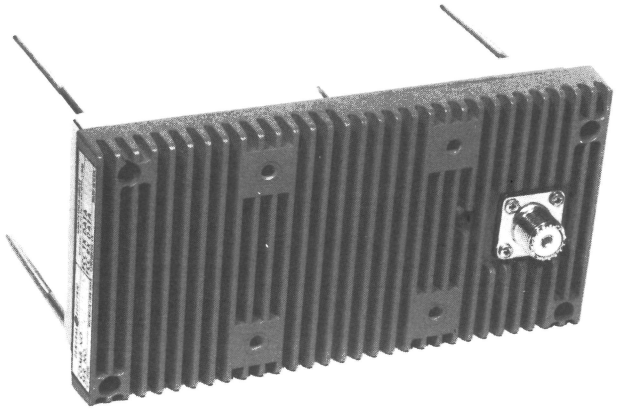
MOBILE RADIO

Porta-Mobile II™

30 - 50 MHz TRANSMITTER TYPES KT-28-A/B



KT-28-A/B

SPECIFICATIONS *

Type Numbers	KT-28-A	KT-28-B
Power Output	Adjustable from 6 to 20 Watts	Adjustable from 8 to 25 Watts
Current Drain (Less Options)	5.0 Amperes @ 20 Watts	5.0 Amperes @ 25 Watts
Spurious		
Radiated	-57 dB	-58 dB
Conducted	-57 dB	-58 dB
Modulation Deviation	0 to ±5 kHz	
Audio Response	Within +1 and -3 dB of a 6-dB/octave pre-emphasis from 300 to 3000 Hz except for an additional 6-dB/octave roll-off from 2500 to 3000 Hz per EIA.	
Audio Distortion	Less than 8%	
Crystal Multiplication	3	
RF Load Impedance	50 ohms	
Modulation Sensitivity	18 to 54 millivolts (at mic jack)	

*These specifications are intended primarily for the use of the serviceman. Refer to the appropriate Specification Sheet for the complete specifications.

GENERAL ELECTRIC

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ILLUSTRATIONS

WARNING

Although the highest DC voltage in Porta● Mobil II™ Equipment is supplied by a portable or vehicular battery, high currents may be drawn under short circuit conditions. These currents can possibly heat metal objects such as tools, rings, watchbands, etc., enough to cause burns. Be careful when working near energized circuits! High-level RF energy in the transmitter Power Amplifier assembly can cause RF burns upon contact. Keep away from these circuits when the transmitter is energized!

DESCRIPTION

Porta ● Mobile II™ transmitter types KT-28-A and KT-28-B are crystal controlled, phase modulated transmitters for one-through twelve-frequency operation in the 30-50 MHz band. The transmitters are single unit construction in the rear cover for the Porta ● Mobile II™ case assembly and utilize both discrete components and integrated circuit modules.

Each transmitter consists of exciter board 19D423681 and power amplifier 19D423710. The exciter board consists of audio module A101, filter module A102, regulator module A103, oscillator/modulator modules A104 through A115, optional compressor module A116, exciter module 4EG32A and exciter PA module 4EF45A. The application of each transmitter type is shown in the following chart:

Transmitter Type No.	Exciter Board No.	Exciter Module No.	Exciter PA Module No.	PA No.	Frequency Range	Number Frequencies	Power Output
KT-28-A	19D473681G1	4EG32A10	4EF45A10	19D423710G1	30-36 MHz	12	20
	19D423681G1	4EG32A11	4EF45A11	19D423710G2	36-42 MHz	12	20
	19D423681G1	4EG32A12	4EF45A12	19D523710G3	42-50 MHz	12	20
KT-28-B	19D423681G1	4EG32A10	4EF45A10	19D423710G4	30-36 MHz	12	25
	19D423681G1	4EG32A11	4EF45A11	19D423710G5	36-42 MHz	12	25
	19D423681G1	4EG32A12	4EF45A12	19D423710G6	42-50 MHz	12	25

Operating voltages for the transmitter are provided by a 10-Volt battery pack or a 13.8-Volt vehicle battery, a 7.5 Volt regulator circuit and two 5.4 Volt regulator circuits. The battery voltage is applied directly to the power amplifier circuit and also to the 7.5 Volt regulator circuit and power amplifier circuit through POWER OFF-ON switch S701 on the case assembly. The 7.5 Volt regulator is part of the receiver audio amplifier and is interfaced by the system board to the transmitter. A keyed 7.5 Volts is connected to the power adjust circuit in the power amplifier, and the 5.4 Volt regulator circuits on the transmitter exciter and system board. The 5.4 Volt regulator circuits provide voltage for the audio module, oscillator modules and the optional compressor module.

References to symbol numbers mentioned in the following text are found on the Schematic Diagram, Outline Diagrams and Parts List (see Table of Contents). The typical, simplified circuit diagrams used in the text are representative of the circuits in the IC modules. A block diagram of the transmitter is shown in Figure 1.

REGULATOR MODULE A103

The Regulator Module operates from the 7.5 Volts and provides a regulated 5.4 Volts for operating the transmitter oscillator/modulator and the exciter modules. A typical regulator circuit is shown in Figure 2.

Turning on the radio applies voltage to Pin 2 of the Regulator, causing Q2 and Q1 to conduct. When conducting, the 5.4 Volts at the collector of Q1 is taken from Pin 4 and applied to the oscillator/modulator and exciter modules.

Regulation is provided by Q2 and Q3, which operate as a differential amplifier. If the output of Q1 starts to increase, Q3 conducts harder, causing Q2 to conduct less. This causes Q1 to conduct less, keeping its output at 5.4 Volts. If the output of Q1 starts to decrease, Q3 conducts less, causing Q2 to conduct harder. This causes Q1 to conduct harder, keeping the output constant.

CIRCUIT ANALYSIS

OSCILLATOR MODULATOR MODULES A104 THROUGH A115

Oscillator Model 4EG31A10 consists of a crystal-controlled Colpitts oscillator and an audio and Channel Guard tone modulator. The entire oscillator is contained in a metal can with the transmitter operating frequency printed on the top. The crystal frequency ranges from 10 to 16.6 MHz, and the crystal frequency is multiplied 3 times by the exciter.

The oscillator frequency is temperature compensated to provide instant frequency compensation, with a frequency stability of ±.002% from -30°C to +60°C. A typical oscillator modulator circuit is shown in Figure 3.

