138—174 MHz EXCITER BOARD 19D423293G1, G2 (MVP)

138—174 MHz EXCITER BOARD 19D432696G1, G2 (Exec II)

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DESCRIPTION

The exciter uses seven transistors, a crystal module and an integrated circuit to provide 250 milliwatt of power to drive the PA assembly. The crystal module determines the (F1) transmitting frequency in single frequency applications.

In multi-frequency transmitters, the crystal modules for frequencies F2-F4 are located on the multi-frequency board.

The crystal frequency ranges from approximately 11.5 to 14.5 megahertz, and is multiplied 12 times.

Audio, supply voltages and control functions are connected from the system audio and squelch board to the exciter board through P902.

Centralized metering jack J103 is provided for use with GE Test Set Model 4EX3A11 or Test Kit 4EX8K12. The Test Set meters the multipliers, amplifier and the regulated 10 Volt supply.

CIRCUIT ANALYSIS

F1 OSCILLATOR CIRCUIT

A Colpitts oscillator comprised of Q102, a plug-in crystal module and associated components provides the fundamental operating frequency for the transmitter. The crystal module in the collector base circuit of Q102 is temperature compensated to maintain frequency stability within ±5 PPM over a temperature range of -30°C to +65°C. Compensation voltage is applied from compensator circuit Q101. The output of the oscillator is taken from the collector of Q102, buffered by Q103 and applied to modulator CR101 and CR102.

With the radio turned on and the PTT switch operated, +10 Volts is present on the Tx OSC lead at P902-1 and the emitter of oscillator Q102. R104 and R105 comprise a voltage divider network to establish the bias voltage for Q102, allowing it to oscillate at the crystal frequency.

SERVICE NOTE

Y1 and C2 are not field replaceable items. C2 is factory selected to compliment the temperature/frequency characteristics of each individual crystal. Should it become necessary to replace either Y1 or C2, the entire crystal module must be replaced.

In single frequency radios, the F1 keying lead is connected directly to A- by a DA jumper connected between H12 and H31 on the system, audio, squelch board (SAS). This assures F1 oscillator operation each time the PTT switch is pressed.

With the radio turned on and the PTT switch operated, +10 Volts is present on the transmitter oscillator lead at P902-1 and the emitter of Q102. R104 and R105 comprise a voltage divider network to establish the base voltage for Q102 allowing it to oscillate at the crystal frequency to allow E1 frequency selection via the frequency selector switch on the control unit.

When frequencies F2 thru F4 are selected the oscillator output frequency from the multi-frequency board is supplied to buffer Q103 through J102-1 on the exciter and cable W2601.

COMPENSATOR CIRCUITS

The crystal modules are temperature compensated at both ends of the temperature range to provide instant frequency compensation. The temperature compensator consists of Q101, VR101, RT101, RT102 and associated components. Zener diode VR101 provides a constant +8.5 V reference voltage for compensator Q101.

The cold end compensation circuit does not operate at temperatures above -10°C (+14°F). When the temperature drops below -10°C, the circuit is activated. As the temperature increases, the resistance of

RT101 increases and the compensation voltage increases.

An increase in compensation voltage decreases the capacitance of the varactor in the oscillator, thereby increasing the output frequency of the crystal module.

The hot end compensation circuit does not operate at temperatures below +55°C (131°F). When the temperature rises above +55°C, the circuit is activated. As the temperature increases, the resistance of RT102 decreases and the compensation voltage decreases. The decrease in compensation voltage increases the capacity of the varactor, decreasing the output frequency of the crystal module.

Listed below are typical minimum and maximum voltage readings to be expected at pin 4 of the crystal modules. Voltages should be measured using a high impedance meter.

TEMPERATURE RANGE	OUTPUT VOLTAGE MINIMUM	OUTPUT VOLTAGE MAXIMUM
-30°	4.9 Volts	6.0 Volts
-10° to 50°C	3.7 Volts	4.3 Volts
+75°C	3.3 Volts	3.8 Volts

AUDIO IC

The transmitter audio circuitry is contained in audio IC U101. A simplified drawing of the audio IC is shown in Figure 1.

Audio from the microphone at pin 12 is coupled through pre-emphasis capacitor C1 to the base of Q1 in the operational amplifier-limiter circuit. Collector voltage for the transistorized microphone preamplifier is supplied from the 10 Volt regulator through R979 and R980 on the System-Audio-Squelch board to J901A-14 in MASTR®.

