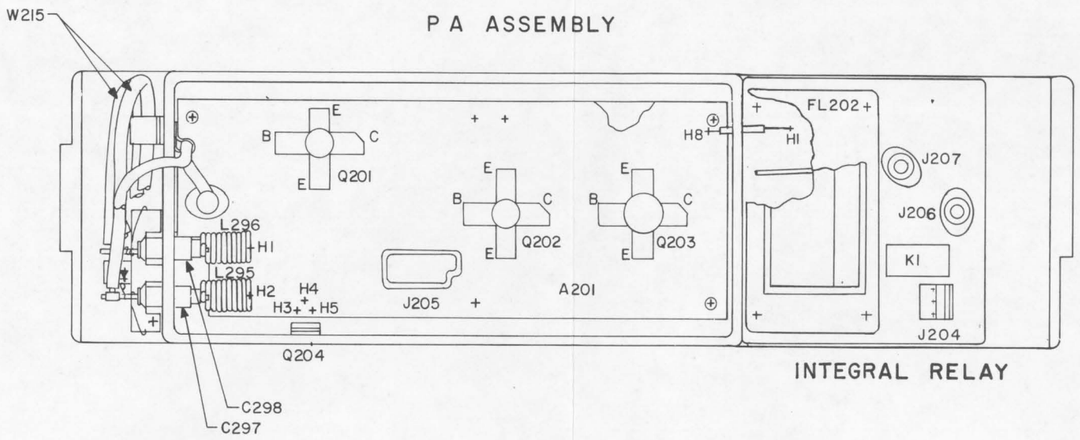
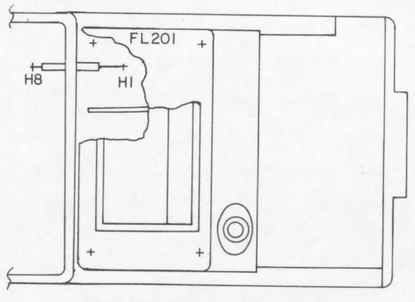
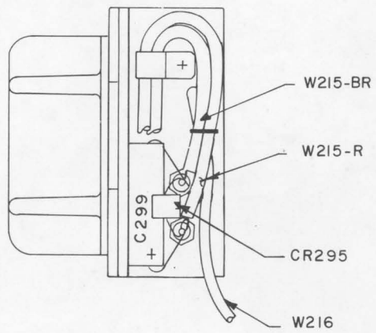
P A ASSEMBLY