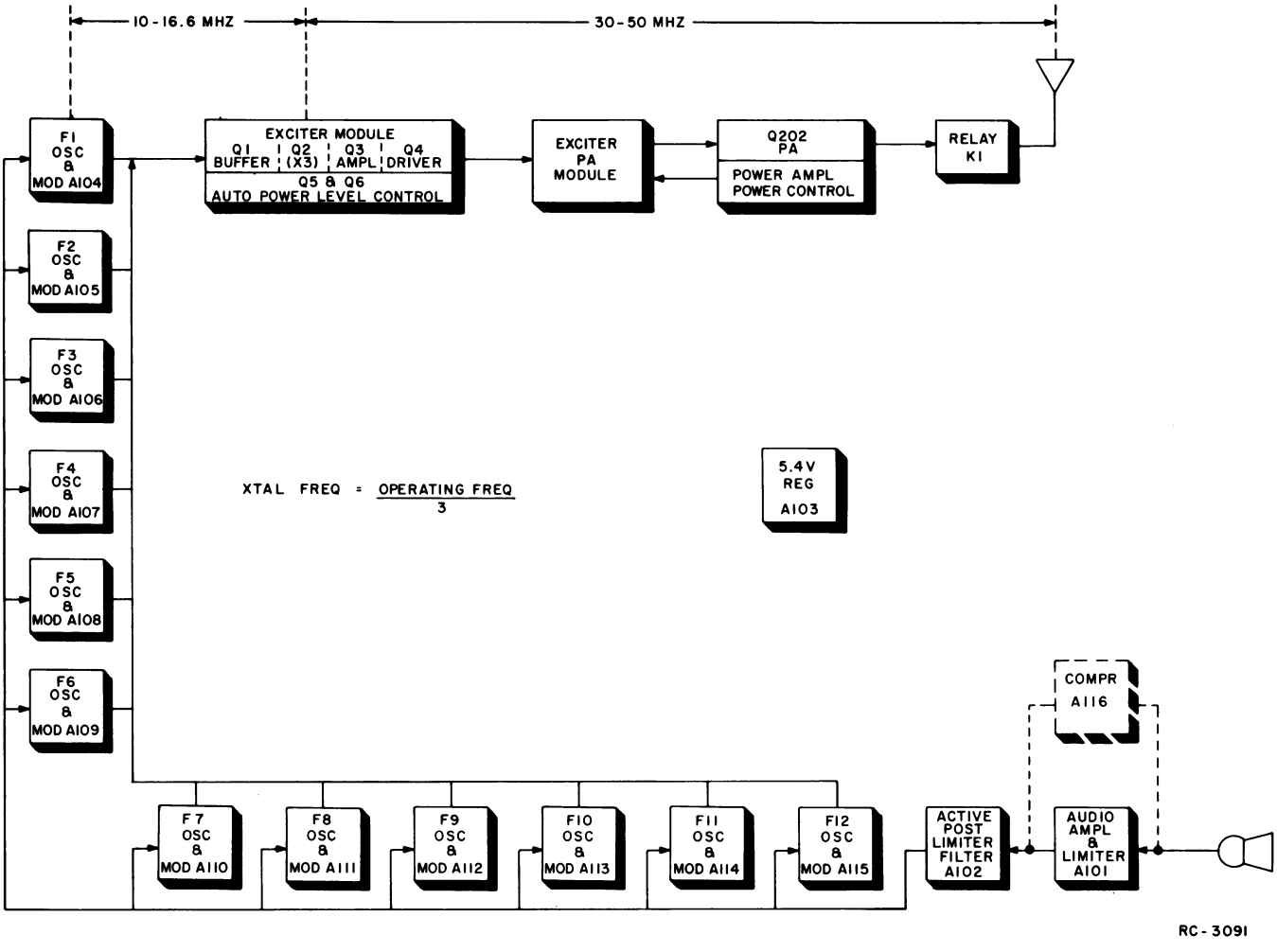


Figure 1 - Block Diagram

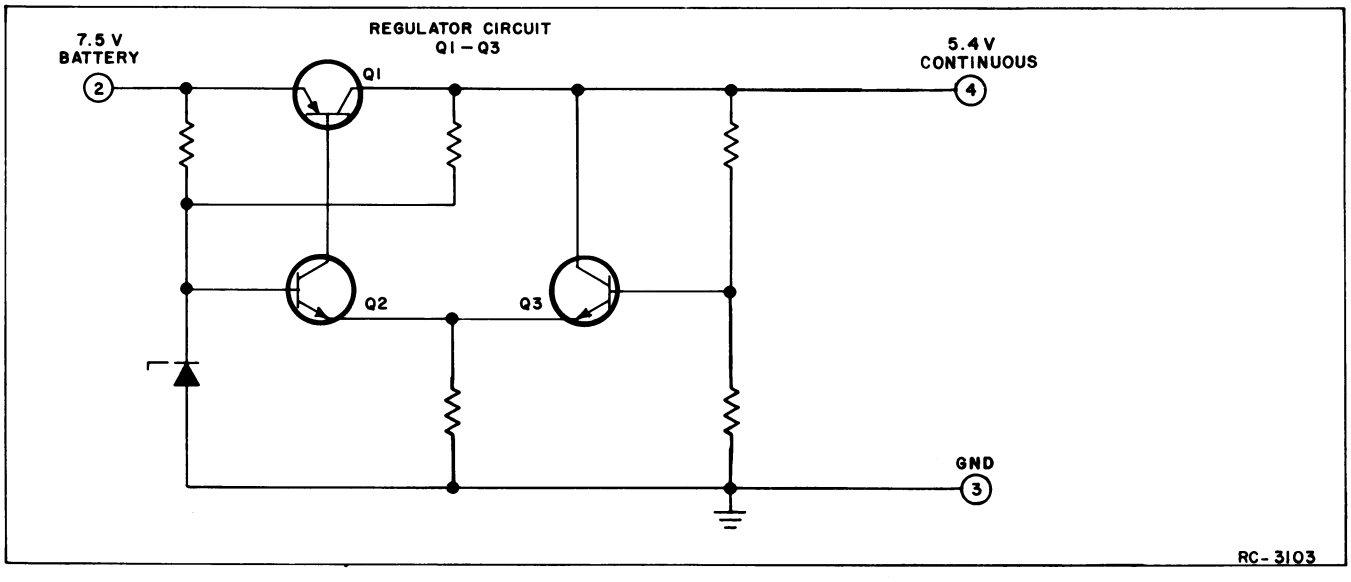


Figure 2 - Typical Regulator Circuit

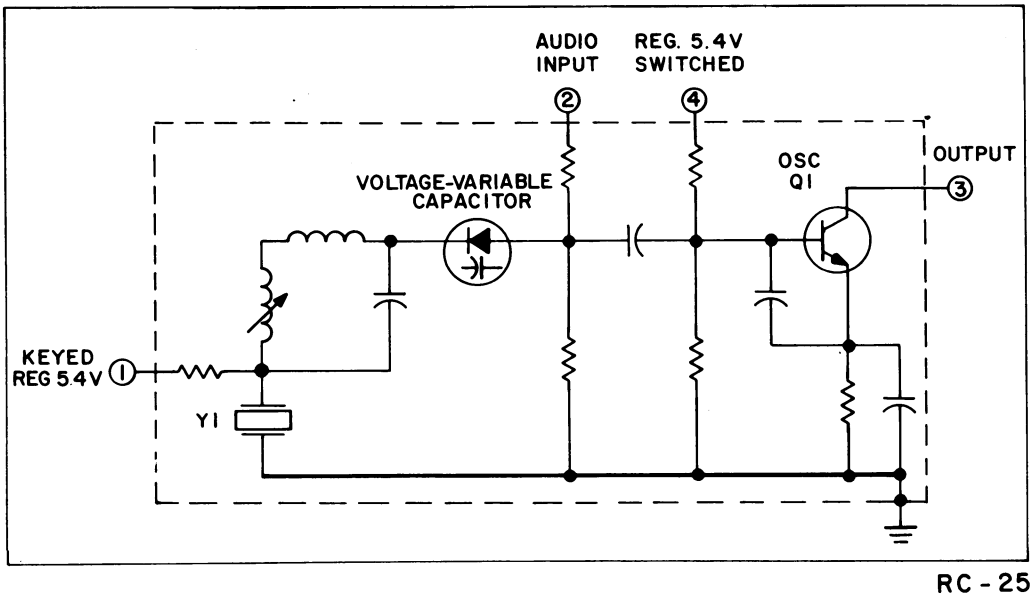


Figure 3 - Typical Oscillator/Modulator Circuit

In single-frequency transmitters, a jumper from Hole 39 to Hole 78 on the system board connected the keyed 5.4 Volt supply voltage to the oscillator/modulator modules. The oscillator output is applied to the input of the exciter module.

In multi-frequency transmitters, the single-frequency supply jumper is removed, and the proper frequency is selected by connecting 5.4 Volts to the selected oscillator module through frequency selector or switch S704 on the control unit.

For Channel Guard applications, tone from the Channel Guard encoder is applied to the oscillator module. The tone is applied through Pin 2 to the voltage-variable capacitor on the oscillator module, frequency modulating the oscillator output.

NOTE

All oscillator modules are individually compensated at the factory and cannot be repaired in the field. Any attempt to remove the oscillator cover will void the warranty.

AUDIO AMPLIFIER AND LIMITER MODULE A101

Audio from the microphone is coupled to Pin 1 of Audio Amplifier and limited module A101 (see Figure 4). Pin 1 is connected to the base of emitter-follower Q1. The output from the emitter of Q2 is direct coupled to the base of amplifier Q2. The collector of Q2 is direct coupled to limiting transistor Q3. Limiting transistor Q4 conducts as a function of Q3. The collector of Q4 is connected to Pin 6.

When the Audio Compressor option is used, audio from the microphone is coupled through the compressor and then applied to the audio amplifier stage. An audio sample from the collector of amplifier Q2 is connected from Pin 5 to the compressor circuit, keeping the audio output to the oscillator/modulator constant.

AUDIO COMPRESSOR MODULE A116

The optional Audio Compressor Module provides a relatively constant audio output to the Audio Amplifier-Limiter module over a 30 dB change in input level. The compressor module also provides a 13 dB additional gain for increased microphone sensitivity. A typical diagram of the Compressor is shown in Figure 5.

Audio from the microphone is coupled through R107 to Pin 1 of the Compressor. The audio is applied to pre-amplifier Q1 which provides the 13 dB gain. The pre-amplifier output at Pin 4 is coupled through C117 to Pin 1 of Amplifier-Limiter module A101.

At the same time, an audio sample voltage from Audio module A101 is applied to Pin 9 and to audio amplifier Q3 in the Compressor module. The output of Q3 is rectified by the two diodes, and the resultant voltage applied to the base of DC amplifier Q4. The DC output of Q4 controls the operation of the compressor-control transistor Q2.

An increase in the audio sample voltage increases the DC voltage applied to Q2. This reduces the AC impedance of Q2, which decreases the audio output voltage at Pin 4. A decrease in the audio sample voltage decreases the DC voltage