EXECUTIVE II RADIOS

In Custom MVP radios, collector voltage for the transistorized microphone preamplifier is supplied from the 20 Volt regulator on the SAS board through R28, R29 and J913 to the microphone.

The operational amplifier-limiter circuit consists of Q1, Q2 and Q3. Q3 provides limiting at high signal levels. The gain of the operational amplifier circuit is fixed by negative feedback through R19, R20 and the resistance in the network (Pin 9).

The output of Q3 is coupled through a de-emphasis network (R10 and C3) to an active post-limiter filter consisting of C4, C5, C6, R11, R12, R13, R15, R17 and Q4.

Following the post-limiter filter is class A amplifier Q5. The output of Q5 is coupled through MOD ADJUST potentiometer R108 and resistors R109 and R115 to the phase modulators.

SERVICE NOTE: If the DC voltages applied to the audio IC are correct and there is no audio output, replace U101.

For radios equipped with Channel Guard, tone from the encoder is applied to the phase modulators through P902-9, (CG HI) and resistors R112 and R117. Instructions for setting Channel Guard modulation are located in the Transmitter Alignment Procedures.

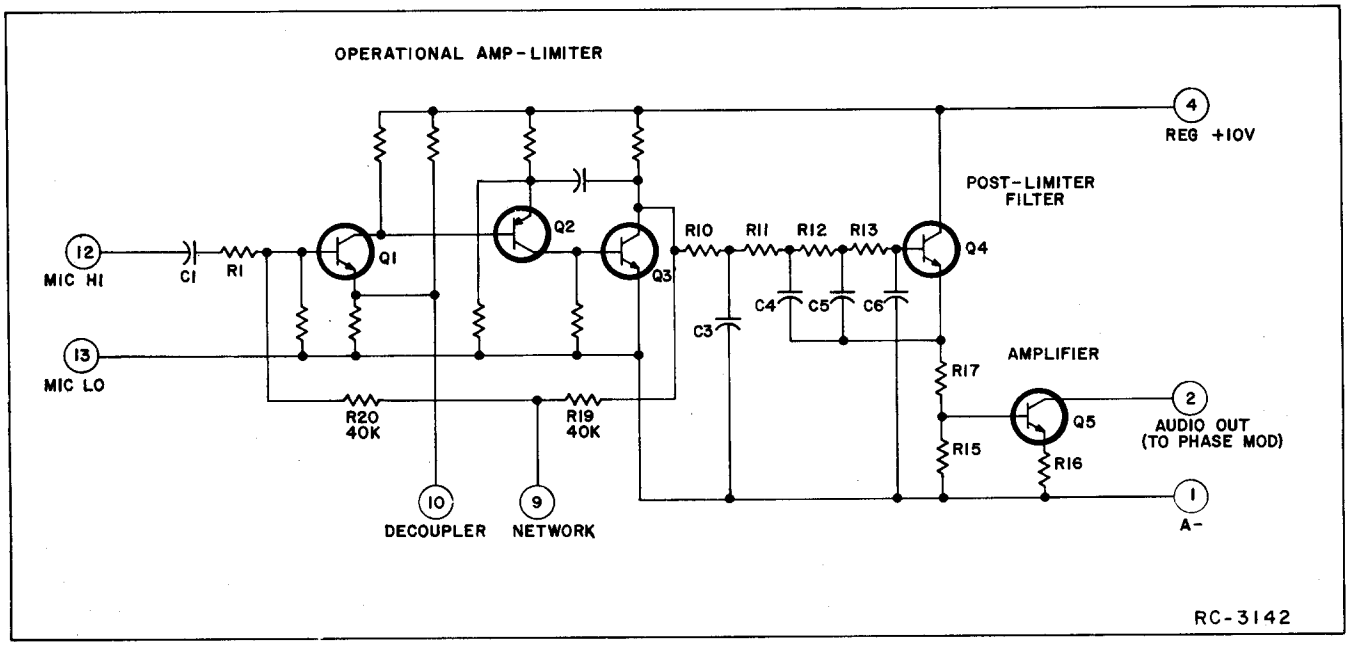

Figure 1 - Simplified Audio IC

BUFFER & PHASE MODULATOR

The oscillator output is coupled through buffer-amplifier Q103 to the modulator. The first phase modulator is varactor (voltage-variable capacitor) CR101 is connected in series with tunable coil L101.