INTEGRAL RELAY



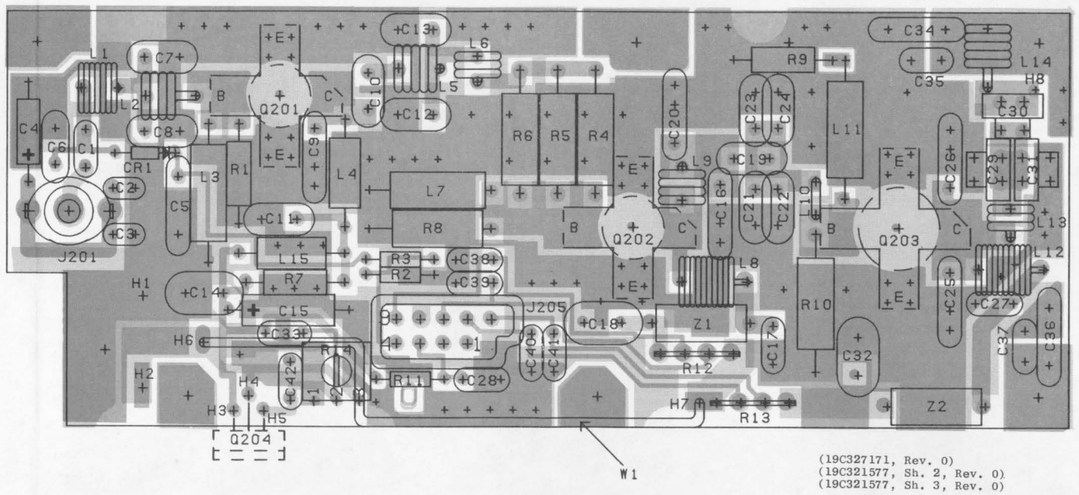
EXTERNAL RELAY



END VIEW

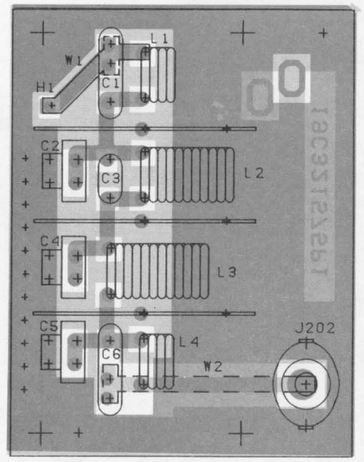
(19C327195, Rev. 4)

PA BOARD
A201



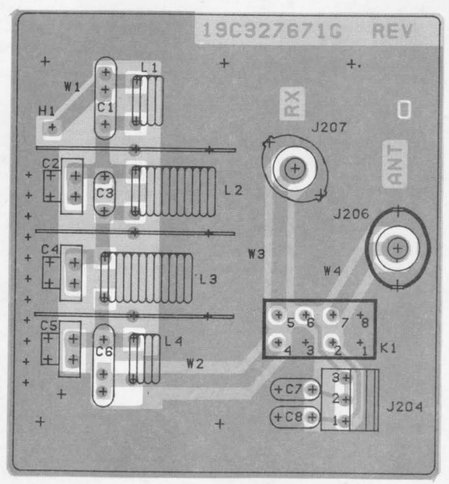
(19C327171, Rev. 0)
(19C321577, Sh. 2, Rev. 0)
(19C321577, Sh. 3, Rev. 0)

LOW PASS FILTER
FL201
(EXTERNAL RELAY)



(19B227405, Rev. 1)
(19B226835, Sh. 2, Rev. 0)
(19B226835, Sh. 3, Rev. 0)

LOW PASS FILTER
FL 202
(INTEGRAL RELAY)



(19C327917, Sh, 1, Rev. 0)
(19B227883, Sh, 1, Rev. 0)
(19B227883, Sh. 2, Rev. 0)