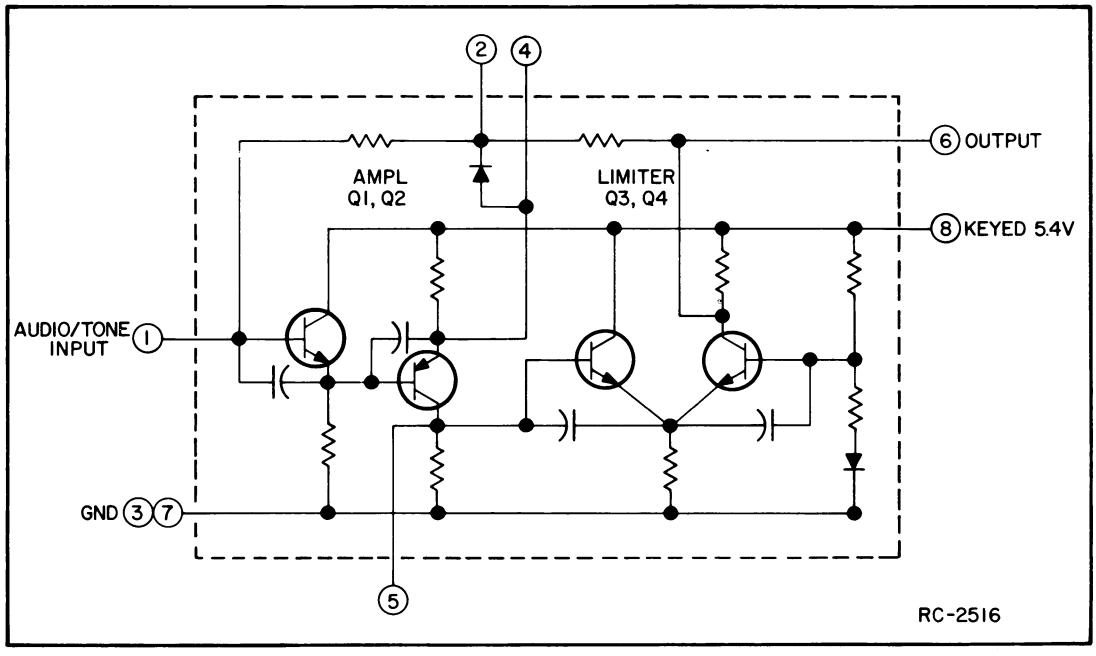


Figure 4 - Typical Audio Amplifier and Limiter

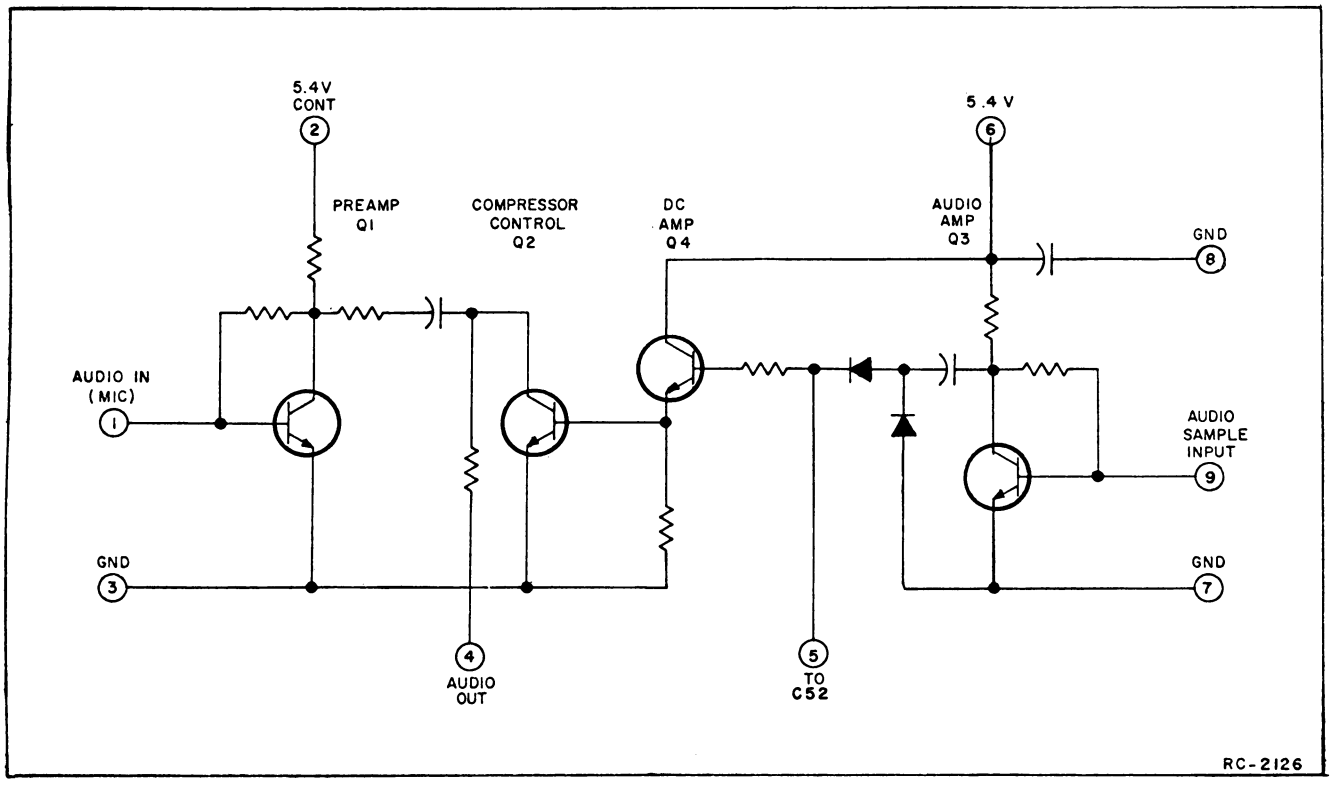


Figure 5 - Typical Audio Compressor Circuit

applied to Q2. This increases the AC impedance of Q2, and increases the audio output voltage at Pin 4.

ACTIVE POST LIMITER FILTER

The output of Audio Amplifier and Limiter module A1 connects to Pin 9 of Active Post Limiter Filter A3. The output of A3 is coupled through MOD ADJUST potentiometer R8 to oscillator/modulator modules A4 and A5. A typical Active Post Limiter Filter is shown in Figure 6.

EXCITER MODULES 4EG32A10, 11 & 12

Exciter modules 4EG32A10 through 12 consist of a buffer stage, a tripler stage, a Class C amplifier and driver stage, and an Automatic Power Level Control (APLC) circuit.

Buffer and Tripler Stages

The oscillator/modulator output is coupled through C2 to the base of Buffer Q1. Buffer Q1 isolates the oscillator from the loading effects of the following tripler stage, and provides some amplification. The output of Q1 is coupled to the base of Tripler Q2. L4 is tuned to three times the crystal frequency. The output of the Tripler stage is metered at TP1. Following the Tripler stage is an impedance-matching network coupling the RF signal to the base of Amplifier stage Q3.

Amplifier and Driver Stages

The output of Amplifier Q3 is coupled to the base of driver Q4. Driver Q4 delivers 250 milliwatts to the exciter PA module. Tripler Q2, Amplifier Q3, and Driver Q4 are tuned by measuring the voltage at TP1 and TP2.

APLC Circuit

The APLC circuit (Q5 and Q6) provides a more constant exciter power output by controlling the output of the Tripler and Amplifier. The circuit also extends the battery life by regulating current to amplifier Q4.

When Q4 starts to conduct harder and draw more collector current, the voltage drop across R14 increases, causing Q6 to conduct harder. This increases the voltage at the base of Q5. Increasing the voltage at the base of Q5 causes Q5 to conduct less, which increases the voltage drop across Q5 and reduces the collector voltage of Q2 and Q3. This reduces the drive to amplifier Q4 and reduces the collector current.

Power Adjust Potentiometer R13 is not used in this application to set power output, but may be used with TP2 for tuning.

EXCITER PA MODULES 4EF45A10, 11 & 12

Exciter PA modules 4EG45A10 through 12 deliver two-watts to the input of the power amplifier board. The output of the exciter is coupled through a tuned circuit to the base of Class C amplifier Q1. The amplifier output is applied through a series-tuned circuit to the input of the transmitter PA board.

POWER AMPLIFIER BOARD

RF is coupled from the exciter through impedance matching network C204 through C209, L205/L206/L223, L208/L209 and R217 through R228 to the base of PA transistor Q202. The RF output of the collector of Q202 is coupled through matching network C216/C217, C239,

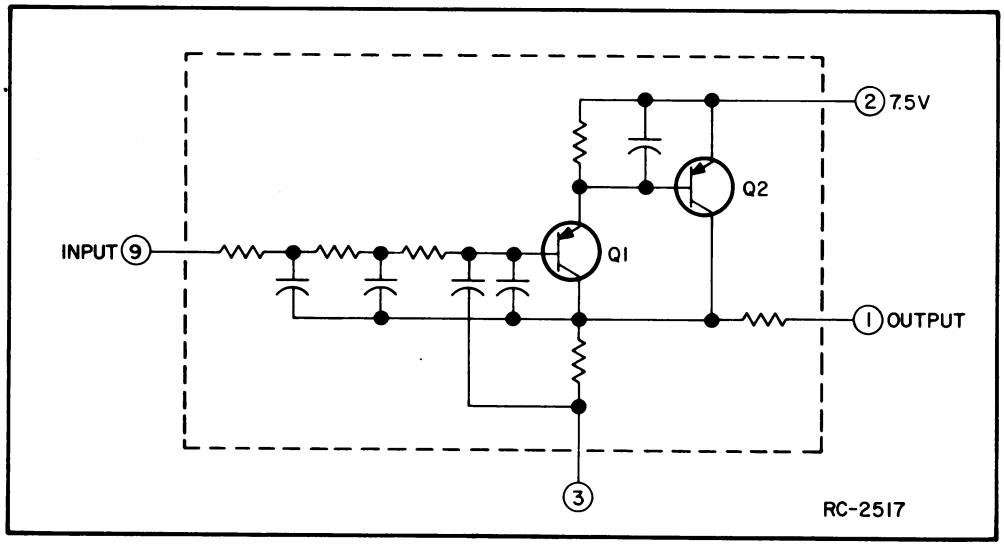


Figure 6 - Typical Active Post Limiter Filter

C218/C219/C240, C223/C224/C225, C226/C227, C228/C229, L215/L216, low pass filter C230 through C238, L217 through L222 and system relay K1 to the antenna.

Power Control Circuit

The Power Control Circuit maintains a constant current through PA transistor Q202 to control the transmitter power output when the supply voltage or load changes.

The voltage drop across metering resistor R206 is monitored by operational amplifier AR201. Initially, the negative and positive inputs to AR201, at Pins 2 and 3, are balanced by BIAS BAL ADJ R208 and PWR ADJ R212 for a nominal voltage output at Pin 6. If the current through PA transistor Q202 starts to increase the voltage drop across R206 will increase proportionally. The voltage on the negative input of AR201 will be smaller than the voltage on the positive input. The output of Pin 6 will be larger than normal. The increased voltage on the base of pass transistor Q201 will cause Q201 to conduct less and reduce the collector voltage of exciter PA module transistor Q1. The reduced collector voltage on Q1 reduces the RF drive to Q202 proportionally, maintaining a constant current through Q202.

If the current through Q202 starts to fall, the voltage on the negative input of AR201 will increase and the voltage on Pin 6 will decrease. The decreased voltage on the base of Q201 will cause Q201 to conduct harder, increasing the collector voltage on Q1. The drive to Q202 will be increased proportionally maintaining constant current through Q202.