This network appears as a series-resonant circuit to the RF output of the oscillator. An audio signal applied to the modulator circuit through blocking capacitor C114 varies the bias of CR101, resulting in a phase modulated output. A voltage divider network (R109 and R113) provides the proper bias for varactors CR101 and CR102.

The output of the modulator is coupled through blocking capacitor C119 to the base of buffer Q104.

MULTIPLIERS & AMPLIFIER

Buffer Q104 is saturated when no RF signal is present. Applying an RF signal to Q104 provides a sawtooth waveform at its collector to drive class C tripler, Q105. The tripler stage is metered through R122. The output of Q105 is coupled through tuned circuits T101 and T102 to the base of doubler Q106. T101 and T102 are tuned to one-fourth of the operating frequency. The doubler stage is metered through R124.

The output of Q106 is coupled through tuned circuits T103 and T104 to the base of second doubler Q107. T103 and T104 are tuned to one-half the operating frequency. Q107 is metered through R129.

The output of Q107 is coupled through two tuned circuits (T105 and T106) to the base of amplifier Q109. These circuits are tuned to the transmitter operating frequency.

Q108 is a class C amplifier, and is metered through R130. The amplifier collector circuit consists of T107, C146, C147, T108 and C149, and matches the amplifier output to the input of the power amplifier assembly.

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

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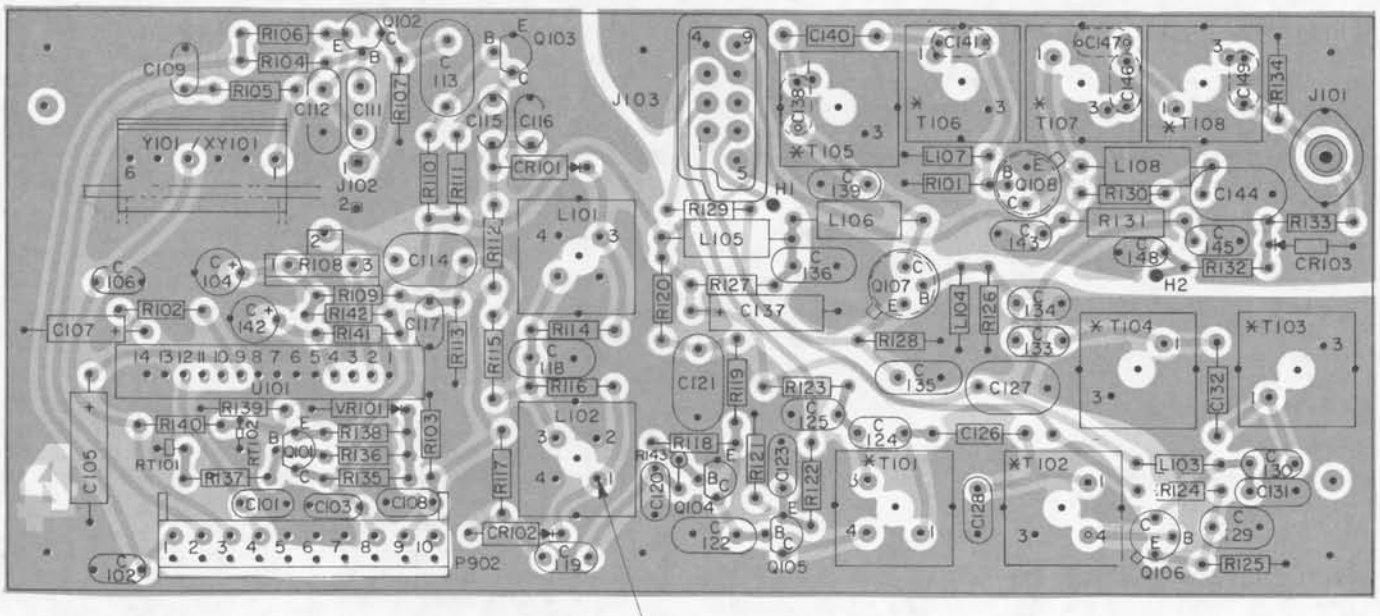
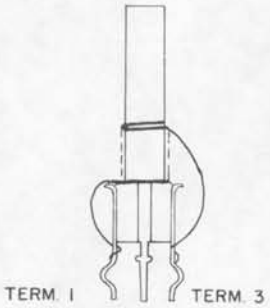
EXCITER BOARD 19D423293 (MVP)





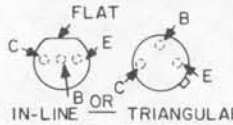
DETAIL "C"

L101 & L102 (ENLARGED)

* RAISED TAB ON COIL FORM INDICATES PIN 1 ON T101 THRU T108.