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

OUTLINE DIAGRAM

29.7—50 MHz POWER AMPLIFIER

PARTS LIST

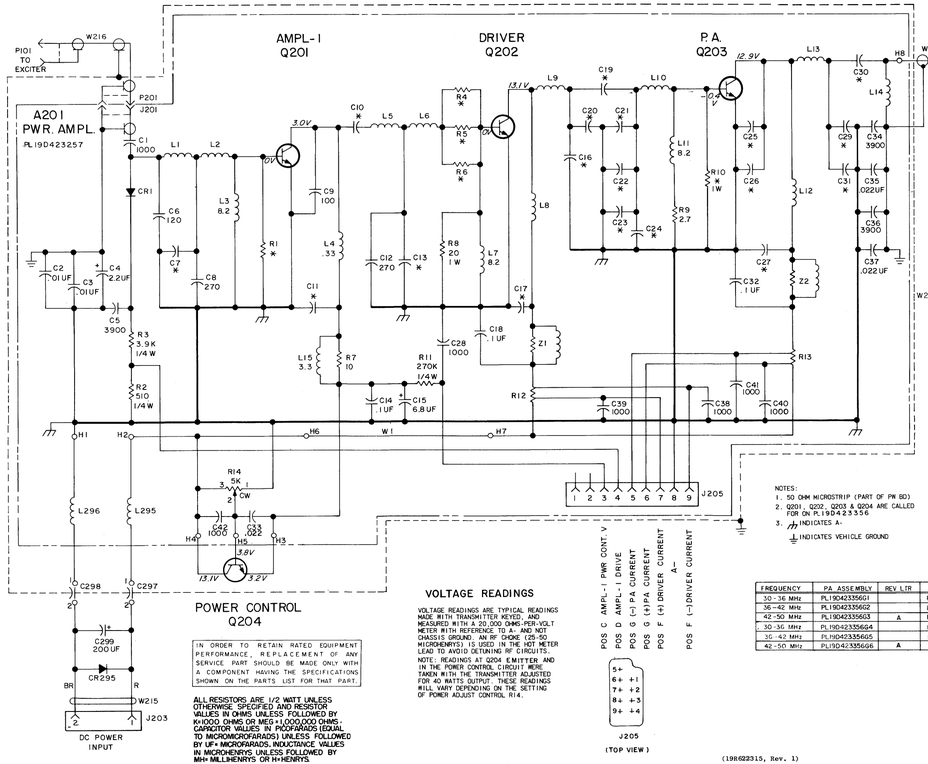
LBI30094D

50 WATT POWER AMPLIFIER
19D423359G1 29.7-36 MHz (L) EXTERNAL RELAY
19D423359G2 36-42 MHz (M) EXTERNAL RELAY
19D423359G3 42-50 MHz (H) EXTERNAL RELAY
19D423359G4 29.7-36 MHz (L) INTEGRAL RELAY
19D423359G5 36-42 MHz (M) INTEGRAL RELAY
19D423359G6 42-50 MHz (H) INTEGRAL RELAY

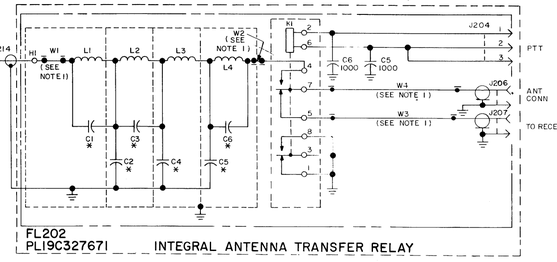
SYMBOL	GE PART NO.	DESCRIPTION
A201		COMPONENT BOARD A201L 19D423257G1 29.7-36 MHz A201M 19D423257G2 36-42 MHz A201H 19D423257G3 42-50 MHz
		---------- CAPACITORS ----------
C1	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C2 and C3	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C4	5496267P13	Tantalum: 2.2 µf ±20%, 20 VDCW; sim to Sprague Type 150D.
C5	19A116655P23	Ceramic disc: 3900 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C6	19A700108P36	Mica: 120 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C7L	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C7M	19A700105P44	Mica: 220 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C7H	19A700105P41	Mica: 180 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C8	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C9	19A116656P100J1	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -150 PPM.
C10L	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C10M	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C10H	19A700105P44	Mica: 220 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C11L	7489162P39	Silver mica: 330 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C11M	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C11H	19A700105P44	Mica: 220 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C12	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C13L	19A700105P44	Mica: 220 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C13M	19A700105P44	Mica: 220 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C13H	19A700105P41	Mica: 180 pf ±5%, 500 VDCW; sim to Electro Motive Type DM15.
C14	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C15	5496267P18	Tantalum: 6.8 µf ±20%, 35 VDCW; sim to Sprague Type 150D.
C16L	19A116656P56J0	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef 0 PPM.
C16M	19A116656P47J0	Ceramic disc: 47 pf ±5%, 500 VDCW, temp coef 0 PPM.
C16H	19A116656P39J0	Ceramic disc: 39 pf ±5%, 500 VDCW, temp coef 0 PPM.
C17L	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C17M	19A116655P17	Ceramic disc: 680 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C17H	19A116655P17	Ceramic disc: 680 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.