MODULATION LEVEL ADJUSTMENT

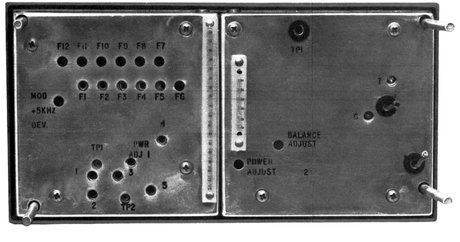
The MOD ADJUST R101 was adjusted to the proper setting before shipment and should not normally require readjustment. This setting permits approximately 75% modulation for the average voice level. The audio peaks which would cause overmodulation are clipped by the modulation limiter. The limiter, in conjunction with the de-emphasis network, instantaneously limits the slope of the audio wave to the modulator, thereby preventing overmodulation while preserving intelligibility.

TEST EQUIPMENT

1. Audio oscillator Model 4EX6A10
2. A deviation meter
3. An output meter or a VTVM

PROCEDURE

1. Connect the equipment as shown in the Test Procedure on the back of this page.
2. Apply a .48 Volt signal at 1000 Hz to the microphone input.
3. For transmitters without Channel Guard, set MOD ADJUST R101 for a 4.5-kHz swing with the deviation polarity which gives the highest reading as indicated on the frequency modulation monitor.
4. For transmitters with Channel Guard, check the Channel Guard modulation for 0.5 - 1.0 kHz.



TRANSMITTER ALIGNMENT

EQUIPMENT REQUIRED:

- GE Test Set Model 4EX3A11 (or 4EX8K11) or equivalent 20,000 ohms-per-volt meter.
- Transmitter Test Connector 19B227389G1.
- Transmitter Test Cables 19D424148G1 connected between the transmitter and system board.
- An ammeter capable of measuring one ampere connected in place of the BLACK lead of transmitter test cable 19D424148G1. This ammeter measures current to the exciter.
- An ammeter capable of measuring ten amperes, as part of, or connected in series with an external power supply.
- An ammeter capable of measuring four amperes connected in place of the RED lead of transmitter test cable 19D424148G1. This ammeter measures current to PA Transistor Q202 and is not necessary for the actual tuning of the transmitter.
- An RF wattmeter capable of measuring 20 watts for the KT-28-A or 25 watts for the KT-28-B.
- A Frequency Counter.

PRELIMINARY CHECKS AND ADJUSTMENTS:

1. Set the channel selector switch to the highest channel frequency.
2. Turn PWR ADJ of the exciter fully counter clockwise.
3. Turn BALANCE ADJUST of the power amplifier fully counter clockwise.
4. Turn POWER ADJUST of the power amplifier fully clockwise.
5. Turn tuning control 7 of power amplifier fully clockwise.
6. Place the (+) lead of the test meter into test point TP1 and the (-) lead on system ground.
7. All adjustments made with the transmitter keyed.

ADJUSTMENT PROCEDURE

STEP	TUNING CONTROL	TYPICAL METER READING	PROCEDURE
EXCITER			
1	F1 through F12	Maximum Volts	Adjust each oscillator slug for peak meter reading at TP1.
2	1	Dip in Volts	Adjust tuning control 1 for a dip in meter reading TP1.
3	2	Maximum mA	Adjust tuning control 2 for maximum transmitter current.
4	3	Maximum mA	Adjust tuning control 3 for maximum transmitter current.
5	4	Maximum mA	Adjust tuning control 4 for maximum transmitter current.
6	5	Maximum mA	Adjust tuning control 5 for maximum transmitter current.
7	PWR ADJ	Decrease in Volts	Turn PWR ADJ Control counterclockwise until a decrease in meter reading at TP2.
8	1, 2 and 3	Minimum Volts	Readjust tuning control 1, 2, and 3 for minimum meter reading at TP2.
9	PWR ADJ 4 & 5	Maximum mA	Turn PWR ADJ control fully clockwise for maximum transmitter current. Readjust tuning control 4 and 5 for transmitter current.
POWER AMPLIFIER			
10	6 and 7	Maximum power output	Adjust tuning control 6 and 7 for maximum transmitter power output
11	4, 5, 6 and 7	Maximum power output	Readjust tuning controls 4 and 5 on the exciter and 6 and 7 on the power amplifier for maximum power output.
12	PWR ADJ		Turn fully counterclockwise.
13	Balance Adjust	Zero power output	Adjust BALANCE ADJUST until power decreases to zero.
14	PWR ADJ	Rated power output	Adjust POWER ADJUST for rated power output.
15	7 and POWER ADJUST	Rated power output	If necessary, tuning control 7 and POWER ADJUST may be readjusted to obtain desired power and current. (7 may only be readjusted when "Power Adjust" is fully clockwise.)
FREQUENCY ADJUSTMENT			
16			With no modulation, adjust F1 through F12 crystal trimmers for proper oscillator inquiries. Next, refer to the Modulation Adjustment. —NOTE— It is recommended that all frequency adjustments be made when the equipment is at a temperature of approximately 75°F. In no case should frequency adjustments be made when the equipment is outside the temperature range of 60°F to 90°F.

TEST PROCEDURES

These Test Procedures are designed to assist you in servicing a transmitter that is operating--but not properly. Problems encountered could be low power output, tone and voice deviation, defective audio sensitivity and modulator adjust control set too high. By following the sequence of test steps starting with Step 1, the defect can be quickly localized. Once a defect is pin pointed, refer to the "Service Check" and the additional corrective measures included in the Transmitter Troubleshooting Procedure. Before starting with the Transmitter Test Procedures, be sure the transmitter is tuned and aligned to the proper operating frequency.

TEST EQUIPMENT REQUIRED

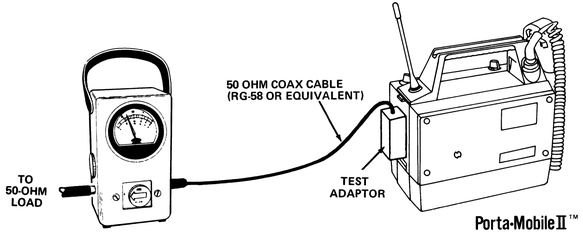
for test hookup shown:

1. Wattmeter similar to:
   Bird # 43
2. VTVM similar to:
   Triplett # 850
   Heath # 1M-21
3. Audio Generator similar to:
   GE Model 4EX6A10 or
   Heath # IG-72
4. Deviation Meter (with a .75 kHz scale) similar to:
   Measurements # 140
   Lampkin # 205A
5. Test Cable
   19D424148G1
6. Test Adaptor
   19B227389G1

STEP 1
POWER MEASUREMENT

TEST PROCEDURE

A. Connect transmitter output to wattmeter as shown below. GE adaptor 19B227389G1 and a 50 ohm coax cable is recommended for accurate power output readings.



B. Key transmitter and check wattmeter for desired power output..

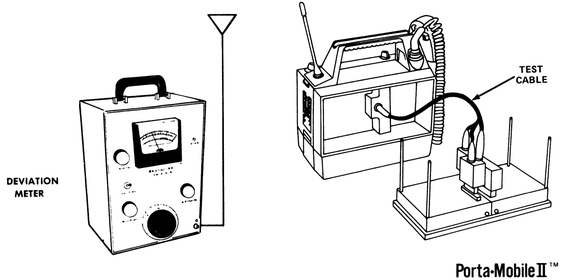
SERVICE CHECK

Refer to Service Hints on Transmitter Troubleshooting Procedure.

STEP 2
TONE DEVIATION WITH CHANNEL GUARD

TEST PROCEDURE

A. Set up Deviation Meter and monitor output of transmitter as shown below:



B. Set MOD ADJUST R103 fully counterclockwise.

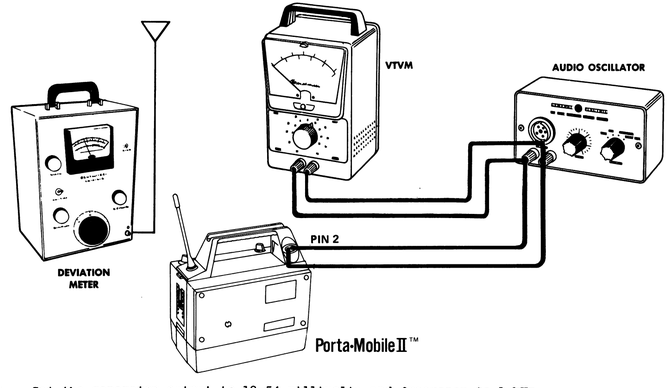
C. Key transmitter and check for approximately 0.75-kHz deviation. If reading is low or high, refer to the Channel Guard Troubleshooting Procedure (see Table of Contents)

NOTES--The Tone Deviation Test Procedures should be repeated every time the Tone Frequency is changed.

STEP 3
VOICE DEVIATION AND SYMMETRY

TEST PROCEDURE

A. Connect test equipment to transmitter as shown below:



B. Set the generator output to 18-54 millivolts and frequency to 1 kHz.

C. Key the transmitter and adjust Deviation Meter to carrier frequency.

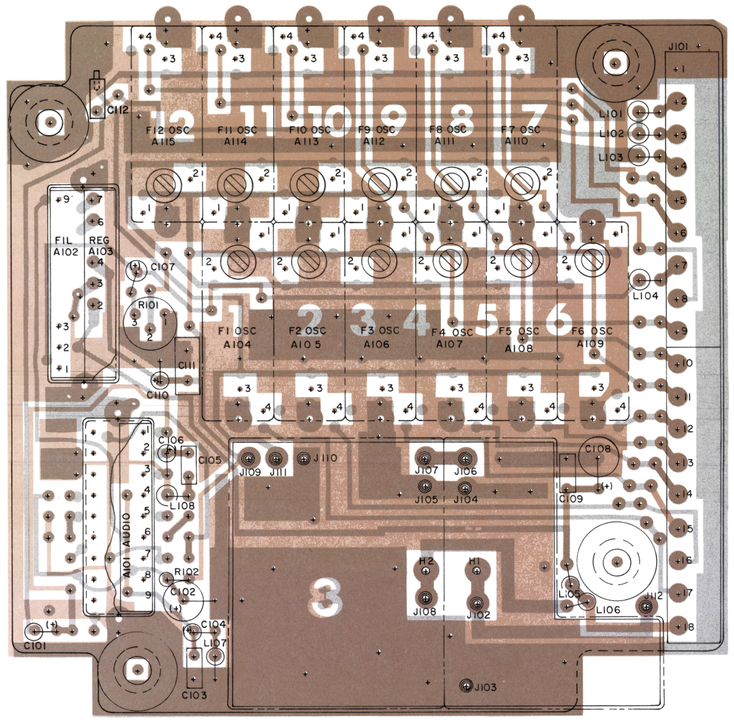
D. Deviation reading should be ±4.5 kHz. If the deviation is not 4.5 kHz, set the deviation as directed on the Transmitter Alignment Procedure (see Table of Contents).