(19D423895, Rev. 0)
(19D423281, Sh. 2, Rev. 4)
(19D423281, Sh. 3, Rev. 4)

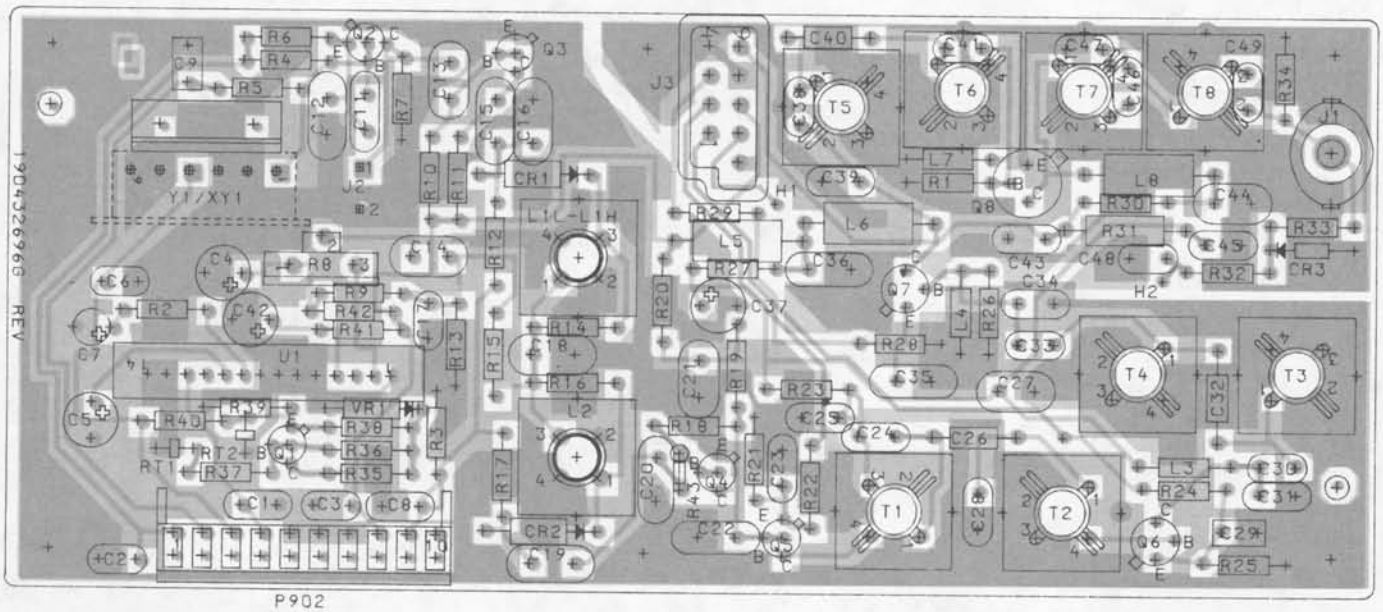
LEAD IDENTIFICATION FOR Q101 - Q107



TOP VIEW

NOTE: LEAD ARRANGEMENT, & NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION TAB INDICATES EMITTER LEAD

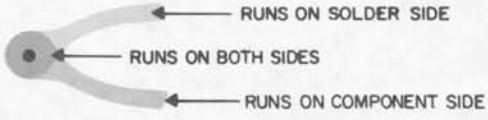
EXCITER BOARD 19D432696 (Exec II)