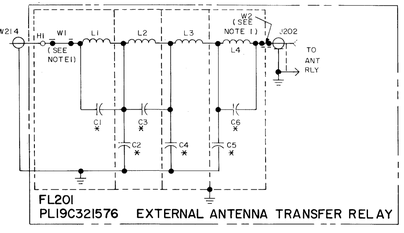
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
C18	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C19L	7489162P39	Silver mica: 330 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C19M	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C19H	19A700105P44	Mica: 220 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C20L	19A116656P56J0	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef 0 PPM.
C20M	19A116656P47J0	Ceramic disc: 47 pf ±5%, 500 VDCW, temp coef 0 PPM.
C20H	19A116656P39J0	Ceramic disc: 39 pf ±5%, 500 VDCW, temp coef 0 PPM.
C21L	7489162P39	Silver mica: 330 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C21M	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C21H	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C22L	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C22M	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C22H	19A700105P41	Mica: 180 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C23L	7489162P39	Silver mica: 330 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C23M	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C23H	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C24L	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C24M	19A700105P46	Mica: 270 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C24H	19A700105P41	Mica: 180 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C25L	19A116656P150J1	Ceramic disc: 150 pf ±5%, 500 VDC#, temp coef -150 PPM.
C25M	19A116656P100J1	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -150 PPM.
C25H*	19A116656P100J1	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -150 PPM.
		Earlier than REV A:
	19A116656P56J0	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef 0 PPM.
C26L	19A116656P150J1	Ceramic disc: 150 pf ±5%, 500 VDCW, temp coef -150 PPM.
C26M	19A116656P100J1	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -150 PPM.
C26H*	19A116656P100J1	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -150 PPM.
		Earlier than REV A:
	19A116656P56J0	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef 0 PPM.
C27L	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C27M	19A116655P17	Ceramic disc: 680 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C27H	19A116655P17	Ceramic disc: 680 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C28	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C29L	19A116679P500J	Mica: 500 pf ±5%, 250 VDCW.
C29M	19A700015P44	Metallized teflon: 430 pf ±5%, 250 VDCW.
C29H	19A700015P12	Metallized teflon: 22 pf ±5%, 250 VDCW.
C30L	19A700015P38	Metallized teflon: 240 pf ±5%, 250 VDCW.
C30M	19A700015P37	Metallized teflon: 220 pf ±5%, 250 VDCW.
C30H	19A700015P35	Metallized teflon: 180 pf ±5%, 250 VDCW.



FREQUENCY	PA ASSEMBLY	REV LTR	PWR AMPL	REV LTR	LP FILTER	REV LTR
30-36 MHz	PL19D423356G1		PL19D423257G1		PL19C321576G1	
36-42 MHz	PL19D423356G2		PL19D423257G2		PL19C321576G2	
42-50 MHz	PL19D423356G3	A	PL19D423257G3	A	PL19C321576G3	
30-36 MHz	PL19D423356G4		PL19D423257G1		PL19C327671G1	
36-42 MHz	PL19D423356G5		PL19D423257G2		PL19C327671G2	
42-50 MHz	PL19D423356G6	A	PL19L423257G3	A	PL19C327671G3	





*COMPONENT VALUES AS FOLLOWS

COMP IDENT	L 30-36 MHz	M 36-42 MHz	H 42-50 MHz
A201-C7	270	220	180
A201-C10	270	270	220
A201-C11	330	270	220
A201-C13	220	220	180
A201-C16	56	47	39
A201-C17	1000	680	680
A201-C19	330	270	220
A201-C20	56	47	39
A201-C21	330	270	270
A201-C22	270	270	180
A201-C23	330	270	270
A201-C24	270	270	180
A201-C25	150	100	100
A201-C26	150	100	100
A201-C27	1000	680	680
A201-C29	500	430	360
A201-C30	240	220	180
A201-C31	500	430	360
A201-R1	10	20	20
A201-R4	5.6	2.7	1.2
A201-R5	5.6	2.7	1.2
A201-R6	5.6	2.7	1.2
A201-R10	10	20	20
FL201,202-C1	68	56	51
FL201,202-C2	91	68	56
FL201,202-C3	13	12	10
FL201,202-C4	110	91	82
FL201,202-C5	100	82	75
FL201,202-C6	68	56	51