NOTES --These transmitters are adjusted for 4.5 kHz deviation at the factory. The factory adjustment will prevent the transmitter from deviating more than 5.0 kHz under the worst conditions of frequency, voltage and temperature.

If the deviation reading plus (+) or minus (-) differs by more than 0.5 kHz:

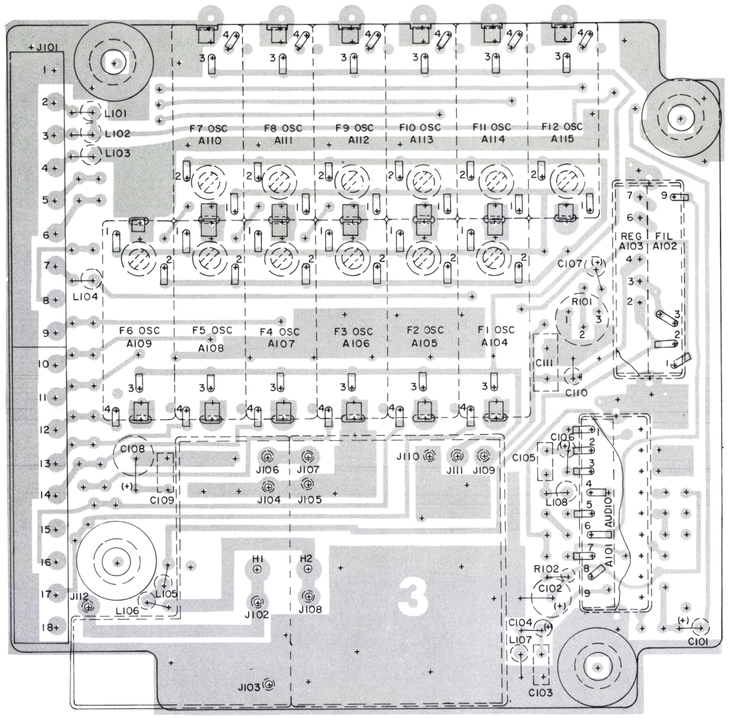
E. Refer to the Modulation Adjustment on the Transmitter Alignment Procedure.

F. Check Audio Sensitivity by reducing generator output until deviation falls to 3 kHz. Voltage should be LESS than 14 millivolts.



(19D423680, Sh. 2, Rev. 3)
(19D423680, Sh. 3, Rev. 3)

COMPONENT SIDE



SOLDER SIDE

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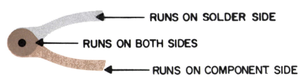
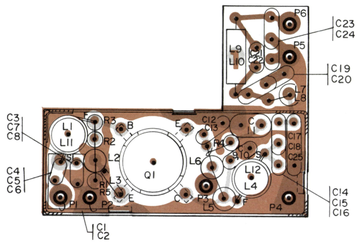
(19D424257, Rev. 2)



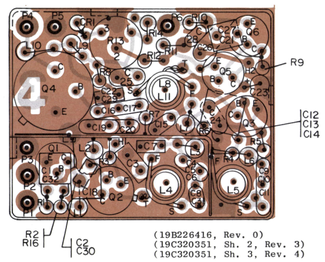
EXCITER MODULES

4EF45A10, 11 & 12



(19B226410, Rev. 0)
(19C320364, Sh. 2, Rev. 0)
(19C320364, Sh. 3, Rev. 1)

4EG32A10, 11 & 12



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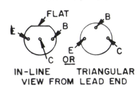
(19C320351, Sh. 2, Rev. 3)
(19C320351, Sh. 3, Rev. 4)

LEAD IDENTIFICATION FOR Q1 - Q6

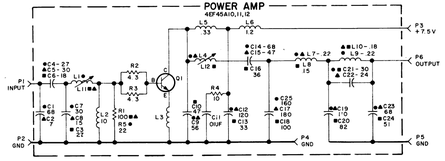


NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

OUTLINE DIAGRAM

30—50 MHz EXCITER BOARD

EXCITER MODULES



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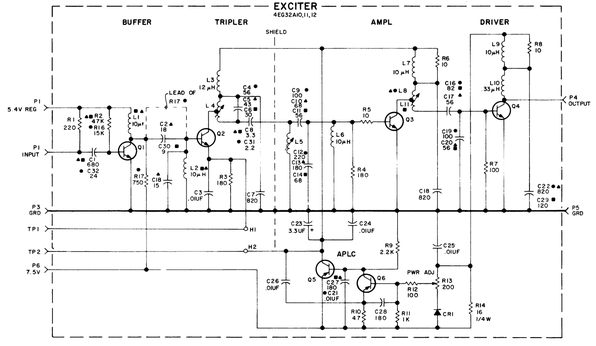

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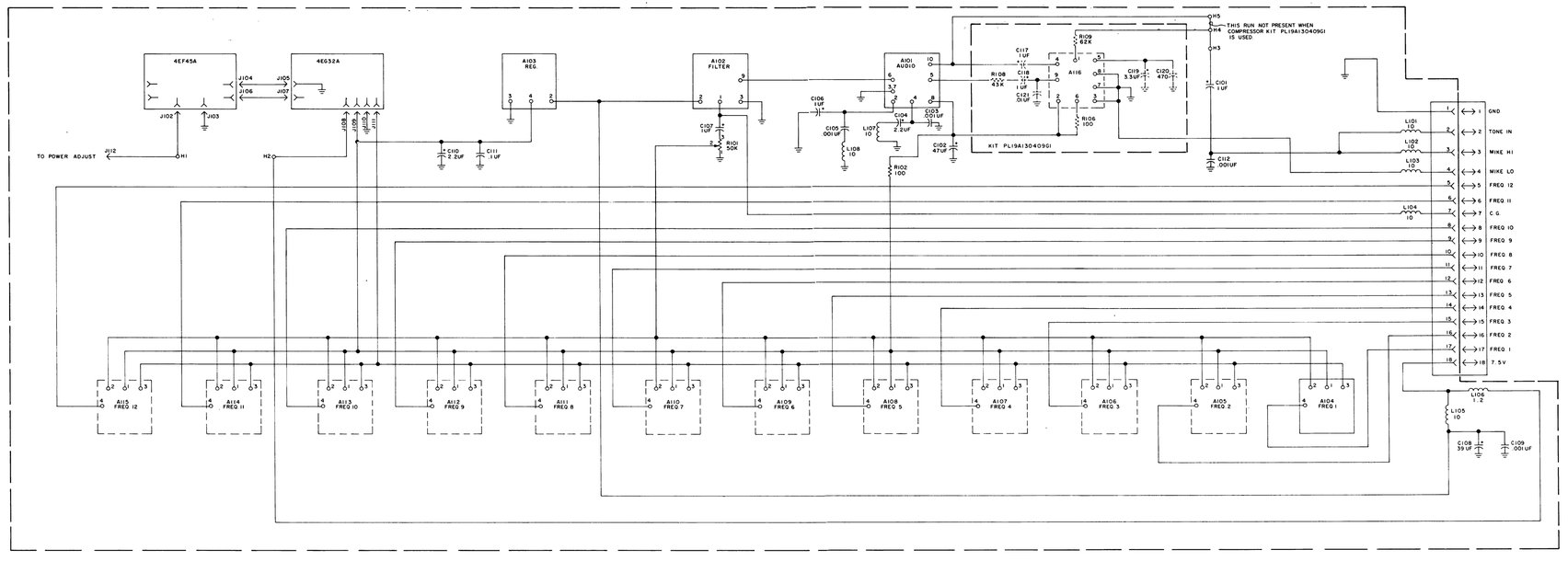


(19B622209, Rev. 3)

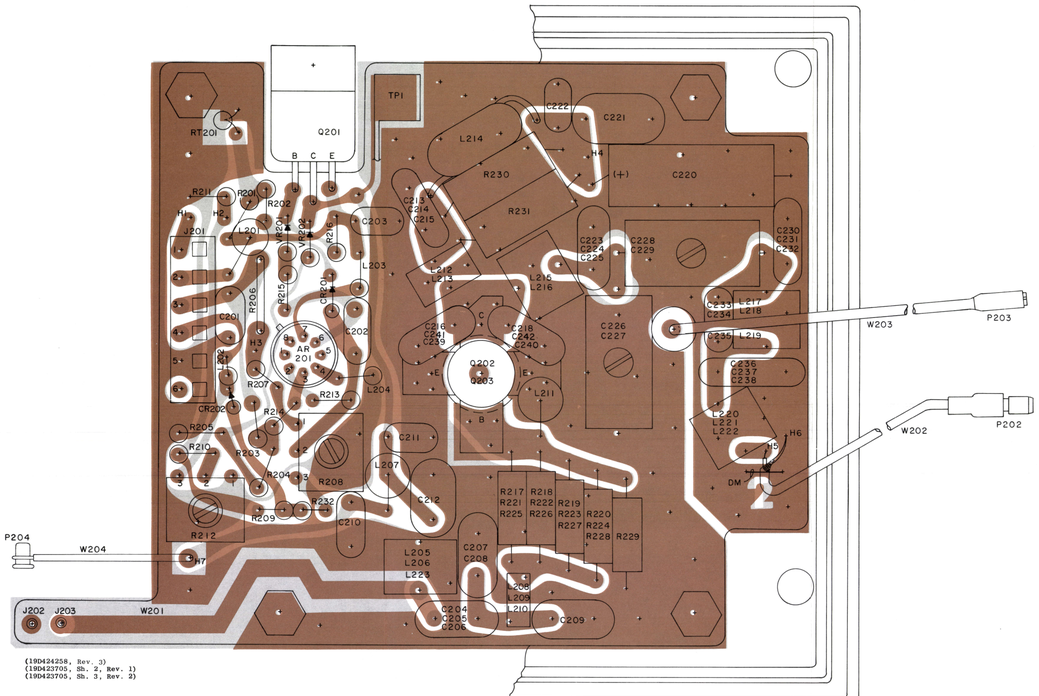
IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

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.