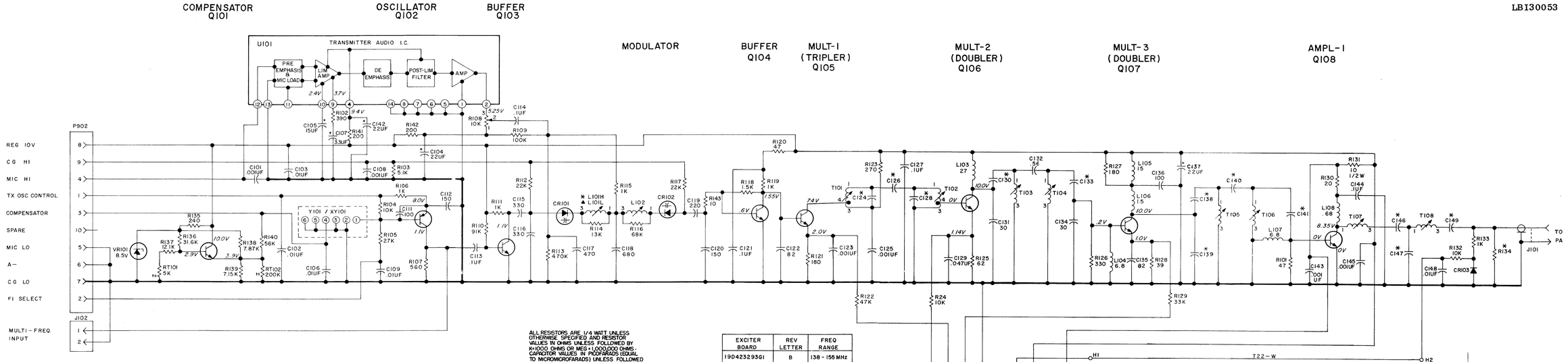


OUTLINE DIAGRAM

(19D432697, Rev. 0)
(19A143738, Sh. 1, Rev. 0)
(19A143738, Sh. 2, Rev. 0)

138—174 MHz EXCITER BOARD
19D423293G1 & G2, 19D432696G1 & G2





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.

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.

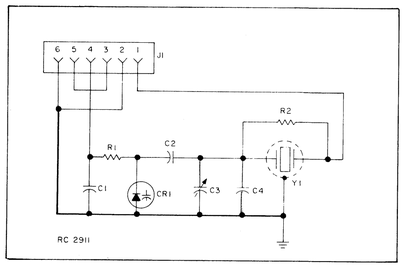
EXCITER BOARD	REV LETTER	FREQ RANGE
19D423293G1	B	138 - 155 MHz
19D423293G2	C	150.8-174MHz
19D432696G1		138-155MHz
19D432696G2		150.8-175MHz

✱ SEE CHART BELOW FOR VALUE

COMPONENT IDENT	VALUE L 138 - 155	VALUE H 150.8-174
C124	30	24
C126	.82	.75
C128	27	24
C130	24	18
C133	24	18
C138	13	8
C139	27	18
C140	.47	.39
C141	8	6
C146	8	6
C147	13	10
C149	8	6
R134	390	NONE

▲ USE IN GROUP 1
✱ USE IN GROUP 2

(19R622171, Rev. 9)



TYPICAL CRYSTAL MODULE

VOLTAGE READINGS

VOLTAGE READINGS ARE TYPICAL READINGS MADE WITH THE TRANSMITTER KEYED, AND MEASURED WITH A 20,000 OHMS-PER-VOLT METER WITH REFERENCE TO A- AND NOT CHASSIS GROUND

AN RF CHOKE (25-50 MICROHENRYS) IS USED IN THE HOT METER LEAD TO AVOID DETUNING RF CIRCUITS.

SCHEMATIC DIAGRAM

138—174 MHz EXCITER BOARD
19D423293G1 & G2
19D432696G1 & G2

PARTS LIST

LBI30064D

138-174 MHz EXCITER BOARD
19D423293G1 138-155 MHz REV C
19D423293G2 150.8-174 MHz REV C
19D432696G1 138-155 MHz
19D432696G2 150.8-174 MHz