SCHEMATIC DIAGRAM

29.7—50 MHz POWER AMPLIFIER

Issue 4

SYMBOL	GE PART NO.	DESCRIPTION
C31L	19A116679P50GJ	Mica: 500 pf ±5%, 250 VDCW.
C31M	19A700015P44	Metallized teflon: 430 pf ±5%, 250 VDCW.
C31N	19A700015P42	Metallized teflon: 360 pf ±5%, 250 VDCW.
C32	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCW.
C33	19A116080P103	Polyester: 0.022 µf ±10%, 50 VDCW.
C34	19A116655P23	Ceramic disc: 3900 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C35	19A116080P103	Polyester: 0.022 µf ±10%, 50 VDCw.
C36	19A116655P23	Ceramic disc: 3900 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C37	19A116080P103	Polyester: 0.022 µf ±10%, 50 VDCW.
C38 thru C42	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J201	19A130924G1	Connector, receptacle: jack type; sim to Cinch 14A11613.
J205	19B219374G1	Connector: 9 contacts.
		- - - - - - - - - - INDUCTORS - - - - - - - - -
L1L	19A129347P1	Coil.
L1M	19A129347P3	Coil.
L1N	19A129347P4	Coil.
L2L	19A129354P4	Coil.
L2M	19A129352P8	Coil.
L2N	19A129352P7	Coil.
L3	19A700000P122	Coil, RF: 8.2 µh ±10%, 0.22 ohms DC res max.
L4	19A700000P6	Coil, RF: 0.33 µh ±20%, 0.065 ohms DC res max.
L5L	19A129351P3	Coil.
L5M	19A129351P2	Coil.
L5N	19A129351P2	Coil.
L6L	19A129352P1	Coil.
L6M	19A129352P3	Coil.
L6N	19A129348P2	Coil.
L7	19A700000P122	Coil, RF: 8.2 µh ±10%, 0.22 ohms DC res max.
L8L	19A129349P1	Coil.
L8M	19A129349P2	Coil.
L8N	19A129349P2	Coil.
L9L	19A129352P4	Coil.
L9M	19A129352P4	Coil.
L9N	19A129352P5	Coil.
L10L	19A129359P1	Coil.
L10M	19A129357P1	Coil.
L10N	19A129357P2	Coil.
L11	19A700000P122	Coil, RF: 8.2 µh ±10%, 0.22 ohms DC res max.
L12L	19A129349P1	Coil.
L12M	19A129349P2	Coil.
L12N	19A129349P2	Coil.
L13L	19A129358P2	Coil.
L13M	19A129355P3	Coil.
L13N	19A129351P4	Coil.
L14L	19A129355P5	Coil.
L14M	19A129355P4	Coil.
L14N	19A129352P10	Coil.