MODEL NO	REV LETTER
PL19D423681G1	A
PL19A130409G1	A

SCHEMATIC DIAGRAM

30—50 MHz EXCITER BOARD

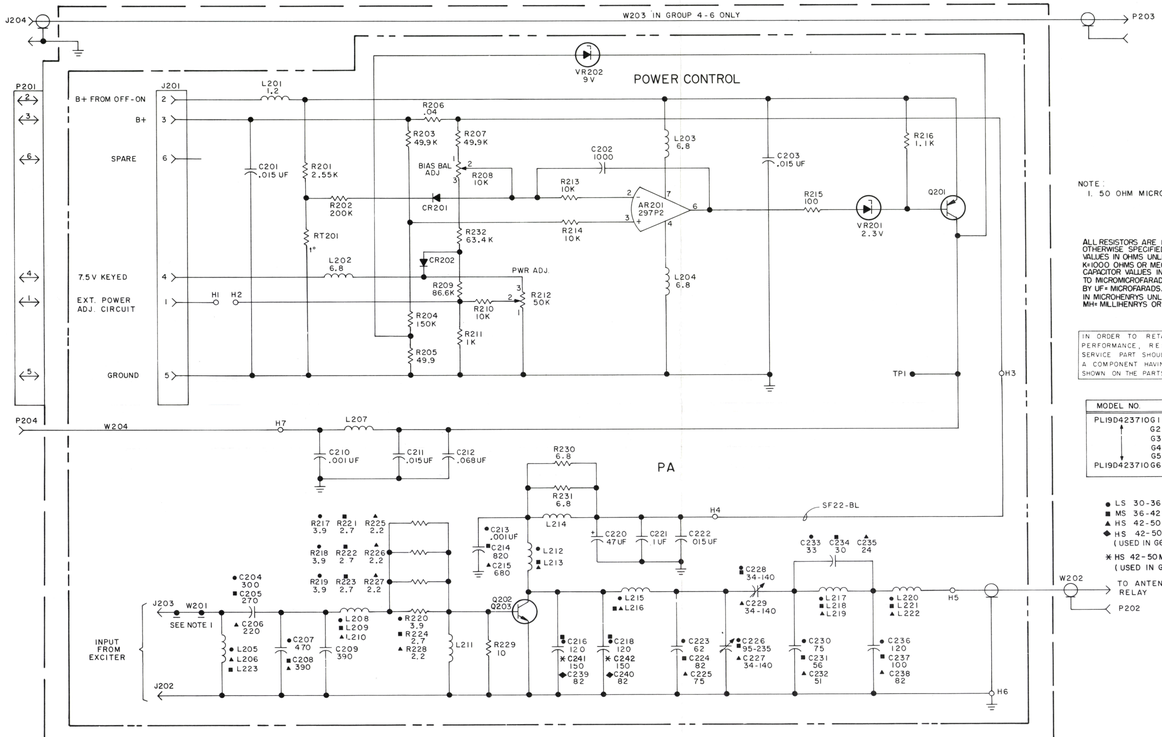


(19D424258, Rev. 3)
(19D423705, Sh. 2, Rev. 1)
(19D423705, Sh. 3, Rev. 2)

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

OUTLINE DIAGRAM

30—50 MHz POWER AMPLIFIER



NOTE:
1. 50 OHM MICROSTRIP PART OF P.W.B.

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.

MODEL NO.	RCV LETTER
PLI9D423710G1	A
G2	A
G3	B
G4	A
G5	A
PLI9D423710G6	

● LS 30-36 MHZ
■ MS 36-42 MHZ
▲ HS 42-50 MHZ
◆ HS 42-50 MHZ (USED IN G6 ONLY)
✱ HS 42-50MHz (USED IN G3 ONLY)

(19D423714, Rev. 5)