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C101	19A143481P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C102 and C103	19A143477P13	Polyester: 0.01 µf ±20%, 50 VDCW.
C104	19A701534P8	Tantalum: 22 µf ±20%, 16 VDCW.
C105	19A143486P10	Tantalum: 15 µf ±20%, 20 VDCW; sim to Sprague Type 150D.
C106	19A143477P13	Polyester: 0.01 µf ±20%, 50 VDCW.
C107	19A143486P7	Tantalum: 3.3 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C108	19A143481P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C109	19A700234P7	Polyester: 0.01 µf ±10%, 50 VDCW.
C111	19A143491P100J7	Ceramic disc: 100 pf ±5%, 500 VDCW, temp coef -750 PPM.
C112	19A700105P38	Mica: 150 pf ±5%, 500 VDCW.
C113 and C114	19A143477P27	Polyester: 0.1 µf ±10%, 50 VDCW.
C115 and C116	5490008P39	Silver mica: 330 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C117	5494481P13	Ceramic disc: 2000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C118	5493368P680J	Mica: 680 pf ±5%, 100 VDCW; sim to Electro Motive Type DM-15.
C119	5490008P35	Silver mica: 220 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C120	5490008P31	Silver mica: 150 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C121	19A143477P27	Polyester: 0.1 µf ±10%, 50 VDCW.
C122	19A700105P32	Mica: 82 pf ±5%, 500 VDCW.
C123	19A143481P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C124L	19A143491P30J8	Ceramic disc: 30 pf ±5%, 500 VDCW, temp coef -80 PPM.
C124H	19A143491P24J8	Ceramic disc: 24 pf ±5%, 500 VDCW, temp coef -80 PPM.
C125	19A143481P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C126H	5491601P118	Phenolic: 0.75 pf ±5%, 500 VDCW.
C126L	19A700013P12	Phenolic: 0.82 pf ±5%, 500 VDCW.
C127	19A143477P27	Polyester: 0.1 µf ±10%, 50 VDCW.
C128L	19A143491P27J8	Ceramic disc: 27 pf ±5%, 500 VDCW, temp coef -80 PPM.
C128H	19A143491P24J8	Ceramic disc: 24 pf ±5%, 500 VDCW, temp coef -80 PPM.
C129	19A700234P11	Polyester: 0.047 µf ±10%, 50 VDCW.
C130L	19A143491P24J8	Ceramic disc: 24 pf ±5%, 500 VDCW, temp coef -80 PPM.
C130H	19A143491P18J8	Ceramic disc: 18 pf ±5%, 500 VDCW, temp coef -80 PPM.
C131	19A143491P30J8	Ceramic disc: 30 pf ±5%, 500 VDCW, temp coef -80 PPM.
C132	19A700013P10	Phenolic: 0.56 pf ±5%, 500 VDCW.
C133L	19A143491P24J8	Ceramic disc: 24 pf ±5%, 500 VDCW, temp coef -80 PPM.
C133H	19A143491P18J8	Ceramic disc: 18 pf ±5%, 500 VDCW, temp coef -80 PPM.
C134	19A143491P30J8	Ceramic disc: 30 pf ±5%, 500 VDCW, temp coef -80 PPM.
C135	19A700105P32	Mica: 82 pf ±5%, 500 VDCW.
C136	5490008P127	Silver mica: 100 pf ±10%, 500 VDCW; sim to Electro Motive Type DM-15.
C137	19A701534P8	Tantalum: 22 µf ±20%, 16 VDCW.
C138L	19A143491P13J8	Ceramic disc: 13 pf ±5%, 500 VDCW, temp coef -80 PPM.
C138H	19A143491P8G8	Ceramic disc: 8.0 pf ±5%, 500 VDCW, temp coef -80 PPM.
C139L	19A143491P27J8	Ceramic disc: 27 pf ±5%, 500 VDCW, temp coef -80 PPM.
C139H	19A143491P18J8	Ceramic disc: 18 pf ±5%, 500 VDCW, temp coef -80 PPM.
C140L	19A700013P9	Phenolic: 0.47 pf ±5%, 500 VDCW.
C140H	19A700013P8	Phenolic: 0.39 pf ±5%, 500 VDCW.
C141L	19A143491P8G8	Ceramic disc: 8.0 pf ±5%, 500 VDCW, temp coef -80 PPM.
C141H	19A143491P6G8	Ceramic disc: 6.0 pf ±0.25 pf, 500 VDCW, temp -80 PPM.
C142	19A701534P8	Tantalum: 22 µf ±20%, 16 VDCW.
C143	19A143481P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C144	19A143477P27	Polyester: 0.1 µf ±10%, 50 VDCW.