SYMBOL	GE PART NO.	DESCRIPTION
L15	19A700000P17	Coil, RF: 3.3 µh ±10%, 0.140 ohms DC res max.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1L	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R1M	3R77P200J	Composition: 20 ohms ±5%, 1/2 w.
R1N	3R77P200J	Composition: 20 ohms ±5%, 1/2 w.
R2	3R152P511J	Composition: 510 ohms ±5%, 1/4 w.
R3	19A700106P77	Composition: 3.9K ohms ±5%, 1/4 w.
R4L	19A700112P9	Composition: 5.6 ohms ±5%, 1 w.
R4M	19A700112P1	Composition: 2.7 ohms ±5%, 1 w.
R4N	7147161P22	Composition: 1.2 ohms ±5%, 1/2 w.
R5L	19A700112P9	Composition: 5.6 ohms ±5%, 1 w.
R5M	19A700112P1	Composition: 2.7 ohms ±5%, 1 w.
R5N	7147161P22	Composition: 1.2 ohms ±5%, 1/2 w.
R6L	19A700112P9	Composition: 56 ohms ±5%, 1 w.
R6M	19A700112P1	Composition: 2.7 ohms ±5%, 1 w.
R6N	7147161P22	Composition: 1.2 ohms ±5%, 1/2 w.
R7	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R8	3R78P200J	Composition: 20 ohms ±5%, 1 w.
R9	19A700113P1	Composition: 2.7 ohms ±5%, 1/2 w.
R10L	19A700112P15	Composition: 10 ohms ±5%, 1 w.
R10M	3R78P200J	Composition: 20 ohms ±5%, 1 w.
R10N	3R78P200J	Composition: 20 ohms ±5%, 1 w.
R11	3R152P274J	Composition: 270K ohms ±5%, 1/4 w.
R12 and R13	19C320212P2	Shunt resistor.
R14	19A116559P102	Variable, cermet: 5K ohms ±20%, .5 w; sim to CTS Series 360.
		- - - - - - - - - - CABLES - - - - - - - - - -
W1	19B224909G2	Jumper.
		- - - - - - - - - - NETWORKS - - - - - - - - - -
Z1 and Z2		FILTER ASSEMBLY 19B219649G1
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A129346G2	Coil.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R78P100K	Composition: 10 ohms ±10%, 1 w.
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C297 and C298	19A116708P1	Ceramic, feed-thru: 0.01 µf +100% -0%, 500 VDCW; sim to Erie Style 327.
C299	19A115680P10	Electrolytic: 200 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX.
		- - - - - - - - DIODES AND RECTIFIERS - - - - -
CR295	19A116783P1	Rectifier, silicon: 100 VDC blocking, 6 amps.
		- - - - - - - - - - FILTERS - - - - - - - - - -
FL201L		LOW PASS FILTER (EXTERNAL RELAY) 19C321576G1 29.7-36 MHz
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1L	19A116656P68J1	Ceramic disc: 68 pf ±5%, 500 VDCW, temp coef -150 PPM.
C2L	19A700015P28	Teflon: 91 pf ±5%, 250 VDCW.
C3L	19A116656P13J1	Ceramic disc: 13 pf ±5%, 500 VDCW, temp coef -150 PPM.