SCHEMATIC DIAGRAM

30—50 MHz POWER AMPLIFIER

PARTS LIST

LBI30231B

TRANSMITTER
KT-SB-A/B

SYMBOL	GE PART NO.	DESCRIPTION
		EXCITER BOARD 19D423681G1
A101	19C320354G1	Audio Module.
A102	19C320345G1	Post Limiter Filter Module.
A103*	19C320870G1	Regulator Module. In REV A & earlier:
	19C311905G2	Regulator Module.
		- - - - - - - - OSCILLATOR MODULES - - - - - - - -
		NOTE: When reordering, give GE Part Number and specify exact frequency needed.
		Crystal Freq. = Fo / 2
A104 thru A115	4SD31A10	Oscillator Module.
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C101	5491674P1	Tantalum: 1.0 µf +40% -20%, 10 VDCV; sim to Sprague Type 162D.
C102	5491674P42	Tantalum: 47 µf ±20%, 6 VDCV; sim to Sprague Type 162D.
C103	5495323P12	Ceramic: 0.001 µf +100% -0%, 75 VDCV.
C104	5491674P8	Tantalum: 2.2 µf +40% -20%, 10 VDCV; sim to Sprague Type 162D.
C105	5495323P12	Ceramic: 0.001 µf +100% -0%, 75 VDCV.
C106	5491674P1	Tantalum: 1.0 µf +40% -20%, 10 VDCV; sim to Sprague Type 162D.
C107	5491674P28	Tantalum: 1.0 µf ±20%, 25 VDCV; sim to Sprague Type 162D.
C108	5491674P30	Tantalum: 39 µf ±20%, 10 VDCV; sim to Sprague Type 162D.
C109	5495323P12	Ceramic: 0.001 µf +100% -0%, 75 VDCV.
C110	5491674P8	Tantalum: 2.2 µf +40% -20%, 10 VDCV; sim to Sprague Type 162D.
C111	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCV.
C112*	5495323P12	Ceramic: 0.001 µf +100% -0%, 75 VDCV. Added by ECN A.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J101	19A130858G2	Connector: 9 contacts. (Quantity 2).
J102 thru J112		(Part of printed board 19D227208G1).
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L101 thru L105	19B209420P125	Coil, RF: 10.0 µh ±10%, 3.10 ohms DC res max; sim to Jeffers 4446-4E.
L106	19B209420P114	Coil, RF: 1.20 µh ±10%, 0.18 ohms DC res max; sim to Jeffers 4436-1E.
L107 and L108	19B209420P125	Coil, RF: 10.0 µh ±10%, 3.10 ohms DC res max; sim to Jeffers 4446-4E.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P101	19A116059P2	Connector, printed wiring: 18 contacts.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R101	19A116412P9	Variable, cermet: 500 ohms ±10%, 1/2 w; sim to Bellpot Model 62 PF.
R102	3B151P101K	Composition: 100 ohms ±10%, 1/8 w.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
		EXCITER MODULE 4EF45A10 19C320771G1 30-36 MHz 4EF45A11 19C320771G2 36-42 MHz 4EF45A12 19C320771G3 42-50 MHz
C1	19A116114P2059	Ceramic: 68 pf ±5%, 100 VDCV; temp coef -80 PPM.
C2	19A116114P24	Ceramic: 7 pf ±5%, 100 VDCV; temp coef 0 PPM.
C3 and C4	19A116114P2043	Ceramic: 27 pf ±10%, 100 VDCV; temp coef -80 PPM.
C5	19A116114P2045	Ceramic: 30 pf ±5%, 100 VDCV; temp coef -80 PPM.
C6	19A116114P37	Ceramic: 18 pf ±10%, 100 VDCV; temp coef 0 PPM.
C7	19A116114P2045	Ceramic: 30 pf ±5%, 100 VDCV; temp coef -80 PPM.
C8	19A116114P2036	Ceramic: 15 pf ±10%, 100 VDCV; temp coef -80 PPM.
C9	19A116114P2056	Ceramic: 56 pf ±5%, 100 VDCV; temp coef -150 PPM.
C10	19A116114P2053	Ceramic: 47 pf ±5%, 100 VDCV; temp coef -80 PPM.
C11	19A116192P1	Ceramic: 0.01 µf ±20%, 50 VDCV; sim to Erie 8121 SPECIAL.
C12	19A116114P2068	Ceramic: 130 pf ±5%, 100 VDCV; temp coef -750 PPM.
C13	19A116114P46	Ceramic: 33 pf ±10%, 100 VDCV; temp coef 0 PPM.
C14	19A116114P2059	Ceramic: 68 pf ±5%, 100 VDCV; temp coef -80 PPM.
C15	19A116114P2053	Ceramic: 47 pf ±5%, 100 VDCV; temp coef -80 PPM.
C16	19A116114P2048	Ceramic: 36 pf ±5%, 100 VDCV; temp coef -80 PPM.
C17	19A116114P6073	Ceramic: 180 pf ±10%, 100 VDCV; temp coef -470 PPM.
C18	19A116114P2064	Ceramic: 100 pf ±10%, 100 VDCV; temp coef -80 PPM.
C19	19A116114P2066	Ceramic: 110 pf ±5%, 100 VDCV; temp coef -80 PPM.
C20	19A116114P2062	Ceramic: 82 pf ±5%, 100 VDCV; temp coef -80 PPM.
C21	19A116114P2045	Ceramic: 30 pf ±5%, 100 VDCV; temp coef -80 PPM.
C22	19A116114P2042	Ceramic: 24 pf ±5%, 100 VDCV; temp coef -80 PPM.
C23	19A116114P2059	Ceramic: 68 pf ±5%, 100 VDCV; temp coef -80 PPM.
C24	19A116114P2054	Ceramic: 51 pf ±5%, 100 VDCV; temp coef -150 PPM.
C25	19A116114P4072	Ceramic: 160 pf ±5%, 100 VDCV; temp coef -220 PPM.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19B210774G2	Coil. Includes:
	19B209436P1	Tuning slug.
L2	19B209420P125	Coil, RF: 10.0 µh ±10%, 3.10 ohms DC res max; sim to Jeffers 4446-4.
L3	19A129518P1	Coil. Includes:
L4	19B210774G1	Coil. Includes:
	19B209436P1	Tuning slug.
L5	19B209420P107	Coil, RF, 0.33 µh ±10%, 0.22 ohms DC res max; sim to Jeffers 4416-7.
L6	19B209420P114	Coil, RF, 1.20 µh ±10%, 0.18 ohms DC res max; sim to Jeffers 4436-1.
L7	19B209420P105	Coil, RF, 0.22 µh ±10%, 0.14 ohms DC res max; sim to Jeffers 4416-5.
L8	19B209420P103	Coil, RF, 1.15 µh ±10%, 0.10 ohms DC res max; sim to Jeffers 4418-3.
L9	19B209420P105	Coil, RF, 0.22 µh ±10%, 0.14 ohms DC res max; sim to Jeffers 4416-5.
L10	19B209420P104	Coil, RF, 0.18 µh ±10%, 0.12 ohms DC res max; sim to Jeffers 4416-4.
L11	19B210774G3	Coil. Includes:
	19B209436P1	Tuning slug.
L12	19B210774G4	Coil. Includes:
	19B209436P1	Tuning slug.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1 thru P6	19A115834P4	Contact, electrical: sim to AMP 2-332070-9.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1	19B227818G1	Silicon, NPN.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R151P101J	Composition: 100 ohms ±5%, 1/8 w.
R2 and R3	3R151P483J	Composition: 4.3 ohms ±5%, 1/8 w.
R4	3R151P100J	Composition: 10 ohms ±5%, 1/8 w.
R5	3R151P220J	Composition: 22 ohms ±5%, 1/8 w.
		EXCITER PA 4EG32A10 19C320357G1 30-36 MHz 4EG32A11 19C320357G2 36-42 MHz 4EG32A12 19C320357G3 42-50 MHz
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A116192P8	Ceramic: 680 pf ±20%, 50 VDCV; sim to Erie 8111-A050-V58.
C2	19A116114P37	Ceramic: 18 pf ±10%, 100 VDCV; temp coef 0 PPM.
C3	19A116192P1	Ceramic: 0.01 µf ±20%, 50 VDCV; sim to Erie 8121 SPECIAL.
C4	19A116114P3056	Ceramic: 56 pf ±5%, 100 VDCV; temp coef -150 PPM.
C5	19A116114P2051	Ceramic: 43 pf ±5%, 100 VDCV; temp coef -80 PPM.
C6	19A116114P2045	Ceramic: 30 pf ±5%, 100 VDCV; temp coef -80 PPM.
C7	19A116192P9	Ceramic: 820 pf ±10%, 50 VDCV; sim to Erie 8111-A050-V58.
C8	19A116114P2011	Ceramic: 3.3 pf ±10%, 100 VDCV; temp coef -80 PPM.
C9	19A116114P64	Ceramic: 100 pf ±10%, 100 VDCV; temp coef 0 PPM.
C10	19A116114P3059	Ceramic: 68 pf ±5%, 100 VDCV; temp coef -80 PPM.
C11	19A116114P3056	Ceramic: 56 pf ±5%, 100 VDCV; temp coef -150 PPM.
C12	19A116114P7076	Ceramic: 220 pf ±10%, 100 VDCV; temp coef -750 PPM.
C13	19A116114P6073	Ceramic: 180 pf ±10%, 100 VDCV; temp coef -470 PPM.
C14	19A116114P4059	Ceramic: 68 pf ±5%, 100 VDCV; temp coef -220 PPM.
C15	19A116192P9	Ceramic: 820 pf ±20%, 50 VDCV; sim to Erie 8131 SPECIAL.
C16	19A116114P2062	Ceramic: 82 pf ±5%, 100 VDCV; temp coef -80 PPM.
C17	19A116114P3056	Ceramic: 56 pf ±5%, 100 VDCV; temp coef -150 PPM.
C18	19A116114P36	Ceramic: 15 pf ±5%, 100 VDCV; temp coef 0 PPM.
C19	19A116114P3064	Ceramic: 100 pf ±10%, 100 VDCV; temp coef -80 PPM.
C20	19A116114P3056	Ceramic: 56 pf ±5%, 100 VDCV; temp coef -150 PPM.
C21	19A116192P1	Ceramic: 0.01 µf ±20%, 50 VDCV; sim to Erie 8131 SPECIAL.
C22	19A116192P9	Ceramic: 820 pf ±20%, 50 VDCV; sim to Erie 8111-A050-V58.
C23	8491674P36	Tantalum: 3.3 µf ±20%, 10 VDCV; sim to Sprague Type 162D.
C24 thru C26	19A116192P1	Ceramic: 0.01 µf ±20%, 50 VDCV; sim to Erie 8121 SPECIAL.
C27 thru C28	19A116114P10073	Ceramic: 180 pf ±10%, 100 VDCV; temp coef -1000 PPM.
C29	19A116114P7068	Ceramic: 130 pf ±5%, 100 VDCV; temp coef -750 PPM.
C30	19A116114P2030	Ceramic: 9 pf ±5%, 100 VDCV; temp coef -80 PPM.
C31	19A116114P2007	Ceramic: 2.2 pf ±10%, 100 VDCV; temp coef -80 PPM.
C32	19A116114P3042	Ceramic: 24 pf ±5%, 100 VDCV; temp coef -80 PPM.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A115250P1	Silicon.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1 and L2	19B209430P125	Coil, RF: 10.0 µh ±10%, 3.10 ohms DC res max; sim to Jeffers 4446-4E.
L3	19B209430P114	Coil, RF: 1.20 µh ±10%, 0.18 ohms DC res max; sim to Jeffers 4436-1E.
L4	19B210766G1	Coil.
L5	19B210765G1	Coil.
L6 and L7	19B209430P125	Coil, RF: 10.0 µh ±10%, 3.10 ohms DC res max; sim to Jeffers 4446-4E.
L8	19B210766G1	Coil.
L9	19B209430P125	Coil, RF: 10.0 µh ±10%, 3.10 ohms DC res max; sim to Jeffers 4446-4E.
L10	19B209430P107	Coil, RF: 0.33 µh ±10%, 0.22 ohms DC res max; sim to Jeffers 4416-7E.
L11	19B210766G2	Coil.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1 thru P6	19A115834P4	Contact, electrical: sim to AMP 2-332070-9.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1	19A115330P1	Silicon, NPN.
Q2	19A115328P1	Silicon, NPN.
Q3	19A115330P1	Silicon, NPN.
Q4	19A115294P2	Silicon, NPN.
Q5 and Q6	19A115768P1	Silicon, PNP; sim to Type 2N3702.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R151P221J	Composition: 220 ohms ±5%, 1/8 w.
R2	3R151P473J	Composition: 47K ohms ±5%, 1/8 w.
R3 and R4	3R151P181J	Composition: 180 ohms ±5%, 1/8 w.
R5 and R6	3R151P100J	Composition: 10 ohms ±5%, 1/8 w.
R7	3R151P101J	Composition: 100 ohms ±5%, 1/8 w.
R8	3R151P100J	Composition: 10 ohms ±5%, 1/8 w.
R9	3R151P222J	Composition: 2.2K ohms ±5%, 1/8 w.
R10	3R151P470J	Composition: 47 ohms ±5%, 1/8 w.
R11	3R151P102J	Composition: 1K ohms ±5%, 1/8 w.
R12	3R151P101J	Composition: 100 ohms ±5%, 1/8 w.
R13	19A116412P6	Variable, cermet: 20K ohms ±10%, 1/2 w; sim to Bellpot Model 62 PR.
R14	3R152P160J	Composition: 16 ohms ±5%, 1/4 w.
R16	3R151P153J	Composition: 15K ohms ±5%, 1/8 w.
R17	3R151P751J	Composition: 750 ohms ±5%, 1/8 w.
		PA BOARD 19D423711G1 30-36 MHz 19D423711G2 36-42 MHz 19D423711G3 42-50 MHz 19D423710G1 30-36 MHz HOTOBCTYLE 19D423710G2 36-42 MHz HOTOBCTYLE 19D423710G3 42-50 MHz HOTOBCTYLE
AR201	19A116297P2	Integrated circuit, linear.
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C201	19A116080P102	Polyester: 0.015 µf ±10%, 50 VDCV.
C202	19A116655P19	Ceramic disc: 1000 pf ±20%, 1000 VDCV; sim to RMC Type JF Discap.

SYMBOL	GE PART NO.	DESCRIPTION
C203	19A116080P102	Polyester: 0.015 µf ±10%, 50 VDCV.
C204	7489162P38	Silver mica: 300 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C205	7489162P27	Silver mica: 270 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C206	7489162P35	Silver mica: 220 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C207	7489162P43	Silver mica: 470 pf ±5%, 300 VDCV; sim to Electro Motive Type DM-15.
C208 and C209	7489162P41	Silver mica: 390 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C210	5494481P11	Ceramic disc: 1000 pf ±20%, 1000 VDCV; sim to RMC Type JF Discap.
C211	19A116080P102	Polyester: 0.015 µf ±10%, 50 VDCV.
C212	19A116080P106	Polyester: 0.068 µf ±10%, 50 VDCV.
C213	5496203P381	Ceramic disc: 1000 pf ±10%, 500 VDCV, temp coef -4700 PPM.
C214	5496203P377	Ceramic disc: 820 pf ±10%, 500 VDCV, temp coef -4700 PPM.
C215	5496203P373	Ceramic disc: 680 pf ±10%, 500 VDCV, temp coef -4700 PPM.
C216*	7489162P29	Silver mica: 120 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15. Added to G2 & G5 by REV A. In G1, G4 Earlier than REV A.
	7489162P33	Silver mica: 180 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C217*	7489162P31	Silver mica: 150 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15. Deleted in G2 & G5 by REV A. Deleted in G3 by REV B.
C218*	7489162P29	Silver mica: 120 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15. Added to G2 & G5 by REV A. In G1, G4 Earlier than REV A.
	7489162P33	Silver mica: 180 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C219*	7489162P31	Silver mica: 150 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15. Added to G2 & G5 by REV A. Deleted in G3 by REV B.
C220	5496267P20	Tantalum: 47 µf ±20%, 35 VDCV; sim to Sprague Type 150D.
C221	19A116080P107	Polyester: 0.1 µf ±10%, 50 VDCV.
C222	19A116080P102	Polyester: 0.015 µf ±10%, 50 VDCV.
C223	7489162P22	Silver mica: 62 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C224	7489162P25	Silver mica: 82 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C225	7489162P24	Silver mica: 75 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C226	19B209408P10	Variable, mica: 100-250 pf, 400 VDCV.
C227 thru C229	19B209408P6	Variable, mica: 37-140 pf, 400 VDCV.
C230	5496218P460	Ceramic disc: 75 pf ±5%, 500 VDCV, temp coef -220 PPM.
C231	5496218P357	Ceramic disc: 56 pf ±5%, 500 VDCV, temp coef -150 PPM.
C232	5496218P256	Ceramic disc: 51 pf ±5%, 500 VDCV, temp coef -80 PPM.
C233	5496218P351	Ceramic disc: 33 pf ±5%, 500 VDCV, temp coef -150 PPM.
C234	5496218P350	Ceramic disc: 30 pf ±5%, 500 VDCV, temp coef -150 PPM.
C235	5496218P348	Ceramic disc: 24 pf ±5%, 500 VDCV, temp coef -150 PPM.
C236	5496218P465	Ceramic disc: 120 pf ±5%, 500 VDCV, temp coef -220 PPM.
C237	5496218P363	Ceramic disc: 100 pf ±5%, 500 VDCV, temp coef -150 PPM.
C238	5496218P361	Ceramic disc: 82 pf ±5%, 500 VDCV, temp coef -150 PPM.
C239 and C240	7489162P25	Silver mica: 82 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15.
C241* and C242*	7489162P31	Silver mica: 150 pf ±5%, 500 VDCV; sim to Electro Motive Type DM-15. Added to G3 by REV B.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR201	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
CR202	19A115100P1	Silicon; sim to Type 1N458A.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J201	19A130858G1	Connector: 6 contacts.
J202 and J203		Rpart of printed board 19A130932G1).
J204		(Part of W203).
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L201	19B209420P114	Coil, RF: 1.20 µh ±10%, 0.18 ohms DC res max; sim to Jeffers 4436-1E.
L202 thru L204	19B209420P123	Coil, RF: 6.80 µh ±10%, 1.80 ohms DC res max; sim to Jeffers 4446-2E.
L205	19C321099P2	Coil.
L206	19C321098P1	Coil.
L207	19A130340G1	Coil.
L208	19C321099P5	Coil.
L209	19C321099P3	Coil.
L210	19C321099P4	Coil.
L211	19A130340G1	Coil.
L212	19C321099P7	Coil.
L213	19C321099P6	Coil.
L214	19B227229G1	Coil.
L215	19C321099P12	Coil.
L216	19C321098P11	Coil.
L217	19C321099P10	Coil.
L218	19C321099P9	Coil.
L219	19C321098P8	Coil.
L220	19C321099P10	Coil.
L221	19C321098P9	Coil.
L222	19C321098P8	Coil.
L223	19C321098P13	Coil.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P202		(Part of W202).
P203		(Part of W203).
P204		(Part of W204).
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q201	19A116942P1	Silicon, PNP.
Q202*	19B232644G1	Silicon, NPN. Added in G3 by REV A.
Q203*	19B232644G4	Silicon, NPN. Added to G3 by REV A.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R201	19C314256P22551	Metal film: 2.55K ohms ±1%, 1/4 w.
R202	3R152P204J	Composition: 200K ohms ±5%, 1/4 w.
R203	19C314256P2499Z	Metal film: 49.9K ohms ±1%, 1/4 w.
R204	19C314256P1503	Metal film: 150K ohms ±1%, 1/4 w.
R205	19C314256P4999	Metal film: 49.0 ohms ±1%, 1/4 w.
R206	19A134225P1	Resistance wire.
R207	19C314256P4992	Metal film: 49.90K ohms ±1%, 1/4 w.
R208	19A116559P106	Variable, cermet: 10K ohms ±20%, .5 w; sim to CTS Series 360.
R209	19C314256P8662	Metal film: 86.60K ohms ±1%, 1/4 w.
R210	19C314256P1002	Metal film: 10K ohms ±1%, 1/4 w.
R211	19C314256P11001	Metal film: 1K ohms ±1%, 1/4 w.
R212	19A116559P106	VariabLP, cermet: 50K ohms ±20%, .5 w; sim to CTS Series 360.
R213 and R214	3R152P103K	Composition: 10K ohms ±10%, 1/4 w.

SYMBOL	GE PART NO.	DESCRIPTION
R215	3R152P101J	Composition: 100 ohms ±5%, 1/4 w.
R216	3R152P115J	Composition: 1.1K ohms ±5%, 1/4 w.
R217 thru R220	7147161P34	Composition: 3.9 ohms ±5%, 1/2 w.
R221 thru R224	7147161P6	Composition: 2.7 ohms ±5%, 1/2 w. To improve symmetry Added C112
R225 thru R228	7147161P29	Composition: 2.2 ohms ±5%, 1/2 w.
R229	3B779100J	Composition: 10 ohms ±5%, 1/2 w.
R230 and R231	5490205P2	Composition: 6.8 ohms ±5%, 1 w.
R232	19C314256P26342	Metal film: 63.4K ohms ±1%, 1/4 w.
RT201	19C300048P6	Disc: 50K ohms ±10%; sim to NL ind. 4D103.
VR201	4036887P1	Zener: 2.3 v. nominal.
VR202	4036887P7	Zener: 500 mW, 9.0 v. nominal.
		- - - - - - - - - - CABLES - - - - - - - - - -
#201		(Part of printed board 19A130932G1).
#202	19A130432G2	Cable assembly, RF: coaxial; sim to Solitron/ Microwave 8100-0003. Includes (P202).
#203	19A130432G4	Cable assembly, RF: coaxial; sim to Solitron/ Microwave 8120-0003. Includes (P203).
#204	19A130943G1	Cable: approx 2 inches long. Includes P204.
		ASSOCIATED ASSEMBLIES
		COMPRESSOR KIT 19A130409G1
A116	19C311907G2	Audio Compressor.
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C117 and C118	5491674P1	Tantalum: 1.0 µf +40% -20%, 10 VDCV; sim to Sprague Type 162D.
C119	5491674P36	Tantalum: 3.3 µf ±20%, 10 VDCV; sim to Sprague Type 162D.
C120	19A116192P2	Ceramic: 470 pf ±20%, 50 VDCV; sim to Erie 8111-A050-V58-471K.
C121	19A116192P1	Ceramic: 0.01 µf ±20%, 50 VDCV; sim to Erie 8121 SPECIAL.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R105	3B151P103J	Composition: 10K ohms ±5%, 1/8 w.
R106	3B151P101J	Composition: 100 ohms ±5%, 1/8 w.
R107	3B151P153J	Composition: 15K ohms ±5%, 1/8 w.
R108	3B151P433J	Composition: 43K ohms ±5%, 1/8 w.
R109*	3B151P623J	Composition: 62K ohms ±5%, 1/8 w. Added by REV A.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19C311491P3	Can. (Used with A101-A103 on Exciter Board).
	19A127337P2	Nut: 8-32. (Used with Q1 on Exciter Module).
	19B219742P1	Shield. (Located on Exciter PA).
	4035306911	#washer, fiber. (Used with Q2 on PA Board).
	4030555591	Insulator, disc. (Used with Q4 on Exciter PA).
	19B210440P1	Nut: No. 8-32. (Used with Q202 on PA Board).
	19A116022P1	Insulator, bushing. (Used with Q201 on PA Board).
	19A116023P1	Insulator, plate. (Used with Q201 on PA Board).
	19C320921G3	Back cover. (PA Board- STD).
	19D234586G3	Back cover. (PA Board- HOTOBCTYLE).
	19B210440P2	Spacer. (Used with PA Board).
	19A134509P1	Gasket. (Located between PA Board and back cover).
	19A130311P4	Gasket. (Used with J204).
	4030593P5	Insulated sleeving. (Used with #206).

PRODUCTION CHANGES

LBI30232

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 19D423681G1

To improve symmetry
Added C112

REV. A - Compressor Kit 19A130409G1
To add stability.
Deleted R107.
Added R109

REV. A - PA Board 19D423710G3
To improve amplifier performance.
Deleted Q202.
Added Q203.
Changed C229 and C240.

REV. A - PA Board 19D423710G1,2, 4&5
REV. B - PA Board 19D423710G3
To improve power output capacity.
Deleted C217 and C219.
Changed C216 and C218 on PA Boards 19D423710G1,2, 4&5.
Added C241 and C242 to PA Board 19D423710G2.