C145	19A143481P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C146L	19A143491P8G8	Ceramic disc: 8.0 pf ±0.25 pf, 500 VDCW, temp coef -80 PPM.
C146H	19A143491P6G8	Ceramic disc: 6.0 pf ±0.25 pf, 500 VDCW, temp coef -80 PPM.
C147L	19A143491P13J8	Ceramic disc: 13 pf ±5%, 500 VDCW, temp coef -80 PPM.
C147H	19A143491P10G8	Ceramic disc: 10 pf ±0.25 pf, 500 VDCW, temp coef -80 PPM.
C148	19A143477P13	Polyester: 0.01 µf ±20%, 50 VDCW.
C149L	19A143491P8G8	Ceramic disc: 8.0 pf ±0.25 pf, 500 VDCW, temp coef -80 PPM.
C149H	19A143491P6G8	Ceramic disc: 6.0 pf ±0.25 pf, 500 VDCW, temp coef -80 PPM.
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR101* and CR102*	5495769P9	Diode, silicon. Earlier than REV A:
	5495769P8	Diode, silicon.
CR103	19A115250P1	Silicon.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J101	19A130924G1	Connector. Includes:
	19A116832P1	Receptacle, coaxial: jack type; sim to Cinch 14H11613.
J102	19A701785P1	Contact, electrical: sim to Molex 08-50-0404. (Quantity 2).
J103	19B219374G1	Connector: 9 contacts.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L101*	19C307171P101	Coil, RF. Deleted in G2 by REV B.
L101H*	19C307171P106	Coil, RF. Added to G2 by REV B.
L101L	19C307171P101	Coil, RF.
L102L	19C307171P102	Coil, RF.
L102H*	19C307171P106	Coil, RF. In REV A & earlier:
	19C307171P101	Coil, RF.
L103	19B209420P130	Coil, RF: 27.0 µh ±10%, 3.60 ohms DC res max; sim to Jeffers 441316-5K.
L104	19A700024P23	Coil, RF: 6.8 µh ±10%, 2.00 ohms DC res max.
L105	19A700000P25	Coil, RF: 15.0 µh ±10%, 1.20 ohms DC res max.
L106	19A700000P14	Coil, RF: 1.50 µh ±10%, 0.485 ohms DC res max.
L107	19A700024P23	Coil, RF: 6.80 µh ±10%, 2.00 ohms DC res max.
L108	19A700000P10	Coil, RF: 0.68 µh ±10%, 0.15 ohms DC res max.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P902	19A116659P2	Connector, printed wiring: 10 contacts; sim to Molex 09-52-3102.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q101	19A116774P1	Silicon, NPN; sim to Type 2N5210.
Q102	19A115852P1	Silicon, PNP; sim to Type 2N3906.
Q103	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q104 and Q105	19A115330P1	Silicon, NPN.
Q106	19A115328P1	Silicon, NPN.
Q107*	19A116201P1	Silicon, NPN. In G1 of REV A & earlier, G2 of REV B & earlier:
	19A115329P2	Silicon, NPN.
Q108*	19A116868P1	Silicon, NPN; sim to Type 2N4427. In G1 of REV A & earlier, G2 of REV B & earlier:
	19A115329P2	Silicon, NPN.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R101*	19A700106P31	Composition: 47 ohms ±5%, 1/4 w. In G1 of REV A & earlier, G2 of REV B & earlier:
	3R152P151J	Composition: 150 ohms ±5%, 1/4 w.
R102	19A700106P53	Composition: 390 ohms ±10%, 1/4 w.
R103	3R152P512J	Composition: 5100 ohms ±5%, 1/4 w.
R104	19A700106P87	Composition: 10K ohms ±5%, 1/4 w.
R105	19A700106P97	Composition: 27K ohms ±5%, 1/4 w.
R106	19A700106P63	Composition: 1K ohms ±5%, 1/4 w.
R107	19A700106P57	Composition: 560 ohms ±5%, 1/4 w.
R108	19B209358P106	Variable, carbon film: approx 300 to 10,000 ohms ±10%, 0.25 w; sim to CTS Type X-201.
R109	19A700106P111	Composition: 100K ohms ±10%, 1/4 w.
R110	3R152P913J	Composition: 91K ohms ±5%, 1/4 w.
R111	19A700106P63	Composition: 1K ohms ±10%, 1/4 w.
R112	19A700106P95	Composition: 22K ohms ±10%, 1/4 w.
R113	3R152P474J	Composition: 470K ohms ±5%, 1/4 w.
R114	3R152P133J	Composition: 13K ohms ±5%, 1/4 w.
R115	19A700106P63	Composition: 1K ohms ±10%, 1/4 w.