SYMBOL	GE PART NO.	DESCRIPTION
C4L	19A700015P30	Teflon/Mica: 110 pf ±5%, 250 VDCW.
C5L	19A700015P29	Teflon/Mica: 100 pf ±5%, 250 VDCW.
C6L	19A116656P68J1	Ceramic disc: 68 pf ±5%, 500 VDCW, temp coef -150 PPM.
J202	19A130924G1	Connector, receptacle: jack type; sim to Cinch 14A11613.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1L	19A129360P6	Coil.
L2L	19A129360P7	Coil.
L3L	19A129360P8	Coil.
L4L	19A129360P6	Coil.
W1 and W2		(Part of printed wiring board 19C321575P1).
		- - - - - - - - - - FILTERS - - - - - - - - - -
FL202L		LOW PASS FILTER (INTEGRAL RELAY) 19C321576G1 42-50 MHz
		- - - - - - - - - - CABLES - - - - - - - - - -
W1 and W2		(Part of printed wiring board 19C321575P1).
		- - - - - - - - - - FILTERS - - - - - - - - - -
		LOW PASS FILTER (EXTERNAL RELAY) 19C321576G3 36-42 MHz
C1M	19A116656P56J1	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef -150 PPM.
C2M	19A700015P25	Metallized teflon: 68 pf ±5%, 250 VDCW.
C3M	19A116656P12J1	Ceramic disc: 12 pf ±5%, 500 VDCW, temp coef -150 PPM.
C4M	19A700015P28	Metallized teflon: 91 pf ±5%, 250 VDCW.
C5M	19A700015P27	Metallized teflon: 82 pf ±5%, 250 VDCW.
C6M	19A116656P56J1	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef -150 PPM.
J202	19A130924G1	Connector, receptacle: jack type; sim to Cinch 14A11613.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1M	19A129360P4	Coil.
L2M	19A129360P3	Coil.
L3M	19A129360P5	Coil.
L4M	19A129360P4	Coil.
W1 and W2		(Part of printed wiring board 19C321575P1).
FL201M		LOW PASS FILTER (EXTERNAL RELAY) 19C321576G3 42-50 MHz
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1M	19A116656P51J1	Ceramic disc: 51 pf ±5%, 500 VDCW, temp coef -150 PPM.
C2M	19A700015P23	Metallized teflon: 56 pf ±5%, 250 VDCW.
C3M	19A116656P10J1	Ceramic disc: 10 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM.
C4M	19A700015P27	Teflon/Mica: 82 pf ±5%, 250 VDCW.
C5M	19A700015P26	Teflon/Mica: 75 pf ±5%, 250 VDCW.
C6M	19A116656P51J1	Ceramic disc: 51 pf ±5%, 500 VDCW, temp coef -150 PPM.
J202	19A130924G1	Connector, receptacle: jack type; sim to Cinch 14A11613.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1H	19A129360P1	Coil.
L2H	19A129360P2	Coil.
L3H	19A129360P3	Coil.
L4H	19A129360P1	Coil.
W1 and W2		(Part of printed wiring board 19C321575P1).
		- - - - - - - - - - FILTERS - - - - - - - - - -
FL202L		LOW PASS FILTER (INTEGRAL RELAY) 19C321767G1 29.7-36 MHz
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1L	19A116656P68J1	Ceramic disc: 68 pf ±5%, 500 VDCW, temp coef -150 PPM.
C2L	19A700015P28	Metallized teflon: 91 pf ±5%, 250 VDCW.
C3L	19A116656P13J1	Ceramic disc: 13 pf ±5%, 500 VDCW, temp coef -150 PPM.
C4L	19A700015P30	Metallized teflon: 110 pf ±5%, 250 VDCW.
C5L	19A700015P29	Teflon/Mica: 100 pf ±5%, 250 VDCW.
C6L	19A116656P68J1	Ceramic disc: 68 pf ±5%, 500 VDCW, temp coef -150 PPM.
C7 and C8	19A116655P20	Ceramic disc: 1000 pf ±10%, 1000 VDCW; sim to RMC Type JF Discap.
J204	19A116659P55	Connector, printed wiring: 3 contacts; sim to Molex 09-65-1031.
J205 and J207	19A130924G1	Connector, receptacle: coaxial, jack type; sim to Cinch 14A11613.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1	19A700061P1	Hermetic sealed: 180 to 341 ohms coil res, 8-16.3 VDC; sim to GE 3SAV1760A2, CP Clare HFA-1201558, or Potter-Brumfield HCM6160.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1M	19A129360P4	Coil.
L2M	19A129360P3	Coil.
L3M	19A129360P5	Coil.
L4M	19A129360P4	Coil.
W1 thru W4		(Part of printed wiring board 19C327672P1).
FL202M		LOW PASS FILTER (INTEGRAL RELAY) 19C321767G2 36-42 MHz
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1M	19A116656P56J1	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef -150 PPM.
C2M	19A700015P25	Teflon/Mica: 68 pf ±5%, 250 VDCW.
C3M	19A116656P12J1	Ceramic disc: 12 pf ±5%, 500 VDCW, temp coef -150 PPM.
C4M	19A700015P28	Metallized teflon: 91 pf ±5%, 250 VDCW.
C5M	19A700015P27	Metallized teflon: 82 pf ±5%, 250 VDCW.
C6M	19A116656P56J1	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef -150 PPM.
C7 and C8	19A116655P20	Ceramic disc: 1000 pf ±10%, 1000 VDCW; sim to RMC Type JF Discap.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - JACKS AND RECEPTACLES - - - - - -
J204	19A116659P55	Connector, printed wiring: 3 contacts; sim to Molex 09-65-1031.
J205 and J207	19A130924G1	Connector, receptacle: coaxial, jack type; sim to Cinch 14A11613.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1	19A700061P1	Hermetic sealed: 180 to 341 ohms coil res, 8-16.3 VDC; sim to GE 3SAV1760A2, CP Clare HFA-1201558, or Potter-Brumfield HCM6160.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1M	19A129360P4	Coil.
L2M	19A129360P3	Coil.
L3M	19A129360P5	Coil.
L4M	19A129360P4	Coil.
W1 thru W4		(Part of printed wiring board 19C327672P1).
		- - - - - - - - - - FILTERS - - - - - - - - - -
FL202M		LOW PASS FILTER (INTEGRAL RELAY) 19C321767G3 42-50 MHz
C1M	19A116656P56J1	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef -150 PPM.
C2M	19A700015P25	Teflon/Mica: 68 pf ±5%, 250 VDCW.
C3M	19A116656P12J1	Ceramic disc: 12 pf ±5%, 500 VDCW, temp coef -150 PPM.
C4M	19A700015P28	Metallized teflon: 91 pf ±5%, 250 VDCW.
C5M	19A700015P27	Metallized teflon: 82 pf ±5%, 250 VDCW.
C6M	19A116656P56J1	Ceramic disc: 56 pf ±5%, 500 VDCW, temp coef -150 PPM.
C7 and C8	19A116655P20	Ceramic disc: 1000 pf ±10%, 1000 VDCW; sim to RMC Type JF Discap.
		- - - - - - - - - - JACKS AND RECEPTACLES - - - - - -
J204	19A116659P55	Connector, printed wiring: 3 contacts; sim to Molex 09-65-1031.
J205 and J207	19A130924G1	Connector, receptacle: coaxial, jack type; sim to Cinch 14A11613.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1	19A700061P1	Hermetic sealed: 180 to 341 ohms coil res, 8-16.3 VDC; sim to GE 3SAV1760A2, CP Clare HFA-1201558, or Potter-Brumfield HCM6160.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1M	19A129360P4	Coil.
L2M	19A129360P3	Coil.
L3M	19A129360P5	Coil.
L4M	19A129360P4	Coil.
		- - - - - - - - - - CABLES - - - - - - - - - -
W1 thru W4		(Part of printed wiring board 19C327672P1).
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L295 and L296	19A130640G1	Coil.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q201*	19A116839P1	Silicon, NPN. Deleted by REV A.
Q201L and Q201M	19A116839P1	Silicon, NPN.
Q201N*	19A116965P1	Silicon, NPN. Added by REV A.
Q202	19A116839P2	Silicon, NPN.
Q203	19A116839P3	Silicon, NPN.
Q204	19A116742P1	Silicon, NPN.
		- - - - - - - - - - CABLES - - - - - - - - - -
W214	19A130607G2	Cable, RF: approx 1 foot long.
W215	19B227058G1	Cable: approx 1 foot long.
W216	19A130909G1	Cable, RF: approx 7-1/2 inches long.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19C321591G1	Heat sink, casting.
	19C321693P1	Insulator. (Located under A201).
	19A134016P1	Insulator, bushing. (Used with Q204).
	19A116023P1	Insulator, plate. (Used with Q204).
	5492178P2	Washer, spring tension: sim to Wallace Barnes 375-00. (Used with Q201-Q203).
	X207P15C6	Nut, hex: No. 8-32. (Used with Q201-Q203).
	X207P16C6	Nut, hex: No. 10-32. (Used with Q201-Q203).
	1929434P1	Washer: fiber. (Used with L295, L296).
	4029851P6	Clip loop. (Secures #215).
	19B226952G1	P.A. Cover.
	19D416275P3	Filter housing.
	19B201074P312	Tap screw, Phillips PO42DR1V^{6}: No. 6-32 x 3/4. (Secures FL202).
	19B201074P305	Tap scr #15, Phillips PO42DR1V^{6}: No. 6-32 x 5/16. (Secures A201 board).
	7139898P3	Nut, hex: 1/4-28. (Secures C297 & C298).

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 Board 19D423257G3 & PA Assembly 19D423356G3, G6

To improve power output at high end of frequency range (50 MHz). Changed Q201, C23H and C24H.