R116	3R152P683K	Composition: 68K ohms ±10%, 1/4 w.
R117	19A700106P95	Composition: 22K ohms ±5%, 1/4 w.
R118	19A700106P67	Composition: 1.5K ohms ±10%, 1/4 w.
R119	19A700106P63	Composition: 1K ohms ±10%, 1/4 w.
R120	19A700106P31	Composition: 47 ohms ±5%, 1/4 w.
R121	19A700106P45	Composition: 180 ohms ±10%, 1/4 w.
R122	19A700106P103	Composition: 47K ohms ±10%, 1/4 w.
R123	19A700106P49	Composition: 270 ohms ±10%, 1/4 w.
R124	19A700106P87	Composition: 10K ohms ±10%, 1/4 w.
R125	3R152P620J	Composition: 62 ohms ±5%, 1/4 w.
R126	19A700106P51	Composition: 330 ohms ±10%, 1/4 w.
R127	19A700106P45	Composition: 180 ohms ±10%, 1/4 w.
R128	19A700106P29	Composition: 39 ohms ±10%, 1/4 w.
R129	19A700106P99	Composition: 33K ohms ±10%, 1/4 w.
R130	3R152P200J	Composition: 20 ohms ±5%, 1/4 w.
R131	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
R132	19A700106P87	Composition: 10K ohms ±10%, 1/4 w.
R133	19A700106P63	Composition: 1K ohms ±10%, 1/4 w.
R134	19A700106P53	Composition: 390 ohms ±10%, 1/4 w.
R135	3R152P241J	Composition: 240 ohms ±5%, 1/4 w.
R136	19C314256P23162	Metal film: 31.6K ohms ±1%, 1/4 w.
R137	19C314256P21212	Metal film: 12.1K ohms ±1%, 1/4 w.
R138	19A701250P287	Metal film: 7.87K ohms ±1%, 1/4 w.
R139	19A701250P283	Metal film: 7.15K ohms ±1%, 1/4 w.
R140	19A700106P105	Composition: 56K ohms ±5%, 1/4 w.
R141 and R142	19A700106P46	Composition: 200 ohms ±5%, 1/4 w.
R143	19A700106P15	Composition: 10 ohms ±10%, 1/4 w.
		- - - - - - - - - - THERMISTORS - - - - - - - - - -
RT101	19C300048P7	Disc: 5000 ohms ±10%; sim to NL 1D103.
RT102	19C300048P5	Disc: 200K ohms ±10%; sim to NL 4D051.
		- - - - - - - - - - TRANSFORMERS - - - - - - - - - -
T101	19C307170P301	Coil, RF: variable, wire size No. 20 AWG; sim to Paul Smith Co. Sample No. 08-2874-WS-2.
T102	19C307170P302	Coil, RF: variable, wire size No. 20 AWG; sim to Paul Smith Co. Sample No. 08-2874-WS-6.
T103 and T104	19C307170P303	Coil, RF: variable, wire size No. 20 AWG; sim to Paul Smith Co. Sample No. 071774-OG-6.
T105 and T106	19C307169P201	Coil, RF: variable, wire size No. 20 AWG; sim to Paul Smith Co. Sample No. 091774-WS-1.
T107	19C307170P304	Coil, RF: variable, wire size No. 20 AWG; sim to Paul Smith Co. Sample No. 071774-OG-3.
T108		
		- - - - - - - - INTEGRATED CIRCUITS - - - - - - - -
U101	19D416542G2	Transmitter, Audio.
		- - - - - - - - VOLTAGE REGULATORS - - - - - - - -
VR101	4036887P9	Zener: 500 mW, 8.5 v. nominal.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XY101	19A701785P1	Connector, printed wiring: 6 contacts; sim to Molex 09-65-1061.
		- - - - - - - - - - CRYSTAL MODULE - - - - - - - - - -
Y101	19B226962G4	NOTE: When reordering, give GE Part Number and specify exact operating frequency needed. Tx. 5 PPM (138-155 MHz).
	19B226962G5	Tx. 5 PPM (150.8-174 MHz).
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19A129424G2	Can. (Used with L101, L102, T101-T108).

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 - Exciter Board 19D423293G1 & G2
To improve tuning on high end of frequency band. Changed CR101 and CR102.

REV. B - Exciter Board 19D423293G2
To improve band end tuning. Changed L101 and L102.

REV. B - Exciter Board 19D423293G1

REV. C - Exciter Board 19D423293G1, G2
To incorporate new transistor. Changed Q107, Q108 and R101.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES